



2015-2016 HYDROMETEOROLOGY BASELINE REPORT

KUDZ ZE KAYAH PROJECT

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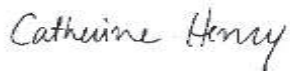
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EXECUTIVE SUMMARY

The hydrometeorological character of the Kudz Ze Kayah (KZK) property is described through analysis of regional data in relation to those data collected on site. This information and datasets will not only define the character of the site and satisfy licence application requirements, but will also inform engineering and design of the mine plan as inputs for modelling. KZK is located in eastern Yukon on the Yukon plateau and is characterized by cold dry winters and wetter summers.

Climatic and meteorological conditions at the Project site are characterized using regional data available through Environment Canada (EC) and Environment Yukon as well as meteorological data collected on site in 1995, and at the new site meteorological station commissioned in late August 2015.

The mean annual temperatures at regional stations range from -4.7°C at Ross River to -2.2°C at Ketz River Mine, and extreme annual temperatures range from -59.4°C at Ross River in December to 35.4°C at Watson Lake in July. Long term records indicate an increasing trend for average minimum, average maximum and mean monthly temperatures at the six regional stations studied. The mean annual temperature recorded at Kudz Ze Kayah for the period September 2015 to August 2016 was -0.47°C and extremes ranged from -26.28°C to 19.89°C . When comparing to both long term regional averages and to regional data for the same period, the 2015-2016 record at KZK generally shows warmer winter temperatures (October to April), cooler summer temperatures (May to September), and reduced diurnal range.

Mean annual precipitation at regional stations ranges from 210 mm at Ross River to 710 mm at Ketz River Mine; the proportion of total annual precipitation falling as rain ranges from 39% at Ketz River Mine up to 70% at Ross River and Faro. The greatest amount of precipitation generally falls between June and September for all regional stations. Long term records do not show clear trends when looking at total precipitation over time; however, the proportion of total precipitation falling as rain has displayed an increasing trend at all stations, consistent with the rising trends observed in air temperature. Total measured and corrected precipitation at Kudz Ze Kayah for the period September 1, 2015 to August 31, 2016 was 478.2 mm. When comparing to concurrent regional data at Faro and Watson Lake, Kudz Ze Kayah is wetter but not as wet as the elevation alone might predict. However, regional data are sparse and do not cover a wide range of elevations. Other factors such as the geographic position on the northeast side of the Pelly Mountains likely play a greater role in determining the precipitation received on site. Using the concurrent regional data and comparing to long term records, mean annual precipitation is estimated to be 616 mm at the KZK meteorology station.

The 2016 snow survey data at five regional stations indicate that 2016 was a below average snow year. Snow water equivalent (SWE) values in April 2016 ranged from 62% to 93% of normal with a mean of 78%, whereas the May 2016 SWE values ranged from 0% to 91% of normal with a mean of 44%. Snow surveys conducted at Kudz Ze Kayah in January, February, and March 2016 seem to indicate lower SWE values

than at regional stations, although sampling was not carried out at the same time of year. Similarly, the 2016 snow survey data at KZK generally indicates a lower snow year when compared to the 1995 site snow survey results.

Winds at the Kudz Ze Kayah site blow predominantly from the northwest to northeast and average and maximum wind speeds are relatively high. Relative humidity and barometric pressure at KZK are generally consistent with regional patterns, and solar radiation peaks in June and is at a minimum in December. Pan evaporation measurements and evapotranspiration calculations at KZK for the 2015-2016 period are generally consistent with 1995 measurements and estimates.

The regional hydrological data encompasses a large study area of several hundred kilometers and is provided by Water Survey of Canada monitoring stations. Initial comparison of data collected on site to regional averages suggests that the site is drier than the regional mean. Estimated runoff in small mountain catchments with data from large rivers lends uncertainty to estimates; however, good on site data collection allows those predictions to be evaluated for their appropriateness and for hybrid approaches to estimating mean conditions.

Hydrometric data were collected on site in 1995 and at present beginning in April, 2015. Seven continuous monitoring stations were installed in May 2015 and discrete monthly discharge were gathered to facilitate the development of continuous derived record. The catchment area of the monitoring stations ranged from approximately 2 km² to 210 km². The measured total annual runoff from April 2015 to May 2016 had a computed range of 217 mm to 535 mm while the predicted mean annual runoff ranged from 246 mm to 610 mm. These higher runoff, small elevation sites have greater uncertainty due to the difficulty in measuring stage in small creek systems and because of higher precipitation variability.

The 1/50 high total runoff year was estimated to range from 336 mm to 824 mm. There is much higher uncertainty with the higher sites as it is suspected that drifting snow is partially responsible for the higher unit runoff. The 1/50 wet year may not increase by the same factor as lower elevation sites and larger catchments. The 1/10 dry total runoff year was estimated to range from 197 mm to 482 mm.

Flowing water was observed at all sites in the winter of 2015 and 2016, and a mean low flow of 1.7 L/s was measured and is expected to be fairly consistent from year to year.

In 2015, the peak discharge occurred during spring snowmelt. However, significant large rainfall driven peaks were observed in the late summer. Peak discharge was estimated through regional flood frequency analysis. Flood frequency analysis was carried out for both peak and instantaneous discharge and the relationship between elevation and peak discharges was judged to be an adequate method of predicting peak flows at KZK.

Monitoring continues on site to further validate and refine estimates as the Project advances; however, the following analyses provide strong estimates with which to advance planning. For the upper Geona

Creek catchment (KZ-9) in which the Project is proposed, the following best estimates are recommended for planning purposes: mean annual precipitation of 612 mm and mean annual runoff of 388 mm. The losses included in the remaining 224 mm includes actual evapotranspiration, sublimation and some groundwater.

LIST OF ACRONYMS

°C	degrees Celsius
%	Percentage
AEG	Alexco Environmental Group Inc.
AET	Actual Evapotranspiration
ASCE	American Society of Civil Engineers
DIAND	Department of Indian Affairs and Northern Development
E	Easting
EC	Environment Canada
ET	Evapotranspiration
IEE	Initial Environmental Evaluation
INAC	Indigenous and Northern Affairs Canada
hPa	hectopascal
KZK	Kudz Ze Kayah
m	Metre
mm	Millimetre
m/s	Metres per second
MAP	Mean Annual Precipitation
MAR	Mean Annual Runoff
masl	Meters Above Sea Level
MOE	Ministry of Environment
N	Northing
NAD83	North American Datum of 1983
PET	Potential Evapotranspiration
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percent Difference
SS	Salt Slug
SWE	Snow Water Equivalent
Tp	Return Period
UTM	Universal Transverse Mercator coordinate system
VA	Velocity-Area
W/m ²	Watt per square meter
WSC	Water Survey of Canada, Department of Environment and Climate Change Canada
YESAA	Yukon Environmental and Socio-economic Assessment Act
YESAB	Yukon Environmental and Socio-economic Assessment Board
YG	Yukon Government

GLOSSARY

Aufeis: a sheet-like mass of layered ice that forms from successive flows on top of an ice sheet, typically from groundwater during freezing temperatures.

Environmental Lapse Rate: the rate of decrease of temperature with altitude in the stationary atmosphere at a given time and location.

Evapotranspiration: the process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.

Hectopascal: a metric measurement unit of pressure commonly used to measure atmospheric pressure.

Initial Environmental Evaluation: document produced by Cominco in 1996 that summarises baseline studies at the Kudz Ze Kayah property, describes the Mine plan, waste material characterization, closure plan, environmental management, potential impacts and associated mitigation measures, and socio-economic impacts associated with the Project as it was defined in 1996.

Log Pearson Type III Distribution: a type of distribution among a family of continuous probability distributions.

Mean Annual Runoff: the average value of all annual runoff amounts usually estimated from the period of record or during a specified base period from a specified area.

Penman Combination Equation: approximates net evapotranspiration, requiring input data including daily mean temperature, wind speed, relative humidity and solar radiation.

Quality Assurance: the process or set of processes used to measure and assure the quality of a product.

Quality Control: the process of ensuring products and services meet consumer expectations.

Relative Percent Difference: used to compare two quantities while taking into account the "sizes" of the things being compared.

Salt Slug: refers to a known mass of salt deployed, typically in a stream, all at once in order to measure discharge through principles of dilution gauging.

Snow Water Equivalent: the amount of water contained within the snowpack.

Velocity-Area: a method of measuring discharge in a channel cross section by dividing it into imaginary vertical panels of known area and measuring and assigning a mean velocity to each panel which cumulatively can be used to compute total discharge.

Yukon Environmental and Socio-economic Assessment Board: an independent body, responsible for implementation of the assessment responsibilities under the *Yukon Environmental and Socio-economic Assessment Act*.

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1 INTRODUCTION

This report summarizes regional and local baseline hydrometeorological information in support of mine development planning in the Kudz Ze Kayah (KZK) Project (the Project) area in Yukon Territory. It is a compilation of monitoring data and observations collected under a variety of efforts including the Initial Environmental Evaluation (IEE) by Cominco Ltd. (1996), as well as regional data from various government sources. It also includes the results of additional baseline studies conducted in 2015 and 2016 by Alexco Environmental Group Inc. (AEG) on behalf of BMC Minerals (No.1) Ltd.

Chapter 2 presents data and observations for climate and meteorological parameters including air temperature, precipitation, snowpack, wind speed and direction, relative humidity, solar radiation, barometric pressure, evaporation, and evapotranspiration. Chapter 3 presents results of hydrometric monitoring at site, mean annual and monthly runoff, wet and dry monthly flows, and a flood frequency analysis.

1.1 REGIONAL SETTING

The Project is located in the northern foothills of the Pelly Mountains on the Yukon Plateau, on the east side of the divide between the Pelly River and Liard River drainage basins. The Project area is located in the Finlayson Creek/River drainage, which forms part of the Liard Basin. Elevations in the area range from approximately 1,300 meters above sea level (masl) to 2,000 masl. The area has a typical northern interior climate. Summers are cool and short, whereas winters are long and very cold. The frost-free period is generally 40 to 60 days (some valley bottom stations report 70 to 90 days), although frost can occur in any month. Mean annual temperatures range from approximately 0 to -5°C. The study area is within the Extensive Discontinuous Permafrost Zone (Bonnaventure and Lewkowicz, 2013). Permafrost is commonly encountered under the organic layers that cover the Geona and upper Finlayson valleys. Permafrost is typically located under poorly drained areas, cool aspects, and upper elevations. Permafrost related ground movement or solifluction is apparent on upper to middle elevation slopes.

Precipitation estimates range from 250 mm to 500 mm per year, with June, July, and August being the wettest months (Canadian Wildlife Service, 1989); to 500 mm to 600 mm with evapotranspiration under 200 mm (Fisheries and Environment Canada, 1978). Assuming a 500 mm to 600 mm annual average, this gives a rough mean annual runoff (MAR) estimate approximately 300 mm to 400 mm which is appropriate when compared to discharge measured at the Water Survey of Canada (WSC) stations in the region.

1.2 OBJECTIVES

Baseline studies were initiated in 2015 to build on previous work completed in 1995. These programs were designed to meet the requirements of the Yukon Environmental and Socio-Economic Assessment Board (YESAB) and the Yukon Water Board for a Water Use Licence application. This report summarizes

the historical data collected for the Project, the current data collected, and the available regional hydrometeorological data. This baseline report seeks to define the hydrometeorological character of the region as well as estimate mean and extreme conditions at the Project site, and detect potential trends. Project conditions are estimated using regional data and compared to data gathered at the Project site to evaluate their appropriateness. This information and datasets will not only define the character of the site and satisfy licence application requirements, but will also inform engineering and design of the mine plan.

2 CLIMATE AND METEOROLOGICAL DATA

The following section presents regional and site-specific climatic and meteorological data. Regional data are available through Environment Canada (EC) and Environment Yukon. Meteorological data were collected on site in 1995, and a new meteorological station for the Project was commissioned in late August 2015.

2.1 METHODS

2.1.1 Regional Data

Climatic normals and long-term trends were evaluated by reviewing long-term records from stations in the region (regional analysis). EC meteorological stations used for regional temperature and precipitation summary and trend analysis, selected based on location/proximity and data availability, are presented in Table 2-1 below. The table also indicates which stations were included in each analysis, while rationale on station selection are provided in the respective sections. Figure 2-1 shows the location of these stations.

Of the stations listed, only Watson Lake A and Faro A have a long enough and complete enough data record for the compilation of climate normals, which were available for the periods 1961-1990, 1971-2000 and 1981-2010 for Watson Lake A, and 1971-2000 and 1981-2010 for Faro A.

The Wolverine Mine is located approximately 28 km to the east of the Project and ran an automated HOBO® Onset Weather Station located on the southwest side of the airstrip, at an approximate elevation of 1,320 masl. This station collected temperature, relative humidity, rain, solar radiation wind speed and direction, and barometric pressure data (Yukon Zinc Corporation, 2011). Results obtained at the Wolverine Mine were used for comparison where practicable, but were not used in the regional analysis because the level of quality assurance/quality control (QA/QC) conducted on the data is not known and may not meet the same standards as those by EC. For example, there were some data gaps in the Wolverine Mine record, some of which were filled by the installation of a second station at a different location (above the tailings facility) (Yukon Zinc Corporation, 2011).

Table 2-1: Regional Environment Canada Meteorological Stations

Station Name	Station ID	Latitude	Longitude	Elevation (masl)	Distance from KZK (km)	Years of data	Temperature		Precipitation	
							Summary Statistics	Trend Analysis	Summary Statistics	Elevation Relationships
Hour Lake	2100FCG	61°10'54"	-129°07'54"	890	86	1982-2014	✓	✓	✓	✓
Tuchitua	2101135	60°56'00"	-129°13'00"	724	97	1967-2014	✓	✓	✓	✓
Ketza River Mine	210FPP	61°31'00"	-132°16'00"	1,380	87	1985-1995	✓		✓	
Swift River	2101081	60°00'00"	-131°11'00"	891	167	1966-2008	✓	✓	✓	✓
Ross River A	2100940	61°58'00"	-132°26'00"	705	111	1964-1994	✓	✓	✓	✓
Ross River YTG	2100941	61°59'00"	-132°27'00"	698	111	1993-2008	✓	✓	✓	✓
Watson Lake A	2101200	60°06'59"	-128°49'20"	687	181	1953-2014	✓	✓	✓	✓
	2101201	60°06'59"	-128°49'21"			2014-2016	✓	✓	✓	✓
Faro A	2100517	62°12'25"	-133°22'24"	716	167	1978-2016	✓	✓	✓	✓

**KUDZ ZE KAYAH PROJECT
HYDROMETEOROLOGY BASELINE REPORT**

**FIGURE 2 - 1
REGIONAL METEOROLOGICAL AND
SNOW MONITORING STATIONS**

OCTOBER 2016



- Kudz Ze Kayah Project
- Meteorological and Snow Monitoring Station
- Snow Monitoring Station



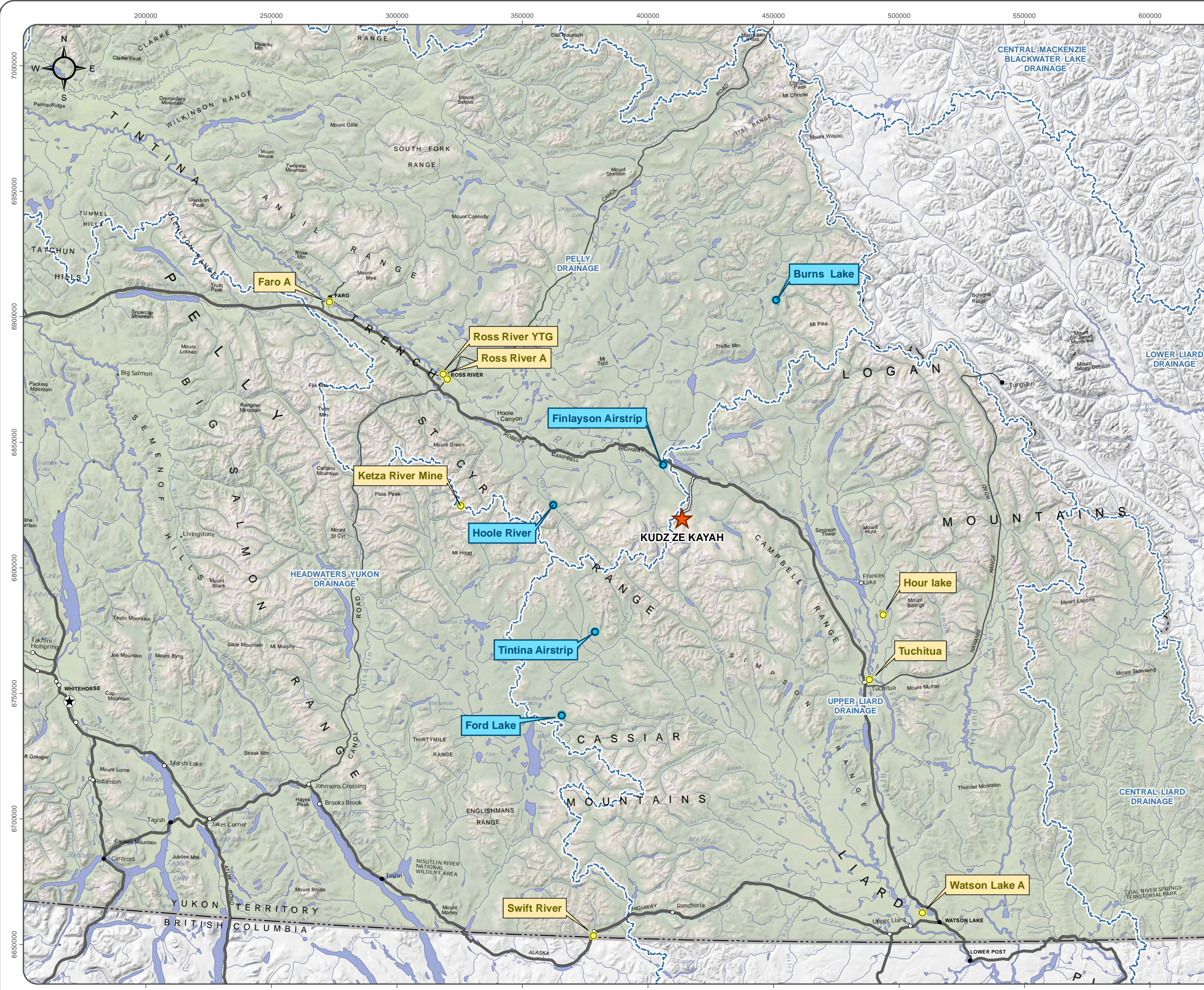
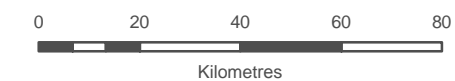
Digital elevation model created by the Yukon Department of the Environment interpolated from the digital 1:50,000 Canadian National Topographic Database (NTDB Edition 2) contour and watercourse layers. Obtained from Geomatics Yukon.

Canvec compiled by Natural Resources Canada at a scale of 1:10,000 - 1:50,000. Reproduced under license from Her Majesty the Queen in Right of Canada, as represented by the Minister of Natural Resources Canada. All rights reserved. Drainage areas obtained from National Hydrology Network 2011

Datum: NAD 83; Projection UTM Zone 9N

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2.1.2 Site Data

Site meteorological data consists of historical datasets collected in 1995, and of ongoing monitoring initiated in late August 2015.

2.1.2.1 Historical Data

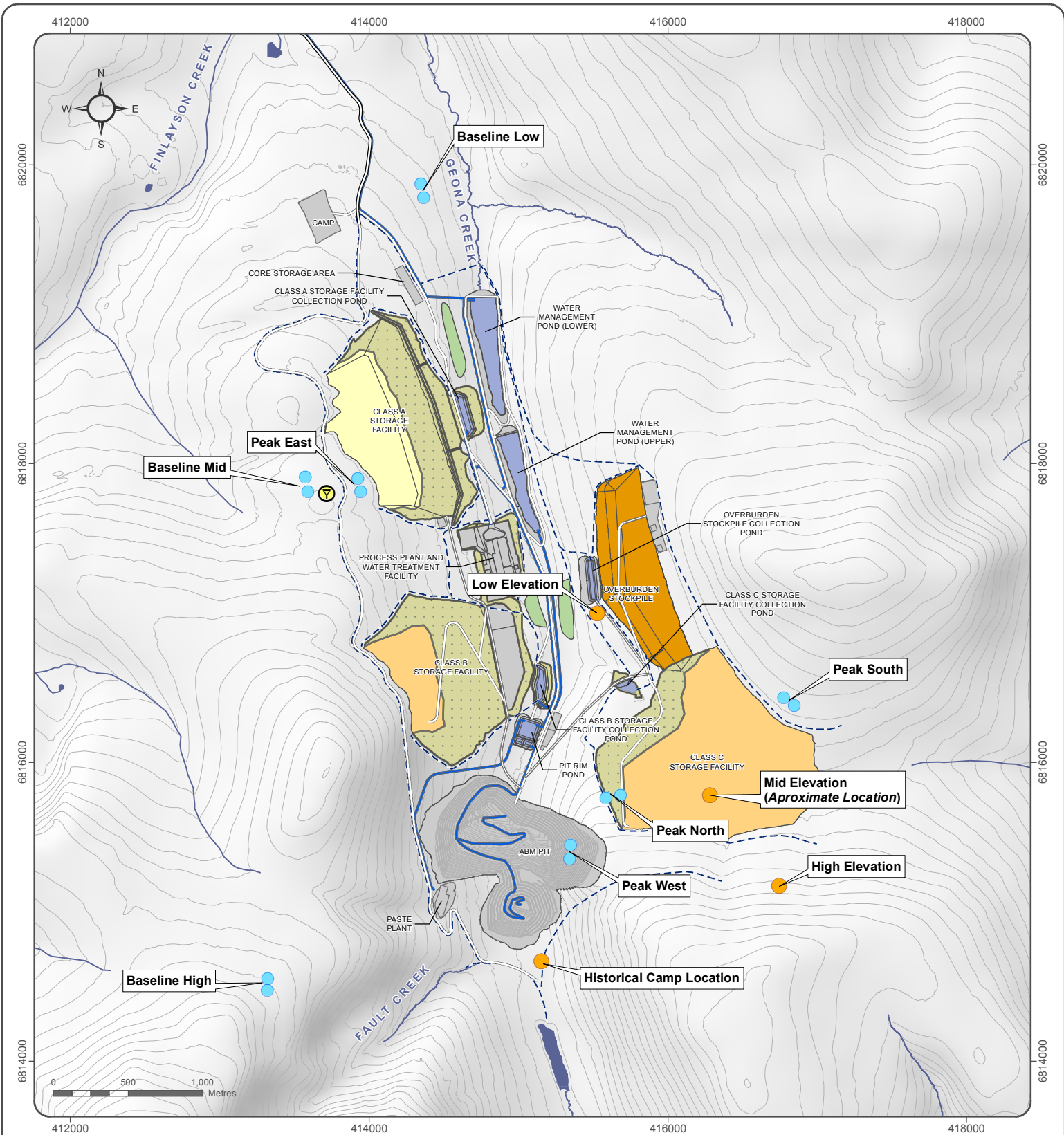
Two meteorological stations were established in the Project area during 1995, as shown in Figure 2-2. A low elevation station was located just east of Geona Creek adjacent to the then proposed location of the tailings impoundment, and was in full operation between April 13 and September 3, 1995. A high elevation station was initially installed (April 12, 1995) at the Project exploration camp at the head of Geona Creek before being moved to its high elevation location on May 8, 1995. The station was also in full operation until September 3, 1995. Data collected included temperature, wind speed, and direction and precipitation. Additional data collected at the low elevation site included evaporation, solar radiation, and relative humidity. These data were sampled at 15 second intervals and averaged and recorded every 30 minutes. The results are summarized in Table 2-2 below (details can be found in Cominco Ltd., 1996).

Table 2-2: Monthly Summary of Climatic Parameters, KZK Climate Stations, 1995

	Wind Speed (m/s)		Air temperature (°C)			Solar Radiation (W/m ²)		Relative Humidity (%)		Precipitation (mm)
	Avg	Max	Avg	Max	Min	Avg	Max	Avg	Max	Total
Low Elevation Station										
April	5.7	15.4	0.4	11.6	-9.3	-	-	-	-	-
May	6.8	14.4	6.7	8.8	-5.5	319.9	869.6	-	-	-
June	6.0	21.0	10.5	25.1	-2.9	340.4	947.8	60.2	94.9	54
July	5.6	16.9	10.0	19.2	2.1	282.0	920.0	77.0	100.0	59
Aug- 4 Sept	5.9	22.3	7.1	16.9	-1.2	267.5	854.0	77.9	100.0	47*
Camp Station										
Apr 12 – May 8	4.7	15.8	0.7	11.5	-11.4	-	-	-	-	-
High Elevation Station										
May 8 – 25	12.7	29.7	5.2	16.0	-2.8	-	-	-	-	-
June 8 – 30	9.6	27.2	11.2	22.6	0.1	-	-	-	-	142*
July	10.1	27.3	8.7	17.0	2.4	-	-	-	-	52
Aug – 4 Sept	10.0	27.7	6.2	14.7	-0.6	-	-	-	-	54*

* Monthly total rather than specified interval

Source: Cominco Ltd., 1996 (Table 3-2)



- Current Meteorological Station
- Historical Meteorological/Snow Monitoring Station
- Snow Sampling Location

Proposed Site Infrastructure

- Class A Storage
- Class B and C Storage Facility
- Overburden Stockpile
- Topsoil Stockpile
- Progressive Reclamation
- Pond/Water

- Pipeline
- Diversion Ditch
- Tote Road/Proposed Access Road
- Proposed Mine Road

**KUDZE KAYAH PROJECT
HYDROMETEOROLOGY BASELINE REPORT**

**FIGURE 2-2
HISTORICAL AND CURRENT
METEOROLOGICAL AND SNOW SURVEY
STATIONS LOCATIONS**

DECEMBER 2016

National topographic Data Base (NTDB) compiled by Natural Resources Canada at a scale of 1:50,000. Reproduced under license from Her Majesty the Queen, as represented by the Minister of Natural Resources Canada. All rights reserved. Datum: NAD 83; Projection: UTM Zone 9N



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2.1.2.2 Current Data Collection

A Campbell Scientific meteorological station was installed at the Project site at the following UTM NAD83 coordinates: 09V 413,710 Easting (E) 6,817,805 Northing (N), elev. 1,542 masl (Figure 2-2) and commissioned on August 25, 2015. The station consists of a 10 m tower, datalogger, and sensors to collect the following measurements:

- Air Temperature (°C);
- Relative Humidity (%);
- Wind Speed (m/s) and Direction (degrees);
- Barometric Pressure (hPa);
- Solar Radiation (W/m²); and
- Precipitation (mm).

A detailed list of components and photos are presented in Appendix A. The station was programmed to take readings at 10 second intervals and to log hourly values of the above parameters, including average and maximum wind speed. The station was equipped with satellite communication and was set up for weekly data transfers. The station's program also incorporates an evapotranspiration (ET) instruction that provided an estimate of ET values based on measured meteorological parameters, using the American Society of Civil Engineers (ASCE) Penman-Monteith Standardized reference evapotranspiration equation.

A Class A evaporation pan was installed at the weather station site; however, no pan evaporation data could be collected in 2015 due to water freezing in the pan at the time of commissioning (late August). In 2016, daily measurements were taken between May 21 and September 5, as conditions allowed.

2.1.2.3 QA/QC

Data collected at the Campbell Scientific meteorological station were validated weekly by searching for outliers or any unrealistic values, and comparing with data from regional stations as required. Diagnostic values were also consulted to help determine whether or not data needed to be invalidated and, as the case may be, determine the cause. ET calculations were also verified using REF-ET, a reference evapotranspiration calculator developed by the University of Idaho (Allen, 2015). When suspicious values were noted during the weekly validation, appropriate maintenance or troubleshooting actions were incorporated into the next site visit. In addition, the station was visually inspected and maintained monthly, including the following steps:

- Ensuring that the solar panel was free of frost, snow and/or debris;
- Ensuring that the solar radiation sensor was free of frost, snow and/or debris. The sensor was wiped free of dust, using a soft cloth dampened with water or alcohol. Condensation within the dome was also checked for;
- Ensuring that the precipitation gauge opening was not obstructed by debris or snow. If clearing was necessary, note the date and time clearing was completed;
- Ensuring that all the wires were properly connected to the datalogger inside the enclosure;
- Replacing desiccant in enclosure; and
- Observing any sign of damage to the station by animals, wind, etc. paying particular attention to sensor cables and guy wires; guy wires were tightened if necessary.

2.2 RESULTS

The following sections summarize regional data, where available, and site data collected between September 2015 and August 2016. A complete hourly table of data collected at the Project site is available in Appendix B, while monthly summaries are discussed in the sections below.

2.2.1 Temperature

2.2.1.1 Regional Data

Extreme and average minimum and maximum, as well as mean monthly and annual temperatures were calculated for the entire period of record for each regional station (Table 2-3). The mean annual temperatures ranged from -4.7°C at Ross River to -2.2°C at Ketz River Mine, and extreme annual temperatures ranged from -59.4°C at Ross River in December to 35.4°C at Watson Lake in July.

Table 2-3: Regional Monthly and Annual Temperatures (°C)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Extreme Monthly Minimum Temperature (period of record) in °C													
Hour Lake	-51.0	-48.0	-45.0	-35.0	-24.0	-4.5	-2.5	-4.5	-20.0	-36.0	-47.0	-51.0	-51.0
Tuchitua	-54.4	-55.6	-45.6	-33.3	-22.5	-8.0	-2.2	-6.1	-19.5	-29.5	-45.6	-54.4	-55.6
Ketz River Mine	-40.0	-40.0	-27.0	-19.0	-12.0	-2.5	1.0	-5.0	-10.0	-24.0	-40.0	-40.0	-40.0
Swift River	-52.2	-54.0	-43.9	-33.3	-17.0	-6.7	-4.0	-5.6	-16.7	-28.9	-41.7	-52.2	-54.0
Ross River A	-59.4	-59.4	-50.0	-32.2	-10.6	-6.7	-3.3	-5.6	-18.5	-38.0	-51.0	-59.4	-59.4
Ross River YTG	-57.0	-52.0	-45.0	-32.0	-17.0	-3.5	-1.0	-4.5	-12.0	-31.5	-45.0	-57.0	-57.0
Watson Lake A	-58.9	-56.1	-46.7	-32.8	-16.0	-3.3	0.6	-6.7	-13.9	-36.6	-47.5	-58.9	-58.9

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
Extreme Monthly Minimum Temperature (period of record) in °C													
Faro A	-51.0	-51.0	-44.0	-30.5	-8.0	-2.5	0.6	-4.5	-15.5	-34.0	-46.0	-51.0	-51.0
Monthly Mean Minimum Temperature (period of record)													
Hour Lake	-26.1	-22.8	-19.0	-9.1	-1.5	4.2	6.2	4.4	0.3	-5.9	-19.5	-24.4	-9.4
Tuchitua	-29.2	-25.5	-20.7	-9.1	-1.3	4.2	6.1	3.6	-1.0	-7.0	-19.5	-27.3	-10.6
Ketza River Mine	-16.1	-16.8	-10.9	-7.2	0.1	4.9	7.3	5.4	0.6	-7.1	-16.4	-16.3	-6.0
Swift River	-24.6	-21.0	-17.1	-9.3	-1.9	2.7	5.0	3.3	-0.2	-5.6	-16.7	-23.4	-9.0
Ross River A	-34.2	-27.2	-20.1	-8.7	-1.4	3.5	6.1	3.3	-1.8	-8.7	-23.3	-30.5	-11.9
Ross River YTG	-31.6	-26.1	-22.0	-9.3	-1.1	4.6	6.6	3.5	-1.5	-8.0	-21.1	-27.2	-11.1
Watson Lake A	-29.1	-24.5	-18.3	-6.9	0.9	6.6	8.8	6.8	2.3	-4.3	-18.7	-26.8	-8.6
Faro A	-24.8	-21.1	-15.5	-5.7	1.2	6.8	8.9	6.4	1.5	-5.2	-18.2	-23.7	-7.4
Mean Monthly Temperature (period of record)													
Hour Lake	-19.9	-16.2	-10.9	-1.7	5.7	11.7	13.5	11.6	5.8	-1.9	-14.7	-18.7	-3.0
Tuchitua	-23.7	-18.2	-11.4	-0.9	6.3	11.8	13.5	11.2	5.4	-1.9	-14.5	-21.9	-3.7
Ketza River Mine	-12.3	-12.6	-7.2	-3.0	4.0	9.5	11.9	9.5	3.8	-4.4	-12.9	-12.4	-2.2
Swift River	-19.1	-14.0	-9.4	-2.0	5.0	10.1	11.9	10.5	5.6	-1.1	-11.6	-18.1	-2.7
Ross River A	-27.7	-19.2	-10.7	-1.0	6.1	11.6	13.7	11.0	5.1	-3.1	-17.5	-24.1	-4.7
Ross River YTG	-24.3	-17.2	-11.5	-0.9	6.5	12.5	14.2	11.5	5.4	-2.5	-15.9	-20.1	-3.5
Watson Lake A	-23.9	-17.9	-10.4	-0.3	7.4	13.0	15.1	13.0	7.7	0.0	-14.2	-22.0	-2.7
Faro A	-20.4	-15.8	-9.0	0.5	7.7	13.2	14.9	12.5	6.7	-1.5	-14.3	-19.3	-2.1
Monthly Mean Maximum Temperature (period of record)													
Hour Lake	-14.4	-9.6	-2.7	5.8	12.8	19.1	20.8	18.5	11.2	2.3	-9.9	-13.4	3.4
Tuchitua	-18.0	-10.9	-2.0	7.1	13.8	19.4	21.0	18.8	12.0	3.3	-9.4	-16.2	3.2
Ketza River Mine	-8.4	-8.4	-3.4	1.2	7.8	14.1	16.4	13.6	7.0	-1.7	-9.4	-8.6	1.7
Swift River	-13.5	-7.1	-1.6	5.4	11.9	17.4	19.2	17.6	11.4	3.5	-6.4	-12.5	3.8
Ross River A	-21.2	-11.3	-1.3	6.5	13.6	19.6	21.4	18.9	12.0	2.6	-11.7	-18.4	2.6
Ross River YTG	-18.0	-9.0	-1.5	7.3	14.1	20.7	22.0	19.6	12.4	3.0	-10.7	-14.3	3.8
Watson Lake A	-18.6	-11.2	-2.5	6.3	13.8	19.3	21.2	19.2	13.0	4.2	-9.6	-17.2	3.2
Faro A	-16.1	-10.5	-2.4	6.7	14.1	19.5	20.9	18.5	11.8	2.2	-10.5	-15.1	3.3
Extreme Monthly Maximum Temperature (period of record)													
Hour Lake	11.0	10.0	15.0	19.5	31.0	32.5	33.0	32.5	24.0	18.0	18.0	11.0	33.0
Tuchitua	4.0	11.0	17.0	21.7	33.0	32.8	34.0	33.0	26.7	20.6	10.0	4.0	34.0
Ketza River Mine	1.0	6.0	4.0	9.5	19.5	24.0	25.0	26.5	21.0	6.0	3.0	1.0	26.5
Swift River	9.0	16.0	16.0	24.0	31.0	31.1	31.0	31.0	27.2	29.0	11.0	9.0	31.1
Ross River A	5.0	11.7	13.0	21.1	31.0	33.3	31.5	31.1	27.8	18.9	11.7	5.0	33.3
Ross River YTG	5.0	7.0	14.0	21.0	32.5	35.0	31.0	32.0	25.0	19.0	10.0	5.0	35.0
Watson Lake A	8.9	12.2	11.7	20.1	34.2	33.9	35.4	32.8	28.9	21.7	12.2	8.9	35.4
Faro A	10.6	12.1	12.5	21.5	32.0	33.8	33.2	33.9	24.0	18.5	12.5	10.6	33.9

Source: EC, 2016a

Although air temperature generally decreases with an increase in elevation at a rate known as the environmental lapse rate, (which varies depending on air water vapour saturation, ambient temperature, and altitude), this relationship was not verified based on data from the seven regional stations (the two Ross River stations were combined). Figure 2-3 shows that mean annual air temperature increases with elevation, although the correlation is weak ($R^2=0.22$). This may indicate that local factors, such as frequent temperature inversions, vegetation, or water bodies, play a role in determining air temperature.

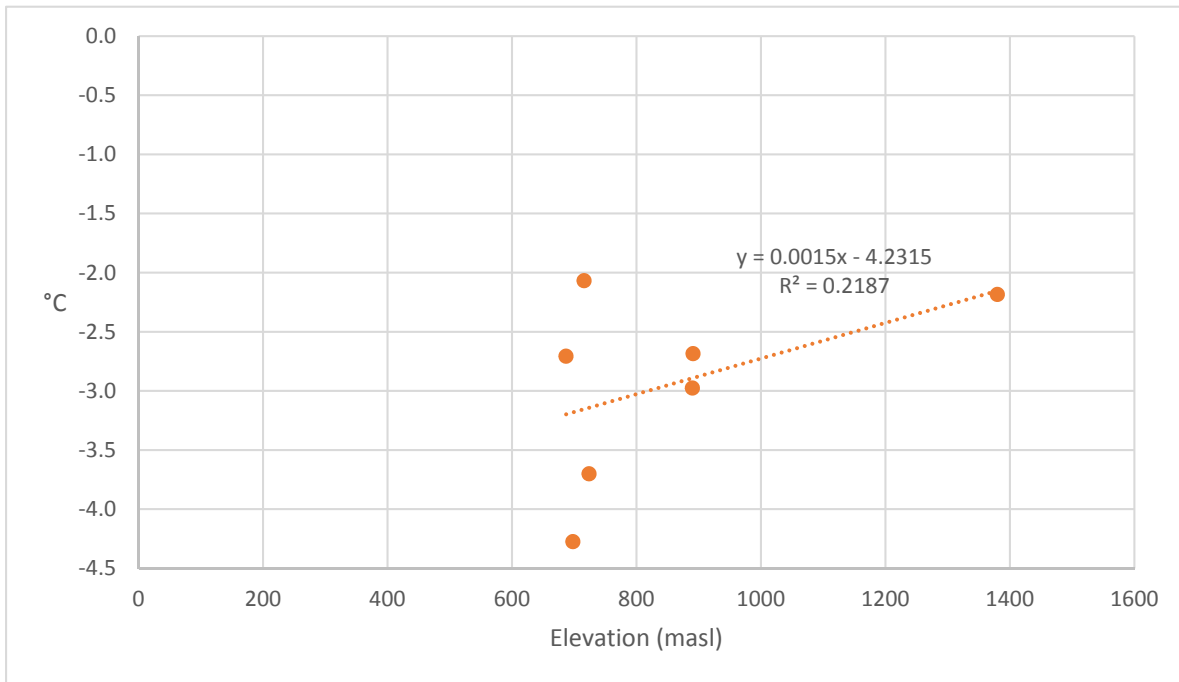


Figure 2-3: Mean Annual Temperature versus Station Elevation for the Period of Record of Seven Regional Climate Stations

The mean annual temperature observed at the nearby Wolverine Mine is comparable to that of the EC regional stations, ranging from -5.7°C to 0.4°C between 2010 and 2015. The warmest month has typically been June or July and the coldest being December or January, with extremes extending from -41.3°C to 25.2°C (Yukon Zinc Corporation, 2011a, 2012, 2013, 2014, 2015, 2016).

2.2.1.1.1 Long-Term Trends

Temperature trends were analyzed for six regional stations (the two Ross River stations were combined, and Ketz River Mine was removed because the record was too short for trend analysis). All stations displayed an increasing trend over the data collection period for average minimum, average maximum and mean monthly temperatures. The greatest rate of increase was observed at Hour Lake (0.0174°C per year for the mean and maximum temperatures) and the lowest was observed at Watson Lake A (0.0007°C per year for the mean, maximum and minimum temperatures). However, correlations were very weak in all cases (Appendix C).

When comparing climate normals at Watson Lake A for the periods 1961 to 1990 and 1981 to 2010, average, minimum and maximum temperatures were higher during the most recent period for every month except for August and October. The difference was greatest during the winter months and for the minimum temperature, which is consistent with trends observed in northern latitudes worldwide (IPCC, 2013; NOAA, 2014). Table 2-4 presents Watson Lake A climate normals data for the three periods.

Table 2-4: Temperature Normals for Watson Lake A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1981-2010													
Daily Average (°C)	-22.5	-17	-9.6	0.1	7.6	13.2	15.3	13	7.5	-0.5	-14.7	-20.8	-2.4
Daily Maximum (°C)	-17.5	-10.4	-1.8	7	14	19.6	21.5	19.1	12.8	3.7	-10	-16	3.5
Daily Minimum (°C)	-27.5	-23.5	-17.3	-6.8	1.3	6.8	9	6.9	2.2	-4.7	-19.3	-25.6	-8.2
1971-2000													
Daily Average (°C)	-24.2	-17.9	-10	0	7.4	12.8	15.1	13	7.5	-0.5	-15	-22.4	-2.9
Daily Maximum (°C)	-18.9	-11.3	-2	6.7	13.7	19.1	21.2	19.1	12.9	3.8	-10.3	-17.4	3.1
Daily Minimum (°C)	-29.4	-24.5	-17.9	-6.8	1	6.3	8.9	6.8	2	-4.8	-19.7	-27.4	-8.8
1961-1990													
Daily Average (°C)	-24.6	-18.4	-10.5	-0.4	6.9	12.5	14.9	13	7.4	-0.1	-15.3	-22.9	-3.1
Daily Maximum (°C)	-19.4	-11.8	-2.7	6.1	13.3	18.9	21.1	19.2	12.8	4.3	-10.5	-18	2.8
Daily Minimum (°C)	-30	-25.1	-18.6	-7.1	0.5	6.1	8.7	6.8	1.9	-4.5	-20.2	-28	-9.1

*Source: EC, 2016b

Similarly, at Faro A, annual and winter temperature normals were generally higher during the most recent period (1981 to 2010) than during 1971 to 2000, consistent with a warming trend (Table 2-5).

Table 2-5: Temperature Normals for Faro A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1981 to 2010													
Daily Average (°C)	-20.1	-15.5	-8.6	0.6	7.5	13.2	15	12.4	6.4	-2	-14.8	-17.9	-2
Daily Maximum (°C)	-16	-10.3	-2.1	6.8	13.8	19.6	21	18.4	11.5	1.7	-11.1	-13.8	3.3
Daily Minimum (°C)	-24.6	-20.7	-15	-5.5	1.2	6.8	8.9	6.3	1.3	-5.7	-18.5	-22.3	-7.3
1971 to 2000													
Daily Average (°C)	-21.5	-16	-8.2	0.5	7.5	13	15	12.3	6.5	-1.7	-14.1	-19.9	-2.2
Daily Maximum (°C)	-17.3	-10.8	-1.8	6.8	13.7	19.3	20.9	18.3	11.6	2.1	-10.4	-15.8	3.1
Daily Minimum (°C)	-26	-21.3	-14.5	-5.7	1.2	6.6	9	6.2	1.3	-5.4	-17.9	-24.3	-7.6

*Source: EC, 2016b

2.2.1.2 Site Data

Monthly average minimum, maximum, mean and extreme temperatures were compiled from the hourly data collected at the Project's Campbell Scientific station since time of commissioning (Table 2-6). The

mean annual temperature for the period September 2015 to August 2016 was -0.47°C , and extremes ranged from -26.28°C to 19.89°C .

The monthly average temperatures recorded at the Project site in 2016 were generally comparable to those recorded during the summer months of 1995 (at both the low and high elevation stations) (Table 2-2).

Figure 2-4 presents a comparison of monthly averages of all the regional stations in Table 2-3 to the 2015-2016 Kudz Ze Kayah monthly averages. Note: the 2015-2016 temperature data collected at the Project site generally had warmer winter temperatures (October to April) and cooler summer temperatures (May to September).

Only two of the regional stations were active during the period September 2015 to August 2016; namely Watson Lake A (station ID 2101201) and Faro A (station ID 2100527). Figure 2-5 presents a comparison of the hourly temperature record for that period between those two regional stations and the Project site. There was correlation between all three sites, with Kudz Ze Kayah temperatures generally warmer in the winter and cooler in the summer, which is consistent with observations described above. The diurnal temperature range was also smaller at the Project site compared to Watson Lake A and Faro A, particularly during summer months. The mean annual temperature for the period September 2016 to August 2016 was 0.22°C at Watson Lake and 0.91°C at Faro, in comparison to -0.47°C at the Project site.

Table 2-6: Monthly Air Temperature ($^{\circ}\text{C}$), KZK, 2015-2016

Month	Extreme Minimum Temperature ($^{\circ}\text{C}$)	Average Minimum Temperature ($^{\circ}\text{C}$)	Mean Temperature ($^{\circ}\text{C}$)	Average Maximum Temperature ($^{\circ}\text{C}$)	Extreme Maximum Temperature ($^{\circ}\text{C}$)
Sep 2015	-8.28	-0.66	1.42	3.65	8.94
Oct 2015	-11.05	-3.08	-1.12	0.89	6.01
Nov 2015	-26.28	-11.08	-8.57	-5.93	2.00
Dec 2015	-21.89	-13.28	-11.08	-9.23	0.23
Jan 2016	-17.04	-8.87	-6.97	-5.41	-0.94
Feb 2016	-21.58	-10.08	-8.02	-6.11	-0.75
Mar 2016	-16.21	-8.01	-6.14	-4.28	7.69
Apr 2016	-5.53	-2.61	-0.16	2.26	9.39
May 2016	-3.05	1.94	5.12	8.31	17.48
Jun 2016	1.45	6.39	9.81	13.29	19.42
Jul 2016	1.52	7.71	10.75	13.91	19.89
Aug 2016	0.33	6.71	9.29	12.31	18.93
Year	-26.28	-2.91	-0.47	1.97	19.89

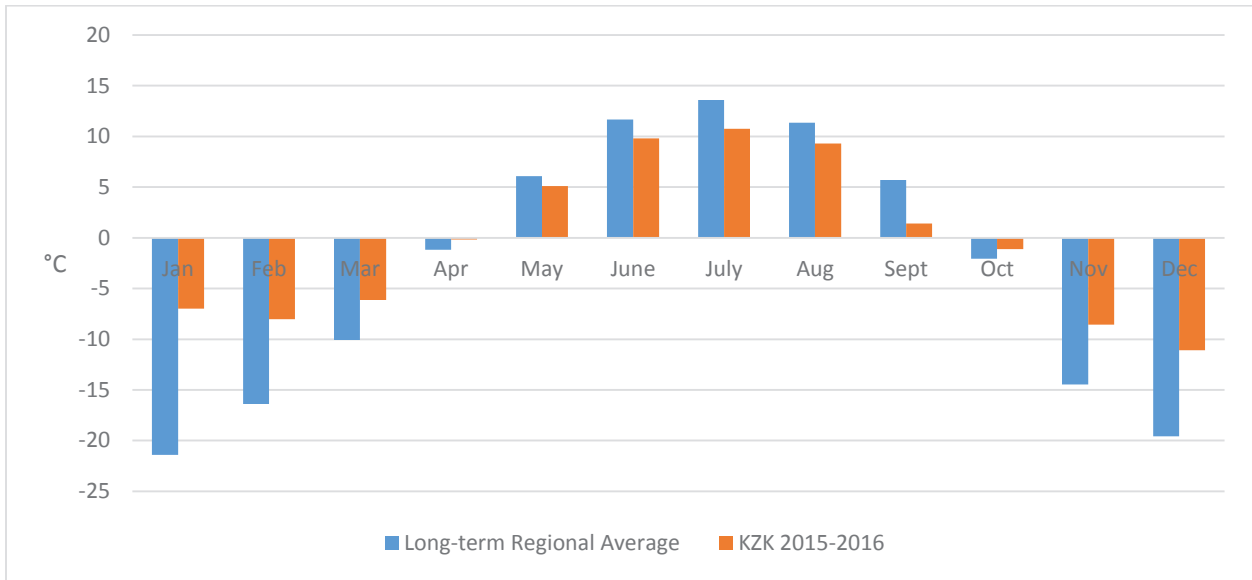


Figure 2-4: Long-term Regional Monthly Average Temperatures and Sept 2015 to Aug 2016 Monthly Averages at KZK

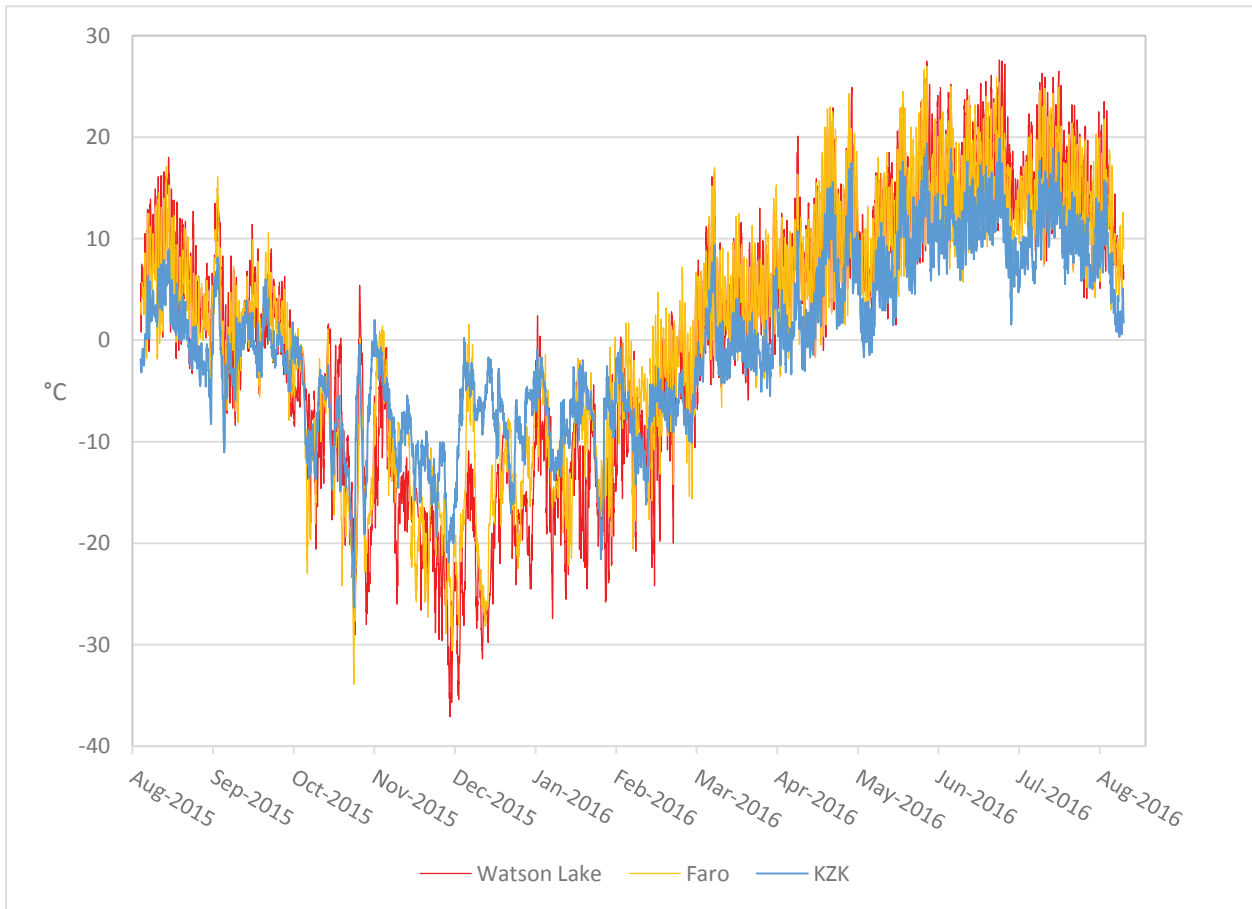


Figure 2-5: Watson Lake A, Faro A, and KZK Hourly Temperature, Sept 2015 to Aug 2016

2.2.2 Precipitation

2.2.2.1 Regional Data

Mean monthly rain, snow and total precipitations were calculated for the entire period of record for each station listed in Table 2-1. The proportion of total annual precipitation falling as rain ranged from 39% at Ketz River Mine to up to 70% at Ross River and Faro (Table 2-7). The greatest amount of precipitation generally fell between June and September for all stations.

Figure 2-6 presents the average monthly distribution of rain and snow across all regional stations.

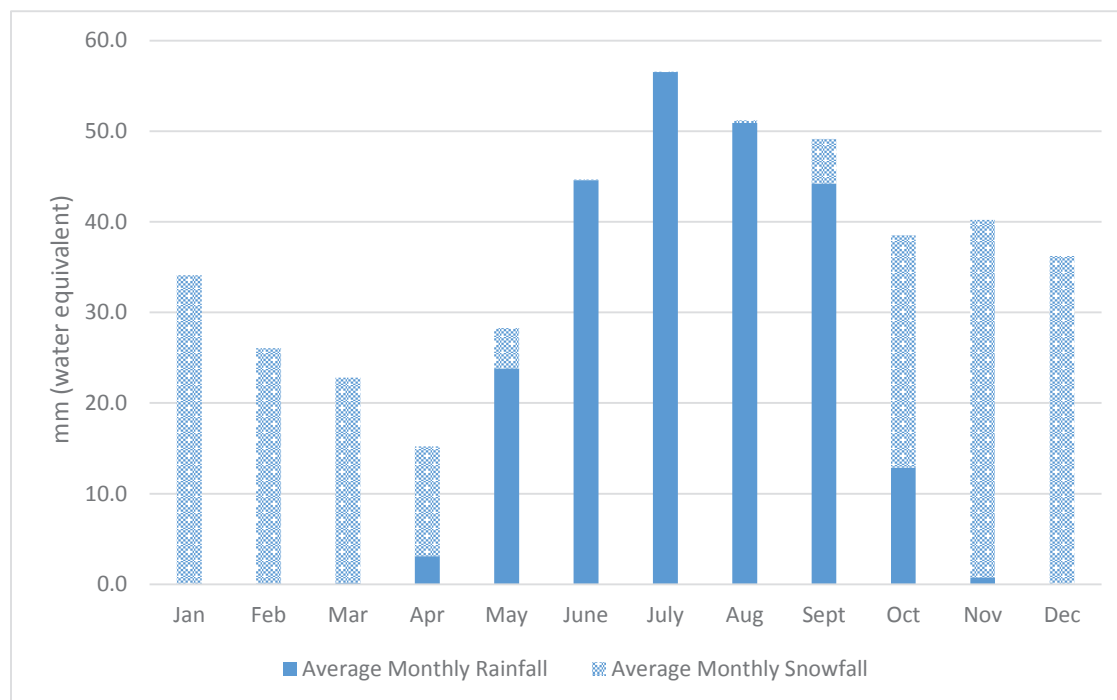


Figure 2-6: Monthly Distribution of Rain and Snow across Eight Regional Stations for the Period of Record

Table 2-7: Regional Monthly and Annual Rain, Snow and Total Precipitation

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual*
Mean Monthly Rain (mm) - period of record													
Hour Lake	0.0	0.2	0.2	5.1	29.5	61.9	69.6	68.9	49.5	14.6	0.3	0.0	299.8
Tuchitua	0.0	0.0	0.0	5.9	31.0	52.6	68.9	49.6	45.3	15.3	0.7	0.1	269.4
Ketz River Mine	0.3	0.5	0.0	0.0	14.1	52.5	51.8	77.3	63.9	12.6	0.0	0.0	272.9
Swift River	0.1	0.0	0.3	2.3	27.1	40.7	61.9	54.7	69.4	23.7	3.2	0.0	283.5
Ross River A	0.0	0.0	0.0	3.1	16.1	30.4	49.2	34.4	24.7	5.7	0.2	0.0	163.8

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual*
Ross River YTG	0.0	0.0	0.0	2.0	19.7	28.8	36.8	31.4	23.4	4.7	0.0	0.0	146.8
Watson Lake A	0.2	0.0	0.4	4.1	27.7	53.4	57.2	45.4	41.4	16.9	1.6	0.3	248.6
Faro A	0.0	0.0	0.1	2.4	25.4	36.5	56.9	45.5	36.2	9.7	0.1	0.1	213.0
Mean Monthly Snow (cm) - period of record													
Hour Lake	40.9	28.8	25.8	14.2	6.6	0.0	0.1	0.1	4.1	30.7	44.9	44.7	240.9
Tuchitua	39.9	28.3	20.8	11.8	3.2	0.0	0.0	0.0	1.9	21.8	37.8	43.1	208.6
Ketza River Mine	62.3	51.7	48.1	25.0	16.5	0.6	0.0	1.0	22.4	55.0	90.7	66.0	439.1
Swift River	45.0	36.1	35.9	19.7	3.9	0.1	0.0	0.1	3.7	36.1	51.9	47.6	280.1
Ross River A	17.1	12.4	10.6	4.4	0.3	0.0	0.0	0.4	1.9	12.8	18.9	15.4	94.3
Ross River YTG	11.4	7.7	5.0	2.2	0.4	0.0	0.0	0.0	0.6	9.2	12.9	12.1	61.4
Watson Lake A	39.8	28.5	22.4	13.3	4.1	0.0	0.0	0.1	2.4	20.7	37.1	42.0	210.4
Faro A	15.9	14.3	12.8	6.5	0.6	0.0	0.0	0.6	2.5	18.9	21.3	18.1	111.5
Mean Monthly Precipitation (mm) - period of record													
Hour Lake	40.9	29.0	26.0	19.3	36.4	61.9	69.7	69.1	53.5	45.3	45.3	44.7	541.0
Tuchitua	39.9	28.3	20.8	18.0	34.2	52.6	68.9	49.6	47.2	37.1	38.5	43.2	478.3
Ketza River Mine	62.5	52.2	48.1	25.0	28.2	53.1	51.8	78.3	86.3	67.5	90.7	66.0	709.8
Swift River	45.2	36.1	36.3	21.4	31.0	40.8	61.9	54.8	73.2	59.0	54.9	47.6	562.0
Ross River A	17.1	12.4	10.6	7.5	16.8	30.4	49.2	34.8	26.6	18.4	19.1	15.4	258.5
Ross River YTG	11.4	7.7	5.0	4.1	21.9	28.8	36.8	31.4	24.0	14.4	12.9	12.1	210.4
Watson Lake A	32.7	22.6	18.7	15.9	32.0	53.4	57.2	45.5	43.7	35.2	32.3	34.8	424.0
Faro A	15.0	10.6	11.0	7.9	22.3	39.4	55.5	49.6	37.8	24.3	16.7	15.1	305.2
% of Total Precipitation Falling as Rain – period of record													
Hour Lake	0.1	0.7	0.6	26.5	81.3	100.0	99.8	99.8	92.4	32.2	0.7	0.1	55.4
Tuchitua	0.0	0.1	0.0	32.6	90.8	100.0	100.0	99.9	96.0	41.2	1.8	0.2	56.3
Ketza River Mine	0.4	1.0	0.0	0.0	49.9	98.8	100.0	98.7	74.1	18.6	0.0	0.0	38.5
Swift River	0.3	0.0	0.9	10.5	87.5	99.8	100.0	99.9	94.9	40.3	5.9	0.0	50.4
Ross River A	0.0	0.0	0.0	41.2	96.2	100.0	100.0	98.7	92.7	30.8	1.1	0.0	63.4
Ross River YTG	0.0	0.0	0.0	47.1	90.1	100.0	100.0	100.0	97.5	32.8	0.0	0.0	69.7
Watson Lake A	0.5	0.2	2.0	25.6	86.6	100.0	100.0	99.8	94.8	47.8	4.9	0.9	58.6
Faro A	0.0	0.1	1.0	30.1	100.0	92.7	100.0	91.7	95.9	39.9	0.8	0.8	69.8

*Annual indicates total for rain, snow and precipitation, and average for % of total precipitation falling as rain

Source: EC, 2016a

The long-term records from seven regional stations (the two Ross River stations were combined) support the observation that total precipitation amounts generally increase with elevation, and that the proportion falling as rain decreases with increasing elevation. Linear regressions were conducted on average annual totals for the entire period of record for the regional stations to estimate the rate of increase in mean annual precipitation (MAP), mean annual snowfall and percent of total precipitation falling as rain as a function of elevation. The relationships suggest a rate of increase of 53.6 mm in MAP per 100 m of elevation gain, 42.9 cm in mean annual snowfall per 100 m of elevation gain, and a 3.6%

decrease in the proportion falling as rain with every 100 m elevation gain. Figure 2-7 to Figure 2-9 illustrate these correlations with the 95% confidence limits in red and the 95% prediction limits in green.

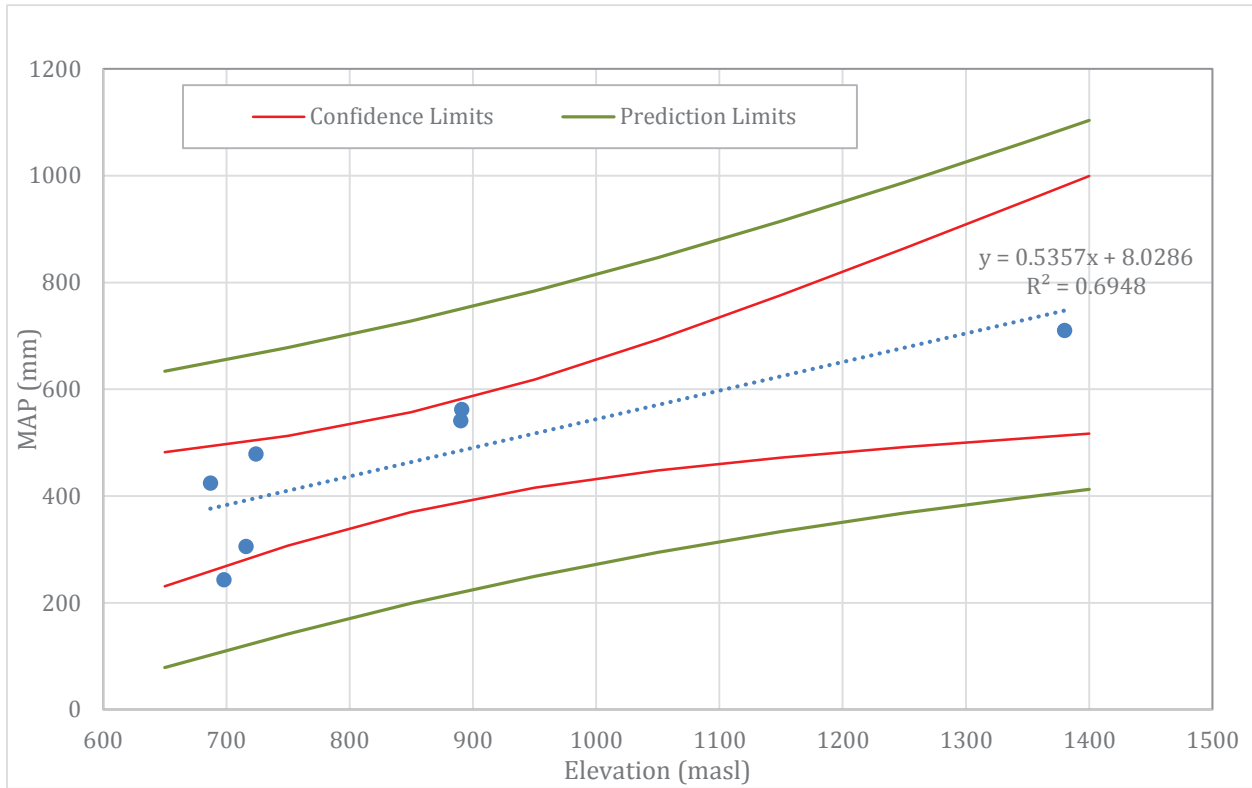


Figure 2-7: Mean Annual Precipitation versus Elevation for the Period of Record of Seven Regional Meteorological Stations

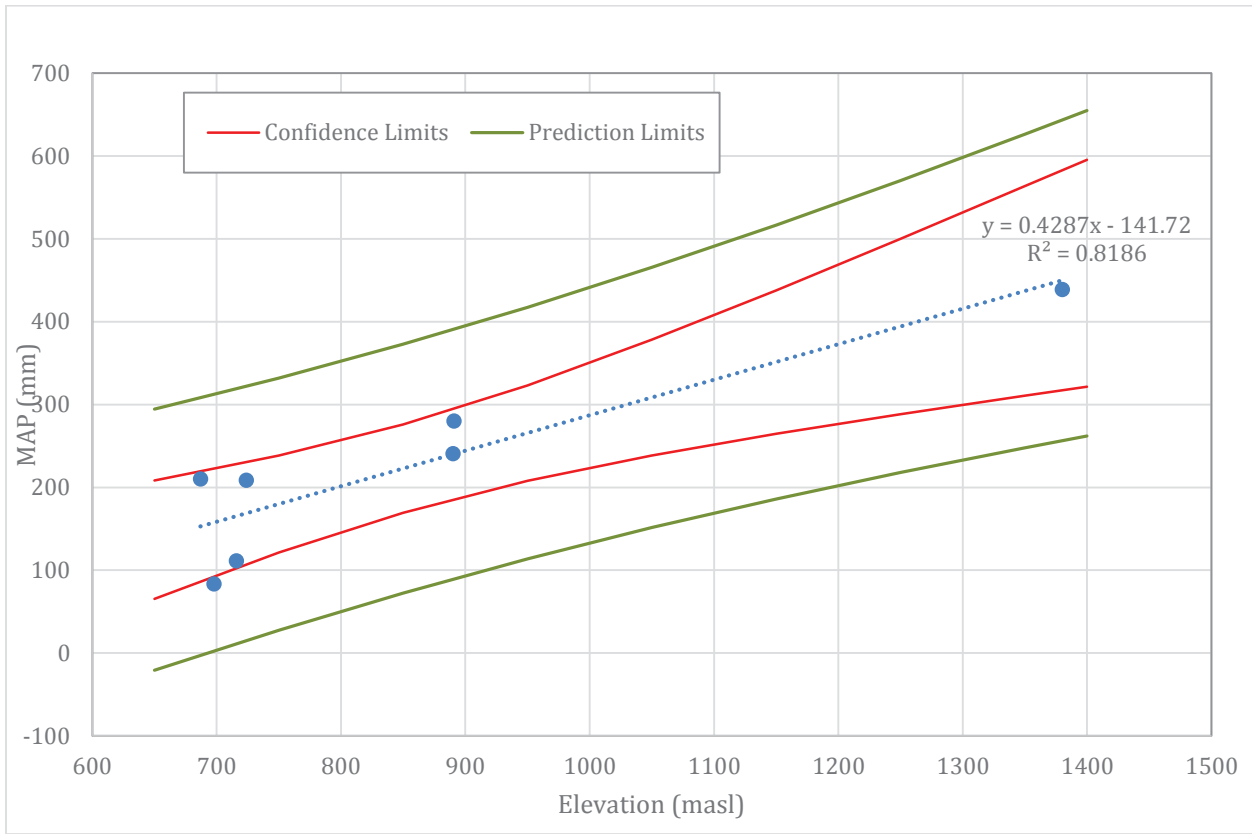


Figure 2-8: Mean Annual Snowfall versus Elevation for the Period of Record of Seven Regional Meteorological Stations

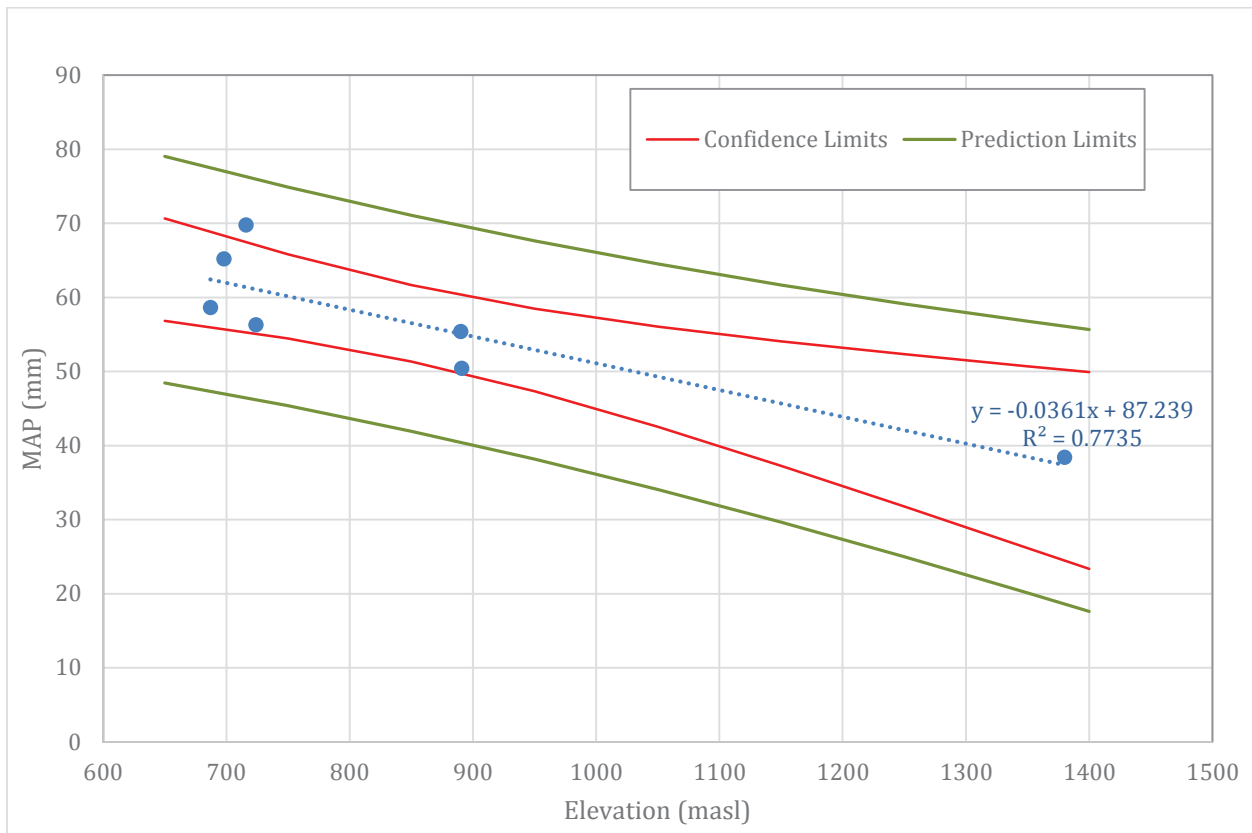


Figure 2-9: Proportion of Total Precipitation Falling as Rain versus Elevation for the Period of Record of Five Regional Meteorological Stations

Based on the relationships above, monthly rain, snow and total precipitation were predicted for the Project (at the elevation of the local meteorological station of 1,542 masl). Results indicate MAP of 834 mm, with annual snowfall of 519 cm, and 315 mm of rain (or 38%). In the IEE of 1996, Cominco Ltd. did a similar exercise based on regional datasets available at the time and found a MAP of 655 mm (390 cm of snow and 265 mm of rain). The difference is likely due to the use of a different elevation for Ketz River Mine in the regression derivation (1,675 masl in 1995 instead of 1,380 masl). The differences could also be due to different datasets used (i.e., longer records are available at this time). It is not known where the 1,675 masl number came from as both EC and the 2010 Ketz River Mine proposal (Ketz, 2010) both confirm the 1,380 masl. The 2010 Ketz River Mine proposal also reported that there were additional data collected at Ketz and provide a MAP estimate of 646.6mm; however, those data were not included in the report (Ketz, 2010). While this would alter the estimate given here, it is worth noting that the trend was based entirely on the Ketz River mine outlier, a record which spans 117 months; 52 of which are missing (44%). The confidence limits of the trend at the elevation of the current meteorological station at the Project site (1,542 masl) are 41% and the prediction interval is 53%, meaning the true MAP for the Project could be anywhere from 357 mm to 1,170 mm (based on the modelling conducted as part of this study).

For comparison, the Wolverine Mine, located roughly 28 km to the east of the Project, has an estimated MAP of 570 mm, 317 mm is estimated to be falling as rain on average (Yukon Zinc Corporation, 2011). Measured annual rain amounts presented in their recent annual reports (2010 to 2014) range from approximately 229 mm to 374 mm (Yukon Zinc Corporation, 2011a, 2012, 2013, 2014, 2015, 2016).

Figure 2-10 shows the MAP distribution for the period of record for each regional station and the mean for all stations. It is recommended that the mean distribution be adopted for modelling purposes. The actual MAP at the Project site is likely similar to those estimates at Wolverine Mine and Ketzka River Mine, and further analysis is presented below using data collected on site.

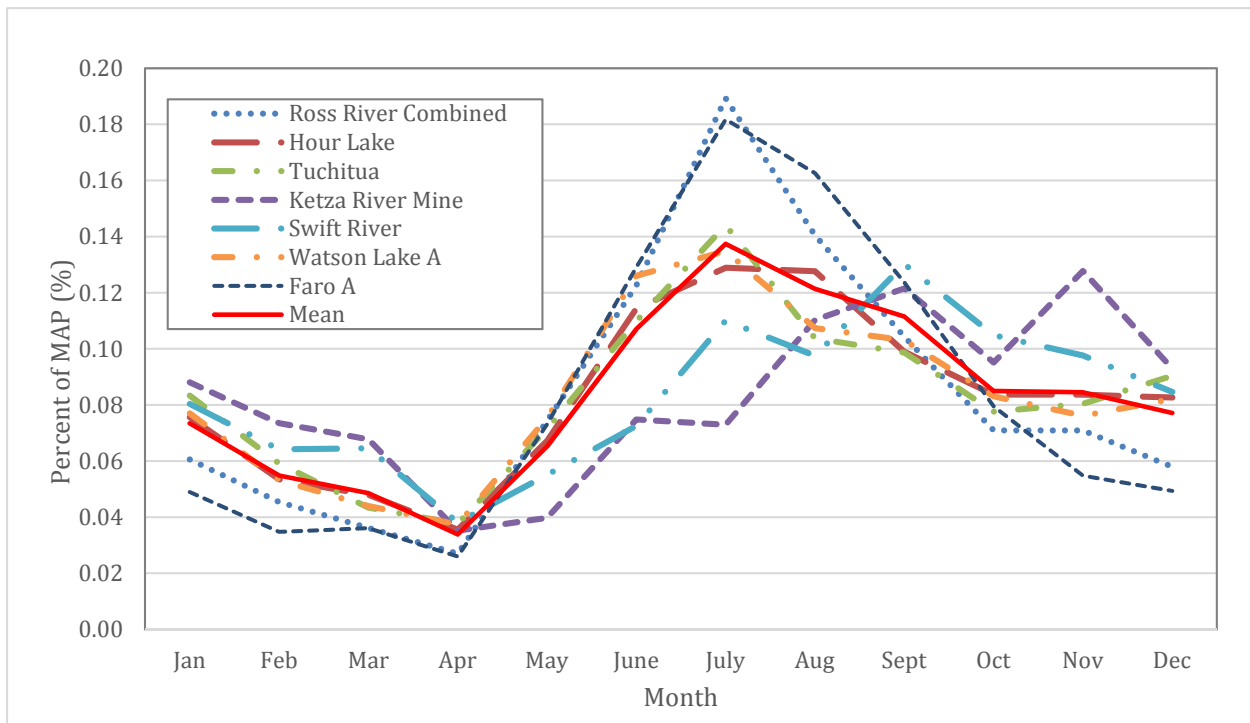


Figure 2-10: Mean Monthly Precipitation as a Percent of Total Annual Precipitation for Regional Meteorological Stations

2.2.2.1.1 Long-Term Trends

Total precipitation trends for the same six stations were analyzed for temperature tendencies. The two Ross River stations were combined and Ketzka River Mine’s record was too short for trend analysis. No clear pattern emerged, as some stations showed a decreasing trend over the period of record, others an increasing trend, and others remained constant. Correlations are weak in all cases, with R² values ranging from 1.0e-05 to 0.5036 (see Appendix D for total rain, snow and precipitation trend graphs).

The proportion of total precipitation falling as rain showed an increasing trend at all stations, consistent with the rising trends observed in air temperature. Although the correlation was weak, a similar trend was generally observed for all stations, with a rate of increase of approximately 0.1% to 0.3% per year, except

for Hour Lake, which shows a much steeper slope (1.0% per year). The trend for Hour Lake is based on a shorter data record and could easily be biased by a few observations (Figure 2-11).

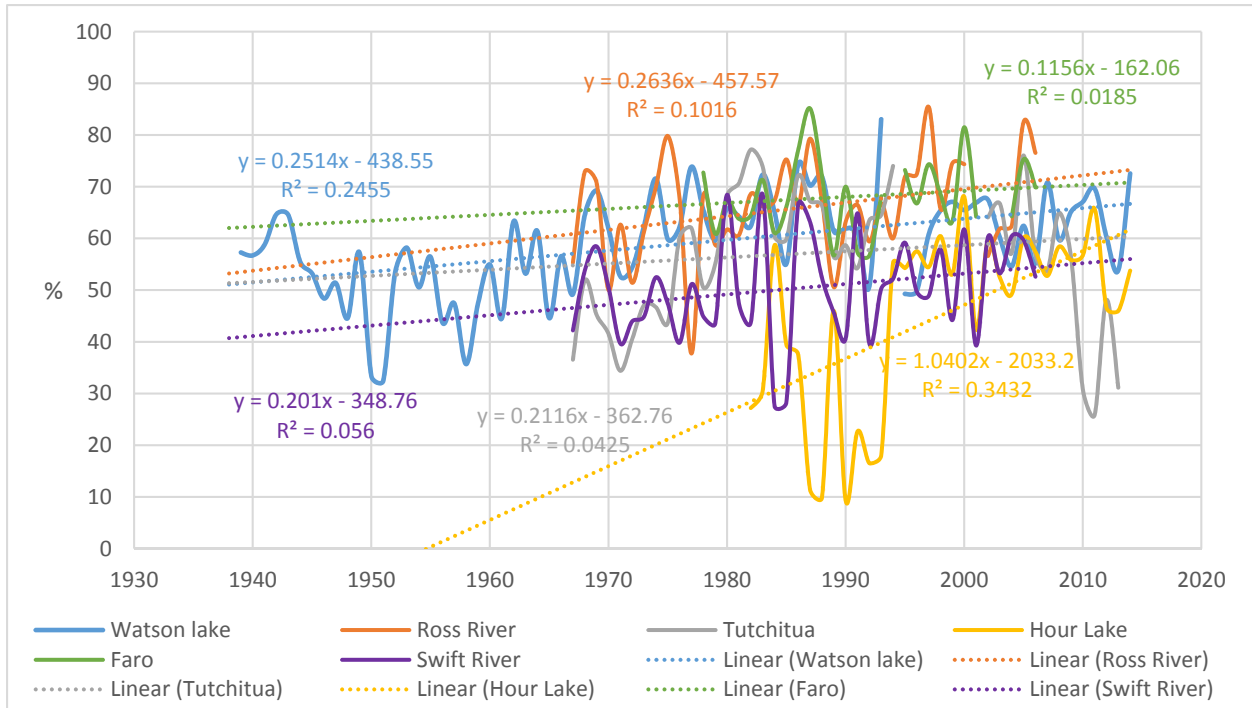


Figure 2-11: Trends in Proportion of Total Annual Precipitation Falling as Rain for Six Regional Stations

When comparing precipitation normals for Watson Lake A between the periods 1961 to 1990 and 1981 to 2010, a 5.3 mm or 2.1% increase in total rainfall, and a 22.8 cm or 10.4% decrease in total snowfall was observed, even with a negligible change in MAP (2.6 mm or 0.6% increase) (Table 2-8) At Faro A, total precipitation, rainfall and snowfall showed an increasing trend between the two climate normals periods of 1.2%, 1.9% and 2.2% respectively, although this comparison was made over a shorter time span than for Watson Lake A (Table 2-9).

Table 2-8: Precipitation Normals, Watson Lake A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981 to 2010													
Rainfall (mm)	0.1	0	0.1	4.6	33.6	54.9	59.5	47.4	41.1	19.5	0.6	0.5	262
Snowfall (cm)	40.6	28.5	19.6	11.4	3.7	0	0	0.3	1.7	20.8	34.2	35.3	196.1
Precipitation (mm)	30.9	20.4	15.3	14.1	37.4	54.9	59.5	47.6	42.6	37.7	27.9	27.9	416.4
1971 to 2000													
Rainfall (mm)	0.3	0	0.2	4.1	35.2	52.4	59.9	44	39.7	18.8	0.3	0.2	255.2
Snowfall (cm)	35.7	29.5	19.8	11.5	4.6	0	0	0.3	2.1	21.4	33.9	37.6	196.5
Precipitation (mm)	26.1	20.9	14.6	13.9	39.9	52.4	59.9	44.2	41.8	36.8	25.6	28.4	404.4
1961 to 1990													
Rainfall (mm)	0.3	0	0.2	3.1	32.3	54.1	60	44.2	43	18	1.1	0.3	256.7
Snowfall (cm)	41.4	32.9	24.5	13.7	5.6	0	0	0.2	2.2	20.4	36.3	41.5	218.9
Precipitation (mm)	30	21.9	17.2	14.3	37.5	54.1	60.1	44.3	45.1	34.1	26.1	29.1	413.8

*Source: Environment Canada, 2016b

Table 2-9: Precipitation Normals, Faro A

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1981 to 2010													
Rainfall (mm)	0	0	0.1	2.6	27.3	36.7	56.1	47.5	38.4	9.4	0.2	0.1	218.4
Snowfall (cm)	16.7	14.6	13.1	6.3	0.6	0	0	0.7	2.4	20.4	21.7	17.6	114
Precipitation (mm)	14.6	12.3	12.3	8.7	27.9	36.7	56.1	48.2	41	27.3	19.4	15.2	319.7
1971 to 2000													
Rainfall (mm)	0	0	0	2.2	23.7	36.1	58.8	47.6	36	9.7	0.2	0.1	214.4
Snowfall (cm)	16	15	12.2	6	0.3	0	0	0.7	2.6	19.4	21.1	18.3	111.6
Precipitation (mm)	14.8	13.3	11.6	8	24	36.1	58.8	48.3	38.9	26.5	19.4	16.4	316

*Source: Environment Canada, 2016b

2.2.2.2 Site Data

Monthly total precipitation was obtained by subtracting the average cumulative depth at the beginning of the month from the average cumulative depth at the end of the month, in order to minimize noise effect (Figure 2-12). The annual total for that period was 343.3 mm.

Project data for the month of June was drier in 2016 than 1995, while the months of July and August were wetter. The 2015 to 2016 Project data generally had lower monthly precipitation than at most of the regional stations, except for Ross River YTG and Faro A, which had lower long-term averages. The Project precipitation was also much lower than predicted values using the regional data. This indicates that either

the September 2015 to August 2016 period was much drier than average, that the precipitation-elevation relationship is a poor predictor of Project conditions, or some combination of the two.

Total precipitation gauges typically have a reduced catch efficiency for solid precipitation that varies as a function of wind speed as well as height and profile of the gauge; therefore, the amount of snowfall measured at the Project could underestimate the actual snowfall amount (Smith, 2007). Most EC stations use similar types of instruments to that used at the Project site and undercatch is well documented (Mekis and Vincent, 2011). In addition, the Project meteorological station experiences very high wind speed which would further contribute to undercatch.

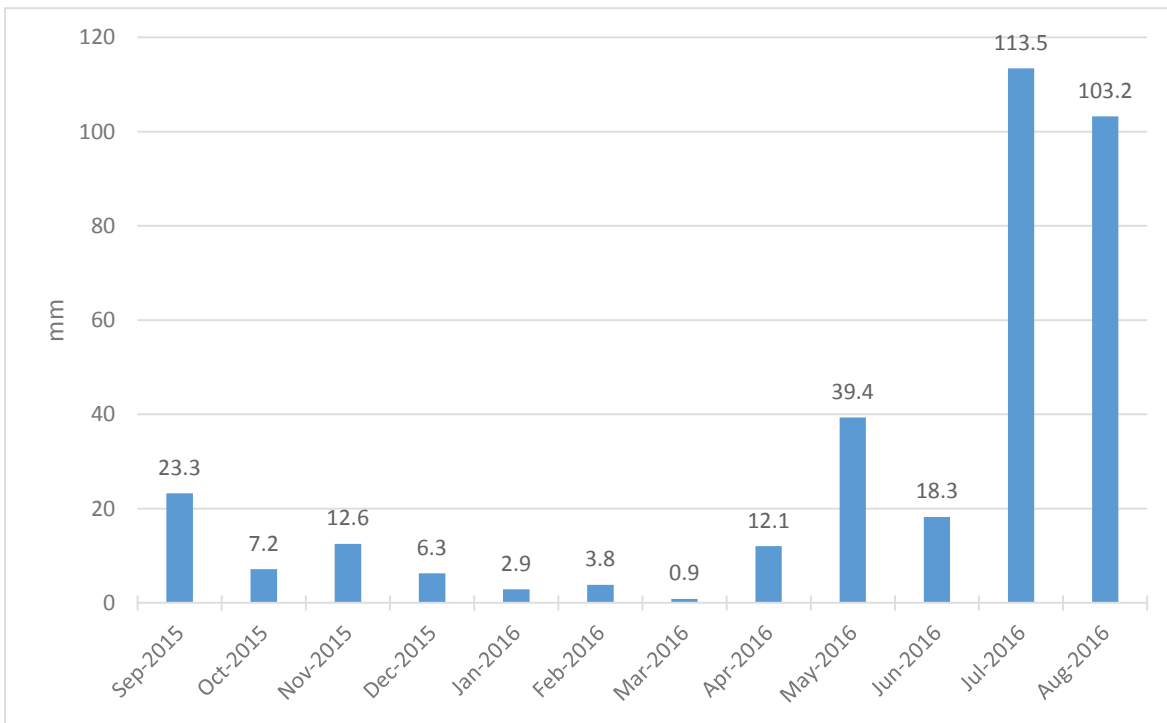


Figure 2-12: Project Monthly Total Precipitation, September 2015 to August 2016

Table 2-10 presents the monthly precipitation totals for the Project, and the two regional stations (Watson Lake A and Faro A) that were active for the period September 2015 to August 2016. Totals for the period were in relatively good agreement, considering the often very localized nature of precipitation in Yukon.

Table 2-10: Monthly Total Precipitation (mm), Watson Lake A, Faro A and Kudz Ze Kayah

Month	KZK (mm)	Watson Lake A (mm)	Faro A (mm)
Sep 2015	23.25	19.4	29.4
Oct 2015	7.18	31.9	24.4
Nov 2015	12.56	24.9	0
Dec 2015	6.30	15	0
Jan 2016	2.88	21.2	0

Month	KZK (mm)	Watson Lake A (mm)	Faro A (mm)
Feb 2016	3.84	19.5	6.8
Mar 2016	0.88	13.5	5.8
Apr 2016	12.06	12.3	11.6
May 2016	39.38	23	21
Jun 2016	18.26	28.1	27
Jul 2016	113.46	37.4	49.8
Aug 2016	103.22	48.8	92.0
TOTAL	343.27	295.0	267.8

The total precipitation measured for the period September 2015 to August 2016 represented 70% of the long term MAP for Watson Lake A, and 88% for Faro A, indicating that the 2015 to 2016 period was below average for precipitation. Applying the same factors to the Project total precipitation amount measured for that period, it can be extrapolated that MAP could range from 391 mm (Faro Factor) to 493 mm (Watson Lake Factor) with a mean of 442 mm. These estimates are significantly lower than the predicted MAP based on the linear regression presented in Figure 2-7. Using measured runoff data from the Project for the same period, the undercatch was estimated for both winter and summer. The winter factor was adjusted to align snowfall with the snowpack observations after considering some sublimation, and the summer was adjusted until the total annual losses to sublimation and evapotranspiration were approximately 200 mm. The October to April precipitation was adjusted by a factor of 2.2, while the summer was adjusted by a factor of 1.25. This produces an annual total of 478 mm and when adjusted by average factor above produces a MAP estimate of 616 mm. The MAP of 616 mm is comparable to the previous estimate of 655 mm from Cominco Ltd. and falls between the estimates for the Wolverine Mine and the Ketz River Mine of 570 mm and 646.6 mm, respectively. The Project is also situated between the Wolverine and Ketz River mines.

In order to predict MAP for modelling runoff at the various monitoring locations, a slope of a trend line between MAP at Watson Lake A and Faro A and the uncorrected 442 mm estimate (since Faro and Watson Lake are also uncorrected) for the Project which is 9 mm per 100 m of elevation. The estimated MAP for the KZ-9 catchment, elevation 1,497 masl, is calculated at 612 mm (corrected). Table 2-11 presents the monthly precipitation estimates based on the mean regional distribution and the estimated snow versus rainfall distribution for the Project based on the Ketz River Mine. While the record at the Ketz River Mine is brief, it is markedly different from other stations and is similar in elevation to the Project.

Table 2-11: Estimated Annual Precipitation (mm) Distribution for Kudz Ze Kayah

	Month												Annual
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
Total (mm)	44.9	33.5	29.7	20.7	39.9	65.5	84	74.2	68.2	52	51.7	47.2	611.5
Rain (%)	0	0	0	0	50	100	100	100	100	20	0	0	
Rain (mm)	0	0	0	0	19.9	65.5	84	74.2	68.2	10.4	0	0	322.3
Snow (%)	100	100	100	100	50	0	0	0	0	80	100	100	
Snow (mm)	44.9	33.5	29.7	20.7	19.9	0	0	0	0	41.6	51.7	47.2	289.2
* Snowmelt (%)				10	50	40							

* Percent of the peak annual snowpack, snowfall occurring in May likely melts in May

2.2.2.3 Extreme 24-Hour Precipitation

Table 2-12 presents the maximum 24-hour precipitation events recorded at all regional meteorological stations (the two Ross River stations were combined) during their respective period of record. The overall maximum of 47.0 mm of rain was recorded in Watson Lake A on June 22, 1987.

Table 2-12: Maximum 24-hour Precipitation Events at Seven Regional Stations (Period of Record)

	Rain		Snow		Precipitation	
	Amount (mm)	Date	Amount (cm)	Date	Amount (mm)	Date
Hour Lake	33.2	Jul 28, 2000	24.8	Mar 25, 2004	33.2	Jul 28, 2000
Tuchitua	36.0	Jun 2, 2001	29.8	Dec 28, 1980	36.0	Jun 02, 2001
Ketza River Mine	32.0	Aug 8, 1991	33.0	Jun 24, 1986	33.0	Jan 24, 1986
Swift River	45.0	Jul 12, 1988	37.0	Dec 24, 1992	45.0	Jul 12, 1988
Ross River	38.9	Jul 13, 1975	15.2	Jan 12, 1973	38.9	Jul 13, 1975
Watson Lake A	47.0	Jun 22, 1987	26.7	Dec 05, 1959	47.0	Jun 22, 1987
Faro A	29.4	May 28, 1993	12.8	Nov 30, 1991	29.4	May 28, 1993

The maximum 24-hour precipitation event recorded for the Project, since commissioning of the meteorological station in August 2015 was 43.0 mm on August 26, 2016.

2.2.2.4 Mean Annual Precipitation Frequency Analysis

Frequency analyses were carried out at all regional meteorological stations, except Ketza River Mine where the data set was insufficient in regards to both length and completeness. Results, using the Log Pearson Type III distribution and the mean of all stations for each return period, are shown in Table 2-13. The mean ratio will be used to predict wet and dry scenarios for modelling purposes for the Project.

Table 2-13: Ratio to Mean Annual Precipitation (mm) of Wet and Dry Precipitation Years of Various Return Periods

Return Period – T _p (Years)	Hour Lake	Tuchitua	Swift River	Ross River	Watson Lake A	Faro A	Mean
Wet Scenario							
10	1.23	1.26	1.23	1.27	1.24	1.24	1.25
25	1.34	1.37	1.31	1.43	1.33	1.32	1.35
50	1.41	1.43	1.36	1.56	1.40	1.37	1.42
100	1.48	1.49	1.41	1.69	1.45	1.41	1.49
200	1.56	1.55	1.45	1.83	1.51	1.45	1.56
Dry Scenario							
10	0.83	0.76	0.78	0.87	0.80	0.74	0.80
25	0.78	0.69	0.70	0.84	0.74	0.65	0.73
50	0.76	0.64	0.65	0.83	0.70	0.60	0.69
100	0.73	0.60	0.61	0.82	0.66	0.55	0.66
200	0.71	0.56	0.57	0.82	0.63	0.51	0.63

2.2.3 Snowpack

2.2.3.1 Regional Data

Environment Yukon conducts regular snow surveys across the territory, on or around March 1, April 1, and May 1 of each year. Average snow water equivalent (SWE) values for the stations located in the Project region are summarized in Table 2-14 (see Figure 2-1 for station locations).

Table 2-14: Regional Average Snow Water Equivalent (mm) provided by Environment Yukon

Station Name	Hoole River	Burns Lake	Finlayson Lake Airstrip	Tintina Airstrip	Ford Lake
Station ID	09BA-SC03	09BA-SC04	09BA-SC05	10AA-SC02	10AA-SC04
Latitude	61°32'4"	62°17'21"	61°41'27"	61°5'9"	60°47'1"
Longitude	-131°35'28"	-129°56'41"	-130°46'36"	-131°14'43"	-131°28'4"
Elevation (masl)	1,036	1,112	988	1,067	1,110
Distance from KZK (km)	52	96	24	55	90
Years of data	1977-2016	1986-2016	1987-2016	1977-2016	1987-2016
March Average SWE (mm)	121	198	93	186	171
April Average SWE (mm)	141	225	108	208	196
May Average SWE (mm)	96	220	57	186	178
March 2016 SWE (mm)	n/a	n/a	87	n/a	n/a
April 2016 SWE (mm)	88	209	74	184	149
May 2016 SWE (mm)	0	201	0	130	109

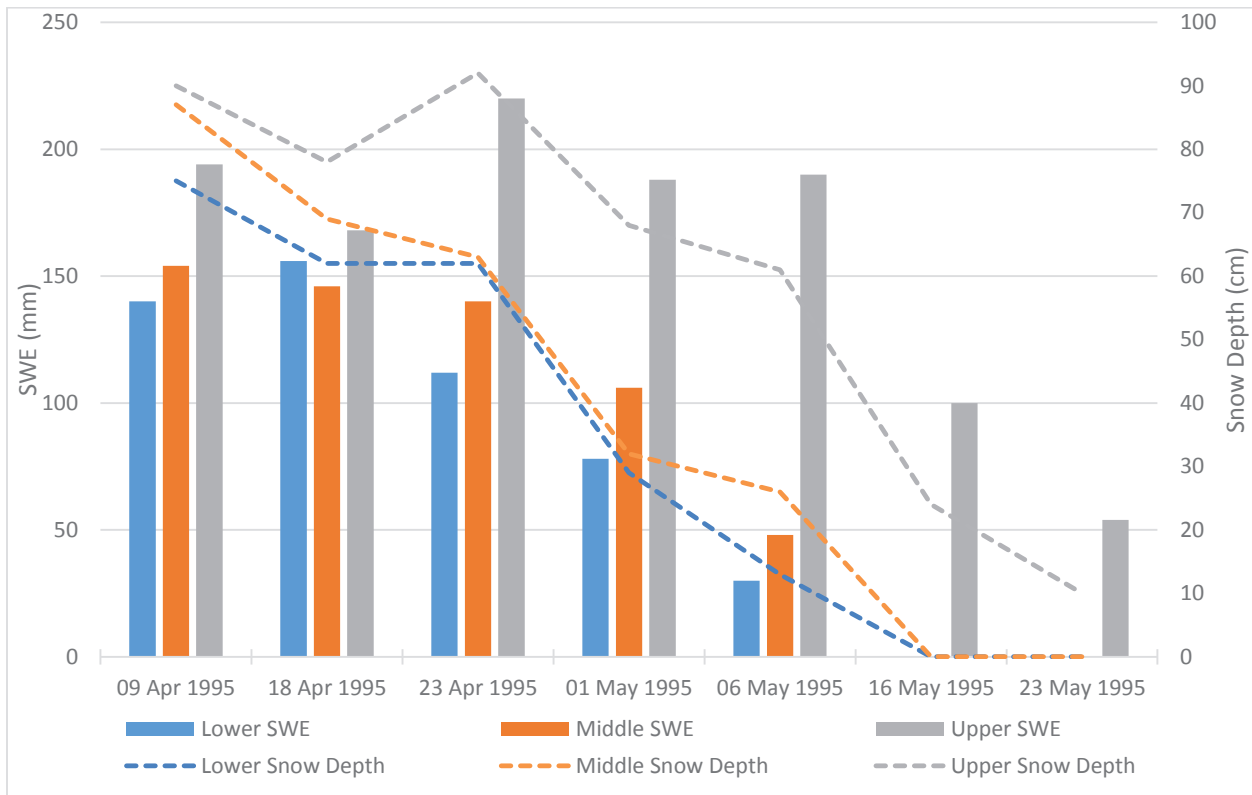
Source: Environment Yukon, 2015

2016 was a below average snow year (Table 2-14). SWE values in April 2016 ranged from 62% to 93% of normal with a mean of 78% whereas the May 2016 SWE values ranged from 0% to 91% of normal with a mean of 44%.

The Wolverine Mine, located approximately 28 km to the east of the Project, reported average SWE values ranging from 199 mm to 279 mm for the period 2010 to 2014 (Yukon Zinc Corporation, 2015). Annual average values are generally based on two to seven surveys, sampled in March or April of each year. The aspect and elevation of these stations were not specified. The estimated average snowfall at Wolverine Mine is 253 mm (as SWE) (Yukon Zinc Corporation, 2011).

2.2.3.2 Site Data

During the 1995 baseline characterization, three snow survey stations were established and sampled in April and May for snow depth and snow water equivalent. Stations were located at both the low and high elevation climate stations, and a third station was located at a median elevation between the high and low sites (Figure 2-2). Although elevations were not specified in the 1996 IEE, they were estimated from the map to be approximately 1,400 masl, 1,500 masl and 1,600 masl for the lower, middle and upper station, respectively (Figure 2-13). The regional snow course stations demonstrated below normal snowpacks for 1995 and extrapolated SWE and snow depth values measured at the Project that year correspond to lower than average values.



* Measurements at the lower station were collected on April 7, 1995 rather than April 9.

Figure 2-13: Snow Course Measurements, KZK, 1995

Baseline snow surveys were completed monthly (January, February and March) in 2016, at three stations located on east facing slopes at low (1,445 masl), mid (1,519 masl) and high (1,819 masl) elevations (Figure 2-2). All surveys consisted of ten-point transects that were averaged (Table 2-15 and Figure 2-14).

Four additional stations (at mid-elevations ranging from 1,487 masl to 1,551 masl) were also sampled in March, to better characterize peak snowpack variability based on slope aspect (Table 2-15). No samples were taken in April as there was little or no snowpack left at survey sites.

Table 2-15: Snow Survey Data, KZK, 2016

Station	Average Snow Depth (cm)			SWE (mm)		
	Jan 21-22	Feb 8-10	Mar 19-21	Jan 21-22	Feb 8-10	Mar 19-21
Baseline Low Elevation	35.4	35	41	37	39	42
Baseline Mid- Elevation	30.2	38.5	36.6	51	34	62
Baseline High Elevation	n/a	15.4	23.1	n/a	39	36
Mid-Elevation Peak North Aspect	-	-	53.1	-	-	47
Mid-Elevation Peak East Aspect	-	-	47.3	-	-	67
Mid-Elevation Peak South Aspect	-	-	56.7	-	-	47
Mid-Elevation Peak West Aspect	-	-	45.4	-	-	44

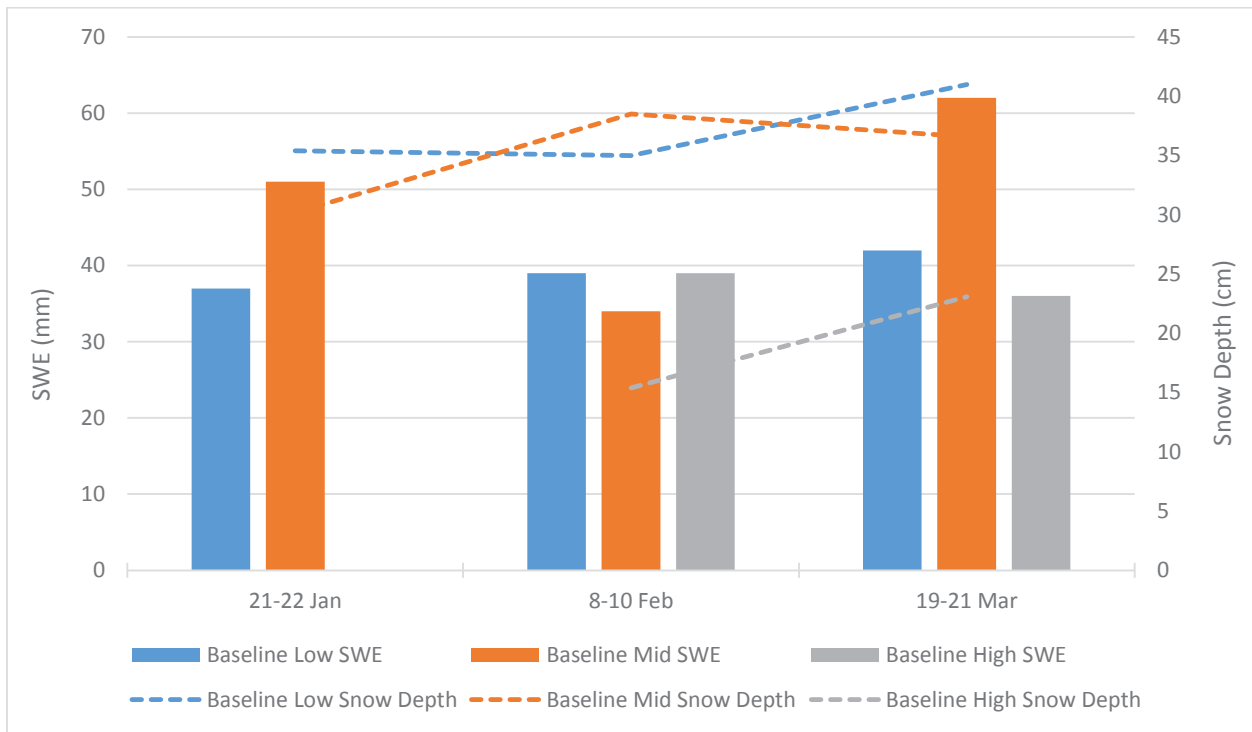


Figure 2-14: Baseline Snow Survey Results, KZK, 2016

Snow surveys conducted in 2016 generally showed lower snow water equivalent values than at regional stations, although sampling was not carried out at the same time of year. The 2016 Project snow survey data also generally showed a lower snow year when compared to the 1995 Project data. If the mean SWE from the late March 2016 survey is factored based on the difference between Finlayson Airstrip at the same time and its mean, the value is 78 mm. If the same is done with the average of the five regional snow courses, the value is 69 mm. It may be that wind and sublimation cause more significant snow loss at the Project than the other snow courses as these values seem too low to be the true mean, especially in light of the 1995 snow course data. Table 2-11 lists total annual snowfall as 289.2 mm which is considered appropriate compared to the estimate for Wolverine Mine at 253 mm, and when you consider sublimation of approximately 30 percent (87 mm) leaving a peak snowpack of approximately 200 mm which is not dissimilar from observations at the Project site in 1995.

2.2.4 Wind Speed and Direction

Wind speed and direction are measured at a height of 10 m at the Campbell Scientific meteorological station. Wind data collected between September 1, 2015 and August 31, 2016 are presented in Figure 2-15. The wind sensor experienced occasional icing during the winter months and periods of zero wind speed were invalidated. In addition, the winter wind speeds may have been occasionally underestimated due to the presence of ice on the sensor; however, these occurrences cannot be detected in the data record. The prevailing winds blow from the northwest to northeast and the highest average wind speeds originate from the northeast. Summary statistics are presented in Table 2-16.

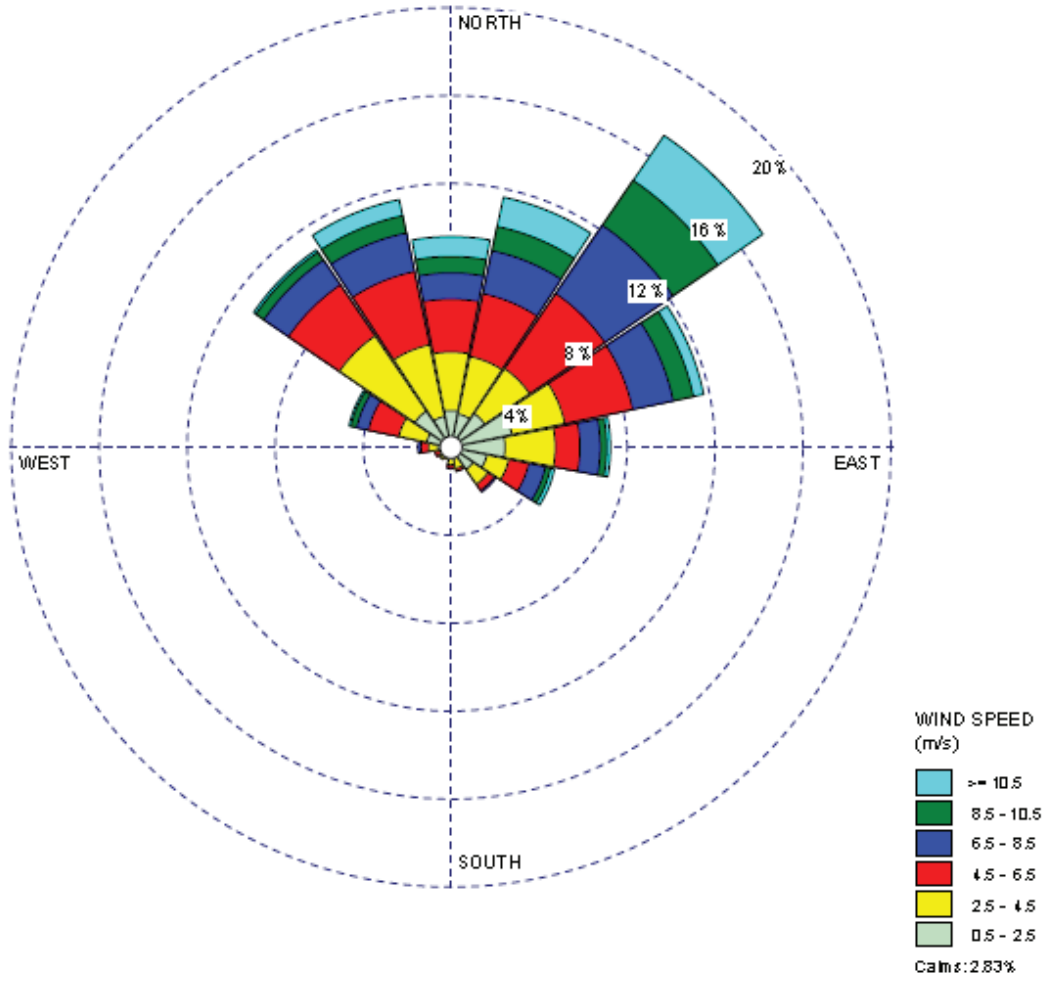


Figure 2-15: Wind Rose, KZK, September 2015 to August 2016

Table 2-16: Wind Rose Summary Statistics

Total Number of Hours	8,784
Average Wind Speed	5.01 m/s
Calm Records	249
Calm Winds Frequency	2.83 %
Data Availability	99.52 %
Incomplete/Missing Records	42
Total Records Used	8,742

The strongest winds were observed during the month of November for the period of record (Table 2-17). Monthly average and maximum wind speeds were generally comparable to results obtained at the low elevation station in 1995 (Table 2-2). Because wind is highly influenced by local topographical features, comparison with data from regional stations is not meaningful.

Table 2-17: Monthly Average and Maximum Wind Speed, KZK, 2015-2016

Month	Average Wind Speed (m/s)	Maximum Wind Speed (m/s)
Sep 2015	5.78	25.42
Oct 2015	4.71	19.17
Nov 2015	6.37	28.52
Dec 2015	3.47	23.62
Jan 2016	4.91	25.99
Feb 2016	4.97	20.93
Mar 2016	4.91	19.56
Apr 2016	6.10	24.87
May 2016	4.87	21.09
Jun 2016	4.84	16.9
Jul 2016	4.44	18.93
Aug 2016	4.70	17.29

2.2.5 Relative Humidity

Monthly minimum, maximum, and mean relative humidity were compiled from the hourly data collected at the Project Campbell Scientific station since time of commissioning (Table 2-18).

Table 2-18: Monthly Average, Maximum and Minimum Relative Humidity (%), KZK, 2015-2016

Month	Average RH	Maximum RH	Minimum RH
Sep 2015	76.4	96.6	57.7
Oct 2015	73.0	96.1	39.9
Nov 2015	73.1	89.1	34.1
Dec 2015	78.8	88.6	49.0
Jan 2016	72.4	88.3	31.7
Feb 2016	75.5	90.1	53.1
Mar 2016	74.9	86.9	47.1
Apr 2016	66.1	89.7	43.3
May 2016	61.7	87.4	26.3
Jun 2016	57.2	78.2	36.1
Jul 2016	69.9	86.7	49.9
Aug 2016	71.0	93.2	45.6

Relative humidity values measured at the low elevation station during the summer months of 1995 were on average slightly higher than in 2016. Maximum values were also higher in 1995.

Although long-term relative humidity data were not readily available from the EC regional meteorological stations, hourly relative humidity data for the period September 2015 to August 2016 for Watson Lake and Faro are plotted and compared to Project data (Figure 2-16). Overall, similar patterns are observed between the three stations; however, the Project station displays greater variability and lower values during the winter months.

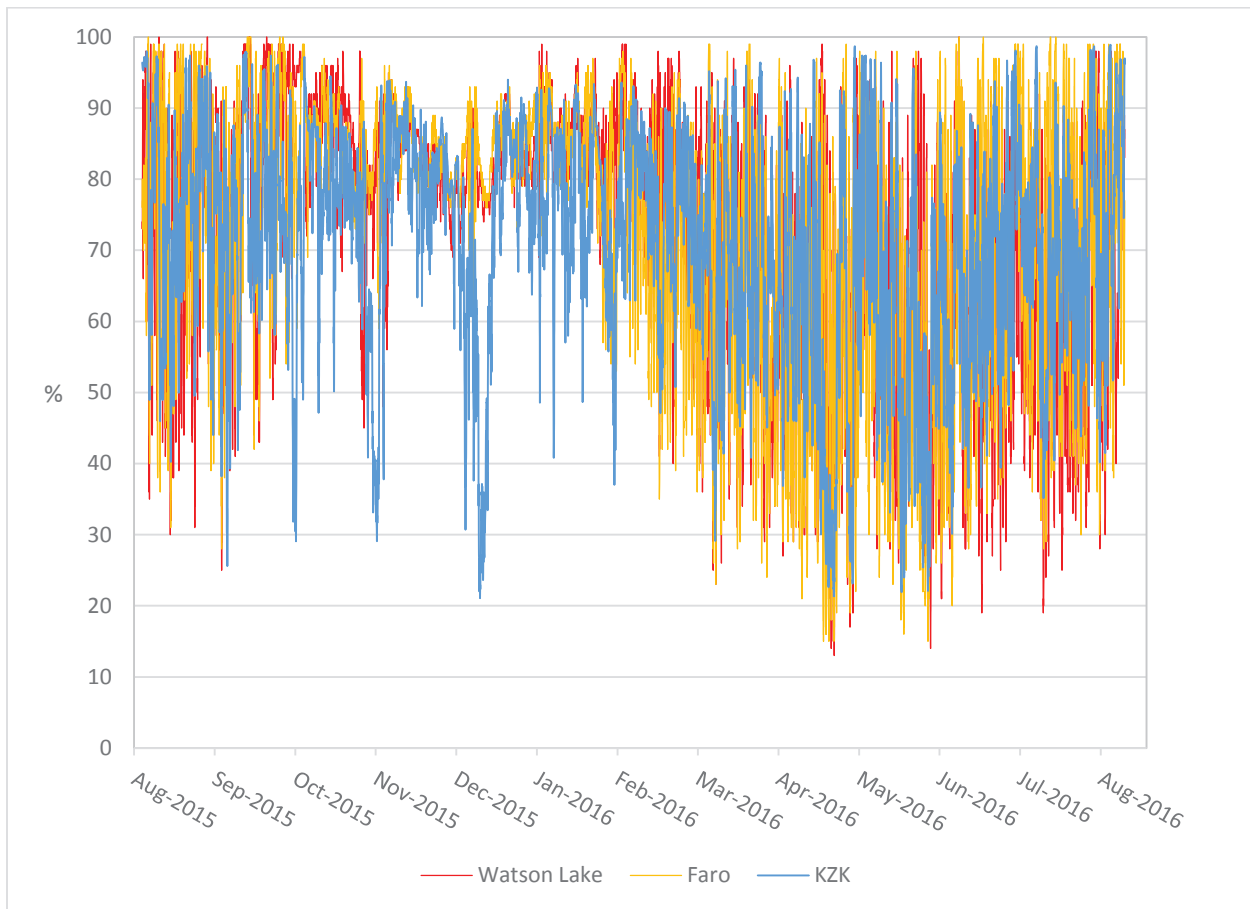


Figure 2-16: Watson Lake A, Faro A and KZK Hourly Relative Humidity, September 2015 to August 2016

2.2.6 Solar Radiation

Monthly solar radiation averages were compiled from the hourly data collected at the Project Campbell Scientific station since time of commissioning (Table 2-19).

Table 2-19: Monthly average solar radiation (W/m²), KZK, 2015-2016

Month	Average Solar Radiation
Sep 2015	105.85
Oct 2015	50.31
Nov 2015	18.25
Dec 2015	5.59
Jan 2016	12.82
Feb 2016	44.84
Ma 2016	120.06
Apr 2016	176.36

Month	Average Solar Radiation
May 2016	225.47
Jun 2016	256.27
Jul 2016	196.60
Aug 2016	153.18

Solar radiation measured at the low elevation station during the summer months of 1995 was on average slightly higher than in 2016, which could be the result of using different instrumentation or higher frequency of overcast skies in 2016. Overall however, the same pattern is observed, with the highest values measured in June. Solar radiation is not typically reported for the EC regional stations.

2.2.7 Barometric Pressure

Barometric pressure is corrected to sea-level equivalent within the Campbell Scientific datalogger program. Monthly averages were compiled from the hourly data collected at the Project meteorological station since time of commissioning (Table 2-20).

Table 2-20: Monthly Average Barometric Pressure (hPa), KZK, 2015-2016

Month	Average Barometric Pressure
Sep 2015	1,006.8
Oct 2015	1,006.8
Nov 2015	1,000.6
Dec 2015	997.9
Jan 2016	1,002.0
Feb 2016	1,003.8
Mar 2016	1,003.9
Apr 2016	1,008.6
May 2016	1,014.4
Jun 2016	1,013.3
Jul 2016	1,014.7
Aug 2016	1,017.3

A seasonal pattern emerged with the lowest average values in winter (December) and the highest in summer (August). No barometric pressure measurements were conducted for the Project in 1995.

Although long-term barometric pressure data are not readily available for the EC regional meteorological stations, hourly pressure data for the period September 2015 to August 2016 for Watson Lake A and Faro A are reported at the station elevation. The same correction used in the Project datalogger program can

be applied to the regional hourly data to obtain the sea-level equivalent pressure and enable comparisons with the Project data. The equation is as follows:

$$BP_{sl} = BP_E + 1013.25 \left(1 - \left(1 - \frac{E}{44307.69231} \right)^{5.25328} \right)$$

Where BP_{sl} = sea-level equivalent barometric pressure in hPa
 BP_E = barometric pressure at station elevation in hPa
 E = station elevation in meters (m)

Figure 2-17 shows that the sea-level equivalent barometric pressure of the two regional stations and of the Project station correlate well for the period September 2015 to August 2016.

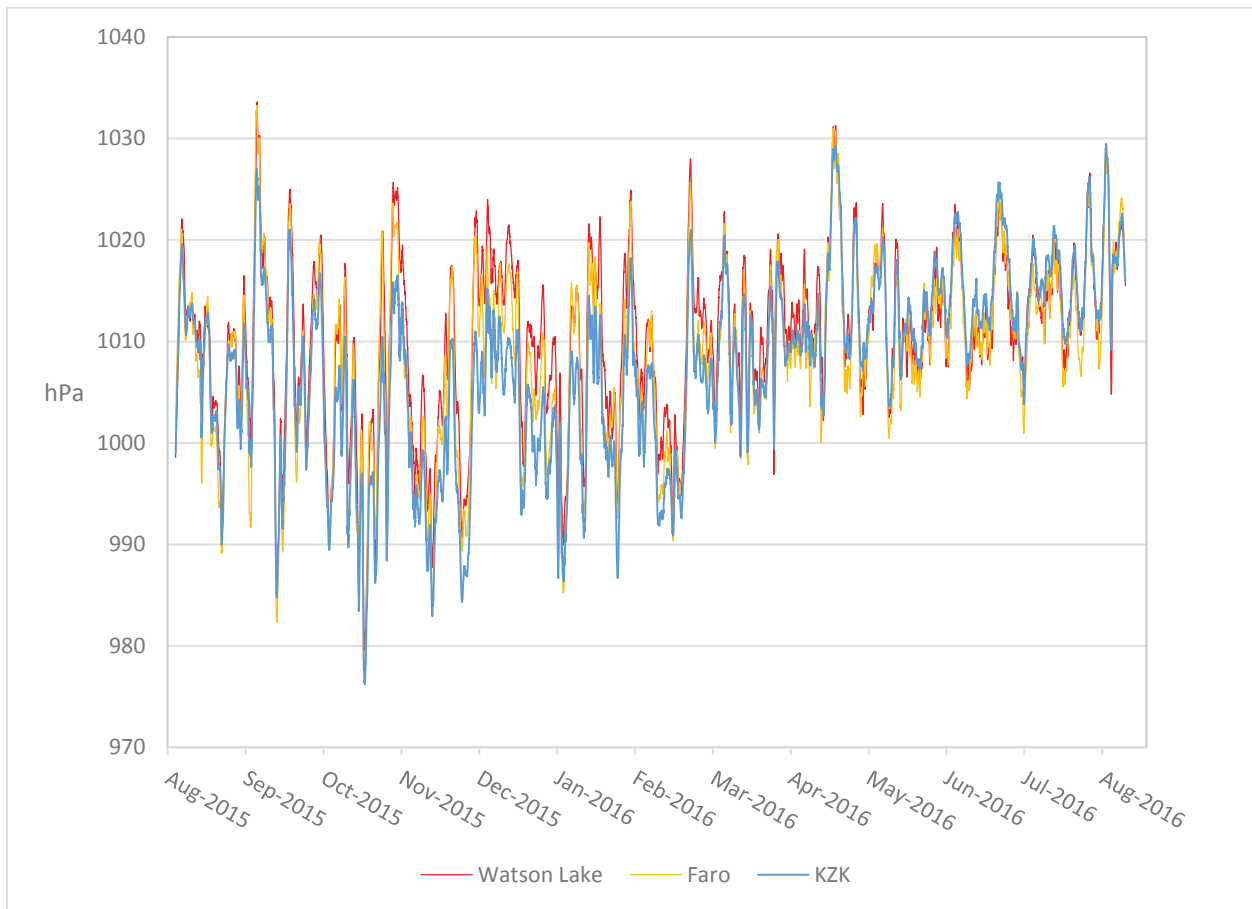


Figure 2-17: Watson Lake A, Faro A and KZK Sea-level Equivalent Hourly Barometric Pressure, September 2015 to August 2016

2.2.8 Evaporation and Evapotranspiration

2.2.8.1 Regional Data

Lake evaporation data are available for Watson Lake A station as part of the 1981 to 2010 climate normals, and are shown in Table 2-21.

Table 2-21: Lake Evaporation Normals for Watson Lake A, 1981-2010

Month	Evaporation (mm)
Jan	-
Feb	-
Mar	-
Apr	-
May	-
Jun	3.9
Jul	3.3
Aug	2.5
Sep	1.6
Oct	-
Nov	-
Dec	-
Year	11.3

No evaporation measurements were conducted at the nearby Wolverine Mine; evaporation values presented in the annual reports were calculated from the Penman combination equation using site meteorological parameters (temperature, relative humidity, wind speed, and solar radiation). Reported annual totals ranged from 231 mm to 467 mm between 2010 and 2014 (Yukon Zinc Corporation, 2011a, 2012, 2013, 2014, 2015). Estimated average annual evaporation at the Wolverine Mine is 405 mm (Yukon Zinc Corporation, 2011).

2.2.8.2 Site Data

Pan evaporation measurements were carried out at the low elevation climate station during baseline characterization in 1995 (Table 2-22). Estimated reservoir evaporation values were obtained assuming a conversion factor of 0.7 (Cominco Ltd., 1996).

Table 2-22: Measured Pan Evaporation and Estimated Reservoir Evaporation, KZK, 1995

Period	Measured Pan Evaporation Average (mm/day)	Measured Pan Evaporation Maximum (mm/day)	Estimated Reservoir Evaporation Average (mm/day)	Estimated Reservoir Evaporation Maximum (mm/day)
25 May 16:30 - 28 May 13:00	5.3	6.0	3.7	4.2
7 June 19:30 – 13 June 15:30	4.5	5.0	3.2	3.5
21 June 14:00 – 28 June 10:30*	4.2	5.5	3.0	3.9
7 Aug 14:00 - 10 Aug 17:30	2.1	3.0	1.5	2.1
11Aug 08:00 – 16 Aug 15:00*	2.9	6.0	2.0	4.2

* evaporation records adjusted for rainfall collated in evaporation pan

Source: Cominco Ltd., 1996 (Table 3.1.4)

Cominco Ltd. then extrapolated the above data and compared them to Watson Lake 1981 to 1990 lake evaporation values to obtain the monthly and annual evaporation estimates presented in Table 2-23 below. Note that results are considerably higher than the Watson Lake climate normal presented in Table 2-21 above.

Table 2-23: Mean Monthly Lake Evaporation Values, KZK

Month	Evaporation (mm)
Jan	-
Feb	-
Mar	-
Apr	-
May	45
Jun	100
Jul	100
Aug	55
Sep	30
Oct	-
Nov	-
Dec	-
Year	330

Source: Cominco Ltd., 1996

Pan evaporation measurements could not be conducted at the Project in 2015 due to freeze-up happening at time of deployment (late August). In 2016, pan evaporation measurements were taken daily between May 21 and September 5 as conditions allowed. Monthly totals, after adjustments for rainfall, are shown in Table 2-24.

The Campbell Scientific datalogger program incorporates an instruction for the calculation of potential evapotranspiration (PET) using the ASCE standardized reference evapotranspiration equation (Penman-Monteith).

Table 2-24: Monthly Pan Evaporation and Potential Evapotranspiration (mm), KZK, 2015-2016

Month	Pan Evaporation (mm)	Total PET (mm)
Sep 2015	-	34.0
Oct 2015	-	14.1
Nov 2015	-	5.0
Dec 2015	-	-1.0
Jan 2016	-	2.2
Feb 2016	-	7.4
Mar 2016	-	25.0
Apr 2016	-	51.3
May 2016	-	84.5
Jun 2016	138.5	106.2
Jul 2016	111.5	76.5
Aug 2016	80.2	59.5
TOTAL	330.19	464.7

The pan evaporation (E_{pan}) is related to the reference evapotranspiration (ET_o) by an empirically derived pan coefficient (FAO, 1998):

$$ET_o = K_p E_{pan}$$

Where K_p = pan coefficient

The pan coefficient is determined by the mean relative humidity and wind speed as well as by the pan siting. In the case of the Project Class A pan, this coefficient was estimated to be 0.75 based on a windward side distance of dry ground surface of between 1 m and 10 m, a mean relative humidity between 40% and 70%, and average wind speeds between 2 m/s and 5 m/s. Applying this coefficient to the evaporation pan measurements taken at the Project site yields ET_o results that are very similar to the ET values obtained with the Penman-Monteith equation, with 103.9 mm, 83.6 mm and 60.2 mm for June, July and August, respectively.

The pan evaporation values measured in 2016 are similar to the average values measured in 1995 (when the average monthly rates in Table 2-24 are applied to the entire month) for June and August while the measured amount in July 2016 was higher than in July 1995.

Using the same conversion factor of 0.7 used by Cominco Ltd. in 1995 to convert pan evaporation values to reservoir/lake evaporation values, estimated reservoir/lake evaporation values of 97.0 mm, 78.1 mm and 56.1 mm were obtained for June, July and August, respectively. These values are very similar to the mean monthly lake evaporation values presented in Table 2-23 for June and August, while estimated lake evaporation from the July 2016 pan evaporation measurements yielded a lower value.

Actual evapotranspiration (AET) is some fraction of PET and occurs between May and September. The total PET measured in those months is 361 mm (Table 2-24). A factor of 0.5 gives 180 mm per year which is within the reasonable range of estimates based on estimates for the region in the 200 mm range. AET may be lower at the site than other regional locations as the shallow soils and more minimal vegetation in the Project footprint area mean more rapid runoff generation and less interception.

Sublimation occurs whenever there is snow present, and that includes October through April. Sublimation is dependent mostly on wind speed, availability and vegetation. It is estimated that sublimation comprised only 28% of the winter 2015 to 2016 snowfall (~21 mm); however, it could be much higher in higher snowfall years. Sublimation is typically more significant in the north than in more temperate climates (Liston and Sturm, 2004).

2.3 DISCUSSION

Data collected at the Project site in 1995 and 2015 to 2016 indicate that average temperatures were comparable to those of regional stations for the same period. The diurnal and annual temperature range at the Project site appears to be smaller than at regional stations.

Total annual precipitation recorded at the Project site in 2015 to 2016 was greater than at regional stations (Watson Lake and Faro), but not when accounting for the elevation difference between the sites. Overall, both 1995 and 2015 to 2016 appear to have been drier years than average (less precipitation and lower snowpack) when compared to the long-term regional record. Based on the local data available to date, it is difficult to determine at this point whether the Project site is part of a drier microclimate compared to the surrounding region, or if the period of record at site coinciding with a drier regional trend introduces this bias. However, given the high degree of uncertainty in estimating precipitation from the regional trend, it is preferred to estimate the MAP based on the newly collected data and comparable concurrent data at long-term regional stations in Faro and Watson Lake. Continued monitoring at the Project site will allow for better characterization of local versus regional patterns.

Winds at the Project site blow predominantly from the northwest to northeast, and average and maximum wind speeds are relatively high. Relative humidity and barometric pressure at the Project site are generally consistent with regional patterns. Solar radiation peaks in July and is at a minimum in December. Pan evaporation measurements and evapotranspiration calculations at Kudz Ze Kayah for the 2015 to 2016 period correlate relatively well with 1995 measurements and estimates.

3 SURFACE WATER HYDROLOGY

The following section will describe the hydrometric (discharge) data available both regionally from government sources and for the Project. Regional data is available through the WSC. Hydrology data were collected on site in 1995 and more recently during the baseline monitoring program that began in April 2015. Regional data are used to define the hydrological character of the region and used to estimate mean and extreme conditions at the site. Site data are considered against these estimates and used to inform the analysis.

3.1 METHODS

3.1.1 Regional Data

WSC stations offer long-term data sets within the Project region and are therefore the best source from which to estimate longer term statistics such as high and low flows. The IEE (Cominco Ltd., 1996) included a regional analysis of 16 WSC stations and two Indigenous and Northern Affairs Canada (INAC, formerly DIAND) stations with seasonal records. For the purposes of this assessment it was determined that the regional stations would need to have at least 10 years of data for them to be included. Of the 16 WSC stations, 13 had the prerequisite 10 years of data to be used in the regional flood frequency analysis. These data were included in Appendix 3.2 of the IEE report and are included here as Appendix E.

At the time of the initial evaluation, approximately 14 of the 16 WSC stations were active or current. Presently, six of those 14 active stations have continuous active data since that time; the other eight were discontinued in 1994 to 1996 or have large data gaps. At the time of the previous analysis, data was available up to 1994. In order to update the regional analysis, it was deemed prudent to test for any significant change in runoff at these six active sites. The pre and post 1994 total annual runoff populations were tested for a significant difference using 95% confidence limits. The populations were first tested for normality and the appropriate T-test was selected. No significant difference was found in the pre and post 1994 populations of mean annual flow at all six sites with post 1994 data. As such, 15 of 16 stations from the original analysis with greater than 10 years of data were considered appropriate for analysis. Rose Creek was the only station that did not qualify as it was only in operation for approximately 4 years.

In addition, four other regional stations, not included in the original analysis, were also added for a total of 19 stations. The INAC stations were not included in the analysis as the data sets were incomplete. Figure 3-1 shows the location of all regional hydrometric stations used in the analysis and they are listed in Table 3-1 with metadata.

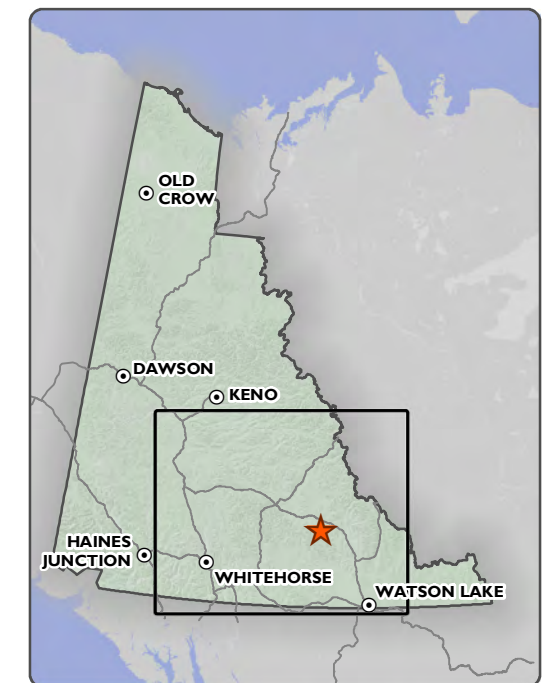
Table 3-1: Regional Mean Annual Runoff (mm) and Metadata at WSC Stations

Station ID	Name	Area (km ²)	Median Elevation (masl)	Minimum Elevation (masl)	Maximum Elevation (masl)	Date Range	MAR (mm)
10AB003	King Creek	13.7	1,341	935	1,853	1975-1988	289
09AD002	Sidney Creek	372	1,256	730	1,882	1982-1994	365
10AA002	Tom Creek	435	985	724	1,563	1974-1993	216
09AH005	Drury Creek	552	1,225	614	2,050	1995-2009	282
09BB001	South MacMillan River	997	1,380	931	2,536	1974-1996	633
10AA005	Big Creek	1,010	1,176	779	2,006.5	1989-2014	246
10AD002	Hyland River	2,150	1,536	849	2,559	1976-1994	653
09DA001	Hess River	4,840	1,391	782	2,916	1976-1996	500
09BA002	Pelly River below Fortin Creek	5,020	1,214	871	2,105	1986-94, 2013-14	472
10AA004	Rancheria River	5,100	1,231	691	2,248	1986-2014	332
09BA001	Ross River at Ross River	7,310	1,068	679	2,533	1960-2014	287
09AD001	Nisutlin River	8,030	1,204	659	2,188	1979-1995	365
10AB001	Frances River	12,800	1,157	657	2,337	1962-2014	396
09BB002	MacMillan River near the mouth	13,800	1,086	500	2,529	1984-1996	320
09BC002	Pelly River at Ross River	18,400	1,125	649	2,533	1954-1974	310
09BC004	Pelly River below Vangorda Creek	21,900	1,131	626	2,533	1972-2014	289
09AE001	Teslin River at Teslin	30,300	1,159	645	2,174	1944-1994	314
10AA001	Liard River at Upper Crossing	32,600	1,140	609	2,333	1960-2014	366
09DC003	Stewart River above Fraser Falls	30,600	1,164	448	2,916	1980-1996	387
<i>Mean</i>	<i>All Stations</i>		1,209	-	-	-	370
<i>Mean</i>	<i>Station <1500 km², excl. 09BB001</i>		1,197	-	-	-	280

KUDZ ZE KAYAH PROJECT
HYDROMETEOROLOGY BASELINE REPORT

FIGURE 3 - 1
REGIONAL HYDROMETRIC
STATION LOCATIONS

OCTOBER 2016

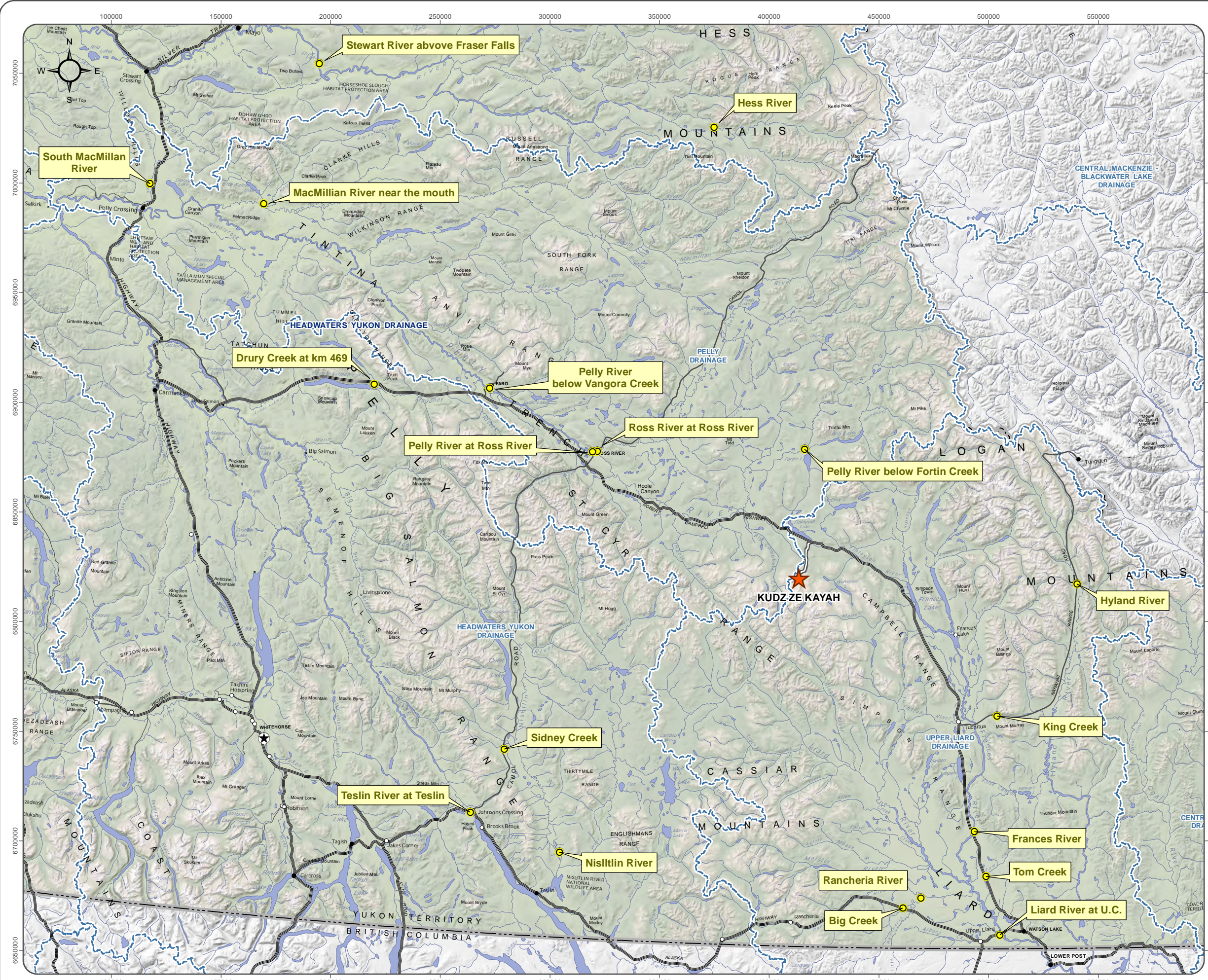


- Kudz Ze Kayah Project
- Regional Hydrometric Station

Digital elevation model created by the Yukon Department of the Environment interpolated from the digital 1:50,000 Canadian National Topographic Database (NTDB Edition 2) contour and watercourse layers. Obtained from Geomatics Yukon.
Canvec compiled by Natural Resources Canada at a scale of 1:10,000 - 1:50,000. Reproduced under license from Her Majesty the Queen in Right of Canada, as represented by the Minister of Natural Resources Canada. All rights reserved.
Drainage areas obtained from National Hydrology Network 2011.
Datum: NAD 83; Projection UTM Zone 9N

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3.1.2 Site Data

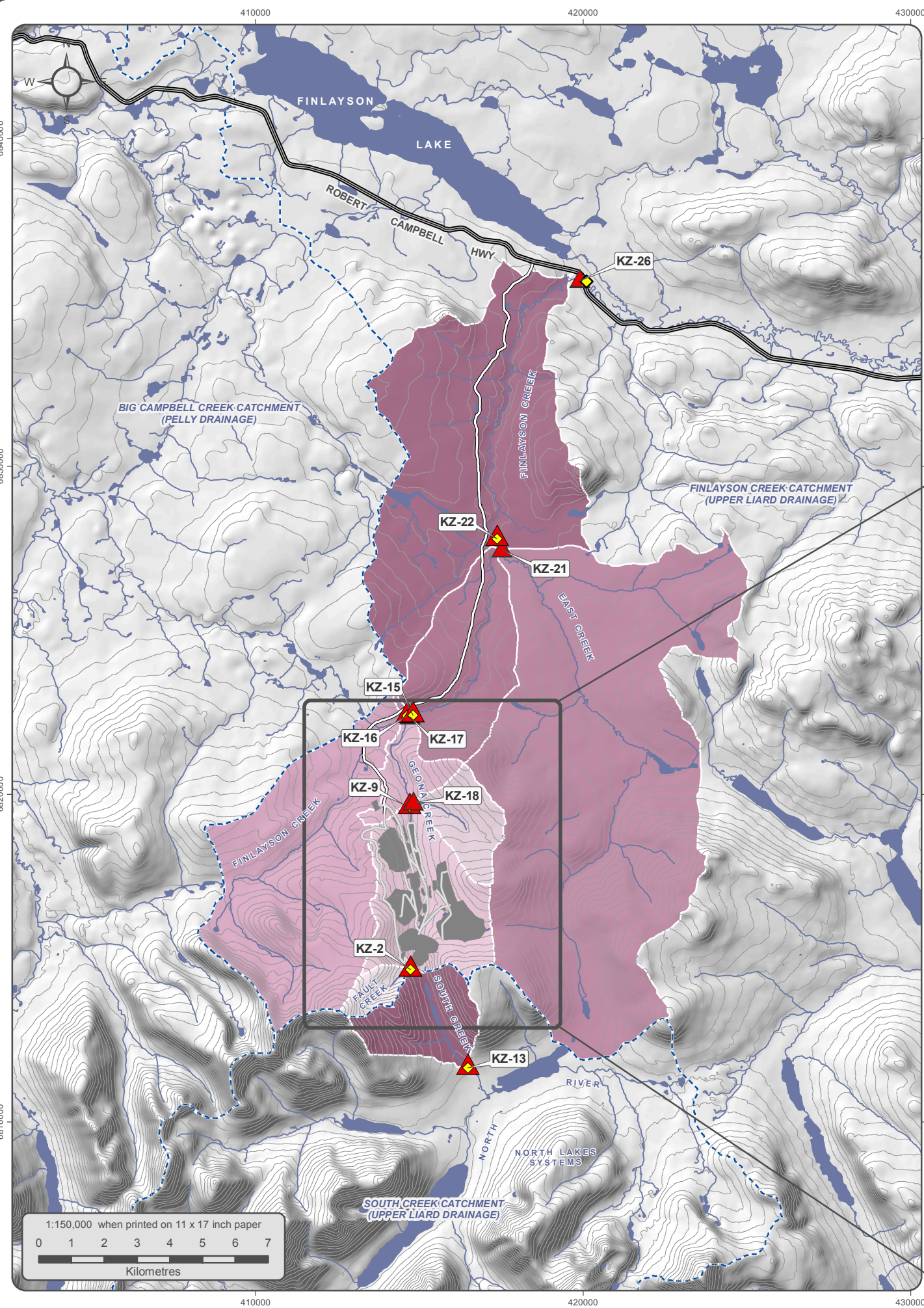
3.1.2.1 Site Description

The Project lies in a small (approximately) 26 km² watershed called Geona Creek which is a north flowing and north facing tributary of Finlayson Creek. Finlayson Creek meets the outflow of Finlayson Lake below the Robert Campbell Highway and flows east to eventually join the Frances River and ultimately the Mackenzie River. One of the highest elevation tributaries within Geona Creek has been named Fault Creek which has a median elevation of 1,707 masl and an area of 2 km². Fault Creek is characterized by steep slopes and small trees and shrubs in the creek valley but otherwise is an alpine environment. Geona Creek has a median elevation of 1,482 masl and spans from the alpine to some sparsely forested areas at lower elevations. The Finlayson Creek catchment area is approximately 41 km² above the confluence with Geona Creek and grows to 215 km² where it flows under the Robert Campbell Highway and shortly before it joins the outflow of Finlayson Lake. The watershed divide of Geona Creek is characterized by several small lakes. Figure 3-2 shows the local catchment areas in the vicinity of the Project.

**KUDZ ZE KAYAH PROJECT
HYDROMETEOROLOGY REPORT**

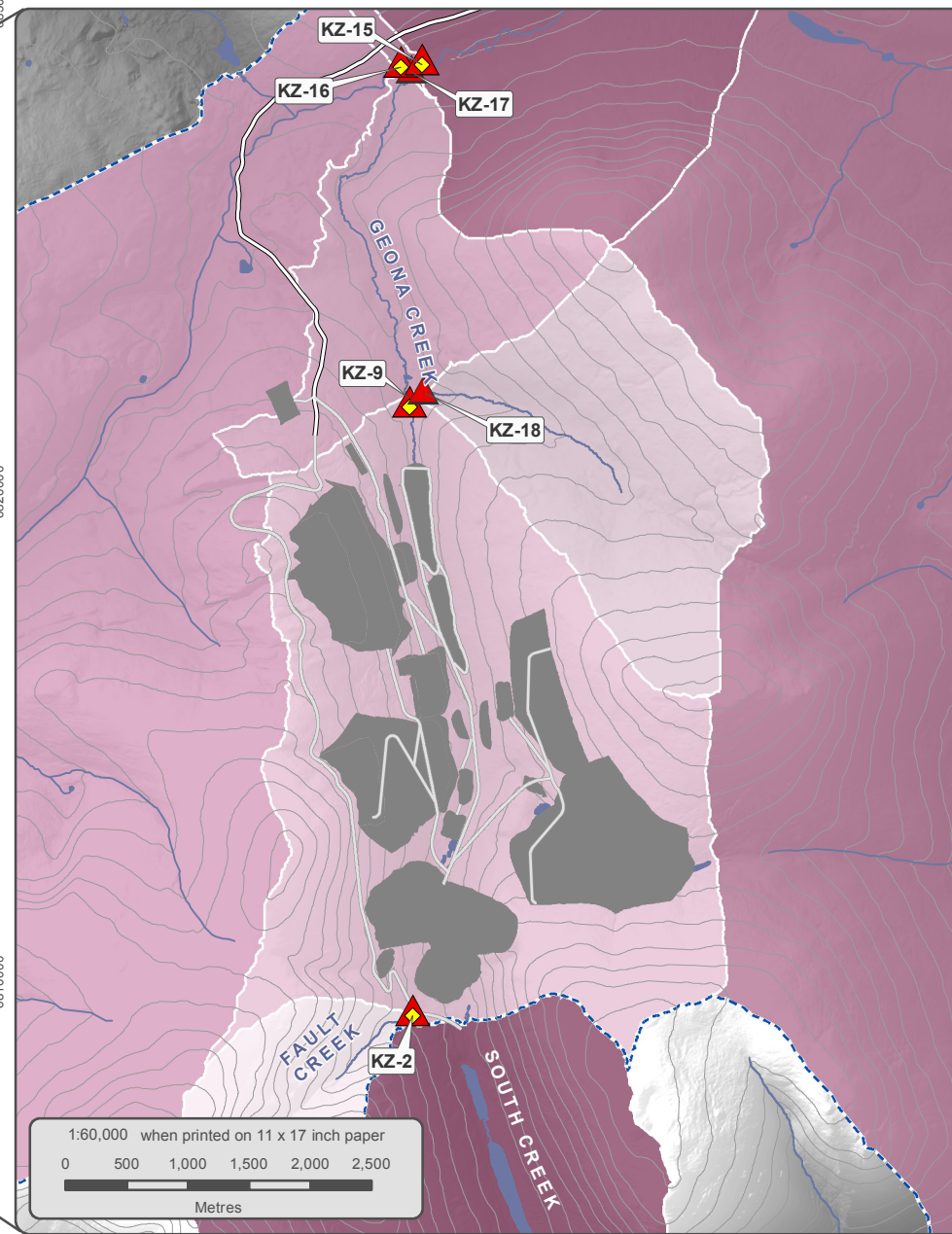
**FIGURE 3-2
SURFACE WATER QUALITY AND
HYDROMETRIC MONITORING
CATCHMENTS**

JANUARY 2017



CATCHMENT INFORMATION		
Station	Location	Area (sq. m)
KZ-26	Finlayson Creek at Robert Campbell Highway	210,834,202
KZ-13	South Creek near mouth	7,917,319
KZ-22	Finlayson Creek 100 m downstream East Creek	162,485,967
KZ-21	East Creek at mouth	83,842,250
KZ-15	Finlayson Creek 100 m downstream confluence with Geona Creek	60,905,680
KZ-16	Finlayson Creek upstream confluence with Geona Creek	35,022,286
KZ-17	Geona Creek at mouth	25,714,949
KZ-18	East Tributary to Geona Creek	5,309,542
KZ-9	Lower Geona Creek	16,465,305
KZ-2	Fault Creek	1,925,859

	KZ-26		KZ-22		KZ-15		KZ-17		KZ-2
	KZ-13		KZ-21		KZ-16		KZ-9		KZ-18



- Hydrometric Station
- Water Quality and Hydrometric Station
- Water Quality Sampling Location
- Location of Proposed Mine Infrastructure
- Major Drainages
- Tote Road/Proposed Access Road
- Proposed Mine Road
- Contour (40 m interval)
- Watercourse
- Waterbody

Catchments delineated using ArcGIS Spatial Analyst Watershed Tools, using 2014 LIDAR data and/or 2005 orthorectified aerial imagery and/or 16m DEM data obtained from geogratis.gc.ca, depending on extent.
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 (Last edited by: amallashevska, 25/01/2017/14:47 PM)

3.1.2.2 Monitoring Network

Three seasons of hydrometric monitoring have taken place at the Project; the first during the 1995 open water season, and two during the current baseline program initiated in April 2015. The current network builds on the original in both spatial and temporal coverage.

Hydrometric monitoring in 1995 utilized six stations. All stations were equipped with staff gauges, and two were also equipped with automated water level recorders. All data were available for the manual stations; however, the continuous data from Geona Creek and Lower Finlayson Creek were not recovered from Cominco Ltd. Active stations in 1995 are indicated in Table 3-2 in the right-hand column. The full extent of the 1995 data can be found in Appendix E (Appendix 3.2a of Cominco Ltd., 1996).

In 2015 a hydrometric monitoring program was initiated in support of the new development plans. The re-initiation began with an evaluation of the previous monitoring network compared with water balance and water quality modelling requirements. Based on this review, the new network includes the original locations (for data consistency) and the addition of four new sites. Table 3-2 lists the current monitoring network and indicates which sites were present in 1995. The current monitoring network was established in early May of 2015 (Figure 3-3).

Table 3-2: Surface Water Hydrometric Monitoring Network at KZK

Catchment/Description	Current Station ID	Drainage Area (km ²)	Median Catchment Elev. (masl)	Current Hydrometric Data Collection Type	Description of 1995 Data Collection Type *
Fault Creek	KZ-2	1.93	1,707	Continuous	Manual
Upper Geona Creek	KZ-7	10.30	1,541	Discrete Measurements	None
Geona Creek near proposed dam	KZ-9	16.47	1,498	Continuous	None
South Creek	KZ-13	7.92	1,540	Continuous	Manual
Finlayson Creek below Geona	KZ-15	66.28	1,479	Continuous	None
Finlayson Creek above Geona	KZ-16	40.56	1,477	Continuous	None
Geona Creek at the mouth	KZ-17	25.71	1,482	Derived/Calculated	Automated
East Creek	KZ-21	83.84	1,282	Discrete Measurements	Manual
Upper Finlayson Creek	KZ-22	165.45	1,354	Continuous	Manual
Lower Finlayson Creek	KZ-26	214.80	1,294	Continuous	Automated

Notes: * Manual: Includes staff gauge, discrete measurements and periods of daily stage observation, data May-Sept/Oct. Automated: Discrete measurements, staff gauge and automated water level recorder, data May-Sept/Oct.

FIGURE 3 - 3
HYDROMETRIC STATION LOCATIONS

NOVEMBER 2016

- Hydrometric Station
- Water Quality and Hydrometric Station
- Water Quality Sampling Location
- Location of Proposed Mine Infrastructure
- BMC Minerals (No.1) Ltd. Mineral Claim Areas
- Waterbody
- Watercourse
- Tote Road/Proposed Access Road
- Proposed Mine Road
- Contour (interval shown on individual map/inset)

Digital elevation model created by the Yukon Department of the Environment interpolated from the digital 1:50,000 Canadian National Topographic Database (NTDB Edition 2) contour and watercourse layers. Obtained from Geomatics Yukon.
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Datum: NAD 83; Projection UTM Zone 9N



Station	Type	Coords (UTM Zone 9N)	
		Easting	Northing
KZ-13	WQ and Automated Hydrology	416482	6811653
KZ-15	WQ and Automated Hydrology	414802	6822418
KZ-16	WQ and Automated Hydrology	414622	6822352
KZ-17	WQ and Automated Hydrology	414727	6822357
KZ-2	WQ and Automated Hydrology	414726	6814654
KZ-21	WQ and Automated Hydrology	417494	6827454
KZ-22	WQ and Automated Hydrology	417372	6827796
KZ-26	Automated Hydrology	420107	6835643
KZ-26	WQ	419893	6835692
KZ-6	WQ	415325	6816659
KZ-7	WQ and Hydrology	415225	6817163
KZ-9	WQ and Automated Hydrology	414686	6819717

Finlayson Creek is monitored at four locations, near the highway (KZ-26), midway between the highway and Geona Creek (KZ-22), immediately below Geona Creek (KZ-15), and above Geona Creek (KZ-16). Finlayson Creek below Geona (KZ-15) is likely to be an important compliance point and is a newly added site as is Finlayson Creek above Geona Creek (KZ-16). KZ-16 was added to identify background water quality in Finlayson Creek prior to the introduction of Geona Creek. KZ-16 was chosen as a hydrometric site because the morphology of multiple turbulent channels at KZ-17 rendered it unsuitable for gauging and establishing a stage-discharge relationship. East creek (KZ-21) is a background site as well, which provides extra water quality and hydrology information and is one of the major tributaries to Finlayson Creek above the highway. Additional detail was also deemed necessary for Geona Creek, especially near the proposed Lower Water Management Pond. As such, monitoring sites were added at KZ-9 and KZ-7. Fault Creek is also monitored as it is the major high elevation tributary of Geona Creek and because the Project plan is to divert it to South Creek which is the rationale for monitoring South Creek (KZ-13).

KZ-7 and KZ-21 are discrete monitoring stations, which means they are metered monthly concurrent with the collection of water quality samples. KZ-21 previously had a staff gauge and was planned to be a continuous monitoring station. However, on the ground the site did not provide a suitable location for development of a stage-discharge relationship. Additionally, since it is a background site it is considered appropriate to derive an estimate of the discharge at this site based on comparison of the discrete measurements to other sites and utilizing the continuous record at those other sites, in particular KZ-22. KZ-17 is at the mouth of Geona Creek and here also the objective was to install a hydrometric station. However, a large beaver dam has been constructed immediately above the confluence and two dominant channels drain from the dam into Finlayson Creek. The channels are turbulent and tortuous. As such, the decision was made to establish a hydrometric station on Finlayson Creek above Geona so that discharge could be calculated by the subtraction of KZ-16 from KZ-15.

The hydrometric stations, referred to as continuous in Table 3-2, consist of a steel angle iron post driven into the stream bed supported with a steel cross piece and guy wire to which the staff gauge is bolted and the stilling well is attached (Figure 3-4). Staff gauges are WSC issue with 2 mm graduations and stilling wells are black 2" ABS pipe. A Solinst Edge M1.5 Levellogger water level recorder is placed in the stilling well affixed to a direct read cable such that the logger is not disturbed during download. Solinst Levelloggers are paired with Solinst Barologgers to provide barometrically compensated pressure data as height of water. Barologgers are located at KZ-26, KZ-15 and KZ-2. Solinst recommends Barologgers be located within 300 m of elevation of the Levellogger being compensated. All sites comply with this recommendation.



Figure 3-4: KZ-15 Hydrometric shown as example of hydrometric stations installed at the Project

3.1.2.3 Data Acquisition

The 2015 to 2016 monitoring program consisted of discrete discharge observations on a monthly basis concurrent with water quality sampling from April 2015 to March 2016. Hydrometric stations are designed to conform with British Columbia standard criteria for the collection of Grade A data (or Grade B when channel conditions prevent Grade A (MOE, 2009)). Sampling was carried out according to AEG's *Standard Operating Protocol, Surface Water Hydrology, Data Collection and Management* (AEG, 2016). The protocol recommends that two discharge measurements are collected at each site so the repeatability of the measurement can be calculated. The repeatability is calculated as the difference between the two measurements divided by their mean and expressed as a percent. Measurements are collected either using the velocity-area method with an electromagnetic flow meter, or using salt dilution gauging. Calibrations for the salt concentration–electrical conductivity relationship are conducted on site for each measurement; weather permitting. Field technicians then enter their data upon return and the staff hydrologist confirms the calculations. The readings are imported in Aquatic Informatics' Aquarius Time-Series software.

Levelloggers and Barologgers log half-hourly observations and are downloaded monthly; as long as weather permits. Levelloggers are compensated in Solinst Levellogger software and then exported as a Comma-Separated Values (.CSV) file and imported into Aquarius Time-Series software. Paired stage and discharge measurements are also imported into Aquarius. Aquarius includes a working environment to build rating curves and to correct data. Stage is first corrected to the staff gauge readings and the rating curve is then applied. Discharge is corrected for ice effect and the winter hydrograph is estimated by drawing a recession line through the month measurements; this is the usual practice for estimating winter discharge where ice precludes the use of a stage-discharge relationship.

Rating curves may be simple or compound, accounting for a change in control. They may also include shifts to account for effects of aggradation or scouring. At the time of data correction and rating curve development, suspicious data are checked for calculation errors, and field notes and photos are reviewed. Ice-affected stage readings are disregarded and discharge records are corrected to account for ice formation and break-up. Finalized discharge records are used to calculate total monthly runoff, mean daily discharge or any other statistic within the Aquarius Time-Series environment.

Aquarius is also used to conduct flood frequency analysis as it allows the import of any data set. While some regional statistics were generated from the mean monthly data available directly from WSC, mean daily discharge time series were imported into Aquarius and all frequency analysis including MAR, low flows and floods were conducted using Aquarius Time-Series.

3.1.2.4 Data Quality

Data quality assurance starts with AEG's Standard Operating Protocol which aims to ensure compliance with Grade A or B data as defined in the British Columbia Hydrometric Standards (MOE, 2009). The following discussion presents those data gathered during the 2015 to 2016 baseline monitoring program and examines the quality and confidence in those data. The data quality of Environment Canada is not discussed as the British Columbia standards are based on WSC data which is only released once the data have been reviewed and approved. The regional data is very high quality, suitable for international distribution and only long and complete records were used for analysis for high confidence results.

While the goal is Grade A compliance, this is extremely difficult and often impossible in small mountain streams, especially those which are too turbulent and narrow for velocity-area measurements, or where the dominant morphology may be step pools, such as at KZ-2. The British Columbia standards criteria assumes the use of the velocity-area method for discharge and requires 20 or more panels, which is not possible at sites such as KZ-2, 9 and 13. Because of their morphology, the sites must be defined as data grade U for "Undefined." However, other than dilution gauging it is the channel morphology itself that precludes a higher grade. The channel should be a stable straight reach, free of boulders and vegetation. While the sites chosen for these stations are quite stable and relatively straight, they are not sufficient for velocity-area measurements. KZ-15, 16 and 26 are considered Grade A data. KZ-22 would be Grade A and it meets all criteria except the channel has some very large boulders and is somewhat turbulent which lowers it to Grade B. Table 3-3 lists all the sites and some key measures of the data quality. The mean repeatability (RPD) is for all measurements; however, the RPD is also shown for just the rating measurements. RPD is higher for all measurements due to the more difficult conditions presented in winter flow gauging. The rating accuracy is the mean of the percent deviation of each rating measurement from the rating curve. Grade A data must be 7% or less (MOE, 2009).

Table 3-3: Data Quality Parameters for 2015 to 2016 KZK Site Data

Catchment / Description	Station ID	Mean Q (m ³ /s)	Mean RPD (%)	Mean RPD for rating measurements	Number of Rating measurements	Rating accuracy (%)	Data Grade	Criteria not met *
Fault Creek	KZ-2	0.033	8.04	5.5	5	6.4	U	CC/MM
Upper Geona Creek	KZ-7	0.119	9.08	n/a	n/a	n/a	n/a	n/a
Geona Creek near proposed tailings dam	KZ-9	0.164	2.82	2.0	6	0.9	U	CC/MM
South Creek	KZ-13	0.092	2.66	1.0	6	4.7	U	CC/MM
Finlayson Creek below Geona	KZ-15	0.492	5.47	1.6	8	4.3	A	-
Finlayson Creek above Geona	KZ-16	0.298	4.81	4.9	6	2.4	A	-
Geona Creek at the mouth	KZ-17	0.196	n/a – these flows are calculated from other sites					
East Creek	KZ-21	0.585	7.09	n/a	n/a	n/a	n/a	n/a
Upper Finlayson Creek	KZ-22	1.177	5.62	3.4	5	6.9	B	CC
Lower Finlayson Creek	KZ-26	1.480	2.39	2.1	6	1.8	A	-

*Notes: * CC = Channel Condition indicating the channel does not meet the overall morphological characteristics prescribed for Grade A. MM = Measurement Method indicating that salt dilution gauging was used instead of velocity - area due to channel conditions*

Often the last open water measurement of the season is ice-affected and this is immediately apparent when comparing the measurement to the rating curve. These measurements are not used in the rating or considered a rating measurement, although they have a stage observation. The discharge record is manually corrected for ice effects by placing it in line with the discharge value. Occasionally some discharge measurements do not conform to the trend in receding winter flows or what is generally expected at a site. These measurements can be ignored if the other winter data support a smooth winter recession. This can happen if multiple flow paths have developed as water speeds up and slows down through extensive ice flow. This is believed to have occurred at KZ-16 where extensive aufeis growth was observed in late winter.

Another measure of data confidence is related to how far the rating curve must be extended to capture the peak flow observed in the stage record. Table 3-4 shows the peak discrete discharge measurement versus the peak discharge derived from the rating curve. Except for KZ-2 all other sites are 1.5 times the highest discharge or less. While the highest derived discharge at KZ-2 is 3.3 times higher than the measured discharge, the stage peaked at 0.494 m versus 0.390 m at the highest observed reading. While the results from KZ-2 should be regarded with some extra caution, the good rating accuracy and measurement repeatability at the site give confidence in the derived data. The following sections will present data from KZ-2; it is substantially higher in unit runoff than the other sites. However, the unique morphology of the site supports these results, such that the data are accepted as reasonable.

Table 3-4: Peak Measured Discharge versus Peak Derived Discharge (m³/s)

Catchment/Description	Station ID	Peak Discrete Q (m ³ /s)	Peak Derived Q (m ³ /s)	Ratio of Peak Derived to Measured
Fault Creek	KZ-2	0.079	0.257	3.3
Geona Creek near proposed tailings dam	KZ-9	0.968	0.967	1.0
South Creek	KZ-13	0.335	0.517	1.5
Finlayson Creek below Geona	KZ-15	2.563	3.062	1.2
Finlayson Creek above Geona	KZ-16	1.471	1.719	1.2
East Creek	KZ-21	3.994	4.664	1.2
Lower Finlayson Creek	KZ-26	7.608	7.547	1.0

Data quality from 1995 is difficult to evaluate. The quality of the discrete measurements is unknown and it is not possible to check the observations for errors. The total monthly runoff values presented below are considered estimates of undefined data quality since they are taken from daily observations and include data gaps. The logger/continuous data were not recovered at KZ-17 and KZ-26. Generally, observations of stage were made during rainfall events and daily during the snowmelt period; therefore, in general there is confidence that the variation is captured and the data gap filling is appropriate for the multi-day periods where little change in runoff is expected. The original rating curves were linear regressions; therefore, these were improved with power functions using Aquatic Informatics Time-Series software. The rating accuracies for the four sites with available data are presented in Table 3-5. KZ-2 shows the highest error, which is not surprising given the turbulent step pool morphology of the stream; however, it is still reasonable and all other sites are less than 7%.

Table 3-5: Rating Accuracy (%) for 1995 Rating Measurements

Station ID	Rating Accuracy (%)
KZ-2	8.5
KZ-13	4.7
KZ-21	3.4
KZ-22	6.6

3.2 RESULTS

The regional stations along with their area, period of record, median elevation and MAR were presented in Table 3-1. MAR for the region is 370 mm with a range from 216 mm to 652 mm. The mean median catchment elevation is 1,209 masl. Figure 3-5 shows MAR plotted vs elevation; although a positive trend is noted, the correlation is not strong ($R^2=0.61$). This is likely due to the varied topography and distinct

variation in precipitation throughout the region. This high degree of variation is also seen in the regional precipitation data (Section 2.2.2.1).

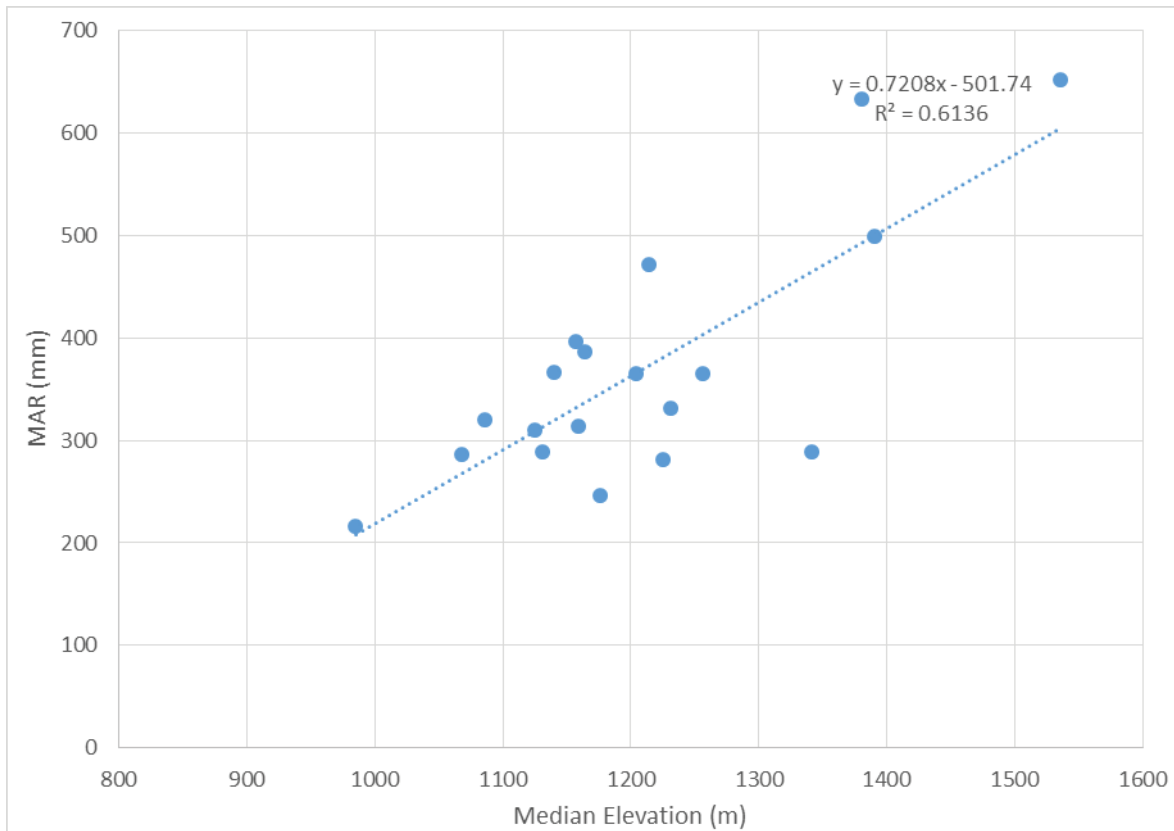


Figure 3-5: Mean Annual Runoff (mm) versus Median Catchment Elevation at Regional Hydrometric Stations

All discrete measurements gathered during the 2015 to 2016 baseline program are listed in Appendix F. The table in the Appendix includes the data, time, stage observation (metre) when applicable, discharge measurement (m^3/s), the RPD (%), the unit discharge ($L/s/km^2$) and the method of measurement (either SS – salt slug or VA – velocity area). The derived discharge hydrographs with the discrete measurements are also included in Appendix F, Figure E.1 through Figure E.7. The following subsections present the observations from 2015 to 2016 (and 1995 where appropriate) for consideration against regionally derived estimates for the Project. While regional data is not yet available for 2015, the 2015 data can still provide some insight into the appropriateness of the estimates and help to guide the analysis with selection of appropriately representative regional stations in some cases.

3.2.1 Mean Annual Runoff

Mean Annual Runoff (MAR), expressed in mm, is the average total annual discharge from a catchment. MAR is dependent on precipitation and gives an overall picture of how wet an area is and how it compares

to the region as a whole. This number is critical to determining water availability for a project and general understanding of the hydrological character of a watershed. Regional analysis is employed to estimate MAR for ungauged catchments or where data are limited, such is the case for the Project.

The approach may vary depending on the region. The Project is located in a mountainous hydrologically diverse region and borders the watershed divides between the Yukon River and Mackenzie River basin. The approach taken here was to use the smallest regional stations which exhibited similar physical characteristics to Geona Creek and Finlayson Creek to estimate MAR. An attempt to validate this estimate using what site data are available is also presented.

For the Project, there are sufficient data to calculate MAR for one year from April 2015 to March 2016. Discrete discharge measured in April 2015 or mean monthly flow from March 2016 are used to estimate the total monthly runoff for April 2015. This is a common practice and appropriate for estimating winter low flows since they are very consistent. The other months are computed from the continuous record. The ice-covered discharge is estimated by the conventional approach of placing a recession line through monthly discrete values as the stage-discharge relationship does not apply. Data for May 2015 and March 2016 are approximately two thirds complete and considered adequate to estimate the monthly total.

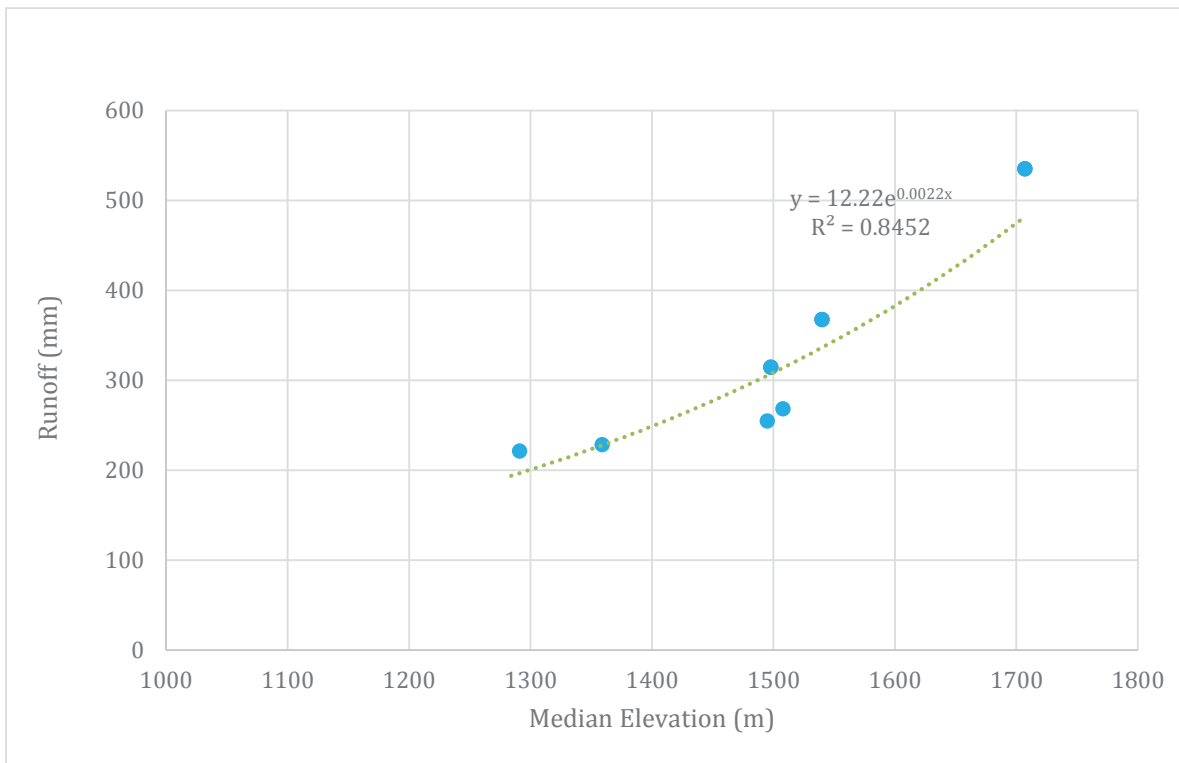
MAR was estimated at 414 mm in 1996 for a catchment elevation of 1,505 masl (Cominco Ltd., 1996). The previous estimate of MAR was done using smaller catchments including two Yukon Government (YG) stations and five WSC stations. The current analysis found slight variations in some of the historic data and an inexplicably large difference in the MAR at the Faro site. However, four WSC stations were added (Table 3-1). The relationship between elevation and MAR for the regional data gives an estimate for the Geona Creek KZ-9 catchment of 578 mm (Table 3-1). However, the R-squared value of 0.61 correlation is poor (Figure 3-5) and the correlation is not significant. It should be noted that one of the closest and smallest stations, King Creek, is the most notable outlier; it has high median elevation and low MAR. Given these points it appears inappropriate to apply the regional relationship to Geona Creek and the Project area in general. Table 3-6 presents the total annual runoff in mm measured in 2015 to 2016 at the Project site as well as catchment metadata and estimated MAR. Total runoff at KZ-2 for 2015 is estimated at 535 mm and at KZ-9 (near the site of the proposed dam) it is 315 mm. Unit runoff continues to decrease downstream, and while median elevation appears to be a factor, it does not fully explain the differences (Figure 3-6). Figure 3-6 shows the total annual runoff for various Project catchments versus their median elevation with an exponential trend line. Increasing MAR with elevation appears non-linear, which is likely due to more factors than just change in precipitation with elevation. Changes in soil, catchment gradient, vegetation and the various lakes and ponds all influence runoff. The larger catchments with lower median elevation contain more vegetation and have lower average gradients.

Table 3-6: Monitoring Stations, Measured Runoff for 2015-2016 and Predicted MAR for KZK Baseline Monitoring Stations

Catchment/Description	Site ID	Area (km ²)	Min Elev. (masl)	Max Elev. (masl)	Median Elev. (masl)	Total Runoff 2015-2016 (mm)	MAR predicted by all regional data (mm)	MAR predicted regional/KZ-26 factor (mm)	MAR predicted by exponential relationship
Fault Creek	KZ-2	1.9	1,428	2,025	1,707	535	729	677	610
Upper Geona Creek	KZ-7	10.3	1,359	2,025	1,541	363*	609	458	425
Geona Creek near proposed tailings dam	KZ-9	16.5	1,296	2,025	1,498	315	578	398	388
South Creek	KZ-13	7.9	1,328	1,963	1,540	368	608	465	425
Finlayson Creek below Geona	KZ-15	66.3	1,207	2,088	1,479	234	576	322	386
Finlayson Creek above Geona	KZ-16	40.6	1,209	2,088	1,477	232	585	340	397
Geona Creek at the mouth	KZ-17	25.7	1,207	2,025	1,482	241*	564	305	373
East Creek	KZ-21	83.8	1,096	1,707	1,282	220*	424	278	245
Upper Finlayson Creek	KZ-22	165.5	1,095	2,088	1,354	224	478	289	288
Lower Finlayson Creek	KZ-26	214.9	959	2,088	1,294	217	429	280	249

Notes

* Test values are calculated for continuous data gathered at other station and not measured directly


Figure 3-6: Total Measured Runoff, April 2015 to March 2016, KZK Baseline Monitoring Stations versus Median Catchment Elevation

Mean annual precipitation for the KZ-9 catchment in which the proposed Project activities are to take place was estimated at 612 mm. The estimated MAR of 388 mm leaves 224 mm of losses to AET, sublimation, and some groundwater losses. This is close to previous estimates and suggests the estimated MAR is a good estimate.

The YG Water Resources Branch of the Department of Environment maintains snow courses throughout the territory which are surveyed at or close to the first day of each month. Finlayson Lake Airstrip is the closest snow course to the Project. The April 2015 snowpack at Finlayson Lake Airstrip was 119 mm SWE compared to the average for that station of 107 mm. The May 2015 SWE for that station was 48 mm versus the average of 57 mm. These observations suggest a slightly greater than average snowpack driving spring runoff in 2015. While regional precipitation data are not yet available to assess whether 2015 was wetter or drier than normal, the limited evidence does not support 2015 being well below normal, but rather that the Project is drier than other regional sites of comparable elevation. The MAR for all regional stations is 370 mm, while for catchments under 1,100 km² it is 339 mm, with a mean median catchment elevation of 1,197 masl (below the regional mean). This suggests that regional elevation trends in MAR are a poor predictor of MAR for the Project.

The estimated MAR adopted for the Project catchments was calculated using a two-step process. The first step is to estimate MAR at the largest catchment (KZ-26) based on regional data by averaging the MAR for the smallest catchments in the region (1,010 km² and under) and applying it to KZ-26. This results in an estimate of 280 mm +/- 25% at 95% confidence. The average was preferred over the linear trend for these five sites as the correlation was not statistically significant. The South MacMillan River was removed based on its physical characteristics; the watershed contains icefields and drains from the Mackenzie Mountains. The MAR for the other Project catchments was then estimated by multiplying the 2015 to 2016 data by a simple factor or the difference between KZ-26 in 2015 to 2016 and the estimate of 280 mm. That factor is 1.26. Using the factored runoff an exponential trend line was applied (Figure 3-7). This elevation-MAR relationship is adopted for estimating runoff from ungauged catchments and the predictions for the various Project monitoring sites are included in Table 3-6. The new best estimate of 388 mm (-12%/+14% confidence interval, -31/+45% prediction interval) for KZ-9 at a median elevation of 1,497 mm is comparable to the Cominco Ltd. estimate of 414 mm for a catchment with median elevation of 1,505 masl.

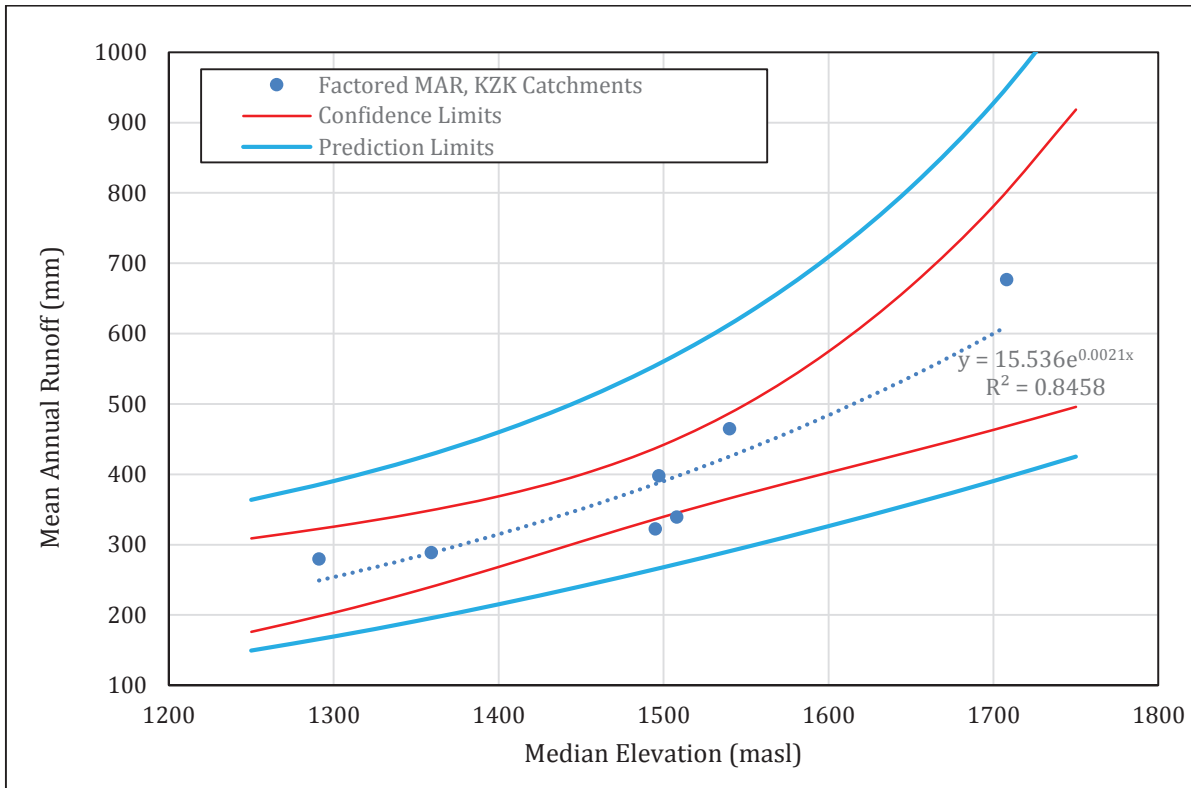


Figure 3-7: Relationship Used to Predict MAR for KZK Catchments

To further validate the lower MAR estimates as compared to those proposed by Cominco Ltd. in 1995, the mean monthly values from 1995 at the larger sites of East Creek (KZ-21) and Upper Finlayson Creek (KZ-22) were compared to regional data. The 1995 mean monthly runoff (May to August) in total mm was compared to that of the regional stations which have concurrent data (Table 3-7). The difference between the regional 1995 monthly flows and their monthly means were calculated and showed that in 1995, May was 14% wetter than average while the other summer months were all drier than average (Column 1, Table 3-7). On average, the total monthly flow at KZ-21/KZ-22 was 71% lower than the mean regional 1995 monthly runoffs (Column 2, Table 3-7). This suggests that the Project location may be drier than the regional average. The large catchments areas of the regional stations will dampen these small scale local variations in runoff. The differences between 1995 and 2015 for the four Project sites with data were also computed and 1995. Total monthly runoff was 52% lower on average than in 2015 (Column 3, Table 3-7).

Table 3-7: Mean Monthly Flow Difference Analysis

Month 1995	Mean difference between 1995 and mean, regional stations (%)	Difference between KZ-21/22 1995 and 1995 regional mean (%)	Mean difference between 1995 and 2015, KZK (%)
May	14	-63	-57
June	-48	-71	-33
July	-41	-79	-61
August	-12	-74	-58

With the exception of June (only 33% drier in 1995 than in 2015 as compared to 48% for the region), all other months in 2015 were wetter at the Project site by a larger margin than the regional difference when compared to 1995. While not conclusive, this suggests that 2015 was wetter than average during the four months where typically over 60% of MAR occurs. The above analysis suggests that the lower MAR estimates as compared to the previous estimates are appropriate.

3.2.2 Mean Monthly Runoff

Mean annual runoff is further discretized as mean monthly runoff for modelling purposes. Water balances and water quality predictions typically use monthly values, so runoff estimates are broken down into this time step. The traditional approach is to use the average mean monthly runoff distribution from the regional stations and apply it to the estimated MAR for the site of interest. In the absence of site data, this is a valid approach. However, the year of data available at for the Project allowed for this approach to be vetted. Small catchments often exhibit very different runoff profiles than larger catchments with freshet occurring earlier in the season. They may also be “flashier”, reacting more rapidly and with greater change to rainfall events. Mean monthly runoff (mm) is presented below for 1995 and 2015/2016 and considered against the regional distribution. Figure 3-8 shows the regional distribution compared to the mean distribution for the Project sites measured in 2015/2016 and a hybrid of the two. This hybrid distribution was selected for the Project site.

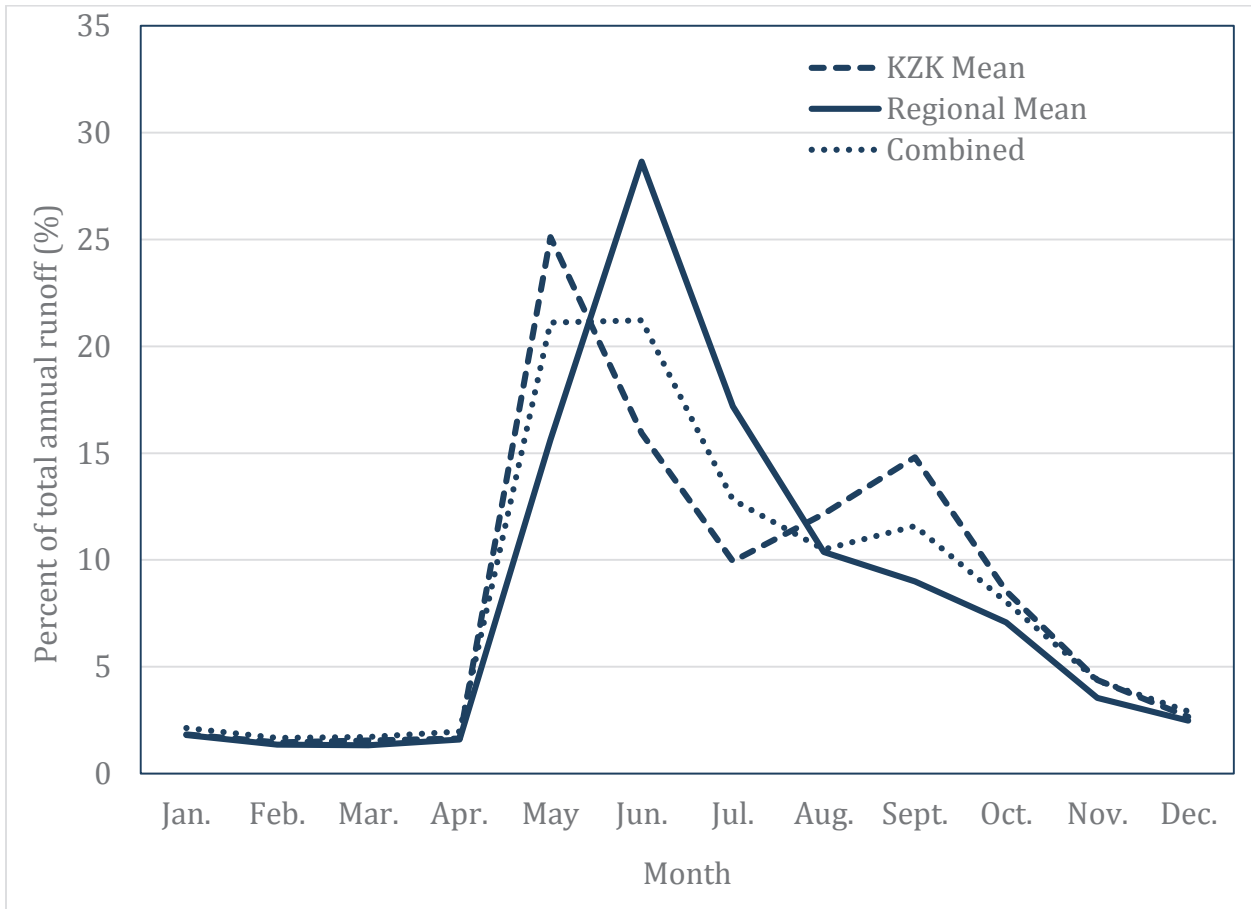


Figure 3-8: Mean Monthly Runoff Distribution Measured at Kudz Ze Kayah versus the Regional Distribution

Total monthly runoff was calculated from both the 1995 dataset (Table 3-8), and from the more recently collected data (Table 3-9). For the 1995 data, rating curves were redeveloped in Aquarius Time-Series software from the available rating measurements and applied to the stage observations which were made almost daily at several sites during some periods (Table 3.2, Appendix 3.2a Runoff Characterization, Cominco Ltd., 1996, Appendix E). The data gaps were then filled using a polynomial interpolation and monthly means were calculated from the interpolated time series (Table 3-8). Although Geona Creek and Lower Finlayson Creek had recording gauges installed, these data were not recovered.

Table 3-8: Mean Monthly Runoff at KZK in 1995 (mm)

Site	Month (1995)			
	May	June	July	August
KZ-2	52.7	79.2	23.6	27.8
KZ-13	46.1	33.3	17.2	22.1
KZ-21	21.9	11.6	6.3	6.7
KZ-22	25.2	21.6	9.9	11.5

Table 3-9: Mean Monthly Runoff at KZK 2015-16 (mm)

Site	Month (2015 - 2016)												Total (mm)
	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	
KZ-2	6.7	137.4	102.1	61.1	65.2	76.6	41.6	16.1	11.1	8.3	5.0	4.2	535
KZ-9	6.3	75.1	46.9	35.6	36.4	45.0	26.5	13.7	10.7	8.0	5.4	4.9	315
KZ-13	3.0	107.5	56.3	35.5	41.3	53.0	29.1	18.0	12.2	6.1	3.1	2.7	368
KZ-15	3.3	66.9	34.9	23.0	26.3	33.2	17.9	10.9	6.9	4.2	3.2	3.5	234
KZ-16	4.5	54.9	34.1	25.7	30.1	35.3	19.9	10.7	7.1	4.6	2.7	2.2	232
KZ-17	4.5	85.8	36.3	18.6	20.2	29.7	14.7	11.3	6.6	3.6	4.0	5.4	241
KZ-21	4.8	46.4	28.6	23.9	28.5	32.6	21.3	11.4	7.8	5.6	4.5	4.8	220
KZ-22	5.3	47.0	29.0	24.3	28.9	33.0	21.6	12.4	7.9	5.7	4.5	4.9	224
KZ-26	4.1	42.0	27.2	21.2	29.5	33.9	19.3	13.3	10.1	7.4	4.9	4.3	217

Total monthly runoff for the current monitoring period were calculated from half hourly discharge values derived from the stage record at each site (Table 3-9). Total runoff for April 2015 was estimated from discrete measurements; examination of discrete discharge measurements taken at the end of April 2015 show that those flows are remarkably similar to the March 2016 mean which indicates they are a reasonable estimate of the April mean. Discharge at KZ-21 is calculated at 50% of KZ- 22 which is the average difference in discrete measurements at these sites. Additionally, KZ-17 is calculated as the difference between KZ-15 and KZ-16 (Table 3-9).

Comparison of total monthly runoff from 1995 to 2015 for May, June, July and August at KZ-2, KZ-13, KZ-21 and KZ-22 shows higher flows in 2015; 54% higher in May, 37% higher in June, 61% higher in July and 60% higher in August. The data indicates a significantly larger freshet and significantly wetter summer in 2015 than in 1995. While regional data were not yet available for 2015, the total monthly runoff for May, June, July and August 1995 were compared to the mean regional runoff in Section 3.2.1 and suggested 2015 to 2016 may be greater than actual MAR at the site.

While the data suggest that 2015 may have been wetter than average in May, July and August; but drier in June, the mean monthly distribution is not unexpected as the peak annual flow tends to occur later in large rivers than in small creeks and streams. Table 3-10 shows the measured mean monthly distributions, the adopted distribution for predicting flows, and the distribution for those stations used to predict the MAR for KZ-26, and the regional mean. Table 3-11 presents the predicted mean monthly runoff at each site in mm while Table 3-12 presents mean monthly unit discharge in L/s/km².

Table 3-10: MAR Distributions (% of annual) Observed at KZK Compared to Predicted and Regional Distributions

Site	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
KZ-2	1.6	0.9	0.8	1.3	25.7	19.1	11.4	12.2	14.3	7.8	3.0	2.1
KZ- 9	2.5	1.7	1.6	2.0	23.9	14.9	11.3	11.6	14.3	8.4	4.4	3.4
KZ-13	1.7	0.8	0.7	0.8	29.2	15.3	9.7	11.2	14.4	7.9	4.9	3.3
KZ-15/16	1.9	1.3	1.2	1.7	26.1	14.8	10.4	12.1	14.7	8.1	4.6	3.0

Site	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
KZ-22	2.5	2.0	2.2	2.4	20.9	12.9	10.8	12.9	14.7	9.6	5.5	3.5
KZ-26	3.4	2.3	2.0	1.9	19.3	12.5	9.7	13.6	15.6	8.9	6.1	4.6
Predicted	2.1	1.7	1.7	2.0	21.1	21.2	12.8	10.5	11.6	8.0	4.3	2.9
Regional	1.8	1.4	1.3	1.6	15.6	28.6	17.2	10.4	9.0	7.1	3.5	2.5
Regional <1,500 km ² *	2.4	1.9	1.9	2.3	17.1	26.5	15.7	8.8	8.4	7.5	4.3	3.2

Notes: * - Excludes South MacMillan River (09BB001)

Table 3-11: Predicted Mean Monthly Runoff (mm) for KZK Catchments

Site	Month												Total (mm)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	
KZ-2	13.0	10.2	10.4	12.0	128.9	129.5	78.3	64.1	70.8	49.0	26.5	17.8	610
KZ-7	9.1	7.1	7.3	8.4	89.8	90.2	54.5	44.7	49.3	34.2	18.5	12.4	425
KZ-9	8.3	6.5	6.6	7.6	81.9	82.3	49.7	40.7	45.0	31.1	16.9	11.3	388
KZ-13	9.1	7.1	7.3	8.4	89.8	90.2	54.5	44.7	49.3	34.2	18.5	12.4	425
KZ-15	8.2	6.5	6.6	7.6	81.5	81.9	49.5	40.5	44.8	31.0	16.8	11.2	386
KZ-16	8.5	6.6	6.8	7.8	83.9	84.2	50.9	41.7	46.0	31.9	17.3	11.6	397
KZ-17	7.9	6.2	6.4	7.3	78.8	79.1	47.8	39.2	43.3	30.0	16.2	10.9	373
KZ-21	5.2	4.1	4.2	4.8	51.8	52.1	31.5	25.8	28.4	19.7	10.7	7.1	245
KZ-22	6.1	4.8	4.9	5.7	60.9	61.2	37.0	30.3	33.4	23.2	12.5	8.4	288
KZ-26	5.3	4.2	4.3	4.9	52.6	52.8	31.9	26.2	28.9	20.0	10.8	7.3	249

Table 3-12: Predicted Mean Monthly Unit Discharge (L/s/km²) for KZK Catchments

Site	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
KZ-2	4.9	4.2	3.9	4.6	48.1	50.0	29.2	23.9	27.3	18.3	10.2	6.6
KZ-7	3.4	2.9	2.7	3.2	33.5	34.8	20.4	16.7	19.0	12.8	7.1	4.6
KZ-9	3.1	2.7	2.5	2.9	30.6	31.7	18.6	15.2	17.3	11.6	6.5	4.2
KZ-13	3.4	2.9	2.7	3.2	33.5	34.8	20.4	16.7	19.0	12.8	7.1	4.6
KZ-15	3.1	2.7	2.5	2.9	30.4	31.6	18.5	15.1	17.3	11.6	6.5	4.2
KZ-16	3.2	2.7	2.5	3.0	31.3	32.5	19.0	15.6	17.8	11.9	6.7	4.3
KZ-17	3.0	2.6	2.4	2.8	29.4	30.5	17.9	14.6	16.7	11.2	6.3	4.1
KZ-21	2.0	1.7	1.6	1.9	19.3	20.1	11.7	9.6	11.0	7.4	4.1	2.7
KZ-22	2.3	2.0	1.8	2.2	22.7	23.6	13.8	11.3	12.9	8.6	4.8	3.1
KZ-26	2.0	1.7	1.6	1.9	19.6	20.4	11.9	9.8	11.1	7.5	4.2	2.7

3.2.3 Wet and Dry Monthly Flows

Monthly runoff estimates for wet and dry years are required for modelling the impact a project may have on water quality and for water management. Designs and water use plans need to consider how water availability can vary from year to year. The most common approach is to carry out frequency analyses on the MAR. The result is total annual runoff estimates for various return periods, both wetter and drier.

Sites with more years of data are preferable, but they should also be representative of the location for which the estimates are being provided.

Frequency analyses were carried out on the three regional stations with the longest records, Ross River at Ross River (09BA001), Liard River at Upper Crossing (10AA001) and Frances River (10AB001) which have 51, 54 and 49 complete years of record, respectively. Frequency analyses were carried out using Aquarius Time-Series software and the best fitting distribution was chosen (Log Pearson Type III). To normalize the data, the ratio of the return period estimates to the means were calculated and averaged for all three sites and multiplied by the MAR for KZ-9 to predict return period flows (Table 3-13). The mean ratio can be applied to the estimated MAR of any or any hypothetical undisturbed sub-catchment for which MAR can also be calculated as described in Section 3.2.2.

Table 3-13: Annual Runoff Frequency Analysis

Return Period	Exceedance Probability	Ratio to mean			Mean Ratio to Mean	KZ-9 Annual Runoff (mm)
		Ross River 09BA001	Frances River 10AB001	Liard River 10AA001		
1 in 500 year low flow	0.998	0.49	0.52	0.63	0.55	212
1 in 200 year low flow	0.995	0.54	0.57	0.66	0.59	228
1 in 100 year low flow	0.99	0.58	0.61	0.68	0.63	243
1 in 50 year low flow	0.98	0.63	0.66	0.72	0.67	259
1 in 20 year low flow	0.95	0.70	0.73	0.77	0.73	283
1 in 10 year low now	0.9	0.77	0.79	0.81	0.79	306
1 in 5 year low flow	0.8	0.85	0.86	0.87	0.86	334
1 in 2 year flow (mean)	0.5	1.00	1.00	1.00	1.00	388
1 in 5 year high flow	0.2	1.14	1.14	1.15	1.14	443
1 in 10 year high flow	0.1	1.21	1.21	1.23	1.22	473
1 in 20 year high flow	0.05	1.26	1.27	1.31	1.28	497
1 in 50 year high flow	0.02	1.31	1.34	1.40	1.35	524
1 in 100 year high flow	0.01	1.35	1.39	1.46	1.40	542
1 in 200 year high now	0.005	1.37	1.43	1.52	1.44	559
1 in 500 year high flow	0.002	1.40	1.48	1.60	1.49	579

Total monthly runoff was estimated for select return periods at KZ-9 by multiplying the estimate by the annual distribution presented above (Table 3-14). In this way, the monthly runoff for any return period in any catchment at site can be predicted.

Table 3-14: Estimated Total Monthly Runoff (mm) at KZ-9 for Select Return Periods

Return Period	Month												Total (mm)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1 in 200 year low flow	5.8	3.9	3.5	4.6	54.6	34.1	25.9	26.5	32.7	19.3	9.9	7.8	228
1 in 100 year low flow	6.2	4.2	3.8	4.9	58.0	36.2	27.5	28.1	34.7	20.5	10.6	8.3	243
1 in 50 year low flow	6.6	4.5	4.0	5.2	61.8	38.6	29.3	30.0	37.0	21.8	11.3	8.8	259
1 in 10 year low now	7.7	5.3	4.7	6.1	73.0	45.6	34.6	35.4	43.8	25.8	13.3	10.4	306
1 in 10 year high flow	12.0	8.2	7.3	9.5	112.8	70.4	53.5	54.7	67.6	39.8	20.6	16.1	473
1 in 50 year high flow	13.3	9.1	8.1	10.5	125.1	78.1	59.3	60.7	75.0	44.1	22.8	17.9	524
1 in 100 year high flow	13.7	9.4	8.4	10.8	129.5	80.8	61.4	62.8	77.6	45.7	23.6	18.5	542
1 in 200 year high now	14.2	9.7	8.7	11.2	133.5	83.3	63.3	64.7	80.0	47.1	24.3	19.1	559

3.2.4 Low Flows

It is important to understand low flows for water quality modelling purposes both in summer and winter. Typically, in Yukon, lowest flows occur in March or April, as inputs have ceased during the winter months and baseflow steadily declines as the groundwater table falls. Summer low flow may occur at various times throughout the summer during prolonged dry periods. Observed low flow values during the 2015 to 2016 monitoring program are presented below, followed by a low flow frequency analysis to estimate low flows at site. Table 3-15 displays the daily low flows measured at hydrometric stations during the 2015-16 baseline monitoring program. Summer is defined as June through September. Of interest is that KZ-13 exhibits markedly different low flows than the other sites and the annual/winter low flow at KZ-16 is much lower than the rest. The annual/winter value at KZ-16 should be disregarded as it is suspected that winter flows were attenuated at this site based on the presence of significant aufeis and the discharge measurement results at this site have been more inconsistent than other sites.

Table 3-15: Daily Low Flows (L/s/km²) Measured at KZK during 2015-2016 Baseline Data Collection

Site	Low Flow	
	Annual	Summer
KZ-2	1.6	16.6
KZ-9	1.6	11.4
KZ-13	6.7	9.8
KZ-15	1.3	6.6
KZ-16	0.7*	7.7
KZ-22	1.8	7.1
KZ-26	1.5	6.1

*Note: *low value is believed to be caused by flow attenuation in aufeis*

Low flow frequency analyses were carried out on regional data to estimate annual low flow and summer low flow values. The method of analysis examined the smaller catchments used to estimate MAR at site. Although peak runoff can vary significantly with catchment size and elevation, low flows are more consistent between stations; therefore, it is appropriate to estimate low flow from representative regional stations. Daily time series were used to run frequency analyses for various low flow return periods, the results of which are presented as unit discharge (L/s/km²) (Table 3-16).

Table 3-16: Calculated Low Flows (L/s/km²) for Various Return Periods for Regional Catchments

Return Period - T _p	King Creek (10AB003)		Sidney Creek (09AD002)		Tom Creek (10AA002)		Drury Creek (09AH005)		Big Creek (10AA005)		Mean	
	Annual	Summer	Annual	Summer	Annual	Summer	Annual	Summer	Annual	Summer	Annual	Summer
1/100	0.5	2.7	0.5	3.6	0.2	1.1	0.6	3.5	0.9	2.5	0.5	2.7
1/50	0.5	2.9	0.6	3.9	0.2	1.4	0.8	4.1	1.1	2.8	0.7	3.0
1/25	0.6	3.1	0.8	4.1	0.3	1.7	1.0	4.7	1.3	3.1	0.8	3.3
1/10	0.6	3.5	1.1	4.6	0.4	2.2	1.3	5.7	1.6	3.6	1.0	3.9
1/2 (mean)	1.1	5.1	1.9	6.5	0.9	3.7	2.4	8.4	2.3	5.5	1.7	5.8

The mean annual low flow of 1.7 L/s/km² is very similar to the mean measured at Kudz Ze Kayah of 1.5 L/s/km², excluding KZ-13 and KZ-16. Given this validation and the fact the mean annual low flow does not vary as greatly from site to site, the regional mean low flows will be adopted as estimates for the Project. Regional mean summer low flow is somewhat lower than the low flow observed at site in 2015/2016; however, it is clear that there is a relationship between elevation and summer low flows (Figure 3-9). The relationship in Figure 3-9 will be adopted to estimate mean summer low flow and the regional ratio to the mean will be used for calculating the low flow at other return periods (Table 3-17).

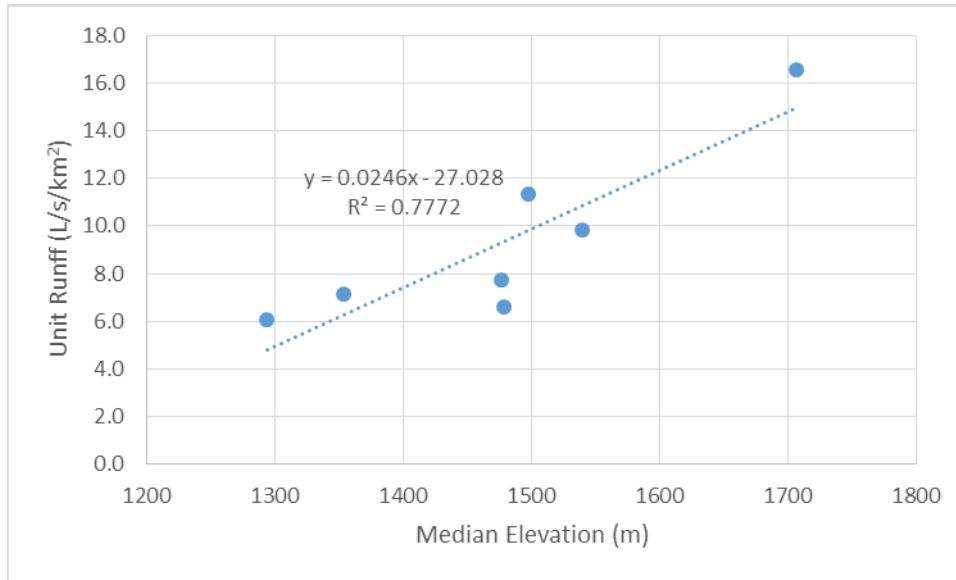


Figure 3-9: Relationship between Measured Summer Low Flow (L/s/km²) at KZK and Median Catchment Elevation

Table 3-17: Estimated Summer Low Flow (L/s/km²) at KZ-9 and KZ-17

Return Period - T _p	Mean (L/s/km ²)	Ratio to Mean	KZ-9 (L/s/km ²)	KZ-17 (L/s/km ²)
1/100	2.7	0.46	4.5	4.4
1/50	3.0	0.51	5.0	4.8
1/25	3.3	0.57	5.6	5.4
1/10	3.9	0.67	6.6	6.4
1/2 (mean)	5.8	1.00	9.8	9.4

Table 3-17 presents the results for KZ-9 and KZ-17 as examples. The results are values closer to those observed on site; for example, 9.8 L/s/km² estimated for KZ-9 versus 11.4 L/s/km² observed. The estimate is considered appropriate since it is conservative and because there is evidence to suggest the 2015 summer may have been wetter than average.

3.2.5 Flood Frequency Analysis

Peak discharges or annual floods characteristics and their expected frequency are key water management planning considerations. Peak discharge observed at Kudz Ze Kayah monitoring stations in 2015 are presented for consideration (Table 3-18). Flood frequency analyses were carried out on the regional sites with the longest period of record, but also on those sites which were used to estimate the MAR since they are considered the most representative of the regional stations. All sites had more than 10 years of complete data, which was considered the minimum for frequency analysis. The data were examined for relationships with elevation and area in order to predict flood flows at Kudz Ze Kayah. It was determined that area was the more suitable predictor of flood flows at the site.

Table 3-18: Observed Peak Flows at KZK in 2015

Site	Peak Flow (m ³ /s)	Peak Flow (L/s/km ²)	Peak Date
KZ-2	0.257	133.2	May 24, 2015
KZ-9	0.967	58.7	May 11, 2015
KZ-13	0.517	65.3	May 19, 2015
KZ-15	3.062	46.2	May 14, 2015
KZ-16	1.719	42.4	May 14, 2015
KZ-22	4.664	28.2	May 10, 2015
KZ-26	11.389	53.0	May 11, 2015

In 2015, peak flow occurred later at KZ-2 than at other stations, and had a significantly higher unit discharge. The timing was likely due to elevation, but the higher unit flow is likely a combination of high elevation, gradient and soil depth. Aside from KZ-2 and KZ-22, peak unit discharge appears to be similar between sites. Regionally, peak flow occurs later in the season, so while it appears in the site data that the larger stations experience peak annual flow early in the season there is likely an inflection point when this relationship reverses.

Flood frequency analyses were carried out on the same five smaller catchments used to calculate MAR as well as the three longest record sites, Ross River at Ross River (09BA001), Liard River at Upper Crossing (10AA001) and Frances River (10AB001) which have 51, 54 and 49 complete years of record, respectively (Table 3-19). The best fit frequency was chosen which was either Pearson Type III or Log Pearson Type III. Data sets are available only as daily time series; however, peak instantaneous flows are available and the average ratio of the instantaneous peak to the daily peak for the top five floods was used to predict instantaneous results from the analyses on daily values (Table 3-19 and Table 3-20).

Table 3-19: Ratio of Peak Instantaneous Flood to the Mean Annual Flood, Regional Analysis

Return Period - T_p	King C. 10AB003	Sidney C. 09AD002	Tom C. 10AA002	Drury C. 09AH005	Big C. 10AA005	Ross R. 09BA001	Frances R. 10AB001	Liard R. 10AA001	Mean
	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual	
1/2 (mean)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1/10	1.412	1.550	1.701	1.529	2.197	1.515	1.411	1.486	1.600
1/25	1.585	1.741	1.974	1.773	2.780	1.730	1.586	1.713	1.860
1/50	1.703	1.856	2.156	1.947	3.190	1.877	1.705	1.875	2.039
1/100	1.813	1.952	2.323	2.115	3.578	2.015	1.818	2.030	2.206
1/200	1.918	2.034	2.478	2.279	3.946	2.145	1.925	2.182	2.363

Table 3-20: Peak Instantaneous Flood for Regional Stations (L/s/km²)

Return Period - T_p	King C. 10AB003	Sidney C. 09AD002	Tom C. 10AA002	Drury C. 09AH005	Big C. 10AA005	Ross R. 09BA001	Frances R. 10AB001	Liard R. 10AA001
	Annual	Annual	Annual	Annual	Annual	Annual	Annual	Annual
1/2 (mean)	103.9	120.3	45.1	34.5	45.1	55.5	55.5	58.6
1/10	146.6	186.5	76.8	52.8	99.1	84.1	78.3	87.1
1/25	164.6	209.5	89.1	61.2	125.3	96.1	87.9	100.4
1/50	176.9	223.3	97.3	67.2	143.8	104.2	94.6	109.9
1/100	188.3	234.9	104.9	73.0	161.3	111.9	100.8	119.0
1/200	199.1	244.7	111.9	78.7	177.9	119.1	106.8	127.9

In order to estimate peak discharges at Kudz Ze Kayah, the regional data were considered for their relationship with both elevation and area. Area was determined to be the better predictor of flood flows for Kudz Ze Kayah based on the wide range in catchment size, as elevation varies less significantly and no catchment was as high as Geona Creek.

Figure 3-10 and Figure 3-11 plot peak flood discharge predictions versus catchment elevation in log-log space where a power relation defines a straight line. The power trend for each return period was then determined to allow the prediction of floods at Kudz Ze Kayah (Table 3-21). This approach yields a mean annual instantaneous peak discharge of 92.0 L/s/km² at KZ-9 which is 57 % higher than that observed in 2015. This is considered conservative given the snowpack (Finlayson Lake Airstrip, measured April 29, 2015) was approximately 84% of normal for May 1.

The same approach used to estimate peak instantaneous floods was taken using the daily floods (Figure 3-10). Table 3-21 presents the predicted flood flows for KZ-9 and KZ-17, as examples along with the equation used to predict them. These equations will be used for predicting flood flows for undisturbed

catchments in the Project area. The low R-squared value shows the degree of natural variability in the region. Without the site data this would lead to low confidence in the predictions. However, given the availability of high quality site data with low uncertainty showing these estimates, to be conservative for Kudz Ze Kayah, there is a high degree of confidence that the estimates are appropriate. The 1996 flood frequency analysis estimated 100-year peak instantaneous discharge to be 2.26 m³/s for a 2.51 km² catchment (Cominco Ltd., 1996). The above methodology predicts a 100-year peak discharge of 0.49 m³/s (194.4 L/s/km²). This appears low given the previous estimate; however, the site data suggest the new estimates are appropriate.

R-squared values are presented in Table 3-21 and are a measure of correlation. A good correlation would approach 1. These values show a very poor correlation which is apparent when examining Figure 3-10 and Figure 3-11. However, the measured R-squared value exemplifies the natural variation found in the region more than a lack of confidence in the quality of the data. This emphasizes that caution should be exercised when doing these type of analyses; however, using local data is the best way to guide and validate the analyses. For Kudz Ze Kayah, the high confidence in the site data supports these estimates as being appropriate.

KZ-2 is the one site which differs from the others with its steep rocky physical characteristics. The peak flow at KZ-2 in 2015 was actually higher than the mean and closer to the 1 in 10 year instantaneous peak, while the other sites all exhibited peaks below the predicted mean. The peak instantaneous unit discharge at KZ-2 was 2.5 times the mean of the other sites, excluding KZ-22 which is lower. However, KZ-2 was also the only site at which the derived peak exceeded the highest rating measurement by more than 2 times, which is generally considered the maximum appropriate extrapolation. The peak derived discharge at KZ-2 was 3.3 times greater than the highest measured discharge. As such, confidence in the estimate is lower than for other stations. To be conservative, the estimates for KZ-2 have been adjusted by a factor of 2.5 to ensure floods are not underestimated (Table 3-22).

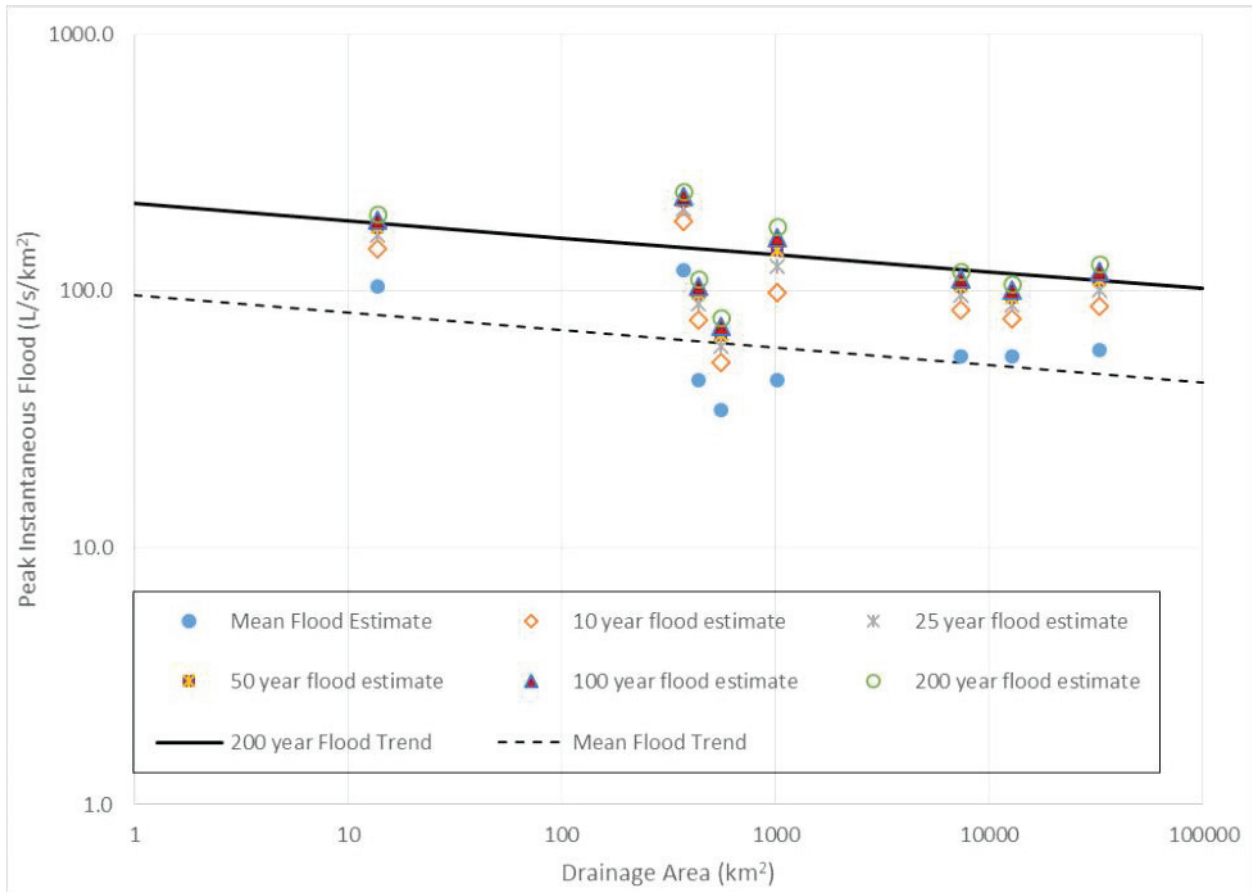


Figure 3-10: Drainage Area Versus Instantaneous Flood (L/s/km²)

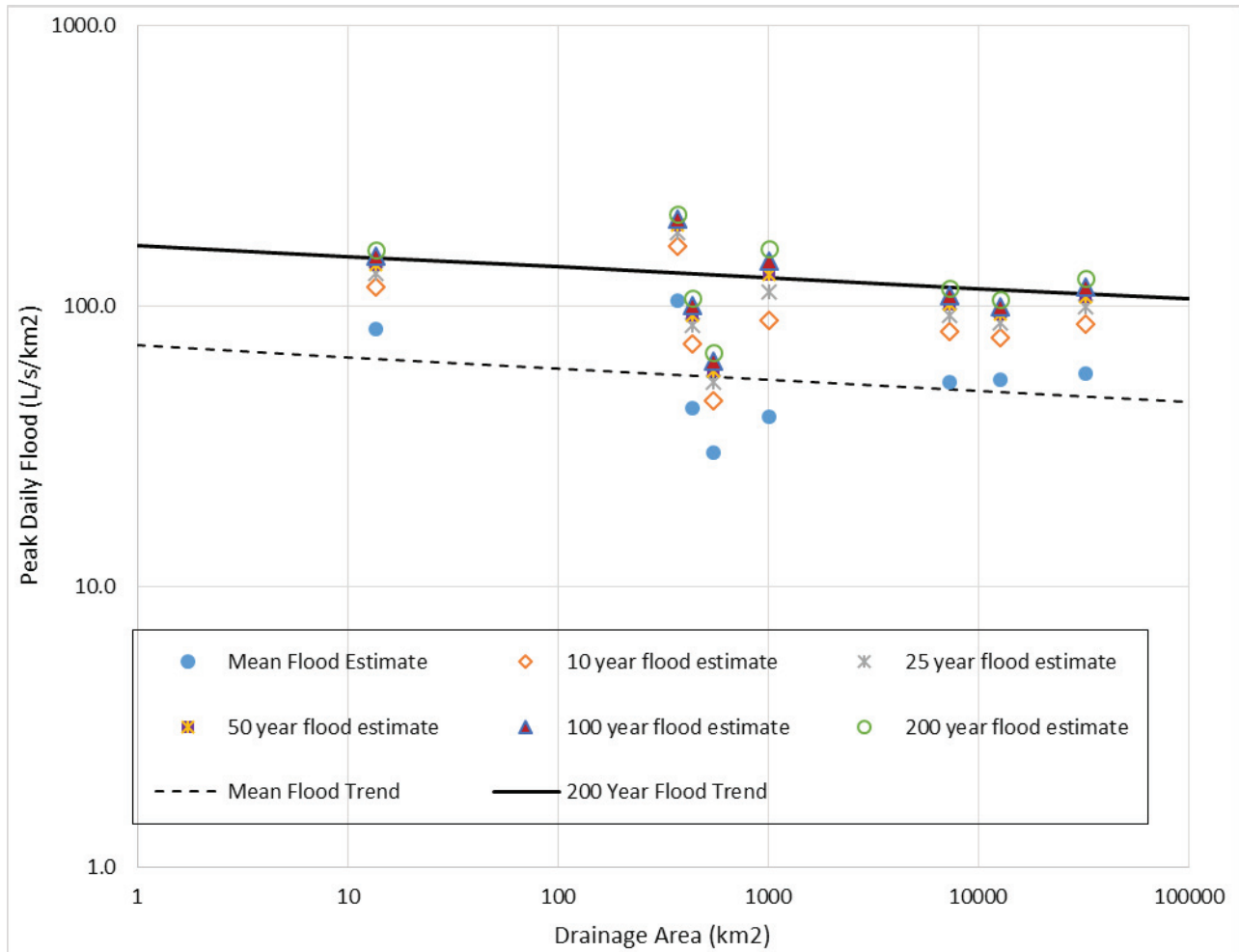


Figure 3-11: Drainage Area versus Daily Flood (L/s/km²)

Table 3-21: Flood Predictions (L/s/km²) for Select KZK Catchments and Predictive Equations

Return Period - T _p	Site				Equation, where x = area (km ²)		R-Squared	
	KZ-9		KZ-17		Inst.	Daily	Inst.	Daily
	Inst.	Daily	Inst.	Daily				
1/2 (mean)	79.4	64.5	77.0	63.4	= 96.281x ^{-0.068}	= 72.193x ^{-0.04}	0.156	0.062
1/10	127.7	103.5	123.7	101.6	= 155.76x ^{-0.071}	= 116.79x ^{-0.043}	0.196	0.085
1/25	146.9	119.1	142.3	116.9	= 178.67x ^{-0.07}	= 133.97x ^{-0.042}	0.197	0.084
1/50	135.1	129.3	135.4	127.0	= 193.49x ^{-0.069}	= 145.08x ^{-0.041}	0.196	0.082
1/100	171.4	138.6	166.3	136.1	= 206.75x ^{-0.067}	= 155.02x ^{-0.04}	0.194	0.079
1/200	181.8	147.5	176.6	145.0	= 218.75x ^{-0.066}	= 164.02x ^{-0.038}	0.191	0.076

Table 3-22: Flood Predictions (L/s/km²) for KZ-2

Return Period - T _p	KZ-2 - predicted by regional trend (L/s/km ²)		KZ-2 Multiplied by 2.5 (L/s/km ²)	
	Inst.	Daily	Inst.	Daily
1/2 (mean)	92.0	70.3	230	176
1/10	148.7	113.5	372	284
1/25	170.6	130.3	427	326
1/50	133.8	141.2	335	353
1/100	197.8	151.0	495	377
1/200	209.5	160.0	524	400

3.3 DISCUSSION

Regional data are not yet available for 2015 for direct comparison to those data gathered on site at Kudz Ze Kayah. However, the above analyses were able to make use of the historic data collected on site to draw some comparisons between the hydrological character of the site and the region. This allowed for more informed analyses of the regional data and more refined estimates for the site than the 1995 report. The mean annual unit runoff estimate for the Project of 388 mm for KZ-9 catchment is 6 percent lower than the previous estimate of 414 mm. This new best estimate is validated based on the estimate mean annual precipitation and scrutiny of the available hydrometric data. These findings will allow the design and water management plans to be more informed and appropriate for the hydrological character of the site.

4 CONCLUSION

Data collected in 1995 and in 2015 to 2016 indicate that average temperatures at Kudz Ze Kayah were comparable to those of regional stations for the same period, but were warmer than long-term averages at regional stations. The diurnal and annual temperature range at Kudz Ze Kayah appears to be smaller than at regional stations.

Total annual precipitation recorded at Kudz Ze Kayah in 2015-2016 was greater than at regional stations (Watson Lake A and Faro A), but not as much as expected when accounting for the elevation difference between the sites. A correction was necessary to produce a realistic precipitation value closer to the predicted regional amount. Overall, both 1995 and 2015 to 2016 appear to have been drier years than average (less precipitation and lower snowpack) when compared to the long term regional record. Mean annual precipitation is estimated to be 612 mm for the KZ-9 catchment with a median elevation of 1497 masl. This is slightly lower than previous estimates and indicates the site may be slightly drier than the regional data alone would predict.

Winds at the Kudz Ze Kayah site blow predominantly from the northwest to northeast and average and maximum wind speeds are relatively high. Relative humidity and barometric pressure at Kudz Ze Kayah are generally consistent with regional patterns and solar radiation peaks in July and is at a minimum in December. Pan evaporation measurements and evapotranspiration calculations at Kudz Ze Kayah for the 2015 to 2016 period correlate relatively well with 1995 measurements and estimates. Actual evapotranspiration is estimated to be 180 mm while sublimation will range depending on snowfall but may be approximately 30 percent of total snowfall.

The hydrological regime at Kudz Ze Kayah is slightly drier than the regional average. This is supported by both the meteorological data and the hydrometric data gathered on site. The first year of data collection has formed an outline of what sort of water volumes to expect at this site and it does not support the use of simple, traditional regional analyses approaches to estimating water inputs and outputs to and from the site. The best estimates provided consider both the regional analyses and the local data to come up with inputs for working models for the site. The estimated mean annual unit runoff for the KZ-9 catchment is 388 mm.

5 REFERENCES

- Alexco Environmental Group Inc., 2016. *Standard Operating Protocol, Surface Water Hydrology, Data Collection and Management*. Available from Alexco Environmental Group.
- Allen, Richard G. 2015. *REF-ET Reference Evapotranspiration Calculator Version 4.1.06182015, for support of ASCE Manual 70 (1990) and 2205 ASCE Standardization and FAO Irrigation and Drainage Paper No.56: Crop Evaporation*. University of Idaho, Research and Extension Center. Kimberly, Idaho 83341.
- Bonnaventure, P.P. and Lewkowicz, A.G., 2013. *Impacts of mean annual air temperature change on a regional permafrost probability model for the southern Yukon and northern British Columbia, Canada*. *The Cryosphere*, 7, 935-946.
- Canadian Wildlife Service. 1989. *Ecoclimatic Regions of Canada. Ecological land classification series, number 23*. Environment Canada.
- Cominco Ltd. 1996. *Initial Environmental Evaluation Kudz Ze Kayah Project*, Yukon Territory
- Environment Canada. 2016a. *Historical Climate Data*. http://climate.weather.gc.ca/index_e.html#access
- Environment Canada. 2016b. *Canadian Climate Normals*.
http://climate.weather.gc.ca/climate_normals/index_e.html
- Environment Yukon. 2015. *Yukon Snow Survey & Water Supply Forecast*. http://www.env.gov.yk.ca/air-water-waste/snow_survey.php
- Fisheries and Environment Canada, Government of Canada. 1978. *Hydrological Atlas of Canada*.
[http://geogratis.gc.ca/api/en/nrcan-rncan/ess-sst/-/\(urn:iso:series\)hydrological-atlas-of-canada?sort-field=relevance](http://geogratis.gc.ca/api/en/nrcan-rncan/ess-sst/-/(urn:iso:series)hydrological-atlas-of-canada?sort-field=relevance)
- Food and Agriculture Organization of the United States (FAO). 1998. *Crop evapotranspiration – Guidelines for computing crop water requirements – FAO Irrigation and drainage paper 56*.
- Intergovernmental Panel on Climate Change (IPCC). 2013. *Climate Change 2013. The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the IPCC*.
- Ketza River Holdings Ltd. 2010. *Project Proposal Application for District Level Assessment Type B Water License for the Ketza River Mine, YT*. Ketza River Holdings Ltd.
- Liston, G.E. and Sturm, M. 2004. *The role of winter sublimation in the Arctic moisture budget*. *Nordic Hydrology*, 35:4, 325-334.

- Mekis, É and Vincent, L.A. 2011. *An Overview of the Second Generation Adjusted Daily Precipitation Dataset for Trend Analysis in Canada*. Atmosphere-Ocean, 49:2, 163-177, DOI: 10.1080/07055900.2011.583910.
- Ministry of Environment (MOE) Science and Information Branch, Government of British Columbia, 2009. *Manual of British Columbia Hydrometric Standards, Version 1.0*. The province of British Columbia for the Resources Information Standards Committee.
- National Oceanic and Atmospheric Administration (NOAA). 2014. *State of the Climate: Global Analysis for January 2014*. National Centers for Environmental Information. February 2014. <https://www.ncdc.noaa.gov/sotc/global/201401>
- Smith, Craig D. 2007. *Correcting the Wind Bias in Snowfall Measurements Made with a Geonor T-200B Precipitation Gauge and Alter Wind Shield*. 14th Symposium on Meteorological Observation and Instrumentation. Session 1: Hydrological Measurements. 15 January 2007.
- Yukon Zinc Corporation. 2011. *Wolverine Project Monitoring and Surveillance Plan. Version 2011-03*. Prepared for Yukon Energy, Mines and Resources. October 28, 2011. http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_monitoring_and_surveillance_plan_version_2011_03.pdf
- Yukon Zinc Corporation. 2011a. *Wolverine Mine Monitoring and Surveillance Plan Annual Report*. Prepared for Yukon Energy, Mines and Resources. March 31, 2011. http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_monitoring_and_surveillance_2010_annual_report.pdf
- Yukon Zinc Corporation. 2012. *Wolverine Mine Monitoring and Surveillance Plan 2011 Annual Report*. Prepared for Yukon Energy, Mines and Resources. March 31, 2012. http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_2011_monitoring_and_surveillance_annual_report.pdf
- Yukon Zinc Corporation. 2013. *Wolverine Mine Monitoring and Surveillance Plan 2012 Annual Report*. Prepared for Yukon Energy, Mines and Resources. March 31, 2013. http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_2012_annual_msr.pdf
- Yukon Zinc Corporation. 2014. *Wolverine Mine Monitoring and Surveillance Plan 2013 Annual Report*. Prepared for Yukon Energy, Mines and Resources. March 31, 2014. http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_2013_monitoring_and_surveillance_plan_annual_report.pdf
- Yukon Zinc Corporation. 2015. *Wolverine Mine Monitoring and Surveillance Plan 2014 Annual Report*. Prepared for Yukon Energy, Mines and Resources. March 31, 2015. http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_2014_monitoring_surveillance_report.pdf

Yukon Zinc Corporation. 2016. Wolverine Mine 2015 Annual Report, Water Use Licence QZ04-065, Quartz Mining Licence QML-0006. Prepared for Yukon Energy, Mines and Resources and Yukon Water Board. February 26, 2016.
http://www.emr.gov.yk.ca/mining/pdf/mml_wolverine_2015_annual_report_20160226.pdf

APPENDIX A

CAMPBELL SCIENTIFIC METEOROLOGICAL STATION COMPONENTS AND PHOTO

Project Campbell Scientific Meteorological Station Component List

Component	Model	Serial Number
Air Temperature and Relative Humidity Sensor	HC-S3-XT-L	61431525
Total Precipitation Gauge	Geonor T-200B (3 sensors)	T1: 44415 T2: 44515 T3: 44615
Wind Speed and Direction Sensor	RM Young 05103AP-10-L	WM139088
Barometric Pressure Sensor	Vaisala CS106	L1250653
Pyranometer	Kipp & Zonen CMP3-L	151852
Solar Panel	MSX50R	n/a
Datalogger	CR1000-XT	72240
Battery	BP100	C1237
Iridium Modem	9522B	300025010847390
Iridium Modem Interface	COM9522B	1141



Project Campbell Scientific Meteorological Station Photograph

APPENDIX B

KUDZ ZE KAYAH HOURLY METEOROLOGICAL DATA 2015-2016 AND PAN EVAPORATION DATA

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
25/08/2015 16:00	6	13.88	101.8006	3.471	3.471	307.4	20.39	7.389	277.6228	0.980008628	1020.644	6.653	82.6	832.6916	1.082	833.1968	834.1337	830.7443	1.306	1.002	0.896	2654.558	2655.328	2654.958	0.12	
25/08/2015 17:00	7	13.41	13.08	3.936	3.936	240.4	14.98	7.86	271.9761	0.979114005	1020.65	6.517	81.1	832.8887	0.094	834.0793	833.528	831.0588	0.111	0.111	0.043	2654.324	2654.146	2655.852	0.1	
25/08/2015 18:00	8	13.37	13.14	1.177	1.177	236.1	33.3	2.803	238.3768	0.858156352	1020.399	8.16	66.45	833.6237	0.124	834.1103	833.6237	830.7755	0.161	0.161	0.015	2654.085	2654.419	2655.576	0.09	
25/08/2015 19:00	9	13.16	12.98	4.067	4.067	245.1	17.08	8.39	51.6494	0.185937928	1020.502	6.468	75.65	832.7957	0.327	833.5507	834.3378	830.4986	0.366	0.398	0.168	2652.565	2653.826	2655.193	0.01	
25/08/2015 20:00	10	13.01	12.93	3.478	3.478	224.5	12.96	5.547	37.46672	0.134880193	1020.536	6.438	72.43	832.8293	0.024	833.509	834.4929	830.4859	0.03	0.026	0.013	2653.576	2655.237	2655.201	0.01	
25/08/2015 21:00	11	12.95	12.89	2.145	2.145	233.4	25.63	3.508	0.5133823	0.001848175	1020.599	5.359	70.01	832.8372	0.076	833.597	834.4469	830.4678	0.094	0.086	0.035	2653.742	2655.221	2655.188	0	
25/08/2015 22:00	12	12.91	12.88	3.625	3.625	221.2	6.785	4.253	0	0	1020.599	4.902	71.88	832.8325	0.082	833.6262	834.4507	830.4207	0.103	0.083	0.054	2653.664	2655.204	2655.218	0.01	
25/08/2015 23:00	13	12.89	12.86	2.757	2.757	224.7	11.6	4.038	0	0	1020.595	4.738	73.93	832.8235	0.097	833.6425	834.4404	830.3876	0.122	0.102	0.053	2654.012	2655.327	2655.066	0	
26/08/2015 0:00	14	12.88	12.85	4.141	4.141	212.9	5.655	5.018	0	0	1020.599	4.431	78.43	832.8127	0.105	833.6597	834.3887	830.3897	0.132	0.114	0.054	2653.582	2654.969	2655.227	0	
26/08/2015 1:00	15	12.87	12.84	4.068	4.068	195.4	10.67	5.802	0	0	1020.272	5.327	76.11	832.8044	0.094	833.6174	834.4586	830.337	0.118	0.099	0.054	2653.851	2655.146	2654.93	0	
26/08/2015 2:00	16	12.87	12.84	3.616	3.616	217.7	8.52	5.762	0	0	1019.944	4.967	75.52	832.8098	0.072	833.65	834.431	830.3486	0.091	0.077	0.036	2653.816	2655.141	2655.054	0	
26/08/2015 3:00	17	12.86	12.83	5.058	5.058	226	6.593	7.056	0	0	1019.78	4.78	76.8	832.7876	0.276	833.7218	834.3144	830.3265	0.286	0.323	0.204	2654.033	2655.247	2655.069	0.01	
26/08/2015 4:00	18	12.85	12.83	5.278	5.278	230.4	5.591	6.194	0	0	1019.78	4.482	78.03	832.8514	0.215	833.8413	834.4331	830.2798	0.245	0.129	0.129	2654.095	2655.33	2654.992	0.01	
26/08/2015 5:00	19	12.85	12.82	5.308	5.308	229.2	5.385	6.135	0	0	1019.289	4.179	79.13	832.7703	0.289	833.6274	834.3392	830.3446	0.342	0.33	0.159	2654.725	2655.628	2655.016	0.01	
26/08/2015 6:00	20	12.87	12.82	4.657	4.657	224.3	9.92	6.154	10.16515	0.036594528	1019.125	3.866	75.37	832.8155	0.139	833.5698	834.7103	830.1665	0.17	0.152	0.077	2653.878	2655.438	2654.576	0.01	
26/08/2015 7:00	21	13.07	12.84	5.049	5.049	237.1	4.86	6.664	99.95135	0.359824951	1018.955	4.357	72.41	832.7588	0.308	832.7686	830.0724	830.0724	0.385	0.334	0.16	2652.596	2656.543	2654.752	0.02	
26/08/2015 8:00	22	13.88	13.07	4.548	4.548	235.1	7.265	6.429	227.6412	0.819508414	1018.749	6.173	64.81	832.6912	0.144	832.26	835.3625	830.451	0.191	0.133	0.09	2652.026	2656.354	2655.198	0.12	
26/08/2015 9:00	23	14.26	13.88	3.847	3.847	246.7	9.64	6.037	363.5733	1.308863971	1018.187	7.664	56.53	831.8474	0.292	835.0173	835.0173	830.451	0.317	0.188	0.188	2652.787	2656.383	2654.922	0.18	
26/08/2015 10:00	24	14.29	13.78	4.436	4.436	233.8	16.53	7.272	443.1846	1.595464732	1017.644	8.52	50.61	832.6882	0.331	832.7239	834.7489	830.5916	0.355	0.395	0.218	2652.499	2655.515	2655.328	0.23	
26/08/2015 11:00	25	13.95	13.81	4.333	4.333	231.7	17.65	7.35	441.3498	1.588859255	1017.314	8.81	49.75	832.6497	0.325	832.6412	834.4825	830.8253	0.426	0.297	0.215	2653.152	2654.883	2654.945	0.24	
26/08/2015 12:00	26	13.94	13.78	4.886	4.886	238.9	15.81	8.31	456.5978	1.643752262	1016.656	8.94	50.86	832.5963	0.44	832.8588	834.1473	830.7828	0.432	0.555	0.294	2652.775	2655.212	2654.781	0.25	
26/08/2015 13:00	27	14.38	13.7	4.144	4.144	231.6	18.24	7.409	588.9075	2.120066685	1016.328	9.83	48.49	832.155	2.178	832.0126	833.2166	831.2355	3.156	2.054	0.236	2652.972	2654.33	2656.242	0.31	
26/08/2015 14:00	28	14.33	14	4.798	4.798	220.1	17.68	8.62	612.5066	2.205022978	1015.345	10.35	50	832.5799	0.443	833.0814	831.2509	831.2509	0.488	0.305	0.305	2652.98	2653.951	2656.544	0.32	
26/08/2015 15:00	29	14.18	13.99	5.948	5.948	206.3	14.54	9.51	592.49	2.132963224	1014.358	10.85	50.71	832.5721	0.643	833.5672	832.9778	831.1713	0.709	0.768	0.384	2654.31	2653.052	2656.126	0.31	
26/08/2015 16:00	30	14.09	13.77	6.838	6.838	205.9	12.49	10.8	549.5213	1.97827605	1013.44	11.36	48.43	832.5503	0.511	833.6873	833.131	830.8326	0.579	0.579	0.335	2654.092	2653.414	2655.57	0.31	
26/08/2015 17:00	31	13.99	13.53	8.32	8.32	207.5	11.11	13.47	397.0951	1.429542305	1012.215	11.33	44.54	832.4747	2.497	832.3375	834.4379	830.6487	2.567	3.215	1.332	2654.448	2653.795	2654.836	0.26	
26/08/2015 18:00	32	13.54	13.35	9.56	9.56	210.4	8.89	14.54	160.3115	0.577121302	1011.499	10.78	40.92	832.2568	1.041	833.5206	832.9567	830.2933	0.953	1.253	0.879	2654.398	2655.305	2655.939	0.19	
26/08/2015 19:00	33	13.36	13.23	9.61	9.61	211	7.723	13.43	110.3377	0.397215591	1010.762	10.55	44.27	831.9922	1.552	832.4334	833.4265	830.1168	2.172	1.201	1.032	2652.753	2656.605	2652.939	0.07	
26/08/2015 20:00	34	13.24	13.15	8.87	8.87	212.1	7.559	12.15	16.87518	0.060750668	1010.298	9.69	50.46	832.1267	0.828	833.0881	833.4937	829.7983	0.655	0.978	0.82	2651.511	2651.177	2655.059	0.05	
26/08/2015 21:00	35	13.17	13.12	8.05	8.05	216	9.69	11.25	0.02036774	7.33239E-05	1009.659	9.48	51.02	831.9429	0.549	832.8993	833.176	829.7534	0.59	0.596	0.45	2650.367	2652.064	2653.33	0.05	
26/08/2015 22:00	36	13.14	13.1	7.738	7.738	215.1	8.36	10.37	0	0	1009.016	9.38	49.86	831.9476	0.635	832.811	833.305	829.7269	0.636	0.619	0.619	2652.601	2654.12	2654.354	0.05	
26/08/2015 23:00	37	13.13	13.09	7.349	7.349	217.8	8.55	11.31	0	0	1009.019	8.73	53.01	831.8013	0.325	832.7989	833.3865	829.2188	0.35	0.37	0.239	2651.858	2653.197	2654.214	0.04	
27/08/2015 0:00	38	13.12	13.09	4.671	4.671	213.9	13	8.82	0	0	1009.072	6.557	70.77	832.1489	0.238	833.2939	833.6656	829.4874	0.217	0.279	0.212	2653.85	2654.43	2654.01	0.01	
27/08/2015 1:00	39	13.11	13.08	4.01	4.01	217.6	12.01	6.919	0	0	1008.314	4.869	82.8	832.5253	0.147	834.4895	834.7128	830.5544	0.164	0.178	0.079	2654.973	2655.422	2655.315	0	
27/08/2015 2:00	40	13.1	13.07	2.726	2.726	217.4	18.35	5.586	0	0	1007.66	4.236	86.5	833.7351	0.267	834.9912	835.1646	831.0495	0.315	0.272	0.203	2655.512	2656.38	2656.342	-0.01	
27/08/2015 3:00	41	13.09	13.06	4.862	4.862	226.3	7.511	7.487	0	0	1007.004	3.929	84.9	834.0461	0.428	835.1505	835.4075	831.58	0.391	0.414	0.414	2655.681	2655.923	2656.099	0	
27/08/2015 4:00	42	13.08	13.05	5.743	5.743	236.3	8.04	8.53	0	0	1006.595	3.794	86.4	834.1524	0.467	835.1694	835.4362	831.8516	0.436	0.475	0.488	2655.979	2657.281	2657.146	0	
27/08/2015 5:00	43	13.08	13.05	6.997	6.997	239.9	7.006	9.56	0	0	1006.185	3.875	88	834.3423	0.511	835.3929	835.6732	831.9609	0.49	0.553	0.487	2654.949	2656.563	2656.888	0	
27/08/2015 6:00	44	13.07	13.04	6.767	6.767	245.6	6.384	9.74	2.621112	0.009436002	1005.858	3.566	92.1	834.3791	0.569	835.6128	832.0733	835.6128	0.577	0.628	0.494	2656.465	2657.263	2656.521	0	
27/08/2015 7:00	45	13.1	13.04	6.177	6.177	246.1	5.257	7.918	17.02694	0.061296984	1005.366	3.376	97.1	834.4209	0.468	835.5355	835.8153	831.9117	0.458	0.469	0.469	2656.338	2657.348	2656.088	0	
27/08/2015 8:00	46	13.28																								

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
29/08/2015 6:00	92	13.13	13.1	2.909	2.909	134.2	8	4.155	3.030644	0.01091032	1000.289	3.977	98.4	836.0063	0.151	837.4627	837.3756	833.1808	0.154	0.189	0.095	2658.424	2658.613	2658.63	-0.01
29/08/2015 7:00	93	13.24	13.1	3.788	3.788	139.9	11.01	6.488	33.17869	0.119443283	999.9612	4.034	98.2	836.0109	0.276	837.4185	837.3874	833.2268	0.321	0.307	0.179	2658.594	2658.906	2658.511	0
29/08/2015 8:00	94	13.47	13.22	4.243	4.243	140.8	13.13	6.233	74.97933	0.269925564	999.6196	4.377	96.4	836.3318	0.223	837.851	837.661	833.4838	0.207	0.164	0.164	2659.133	2659.75	2659.484	0.01
29/08/2015 9:00	95	14.63	13.45	4.152	4.152	124	13.06	7.134	137.9391	0.496580726	998.9299	5.141	93.6	836.2897	0.305	837.7872	837.7386	833.3432	0.37	0.341	0.159	2658.866	2658.815	2659.033	0.06
29/08/2015 10:00	96	14.64	14.09	5.049	5.049	133.2	7.59	7.37	218.2473	0.785690234	998.5896	5.744	89.7	836.3486	0.343	838.0047	837.7364	833.3047	0.395	0.386	0.219	2659.152	2659.599	2658.657	0.09
29/08/2015 11:00	97	14.64	14.17	5.071	5.071	132.1	8.17	7.311	237.9952	0.856782611	997.9271	5.902	89	836.4458	0.307	838.1775	837.7906	833.3693	0.36	0.356	0.16	2659.049	2658.565	2658.913	0.1
29/08/2015 12:00	98	14.2	14.11	5.704	5.704	132	9.98	8.21	326.9425	1.17699316	997.4817	6.432	85.1	836.4158	0.313	838.0724	837.6811	833.4939	0.406	0.316	0.171	2658.24	2658.667	2658.667	0.13
29/08/2015 13:00	99	14.2	14.08	5.666	5.666	132.2	9.48	8.29	313.138	1.12729679	996.5747	6.821	82.7	836.4586	0.41	837.8134	837.7391	833.8232	0.463	0.428	0.328	2658.92	2659.653	2659.287	0.14
29/08/2015 14:00	100	14.63	13.96	6.145	6.145	121.3	8.54	10.13	201.7921	0.72645134	995.9198	6.888	83.6	836.6196	0.627	837.7469	838.001	834.1111	0.637	0.707	0.523	2658.351	2660.212	2660.221	0.1
29/08/2015 15:00	101	14.5	13.97	6.626	6.626	128.1	11.76	11.76	199.4015	0.7178453	995.2648	7.239	79.52	836.4543	0.592	837.5857	837.8372	833.9398	0.709	0.564	0.48	2657.478	2660.54	2659.361	0.11
29/08/2015 16:00	102	14.44	13.89	6.783	6.783	123.5	9.65	10.53	182.7554	0.657919627	995.1011	7.382	81.7	836.5036	0.505	837.72	837.6892	834.1015	0.527	0.554	0.424	2659.156	2658.613	2659.111	0.09
29/08/2015 17:00	103	13.98	13.8	6.19	6.19	130	9.31	9.6	130.9344	0.471363834	994.4462	7.12	83.8	836.8049	0.626	837.9011	837.9989	834.5146	0.608	0.655	0.613	2659.365	2659.172	2659.939	0.07
29/08/2015 18:00	104	13.84	13.74	8.07	8.07	125.8	7.093	11.64	96.72716	0.348217883	993.3229	6.312	89.1	836.4998	0.769	837.5333	837.9113	834.8232	0.843	0.845	0.591	2658.886	2660.371	2659.386	0.04
29/08/2015 19:00	105	13.82	13.57	8.7	8.7	130.4	7.066	12.17	55.37551	0.199351791	992.6707	6.791	82.1	836.7108	0.793	837.856	837.9774	834.299	0.99	0.732	0.608	2659.998	2660.421	2660.7	0.05
29/08/2015 20:00	106	13.59	13.39	6.832	6.832	134.3	8.79	10.29	16.84077	0.060626785	992.3435	6.678	82.8	836.7349	0.588	837.6472	838.0285	834.5289	0.611	0.539	0.539	2659.603	2660.249	2660.024	0.01
29/08/2015 21:00	107	13.41	13.28	5.67	5.67	148.2	8.07	8.27	0	0	991.8702	6.781	79.31	836.6911	0.461	837.8647	837.8647	834.403	0.453	0.548	0.362	2658.553	2659.385	2661.553	0.01
29/08/2015 22:00	108	13.3	13.23	4.475	4.475	139.8	11.26	7.35	0	0	991.5367	6.761	80.1	836.6447	0.328	837.9477	837.8914	834.095	0.328	0.387	0.254	2659.848	2660.17	2659.402	0.01
29/08/2015 23:00	109	13.25	13.2	4.955	4.955	123.1	11.03	8.62	0	0	990.8978	5.835	88.8	836.6401	0.446	837.7949	837.9661	834.1595	0.495	0.479	0.35	2658.227	2660.397	2660.182	0
30/08/2015 0:00	110	13.21	13.17	5.032	5.032	134.9	10.2	8.43	0.005602461	2.01689E-05	990.623	4.129	93.7	837.9638	0.209	839.3146	839.2341	835.3426	0.194	0.23	0.202	2660.958	2661.061	2661.43	0
30/08/2015 1:00	111	13.19	13.15	3.87	3.87	144.7	22.23	6.311	0	0	990.1335	3.881	94.8	838.2923	0.089	839.6206	839.5352	835.7212	0.109	0.092	0.06	2661.501	2661.686	2661.984	0
30/08/2015 2:00	112	13.18	13.14	3.395	3.395	250.4	7.549	6.194	0	0	989.8059	3.199	95.4	838.6241	0.032	839.7728	839.8789	836.2205	0.035	0.026	0.026	2668.239	2668.168	2662.58	0
30/08/2015 3:00	113	13.17	13.13	1.65	1.65	231.4	37.4	2.528	0	0	989.4784	2.922	95.2	839.8332	0.029	840.9378	841.0646	837.497	0.029	0.033	0.024	2663.171	2663.707	2664.237	0
30/08/2015 4:00	114	13.15	13.12	1.841	1.841	255.3	17.99	3.293	0	0	989.0688	2.453	96.6	841.2962	0.06	842.4694	842.485	838.9344	0.059	0.071	0.046	2665.014	2665.349	2666.095	0
30/08/2015 5:00	115	13.15	13.11	2.09	2.09	239.4	9.78	3.312	0	0	988.7413	1.889	93.7	842.4495	0.048	843.616	843.6443	840.088	0.053	0.052	0.039	2666.671	2667.033	2667.597	0
30/08/2015 6:00	116	13.14	13.1	1.254	1.254	219	50.92	3.352	1.130283	0.00406902	988.1688	1.281	93.8	843.6758	0.129	844.8272	844.8907	841.3094	0.153	0.15	0.063	2667.751	2668.43	2669.037	0
30/08/2015 7:00	117	13.16	13.1	1.553	1.553	198.8	57.92	2.607	11.15763	0.040167481	988.25	1.272	94.8	844.9475	0.028	844.9099	844.9475	841.415	0.028	0.03	0.025	2668.195	2668.622	2669.208	0
30/08/2015 8:00	118	13.29	13.14	1.162	1.162	255.4	12.11	2.509	34.69102	0.124887688	988.4138	1.735	96.4	843.7894	0.028	844.8791	845.0151	841.4739	0.029	0.03	0.023	2668.122	2668.717	2669.267	0
30/08/2015 9:00	119	14.47	13.26	0.488	0.488	126.9	51.05	1.764	107.426	0.386733657	988.4956	2.356	96	843.7866	0.01	844.7229	845.0214	841.6154	0.012	0.012	0.006	2667.934	2668.684	2669.454	0.05
30/08/2015 10:00	120	14.65	14.02	1.022	1.022	250.5	56.09	4.155	233.0109	0.83883933	988.3284	3.607	88.5	843.6064	0.094	844.8064	845.0303	840.9828	0.097	0.108	0.073	2667.789	2668.474	2668.79	0.1
30/08/2015 11:00	121	14.67	14.14	2.546	2.546	266.9	73.9	5.233	227.6646	0.819592685	988.4794	3.793	87.8	843.4614	0.305	844.6992	844.7376	840.9474	0.324	0.345	0.235	2668.239	2668.707	2668.906	0.1
30/08/2015 12:00	122	14.68	14	1.957	1.957	40.05	85.2	4.724	287.9273	1.036538426	988.4866	3.262	93.8	843.312	0.248	843.7463	844.3092	841.8805	0.251	0.257	0.237	2667.124	2668.289	2669.519	0.12
30/08/2015 13:00	123	14.63	14.19	2.964	2.964	197.4	81.7	5.527	458.95	1.652220106	988.234	5.085	74.27	843.3365	0.213	844.6307	844.4988	840.8799	0.221	0.239	0.173	2667.965	2668.41	2668.283	0.19
30/08/2015 14:00	124	14.65	13.98	3.293	3.293	345.7	70.18	11.25	243.3032	0.875891424	988.2778	3.76	87	843.481	0.249	844.9401	844.948	840.5547	0.222	0.246	0.277	2667.73	2668.157	2667.834	0.1
30/08/2015 15:00	125	14.24	14.07	3.047	3.047	317.4	95	6.076	459.4637	1.654069493	988.4036	5.343	74.64	843.2643	0.09	844.5822	844.3743	840.8364	0.098	0.108	0.053	2667.714	2667.91	2668.428	0.18
30/08/2015 16:00	126	14.23	14.04	3.2	3.2	351.4	20.07	5.214	232.884	0.838382513	988.0219	4.71	83.8	843.2867	0.26	844.6761	844.4633	840.7208	0.286	0.262	0.23	2667.629	2667.486	2668.186	0.09
30/08/2015 17:00	127	14.46	13.82	4.046	4.046	9.44	10.58	5.9	140.2019	0.504726659	987.8684	4.55	84.5	843.3245	0.284	844.7349	844.6024	840.636	0.232	0.278	0.232	2668.026	2668.214	2668.229	0.06
30/08/2015 18:00	128	13.88	13.73	3.166	3.166	9.07	9.02	5.743	86.9734	0.3131042	987.5675	3.905	89.6	843.473	0.241	844.8008	844.6225	840.9955	0.252	0.268	0.196	2667.525	2667.416	2668.838	0.03
30/08/2015 19:00	129	13.74	13.58	2.776	2.776	7.18	9.42	4.41	54.05887	0.19461197	987.5128	3.35	90.8	843.4899	0.166	844.8934	844.7327	840.8436	0.193	0.15	0.15	2667.991	2668.363	2668.664	0.01
30/08/2015 20:00	130	13.59	13.4	2.767	2.767	10.257	9.15	4.018	11.92804	0.042940941	986.9396	2.536	95.7	843.5874	0.132	844.875	844.8696	841.0175	0.131	0.144	0.12	2668.037	2668.462	2668.684	0
30/08/2015 21:00	131	13.42	13.3	2.544	2.544	7.17																			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
01/09/2015 20:00	178	13.82	13.61	6.652	6.652	283.1	6.463	9.15	4.535151	0.016326541	1007.471	-1.015	97.1	849.1934	0.475	851.0938	850.3166	846.1696	0.389	0.526	0.5	2677.298	2677.377	2675.737	0
01/09/2015 21:00	179	13.62	13.48	7.215	7.215	284.5	7.481	10.51	0.09809174	0.00035313	1007.881	-1.234	97	849.3453	0.529	851.2031	850.2911	846.5417	0.404	0.582	0.58	2676.501	2676.18	2674.619	0
01/09/2015 22:00	180	13.5	13.38	7.33	7.33	286.8	5.575	9.47	0.000764351	2.751666-06	1008.208	-1.547	96.8	849.4413	0.509	851.3794	850.4906	846.454	0.419	0.637	0.442	2676.938	2676.521	2676.488	0
01/09/2015 23:00	181	13.4	13.32	7.164	7.164	281	5.464	9.41	0.000509599	1.834566-06	1008.372	-1.778	96.5	849.6792	0.509	851.7043	850.8062	846.527	0.439	0.552	0.53	2677.16	2676.274	2675.816	0
02/09/2015 0:00	182	13.33	13.26	6.559	6.559	280.1	5.182	9.48	0	0	1008.536	-1.927	96.4	849.6292	0.394	851.6544	850.7302	846.5031	0.345	0.424	0.408	2676.252	2675.265	2675.285	0
02/09/2015 1:00	183	13.28	13.22	5.83	5.83	287	7.211	8.39	0.02064092	7.43073E-05	1008.7	-2.023	96.3	849.7529	0.36	851.8275	850.9406	846.4908	0.361	0.382	0.336	2677.141	2676.242	2674.663	0
02/09/2015 2:00	184	13.24	13.18	5.408	5.408	301.1	7.456	7.37	0.01376053	4.95379E-05	1009.191	-1.997	96.4	849.8013	0.389	851.9249	851.0583	846.4206	0.36	0.517	0.241	2676.549	2675.202	2675.855	0
02/09/2015 3:00	185	13.21	13.16	5.069	5.069	308.5	8.3	7.605	0.01248651	4.49514E-05	1009.847	-2.031	96.3	849.8455	0.264	851.9039	851.0941	846.5387	0.245	0.29	0.256	2676.852	2675.983	2675.725	0
02/09/2015 4:00	186	13.18	13.14	4.614	4.614	305.3	6.777	6.586	0	0	1010.338	-2.095	96.3	849.8387	0.223	851.8436	851.1232	846.5493	0.191	0.253	0.222	2677.051	2676.573	2675.726	0
02/09/2015 5:00	187	13.16	13.12	3.481	3.481	301.9	8.35	4.978	0	0	1010.993	-2.236	96.1	849.8943	0.119	851.8489	851.2261	846.6081	0.122	0.146	0.079	2677.039	2676.418	2675.867	0
02/09/2015 6:00	188	13.16	13.12	2.737	2.737	289.9	8.6	4.116	4.680917	0.016851301	1011.157	-2.437	95.9	849.9058	0.106	851.8368	851.2401	846.6403	0.1	0.128	0.084	2676.992	2676.604	2675.933	0
02/09/2015 7:00	189	13.48	13.15	2.303	2.303	271.4	10.15	3.371	49.31565	0.177536331	1011.734	-2.52	95.8	849.9233	0.113	851.7271	851.2621	846.7805	0.115	0.119	0.104	2676.868	2676.485	2676.07	0.01
02/09/2015 8:00	190	14.64	13.47	2.813	2.813	281.7	7.949	3.842	92.95068	0.3346252	1012.222	-2.323	96	849.8945	0.152	851.563	851.2292	846.8915	0.162	0.161	0.132	2676.61	2676.473	2676.238	0.02
02/09/2015 9:00	191	14.66	14.62	3.145	3.145	281	8.14	4.214	198.4336	0.714360767	1012.877	-1.99	96.1	849.7822	0.195	851.2848	851.1783	846.8834	0.177	0.234	0.167	2676.419	2676.667	2676.102	0.06
02/09/2015 10:00	192	14.67	14.4	2.635	2.635	282.2	12.23	4.194	247.0367	0.889331976	1013.451	-1.661	96.4	849.7988	0.192	851.3139	851.1034	846.9792	0.217	0.208	0.143	2676.239	2676.428	2676.342	0.07
02/09/2015 11:00	193	14.46	14.4	2.962	2.962	282.2	11.21	4.351	216.3783	0.778961915	1013.769	-1.525	96.5	849.8085	0.276	851.3517	851.1522	846.9216	0.306	0.304	0.207	2676.95	2676.903	2676.426	0.07
02/09/2015 12:00	194	14.43	14.34	3.5	3.5	282.2	12.57	6.919	395.5681	1.424045144	1014.132	-0.873	96.9	849.8152	0.244	850.9399	850.9963	847.5094	0.24	0.221	0.269	2675.65	2676.216	2677.368	0.11
02/09/2015 13:00	195	14.38	13.97	3.411	3.411	312.5	17.76	5.527	350.8327	1.262997627	1014.539	-0.412	97.3	849.3425	1.893	850.1701	850.937	846.9205	3.236	0.459	0.267	2676.202	2676.107	2676.003	0.1
02/09/2015 14:00	196	14.4	13.83	3.968	3.968	307.5	14.96	6.468	243.4467	0.876408382	1014.703	-0.057	97.6	849.7565	0.388	851.6818	851.0826	846.505	0.35	0.485	0.306	2676.213	2676.047	2675.797	0.07
02/09/2015 15:00	197	14.4	14.29	3.095	3.095	310.1	18.22	4.998	204.5568	0.736404434	1015.03	0.114	97.9	849.876	0.295	851.6028	851.2572	846.768	0.327	0.32	0.229	2676.032	2676.168	2676.264	0.06
02/09/2015 16:00	198	14.4	14.32	3.219	3.219	309.8	18.71	5.743	218.126	0.785253708	1015.276	0.14	98	849.9799	0.168	851.8781	851.1177	846.944	0.191	0.183	0.121	2676.926	2676.335	2676.187	0.06
02/09/2015 17:00	199	14.64	14.19	3.843	3.843	296.4	14.42	5.606	142.0999	0.511559723	1015.522	0.339	97.7	850.0016	0.239	851.9369	851.2921	846.7758	0.247	0.269	0.196	2677.194	2677.051	2676.166	0.03
02/09/2015 18:00	200	14.46	13.99	4.221	4.221	294.5	8.74	5.9	106.839	0.384620489	1015.686	0.62	96.3	850.0894	0.234	851.9568	851.4269	846.8846	0.258	0.162	0.162	2677.241	2677.041	2676.149	0.02
02/09/2015 19:00	201	14.02	13.74	3.075	3.075	283.1	20.68	5.233	28.90067	0.104042402	1016.177	0.529	96.7	850.0875	0.136	851.9521	851.4228	846.8875	0.15	0.156	0.095	2677.088	2676.688	2676.192	0
02/09/2015 20:00	202	13.75	13.55	3.462	3.462	273.6	12.1	5.998	6.691014	0.024087645	1016.51	0.467	96.4	850.063	0.25	852.0555	851.3588	846.775	0.275	0.221	0.25	2677.392	2676.427	2675.889	0
02/09/2015 21:00	203	13.57	13.44	3.578	3.578	276.2	11.54	5.978	0.006368689	2.29273E-05	1017.012	0.317	96.6	850.0886	0.282	852.1231	850.0886	846.749	0.238	0.368	0.216	2677.25	2676.843	2675.892	0
02/09/2015 22:00	204	13.45	13.35	3.114	3.114	271.3	12.26	5.037	0	0	1017.025	0.146	97.1	850.2443	0.185	852.2301	851.5764	846.9265	0.204	0.225	0.104	2677.47	2677.01	2676.226	0
02/09/2015 23:00	205	13.37	13.29	3.642	3.642	282.8	10.88	5.998	0	0	1017.107	0.194	96.3	850.2443	0.194	852.198	851.5948	846.9401	0.199	0.22	0.158	2677.174	2676.664	2676.326	0
03/09/2015 0:00	206	13.31	13.24	2.376	2.376	269.3	18.8	4.763	0	0	1017.364	0.151	95.4	850.2507	0.049	852.1744	851.5677	847.0099	0.043	0.058	0.043	2677.465	2677.129	2676.261	0
03/09/2015 1:00	207	13.26	13.21	2.581	2.581	266.4	10.92	3.9	0	0	1017.608	0.22	92.3	850.2542	0.047	852.1573	851.5967	847.0084	0.048	0.054	0.036	2677.367	2677.06	2676.308	0
03/09/2015 2:00	208	13.23	13.18	2.592	2.592	271.6	9.33	4.116	0	0	1017.688	0.265	91.4	850.2503	0.124	852.1502	851.5818	847.019	0.128	0.145	0.093	2677.379	2676.999	2676.314	0
03/09/2015 3:00	209	13.2	13.16	2.337	2.337	265.6	11.91	3.9	0	0	1018.01	0.288	91.4	850.2337	0.017	852.0968	851.6064	846.9978	0.016	0.017	0.017	2677.321	2677.076	2676.272	0
03/09/2015 4:00	210	13.18	13.14	2.094	2.094	274.6	13.31	3.861	0	0	1018.358	0.167	92.2	850.2378	0.059	852.1045	851.6145	846.9944	0.056	0.073	0.043	2677.384	2677.146	2676.209	0
03/09/2015 5:00	211	13.17	13.13	1.527	1.527	279.1	14.89	3.273	0	0	1018.503	0.191	92.4	850.2411	0.009	852.0528	851.6478	847.0228	0.01	0.009	0.007	2677.275	2677.128	2676.319	-0.01
03/09/2015 6:00	212	13.16	13.12	0.315	0.315	301.4	8.43	1.235	1.273391	0.004584209	1018.84	0.171	92.9	850.3448	0.005	852.1216	851.7604	847.1523	0.005	0.005	0.006	2677.363	2677.271	2676.488	-0.01
03/09/2015 7:00	213	13.24	13.12	0	0	0	8.4	0	24.05462	0.086596648	1019.158	0.215	93	850.3486	0.006	852.0695	851.7698	847.287	0.009	0.004	0.003	2677.289	2677.287	2676.559	-0.01
03/09/2015 8:00	214	13.69	13.23	1.025	1.025	117.7	23.05	2.842	64.57357	0.232464912	1019.305	0.262	93.5	850.4014	0.016	851.9059	851.9294	847.3689	0.021	0.015	0.01	2677.04	2677.5	2676.775	0.01
03/09/2015 9:00	215	14.67	13.69	2.836	2.836	110.8	17.7	5.527	340.2477	1.224891691	1019.453	1.243	84.9	849.9155	0.272	850.4231	851.9819	847.3413	0.287	0.316	0.2	2675.437	2677.135	2676.778	0.11
03/09/2015 10:00	216	14.68	14.61	2.223	2.223	103.5	21.24	4.782	478.5205	1.722673962	1019.583	2.593	76.03	849.7336	0.335	850.5869	851.3303	847.2838	0.398	0.236	0.349	2676.086	2676.309	2675.766	0.17
03/09/2015 11:00	217	14.67	13.96	1.952	1.952	126	25.9	4.41	551.																

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
05/09/2015 10:00	264	14.68	14.61	2.285	2.285	202.3	62.67	5.174	311.6212	1.121836372	1011.363	4.129	80.7	850.6556	0.431	852.7115	851.5425	847.7126	0.409	0.57	0.255	2677.99	2676.661	2677.324	0.13	
05/09/2015 11:00	265	14.66	14.21	3.597	3.597	194.4	30.75	5.684	182.9485	0.658614632	1011.86	3.925	81.5	850.7637	0.298	852.8779	851.6536	847.7597	0.338	0.338	0.194	2679.163	2677.507	2676.713	0.09	
05/09/2015 12:00	266	14.26	14.19	3.06	3.06	208.4	15.76	5.684	199.3832	0.717779675	1012.183	4.28	80.1	850.7148	0.359	852.7939	851.5325	847.8179	0.309	0.37	0.394	2679.76	2676.85	2677.481	0.1	
05/09/2015 13:00	267	14.27	14.19	4.731	4.731	220.8	19.59	8.13	251.3648	0.904913115	1012.351	4.467	80.1	850.7238	0.767	852.9017	851.2638	848.0059	0.742	0.922	0.604	2678.83	2678.032	2677.307	0.11	
05/09/2015 14:00	268	14.26	14.12	4.818	4.818	225.7	14.42	8.29	243.4076	0.876267261	1012.652	4.704	78.76	850.7576	0.241	852.6895	851.583	848.0003	0.232	0.307	0.161	2677.971	2677.012	2677.568	0.11	
05/09/2015 15:00	269	14.37	14.19	2.849	2.849	227.7	17.91	5.429	142.3496	0.512458733	1012.827	4.931	76.69	850.7839	0.111	852.7786	851.6892	847.8841	0.102	0.147	0.068	2678.251	2677.301	2677.439	0.08	
05/09/2015 16:00	270	14.48	14.07	2.018	2.018	227	18.93	3.959	129.6154	0.466615422	1013	4.809	79.82	850.831	0.057	852.8013	851.7939	847.8976	0.049	0.072	0.047	2678.135	2677.091	2677.305	0.06	
05/09/2015 17:00	271	14.24	13.92	2.313	2.313	224.8	23.72	4.038	106.8284	0.384582284	1013.007	4.732	81.8	850.8321	0.069	852.8869	851.7139	847.8954	0.08	0.049	0.075	2678.366	2677.24	2677.416	0.05	
05/09/2015 18:00	272	13.94	13.81	1.917	1.917	211.1	18.87	3.881	55.44667	0.199608077	1013.031	4.625	81.7	850.8576	0.027	852.9188	851.759	847.8949	0.03	0.032	0.017	2678.364	2677.34	2677.429	0.02	
05/09/2015 19:00	273	13.82	13.65	1.738	1.738	210.7	20.01	4.136	21.44127	0.077188555	1013.228	4.118	87.2	851.171	0.074	853.2932	852.0596	848.1602	0.077	0.081	0.061	2678.957	2677.735	2677.776	0	
05/09/2015 20:00	274	13.67	13.5	2.806	2.806	197.1	13.42	5.37	2.273123	0.008183242	1013.147	3.52	89.2	851.3921	0.124	853.4718	852.2816	848.4227	0.124	0.069	0.069	2679.236	2677.822	2678.082	0	
05/09/2015 21:00	275	13.51	13.4	1.874	1.874	199.8	44.16	3.41	0	0	1013.147	3.313	89.5	851.6772	0.013	853.7861	852.5583	848.6873	0.016	0.013	0.01	2679.486	2678.273	2678.438	0	
05/09/2015 22:00	276	13.42	13.33	1.367	1.367	221	79.6	2.744	0	0	1013.229	3.068	91.8	851.8117	0.013	853.9494	852.6734	848.8123	0.013	0.014	0.013	2679.668	2678.429	2678.614	0	
05/09/2015 23:00	277	13.34	13.28	0.604	0.604	245.9	29.07	2.097	0	0	1013.063	2.993	93.8	852.2731	0.011	854.3859	853.138	849.2954	0.01	0.01	0.012	2680.277	2679.051	2679.26	-0.01	
06/09/2015 0:00	278	13.29	13.24	0.718	0.718	215.9	53.36	2.783	0	0	1013.065	2.793	94.8	852.6619	0.031	854.795	853.5187	849.6718	0.033	0.038	0.018	2680.759	2679.499	2679.669	-0.01	
06/09/2015 1:00	279	13.25	13.2	0.303	0.303	188.9	22.44	2.156	0	0	1013.059	2.637	92	853.2236	0.007	855.3504	854.095	850.2254	0.007	0.008	0.007	2681.473	2680.254	2680.409	-0.01	
06/09/2015 2:00	280	13.22	13.18	0.614	0.614	139.9	21.84	2.234	0	0	1012.901	2.546	91.4	853.4717	0.028	855.5952	854.3444	850.4756	0.023	0.037	0.021	2681.805	2680.557	2680.691	-0.01	
06/09/2015 3:00	281	13.2	13.16	0.576	0.576	191.8	44.43	1.627	0	0	1012.737	2.583	91.2	853.674	0.006	855.8019	854.5469	850.673	0.006	0.006	0.005	2682.048	2680.818	2680.958	-0.01	
06/09/2015 4:00	282	13.18	13.15	0.344	0.344	119.8	42.93	1.784	0	0	1012.655	2.637	91.4	853.9141	0.004	856.0308	854.7938	850.9178	0.003	0.005	0.005	2682.332	2681.129	2681.279	-0.01	
06/09/2015 5:00	283	13.17	13.14	0.555	0.555	245.6	39.68	1.744	0	0	1012.573	2.521	93.4	854.2271	0.012	856.341	855.1093	851.2308	0.013	0.014	0.007	2682.734	2681.528	2681.674	-0.01	
06/09/2015 6:00	284	13.16	13.12	0.413	0.413	194.1	56.9	1.94	0.5662414	0.002038468	1012.41	2.638	90.4	854.5574	0.007	856.6797	855.439	851.5536	0.005	0.009	0.006	2683.167	2681.967	2682.082	-0.01	
06/09/2015 7:00	285	13.18	13.13	0.414	0.414	333.1	24.56	1.039	11.00606	0.039621823	1012.409	2.278	95.3	854.7601	0.004	856.8749	855.6434	851.7621	0.004	0.004	0.004	2683.41	2682.205	2682.349	-0.01	
06/09/2015 8:00	286	13.29	13.15	0.442	0.442	306	16.8	1.627	32.77137	0.117976953	1012.49	2.406	96.4	855.302	0.016	857.3897	856.189	852.3273	0.02	0.013	0.015	2684.086	2682.922	2683.085	0	
06/09/2015 9:00	287	13.46	13.27	0.513	0.513	323.9	32.18	1.627	50.48955	0.181762393	1012.41	2.56	97.3	855.6732	0.021	857.7607	856.5489	852.7098	0.021	0.024	0.017	2684.546	2683.358	2683.558	0.02	
06/09/2015 10:00	288	13.77	13.44	0.594	0.594	359.3	74.81	2.92	80.96635	0.291478779	1012.41	2.692	96.4	856.3937	0.071	858.6159	857.2228	853.3423	0.08	0.075	0.057	2685.581	2684.301	2684.384	0.04	
06/09/2015 11:00	289	14.45	13.77	2.31	2.31	308.9	17.32	3.802	104.8362	0.377410492	1012.573	2.688	96.5	856.9805	0.171	859.071	857.8513	854.9169	0.181	0.18	0.151	2685.946	2684.649	2685.098	0.04	
06/09/2015 12:00	290	14.65	14.26	3.283	3.283	319.7	10.42	4.586	167.5527	0.60318986	1012.737	2.727	96.5	857.1978	0.309	859.1911	858.0518	854.3505	0.354	0.342	0.21	2686.205	2685.043	2685.116	0.06	
06/09/2015 13:00	291	14.65	14.57	3.62	3.62	315	5.88	5.488	179.3803	0.645769094	1012.734	3.025	95	857.3914	0.49	859.5137	858.2707	854.3897	0.494	0.58	0.374	2687.203	2686.205	2686.835	0.07	
06/09/2015 14:00	292	14.65	14.16	3.718	3.718	307	12.37	5.194	190.1303	0.684469131	1012.73	3.27	94.6	857.6182	0.365	859.6133	858.4562	854.7849	0.37	0.424	0.288	2687.139	2686.22	2686.086	0.07	
06/09/2015 15:00	293	14.34	14.26	4.893	4.893	297.6	10.9	6.978	202.2512	0.728104218	1012.884	3.458	94.4	857.6765	0.451	859.8016	858.4727	854.7551	0.436	0.576	0.298	2687.202	2685.149	2686.347	0.07	
06/09/2015 16:00	294	14.34	13.97	4.833	4.833	300.7	9.91	7.076	119.5775	0.430478732	1012.901	2.982	95.9	857.7104	0.607	859.9678	858.5477	854.6156	0.562	0.735	0.5	2687.191	2688.229	2685.948	0.04	
06/09/2015 17:00	295	14.55	13.97	4.138	4.138	300.5	9.04	6.782	126.2862	0.454630324	1013.065	2.7	96.6	857.7549	0.276	859.8737	858.6285	854.7625	0.283	0.349	0.162	2687.281	2686.268	2686.469	0.04	
06/09/2015 18:00	296	14.17	13.82	3.371	3.371	305.7	13.92	5.645	51.65411	0.185954746	1013.065	2.727	95.7	857.7652	0.3	859.8461	858.6592	854.7903	0.296	0.346	0.25	2686.504	2685.76	2686.32	0.02	
06/09/2015 19:00	297	13.84	13.72	2.319	2.319	295.3	14.73	4.273	30.81842	0.110946301	1013.065	2.404	96.9	857.893	0.054	860.1107	858.7687	854.7996	0.051	0.06	0.052	2687.525	2686.183	2686.15	0.01	
06/09/2015 20:00	298	13.73	13.57	2.095	2.095	264.9	12.53	3.391	4.1769	0.015036843	1013.31	1.833	94	857.9434	0.051	860.1851	858.7906	854.8543	0.052	0.056	0.043	2687.478	2686.134	2686.232	0	
06/09/2015 21:00	299	13.58	13.46	1.796	1.796	243.7	11.37	3.156	0	0	1013.4	2.012	90.5	857.9936	0.029	860.1484	858.882	854.9504	0.03	0.032	0.026	2687.569	2686.322	2686.332	0	
06/09/2015 22:00	300	13.47	13.38	0.754	0.754	240.3	20.55	1.94	0	0	1013.229	2.3	89.1	858.0095	0.019	860.1019	858.9017	855.0249	0.019	0.022	0.015	2687.506	2686.319	2686.462	0	
06/09/2015 23:00	301	13.39	13.32	1.849	1.849	243.9	8.99	2.92	0	0	1013.236	2.049	88.8	858.0088	0.078	860.1769	858.8965	854.9528	0.075	0.086	0.071	2687.614	2686.271	2686.26	0	
07/09/2015 0:00	302	13.33	13.27	2.25	2.25	238.1	15.03	3.45	0	0	1013.255	1.819	87.4	858.0469	0.028	860.2075	858.9559	854.9774	0.028	0.033	0.021	2687.654	2686.452	2686.395	0	
07/09/2015 1:00	303	13.28	13.23	1.921	1.921	266	7.962	2.881	0	0	1013.429	1.974	85.2	858.0566	0.03	860.2495	858.9564	854.9642	0.029	0.032	0.03	2687.736	2686.417	2686.377	0	

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
09/09/2015 0:00	350	13.29	13.23	2.453	2.453	191.6	14.43	5.645	0	0	1010.116	2.945	70.47	857.7576	0.355	859.7846	858.5487	854.9398	0.347	0.439	0.256	2687.208	2686.256	2686.967	0.01	
09/09/2015 1:00	351	13.25	13.2	4.134	4.134	197.9	30.26	10.54	0	0	1009.953	3.218	70.99	857.8633	1.301	859.5289	858.4537	855.6072	1.215	1.715	0.812	2686.387	2684.893	2687.739	0.01	
09/09/2015 2:00	352	13.22	13.18	7.201	7.201	221.6	5.273	9.78	0	0	1009.953	3.993	69.56	857.9917	0.559	859.5931	858.5794	855.8026	0.561	0.659	0.436	2686.301	2684.981	2687.314	0.02	
09/09/2015 3:00	353	13.19	13.15	7.058	7.058	213.9	8.14	8.94	0	0	1009.789	3.775	73.65	858.0416	0.793	859.5385	858.6514	855.9349	0.63	0.977	0.733	2686.125	2685.908	2688.357	0.02	
09/09/2015 4:00	354	13.18	13.14	7.115	7.115	219.5	6.985	10.56	0	0	1009.625	4.247	73.05	857.8757	0.545	859.5298	858.4655	855.632	0.545	0.652	0.411	2687.644	2685.786	2687.445	0.02	
09/09/2015 5:00	355	13.17	13.13	6.748	6.748	215.8	8.7	10.11	0	0	1009.543	4.261	65.86	858.0948	0.944	859.345	858.6608	856.2785	0.906	0.89	1.031	2686.571	2687.932	2689.062	0.02	
09/09/2015 6:00	356	13.15	13.12	7.583	7.583	207.3	14.06	10.92	0.1362642	0.000490551	1009.625	4.112	67.37	857.9769	1	859.2617	858.577	856.092	0.857	1.243	0.848	2689.086	2688.422	2689.938	0.02	
09/09/2015 7:00	357	13.45	13.12	6.922	6.922	187.6	8.14	8.72	39.0927	0.140733704	1009.702	3.582	76.21	857.5385	0.755	858.4693	858.9084	855.2378	0.735	0.921	0.567	2684.558	2686.182	2688.9	0.02	
09/09/2015 8:00	358	14.67	13.45	3.764	3.764	133.7	17.45	5.958	156.3335	0.562800752	1009.707	4.668	73.83	857.7507	0.256	857.9484	859.3868	855.9168	0.218	0.345	0.173	2684.789	2686.875	2687.635	0.07	
09/09/2015 9:00	359	14.67	14.59	3.01	3.01	117.2	41.22	7.899	303.0573	1.091006241	1009.523	5.739	67.16	857.452	0.728	858.1502	858.5551	855.6506	0.682	0.935	0.5	2686.646	2687.477	2686.396	0.13	
09/09/2015 10:00	360	14.67	14	3.799	3.799	196.4	24.69	7.82	353.4798	1.272527356	1009.51	6.517	59.52	857.6084	0.558	857.8278	858.7698	856.2225	0.584	0.601	0.48	2685.367	2686.552	2688.496	0.17	
09/09/2015 11:00	361	14.14	14.02	6.028	6.028	203.7	17.94	10.78	441.4228	1.589122304	1009.34	6.658	57.76	857.582	1.164	857.4765	858.3474	856.9222	1.144	1.424	0.853	2683.702	2685.38	2688.115	0.21	
09/09/2015 12:00	362	14.1	13.98	6.96	6.96	207.1	12.1	11.66	541.5561	1.949602044	1009.474	7.236	56.46	857.5026	1.129	857.598	857.598	857.3024	0.963	1.103	1.297	2685.387	2684.577	2691.302	0.25	
09/09/2015 13:00	363	14.06	13.94	8.46	8.46	208.9	10.78	12.23	606.3582	2.182889556	1009.455	7.518	54.27	856.8691	2.521	856.7208	857.1373	856.749	3.926	1.483	1.208	2682.208	2683.848	2689.865	0.28	
09/09/2015 14:00	364	14.05	13.48	7.368	7.368	208.4	11.92	12.15	588.9745	2.120307981	1009.782	7.926	53.39	857.0945	0.832	856.6611	856.9348	855.6876	0.875	1.047	0.464	2685.721	2683.969	2687.411	0.28	
09/09/2015 15:00	365	14.13	13.98	5.56	5.56	198.1	15.73	9.6	313.0927	1.12713355	1009.486	7.634	54.16	857.5914	1.175	858.0907	858.0907	855.7639	0.974	1.536	0.913	2685.203	2680.656	2686.404	0.18	
09/09/2015 16:00	366	14.14	13.99	6.379	6.379	200.2	17.94	10.78	161.7414	0.582269133	1009.755	7.332	55.45	857.31	0.636	859.033	857.853	855.0439	0.647	0.828	0.33	2686.684	2685.513	2686.369	0.13	
09/09/2015 17:00	367	14.63	13.93	3.833	3.833	168.9	17.31	8.06	160.957	0.579445421	1009.51	7.643	53.98	857.3399	0.231	859.1568	858.0502	854.8127	0.206	0.308	0.153	2686.473	2685.293	2685.78	0.11	
09/09/2015 18:00	368	13.94	13.77	3.064	3.064	170.9	67.43	9.31	55.33451	0.199204272	1009.182	6.98	56.43	857.2905	0.562	859.0294	857.9011	854.9407	0.522	0.737	0.364	2686.755	2683.708	2687.43	0.05	
09/09/2015 19:00	369	13.79	13.6	7.798	7.798	206.3	10.87	13.66	18.64442	0.067119931	1009.188	6.386	58.78	857.326	0.501	859.1624	858.04	854.7756	0.476	0.605	0.399	2685.565	2684.49	2686.656	0.04	
09/09/2015 20:00	370	13.61	13.47	9.22	9.22	211.8	8.86	14.31	0.2368281	0.000852581	1009.217	6.102	61.94	857.7129	1.274	858.8883	858.3416	855.9087	1.225	1.345	1.25	2687.086	2687.903	2684.6	0.03	
09/09/2015 21:00	371	13.48	13.39	8.04	8.04	209.3	9.14	11.8	0	0	1009.563	6.021	63.98	857.4751	1.19	858.9808	858.0762	855.3682	1.052	1.448	1.023	2684.834	2684.167	2686.633	0.03	
09/09/2015 22:00	372	13.4	13.32	7.913	7.913	206.3	8.98	12.58	0	0	1009.238	5.639	65.03	857.7296	1.917	858.384	858.1974	856.6072	2.158	1.8	1.77	2684.473	2686.107	2689.163	0.03	
09/09/2015 23:00	373	13.34	13.27	9.65	9.65	212.7	9.41	14.84	0	0	1009.652	5.317	65.36	857.3474	1.217	858.7849	857.9705	855.2866	1.108	1.359	1.171	2685.882	2686.437	2688.047	0.03	
10/09/2015 0:00	374	13.29	13.24	4.683	4.683	192.7	19.46	8.15	0	0	1009.919	4.737	70.42	857.2048	0.695	859.1094	857.9152	854.5897	0.661	0.929	0.386	2685.803	2685.374	2686.494	0.02	
10/09/2015 1:00	375	13.25	13.2	4.475	4.475	171.4	30.51	9	0	0	1010.115	4.25	73.54	857.3332	0.477	859.2377	858.2144	856.5475	0.475	0.64	0.216	2686.201	2685.199	2686.002	0.01	
10/09/2015 2:00	376	13.22	13.18	4.77	4.77	181.9	32.07	11.09	0	0	1010.28	4.154	73.86	857.4575	0.254	859.2672	858.2334	854.8719	0.252	0.349	0.09	2686.439	2685.655	2686.349	0.01	
10/09/2015 3:00	377	13.2	13.16	4.744	4.744	201.5	26.83	9.11	0	0	1009.787	4.45	70.15	857.488	0.717	859.2949	858.1861	854.9832	0.659	0.806	0.677	2685.311	2684.848	2686.604	0.02	
10/09/2015 4:00	378	13.18	13.14	5.868	5.868	190	18.84	9.96	0	0	1010.116	4.147	72.72	857.4434	0.235	859.2119	858.2595	854.8589	0.225	0.28	0.191	2686.35	2685.3	2686.407	0.02	
10/09/2015 5:00	379	13.17	13.13	4.337	4.337	161.4	20.14	10.31	0	0	1009.461	3.682	78.46	857.4351	1.054	858.8947	858.0991	855.3112	1.104	0.977	1.077	2684.778	2685.918	2688.771	0.01	
10/09/2015 6:00	380	13.15	13.12	8.3	8.3	179.2	13.3	13.62	0	0	1009.461	3.444	82.2	857.3696	0.98	859.3841	858.0199	854.705	0.879	1.189	0.833	2685.718	2687.922	2686.514	0.01	
10/09/2015 7:00	381	13.19	13.12	5.707	5.707	170.1	17.14	11.7	11.69701	0.042109256	1009.134	3.422	83	857.7673	1.39	858.6473	858.3662	856.2885	1.142	1.244	1.244	2685.871	2683.926	2687.79	0.01	
10/09/2015 8:00	382	13.4	13.18	9.83	9.83	187.3	9.87	16.03	39.97789	0.143920402	1008.233	4.134	78.02	857.8141	3.214	856.9233	858.9465	857.5726	4.331	2.24	2.685	2685.055	2685.22	2692.878	0.05	
10/09/2015 9:00	383	13.8	13.4	11.55	11.55	204.1	11.83	18.44	95.23151	0.342833509	1008.291	4.793	76.07	858.1028	2.476	859.2381	858.7316	856.3389	2.672	1.867	1.867	2686.315	2688.103	2691.141	0.08	
10/09/2015 10:00	384	14.05	13.77	11.95	11.95	217.4	11.89	18.58	69.45336	0.250032173	1008.585	5.11	73.84	857.5059	1.414	859.4964	858.0412	854.98	1.712	1.374	1.085	2686.191	2684.555	2685.678	0.08	
10/09/2015 11:00	385	14.65	14	7.441	7.441	197	40.41	16.23	159.8398	0.575423273	1008.721	5.685	73.11	858.2401	3.511	858.0002	859.1406	857.5792	3.289	3.027	4.123	2686.958	2687	2688.112	0.1	
10/09/2015 12:00	386	14.66	14.6	12.49	12.49	208.7	8.84	18.38	206.8558	0.744680886	1008.372	6.195	70.99	858.1762	3.663	857.5463	859.7134	857.2689	3.631	3.7	3.659	2685.685	2692.681	2698.702	0.13	
10/09/2015 13:00	387	14.67	14.16	13.67	13.67	214.8	8.38	21.15	268.1561	0.965361962	1008.2	6.504	71.5	859.2183	8.08	851.9609	866.0838	859.6102	8.83	9.07	5.966	2683.361	2686.275	2686.016	0.14	
10/09/2015 14:00	388	14.21	14.14	14.55	14.55	213.8	8.57	19.62	245.1907	0.882686465	1008.528	6.64	71.83	858.1968	5.689	855.4862	860.7684	858.3359	4.622	5.696	4.622	2681.812	2685.072	2684.422	0.14	
10/09/2015 15:00	389	14.21	14.09	11.06	11.06	183.8	9.15	17.33	242.032																	

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
12/09/2015 14:00	436	14.26	14.19	4.999	4.999	254	13.61	7.33	321.1056	1.155980301	1012.215	4.78	56.02	858.3923	0.394	861.8165	857.5417	855.8188	0.358	0.467	0.345	2689.699	2684.976	2687.641	0.16
12/09/2015 15:00	437	14.23	14.04	3.028	3.028	246.8	33.49	5.704	424.2454	1.527283446	1012.13	5.892	48.88	858.2878	0.243	862.2203	857.0009	855.6421	0.16	0.332	0.204	2690.306	2684.412	2686.928	0.19
12/09/2015 16:00	438	14.21	14.04	3.434	3.434	244.9	16.9	5.998	234.9392	0.845780976	1012.13	5.949	48.07	858.4282	0.131	861.9734	858.0709	855.6201	0.138	0.144	0.108	2690.234	2685.743	2686.454	0.12
12/09/2015 17:00	439	14.36	14.03	3.137	3.137	251.1	14.9	5.762	134.5388	0.484339891	1011.971	5.711	50.32	858.4086	0.407	862.2322	858.0294	854.9642	0.472	0.482	0.207	2689.186	2684.129	2686.615	0.07
12/09/2015 18:00	440	14.07	13.86	4.997	4.997	257.1	7.168	6.821	83.69939	0.301317805	1011.856	4.972	58.66	858.4541	0.27	862.3134	858.0828	854.9659	0.3	0.282	0.222	2690.568	2685.766	2686.213	0.03
12/09/2015 19:00	441	13.87	13.7	4.001	4.001	258	5.936	5.684	28.11231	0.101204305	1011.918	3.516	64.78	858.5067	0.143	862.2297	858.271	855.0192	0.147	0.158	0.122	2689.815	2685.172	2686.568	0.02
12/09/2015 20:00	442	13.72	13.55	3.946	3.946	259.5	9.31	5.429	0.8565453	0.003083563	1012.082	2.501	70.13	858.5646	0.267	862.3419	858.3206	855.0312	0.297	0.32	0.155	2690.501	2685.58	2686.34	0.01
12/09/2015 21:00	443	13.57	13.46	3.844	3.844	270.2	7.664	5.194	0	0	1012.246	2.301	75.06	858.6071	0.236	862.3068	858.413	855.1016	0.251	0.261	0.189	2690.604	2685.325	2686.701	0.01
12/09/2015 22:00	444	13.48	13.39	3.663	3.663	259.7	14.65	6.311	0	0	1012.41	2.694	76.47	858.6462	0.098	862.2725	858.4622	855.2038	0.128	0.087	0.068	2690.425	2685.853	2686.725	0
12/09/2015 23:00	445	13.4	13.33	3.708	3.708	242.4	9.17	5.39	0	0	1012.409	2.445	78.08	858.6426	0.21	862.2737	858.4408	855.2133	0.251	0.207	0.164	2690.159	2685.771	2687.006	0
13/09/2015 0:00	446	13.34	13.28	3.695	3.695	250.7	9.46	5.39	0	0	1012.573	2.065	80	858.6692	0.129	862.3208	858.4562	855.2304	0.142	0.105	0.105	2690.431	2685.694	2686.806	0
13/09/2015 1:00	447	13.29	13.23	3.595	3.595	272	12.43	6.468	0	0	1012.573	1.785	84.3	858.7938	0.108	862.3471	858.674	855.3602	0.118	0.11	0.094	2690.009	2685.916	2686.95	0
13/09/2015 2:00	448	13.25	13.2	3.045	3.045	243.9	9.25	4.449	0	0	1012.495	1.23	89.7	858.8438	0.126	862.4466	858.7219	855.3628	0.128	0.143	0.105	2690.41	2686.131	2686.847	0
13/09/2015 3:00	449	13.22	13.17	4.567	4.567	237.5	5.905	6.664	0	0	1012.419	1.229	86	858.8757	0.297	862.5919	858.6746	855.3606	0.31	0.289	0.293	2690.519	2685.626	2686.923	0
13/09/2015 4:00	450	13.18	13.14	4.76	4.76	240.3	7.382	6.115	0	0	1012.414	1.365	83.5	858.8943	0.273	862.5742	858.6732	855.4357	0.292	0.291	0.23	2689.259	2685.233	2687.24	0
13/09/2015 5:00	451	13.16	13.12	4.563	4.563	254.9	7.968	6.958	0	0	1012.497	1.156	83.1	858.8821	0.343	862.6478	858.6795	855.3191	0.347	0.309	0.309	2690.629	2686.177	2686.484	0
13/09/2015 6:00	452	13.14	13.1	6.205	6.205	275.3	7.526	8.94	0.04228771	0.000152236	1012.416	1.065	84.5	858.894	0.546	862.7116	858.6713	855.2991	0.559	0.613	0.453	2691.954	2686.905	2686.746	0
13/09/2015 7:00	453	13.16	13.1	6.102	6.102	277.1	6.452	8.74	10.84802	0.039052858	1012.438	1.084	83.4	858.7576	0.812	862.6775	858.5403	855.0553	0.733	1.004	0.656	2690.672	2685.912	2687.072	0.01
13/09/2015 8:00	454	14.28	13.15	6.735	6.735	268.1	7.014	9.64	63.49982	0.228599423	1012.492	1.424	82	858.8316	0.692	862.4925	858.6563	855.3461	0.784	0.791	0.445	2689.413	2686.093	2687.334	0.01
13/09/2015 9:00	455	13.9	13.59	6.694	6.694	270.4	7.426	9.37	78.28333	0.281819993	1012.737	1.473	83.2	858.9617	0.649	862.6915	858.8024	855.3912	0.704	0.469	0.269	2690.757	2687.412	2689.087	0.05
13/09/2015 10:00	456	14.65	13.86	6.255	6.255	287.7	9.4	8.84	149.9774	0.539918398	1012.901	1.956	82.1	858.7869	0.884	862.7548	858.5238	855.082	0.925	1.093	0.54	2690.768	2685.365	2685.685	0.07
13/09/2015 11:00	457	14.68	14.62	6.755	6.755	287.6	13.86	10.33	328.8736	1.18394486	1012.819	2.891	77.24	858.8664	1.398	862.2804	858.5647	855.7466	1.424	1.581	1.157	2692.362	2686.841	2686.82	0.12
13/09/2015 12:00	458	14.68	14.2	6.266	6.266	298.9	11.14	9.37	330.3883	1.189397784	1012.844	3.632	71.31	858.7094	0.795	861.9299	858.5376	855.6036	0.803	0.934	0.615	2689.231	2684.82	2687.943	0.14
13/09/2015 13:00	459	14.68	14.17	6.035	6.035	291.2	11.73	10.05	241.4856	0.869348099	1012.761	3.914	65.05	858.8658	0.4	862.5262	858.4744	855.5967	0.413	0.464	0.306	2689.878	2685.083	2687.627	0.13
13/09/2015 14:00	460	14.68	14.21	3.602	3.602	308.9	16.48	9.84	259.153	0.932950977	1012.702	3.704	70.22	858.8389	0.105	862.4725	858.4078	855.6365	0.113	0.085	0.113	2690.317	2685.615	2687.308	0.12
13/09/2015 15:00	461	14.64	14.09	2.754	2.754	326.8	26.49	5.096	314.8202	1.133352771	1012.272	4.384	66.51	858.5398	0.394	863.0866	856.36	855.1728	0.437	0.269	0.269	2691.297	2683.397	2687.724	0.13
13/09/2015 16:00	462	14.57	14.09	4.855	4.855	327	33.1	11.21	255.7563	0.920722755	1012.186	3.822	68.58	858.9231	0.639	862.5435	858.4562	855.7696	0.692	0.689	0.52	2689.53	2685.366	2687.741	0.1
13/09/2015 17:00	463	14.67	14.22	5.348	5.348	269.7	17.08	7.683	285.5505	1.027981925	1011.86	4.463	64.15	858.6762	0.502	863.5112	857.0096	855.5078	0.548	0.568	0.365	2691.336	2684.303	2687.069	0.12
13/09/2015 18:00	464	14.42	13.84	3.687	3.687	296.5	18.07	7.507	46.16986	0.166211489	1011.727	3.8	63.38	858.9525	0.055	862.4937	858.7989	855.5649	0.06	0.062	0.04	2690.576	2686.212	2687.107	0.02
13/09/2015 19:00	465	13.86	13.72	4.005	4.005	251	14.22	6.252	19.17557	0.069032038	1011.509	2.213	72.53	859.0325	0.239	862.616	858.8846	855.5971	0.231	0.16	0.16	2691.065	2686.154	2687.08	0.01
13/09/2015 20:00	466	13.73	13.58	5.401	5.401	259.7	8.9	7.546	0.3502586	0.001260931	1011.591	1.817	72.66	858.6893	0.388	862.6893	858.7953	855.5755	0.377	0.443	0.336	2690.481	2685.935	2687.184	0.01
13/09/2015 21:00	467	13.59	13.48	4.453	4.453	261.4	18.43	7.409	0	0	1011.427	1.447	80.1	859.0624	0.298	862.6161	858.8224	855.7487	0.32	0.282	0.291	2690.565	2686.44	2687.879	0
13/09/2015 22:00	468	13.5	13.42	5.865	5.865	227.5	9.22	8.27	0	0	1011.277	1.169	79.16	859.1114	0.354	862.6882	858.946	855.7	0.41	0.348	0.295	2690.14	2686.241	2687.435	0.01
13/09/2015 23:00	469	13.43	13.35	5.312	5.312	221.7	7.317	6.488	0	0	1010.987	0.809	78.34	859.1429	0.228	862.6653	858.9859	855.7776	0.241	0.246	0.193	2690.694	2686.954	2687.33	0.01
14/09/2015 0:00	470	13.37	13.3	3.831	3.831	217.2	6.144	5.233	0	0	1010.66	1.1	73.18	859.1956	0.07	862.6311	859.0754	855.8801	0.078	0.078	0.05	2690.581	2686.365	2687.708	0.01
14/09/2015 1:00	471	13.31	13.25	1.152	1.152	229.3	17.4	2.372	0	0	1010.01	1.531	68.51	859.1161	0.01	862.6319	859.1161	855.8901	0.012	0.008	0.008	2690.673	2686.587	2687.563	-0.01
14/09/2015 2:00	472	13.26	13.21	2.267	2.267	179.7	20.82	4.077	0	0	1009.273	1.178	68.56	859.2187	0.185	862.561	859.1637	855.9315	0.173	0.231	0.141	2690.419	2686.621	2687.805	0
14/09/2015 3:00	473	13.22	13.17	3.907	3.907	204.9	11.73	6.154	0	0	1008.782	0.508	74.7	859.2518	0.027	862.6848	859.2109	855.8597	0.024	0.033	0.024	2690.735	2686.692	2687.507	0
14/09/2015 4:00	474	13.19	13.15	4.338	4.338	214	11.64	6.664	0	0	1008.208	0.603	73.22	859.2469	0.331	862.6967	859.1644	855.8795	0.331	0.393	0.253	2690.111	2686.541	2688.072	0.01
14/09/2015 5:00	475	13.16	13.12	5.431	5.431	225.7	7.172	7.566	0	0	1007.542	1.245	70</												

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
16/09/2015 4:00	522	13.23	13.17	3.471	3.471	151.4	9.82	6.35	0	0	1002.293	0.012	89.1	859.2444	0.126	862.5505	859.2567	855.926	0.125	0.157	0.087	2690.679	2686.972	2687.451	0	
16/09/2015 5:00	523	13.19	13.14	3.652	3.652	129.1	16.64	5.351	0	0	1002.308	0.059	85.3	859.2304	0.296	862.4288	859.2678	855.9946	0.307	0.351	0.214	2691.035	2687.262	2687.754	0	
16/09/2015 6:00	524	13.16	13.12	5.519	5.519	148.5	12.09	7.997	0	0	1002.141	0.049	83.4	859.1897	0.692	862.2885	859.1976	856.083	0.672	0.885	0.449	2689.533	2685.53	2688.745	0	
16/09/2015 7:00	525	13.18	13.12	6.865	6.865	157	5.65	9.43	10.39976	0.037439137	1002.229	-0.11	82.4	859.2419	0.707	862.3589	859.3329	856.0339	0.641	0.929	0.476	2690.788	2687.339	2687.651	0.01	
16/09/2015 8:00	526	14.63	13.17	1.943	1.943	156.1	76.38	5.645	98.73532	0.355447257	1002.63	0.471	79.55	859.4456	0.067	861.6823	859.9981	856.6563	0.065	0.078	0.055	2689.482	2687.483	2688.465	0.01	
16/09/2015 9:00	527	14.67	14.42	1.452	1.452	274.9	97.1	4.684	165.9627	0.597465844	1002.746	1.467	73.52	859.489	0.312	860.7958	860.2128	857.4586	0.353	0.386	0.139	2688.197	2687.63	2689.652	0.07	
16/09/2015 10:00	528	14.67	14.14	2.839	2.839	175.5	33.97	6.311	295.1736	1.062625081	1002.828	3.001	64.19	859.386	0.307	860.7965	859.8212	857.5406	0.326	0.363	0.212	2688.815	2687.551	2689.154	0.12	
16/09/2015 11:00	529	14.3	14.14	3.848	3.848	156.9	26.22	6.311	236.2719	0.850578928	1002.908	2.836	65.46	859.2219	0.381	861.8533	859.335	856.4775	0.413	0.208	0.208	2689.472	2686.691	2688.595	0.11	
16/09/2015 12:00	530	14.34	14.25	4.009	4.009	139.2	16.61	6.938	175.379	0.631364638	1003.073	2.605	68.67	859.196	0.345	862.4189	859.1792	855.9897	0.342	0.407	0.274	2690.187	2686.668	2687.889	0.09	
16/09/2015 13:00	531	14.34	13.72	5.398	5.398	176	12.81	7.37	178.4832	0.642539567	1003.073	2.534	73.23	858.5174	3.03	860.9429	858.9597	855.6497	5.053	1.058	0.94	2690.648	2685.737	2687.819	0.09	
16/09/2015 14:00	532	14.64	14.09	4.981	4.981	162	16.49	7.036	175.5972	0.632149947	1003.073	2.12	78.64	859.1003	0.427	862.3745	859.0031	855.9235	0.414	0.535	0.297	2690.248	2687.717	2687.768	0.08	
16/09/2015 15:00	533	14.68	14.6	4.282	4.282	150.9	24.14	7.82	485.6658	1.748397027	1002.941	3.785	70.15	858.9531	0.581	862.7488	857.8469	856.2637	0.542	0.783	0.325	2690.762	2684.358	2688.113	0.18	
16/09/2015 16:00	534	14.66	14.11	4.627	4.627	166.2	18.62	7.722	432.2489	1.556096014	1002.884	4.336	65.88	858.7314	1.013	863.0405	857.168	855.9586	1.032	1.291	0.589	2692.819	2685.952	2688.103	0.17	
16/09/2015 17:00	535	14.64	14.15	5.002	5.002	166.4	13.46	8.15	209.284	0.753422381	1003.121	3.197	73.97	858.9446	0.553	862.8293	858.4074	855.5974	0.539	0.678	0.41	2690.027	2684.071	2687.554	0.07	
16/09/2015 18:00	536	14.64	14.06	7.245	7.245	167.9	9.68	10.78	114.8393	0.41342154	1002.904	2.304	79.42	858.9786	0.599	862.4993	858.843	855.5936	0.647	0.638	0.502	2691.238	2686.106	2687.71	0.04	
16/09/2015 19:00	537	14.11	13.82	4.977	4.977	175.9	18.65	8.66	28.93521	0.104166743	1003.073	1.954	79.56	859.0891	0.418	862.4323	859.071	855.764	0.431	0.514	0.272	2690.708	2686.944	2687.064	0.01	
16/09/2015 20:00	538	13.83	13.67	5.935	5.935	156.7	10.63	9.37	0.01528375	5.50215E-05	1002.91	1.975	79.02	859.0159	0.473	862.2446	859.0491	855.7542	0.512	0.565	0.299	2690.546	2687.326	2687.644	0.01	
16/09/2015 21:00	539	13.68	13.57	3.085	3.085	121	11.84	5.586	0	0	1002.746	1.618	82.5	859.0855	0.211	862.3735	859.1553	855.7278	0.192	0.282	0.13	2690.334	2686.453	2687.208	0	
16/09/2015 22:00	540	13.58	13.48	3.819	3.819	145.7	20.87	9.92	0	0	1002.418	1.905	80.4	859.0803	0.638	862.2627	859.1409	855.8373	0.642	0.788	0.435	2691.062	2687.034	2687.784	0	
16/09/2015 23:00	541	13.5	13.42	7.062	7.062	159.4	7.943	10.05	0	0	1002.091	1.929	80.9	858.8205	0.911	862.3615	858.7805	855.3195	0.939	1.125	0.583	2690.509	2688.423	2685.481	0.01	
17/09/2015 0:00	542	13.43	13.35	5.89	5.89	154.7	7.117	9.31	0	0	1001.927	1.568	84.3	858.9355	0.726	862.4198	858.6641	855.7228	0.701	0.891	0.544	2690.908	2686.617	2687.121	0	
17/09/2015 1:00	543	13.37	13.3	6.646	6.646	155.8	7.286	9.72	0	0	1001.517	1.307	86.4	859.0998	0.705	862.4504	859.1262	855.7227	0.683	0.913	0.438	2691.221	2688.301	2687.364	0	
17/09/2015 2:00	544	13.32	13.25	5.277	5.277	145.9	7.674	0	0	0	1001.354	0.782	92.1	859.1849	0.562	862.4625	859.3234	855.7687	0.582	0.714	0.314	2691.073	2687.32	2687.005	0	
17/09/2015 3:00	545	13.27	13.21	5.746	5.746	145.9	4.733	7.683	0	0	1000.963	0.634	94.1	859.1543	0.669	862.4459	859.2607	855.7561	0.637	0.832	0.494	2690.037	2686.617	2688.177	0	
17/09/2015 4:00	546	13.23	13.18	5.773	5.773	144.8	5.036	7.546	0	0	1000.627	0.437	95.7	859.1704	0.627	862.4622	859.2208	855.8282	0.656	0.785	0.364	2690.668	2687.261	2688.289	0	
17/09/2015 5:00	547	13.19	13.15	5.679	5.679	143.9	4.983	7.076	0	0	1000.226	0.472	94.9	859.3494	0.701	862.4727	859.3494	855.9516	0.639	1	0.26	2689.061	2684.702	2687.083	0	
17/09/2015 6:00	548	13.17	13.12	4.589	4.589	134.2	6.869	6.096	0	0	999.9678	0.197	96.8	859.2373	0.362	862.4836	859.3422	855.8864	0.369	0.471	0.19	2690.156	2686.879	2687.648	-0.01	
17/09/2015 7:00	549	13.14	13.12	4.416	4.416	126.7	11.11	6.664	7.315076	0.026334275	999.901	0.152	97	859.2523	0.218	862.5559	859.3261	855.8747	0.233	0.28	0.099	2690.362	2687.063	2687.587	-0.01	
17/09/2015 8:00	550	13.21	13.12	2.916	2.916	98.8	17.72	5.351	32.56628	0.117238623	999.6482	0.324	96	859.3027	0.086	862.7828	859.3748	855.7502	0.082	0.107	0.062	2690.897	2686.954	2687.344	-0.01	
17/09/2015 9:00	551	13.59	13.18	2.45	2.45	115.3	43.23	7.409	92.78148	0.33401341	999.1515	0.968	90.8	859.2829	0.859	862.6328	859.2428	855.9733	0.86	1.063	0.588	2689.577	2686.511	2686.971	0.04	
17/09/2015 10:00	552	14.63	13.59	5.3	5.3	153.2	12.52	8.84	189.4156	0.681896404	998.9785	1.599	85.6	859.2936	0.478	862.4627	859.3903	856.028	0.413	0.311	0.269	2690.947	2687.072	2687.797	0.07	
17/09/2015 11:00	553	14.67	14.6	6.418	6.418	165.8	11.4	10.76	261.6186	0.941827013	998.4872	2.279	83.7	859.416	1.475	861.8781	859.3922	856.9778	1.363	1.741	1.281	2690.996	2688.037	2689.115	0.09	
17/09/2015 12:00	554	14.67	14.28	8.14	8.14	166.6	9.59	14.33	263.6797	0.949246681	997.9137	2.641	81.6	859.8162	1.956	861.6739	860.0668	857.708	1.839	2.243	1.75	2692.513	2690.609	2687.633	0.1	
17/09/2015 13:00	555	14.32	14.22	10.66	10.66	164.1	7.422	13.76	430.1046	1.548376736	997.9956	3.143	79.62	859.4792	2.67	860.6114	859.7103	858.1157	2.216	2.675	2.216	2689.042	2687.957	2688.889	0.13	
17/09/2015 14:00	556	14.29	13.75	11	11	169	7.754	14.66	483.7845	1.741624288	997.4978	3.615	76.91	859.7405	3.44	859.5864	859.8171	859.8179	3.709	4.094	2.233	2684.651	2681.523	2691.891	0.15	
17/09/2015 15:00	557	14.31	14.21	10.88	10.88	166	6.783	15.31	436.1203	1.570033233	997.6639	3.34	79.67	859.5132	1.912	861.4883	858.6028	858.4484	1.961	1.57	1.57	2689.289	2684.017	2689.466	0.13	
17/09/2015 16:00	558	14.26	14.19	8.17	8.17	176.6	13.98	13.41	430.2414	1.548869016	997.8077	3.816	76.47	859.6792	1.549	862.0839	859.2339	857.7197	1.583	1.837	1.146	2685.698	2688.717	2691.695	0.14	
17/09/2015 17:00	559	14.34	14.25	7.106	7.106	169.1	19.62	11.43	221.8003	0.798481298	997.9957	2.766	83.5	859.2018	0.863	862.4256	859.0805	856.0994	0.907	1.049	0.56	2690.948	2686.154	2687.279	0.06	
17/09/2015 18:00	560	14.33	14	6.989	6.989	166.3	9.13	10.41	94.67787	0.340840441	997.8319	2.159	85.2	859.4628	1.016	862.7723	859.4628	856.0689	1.075	1.241	0.635	2692.379	2688.578	2687.073	0.01	
17/09/2015 19:00	561	14.02	13.79	6.579																						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
19/09/2015 18:00	608	14.56	14.14	10.02	10.02	248.4	5.307	12.66	98.73975	0.35546316	999.2273	-0.004	75.31	864.2758	1.802	866.9068	863.3746	862.546	1.712	2.098	1.552	2698.734	2693.707	2696.946	0.05
19/09/2015 19:00	609	14.21	13.88	8.96	8.96	250	5.041	12	17.86035	0.064297262	999.6566	-0.364	77.82	863.9167	1.392	867.1232	863.329	861.2979	1.447	1.571	1.12	2697.057	2690.622	2694.654	0.01
19/09/2015 20:00	610	13.9	13.75	7.519	7.519	253.9	5.588	10.05	0.008662377	3.11846E-05	1000.015	-0.796	80.8	863.2487	0.908	867.1776	863.5156	860.1206	0.957	1.084	0.617	2697.407	2693.378	2692.293	0.01
19/09/2015 21:00	611	13.76	13.65	6.679	6.679	255.7	5.203	10.29	0	0	1000.672	-0.979	80.3	863.5126	0.733	867.3417	863.1772	860.0189	0.715	0.941	0.463	2696.407	2691.59	2692.86	0.01
19/09/2015 22:00	612	13.66	13.57	6.09	6.09	264.1	5.874	8.35	0	0	1001.164	-1.033	78.47	863.5749	0.47	867.3423	863.2635	860.1188	0.515	0.498	0.387	2695.794	2692.268	2693.127	0.01
19/09/2015 23:00	613	13.58	13.5	5.496	5.496	266.3	8.01	8.11	0	0	1001.41	-1.288	78.36	863.6088	0.343	867.1903	863.4288	860.2073	0.372	0.379	0.268	2696.697	2692.337	2692.822	0.01
20/09/2015 0:00	614	13.51	13.43	5.075	5.075	251.7	5.605	7.468	0	0	1001.655	-1.465	78.9	863.6407	0.262	867.2061	863.4942	860.2219	0.304	0.262	0.213	2695.925	2692.113	2693.672	0.01
20/09/2015 1:00	615	13.45	13.37	4.971	4.971	256.9	5.676	6.566	0	0	1001.983	-1.798	79.41	863.6694	0.217	867.2497	863.4888	860.2696	0.252	0.214	0.177	2696.878	2692.628	2693.035	0.01
20/09/2015 2:00	616	13.39	13.32	5.149	5.149	251.5	5.208	6.801	0	0	1002.147	-2.516	80.4	863.6616	0.282	867.2783	863.4778	860.2285	0.311	0.293	0.238	2696.392	2692.092	2693.135	0.01
20/09/2015 3:00	617	13.33	13.27	5.024	5.024	245.4	5.461	6.488	0	0	1002.557	-2.653	79.02	863.715	0.169	867.2623	863.5652	860.3174	0.175	0.192	0.136	2696.123	2692.052	2693.06	0.01
20/09/2015 4:00	618	13.28	13.22	2.688	2.688	280.5	22.63	4.645	0	0	1002.693	-2.89	78.17	863.7888	0.039	867.3206	863.7179	860.3276	0.044	0.03	0.026	2696.523	2692.339	2693.109	0
20/09/2015 5:00	619	13.24	13.18	2.267	2.267	283.4	7.99	3.175	0	0	1003.027	-2.547	75.49	863.8179	0.036	867.3293	863.713	860.4113	0.037	0.039	0.033	2696.542	2692.288	2693.244	0
20/09/2015 6:00	620	13.2	13.14	2.46	2.46	245.3	10.46	3.626	0	0	1003.24	-2.866	77.29	863.8271	0.073	867.2642	863.7253	860.4916	0.072	0.089	0.054	2696.445	2692.433	2693.378	0
20/09/2015 7:00	621	13.16	13.13	2.565	2.565	241.1	8.91	3.822	5.146534	0.018527528	1003.294	-2.553	78.11	863.8517	0.077	867.2564	863.746	860.5526	0.084	0.07	0.077	2696.357	2692.483	2693.37	0
20/09/2015 8:00	622	13.38	13.13	2.161	2.161	248.3	13.89	4.39	45.4131	0.163487166	1003.704	-1.805	74.13	863.8472	0.018	867.1103	863.7935	860.6377	0.021	0.019	0.012	2696.288	2692.477	2693.576	0.01
20/09/2015 9:00	623	14.03	13.38	2.608	2.608	233.4	7.491	3.724	101.6786	0.366043075	1004.113	-0.93	68.51	863.834	0.072	867.0098	863.7791	860.7133	0.08	0.085	0.046	2696.266	2692.48	2693.739	0.04
20/09/2015 10:00	624	14.67	14.03	2.234	2.234	243.1	13.92	3.234	221.7043	0.798135623	1004.564	-0.152	63.42	863.9142	0.099	865.4583	864.2299	862.0544	0.116	0.107	0.067	2694.157	2693.16	2695.4	0.09
20/09/2015 11:00	625	14.68	14.63	2.904	2.904	249.1	14.91	6.625	457.249	1.646096124	1004.875	0.84	55.11	863.8459	0.489	864.2449	864.1584	863.1343	0.557	0.511	0.384	2693.246	2692.531	2696.167	0.16
20/09/2015 12:00	626	14.68	14.22	3.349	3.349	245.2	19.1	6.684	401.7993	1.446477444	1005.203	1.124	49.52	863.6938	0.196	866.5812	863.7374	860.7626	0.234	0.181	0.168	2696.118	2693.012	2693.676	0.16
20/09/2015 13:00	627	14.36	14.28	2.801	2.801	235	19.71	5.174	277.6439	0.999518139	1005.694	1.037	50.21	863.668	0.161	866.7357	863.6219	860.6466	0.163	0.191	0.12	2695.886	2692.264	2693.3	0.12
20/09/2015 14:00	628	14.39	14.28	2.699	2.699	218	23.62	4.861	187.6028	0.675370261	1006.104	1.021	53.42	863.6606	0.062	866.9162	863.5842	860.4816	0.059	0.081	0.037	2696.117	2692.19	2693.343	0.1
20/09/2015 15:00	629	14.4	14.32	2.673	2.673	242.6	23.37	4.626	161.7517	0.582306058	1006.349	1.017	52.51	863.6529	0.155	866.8716	863.5081	860.5791	0.185	0.173	0.09	2695.957	2691.99	2693.529	0.08
20/09/2015 16:00	630	14.67	14.32	1.495	1.495	244.9	30.33	4.567	183.6947	0.661300878	1006.513	1.311	50.24	863.5524	0.063	867.0494	863.0854	860.5226	0.066	0.087	0.013	2696.153	2691.769	2693.392	0.06
20/09/2015 17:00	631	14.56	14.07	2.014	2.014	177.4	9.32	3.273	99.74578	0.359084794	1006.513	1.319	51.95	863.6035	0.083	866.9703	863.4995	860.3408	0.085	0.098	0.063	2696.008	2691.834	2693.133	0.04
20/09/2015 18:00	632	14.13	13.97	2.681	2.681	196.3	10.64	3.646	45.93833	0.165377994	1006.759	0.773	60.99	863.555	0.168	867.2408	863.1927	860.2314	0.183	0.204	0.096	2696.534	2691.255	2692.726	0.01
20/09/2015 19:00	633	13.99	13.8	2.564	2.564	202.8	10.34	3.783	25.69391	0.09249809	1007.026	0.219	64.23	863.5661	0.083	867.0735	863.461	860.1638	0.091	0.1	0.049	2696.159	2691.835	2692.873	0.01
20/09/2015 20:00	634	13.82	13.67	2.267	2.267	179.9	15.82	2.92	0	0	1007.225	-0.901	63.15	863.6255	0.03	867.0234	863.5167	860.3365	0.027	0.032	0.03	2696.229	2692.142	2693.167	0
20/09/2015 21:00	635	13.68	13.58	3.591	3.591	187.5	7.992	4.861	0	0	1007.235	-1.232	62.9	863.666	0.029	867.0264	863.5065	860.4648	0.307	0.342	0.202	2696.242	2692.201	2693.898	0.01
20/09/2015 22:00	636	13.6	13.51	4.437	4.437	172.7	13.44	5.664	0	0	1007.473	-1.125	63.75	863.6956	0.324	866.9868	863.5715	860.5286	0.362	0.357	0.237	2695.986	2692.159	2693.751	0.01
20/09/2015 23:00	637	13.52	13.44	4.223	4.223	155.7	4.834	5.468	0	0	1007.8	-0.868	64.83	863.6572	0.262	866.914	863.5375	860.52	0.265	0.314	0.191	2695.771	2692.053	2693.37	0.01
21/09/2015 0:00	638	13.46	13.38	3.795	3.795	215.6	30.68	7.546	0	0	1008.29	-1.475	74.09	863.5837	0.553	867.1002	863.2479	860.4028	0.622	0.438	0.438	2697.187	2692.539	2692.192	0.01
21/09/2015 1:00	639	13.4	13.33	3.687	3.687	201.8	24.6	5.468	0	0	1008.29	-1.846	84.3	863.7568	0.149	867.0502	863.6299	860.5904	0.166	0.181	0.079	2696.126	2692.269	2693.482	0
21/09/2015 2:00	640	13.35	13.27	3.553	3.553	178	15.98	4.371	0	0	1008.536	-1.314	74.44	863.7525	0.141	866.9738	863.627	860.6567	0.143	0.174	0.095	2696.22	2692.258	2693.532	0
21/09/2015 3:00	641	13.3	13.23	2.237	2.237	149.9	14.41	3.469	0	0	1008.7	-1.179	76.08	863.7557	0.011	867.0295	863.6667	860.5709	0.012	0.009	0.009	2696.222	2692.331	2693.468	0
21/09/2015 4:00	642	13.25	13.19	2.044	2.044	165.9	64.51	4.998	0	0	1008.7	-1.043	75.22	863.7487	0.073	867.1008	863.6149	860.5306	0.07	0.084	0.065	2696.372	2692.289	2693.414	0
21/09/2015 5:00	643	13.21	13.15	1.237	1.237	119.5	4.704	4.704	0	0	1008.618	-1.08	75.17	863.7363	0.206	867.0284	863.6388	860.5416	0.235	0.238	0.126	2696.738	2692.631	2693.121	-0.01
21/09/2015 6:00	644	13.17	13.12	5.459	5.459	183.7	3.296	6.331	0	0	1008.619	-1.418	72.09	863.6865	0.269	866.9261	863.5303	860.6033	0.298	0.287	0.216	2696.534	2692.164	2693.599	0.01
21/09/2015 7:00	645	13.17	13.12	5.502	5.502	179	7.55	6.331	6.080558	0.021890006	1008.536	-2.009	74.5	863.8342	0.347	866.0143	864.3212	861.1671	0.382	0.395	0.244	2694.438	2693.185	2694.411	0.01
21/09/2015 8:00	646	14.66	13.16	6.67	6.67	168.6	4.707	7.958	102.0511	0.367383913	1008.701	-0.982	72.11	864.0446	0.926	865.0706	865.0153	862.0479	0.944	0.529	0.183	2695.161	2696.521	2694.991	0.04
21/09/2015 9:00	647	14.67	14.64	5.913	5.913	174.2	6.968	7.526	219.3765	0.789755523	1009.162	0.004	64.79	863.9407	0.377										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
23/09/2015 8:00	694	13.19	13.11	1.358	1.358	139.6	29.47	2.097	25.89852	0.093234682	1008.503	-4.224	94.1	866.2375	0.023	869.3591	866.2355	863.1179	0.024	0.026	0.019	2699.164	2695.609	2696.718	-0.01	
23/09/2015 9:00	695	13.27	13.17	1.172	1.172	116.7	18.3	2.176	49.76223	0.179144039	1008.54	-3.765	93	866.5332	0.029	869.6613	866.507	863.4312	0.029	0.037	0.018	2699.588	2695.949	2697.092	-0.01	
23/09/2015 10:00	696	13.56	13.27	1.03	1.03	106.5	18.51	1.764	95.33624	0.343210443	1008.705	-3.255	90	866.5793	0.023	869.6987	866.5333	863.506	0.022	0.028	0.019	2699.592	2695.962	2697.177	0.03	
23/09/2015 11:00	697	13.77	13.55	1.137	1.137	117.1	14.72	1.921	109.2393	0.393261627	1008.864	-2.787	89	866.762	0.021	870.0444	866.5679	863.674	0.019	0.025	0.017	2700.014	2696.004	2697.381	0.04	
23/09/2015 12:00	698	14.01	13.75	1.543	1.543	122.5	20.88	2.646	133.7751	0.481590396	1008.864	-2.288	84.7	866.7504	0.023	869.9802	866.5471	863.7239	0.018	0.03	0.019	2699.987	2695.967	2697.394	0.05	
23/09/2015 13:00	699	14.35	13.97	0.737	0.737	86.4	28.13	2.195	155.3607	0.559298487	1009.172	-1.608	80.3	865.9521	3.431	868.0538	865.9394	863.8633	5.584	2.034	0.041	2699.778	2695.947	2697.562	0.06	
23/09/2015 14:00	700	14.65	13.67	0.741	0.741	104	64.78	2.215	170.1102	0.612396764	1008.807	-1.027	77.89	866.6848	0.056	869.7172	866.3745	863.9626	0.053	0.066	0.048	2699.661	2695.693	2697.659	0.06	
23/09/2015 15:00	701	14.66	14.62	0.854	0.854	85.6	86.6	3.018	145.8849	0.525185633	1008.806	-0.826	81.3	866.7321	0.029	869.7043	866.7565	863.7356	0.034	0.029	0.022	2699.667	2696.247	2697.459	0.05	
23/09/2015 16:00	702	14.67	14.23	1.375	1.375	189.2	25.64	2.724	180.9948	0.65158122	1008.806	-0.273	69.84	866.6509	0.027	870.0093	866.4315	863.5117	0.027	0.027	0.027	2700.006	2695.81	2697.119	0.07	
23/09/2015 17:00	703	14.4	14.25	1.853	1.853	136.2	14.14	2.979	79.11681	0.284820472	1008.979	-0.81	74.66	866.6501	0.051	869.8666	866.5045	863.579	0.054	0.059	0.036	2699.889	2695.95	2697.26	0.03	
23/09/2015 18:00	704	14.28	14.02	0.764	0.764	105.5	44.42	2.058	39.89616	0.143626167	1008.933	-1.067	84.5	866.6377	0.01	869.8201	866.5539	863.5391	0.01	0.006	0.012	2699.759	2695.98	2697.202	0.01	
23/09/2015 19:00	705	14.04	13.84	1.152	1.152	123.6	25.03	2.234	3.207472	0.011546901	1008.946	-1.592	89.1	866.6489	0.02	869.8558	866.6027	863.4882	0.023	0.023	0.014	2699.82	2696.02	2697.187	0	
23/09/2015 20:00	706	13.85	13.72	0.46	0.46	133.1	21.67	2.176	0	0	1009.027	-1.918	89.5	866.6641	0.009	869.8762	866.6255	863.4908	0.011	0.004	0.01	2699.779	2696.068	2697.154	0	
23/09/2015 21:00	707	13.73	13.63	1.821	1.821	118.5	18.38	3.704	0	0	1008.946	-2.135	90.7	866.6871	0.068	869.8577	866.6553	863.5484	0.069	0.087	0.037	2699.762	2696.185	2697.164	0	
23/09/2015 22:00	708	13.65	13.56	3.372	3.372	144.7	11.26	4.508	0	0	1008.864	-2.202	90.1	866.6814	0.136	869.8178	866.6515	863.575	0.131	0.183	0.071	2699.902	2696.278	2697.358	0	
23/09/2015 23:00	709	13.57	13.49	3.186	3.186	152.4	12.21	5.312	0	0	1008.946	-2.027	80.4	866.6765	0.151	869.7924	866.6465	863.5904	0.141	0.2	0.092	2699.805	2696.204	2697.372	0.01	
24/09/2015 0:00	710	13.51	13.43	2.524	2.524	137.4	10.42	4.351	0	0	1009.031	-2.329	85.5	866.6896	0.046	869.8573	866.6565	863.5549	0.045	0.058	0.032	2699.755	2696.127	2697.242	0	
24/09/2015 1:00	711	13.45	13.37	3.661	3.661	139.6	9.35	5.645	0	0	1009.192	-2.315	84.8	866.7251	0.068	869.8647	866.6907	863.6198	0.076	0.083	0.037	2699.712	2696.049	2697.37	0	
24/09/2015 2:00	712	13.39	13.32	2.75	2.75	127.5	5.832	4.586	0	0	1008.874	-2.721	90.1	866.7211	0.116	869.8651	866.7047	863.5935	0.123	0.147	0.063	2699.648	2696.009	2697.403	0	
24/09/2015 3:00	713	13.33	13.27	4.388	4.388	132.7	8.06	6.39	0	0	1008.619	-2.641	85.3	866.7503	0.304	869.7915	866.7335	863.726	0.257	0.423	0.178	2699.83	2696.143	2697.316	0	
24/09/2015 4:00	714	13.28	13.22	4.029	4.029	136.5	7.042	6.586	0	0	1008.213	-2.711	87.1	866.7558	0.078	869.8961	866.7213	863.6499	0.077	0.099	0.048	2699.802	2696.275	2697.355	0	
24/09/2015 5:00	715	13.24	13.18	3.382	3.382	130.7	12.9	5.214	0	0	1007.89	-2.839	88.9	866.7619	0.083	869.8895	866.734	863.662	0.087	0.101	0.053	2699.524	2695.895	2697.381	0	
24/09/2015 6:00	716	13.2	13.14	4.482	4.482	117.5	8.35	7.036	0	0	1007.554	-3.087	91.8	866.7438	0.298	869.7891	866.7569	863.6854	0.29	0.363	0.225	2699.217	2695.95	2697.49	0	
24/09/2015 7:00	717	13.16	13.13	5.069	5.069	98.6	7.462	7.82	3.133956	0.011282243	1007.315	-3.425	94.5	866.7657	0.148	869.8195	866.7844	863.6934	0.144	0.183	0.108	2699.661	2696.131	2697.397	0	
24/09/2015 8:00	718	13.58	13.13	5.755	5.755	102.5	11.08	8.68	53.00875	0.190831484	1006.98	-3.174	91.7	866.7141	0.391	869.6069	866.7804	863.7547	0.439	0.43	0.285	2700.038	2696.301	2696.687	0.01	
24/09/2015 9:00	719	14.62	13.58	5.464	5.464	106.7	8.58	7.801	67.79339	0.244056259	1006.903	-2.794	87.7	866.7651	0.42	869.7633	866.8022	863.7299	0.394	0.55	0.265	2700.224	2696.649	2697.646	0.02	
24/09/2015 10:00	720	14.63	14.05	5.271	5.271	103.4	7.835	8.06	81.57581	0.293672927	1006.409	-2.657	87.8	866.7236	0.233	869.7965	866.6819	863.6926	0.234	0.269	0.188	2699.901	2696.352	2697.402	0.03	
24/09/2015 11:00	721	14.65	14.41	4.896	4.896	97.4	9.98	8.41	116.6737	0.420025525	1005.833	-2.334	88.1	866.7703	0.4	869.707	866.7484	863.8553	0.378	0.504	0.288	2699.873	2696.402	2697.479	0.04	
24/09/2015 12:00	722	14.46	14.44	5.909	5.909	99.6	8.07	8.62	125.7421	0.452671439	1004.85	-2.078	85.5	866.7205	0.276	869.7227	866.7022	863.7367	0.303	0.275	0.247	2700.062	2696.289	2697.826	0.05	
24/09/2015 13:00	723	14.47	14.45	5.953	5.953	103.3	9.81	9.39	124.8182	0.449345393	1004.277	-2.104	87.9	866.6457	0.392	869.6915	866.5575	863.688	0.381	0.482	0.291	2700.336	2696.096	2697.49	0.04	
24/09/2015 14:00	724	14.65	14.25	4.739	4.739	100.6	9.87	6.429	113.8358	0.409808864	1003.621	-2.411	93.4	866.8513	0.183	869.9844	866.7923	863.777	0.204	0.209	0.124	2699.976	2696.766	2697.411	0.04	
24/09/2015 15:00	725	14.65	14.42	4.494	4.494	88.2	9.29	6.723	79.8934	0.287616215	1003.048	-2.385	93.7	867.0117	0.252	870.1417	866.9643	863.9289	0.269	0.28	0.2	2700.225	2696.328	2697.744	0.03	
24/09/2015 16:00	726	14.65	14.44	4.209	4.209	83.8	10.35	6.174	85.89576	0.309224818	1002.639	-2.334	93.9	867.1849	0.185	870.3807	867.1063	864.0676	0.191	0.218	0.135	2700.378	2696.88	2697.906	0.03	
24/09/2015 17:00	727	14.65	14.44	5.218	5.218	95.7	9.8	7.507	81.33701	0.292813219	1001.983	-2.27	92.2	867.0972	0.495	870.0054	867.1046	864.1814	0.503	0.623	0.307	2699.296	2695.949	2697.448	0.03	
24/09/2015 18:00	728	14.65	14.08	4.669	4.669	96	7.121	6.331	59.2015	0.213125404	1001.819	-2.288	91.4	867.1684	0.201	870.2256	867.1658	864.1138	0.219	0.238	0.127	2700.316	2696.817	2697.55	0.02	
24/09/2015 19:00	729	14.09	13.87	3.411	3.411	114.2	12.47	5.468	3.955101	0.014238362	1001.656	-2.716	94.4	867.2476	0.154	870.353	867.2097	864.18	0.144	0.056	0.056	2700.362	2696.734	2698.079	0	
24/09/2015 20:00	730	13.89	13.76	2.607	2.607	125.9	9.28	4.43	0	0	1001.658	-2.899	93.9	867.2881	0.038	870.4081	867.2593	864.1971	0.04	0.043	0.028	2700.479	2696.926	2698.004	0	
24/09/2015 21:00	731	13.77	13.67	3.352	3.352	154.4	26.25	6.233	0	0	1001.574	-2.712	89.5	867.2443	0.283	870.3798	867.1167	864.2364	0.291	0.344	0.195	2700.617	2696.731	2698.457	0	
24/09/2015 22:00	732	13.68	13.6	4.255	4.255	188.3	9.05	6.311	0	0	1001.41	-2.465	81.4	867.2681	0.234	870.4033	867.1297	864.2713	0.184	0.325	0.157	2700.129	2696.748	2698.169	0.01	
24/09/2015 23:00	733	13.61	13.53	4.372	4.372	190.2	8.29	7.291																		

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
26/09/2015 22:00	780	13.73	13.64	9.38	9.38	273.8	5.842	13.23	0	0	1007.504	-6.065	68.94	869.7044	1.424	873.2491	868.4774	867.387	1.139	1.541	1.554	2706.572	2699.354	2704.659	0.01	
26/09/2015 23:00	781	13.66	13.57	9.53	9.53	268.3	5.591	12.92	0	0	1007.995	-6.679	68.76	869.7928	1.487	873.1127	868.4279	867.8377	1.365	1.718	1.35	2701.998	2699.395	2701.946	0.01	
27/09/2015 0:00	782	13.59	13.51	8.69	8.69	266.9	5.919	11.66	0	0	1008.358	-7.16	70.95	868.4961	1.282	873.2869	868.4961	867.363	1.293	1.484	1.026	2706.872	2699.793	2701.627	0.01	
27/09/2015 1:00	783	13.53	13.45	8.37	8.37	270.9	5.994	10.96	0	0	1009.272	-7.173	71.43	869.3633	1.041	873.6133	868.2218	866.255	0.734	0.981	1.324	2705.905	2700.038	2700.234	0.01	
27/09/2015 2:00	784	13.47	13.4	6.804	6.804	263.2	8.02	10.39	0	0	1009.692	-7.823	73.17	869.3568	0.462	873.7127	867.8399	866.5178	0.477	0.481	0.425	2703.841	2697.115	2701.243	0.01	
27/09/2015 3:00	785	13.41	13.34	6.011	6.011	253.4	5.938	8.64	0	0	1010.02	-8.06	73.01	869.3625	0.571	873.7764	867.8865	866.4246	0.595	0.65	0.45	2705.147	2697.541	2701.367	0.01	
27/09/2015 4:00	786	13.36	13.29	5.925	5.925	248.9	5.516	7.997	0	0	1010.511	-8.08	71.88	869.469	0.34	873.8465	868.0688	866.4916	0.353	0.358	0.307	2705.089	2697.407	2701.64	0.01	
27/09/2015 5:00	787	13.31	13.24	5.366	5.366	243.7	5.655	7.115	0	0	1010.757	-8.2	70.33	869.5148	0.211	873.818	868.1434	866.5831	0.245	0.18	0.202	2704.505	2698.229	2700.939	0.01	
27/09/2015 6:00	788	13.26	13.19	4.802	4.802	239.3	7	5.939	0	0	1011.008	-8.28	68.95	869.5433	0.211	873.8566	868.1151	866.6581	0.205	0.209	0.218	2704.733	2697.845	2701.257	0.01	
27/09/2015 7:00	789	13.21	13.18	3.657	3.657	232.2	6.59	4.88	1.453502	0.005232607	1011.167	-8.11	65.16	869.5729	0.078	873.8767	868.2299	866.6121	0.087	0.09	0.053	2704.974	2697.988	2701.057	0	
27/09/2015 8:00	790	14.66	13.19	3.633	3.633	215	7.203	4.724	70.56072	0.254018675	1011.331	-7.168	59.2	869.8365	0.102	871.6436	869.8882	867.9777	0.119	0.1	0.084	2701.915	2700.312	2702.958	0.01	
27/09/2015 9:00	791	14.67	14.64	0.75	0.75	255.3	25.22	2.862	183.7791	0.661604691	1011.378	-4.331	44.92	869.8063	0.038	870.1518	869.8144	869.4526	0.046	0.039	0.025	2700.038	2700.169	2704.743	0.04	
27/09/2015 10:00	792	14.67	14.27	1.969	1.969	133.2	35.24	4.39	306.9963	1.105186761	1011.567	-3.43	49.27	869.5408	0.137	870.9733	868.9071	868.7419	0.17	0.097	0.134	2700.854	2699.039	2704.164	0.1	
27/09/2015 11:00	793	14.37	14.22	2.624	2.624	244.2	26.82	5.488	404.6306	1.456670371	1011.726	-2.711	44.01	869.4731	0.185	870.5519	868.5737	869.2935	0.221	0.179	0.146	2700.618	2698.26	2704.435	0.13	
27/09/2015 12:00	794	14.37	14.28	4.303	4.303	231.9	9.84	7.272	473.9476	1.706211543	1011.606	-2.058	52.26	869.2978	0.626	871.5014	867.6475	868.7443	0.622	0.76	0.458	2701.24	2697.571	2703.833	0.15	
27/09/2015 13:00	795	14.37	14.21	4.516	4.516	220.6	12.34	7.193	487.2638	1.75414956	1011.595	-1.743	61.45	869.1439	0.333	872.3224	867.141	867.9681	0.274	0.403	0.308	2703.475	2697.212	2702.808	0.15	
27/09/2015 14:00	796	14.42	14.18	3.672	3.672	207.1	30.65	7.076	282.3723	1.016540291	1011.196	-1.43	67.07	869.1976	0.199	873.2446	867.6091	866.739	0.211	0.224	0.155	2704.386	2697.193	2701.214	0.09	
27/09/2015 15:00	797	14.36	14.2	3.335	3.335	209.8	26.03	6.331	380.4632	1.36966745	1011.099	-0.233	65.36	868.9863	0.256	873.402	866.2726	867.2482	0.261	0.295	0.204	2704.448	2695.816	2702.482	0.12	
27/09/2015 16:00	798	14.42	14.22	3.645	3.645	229.7	21.12	6.997	272.2741	0.980187041	1010.935	-0.271	68.3	869.145	0.068	873.1597	867.7191	866.5561	0.072	0.079	0.05	2703.941	2697.52	2700.975	0.08	
27/09/2015 17:00	799	14.4	14.29	2.81	2.81	212.1	22.33	5.39	99.84145	0.359429189	1010.533	-0.601	72.02	869.1731	0.075	873.213	867.7732	866.5331	0.081	0.085	0.056	2704.034	2697.619	2701.011	0.01	
27/09/2015 18:00	800	14.37	13.96	4.987	4.987	228.2	10.79	7.683	40.29475	0.145061128	1010.233	-0.745	76.15	869.0939	0.453	873.124	867.6336	866.5243	0.448	0.532	0.364	2703.117	2697.336	2700.565	0.01	
27/09/2015 19:00	801	13.97	13.78	2.315	2.315	216.9	31.34	7.036	2.440063	0.008784228	1010.172	-0.88	80.2	869.2426	0.067	873.1024	868.0244	866.6011	0.073	0.078	0.046	2703.733	2697.635	2701.076	0	
27/09/2015 20:00	802	13.8	13.67	1.169	1.169	121.4	87.6	3.665	0	0	1009.847	-1.4	86.6	869.373	0.03	873.2588	868.1824	866.6777	0.034	0.032	0.021	2704.082	2698.029	2701.219	-0.01	
27/09/2015 21:00	803	13.69	13.59	1.818	1.818	135.7	65.92	4.665	0.008662904	3.11864E-05	1009.519	-1.328	86.6	869.4059	0.008	873.2716	868.2247	866.7216	0.011	0.004	0.006	2704.082	2698.088	2701.226	-0.01	
27/09/2015 22:00	804	13.61	13.52	2.084	2.084	248.1	49.15	4.978	0.02598829	9.35579E-05	1009.109	-0.817	86.4	869.3857	0.2	873.2921	868.1319	866.7331	0.225	0.212	0.158	2703.989	2697.783	2701.151	-0.01	
27/09/2015 23:00	805	13.53	13.45	3.412	3.412	246.5	29.46	7.448	0	0	1008.529	-0.136	84.4	868.1045	0.204	873.3079	866.6892	866.6892	0.226	0.191	0.194	2704.627	2698.496	2701.4	0	
28/09/2015 0:00	806	13.47	13.39	4.608	4.608	237.3	9.76	7.605	0	0	1008.207	0.193	84.6	869.2969	0.281	873.2443	867.9578	866.6887	0.311	0.292	0.236	2704.326	2697.701	2700.878	0	
28/09/2015 1:00	807	13.41	13.34	4.606	4.606	245.7	15.59	9.13	0.008152385	2.93486E-05	1007.825	1.392	84.7	869.2642	0.334	873.092	867.9703	866.7303	0.342	0.193	0.236	2703.354	2698.241	2701.215	0	
28/09/2015 2:00	808	13.35	13.29	5.21	5.21	239.6	15.66	10.51	0	0	1007.66	2.698	81.8	869.0444	0.358	873.3616	867.5222	866.2493	0.436	0.363	0.249	2703.674	2696.782	2700.771	0	
28/09/2015 3:00	809	13.3	13.24	5.365	5.365	226.9	13.48	10.07	0	0	1007.496	2.836	84	868.8737	0.371	873.1803	867.7155	865.7254	0.343	0.423	0.342	2705.139	2697.627	2699.771	0	
28/09/2015 4:00	810	13.26	13.2	5.453	5.453	228.4	12.24	9.86	0	0	1007.168	3.303	82.1	869.0136	0.672	873.0228	867.7933	866.2247	0.669	0.808	0.505	2703.456	2696.502	2700.586	0	
28/09/2015 5:00	811	13.22	13.17	6.247	6.247	226.2	12.95	11.72	0	0	1006.759	3.194	83.1	868.9891	0.756	872.784	867.8419	866.3414	0.712	0.937	0.573	2703.886	2697.789	2701.026	0	
28/09/2015 6:00	812	13.18	13.14	8.46	8.46	225.9	9.92	12.96	0	0	1006.349	3.619	80.7	869.4216	2.259	871.9849	868.3194	867.9606	2.584	2.165	1.987	2704.695	2701.33	2702.033	0.01	
28/09/2015 7:00	813	13.15	13.11	8.17	8.17	231.3	10.43	14.99	0.7233405	0.002604026	1006.185	3.559	83.9	869.5098	2.17	871.7726	868.3348	868.4219	2.446	2.283	1.714	2701.64	2697.801	2702.471	0.01	
28/09/2015 8:00	814	13.29	13.11	9.6	9.6	226.1	9.94	14.56	31.99508	0.115182325	1005.366	3.925	81.6	870.2396	3.869	871.2109	869.8697	869.6383	3.672	4.163	3.753	2701.99	2699.864	2714.029	0.01	
28/09/2015 9:00	815	13.63	13.29	11.4	11.4	230.7	16.9	16.59	65.07442	0.234267868	1005.527	4.294	79.13	869.7369	1.944	871.9934	868.3568	868.8607	1.842	2.041	2.041	2703.798	2700.221	2701.744	0.02	
28/09/2015 10:00	816	14.02	13.62	10.56	10.56	232.7	7.829	14.17	80.27498	0.288989957	1005.524	4.133	82.6	869.9166	2.479	872.0211	868.9096	868.819	1.91	3.039	2.356	2699.767	2696.121	2703.66	0.06	
28/09/2015 11:00	817	14.68	14.01	7.995	7.995	229.9	10.72	13.39	256.059	0.921812425	1005.96	5.03	79.12	868.838	1.083	871.5003	867.4871	867.5265	0.993	1.351	0.84	2701.895	2696.752	2703.46	0.11	
28/09/2015 12:00	818	14.68	14.01	8.61	8.61	220.6	9.09	12.94	481.2032	1.732331833	1005.745	5.258	79.11	869.0234	1.936	870.033	867.7068	869.3303	2.067	2.327	1.247	2702.588	2696.254	2703.009	0.16	
28/09/2015 13:00	819	14.68	14.14	8.95	8.95	220.5	7.329	12.99	485.0954	1.746343452</																

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
30/09/2015 12:00	866	14.39	14.29	10.56	10.56	236.3	10.67	15.48	322.1523	1.15974854	1003.237	1.07	43.9	871.3935	1.744	874.2111	869.0784	870.8908	1.566	2.041	1.584	2708.432	2701.37	2704.335	0.16	
30/09/2015 13:00	867	14.39	14.23	11.83	11.83	235.5	11.62	18.62	417.3363	1.502410949	1003.565	1.399	38.2	872.1985	7.056	868.2032	872.0092	876.3831	8.24	6.738	6.005	2706.368	2695.934	2704.678	0.19	
30/09/2015 14:00	868	14.3	13.81	11.23	11.23	212.1	13.11	16.88	454.5923	1.636532577	1003.565	1.419	42.17	871.7314	5.585	870.3513	869.6788	875.1641	6.842	5.188	4.455	2706.887	2699.996	2712.164	0.19	
30/09/2015 15:00	869	14.42	14.28	11.97	11.97	202.2	11.95	19.36	326.1235	1.174044413	1004.22	0.407	53.09	871.3409	2.409	874.2549	868.0203	871.7476	1.83	2.657	2.647	2703.079	2698.226	2709.614	0.14	
30/09/2015 16:00	870	14.37	14.3	10.56	10.56	203.4	9.61	16.8	299.5728	1.078461957	1004.875	0.99	48.37	870.1986	4.602	872.5643	870.1986	872.7297	4.254	6.124	2.815	2703.405	2706.22	2709.73	0.14	
30/09/2015 17:00	871	14.39	14	9.07	9.07	211.1	10.8	14.78	110.7143	0.398571235	1004.875	0.609	48.27	871.4658	3.051	873.7419	869.528	871.1275	2.52	4.102	2.18	2694.516	2698.099	2709.222	0.09	
30/09/2015 18:00	872	14.2	13.89	10.28	10.28	209.5	10.71	16.05	25.99945	0.093598034	1005.83	-0.458	56.16	871.0983	1.938	874.1144	868.7924	870.3882	1.715	2.35	1.673	2704.854	2696.958	2706.443	0.03	
30/09/2015 19:00	873	13.91	13.74	12.31	12.31	208.2	8.53	19.66	0.6175947	0.002223341	1005.505	-0.941	60.75	872.4714	4.502	872.3875	871.2167	873.8097	4.07	4.919	4.478	2704.384	2705.995	2704.925	0.02	
30/09/2015 20:00	874	13.76	13.65	13.14	13.14	204.7	8.36	22.29	0	0	1006.324	-0.693	58.58	871.397	3.207	872.9182	869.1954	872.0775	3.772	3.094	2.655	2703.231	2700.975	2709.897	0.03	
30/09/2015 21:00	875	13.66	13.57	13.36	13.36	205.6	9.05	18.54	0.003822056	1.37594E-05	1006.652	-1.309	66.74	872.0394	3.294	872.594	869.9059	873.6633	2.925	3.943	2.905	2704.047	2692.736	2704.388	0.02	
30/09/2015 22:00	876	13.58	13.5	13.95	13.95	217.6	7.521	20.7	0	0	1007.062	-1.147	61.2	873.3636	6.992	870.1975	873.9316	875.9617	6.836	8.04	5.941	2700.432	2704.801	2711.014	0.02	
30/09/2015 23:00	877	13.51	13.43	14.83	14.83	214.4	7.202	20.11	0	0	1008.045	-1.207	60.91	871.7995	4.007	872.6993	869.3575	873.3416	3.753	3.936	4.312	2700.136	2704.362	2706.686	0.02	
01/10/2015 0:00	878	13.45	13.37	14.41	14.41	223.2	7.591	19.48	0	0	1008.864	-1.323	58.97	871.4938	4.52	870.5858	869.7645	874.1312	4.081	3.909	2691.956	2705.542	2709.944	0.02		
01/10/2015 1:00	879	13.4	13.32	13.77	13.77	226	6.934	17.82	0	0	1009.683	-1.505	60.57	872.0922	3.59	873.0214	869.7666	873.4886	4.233	3.252	3.188	2702.178	2704.803	2709.12	0.02	
01/10/2015 2:00	880	13.34	13.27	11.35	11.35	229.5	8.11	16.93	0	0	1011.075	-1.699	59.73	870.884	1.243	875.2792	868.4341	868.9389	1.151	1.523	0.994	2707.509	2698.489	2705.119	0.02	
01/10/2015 3:00	881	13.28	13.22	6.664	6.664	220.6	16.43	13.37	0	0	1012.059	-2.257	62.09	870.9177	0.428	875.0914	868.7553	868.9066	0.399	0.567	0.263	2706.604	2698.505	2702.748	0.01	
01/10/2015 4:00	882	13.24	13.17	3.954	3.954	222.7	12.83	7.624	0	0	1012.55	-2.574	64.35	871.0627	0.085	875.2007	868.9643	869.0231	0.098	0.095	0.056	2706.506	2699.05	2704.005	0.01	
01/10/2015 5:00	883	13.2	13.13	4.725	4.725	225.7	8.84	7.546	0	0	1012.919	-3.332	68.94	871.0853	0.28	875.3336	868.9109	869.0111	0.291	0.258	0.258	2707.192	2699.369	2704.017	0.01	
01/10/2015 6:00	884	13.15	13.1	5.15	5.15	227.5	7.334	6.88	0	0	1013.427	-3.744	73.74	871.1436	0.424	875.3812	868.9685	869.0811	0.479	0.442	0.338	2706.47	2698.437	2704.614	0.01	
01/10/2015 7:00	885	13.12	13.07	4.337	4.337	201.5	10.83	6.84	0.2977156	0.001071776	1014.015	-3.693	70.09	871.1895	0.228	875.2547	869.0493	869.2647	0.232	0.259	0.189	2706.879	2699.51	2704.261	0.01	
01/10/2015 8:00	886	14.52	13.07	4.774	4.774	197.7	7.776	6.644	44.52195	0.160279026	1014.697	-2.96	67.96	874.7854	0.509	874.7854	869.4179	869.585	0.552	0.554	0.407	2706.456	2700.226	2705.385	0.01	
01/10/2015 9:00	887	14.66	14.33	4.612	4.612	222	16.83	7.272	123.7788	0.44560366	1015.581	-2.061	67.34	871.27	0.158	874.2859	869.5753	869.9485	0.169	0.181	0.115	2705.131	2699.739	2705.317	0.04	
01/10/2015 10:00	888	14.67	14.61	3.371	3.371	237.9	21.88	6.488	209.4316	0.753953781	1015.905	-1.563	67.01	871.1556	0.354	874.5336	869.1714	869.7617	0.386	0.395	0.266	2705.534	2698.827	2705.325	0.08	
01/10/2015 11:00	889	14.66	14.18	5.179	5.179	294.7	21.81	9.17	134.7604	0.485137265	1016.481	-3.344	85.8	871.1492	1.058	875.6233	868.8528	868.9716	0.975	1.332	0.797	2705.543	2699.2	2703.791	0.05	
01/10/2015 12:00	890	14.64	14.2	6.837	6.837	281.7	9.89	9.76	162.6403	0.585505058	1017.22	-4.858	91.1	871.2473	1.14	875.5988	868.9238	869.2193	1.141	1.299	0.952	2707.844	2700.709	2704.619	0.04	
01/10/2015 13:00	891	14.66	14.59	8.69	8.69	281	8.09	12.11	205.0392	0.738141034	1018.123	-5.384	87.5	871.2567	1.816	875.8474	868.7928	869.13	1.841	1.959	1.634	2709.056	2700.811	2702.913	0.05	
01/10/2015 14:00	892	14.61	14.45	7.344	7.344	289.2	7.841	11.07	208.6943	0.751299525	1019.043	-5.843	87.4	871.2559	0.967	875.7534	868.9016	869.113	0.991	1.212	0.595	2708.28	2699.465	2703.302	0.04	
01/10/2015 15:00	893	14.67	14.53	6.985	6.985	284.7	10.07	10.27	223.7905	0.805645778	1019.691	-5.754	80.8	871.174	0.688	875.785	868.7319	869.005	0.699	0.824	0.501	2708.433	2698.939	2703.562	0.05	
01/10/2015 16:00	894	14.67	14.5	6.747	6.747	290.4	8.05	9.49	133.6944	0.481299927	1020.141	-5.479	78.73	871.3067	0.963	876.2489	868.9449	868.7264	1.003	1.133	0.703	2707.766	2700.835	2703.997	0.03	
01/10/2015 17:00	895	14.64	14.13	7.919	7.919	296.3	8.33	11.47	64.64412	0.232718821	1020.725	-5.53	72.9	871.4274	1.708	875.5187	869.0341	869.7294	1.673	1.935	1.486	2704.564	2695.588	2705.968	0.01	
01/10/2015 18:00	896	14.37	14.01	7.864	7.864	298.4	9.8	11.09	28.05971	0.10101496	1021.679	-6.242	70.93	871.3271	1.041	876.2575	868.9287	868.7952	1.078	1.312	0.608	2709.455	2701.434	2703.025	0.01	
01/10/2015 19:00	897	14.02	13.86	7.858	7.857	284.9	7.07	10.92	0.9880214	0.003556876	1022.751	-7.297	70.07	871.4496	1.326	876.3162	869.0633	868.9695	1.301	1.735	0.757	2709.437	2700.367	2703.815	0.01	
01/10/2015 20:00	898	13.87	13.76	7.438	7.438	270.9	6.705	10.29	0	0	1023.46	-8.24	70.57	871.527	0.471	876.1583	869.2289	869.1937	0.507	0.507	0.389	2709.309	2700.404	2703.793	0.01	
01/10/2015 21:00	899	13.77	13.68	5.612	5.612	277.2	6.913	7.409	0	0	1023.87	-8.96	72.53	871.6089	0.384	876.312	869.3111	869.2037	0.413	0.368	0.267	2707.799	2698.813	2702.091	0.01	
01/10/2015 22:00	900	13.69	13.61	5.258	5.258	278	5.748	6.997	0	0	1024.385	-9.42	73.44	871.6586	0.447	876.3769	869.3135	869.2854	0.463	0.492	0.378	2707.928	2699.246	2704.974	0	
01/10/2015 23:00	901	13.63	13.54	4.881	4.881	275.6	5.949	7.33	0	0	1024.828	-10.07	77.96	871.6438	0.549	876.4402	869.3185	869.1727	0.583	0.381	0.267	2707.939	2699.399	2704.639	0	
02/10/2015 0:00	902	13.56	13.49	6.589	6.589	275.2	5.871	9.64	0	0	1024.995	-10.1	82.1	871.6485	1.111	876.837	869.1073	869.0012	1.117	1.306	0.867	2708.163	2698.846	2706.521	0	
02/10/2015 1:00	903	13.5	13.43	6.339	6.339	274.4	5.965	8.66	0	0	1025.487	-10.45	82.6	871.8081	0.469	876.7461	869.3411	869.337	0.54	0.428	0.429	2709.052	2700.149	2704.763	0	
02/10/2015 2:00	904	13.45	13.37	4.711	4.711	264.9	7.113	6.644	0	0	1026.074	-10.98	84.3	871.8086	0.307	876.7701	869.4072	869.2484	0.339	0.307	0.271	2707.973	2699.281	2704.848	0	
02/10/2015 3:00	905	13.39	13.32	4.434	4.434	256	7.487	7.076	0</																	

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
04/10/2015 2:00	952	13.32	13.26	4.049	4.049	250.9	4.846	5.743	0	0	1016.072	-2.206	60.73	871.3069	0.375	876.0812	868.4498	869.3898	0.423	0.383	0.311	2706.886	2697.426	2704.478	0.01	
04/10/2015 3:00	953	13.27	13.21	4.925	4.925	250.5	4.721	6.292	0	0	1015.826	-2.099	61.47	871.3184	0.314	876.0367	868.4604	869.4579	0.365	0.31	0.259	2707.612	2698.33	2704.793	0.02	
04/10/2015 4:00	954	13.23	13.17	4.146	4.146	254.2	5.318	5.39	0	0	1015.744	-1.937	63.03	871.3059	0.291	875.9791	868.4646	869.4742	0.306	0.321	0.24	2707.351	2698.122	2705.039	0.01	
04/10/2015 5:00	955	13.18	13.13	5.005	5.005	266.7	7.264	10.762	0	0	1015.744	-1.91	66.13	871.3328	0.343	876.0914	868.4567	869.4504	0.383	0.391	0.232	2707.991	2698.711	2704.739	0.01	
04/10/2015 6:00	956	13.15	13.1	5.83	5.83	271.2	8.764	16.04	0	0	1015.58	-2.498	69.31	871.2119	0.926	876.1517	868.2035	869.2803	0.908	1.168	0.62	2708.83	2697.667	2704.515	0.01	
04/10/2015 7:00	957	13.11	13.06	6.859	6.859	268.4	8.05	9.9	0.2132902	0.000767845	1015.744	-2.681	74.8	871.2383	0.786	876.051	868.2683	869.3957	0.855	0.874	0.599	2708.527	2700.502	2704.378	0.01	
04/10/2015 8:00	958	13.1	13.06	5.782	5.782	273.7	7.468	8.6	9.804977	0.035297927	1015.75	-3.282	81.6	871.4327	0.421	876.1675	868.6055	869.5252	0.445	0.472	0.332	2708.05	2699.449	2704.992	0.01	
04/10/2015 9:00	959	13.22	13.08	5.522	5.522	269.8	9.01	8.04	35.2204	0.126793451	1015.583	-3.189	83.4	871.3784	0.76	876.2488	868.4344	869.4517	0.672	0.957	0.604	2706.523	2696.752	2704.829	0.01	
04/10/2015 10:00	960	14.67	13.2	6.527	6.527	276.1	10.03	10.02	194.7345	0.701044154	1015.744	-2.481	79	871.4836	0.766	873.7467	869.1196	871.5844	0.82	0.845	0.612	2703.933	2699.62	2707.49	0.06	
04/10/2015 11:00	961	14.67	14.62	6.392	6.392	284.8	13.41	9.55	249.0351	0.896526435	1015.786	-1.574	70.76	870.9578	0.673	876.2123	868.1163	868.545	0.708	0.77	0.515	2707.996	2698.157	2702.131	0.09	
04/10/2015 12:00	962	14.64	14.21	7.094	7.094	285.5	7.267	10.8	132.2028	0.475929995	1015.712	-1.228	68.86	871.2283	1.841	875.9543	868.1409	869.5898	1.634	2.353	1.402	2704.953	2697.089	2704.208	0.07	
04/10/2015 13:00	963	14.65	14.21	8.29	8.29	287.7	8.42	12.7	142.1005	0.511561916	1015.787	-0.9	68.55	871.231	1.88	876.3295	868.0549	869.3085	1.694	2.419	1.373	2708.164	2699.122	2704.888	0.08	
04/10/2015 14:00	964	14.64	14.34	8.22	8.22	287.9	8.37	11.21	170.1236	0.612445023	1015.932	-0.467	65.77	871.2418	1.705	875.8391	868.265	869.6213	1.46	2.118	1.452	2704.415	2694.268	2702.602	0.08	
04/10/2015 15:00	965	14.64	14.34	8.34	8.34	283.5	8.49	11.09	162.0916	0.583529539	1015.851	-0.31	63.8	871.2255	1.135	876.3049	868.3522	869.0195	1.314	1.321	0.626	2707.948	2698.068	2703.205	0.09	
04/10/2015 16:00	966	14.4	14.04	7.387	7.387	288.1	9.15	10.92	59.32945	0.21358606	1015.699	-0.481	64.27	871.2153	1.283	876.2933	868.3822	868.9702	1.333	1.625	0.719	2705.869	2697.293	2704.202	0.06	
04/10/2015 17:00	967	14.08	13.94	9	9	287.2	8.61	13.19	32.8359	0.118209237	1015.644	-1.04	70	871.9008	2.439	875.9985	868.9838	870.72	2.293	2.844	2.122	2710.811	2703.95	2712.365	0.02	
04/10/2015 18:00	968	13.96	13.84	9.74	9.74	287.1	7.274	14.13	17.58498	0.063305938	1015.744	-1.895	74.42	872.2266	2.426	875.9966	869.5151	871.168	2.325	2.902	1.957	2708.962	2701.509	2705.122	0.01	
04/10/2015 19:00	969	13.85	13.72	9.2	9.2	280.5	8.87	13.23	0.1651034	0.000594372	1016.157	-2.742	77.01	871.2618	0.697	876.3554	868.2722	869.1578	0.652	0.844	0.567	2708.051	2698.691	2704.914	0.01	
04/10/2015 20:00	970	13.73	13.64	6.576	6.576	282.7	8.67	9.8	0	0	1016.483	-3.065	82.2	871.3908	0.536	876.387	868.4888	869.2965	0.55	0.655	0.359	2708.087	2699.593	2704.367	0.01	
04/10/2015 21:00	971	13.65	13.56	5.652	5.652	282.2	7.632	8.35	0	0	1016.73	-3.204	85.3	871.4085	0.517	876.3853	868.6799	869.1605	0.524	0.6	0.41	2707.885	2698.771	2703.784	0	
04/10/2015 22:00	972	13.58	13.5	6.02	6.02	277.5	6.459	8.37	0	0	1016.814	-3.406	86.2	871.4383	0.517	876.3495	868.6548	869.3105	0.524	0.713	0.464	2709.567	2700.551	2704.066	0	
04/10/2015 23:00	973	13.51	13.44	6.156	6.156	278.3	6.765	8.43	0	0	1016.811	-3.6	85.6	871.4232	0.563	876.4285	868.6248	869.2164	0.532	0.641	0.507	2707.371	2696.917	2703.955	0	
05/10/2015 0:00	974	13.45	13.38	6.409	6.409	278.1	7.544	8.68	0	0	1016.977	-3.822	86.9	871.5599	0.451	876.433	868.8338	869.413	0.461	0.521	0.356	2707.768	2698.582	2704.681	0	
05/10/2015 1:00	975	13.4	13.32	4.571	4.571	273.1	7.876	6.468	0	0	1017.137	-3.921	87.6	871.5073	0.242	876.2704	868.7642	869.4873	0.237	0.278	0.206	2708.064	2698.694	2705.51	0	
05/10/2015 2:00	976	13.34	13.27	4.064	4.064	273.8	8.28	6.096	0	0	1017.302	-4.03	87.1	871.532	0.172	876.3114	868.801	869.4835	0.187	0.172	0.156	2707.792	2698.453	2704.433	0	
05/10/2015 3:00	977	13.29	13.22	4.372	4.372	267.6	6.595	5.978	0	0	1017.302	-4.154	87.5	871.5615	0.308	876.3472	868.8414	869.4958	0.336	0.345	0.229	2707.743	2698.181	2704.693	0	
05/10/2015 4:00	978	13.24	13.18	4.007	4.007	275.3	8.18	5.919	0	0	1017.143	-4.211	87.3	871.575	0.275	876.3423	868.8433	869.5394	0.298	0.279	0.246	2708.235	2698.98	2704.765	0	
05/10/2015 5:00	979	13.2	13.13	3.319	3.319	281.4	8.02	4.841	0	0	1017.071	-4.255	86.1	871.6008	0.109	876.316	868.9003	869.5859	0.125	0.111	0.088	2707.631	2698.85	2704.979	0	
05/10/2015 6:00	980	13.16	13.1	2.974	2.974	287.3	16.2	4.861	0	0	1017.059	-4.205	83.2	871.6101	0.089	876.2808	868.9284	869.6212	0.09	0.107	0.064	2707.831	2698.927	2704.962	0	
05/10/2015 7:00	981	13.12	13.06	2.263	2.263	305.7	15.77	4.704	0.2395692	0.000862449	1016.735	-4.272	82.3	871.6061	0.2	876.2672	868.9177	869.6336	0.254	0.213	0.103	2708.296	2699.098	2705.042	0	
05/10/2015 8:00	982	13.1	13.06	2.516	2.516	289.2	12.47	4.802	10.21662	0.03677985	1016.663	-4.434	83.5	871.6288	0.26	876.3525	868.9111	869.6228	0.317	0.211	0.211	2707.757	2699.242	2705.204	0	
05/10/2015 9:00	983	13.27	13.08	2.688	2.688	283.3	12.71	4.645	44.86005	0.1614962	1016.651	-4.344	85.8	871.6243	0.065	876.1699	868.9618	869.7413	0.067	0.075	0.051	2707.693	2699.057	2705.018	0.01	
05/10/2015 10:00	984	13.73	13.27	2.627	2.627	270.9	19.72	4.841	89.09222	0.320732077	1016.482	-4.125	84.9	871.6289	0.069	876.1453	868.961	869.7803	0.075	0.07	0.061	2707.697	2698.997	2705.041	0.02	
05/10/2015 11:00	985	14.59	13.73	2.84	2.84	294.6	27.26	5.508	131.4125	0.473084896	1016.403	-3.473	78.1	871.5798	0.152	876.1196	868.8463	869.7737	0.143	0.205	0.083	2707.786	2697.301	2704.997	0.05	
05/10/2015 12:00	986	14.65	14.37	3.387	3.387	300	16.09	6.096	129.584	0.466502269	1016.4	-3.155	76.58	871.5679	0.168	876.1709	868.8358	869.6972	0.187	0.193	0.11	2708.003	2698.851	2704.854	0.05	
05/10/2015 13:00	987	14.65	14.5	1.984	1.984	300.1	24.93	7.115	143.6942	0.517299276	1016.4	-2.839	74.36	871.5711	0.079	876.045	868.8844	869.7839	0.085	0.059	0.279	2707.242	2698.671	2705.196	0.05	
05/10/2015 14:00	988	14.65	14.21	2.839	2.839	326.1	16.25	4.586	118.3847	0.426185001	1016.072	-2.913	76.5	871.545	0.128	876.1696	868.8033	869.662	0.127	0.156	0.093	2708.284	2699.455	2704.813	0.05	
05/10/2015 15:00	989	14.5	14.25	3.307	3.307	318.9	22.16	5.449	113.9195	0.410110119	1015.826	-2.816	72.27	871.5262	0.274	876.1143	868.8477	869.6167	0.252	0.375	0.148	2707.462	2698.901	2704.952	0.05	
05/10/2015 16:00	990	14.28	14.15	2.766	2.766	320	30.21	4.763	83.05376	0.298993503	1015.662	-2.91	71.29	871.5093	0.172	876.0988	868.7864	869.6428	0.197	0.174	0.142	2707.047	2698.32	2704.918	0.04	
05/10/2015 17:00	991	14.17	14.03	3.054	3.054	321.8	16.83	5.566	43.50763	0.156627468	1015.335	-3.15														

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
07/10/2015 16:00	1038	14.22	14.09	1.639	1.639	185.8	39.97	4.841	66.16803	0.238204831	1011.258	1.422	68.6	871.3956	0.085	875.4529	868.4682	870.2656	0.095	0.092	0.066	2706.716	2698.142	2705.745	0.03	
07/10/2015 17:00	1039	14.13	13.95	1.433	1.433	226.6	28.54	3.077	34.46415	0.124070937	1011.181	1.5	70.46	871.3931	0.026	875.4098	868.5083	870.2614	0.027	0.028	0.023	2706.804	2698.488	2705.692	0.02	
07/10/2015 18:00	1040	13.96	13.79	0.952	0.952	190.1	65.54	2.666	7.144131	0.025718879	1011.263	1.025	72.6	871.3835	0.016	875.4514	868.5058	870.1934	0.018	0.017	0.014	2706.834	2698.408	2705.544	0	
07/10/2015 19:00	1041	13.81	13.69	1.235	1.235	188.5	43.34	2.548	0.05986394	0.00021551	1011.345	0.598	74.58	871.3916	0.01	875.4571	868.5197	870.1981	0.012	0.009	0.01	2706.816	2698.451	2705.607	0	
07/10/2015 20:00	1042	13.7	13.6	1.137	1.137	192.4	63.91	3.763	0	0	1011.263	0.772	75.62	871.4011	0.066	875.4124	868.5421	870.2491	0.057	0.085	0.051	2706.725	2698.599	2705.827	0	
07/10/2015 21:00	1043	13.62	13.53	1.139	1.139	176.8	57.5	3.998	0	0	1011.427	0.889	76.46	871.4035	0.023	875.4261	868.5363	870.2482	0.024	0.028	0.013	2706.824	2698.505	2705.668	0	
07/10/2015 22:00	1044	13.55	13.47	0.611	0.611	139.4	23.48	3.156	0.03795633	0.000136643	1011.427	1.052	76.92	871.413	0.094	875.3669	868.5931	870.2791	0.101	0.108	0.067	2706.854	2698.723	2705.736	0	
07/10/2015 23:00	1045	13.48	13.41	0.988	0.988	203.4	73.53	5.331	0.01273702	4.58533E-05	1011.591	1.363	77.31	871.3976	0.005	875.3674	868.5761	870.2491	0.007	0.005	0.004	2706.733	2698.529	2705.672	0	
08/10/2015 0:00	1046	13.43	13.35	1.639	1.639	126.9	19.95	4.782	0.02853093	0.000102711	1011.427	1.67	77.72	871.4151	0.058	875.3127	868.6006	870.3321	0.064	0.064	0.043	2706.762	2698.608	2705.75	0	
08/10/2015 1:00	1047	13.37	13.3	2.468	2.468	150.7	49.72	4.763	0	0	1011.099	0.617	81.2	871.3616	0.269	875.2828	868.5513	870.2508	0.283	0.346	0.132	2706.746	2698.614	2705.696	0	
08/10/2015 2:00	1048	13.32	13.24	1.821	1.821	150.6	31.58	4.861	0	0	1011.234	0.689	82.2	871.4363	0.136	875.2905	868.6613	870.3573	0.153	0.152	0.095	2706.67	2698.532	2705.715	0	
08/10/2015 3:00	1049	13.26	13.2	3.264	3.264	139.7	41.25	7.272	0	0	1010.885	1.03	80.2	871.4597	0.238	875.2936	868.712	870.3734	0.265	0.272	0.16	2706.656	2698.143	2705.954	0.01	
08/10/2015 4:00	1050	13.22	13.16	3.619	3.619	123.3	15.47	5.782	0	0	1010.502	0.153	81.6	871.4713	0.287	875.2197	868.7338	870.4603	0.32	0.33	0.19	2706.551	2698.677	2705.83	0.01	
08/10/2015 5:00	1051	13.17	13.12	4.351	4.351	139.8	7.184	5.508	0	0	1010.335	0.873	74.9	871.4603	0.248	875.2314	868.7418	870.4078	0.249	0.311	0.162	2707.088	2699.369	2706.112	0.01	
08/10/2015 6:00	1052	13.14	13.08	3.791	3.791	130.3	11.37	5.802	0	0	1009.601	-0.71	82.2	871.5048	0.353	875.3377	868.7755	870.4012	0.358	0.472	0.152	2706.237	2699.956	2706.187	0.01	
08/10/2015 7:00	1053	13.11	13.06	3.765	3.765	124	14.68	6.703	0	0	1009.355	-1.576	86.3	871.5293	0.073	875.3144	868.8233	870.4501	0.086	0.077	0.051	2706.756	2698.917	2705.939	0	
08/10/2015 8:00	1054	13.56	13.06	3.535	3.535	128.4	21.71	5.939	13.83481	0.049805318	1008.782	-0.349	79.86	871.5666	0.505	875.0787	868.9306	870.6905	0.44	0.687	0.315	2705.719	2699.675	2706.068	0.01	
08/10/2015 9:00	1055	13.8	13.55	4.729	4.729	142.1	5.791	5.998	43.13615	0.155290122	1008.83	0.09	77.93	871.501	0.418	875.2601	868.764	870.4788	0.448	0.515	0.243	2706.318	2698.09	2706.505	0.03	
08/10/2015 10:00	1056	14.04	13.77	4.556	4.556	144.9	10.36	7.291	72.87617	0.262354171	1008.406	-0.2	79.45	871.4907	0.527	875.1536	868.7319	870.5868	0.524	0.67	0.331	2706.856	2698.93	2705.897	0.04	
08/10/2015 11:00	1057	14.17	14	4.636	4.636	147.6	10.43	6.684	65.57247	0.236060953	1008.151	0.127	79.13	871.5416	0.311	875.2703	868.8837	870.4708	0.3	0.426	0.138	2706.606	2698.383	2706.162	0.04	
08/10/2015 12:00	1058	14.17	14.11	4.3	4.3	131	11.52	6.84	62.97342	0.226704336	1007.332	-0.295	90.7	871.6099	0.593	875.3465	868.9446	870.5388	0.534	0.816	0.323	2705.458	2697.705	2705.986	0.03	
08/10/2015 13:00	1059	14.28	14.11	5.874	5.874	147.5	6.86	7.683	75.23454	0.270844317	1006.841	0.106	94.1	871.5699	0.968	875.2969	868.9011	870.5118	0.878	1.296	0.601	2706.342	2698.154	2706.584	0.03	
08/10/2015 14:00	1060	14.64	14.1	8.44	8.44	144.7	5.636	11.56	100.967	0.363481316	1005.86	-0.453	96.9	871.2339	1.408	875.1885	868.0736	870.4398	1.528	1.687	0.877	2704.187	2697.187	2706.224	0.03	
08/10/2015 15:00	1061	14.64	14.23	9.04	9.04	146.7	4.136	10.96	119.7792	0.431205054	1005.039	0.087	94.8	871.5454	1.256	875.3348	868.8534	870.4481	1.161	1.554	0.983	2705.367	2697.932	2706.522	0.03	
08/10/2015 16:00	1062	14.26	14.1	8.67	8.67	141.4	6.138	11.21	68.47891	0.246524058	1004.548	-0.257	96.7	871.4222	1.331	874.9064	868.9278	870.4324	1.294	1.727	0.812	2706.755	2698.992	2705.892	0.02	
08/10/2015 17:00	1063	14.12	13.95	9.76	9.76	144.7	3.998	12.76	25.79463	0.092860655	1003.892	-0.417	97.5	871.3587	1.222	874.8713	868.6174	870.5874	1.204	1.543	0.808	2704.109	2696.297	2706.198	0.01	
08/10/2015 18:00	1064	13.97	13.8	7.161	7.161	140.8	7.249	10.21	3.648941	0.01313619	1003.658	-0.431	97.5	871.2692	0.773	874.882	868.5955	870.3302	0.755	1.005	0.46	2704.878	2696.421	2705.5	0	
08/10/2015 19:00	1065	13.82	13.71	7.819	7.819	138.7	5.491	9.74	0.03235538	0.000116479	1003.407	-0.438	97.5	871.3941	0.801	875.0349	868.8587	870.2888	0.743	1.021	0.575	2705.713	2698.051	2706.279	0	
08/10/2015 20:00	1066	13.72	13.62	5.78	5.78	135	8.13	9	0.002292772	8.25398E-06	1003.169	-0.336	97.4	871.416	0.666	875.0925	868.7296	870.4261	0.59	0.897	0.421	2706.438	2698.777	2706.231	0	
08/10/2015 21:00	1067	13.64	13.55	4.753	4.753	129.9	22.78	8.94	0	0	1003.239	-0.168	97.1	871.3958	0.087	875.3464	868.7222	870.1189	0.097	0.103	0.051	2706.721	2698.719	2705.49	0	
08/10/2015 22:00	1068	13.57	13.49	1.676	1.676	125.7	55.95	6.801	0.05171396	0.00018617	1002.912	0.318	95.9	871.4219	0.087	875.451	868.7451	870.0696	0.113	0.065	0.075	2706.735	2698.633	2705.375	0	
08/10/2015 23:00	1069	13.5	13.43	3.807	3.807	212.2	18.82	11.02	0.03591915	0.000129309	1002.582	1.664	90	871.3115	1.164	875.5013	868.3798	870.0535	0.988	1.637	0.64	2707.203	2698.5	2702.779	0	
09/10/2015 0:00	1070	13.44	13.37	3.989	3.989	150.3	58.56	10.27	0.02572832	9.2622E-05	1002.5	1.875	89.5	871.41	0.659	875.2043	868.883	870.1428	0.594	0.889	0.399	2707.183	2698.796	2704.929	0	
09/10/2015 1:00	1071	13.39	13.32	4.572	4.572	145.3	20.62	6.919	0	0	1002.091	0.782	93.6	871.3476	0.499	875.0124	868.7328	870.2974	0.54	0.609	0.292	2706.697	2699.073	2705.23	0	
09/10/2015 2:00	1072	13.33	13.26	5.391	5.391	155.1	25.98	8.68	0.01197291	4.31025E-05	1002.173	0.596	95.1	871.3908	0.083	875.3703	868.6995	870.1025	0.069	0.111	0.06	2706.828	2698.699	2705.502	0	
09/10/2015 3:00	1073	13.28	13.22	4.604	4.604	166.1	16.55	8.08	0.01630331	5.86919E-05	1001.599	2.299	89.3	871.3877	0.568	875.2618	868.6698	870.2314	0.586	0.727	0.312	2705.248	2696.569	2706.04	0.01	
09/10/2015 4:00	1074	13.23	13.17	7.005	7.005	160.9	14.33	10.11	0	0	1000.78	1.185	91.1	871.3426	0.49	874.9625	868.7733	870.2919	0.536	0.525	0.398	2706.169	2698.553	2705.791	0.01	
09/10/2015 5:00	1075	13.19	13.13	4.546	4.546	139	22.89	7.84	0	0	999.4736	0.434	96.3	871.433	0.419	875.1978	868.7335	870.3679	0.428	0.514	0.283	2706.924	2699.648	2705.37	0	
09/10/2015 6:00	1076	13.15	13.09	5.812	5.812	140.1	12.28	8.02	0.01426575	5.13567E-05	998.6632	-0.35	96.6	871.4331	0.355	875.1249	868.8481	870.3263	0.38	0.46	0.15	2706.189	2698.527	2705.69	0	
09/10/2015 7:00	1077	13.12																								

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
11/10/2015 6:00	1124	13.12	13.07	2.32	2.32	174.9	49.78	9.07	0	0	998.1333	0.121	64.82	873.5515	0.745	877.2216	870.7624	872.6704	0.777	0.889	0.522	2710.53	2702.418	2708.974	0	
11/10/2015 7:00	1125	13.08	13.04	8.42	8.42	217	8.94	11.41	0	0	998.5338	0.359	68	873.4866	0.9	877.1377	870.5601	872.762	0.939	1.109	0.565	2710.45	2701.67	2709.448	0.02	
11/10/2015 8:00	1126	13.74	13.04	8.37	8.37	225.5	9.74	12.92	17.44683	0.062808594	998.9874	0.669	63.28	873.9219	1.741	876.5504	871.1376	874.0779	1.459	2.057	1.652	2707.401	2699.444	2710.862	0.02	
11/10/2015 9:00	1127	13.72	13.59	6.964	6.964	220.7	10.02	11.6	37.59566	0.135344377	999.6338	0.483	68.95	873.3848	0.557	877.1192	870.6494	872.3858	0.419	0.778	0.389	2707.833	2697.638	2708.354	0.02	
11/10/2015 10:00	1128	14.67	13.72	4.779	4.779	220.1	12.88	9.64	120.4606	0.43365823	1000.125	0.869	66.91	873.4777	0.519	876.1547	871.0176	873.2609	0.249	0.691	0.519	2707.902	2700.986	2708.869	0.05	
11/10/2015 11:00	1129	14.67	14.62	6.184	6.184	204.6	11.69	9.8	158.9675	0.572283135	1000.289	1.218	66.04	873.4418	0.899	875.7632	870.6986	873.8635	0.924	1.135	0.53	2707.593	2701.885	2710.157	0.08	
11/10/2015 12:00	1130	14.67	14.22	8.76	8.76	214.8	9.62	13.09	365.1154	1.314415424	999.9613	1.844	62.95	874.0678	2.272	875.4182	870.623	876.1622	1.542	2.978	2.058	2707.372	2702.836	2710.292	0.14	
11/10/2015 13:00	1131	14.24	14.22	9.91	9.91	211.2	7.12	12.82	380.2316	1.368834065	1000.124	2.109	61.19	874.0276	2.824	875.3302	871.0494	875.7032	2.347	3.789	2.017	2711.162	2700.379	2709.201	0.14	
11/10/2015 14:00	1132	14.3	14.18	8.63	8.63	210.2	8.7	13.33	313.2603	1.127737338	1000.769	2.375	62.41	873.02	0.815	876.5928	869.2983	873.1688	0.822	1.008	0.55	2708.23	2699.724	2709.716	0.13	
11/10/2015 15:00	1133	14.26	14.21	3.038	3.038	151.7	22.33	7.84	220.338	0.793216841	999.9451	2.651	64.25	873.2747	0.129	877.1958	870.0348	872.5934	0.13	0.084	0.084	2709.052	2700.393	2708.589	0.08	
11/10/2015 16:00	1134	14.34	14.17	3.706	3.706	140.8	12.32	6.272	117.4356	0.422768286	999.306	2.136	67.86	873.3664	0.327	877.0301	870.5697	872.4993	0.331	0.418	0.191	2709.516	2701.457	2708.583	0.04	
11/10/2015 17:00	1135	14.19	13.99	4.228	4.228	119.2	36.71	7.115	54.95347	0.197832541	998.2413	1.512	69.08	873.4162	0.309	876.9023	870.7803	872.5659	0.309	0.41	0.15	2708.341	2701.243	2708.532	0.01	
11/10/2015 18:00	1136	14	13.79	6.849	6.849	144.5	9.56	11.13	6.769418	0.024369907	996.9333	0.636	72.99	873.3501	1.488	876.2371	871.011	875.8022	1.514	1.359	1.359	2705.618	2699.104	2708.517	0.01	
11/10/2015 19:00	1137	13.81	13.68	9.28	9.28	122.9	6.895	13.25	0	0	996.0303	0.628	76.81	873.8204	2.175	875.8672	871.6292	873.9648	1.702	2.256	2.49	2707.002	2700.331	2710.156	0.01	
11/10/2015 20:00	1138	13.7	13.59	9.47	9.47	115	7.442	12.92	0	0	995.0475	0.338	82.7	873.3498	1.573	876.0666	871.1382	872.8446	1.505	1.975	1.12	2708.502	2701.158	2708.927	0.01	
11/10/2015 21:00	1139	13.62	13.53	10.24	10.24	110.1	7.207	14.13	0	0	994.0684	0.218	86.7	873.673	2.147	876.1956	870.926	873.8975	1.768	2.759	1.759	2708.379	2700.366	2710.999	0	
11/10/2015 22:00	1140	13.54	13.46	8.98	8.98	123.7	9.91	14.5	0	0	993.5873	-0.423	93.9	873.0018	1.206	876.8639	870.631	871.5106	1.168	1.543	0.787	2708.624	2700.646	2706.312	0	
11/10/2015 23:00	1141	13.47	13.4	5.563	5.563	133.5	7.244	8.25	0	0	993.2755	-0.697	96.2	873.1149	0.47	877.0652	870.7205	872.227	0.475	0.592	0.294	2709.103	2702.227	2706.946	0	
12/10/2015 0:00	1142	13.42	13.34	5.058	5.058	138.6	10.01	10.7	0	0	992.7792	-0.668	94.2	873.1041	1.052	876.9008	870.6199	871.7916	0.967	1.318	0.803	2707.292	2699.292	2707.912	0	
12/10/2015 1:00	1143	13.36	13.29	12.4	12.4	158.4	8.13	16.88	0	0	991.8599	-0.066	84.2	873.9927	3.364	874.3567	871.7253	875.8959	3.281	3.717	3.06	2706.172	2698.594	2710.952	0.01	
12/10/2015 2:00	1144	13.31	13.24	12.31	12.31	160.1	8.83	18.19	0	0	992.3658	0.03	81.4	873.4532	1.298	876.5034	871.2238	872.6323	1.123	1.754	0.845	2708.111	2702.488	2708.683	0.01	
12/10/2015 3:00	1145	13.26	13.19	6.797	6.797	142.8	24.78	11.86	0	0	992.2028	0.389	79.58	873.3872	1.047	876.8315	870.6304	872.6997	0.939	1.348	0.769	2708.892	2703.914	2708.736	0.01	
12/10/2015 4:00	1146	13.21	13.15	10.13	10.13	158.7	10.13	15.46	0	0	991.5261	0.321	82.8	873.7366	1.986	875.6596	871.0453	874.5051	1.852	2.409	1.612	2712.704	2709.432	2713.225	0.01	
12/10/2015 5:00	1147	13.17	13.11	11.48	11.48	161.8	5.665	15.33	0	0	991.7716	-0.01	85.5	873.5452	2.015	875.8206	870.7635	874.0518	1.566	2.606	1.714	2710.343	2703.263	2706.726	0.01	
12/10/2015 6:00	1148	13.13	13.08	10.92	10.92	165.9	6.386	14.5	0	0	991.7792	0.025	85.5	873.9727	2.255	875.8134	871.7648	874.3399	1.851	2.776	2.031	2710.987	2705.773	2708.692	0.01	
12/10/2015 7:00	1149	13.09	13.05	10.46	10.46	171.8	8.03	14.92	0	0	992.1057	0.209	83.9	873.9902	1.739	876.6487	871.3423	871.9796	1.67	2.162	1.269	2711.163	2701.922	2708.808	0.01	
12/10/2015 8:00	1150	13.08	13.05	11.43	11.43	188	11.15	17.66	5.319273	0.019149377	992.5087	1.072	76.69	873.8469	3.068	875.0358	870.9858	875.5189	3.451	3.301	2.332	2708.297	2700.501	2709.24	0.01	
12/10/2015 9:00	1151	13.22	13.06	12.37	12.37	196.2	9.7	19.17	26.46781	0.095284108	993.0819	1.701	70.79	874.5678	4.55	874.3226	872.4161	876.9646	5.102	4.349	4.143	2705.335	2705.477	2718.841	0.02	
12/10/2015 10:00	1152	13.73	13.21	11.51	11.51	199	9.77	17.68	55.31923	0.199149249	993.7372	1.747	68.02	874.0687	5.051	874.7606	872.3687	875.077	6.184	5.696	2.422	2705.286	2695.959	2708.36	0.02	
12/10/2015 11:00	1153	14.28	13.73	11.59	11.59	198.2	9.91	17.76	76.07632	0.273874775	994.225	1.653	65.77	873.8433	3.126	876.52	870.756	874.2537	3.493	2.955	2.707	2707.487	2696.805	2713.047	0.09	
12/10/2015 12:00	1154	14.67	14.24	9.85	9.85	199	11.11	16.54	109.9933	0.395975841	994.7198	1.606	65.31	874.0268	3.564	875.0632	871.4796	875.5377	3.938	4.019	2.538	2708.297	2699.852	2711.066	0.09	
12/10/2015 13:00	1155	14.67	14.63	12.33	12.33	203.4	8.72	17.62	420.1218	1.512438808	994.3103	2.458	62.89	874.6822	4.042	874.6888	872.1901	877.1677	3.417	4.419	4.22	2702.619	2692.678	2713.744	0.15	
12/10/2015 14:00	1156	14.64	14.27	10.89	10.89	204.8	10.15	16.41	180.3438	0.649237724	995.1293	2.103	63.39	873.681	1.998	876.6685	870.3124	874.062	1.608	2.079	2.251	2710.486	2701.721	2707.177	0.1	
12/10/2015 15:00	1157	14.34	14.22	8.26	8.26	196.9	15	13.5	240.0677	0.864243775	995.698	2.75	61.31	873.3284	1.394	877.1082	870.0751	872.802	1.205	0.876	0.76	2708.545	2699.445	2709.81	0.12	
12/10/2015 16:00	1158	14.34	14.13	6.783	6.783	186.6	11.41	12.19	92.80498	0.334098047	995.8663	1.951	67.53	873.1282	1.261	876.8653	870.4603	872.0588	1.261	1.524	0.926	2707.334	2698.68	2707.873	0.06	
12/10/2015 17:00	1159	14.15	13.96	7.815	7.815	187.1	9.98	11.82	40.76626	0.146758536	996.193	1.837	67.58	873.9235	1.078	876.7689	870.1321	871.8668	1.057	0.618	0.618	2708.868	2700.629	2708.278	0.02	
12/10/2015 18:00	1160	13.98	13.81	8.06	8.06	197.3	10.49	13.41	9.047108	0.032569583	996.3578	1.414	64.3	873.6082	1.793	876.9411	871.0967	872.7866	1.556	2.132	1.638	2710.547	2704.128	2707.489	0.02	
12/10/2015 19:00	1161	13.82	13.69	8.93	8.93	204.6	10.13	14.92	0	0	996.5215	0.803	66.29	873.669	2.457	876.1308	870.8709	874.0053	2.306	2.876	2.128	2708.733	2702.928	2711.88	0.02	
12/10/2015 20:00	1162	13.71	13.61	9.63	9.63	207	8.39	14.13	0	0	996.8496	0.099	66.6	873.2272	1.385	877.0898	870.185	872.4068	1.312	1.753	0.981	2708.693	2700.345	2709.479	0.02	
12/10/2015 21:00	1163	13.63	13.53	12.12	12.12	204.1	6.																			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
14/10/2015 20:00	1210	13.75	13.64	4.04	4.04	183	16.97	7.722	0	0	1020.824	-2.285	71.2	873.5829	0.024	877.7622	870.9759	872.0108	0.027	0.029	0.015	2709.633	2701.499	2707.872	0.01	
14/10/2015 21:00	1211	13.66	13.57	2.238	2.238	188.5	22.55	4.645	0	0	1020.925	-1.732	65.58	873.6058	0.149	877.7994	870.9755	872.0425	0.144	0.195	0.09	2709.391	2701.216	2707.988	0	
14/10/2015 22:00	1212	13.58	13.5	2.301	2.301	190.7	20.71	4.057	0	0	1021.033	-1.978	66.71	873.6196	0.101	877.8076	870.9753	872.0759	0.105	0.121	0.069	2709.791	2701.732	2707.852	0	
14/10/2015 23:00	1213	13.52	13.44	1.742	1.742	156.7	45.45	3.783	0	0	1021.044	-1.839	67.24	873.6567	0.086	877.7227	871.1451	872.1024	0.091	0.109	0.046	2709.602	2701.848	2708.01	0	
15/10/2015 0:00	1214	13.45	13.38	1.609	1.609	177.5	66.39	4.096	0	0	1020.963	-2.299	71.01	873.6762	0.048	877.8131	871.0776	872.138	0.058	0.032	0.058	2709.807	2701.784	2708.083	0	
15/10/2015 1:00	1215	13.4	13.33	0.717	0.717	131.4	18.37	1.98	0	0	1020.819	-1.945	70.45	873.7271	0.015	877.8198	871.1221	872.2396	0.018	0.013	0.015	2709.804	2701.783	2708.162	-0.01	
15/10/2015 2:00	1216	13.34	13.28	0.489	0.489	117.9	12.49	2.019	0	0	1020.748	-1.692	68.95	873.746	0.01	877.8145	871.1647	872.2588	0.015	0.005	0.008	2709.778	2701.784	2708.186	-0.02	
15/10/2015 3:00	1217	13.29	13.23	0.618	0.618	125.6	11.52	2.078	0	0	1020.447	-2.077	70.22	873.809	0.051	877.8088	871.2651	872.353	0.059	0.057	0.035	2709.859	2702.026	2708.319	-0.01	
15/10/2015 4:00	1218	13.24	13.18	1.381	1.381	202.3	22.12	2.803	0	0	1020.108	-2.639	69.99	873.7944	0.048	877.9299	871.1239	872.3293	0.056	0.053	0.031	2709.954	2701.764	2708.266	-0.01	
15/10/2015 5:00	1219	13.2	13.13	1.332	1.332	196.9	14.59	3.195	0	0	1019.928	-2.791	70.05	873.8041	0.013	877.9464	871.1724	872.2936	0.007	0.016	0.015	2709.987	2701.767	2708.194	-0.01	
15/10/2015 6:00	1220	13.16	13.09	1.378	1.378	207.6	16.6	3.018	0	0	1019.631	-3.067	70.86	873.8183	0.033	877.9912	871.1297	872.334	0.037	0.036	0.026	2709.997	2701.764	2708.271	-0.01	
15/10/2015 7:00	1221	13.11	13.06	1.003	1.003	193.2	35.74	3.116	0	0	1019.131	-2.6	70.28	873.8337	0.145	877.8148	871.2211	872.465	0.156	0.166	0.105	2709.798	2701.988	2708.511	-0.01	
15/10/2015 8:00	1222	13.06	12.81	2.17	2.17	181.1	26.85	3.842	7.420516	0.02033221	1019.004	-2.973	72.74	874.2087	0.028	878.8361	870.4955	873.2945	0.04	0.022	0.018	2711.072	2701.039	2709.536	0	
15/10/2015 9:00	1223	13.41	12.37	1.475	1.475	146.6	36.41	2.783	56.67333	0.204024	1019.024	-2.573	71.59	874.2625	0.042	878.3341	870.7463	873.7068	0.042	0.04	0.043	2710.51	2701.25	2709.984	0	
15/10/2015 10:00	1224	14.66	13.4	1.362	1.362	164.2	44.26	3.959	136.219	0.4903885	1019.103	-1.775	70.57	874.2354	0.022	878.1051	870.6054	873.9958	0.029	0.016	0.02	2710.119	2701.087	2710.379	0.02	
15/10/2015 11:00	1225	14.67	14.61	1.147	1.147	147	73.86	2.96	190.9455	0.6874039	1018.939	-1.319	70.27	874.187	0.063	877.8579	870.4564	874.2425	0.069	0.063	0.057	2709.901	2700.758	2710.614	0.04	
15/10/2015 12:00	1226	14.66	14.27	1.88	1.88	167.4	61	4.939	217.3426	0.7824333	1018.651	-0.647	65.54	874.0679	0.323	877.9839	869.9775	874.2425	0.301	0.378	0.281	2710.084	2701.66	2710.878	0.08	
15/10/2015 13:00	1227	14.37	14.28	4.292	4.292	152.2	11.14	6.331	220.0129	0.7920463	1018.312	-0.515	66.12	873.9658	0.429	878.395	869.9271	873.5754	0.448	0.481	0.345	2710.254	2700.192	2709.813	0.08	
15/10/2015 14:00	1228	14.37	14.26	4.124	4.124	149.4	13.39	6.488	225.0891	0.8103207	1018.224	-0.197	60.18	873.9185	0.411	878.6589	869.424	873.6725	0.405	0.501	0.302	2711.003	2699.603	2709.34	0.09	
15/10/2015 15:00	1229	14.4	14.29	3.503	3.503	142.4	10.44	5.625	172.0169	0.6192607	1018.061	-0.411	61.9	873.9798	0.16	878.7852	870.1083	873.0461	0.164	0.172	0.142	2711.111	2700.66	2709.278	0.07	
15/10/2015 16:00	1230	14.4	14.16	2.777	2.777	134.8	9.47	4.43	96.46245	0.3472648	1017.673	-0.788	64.65	874.0046	0.13	878.8154	870.2028	872.9955	0.139	0.091	0.091	2711.061	2700.454	2709.05	0.03	
15/10/2015 17:00	1231	14.18	14.02	3.213	3.213	118.5	9.46	5.253	43.06241	0.1550247	1016.965	-1.222	68.29	874.0008	0.188	878.8136	870.2034	872.9852	0.201	0.219	0.134	2711.104	2700.456	2709.345	0.01	
15/10/2015 18:00	1232	14.03	13.84	2.04	2.04	137.2	12.79	4.292	4.797707	0.01727174	1016.645	-2.098	73.58	874.0211	0.017	878.8911	870.2538	872.9183	0.018	0.019	0.014	2711.145	2700.636	2709.012	0	
15/10/2015 19:00	1233	13.86	13.73	2.17	2.17	157.4	41.59	6.037	0	0	1016.318	-2.909	77.24	874.0977	0.483	878.7158	870.3159	873.2614	0.527	0.565	0.321	2711.915	2700.752	2709.099	0	
15/10/2015 20:00	1234	13.75	13.65	4.748	4.748	136.4	9.54	7.958	0	0	1015.745	-3.001	80.1	874.0513	0.621	878.5399	870.3176	873.2963	0.678	0.731	0.404	2710.201	2700.137	2709.003	0	
15/10/2015 21:00	1235	13.66	13.57	6.334	6.334	143.1	5.802	7.84	0	0	1015.666	-3.142	82.5	874.1315	0.434	878.6882	870.4279	873.2786	0.419	0.549	0.299	2711.537	2700.453	2709.533	0	
15/10/2015 22:00	1236	13.59	13.51	4.021	4.021	120.3	11.93	6.605	0	0	1015.255	-3.188	85.6	874.1069	0.451	878.7407	870.451	873.1293	0.512	0.495	0.323	2710.819	2701.001	2709.365	0	
15/10/2015 23:00	1237	13.52	13.45	5.889	5.889	130.4	10	8.43	0.002037905	7.34E-06	1014.762	-3.487	92	874.2726	0.743	878.8021	870.58	873.4357	0.775	0.797	0.648	2712.342	2702.291	2709.665	0	
16/10/2015 0:00	1238	13.46	13.39	4.238	4.238	130.6	15.32	8.43	0.05935399	0.000213674	1014.516	-3.648	94.5	874.4777	0.714	879.0874	870.7289	873.6169	0.735	0.707	0.7	2710.476	2702.608	2710.437	0	
16/10/2015 1:00	1239	13.41	13.33	6.414	6.414	130	7.035	10.02	0.1108111	0.00039892	1014.777	-3.624	94.6	874.2739	0.436	879.7762	870.1362	872.9093	0.439	0.522	0.325	2711.709	2700.424	2709.39	0	
16/10/2015 2:00	1240	13.35	13.28	7.48	7.48	131	6.347	10.53	0.101131	0.000364072	1013.943	-3.523	94.7	874.3349	0.749	870.4551	872.9094	872.9094	0.909	0.789	0.486	2711.837	2700.721	2709.373	0	
16/10/2015 3:00	1241	13.3	13.23	5.848	5.848	132	9.48	9.23	0.05731608	0.000206338	1013.372	-3.217	94.9	874.2658	1.067	879.34	870.3848	873.0726	1.057	1.306	0.769	2708.904	2697.546	2709.064	0	
16/10/2015 4:00	1242	13.25	13.18	7.511	7.511	128.1	14.91	11.03	0.20914	0.000752904	1013.287	-2.354	95.3	874.2399	0.433	879.6274	870.1869	872.9054	0.44	0.563	0.227	2712.084	2700.033	2708.696	0	
16/10/2015 5:00	1243	13.2	13.14	7.315	7.315	129.7	14.44	11.47	0.0028021	1.01E-05	1012.222	-1.874	92.7	879.4324	1.154	879.4324	870.1381	873.3118	1.178	0.784	0.784	2712.896	2703.447	2707.183	0	
16/10/2015 6:00	1244	13.16	13.1	6.251	6.251	134.1	10.88	12.5	0.01146199	4.13E-05	1012.222	-0.986	89.8	874.312	0.655	879.4227	870.3398	873.1735	0.707	0.645	0.608	2711.733	2700.248	2709.866	0	
16/10/2015 7:00	1245	13.12	13.07	3.421	3.421	114.4	19.4	7.86	0	0	1011.805	-0.759	92.5	874.2805	0.194	879.6019	870.2626	872.9767	0.205	0.152	0.152	2711.843	2700.436	2709.174	0	
16/10/2015 8:00	1246	13.08	13.06	4.185	4.185	117.9	22.8	7.448	2.956162	0.01064218	1010.97	0.132	89.7	874.2386	0.263	879.5878	870.2852	872.8427	0.306	0.252	0.225	2712.017	2700.947	2709.429	0	
16/10/2015 9:00	1247	13.19	13.06	4.518	4.518	105.3	20.67	8.9	18.68734	0.06727441	1010.772	0.808	89.7	874.2493	0.479	879.4921	870.2252	873.0305	0.562	0.543	0.278	2711.718	2700.248	2709.275	0	
16/10/2015 10:00	1248	13.6	13.17	5.182	5.182	66.51	23.24	10.09	51.00315	0.1836113	1010.28	0.769	90.5	874.5141	0.477	879.2253	870.38	873.9369	0.511	0.498	0.417	2710.763	2700.531	2709.599	0	
16/10/2015 11:00	1249	14.04	13.6	4.587	4.587	73.22	32.52	9.6	65.68024	0.2364489	1009.953															

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
18/10/2015 10:00	1296	14.67	14.62	6.174	6.174	211.6	9.58	8.47	139.9976	0.5039912	1005.203	2.555	72.57	873.8604	0.873	877.9965	869.8538	873.7308	0.895	1.041	0.632	2710.195	2699.761	2708.249	0.06	
18/10/2015 11:00	1297	14.67	14.16	5.144	5.144	186	25.79	8.6	219.5631	0.7904272	1005.518	3.18	72.1	873.7382	0.601	878.3772	869.4977	873.3397	0.594	0.773	0.365	2709.142	2696.711	2708.791	0.08	
18/10/2015 12:00	1298	14.23	14.15	5.573	5.573	201.2	10.08	8.49	280.7048	1.010537	1005.476	3.53	70.04	873.7762	0.748	878.123	869.3028	873.9028	0.799	0.663	0.663	2710.76	2699.994	2710.548	0.1	
18/10/2015 13:00	1299	14.19	14.11	4.151	4.151	204.6	10.68	6.958	248.3731	0.894143	1005.474	3.628	69.34	873.7303	0.218	878.6495	868.9814	873.5601	0.208	0.214	0.232	2710.892	2699.25	2709.578	0.09	
18/10/2015 14:00	1300	14.2	14.07	2.805	2.805	189.5	22.81	4.645	194.869	0.7015285	1005.145	4.041	66.07	873.6356	0.249	879.2289	868.8143	872.8636	0.276	0.313	0.108	2711.223	2698.225	2708.895	0.07	
18/10/2015 15:00	1301	14.32	14.19	3.813	3.813	157.2	10.35	5.116	134.3735	0.4837445	1004.859	3.154	73.57	873.4739	0.522	862.2434	876.754	881.4246	0.427	0.289	0.743	2691.097	2709.273	2718.554	0.04	
18/10/2015 16:00	1302	14.28	14.03	4.717	4.717	145.2	9.85	6.742	79.78802	0.2872368	1004.547	2.762	75.55	873.1516	0.526	864.6956	875.2566	879.5024	0.435	0.297	0.743	2694.245	2706.477	2716.489	0.01	
18/10/2015 17:00	1303	14.04	13.84	5.187	5.187	143.8	6.843	6.507	25.47397	0.09170631	1004.218	2.151	80.6	872.9011	0.654	866.3501	874.2431	878.1097	0.617	0.457	0.833	2695.439	2705.685	2715.644	0.01	
18/10/2015 18:00	1304	13.86	13.7	4.422	4.422	142.4	11.95	6.429	0.8603666	0.00309732	1004.22	1.722	82.6	872.5729	0.279	867.9125	872.9907	876.8155	0.214	0.142	0.409	2697.264	2704.04	2713.96	0	
18/10/2015 19:00	1305	13.72	13.6	3.976	3.976	139.9	35.94	7.977	0	0	1003.974	1.619	82.6	872.6714	1.034	867.0414	873.8272	877.1457	0.745	1.005	1.281	2696.467	2706.785	2712.957	0	
18/10/2015 20:00	1306	13.62	13.53	6.226	6.226	141.1	6.613	8.94	0	0	1003.892	1.173	87.7	872.4519	0.79	867.6091	873.7551	875.9914	0.704	0.557	1.033	2696.229	2704.375	2713.444	0	
18/10/2015 21:00	1307	13.54	13.46	5.506	5.506	142.9	5.432	6.997	0	0	1003.892	0.204	96.2	872.3242	0.8	869.1247	872.6617	875.1864	0.643	0.552	1.097	2698.417	2703.067	2711.745	0	
18/10/2015 22:00	1308	13.47	13.39	5.331	5.331	148.4	7.065	6.723	0	0	1003.729	0.005	97.4	872.259	0.65	870.1677	871.9839	874.6255	0.627	0.539	0.765	2699.719	2702.893	2711.94	-0.01	
18/10/2015 23:00	1309	13.41	13.34	3.387	3.387	151.4	21.32	6.762	0	0	1004.224	-0.018	97.2	872.449	0.304	870.5656	871.8038	874.9775	0.276	0.193	0.404	2701.002	2702.66	2710.345	-0.01	
19/10/2015 0:00	1310	13.35	13.28	6.235	6.235	155.7	15.12	9.88	0	0	1003.812	0.406	92.7	872.6516	1.651	868.4913	873.4521	876.0112	1.694	1.614	1.645	2700.083	2703.087	2709.855	0	
19/10/2015 1:00	1311	13.3	13.23	6.407	6.407	160	7.441	8.55	0	0	1003.892	0.661	91.3	872.342	0.74	869.1556	872.8504	875.0198	0.756	0.633	0.82	2697.905	2703.993	2712.97	0	
19/10/2015 2:00	1312	13.25	13.19	5.254	5.254	153.3	10.4	7.977	0	0	1003.893	0.336	93.7	872.4694	0.672	869.683	872.5859	875.1392	0.673	0.461	0.831	2700.411	2703.842	2712.213	0	
19/10/2015 3:00	1313	13.2	13.14	3.642	3.642	165.1	12.41	6.076	0	0	1004.056	0.564	91.2	872.8521	0.082	870.9963	872.446	875.1139	0.06	0.082	0.1	2701.347	2703.373	2711.889	0	
19/10/2015 4:00	1314	13.16	13.1	2.195	2.195	184.9	17.82	4.292	0	0	1004.138	0.547	91.2	872.6961	0.105	870.2846	872.3065	875.4973	0.129	0.061	0.114	2699.973	2703.136	2711.938	-0.01	
19/10/2015 5:00	1315	13.12	13.07	3.156	3.156	212.2	24.99	6.272	0	0	1004.056	0.688	88	872.8303	0.394	871.0469	872.3513	875.0926	0.337	0.268	0.53	2700.573	2702.688	2711.044	0	
19/10/2015 6:00	1316	13.09	13.04	5.597	5.597	229.6	8.81	9.43	0	0	1003.73	1.043	82.1	873.0075	0.776	870.629	872.51	875.8836	0.841	0.702	0.778	2700.65	2702.865	2710.366	0	
19/10/2015 7:00	1317	13.06	13.02	6.905	6.905	236.1	7.3	10.62	0	0	1004.224	0.701	83.3	872.8777	1.607	870.6517	872.1772	875.8044	1.762	1.687	1.339	2702.35	2701.774	2711.176	0	
19/10/2015 8:00	1318	13.04	12.99	9.52	9.52	241.6	6.641	12.9	0.7657554	0.002756719	1004.479	0.29	78.43	873.1308	2.108	868.9502	874.4766	875.9656	2.049	2.556	1.613	2698.582	2705.296	2711.637	0.01	
19/10/2015 9:00	1319	13.05	12.99	7.498	7.498	236.8	7.922	11.03	25.68873	0.09247942	1005.223	0.47	77.23	872.9174	0.728	871.1235	872.7516	874.8771	0.716	0.582	0.859	2701.717	2703.609	2710.856	0.01	
19/10/2015 10:00	1320	13.27	13.03	7.76	7.76	233.6	8.32	12.6	89.97398	0.3239063	1005.466	0.382	74.54	872.9343	1.021	870.9413	872.772	875.0895	0.962	0.745	1.284	2702.006	2702.899	2711.878	0.02	
19/10/2015 11:00	1321	14.66	13.27	8.34	8.34	235.2	8.5	11.58	218.9976	0.7883914	1006.022	0.686	66.74	872.4387	2.055	871.0603	871.975	874.2886	2.04	1.783	2.309	2700.242	2702.21	2711.168	0.09	
19/10/2015 12:00	1322	14.67	14.61	8.82	8.82	237.2	7.694	12.21	282.334	1.016403	1006.431	0.687	67.01	872.3672	2.591	871.007	871.842	874.2526	3.107	2.423	2.147	2703.915	2704.101	2709.204	0.1	
19/10/2015 13:00	1323	14.67	14.24	8.45	8.45	238.2	7.327	11.82	147.1174	0.5296224	1006.841	0.092	69.41	872.5854	2.1	872.6596	871.9994	873.0972	2.196	2.079	2.021	2703.969	2703.604	2711.116	0.06	
19/10/2015 14:00	1324	14.67	14.22	7.569	7.569	246.2	7.12	10.33	166.569	0.5996484	1007.168	0.22	70.64	872.3816	1.886	872.6695	871.7386	872.7367	2.163	1.511	1.927	2703.584	2704.163	2712.444	0.06	
19/10/2015 15:00	1325	14.65	14.27	5.636	5.636	256.8	6.768	8.98	123.2431	0.4436752	1007.25	-0.166	78.83	872.095	0.624	875.845	869.519	870.9209	0.548	0.399	0.842	2707.677	2699.306	2706.485	0.03	
19/10/2015 16:00	1326	14.44	14.02	5.953	5.953	244.9	8.93	9.47	54.67297	0.1968227	1007.504	-0.241	76.44	872.1456	1.002	875.3555	870.0621	871.019	0.955	0.987	1.062	2706.98	2700.289	2705.735	0.01	
19/10/2015 17:00	1327	14.09	13.9	6.695	6.695	249.7	5.281	10.29	21.925	0.07893	1007.853	-0.443	76.96	872.0095	0.937	876.124	869.3055	870.5989	1.155	0.793	0.819	2709.397	2698.388	2704.835	0.01	
19/10/2015 18:00	1328	13.91	13.75	6.255	6.255	248.3	5.116	8.13	1.011567	0.003641641	1008.196	-0.798	79.17	872.0371	0.636	876.9637	868.8846	870.263	0.638	0.575	0.69	2709.068	2698.764	2707.863	0.01	
19/10/2015 19:00	1329	13.77	13.66	6.507	6.507	245.6	6.276	8.58	0	0	1008.526	-0.58	75.61	871.9901	0.858	876.463	870.2893	870.2893	1.018	0.822	0.705	2706.98	2700.823	2707.363	0.01	
19/10/2015 20:00	1330	13.67	13.58	6.114	6.114	246.3	4.77	8.29	0	0	1008.782	-1.014	79.2	871.9797	0.629	878.139	868.1857	869.6144	0.665	0.662	0.552	2710.337	2696.947	2705.547	0.01	
19/10/2015 21:00	1331	13.6	13.51	6.171	6.171	246.1	5.506	8.15	0	0	1009.109	-1.506	82.7	871.8548	0.629	878.6219	869.2034	867.7391	0.572	0.546	0.424	2710.486	2696.397	2704.561	0	
19/10/2015 22:00	1332	13.52	13.45	7.058	7.058	241.4	6.229	9.98	0	0	1009.519	-1.019	79.96	871.9412	0.56	877.8137	868.3061	869.7037	0.622	0.521	0.531	2708.999	2697.364	2704.316	0.01	
19/10/2015 23:00	1333	13.46	13.38	5.213	5.213	244.7	5.61	6.919	0	0	1009.847	-1.361	83	871.814	0.203	878.9588	867.4745	869.0084	0.233	0.194	0.179	2711.296	2697.552	2704.639	0	
20/10/2015 0:00	1334	13.4	13.33	2.922	2.922	261.7	20.24	7.33	0	0	1010.092	-1.466	83.9	871.8683	0.059	879.0267	867.5627	869.0156	0.071	0.07	0.024	2710.848	2696.766	2704.083	0	
20/10/2015 1:00	1335	13.35	13.27	2.889	2.889	247.4	14.79	4.312	0	0	1010.42	-1.668	84	871.9055	0.058	879.0797										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
22/10/2015 0:00	1382	13.45	13.37	7.568	7.568	217.5	22.42	15.9	0	0	1000.788	0.453	75.4	875.8333	2.199	880.0387	873.5046	873.9568	2.159	2.737	1.535	2707.14	2709.918	2710.185	0.01	
22/10/2015 1:00	1383	13.39	13.32	8.98	8.98	226.3	8.01	13.07	0	0	1001.275	0.182	78.18	875.4876	1.085	880.9273	872.2233	873.3121	1.25	1.096	0.878	2714.731	2702.632	2708.005	0.01	
22/10/2015 2:00	1384	13.34	13.27	3.907	3.907	221.5	24.83	8.64	0	0	1001.968	0.05	76.59	875.4651	0.061	882.5518	871.2505	872.5934	0.061	0.069	0.053	2715.817	2702.087	2708.73	0	
22/10/2015 3:00	1385	13.28	13.22	4.751	4.751	210.2	18.19	8.19	0	0	1001.982	-0.138	77.75	875.4793	0.877	881.6039	871.7374	873.0966	1.208	0.73	0.56	2714.859	2702.672	2710.123	0	
22/10/2015 4:00	1386	13.23	13.17	5.649	5.649	209.4	17.42	10.54	0	0	1001.983	-0.182	78.02	875.7595	1.276	881.0167	872.683	873.5787	1.421	1.394	0.961	2714.081	2705.663	2710.722	0.01	
22/10/2015 5:00	1387	13.18	13.12	5.043	5.043	207.7	30.46	10.37	0	0	1002.379	0.332	75.33	875.5441	0.717	881.6	871.9549	873.0775	0.784	0.786	0.555	2712.768	2703.579	2708.53	0.01	
22/10/2015 6:00	1388	13.14	13.08	4.307	4.307	160.7	17.64	7.174	0	0	1002.768	-0.16	80.2	875.4563	0.354	882.3616	871.3511	872.6563	0.361	0.366	0.334	2715.704	2702.014	2708.627	0	
22/10/2015 7:00	1389	13.11	13.05	4.181	4.181	146.5	44.06	8.92	0	0	1002.802	-0.484	80.4	875.457	1.05	881.0964	872.1647	873.1099	1.259	1.097	0.722	2713.654	2703.054	2708.969	0	
22/10/2015 8:00	1390	13.07	13.02	8.03	8.03	201.7	6.887	10.76	0.9362575	0.003370527	1002.945	-0.188	78.41	875.6506	1.145	880.2543	872.9748	873.723	1.169	1.224	1.034	2707.817	2706.67	2713.186	0.01	
22/10/2015 9:00	1391	13.27	13.02	9.58	9.58	215.2	8.35	13.94	22.15991	0.07977566	1002.584	0.499	72.6	876.3349	4.646	874.746	877.3729	876.8858	5.614	5.025	2.827	2709.247	2707.161	2714.472	0.02	
22/10/2015 10:00	1392	13.87	13.27	12.16	12.16	214.5	7.205	15.8	65.46549	0.2356758	1002.665	0.259	76.47	877.4404	5.109	871.9535	881.07	879.2977	5.218	6.027	3.841	2697.256	2713.12	2715.389	0.02	
22/10/2015 11:00	1393	14.64	13.87	12.65	12.65	212	6.26	16.64	103.8184	0.3737464	1003.073	0.287	76.3	878.6226	7.325	871.3055	881.522	883.0405	7.892	7.529	6.479	2688.296	2726.792	2730.268	0.05	
22/10/2015 12:00	1394	14.67	14.63	11.37	11.37	218.3	7.508	15.56	339.3457	1.221645	1004.056	1.284	70.14	876.3444	3.473	874.1016	876.8495	878.0821	3.85	3.334	3.201	2708.518	2704.513	2717.483	0.11	
22/10/2015 13:00	1395	14.67	14.22	9.08	9.08	222.7	9.33	13.94	419.062	1.508623	1004.376	1.803	66.94	876.2834	4.161	873.1505	877.2088	878.4907	5.56	3.212	3.273	2701.733	2714.589	2725.571	0.14	
22/10/2015 14:00	1396	14.35	14.18	9.66	9.66	210.3	7.709	14.39	355.2677	1.278964	1004.875	1.233	72.25	875.8841	2.82	876.6138	875.5353	875.5032	3.415	2.982	1.819	2713.454	2702.251	2710.936	0.11	
22/10/2015 15:00	1397	14.4	14.28	7.605	7.605	213.4	8.99	12.62	178.4832	0.6425396	1005.285	0.995	72.97	875.6047	0.72	881.7049	872.0474	875.0618	0.837	0.704	0.598	2715.045	2703.018	2708.941	0.06	
22/10/2015 16:00	1398	14.37	14.07	8.28	8.28	218.6	8.58	12.39	61.85246	0.2226689	1005.203	0.545	75.01	875.6936	1.757	880.3531	873.0015	873.7263	2.173	1.637	1.362	2711.53	2703.231	2709.413	0.02	
22/10/2015 17:00	1399	14.08	13.89	8.89	8.89	228	7.52	12.8	19.65066	0.07074237	1005.366	0.557	74.16	875.2977	3.604	877.6321	875.8065	875.4544	4.577	2.332	2.322	2689.03	2718.288	2718.047	0.01	
22/10/2015 18:00	1400	13.9	13.75	8.37	8.37	226.1	7.223	12.41	0.256434	0.000923162	1006.022	0.597	73.78	875.9731	1.719	880.3515	873.762	873.8056	1.796	2.084	1.139	2707.987	2704.035	2709.377	0.01	
22/10/2015 19:00	1401	13.77	13.66	5.904	5.904	218.7	12	11.54	0	0	1006.022	0.669	73.38	876.2234	2.212	879.4208	874.4656	874.7836	2.565	2.349	1.605	2708.756	2704.985	2709.101	0.01	
22/10/2015 20:00	1402	13.67	13.58	8.16	8.16	225.6	8	11.9	0	0	1006.022	0.651	74.17	876.3174	2.821	877.3663	875.8166	875.7695	2.789	2.956	2.714	2713.282	2708.564	2708.526	0.01	
22/10/2015 21:00	1403	13.59	13.51	9.56	9.56	222	6.646	12.56	0	0	1006.104	0.542	73.17	876.189	3.668	876.1085	876.4963	875.9623	4.635	3.323	2.8	2706.046	2712.548	2714.594	0.01	
22/10/2015 22:00	1404	13.53	13.45	9.5	9.5	226.7	7.563	13.58	0	0	1006.513	0.525	73.96	876.2073	4.445	875.9604	876.8983	875.7634	5.337	4.284	3.526	2700.204	2714.754	2714.905	0.01	
22/10/2015 23:00	1405	13.46	13.39	8.15	8.15	224.6	8.78	11.56	0	0	1006.68	0.251	75.18	876.0205	2.528	879.6827	874.0415	874.3375	2.843	2.635	2.037	2714.811	2702.816	2713.547	0.01	
23/10/2015 0:00	1406	13.4	13.33	8.96	8.96	219.8	7.804	12.62	0	0	1006.761	0.129	75.22	876.1614	3.553	876.7797	876.3125	875.392	4.122	3.839	2.48	2711.912	2711.106	2715.046	0.01	
23/10/2015 1:00	1407	13.35	13.28	11.43	11.43	215	7.585	15.35	0	0	1006.841	0.156	75.06	875.9275	5.541	874.1427	877.5604	876.0794	6.811	3.412	3.412	2705.074	2708.058	2714.048	0.01	
23/10/2015 2:00	1408	13.29	13.23	11.4	11.4	217.6	6.838	15.27	0	0	1007.172	0.089	74.85	876.4059	3.913	874.9514	877.4017	876.8647	5.009	3.425	3.017	2707.021	2725.735	2714.077	0.01	
23/10/2015 3:00	1409	13.24	13.18	10.1	10.1	227.4	7.395	14.13	0	0	1007.173	-0.001	74.3	876.7978	4.134	875.548	878.2612	876.584	4.67	4.46	3.093	2707.463	2704.848	2712.851	0.01	
23/10/2015 4:00	1410	13.19	13.13	9.4	9.4	222.4	7.08	13.27	0	0	1007.836	-0.032	73.87	875.8565	2.309	879.8293	873.6947	874.0455	2.733	2.348	1.735	2709.026	2706.264	2711.013	0.01	
23/10/2015 5:00	1411	13.15	13.09	7.101	7.101	241.1	9.35	11.23	0	0	1008.162	0.002	72.73	875.7416	1.344	880.8299	872.8865	873.5084	1.676	1.036	1.24	2714.305	2703.141	2709.211	0.01	
23/10/2015 6:00	1412	13.11	13.06	6.421	6.421	244.3	8.85	9.29	0	0	1008.332	-0.604	79.82	875.8054	0.99	882.1403	872.2711	873.0047	1.113	0.977	0.865	2715.35	2705.07	2709.26	0.01	
23/10/2015 7:00	1413	13.08	13.03	5.447	5.447	236.6	7.799	8.58	0	0	1008.771	-0.68	79.72	875.5998	0.617	882.4193	871.7761	872.6039	0.776	0.546	0.493	2715.511	2701.94	2708.033	0	
23/10/2015 8:00	1414	13.05	13.01	4.013	4.013	232.2	12.73	6.821	0.8504254	0.003061531	1009.027	-1.16	85.3	875.718	0.209	882.8231	871.8109	872.5198	0.211	0.251	0.152	2716.178	2702.504	2708.116	0	
23/10/2015 9:00	1415	13.82	13.01	4.392	4.392	238.2	9.26	7.507	35.26886	0.1269679	1009.273	-1.042	80.8	875.7366	0.662	882.4006	872.0153	872.7942	0.843	0.653	0.42	2715.665	2702.184	2708.731	0	
23/10/2015 10:00	1416	13.96	13.61	5.818	5.818	235.4	7.664	8.55	61.89296	0.2228146	1009.67	-0.379	75.77	875.7314	0.692	882.1228	872.2596	872.8118	0.862	0.64	0.531	2716.243	2702.863	2709.421	0.01	
23/10/2015 11:00	1417	14.66	13.95	5.986	5.986	233.9	6.499	8.64	115.5791	0.4160847	1009.962	-0.55	80.4	875.9207	1.389	881.4956	872.8585	873.408	1.433	1.191	1.191	2714.538	2705.276	2709.003	0.03	
23/10/2015 12:00	1418	14.67	14.62	5.648	5.648	240.2	8.23	8.27	155.0168	0.5580605	1010.608	-0.078	76.52	875.7988	0.657	882.1365	872.2338	873.0259	0.657	0.642	0.673	2716.236	2702.607	2709.191	0.05	
23/10/2015 13:00	1419	14.67	14.35	5.094	5.094	234.3	9.13	6.938	204.2084	0.7351502	1010.936	0.29	72.25	875.8683	0.738	881.1846	872.6239	873.7964	0.785	0.721	0.706	2714.312	2705.87	2709.952	0.06	
23/10/2015 14:00	1420	14.42	14.33	6.201	6.201	235.2	7.826	8.35	217.2932	0.7822554	1011.263	0.11	73.74	875.9899	1.341	879.9025	873.1581	874.9091	1.512	1.43	1.03	2713.852	2703.859	2710.498	0.07	
23/10/2015 15:00	1421	14.39	14.3	5.068	5.068	230.5	7.363	7.095	201.3303	0.7247891	1011.754	0.282	72.16	875.743	0.356	882.281	8									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	Max	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
25/10/2015 14:00	1468	14.61	14.33	2.523	2.523	249.9	10.6	4.371	172.2044	0.6199359	1011.594	-1.045	59.97	875.7634	0.066	882.5928	871.7167	872.9804	0.076	0.067	0.052	2715.772	2702.458	2709.05	0.05	
25/10/2015 15:00	1469	14.42	14.37	1.706	1.706	289.3	36.78	3.41	138.5101	0.4986365	1011.595	-1.028	60.64	875.7681	0.098	882.7307	871.7292	872.8444	0.112	0.109	0.067	2715.943	2702.449	2708.808	0.03	
25/10/2015 16:00	1470	14.41	14.11	2.871	2.871	336.8	21.62	5.351	59.84986	0.2154595	1011.812	-2.188	74.36	875.7756	0.152	882.924	871.8904	872.5126	0.149	0.182	0.118	2716.389	2702.645	2708.314	0.01	
25/10/2015 17:00	1471	14.12	13.95	2.448	2.448	297.8	25.49	4.41	19.46513	0.07007447	1011.813	-3.257	84	875.8095	0.073	882.9564	871.966	872.5061	0.076	0.073	0.07	2716.569	2702.991	2708.232	0	
25/10/2015 18:00	1472	13.96	13.81	4.63	4.63	278.7	6.623	6.252	0.7512221	0.002704399	1011.653	-3.293	79.96	875.8291	0.414	883.2352	871.8337	872.4182	0.461	0.407	0.37	2715.376	2702.167	2708.451	0	
25/10/2015 19:00	1473	13.82	13.71	5.117	5.117	271	6.196	7.644	0	0	1012.066	-3.264	78.01	875.8596	0.329	883.1068	871.9393	872.5325	0.364	0.357	0.256	2716.122	2702.238	2708.762	0	
25/10/2015 20:00	1474	13.73	13.63	4.05	4.05	278.8	11.93	7.389	0	0	1012.227	-3.003	73.28	875.8511	0.185	882.9965	871.9889	872.5681	0.203	0.219	0.117	2716.095	2702.417	2708.425	0	
25/10/2015 21:00	1475	13.65	13.56	5.198	5.198	274.1	6.456	7.252	0	0	1012.474	-3.342	78.64	875.8113	0.488	883.2162	871.8298	872.3879	0.551	0.531	0.359	2716.225	2703.33	2708.541	0	
25/10/2015 22:00	1476	13.58	13.5	5.611	5.611	282.8	5.555	7.389	0	0	1012.717	-3.733	83	875.8318	0.445	883.1594	871.8281	872.5078	0.483	0.476	0.366	2716.722	2702.991	2708.239	0	
25/10/2015 23:00	1477	13.52	13.44	4.547	4.547	278.4	5.032	6.39	0	0	1012.798	-4.235	86.7	875.9424	0.26	883.1821	872.0148	872.6303	0.295	0.263	0.217	2716.489	2703.08	2708.852	0	
26/10/2015 0:00	1478	13.46	13.38	4.154	4.154	283.8	5.792	5.566	0	0	1013.008	-4.805	90	875.9827	0.265	883.2681	872.0601	872.6201	0.302	0.274	0.21	2716.76	2702.974	2708.605	0	
26/10/2015 1:00	1479	13.4	13.33	5.41	5.41	283.1	4.423	7.487	0	0	1013.495	-4.85	91.3	875.8924	0.668	883.3865	871.9535	872.3374	0.718	0.763	0.489	2717.825	2702.008	2708.709	0	
26/10/2015 2:00	1480	13.35	13.28	5.673	5.673	275.7	7.093	7.703	0	0	1014.07	-5.012	92.5	875.9589	0.502	883.3308	871.9631	872.5828	0.589	0.454	0.452	2716.771	2702.189	2708.477	0	
26/10/2015 3:00	1481	13.29	13.23	4.851	4.851	270.9	8.01	6.605	0	0	1014.408	-5.077	92.5	876.0417	0.333	883.2909	872.1338	872.7005	0.385	0.313	0.293	2716.357	2703.072	2709.295	0	
26/10/2015 4:00	1482	13.24	13.17	4.694	4.694	267.2	8.4	6.938	0	0	1014.491	-4.924	91	876.0059	0.461	883.2831	872.0533	872.6812	0.446	0.528	0.401	2715.459	2702.737	2708.023	0	
26/10/2015 5:00	1483	13.19	13.13	3.822	3.822	278.3	8.76	5.998	0	0	1014.815	-4.903	90.2	876.0516	0.241	883.2686	872.1978	872.6885	0.266	0.237	0.218	2716.446	2703.114	2708.843	0	
26/10/2015 6:00	1484	13.15	13.09	4.364	4.364	275.3	8.68	6.35	0	0	1015.14	-4.796	89	876.0242	0.398	883.2745	872.1154	872.6827	0.462	0.378	0.346	2716.134	2702.706	2709.082	0	
26/10/2015 7:00	1485	13.11	13.05	4.319	4.319	275.2	7.545	6.448	0	0	1015.462	-4.783	90.1	876.0501	0.286	883.304	872.1262	872.7202	0.348	0.257	0.243	2716.462	2702.762	2709.58	0	
26/10/2015 8:00	1486	13.06	13.01	4.902	4.902	282.3	6.604	6.684	0.5989911	0.002156368	1015.795	-4.884	91.4	876.0515	0.364	883.2879	872.1307	872.7357	0.407	0.411	0.249	2716.653	2703.039	2708.926	0	
26/10/2015 9:00	1487	13.11	13.01	3.178	3.178	288.5	8.52	4.959	19.24517	0.06928261	1015.799	-4.836	90.7	876.0806	0.197	883.2004	872.2097	872.8314	0.219	0.218	0.145	2716.393	2703.069	2709.007	0	
26/10/2015 10:00	1488	13.33	13.09	2.355	2.355	298.8	20.17	4.802	45.90142	0.1652451	1015.768	-4.661	86.1	876.0596	0.092	883.0319	872.2283	872.9185	0.106	0.095	0.071	2716.33	2703.187	2709.064	0	
26/10/2015 11:00	1489	13.87	13.33	2.214	2.214	274	21.61	4.743	90.27697	0.3249971	1016.074	-4.687	85.3	876.0676	0.079	882.9763	872.2762	872.9503	0.086	0.088	0.061	2716.271	2703.176	2709.077	0	
26/10/2015 12:00	1490	14.64	13.87	1.458	1.458	264.7	27.6	3.548	133.8454	0.4818434	1016.412	-4.533	84.7	876.0222	0.045	882.8533	872.1993	873.0139	0.054	0.044	0.033	2716.072	2703.197	2709.149	0.02	
26/10/2015 13:00	1491	14.66	14.61	2.274	2.274	253.3	22.3	5.253	153.8868	0.5539925	1016.734	-4.361	83.7	876.0249	0.132	882.8572	872.204	873.0135	0.129	0.143	0.123	2716.142	2703.109	2709.291	0.03	
26/10/2015 14:00	1492	14.66	14.21	0.71	0.711	285.2	45.23	2.979	217.3465	0.7824474	1016.727	-3.936	79.77	875.6342	0.029	882.7777	869.9795	874.1454	0.024	0.038	0.038	2716.068	2700.286	2710.474	0.05	
26/10/2015 15:00	1493	14.28	14.22	0.239	0.239	349.2	64.8	1.078	187.4943	0.6749795	1016.673	-2.83	73.23	875.7148	0.017	883.5937	870.2454	873.3053	0.015	0.023	0.012	2717.037	2700.584	2709.485	0.04	
26/10/2015 16:00	1494	14.31	14.22	0.557	0.557	182.4	22	1.196	106.1142	0.3820111	1016.398	-2.001	68	875.6794	0.04	883.6499	870.636	872.7522	0.02	0.058	0.032	2717.084	2701.229	2708.736	0.01	
26/10/2015 17:00	1495	14.4	13.99	0.867	0.867	266.6	11.16	1.47	15.97834	0.05752202	1016.442	-4.397	79.47	875.8917	0.022	883.1727	872.0181	872.4841	0.023	0.026	0.017	2716.471	2702.839	2708.444	-0.01	
26/10/2015 18:00	1496	14	13.84	1.808	1.808	173.9	38.09	3.881	0	0	1016.189	-5.033	82.4	875.9951	0.031	883.1824	872.1027	872.7001	0.032	0.035	0.026	2716.549	2703.081	2708.719	-0.01	
26/10/2015 19:00	1497	13.85	13.74	0.59	0.59	182.6	41.04	2.097	0	0	1015.943	-4.062	72.73	876.0474	0.007	883.1675	872.1337	872.8409	0.011	0.004	0.004	2716.502	2702.996	2708.922	-0.01	
26/10/2015 20:00	1498	13.76	13.66	0.07	0.07	167.5	0.608	0.07	0	0	1015.861	-3.379	66.83	876.0764	0.008	883.2944	872.1938	872.741	0.012	0.007	0.004	2716.649	2703.063	2708.814	-0.02	
26/10/2015 21:00	1499	13.68	13.59	0.301	0.301	253.8	25.09	1.313	0	0	1015.869	-3.073	63.81	876.1365	0.026	883.3064	872.1695	872.9338	0.03	0.024	0.022	2716.626	2703.025	2709.041	-0.02	
26/10/2015 22:00	1500	13.61	13.53	0.548	0.548	230.1	22.79	1.137	0	0	1015.862	-2.816	62.19	876.0996	0.022	883.2517	872.2248	872.8224	0.013	0.02	0.03	2716.644	2703.082	2708.843	-0.01	
26/10/2015 23:00	1501	13.54	13.47	0.439	0.439	188.7	50.39	1.744	0	0	1015.534	-3.312	59.63	876.1276	0.032	883.3626	872.1586	872.8615	0.037	0.03	0.028	2716.687	2703.008	2708.974	-0.01	
27/10/2015 0:00	1502	13.48	13.41	0.735	0.735	241.3	25.6	1.784	0	0	1015.534	-2.579	51.62	876.1519	0.025	883.22	872.2421	872.9935	0.028	0.022	0.025	2716.532	2703.2	2709.061	-0.01	
27/10/2015 1:00	1503	13.43	13.36	0.019	0.019	331.8	9.53	0.921	0	0	1015.37	-2.503	46.31	876.1412	0.012	883.2197	872.2417	872.9622	0.011	0.013	0.011	2716.599	2703.119	2709.05	-0.02	
27/10/2015 2:00	1504	13.37	13.3	0.212	0.212	302.8	13.28	0.96	0	0	1015.174	-2.076	45	876.1426	0.009	883.1677	872.2586	873.0016	0.011	0.01	0.006	2716.511	2703.139	2709.115	-0.02	
27/10/2015 3:00	1505	13.32	13.25	0.322	0.322	232.5	25.39	1.45	0	0	1014.735	-1.853	42.58	876.1382	0.012	883.1954	872.2369	872.9823	0.014	0.012	0.011	2716.514	2703.105	2709.133	-0.02	
27/10/2015 4:00	1506	13.26	13.2	0.244	0.244	297.1	57.84	1.17	0	0	1014.177	-1.406	37.25	876.1213	0.01	883.2355	872.2896	872.8307	0.008	0.007	0.014	2716.584	2703.196	2708.922	-0.02	
27/10/2015 5:00	1507	13.22	13.15	0.189	0.189	314.2	65.48	0.843	0	0	1013.558	-1.287	34.63	876.1258	0.014	883.0656	872.3209	872.991	0.02	0.009	0.009	271				

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
29/10/2015 4:00	1554	13.24	13.18	6.221	6.221	229.4	14.43	10.19	0	0	995.0195	-0.589	78.32	875.7923	0.638	882.646	871.8918	872.8391	0.711	0.694	0.483	2716.448	2702.63	2708.721	0.01	
29/10/2015 5:00	1555	13.2	13.14	6.182	6.182	239.1	13.58	10.51	0	0	994.8148	-0.117	72.74	875.8606	0.688	882.6074	871.9405	873.034	0.894	0.572	0.54	2716.298	2702.607	2708.622	0.01	
29/10/2015 6:00	1556	13.16	13.09	3.76	3.76	234.5	14.63	7.174	0	0	994.7413	-0.504	75.27	875.8313	0.178	882.791	871.8623	872.8405	0.213	0.173	0.139	2716.023	2702.756	2708.994	0	
29/10/2015 7:00	1557	13.11	13.06	2.446	2.446	245.1	22.13	5.684	0.01553637	5.59E-05	994.447	-1.322	83.2	875.8664	0.08	882.8503	871.9214	872.8273	0.103	0.068	0.064	2716.069	2702.774	2708.915	0	
29/10/2015 8:00	1558	13.08	13.02	6.244	6.244	218.6	15.31	12.09	0.07895534	0.000284239	994.1163	-0.767	77.47	875.9658	1.355	882.0562	872.4805	873.3608	1.648	1.33	1.013	2705.518	2706.403	2709.702	0.01	
29/10/2015 9:00	1559	13.11	13.02	8.09	8.09	228.4	8.13	10.74	14.22673	0.05121624	993.7809	-0.621	77.18	875.9683	1.896	880.7828	873.1498	873.972	2.194	1.974	1.44	2713.244	2704.719	2711.24	0.01	
29/10/2015 10:00	1560	13.95	13.11	9.04	9.04	222.5	6.609	11.9	56.11935	0.2020297	993.6792	-0.516	76.46	876.1259	2.616	878.9107	874.3309	875.136	3.118	2.339	2.312	2711.703	2704.9	2710.012	0.01	
29/10/2015 11:00	1561	14.65	13.77	5.807	5.807	233.2	10.33	9.64	90.81075	0.3269187	994.0657	-0.142	74.4	875.8255	0.254	882.2797	871.9338	873.2629	0.266	0.191	0.293	2715.498	2702.554	2709.716	0.01	
29/10/2015 12:00	1562	14.64	14.62	4.706	4.706	232.3	16.01	11.13	146.1514	0.5261449	993.9828	0.253	73.45	876.3797	2.333	879.683	874.1976	875.2585	2.648	2.299	2.009	2714.983	2703.282	2709.633	0.04	
29/10/2015 13:00	1563	14.64	14.38	7.746	7.746	229.2	9	11.6	153.3973	0.5522301	994.0647	0.034	74.32	876.0235	1.159	880.9438	873.3168	873.8101	1.339	1.211	0.876	2714.724	2703.627	2710.049	0.05	
29/10/2015 14:00	1564	14.42	13.95	6.851	6.851	234.7	10.42	10.8	141.8249	0.5105695	993.7372	-0.225	76.11	876.0712	2.123	880.0966	873.6989	874.4182	2.512	2.338	1.322	2715.803	2702.289	2710.377	0.04	
29/10/2015 15:00	1565	14.42	14.2	7.38	7.38	231.9	8.28	11.7	103.9447	0.3742009	993.2457	-0.165	73.84	876.4185	2.274	880.4091	873.6715	875.1751	2.411	2.036	2.357	2715.142	2702.743	2709.56	0.04	
29/10/2015 16:00	1566	14.61	14.18	4.934	4.934	252.3	30.04	10.41	41.91693	0.1509009	993.178	-0.508	75.07	875.8104	0.084	882.8485	871.6251	872.9574	0.096	0.097	0.049	2716.052	2702.512	2709.088	0.01	
29/10/2015 17:00	1567	14.19	13.91	1.598	1.598	261	28.42	4.586	6.620888	0.0238352	992.7272	-1.654	85.9	875.872	0.008	882.8413	871.9467	872.8279	0.011	0.005	0.005	2716.094	2702.765	2708.894	-0.01	
29/10/2015 18:00	1568	13.93	13.78	1.542	1.542	227.9	18.87	3.45	0	0	992.1647	-2.361	87.6	875.8854	0.049	882.936	871.9545	872.7656	0.045	0.057	0.045	2716.133	2702.591	2708.859	-0.01	
29/10/2015 19:00	1569	13.8	13.69	3.458	3.458	211.4	12.85	6.782	0.005604234	2.02E-05	991.9099	-1.594	80.1	875.8957	0.432	882.85	871.8441	872.93	0.463	0.354	0.469	2716.268	2702.766	2708.87	0	
29/10/2015 20:00	1570	13.71	13.61	4.299	4.299	219.7	10.5	7.154	0	0	991.5804	-1.04	75.85	875.897	0.308	882.8965	871.8678	872.9266	0.318	0.329	0.275	2715.679	2702.104	2709.337	0	
29/10/2015 21:00	1571	13.63	13.55	4.221	4.221	235.6	11.44	8.6	0	0	991.2526	-1.198	74.77	875.8688	0.256	882.8287	871.8895	872.8884	0.287	0.203	0.203	2716.233	2702.584	2709.383	0	
29/10/2015 22:00	1572	13.56	13.48	3.333	3.333	248.1	15.07	6.586	0	0	990.8431	-1.31	74.99	875.9341	0.024	882.8603	871.9994	872.9425	0.025	0.026	0.022	2716.081	2702.889	2709.046	0	
29/10/2015 23:00	1573	13.5	13.42	2.885	2.885	232.7	13.43	4.116	0	0	990.1879	-1.84	79.16	875.9278	0.153	882.8542	871.9359	872.9934	0.175	0.154	0.126	2715.749	2702.477	2709.066	0	
30/10/2015 0:00	1574	13.43	13.36	4.001	4.001	211.2	3.909	5.135	0	0	989.9427	-2.577	77.25	875.9595	0.254	882.9448	871.9368	872.9971	0.271	0.283	0.199	2716.363	2702.729	2709.122	0.01	
30/10/2015 1:00	1575	13.38	13.31	3.728	3.728	205.9	5.67	4.939	0	0	990.1068	-1.813	68.66	875.9764	0.176	882.8077	872.0042	873.1174	0.2	0.206	0.102	2716.133	2702.423	2709.212	0.01	
30/10/2015 2:00	1576	13.32	13.26	3.157	3.157	206.7	8.77	4.214	0	0	989.9423	-1.601	70.42	875.9969	0.082	882.8476	872.0387	873.1046	0.08	0.102	0.058	2716.132	2702.003	2709.243	0	
30/10/2015 3:00	1577	13.27	13.21	2.295	2.295	219.4	9.07	3.136	0	0	989.8604	-1.934	75.88	875.9913	0.024	882.8541	872.0543	873.0655	0.028	0.026	0.016	2716.103	2702.889	2709.16	0	
30/10/2015 4:00	1578	13.22	13.16	1.769	1.769	208.9	12.44	2.626	0	0	989.5327	-1.708	70.38	875.9988	0.029	882.8503	872.0665	873.0795	0.03	0.035	0.021	2716.081	2702.899	2709.231	0	
30/10/2015 5:00	1579	13.17	13.11	1.617	1.617	219.5	16.65	3.038	0	0	989.4508	-1.649	71.48	876.0051	0.015	882.8597	872.0672	873.0881	0.017	0.015	0.011	2716.107	2702.911	2709.229	-0.01	
30/10/2015 6:00	1580	13.13	13.07	1.277	1.277	249	29.07	3.548	0	0	989.4508	-1.566	66.77	876.0057	0.019	882.8693	872.0613	873.0865	0.024	0.017	0.016	2716.112	2702.923	2709.235	-0.01	
30/10/2015 7:00	1581	13.1	13.04	0.246	0.246	251.6	23.27	1.352	0	0	989.5327	-1.576	67.66	876.0048	0.009	882.8755	872.0797	873.0591	0.012	0.008	0.005	2716.122	2702.921	2709.207	-0.02	
30/10/2015 8:00	1582	13.06	13.01	0.369	0.369	179.6	12.26	1.294	0.00611371	2.20E-05	989.7786	-1.436	59.16	876.0119	0.016	882.8239	872.0787	873.1331	0.018	0.015	0.015	2716.049	2702.921	2709.291	-0.02	
30/10/2015 9:00	1583	13.04	13.01	1.86	1.86	201.4	10.45	2.666	6.695022	0.02410208	989.9423	-1.714	58.78	876.013	0.047	882.8304	872.0754	873.1331	0.048	0.057	0.032	2716.077	2702.897	2709.304	0	
30/10/2015 10:00	1584	13.2	13.02	2.234	2.234	190.6	14.9	3.077	37.03838	0.1333382	990.188	-1.44	57.81	876.0231	0.097	882.7278	872.109	873.2325	0.094	0.116	0.077	2715.884	2702.92	2709.472	0.01	
30/10/2015 11:00	1585	13.77	13.2	2.383	2.383	171.9	10.7	3.41	85.4647	0.3076729	990.5155	-0.847	53.76	876.0297	0.097	882.6389	872.1187	873.3315	0.114	0.109	0.059	2715.801	2703.104	2709.522	0.02	
30/10/2015 12:00	1586	14.64	13.77	1.842	1.842	171.2	28.46	3.352	125.3684	0.4513263	990.9613	-0.568	51.5	876.0005	0.036	882.5372	872.0975	873.3666	0.044	0.036	0.027	2715.651	2703.007	2709.563	0.03	
30/10/2015 13:00	1587	14.64	14.49	0.669	0.669	250.4	30.62	1.764	118.3835	0.4261805	991.2871	-0.935	66.88	875.9766	0.027	882.6277	872.0093	873.2926	0.035	0.028	0.016	2715.83	2702.915	2709.449	0.01	
30/10/2015 14:00	1588	14.64	14.29	1.126	1.126	234.9	47.75	4.332	113.0184	0.4068662	991.4441	-0.6	54.04	875.9398	0.243	882.635	872.0142	873.1701	0.242	0.305	0.162	2715.881	2702.95	2709.322	0.02	
30/10/2015 15:00	1589	14.35	14.14	2.231	2.231	236.8	17.29	3.979	70.5658	0.2540368	991.7827	-0.799	51.57	875.9575	0.071	882.7089	872.0427	873.1208	0.083	0.08	0.043	2716.061	2703.055	2709.26	0.01	
30/10/2015 16:00	1590	14.16	14	3.124	3.124	235.2	14.94	5.292	31.89777	0.114832	991.9812	-1.168	51.75	875.9436	0.138	882.8031	871.9742	873.0534	0.118	0.165	0.128	2716.335	2702.983	2709.21	0.01	
30/10/2015 17:00	1591	14.02	13.84	2.672	2.672	210.2	19.28	5.625	4.081231	0.01469243	992.1537	-1.393	51.39	875.9644	0.244	882.8117	871.9571	873.1244	0.216	0.336	0.139	2715.304	2701.111	2708.936	0.01	
30/10/2015 18:00	1592	13.85	13.73	2.405	2.405	208.3	12.69	3.998	0	0	992.8091	-1.726	54.8	875.9409	0.104	882.8245	873.0313	873.0313	0.115	0.076	0.076	2716.009	2702.828	2709.295	0.01	
30/10/2015 19:00	1593	13.75	13.65	2.65	2.65	202.6	10.37	4.1																		

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP TS	RECORD RN	BattV_Max Volts Max	BattV_Min Volts Min	WS_ms_Avg meters/Second Avg	WS_ms_S_WVT meters/Second WVC	WindDir_D1_WVT Deg WVC	WindDir_SD1_WVT Deg WVC	WS_ms_Max meters/Second Max	SlrW_Avg W/m^2 Avg	SlrMJ_Tot MJ/m^2 Tot	BP_kPa kPa Smp	Air_Temp_Avg degC Avg	RH_Avg percent Avg	Geonor_Depth_Average mm Smp	Geonor_Depth_StdDev mm Smp	T1_Depth_Average mm Smp	T2_Depth_Average mm Smp	T3_Depth_Average mm Smp	T1_Depth_StdDev mm Smp	T2_Depth_StdDev mm Smp	T3_Depth_StdDev mm Smp	T1_Freq Hz Smp	T2_Freq Hz Smp	T3_Freq Hz Smp	ET_mm mm ETos
01/11/2015 18:00	1640	13.93	13.82	0	0	0	0	0	0.01478528	5.32E-05	1005.226	-11.11	87.9	881.3343	0.009	888.8683	877.3596	877.7752	0.015	0.004	0.005	2723.594	2709.552	2715.098	-0.01
01/11/2015 19:00	1641	13.84	13.74	0	0	0	0	0	0	0	1005.135	-11.14	87.9	881.3508	0.011	888.8898	877.3765	877.786	0.017	0.004	0.006	2723.624	2709.576	2715.105	-0.01
01/11/2015 20:00	1642	13.76	13.67	0	0	0	0	0	0	0	1005.143	-11.5	87.6	881.3649	0.017	888.9564	877.3868	877.7515	0.021	0.015	0.014	2723.716	2709.609	2715.06	-0.01
01/11/2015 21:00	1643	13.69	13.61	0	0	0	0	0	0	0	1005.159	-11.68	87.3	881.439	0.006	889.0604	877.463	877.7935	0.009	0.003	0.003	2723.843	2709.687	2715.12	-0.01
01/11/2015 22:00	1644	13.63	13.55	0	0	0	0	0	0	0	1004.995	-11.97	86.8	881.561	0.005	889.2487	877.5822	877.8522	0.007	0.003	0.003	2724.086	2709.839	2715.194	-0.01
01/11/2015 23:00	1645	13.57	13.49	0	0	0	0	0	0	0	1004.836	-12.1	86.8	881.6489	0.006	889.3486	877.6674	877.9305	0.007	0.004	0.006	2724.206	2709.941	2715.301	-0.01
02/11/2015 0:00	1646	13.5	13.43	0	0	0	0	0	0	0	1004.832	-11.37	87.7	881.8016	0.004	889.3837	877.8481	878.173	0.004	0.004	0.004	2724.266	2710.172	2715.599	-0.01
02/11/2015 1:00	1647	13.45	13.37	0	0	0	0	0	0	0	1004.499	-10.59	88.3	881.8018	0.012	889.6042	877.814	877.9871	0.012	0.011	0.012	2724.535	2710.132	2715.353	-0.02
02/11/2015 2:00	1648	13.39	13.32	0	0	0	0	0	0	0	1004.705	-11.2	87.7	881.84	0.02	889.5838	877.8204	878.1159	0.021	0.018	0.021	2724.51	2710.143	2715.528	-0.01
02/11/2015 3:00	1649	13.34	13.26	0	0	0	0	0	0	0	1004.555	-11.09	87.7	881.8382	0.01	889.7261	877.811	877.9775	0.01	0.007	0.012	2724.702	2710.13	2715.343	-0.01
02/11/2015 4:00	1650	13.28	13.21	0	0	0	0	0	0	0	1004.56	-11.03	87.6	881.8499	0.008	889.6743	877.8023	878.0731	0.006	0.007	0.011	2724.632	2710.119	2715.458	-0.01
02/11/2015 5:00	1651	13.23	13.16	0	0	0	0	0	0	0	1004.232	-11.34	87.4	881.8361	0.021	889.7522	877.8726	877.8837	0.019	0.007	0.03	2724.764	2710.208	2715.17	-0.01
02/11/2015 6:00	1652	13.17	13.11	0	0	0	0	0	0	0	1004.068	-11.62	86.8	881.9334	0.018	889.902	877.8647	878.0336	0.021	0.018	0.016	2724.901	2710.187	2715.417	-0.01
02/11/2015 7:00	1653	13.12	13.06	0	0	0	0	0	0	0	1004.314	-11.85	86.9	881.9302	0.026	890.0055	877.8674	877.9177	0.034	0.02	0.021	2725.003	2710.206	2715.295	-0.01
02/11/2015 8:00	1654	13.07	13.01	0	0	0	0	0	0	0	1004.233	-12.41	86.3	881.9123	0.032	889.8298	878.007	877.8999	0.037	0.035	0.022	2724.73	2710.316	2715.221	-0.01
02/11/2015 9:00	1655	13.28	13.01	0	0	0	0	0	8.265276	0.02975499	1004.56	-12.29	86	881.8279	0.11	889.0405	878.1566	878.2867	0.155	0.045	0.102	2723.497	2710.648	2715.933	-0.01
02/11/2015 10:00	1656	14.66	13.28	0	0	0	0	0	79.95735	0.2878464	1004.522	-9.72	83.7	881.9139	0.067	887.1385	878.5557	880.0475	0.051	0.056	0.089	2721.377	2710.921	2718.146	0
02/11/2015 11:00	1657	14.67	14.62	0.001	0.001	272.8	3.903	0.235	134.8789	0.4855639	1004.285	-8.81	79.75	881.842	0.075	886.7877	878.1406	880.598	0.111	0.063	0.063	2720.816	2710.579	2718.75	0.01
02/11/2015 12:00	1658	14.66	14.35	0	0	254.9	0.001	0.137	168.5602	0.6068169	1004.611	-10.56	80.6	881.6572	0.036	887.0677	877.4696	880.4344	0.013	0.057	0.021	2721.423	2709.572	2718.372	0.02
02/11/2015 13:00	1659	14.49	14.28	0	0	0	0	0	142.9169	0.5145009	1004.682	-9.87	82.3	881.7205	0.029	888.9057	877.5162	878.7395	0.028	0.023	0.036	2723.716	2709.822	2716.235	0.01
02/11/2015 14:00	1660	14.6	14.44	0	0	0	0	0	96.4924	0.3473727	1004.775	-10.88	83.8	881.787	0.019	889.2839	877.7759	878.3013	0.02	0.019	0.019	2723.913	2710.098	2715.748	0
02/11/2015 15:00	1661	14.64	14.58	0	0	0	0	0	56.06927	0.2018494	1004.796	-11.59	85	881.793	0.031	889.5936	877.6485	878.1367	0.034	0.026	0.031	2724.598	2709.979	2715.543	-0.01
02/11/2015 16:00	1662	14.66	14.23	1.297	1.297	216.4	6.092	2.803	31.56324	0.1136277	1004.995	-12.09	85.2	881.8359	0.035	889.7623	877.8075	877.9377	0.039	0.027	0.038	2724.724	2710.082	2715.321	0
02/11/2015 17:00	1663	14.25	14.04	1.931	1.931	232.4	17.18	2.94	4.989461	0.01796206	1005.378	-12.5	85.8	881.9026	0.041	889.8533	877.8516	878.0032	0.046	0.039	0.038	2724.818	2710.133	2715.406	0
02/11/2015 18:00	1664	14.05	13.91	1.455	1.455	256	10.64	2.783	0	0	1005.544	-13.09	86.1	881.8677	0.118	890.0162	877.7957	877.7911	0.136	0.098	0.116	2724.995	2710.192	2715.1	-0.01
02/11/2015 19:00	1665	13.93	13.82	2.724	2.724	265.6	6.643	3.587	0.0701229	0.000252442	1005.954	-13.61	86	881.9179	0.245	890.092	877.8396	877.8221	0.228	0.225	0.278	2725.222	2709.778	2715.286	0
02/11/2015 20:00	1666	13.84	13.75	3.308	3.308	262.2	8.25	5.312	0.02932308	0.000105563	1006.2	-13.25	85.8	882.0187	0.368	890.1967	877.8443	878.0151	0.41	0.353	0.337	2725.235	2710.65	2715.133	0
02/11/2015 21:00	1667	13.77	13.69	4.811	4.811	260.8	8.04	7.566	0.03518376	0.000126662	1006.364	-13.07	85.2	882.0889	0.304	890.2645	878.0134	877.9889	0.355	0.288	0.26	2726.488	2711.041	2715.379	0
02/11/2015 22:00	1668	13.7	13.62	5.245	5.245	247.1	13.05	9.04	0	0	1006.446	-12.54	85.1	881.8615	0.766	890.1611	877.6118	877.8115	0.814	0.877	0.572	2725.482	2708.694	2715.002	0
02/11/2015 23:00	1669	13.63	13.56	6.061	6.061	246.2	8.21	8.92	0.007393688	2.66E-05	1006.852	-12.04	84.5	881.9485	0.396	890.2067	877.7844	877.8545	0.392	0.401	0.394	2726.193	2710.361	2715.918	0
03/11/2015 0:00	1670	13.58	13.5	6.065	6.065	259.9	14.37	10.45	0.000254955	9.18E-07	1007.062	-12.17	84.7	881.9341	0.219	890.1514	877.8919	877.7592	0.23	0.224	0.201	2725.28	2710.097	2715.393	0
03/11/2015 1:00	1671	13.52	13.44	5.032	5.032	270	10.53	7.33	0.009688282	3.49E-05	1007.623	-12.21	85.1	881.9523	0.412	890.2791	877.7966	877.7813	0.454	0.41	0.369	2725.198	2710.453	2714.734	0
03/11/2015 2:00	1672	13.46	13.39	4.099	4.099	292.4	22.35	7.526	0.002039638	7.34E-06	1007.618	-12.24	86.1	881.9866	0.023	890.0169	877.9965	877.9466	0.025	0.021	0.022	2725.021	2710.344	2715.313	0
03/11/2015 3:00	1673	13.4	13.33	0.837	0.837	335	31.2	2.47	0	0	1007.593	-13.17	87.8	881.9997	0.011	890.1124	877.8525	878.0341	0.007	0.006	0.016	2725.175	2710.396	2715.177	-0.01
03/11/2015 4:00	1674	13.35	13.28	0.779	0.779	255.9	10.8	1.921	0	0	1007.512	-13.21	86.9	882.0877	0.023	890.3043	878.0018	877.957	0.026	0.019	0.024	2725.385	2710.387	2715.336	-0.01
03/11/2015 5:00	1675	13.3	13.22	1.7	1.7	250.9	10.2	3.763	0	0	1007.272	-12.85	84.4	882.0915	0.009	890.2794	878.0112	877.984	0.01	0.006	0.01	2725.385	2710.386	2715.344	0
03/11/2015 6:00	1676	13.25	13.17	0.63	0.63	272.2	19.74	1.646	0	0	1007.277	-12.65	82.8	882.0792	0.019	890.1816	878.1719	877.8841	0.016	0.028	0.006	2725.25	2710.63	2715.253	-0.01
03/11/2015 7:00	1677	13.2	13.13	0.375	0.375	143.7	22.71	1.313	0	0	1007.067	-12.9	83.3	882.1309	0.008	890.2233	878.1017	878.0677	0.003	0.005	0.003	2725.29	2710.495	2715.479	-0.01
03/11/2015 8:00	1678	13.15	13.07	0.631	0.631	140.5	23.37	1.823	0	0	1006.906	-12.82	83	882.1577	0.032	890.091	878.2454	878.1365	0.038	0.022	0.035	2725.141	2710.676	2715.574	-0.01
03/11/2015 9:00	1679	14.63	13.07	0.326	0.326	186.3	41.47	1.666	13.68944	0.04928198	1006.447	-11.73	79.86	882.132	0.031	888.6378	878.7286	879.0297	0.048	0.01	0.023	2723.247	2711.299	2716.743	-0.01
03/11/2015 10:00	1680	14.67	14.6	0.758	0.758	135.8	16.14	2.156	75.41827	0.2715057	1005.652	-9.69	72.39	882.0954	0.042	888.2043	878.4639	879.6129	0.046	0.024	0.05	2722.693	2710.923	2717.409	0
03/11/2015 11:00	1681	14.66	14.55	0.698	0.698	180.2	48.48	2.176	69.58688	0.2505127	1005.479	-10.5	76.42	881.9914	0.014	889.4441	878.0505	878.4796	0.01</						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
05/11/2015 8:00	1726	13.2	13.12	0.28	0.28	120.1	6.45	1.333	0	0	1009.971	-11.78	87.1	883.3791	0.014	891.3108	879.3513	879.4751	0.019	0.007	0.013	2726.637	2712.033	2717.208	-0.01	
05/11/2015 9:00	1727	13.21	13.12	0.154	0.154	186.3	34.02	0.98	1.982277	0.007136197	1009.725	-11.43	87.4	883.3271	0.019	891.1829	879.3659	879.4324	0.029	0.011	0.009	2726.513	2712.096	2717.175	-0.01	
05/11/2015 10:00	1728	14.66	13.2	1.176	1.176	167.7	36.5	2.881	80.98741	0.2915547	1009.18	-10.44	85.6	883.3029	0.041	889.0313	879.7994	881.0782	0.041	0.029	0.041	2723.722	2712.585	2719.278	0	
05/11/2015 11:00	1729	14.67	14.64	2.322	2.322	173.2	57.7	5.174	177.1493	0.6377373	1008.873	-9.62	71.75	883.1199	0.062	888.4971	879.2745	881.5883	0.037	0.099	0.015	2723.243	2711.684	2719.845	0.03	
05/11/2015 12:00	1730	14.66	14.38	1.555	1.555	169.7	56.77	4.43	243.1078	0.8751881	1008.57	-8.26	59.68	888.8674	0.049	888.8674	878.6799	881.4494	0.045	0.033	0.063	2723.727	2711.098	2719.564	0.05	
05/11/2015 13:00	1731	14.47	14.35	1.962	1.962	194.4	35.97	6.684	282.0095	1.015234	1008.323	-8.07	53.61	882.8327	0.08	889.7539	877.8434	880.9008	0.094	0.084	0.057	2724.978	2709.928	2718.875	0.06	
05/11/2015 14:00	1732	14.54	14.32	4.737	4.737	175.8	25.77	8.94	273.5197	0.9846709	1007.668	-7.766	52.44	882.7361	0.435	890.5166	877.4127	880.2792	0.414	0.568	0.27	2726.562	2710.957	2717.734	0.07	
05/11/2015 15:00	1733	14.63	14.5	5.118	5.118	161.9	33.49	10.12	118.3212	0.4259561	1007.094	-8.7	57.02	882.7246	0.069	891.3137	877.1791	879.6811	0.024	0.112	0.037	2726.693	2709.101	2717.553	0.03	
05/11/2015 16:00	1734	14.58	14.25	2.219	2.219	162.2	40.79	5.978	62.11716	0.2236218	1006.219	-8.18	48.27	883.0076	0.089	891.0019	878.9011	879.1196	0.097	0.085	0.084	2726.321	2711.611	2716.938	0.01	
05/11/2015 17:00	1735	14.26	14.03	7.373	7.373	208.2	15.49	12.21	0.5084609	0.001830459	1006.086	-8	47.14	883.0278	0.565	890.8831	878.7945	879.4061	0.545	0.686	0.437	2725.954	2711.505	2717.569	0.02	
05/11/2015 18:00	1736	14.05	13.91	3.555	3.555	160.6	24.12	6.448	0	0	1005.273	-9.11	55.26	883.0746	0.205	890.8745	879.0364	879.313	0.234	0.129	0.234	2726.572	2711.845	2716.83	0.01	
05/11/2015 19:00	1737	13.93	13.83	6.581	6.581	171.3	33.07	12.62	0	0	1004.448	-8.24	53.66	882.8918	0.716	890.8873	878.6616	879.1265	0.802	0.587	0.742	2726.202	2711.818	2717.258	0.01	
05/11/2015 20:00	1738	13.84	13.75	6.321	6.321	172.2	20.71	11.05	0	0	1003.594	-7.069	51.37	883.0207	0.531	890.7079	878.9594	879.3948	0.486	0.647	0.437	2727.093	2709.45	2716.382	0.01	
05/11/2015 21:00	1739	13.76	13.68	4.52	4.52	158	37.79	9.06	0	0	1002.948	-7.514	52.4	883.0544	0.166	890.7905	879.0153	879.3576	0.16	0.18	0.158	2726.089	2711.579	2717.128	0.01	
05/11/2015 22:00	1740	13.7	13.61	3.721	3.721	112.5	42.45	11.31	0.000764706	2.75E-06	1001.496	-8.95	60.42	882.9099	0.964	890.5028	878.9448	879.2822	0.975	1.194	0.641	2724.561	2710.66	2716.871	0.01	
05/11/2015 23:00	1741	13.63	13.55	8.68	8.68	158.1	18.24	14.54	0.02013474	7.25E-05	1001.156	-7.671	56.95	883.0383	0.301	890.7152	879.4185	879.4185	0.286	0.241	0.286	2724.758	2710.4	2717.26	0.01	
06/11/2015 0:00	1742	13.57	13.49	7.572	7.572	153	13.06	12.45	0.1271772	0.000457838	1000.539	-7.672	58.63	882.9988	0.58	890.6036	879.079	879.3137	0.557	0.695	0.465	2726.41	2711.799	2717.749	0.01	
06/11/2015 1:00	1743	13.51	13.44	3.778	3.778	93.5	31.5	8.58	0.08767078	0.000315615	998.8492	-8.8	66.79	890.6682	0.475	890.6682	879.0559	879.0559	0.475	0.406	0.406	2725.41	2712.237	2716.576	0	
06/11/2015 2:00	1744	13.46	13.39	9.18	9.18	138.5	13.69	15.48	0.2444196	0.000879911	996.2388	-8.75	85.7	883.061	2.376	889.3909	879.5596	880.2325	2.623	2.42	2.05	2716.667	2716.334	2719.998	0	
06/11/2015 3:00	1745	13.4	13.33	11.11	11.11	151.2	8.05	17.01	0.1195262	0.000430294	995.2949	-6.236	84.1	883.1964	2.798	889.3892	880.0714	880.1284	2.205	3.978	1.672	2725.579	2718.092	2717.991	0	
06/11/2015 4:00	1746	13.35	13.28	12.97	12.97	154.6	6.443	17.76	0.1355661	0.000488038	993.5742	-6.302	85.7	887.9072	3.021	887.9072	880.7959	881.1216	3.148	3.591	2.139	2726.654	2713.891	2719.413	0	
06/11/2015 5:00	1747	13.3	13.23	16.58	16.58	161	5.588	21.03	0.1161995	0.000418318	991.605	-6.141	83.7	885.416	8.93	879.7977	885.707	890.7433	11.48	7.537	7.1	2725.395	2726.861	2746.851	0.01	
06/11/2015 6:00	1748	13.25	13.18	18.92	18.92	167.9	4.429	22.21	0.006625437	2.39E-05	990.952	-6.467	82.5	887.1771	8.83	879.6291	889.5626	892.3395	10.25	8.41	7.636	2716.506	2725.802	2727.599	0.01	
06/11/2015 7:00	1749	13.2	13.13	16.46	16.46	171.4	4.229	20.7	0	0	991.7714	-6.397	82.5	885.8477	4.135	886.0965	882.6906	888.7561	4.863	3.934	3.488	2723.71	2716.773	2727.723	0.01	
06/11/2015 8:00	1750	13.16	13.09	14.03	14.03	169.5	4.528	16.97	0	0	991.8533	-5.763	81.4	885.22	3.42	887.7775	881.4015	886.4813	4.381	3.298	2.241	2724.158	2719.24	2727.512	0.01	
06/11/2015 9:00	1751	13.11	13.07	11.47	11.47	169.8	5.54	14.82	3.065284	0.01103502	991.3617	-5.809	81.8	885.3698	2.201	886.62	886.2466	881.1807	2.167	2.539	1.84	2723.192	2719.913	2726.738	0.01	
06/11/2015 10:00	1752	13.19	13.07	11.61	11.61	178.9	11.39	15.46	19.17393	0.06902614	991.4266	-5.275	80.6	884.9858	1.871	889.4344	880.6879	884.8353	1.962	2.091	1.511	2724.327	2711.537	2721.509	0.01	
06/11/2015 11:00	1753	13.7	13.17	10.72	10.72	212.2	10.23	15.72	53.99287	0.1943743	991.3518	-3.958	75.51	885.8309	3.744	887.4003	883.3273	886.765	4.314	4.187	2.433	2715.443	2714.436	2728.626	0.01	
06/11/2015 12:00	1754	14.66	13.7	12.5	12.5	206.8	9.25	19.15	69.41561	0.2498962	990.3518	-3.943	74.02	885.2376	5.716	885.5392	883.5875	889.5862	6.207	5.408	5.5	2723.394	2711.977	2723.459	0.01	
06/11/2015 13:00	1755	14.67	14.61	11.83	11.83	213.6	10.76	17.52	173.9856	0.6263481	991.0073	-3.743	72.42	885.8488	7.295	883.1494	883.2053	891.1918	9.73	5.539	5.856	2722.859	2712.074	2728.337	0.05	
06/11/2015 14:00	1756	14.67	14.42	14.37	14.37	219.7	8.47	20.58	123.3802	0.4441687	989.7021	-3.712	72.05	887.7424	9.14	878.3747	889.4283	895.0641	10.65	8.24	8.34	2697.896	2735.901	2745.734	0.05	
06/11/2015 15:00	1757	14.52	14.34	13.78	13.78	220.6	7.642	19.29	76.1261	0.2740539	990.2771	-3.659	71.54	886.0676	7.997	884.4778	884.33	889.3948	9.1	7.009	7.741	2705.797	2715.805	2726.456	0.02	
06/11/2015 16:00	1758	14.4	14.09	10.59	10.59	230	8.74	16.58	27.13548	0.09768772	991.4191	-3.652	70.94	884.4518	0.868	890.3618	879.6068	883.3871	1.106	0.791	0.64	2724.189	2713.374	2722.093	0.01	
06/11/2015 17:00	1759	14.11	13.93	5.078	5.078	230.2	20.69	10.49	1.99694	0.007188984	991.9089	-3.869	73.43	884.56	0.138	890.272	879.9087	883.4992	0.181	0.102	0.102	2725.161	2712.825	2722.452	0.01	
06/11/2015 18:00	1760	13.94	13.82	8.13	8.13	234	15.75	16.37	0	0	991.6624	-3.544	71.09	884.7299	0.972	890.2109	879.8629	884.116	1.023	0.689	1.147	2725.034	2713.978	2722.689	0.01	
06/11/2015 19:00	1761	13.84	13.74	9.58	9.58	224	9.18	15.19	0	0	991.5028	-3.419	70.57	885.2647	3.721	888.6237	881.5745	885.5959	3.545	2.831	2.831	2691.436	2723.471	2738.838	0.01	
06/11/2015 20:00	1762	13.76	13.66	10.62	10.62	225.5	8.59	14.95	0	0	991.9927	-3.325	70.52	885.148	2.705	888.5135	880.8326	886.0978	3.114	2.809	2.809	2719.135	2710.125	2724.607	0.01	
06/11/2015 21:00	1763	13.68	13.6	10.42	10.42	230.7	8.93	15.05	0	0	992.6455	-2.91	66.64	884.8625	2.283	888.9774	880.6226	884.9877	2.797	2.168	1.763	2720.908	2713.634	2723.229	0.02	
06/11/2015 22:00	1764	13.62	13.54	9.15	9.15	239.3	7.744	14.31	0	0	993.3842	-3.486	74.17	884.7556	1.277	889.9953	880.0313	884.2399	1.219	1.499	1.078	2725.312	2712.447	2724.971	0.01	
06/11/2015 23:0																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
08/11/2015 22:00	1812	13.61	13.53	3.626	3.626	164.3	27.68	6.899	0	0	1003.98	-5.899	79.75	884.6109	0.394	890.098	880.1773	883.5575	0.434	0.425	0.31	2724.126	2711.704	2722.805	0	
08/11/2015 23:00	1813	13.54	13.47	6.826	6.826	194.4	15.71	12.54	0	0	1003.407	-5.603	76.12	884.7868	2.666	889.868	880.4579	884.0344	3.341	2.859	1.407	2726.852	2712.998	2721.035	0.01	
09/11/2015 0:00	1814	13.49	13.41	9.75	9.75	206.5	7.933	15.27	0	0	1002.505	-5.471	72.78	884.9189	1.498	889.9636	879.8049	884.9883	1.627	1.69	1.11	2721.226	2709.367	2725.241	0.01	
09/11/2015 1:00	1815	13.43	13.36	9.08	9.08	206.7	9.28	13.72	0	0	1002.669	-5.442	72.27	884.7131	1.069	890.7692	879.613	883.7573	1.306	0.993	0.86	2724.917	2711.292	2721.529	0.01	
09/11/2015 2:00	1816	13.38	13.31	6.995	6.995	187	16.02	13.35	0	0	1001.847	-5.652	74.71	884.7952	1.203	889.9609	880.107	884.3176	1.315	1.298	0.962	2727.449	2713.06	2721.777	0.01	
09/11/2015 3:00	1817	13.32	13.25	6.907	6.907	182.2	11.48	10.96	0	0	1001.275	-5.578	73.85	884.8834	0.818	890.1494	880.3584	884.1424	0.788	0.979	0.654	2724.291	2712.37	2724.404	0.01	
09/11/2015 4:00	1818	13.27	13.2	6.385	6.385	175.6	11.71	10.37	0	0	1000.683	-5.649	78.34	884.9128	1.061	890.2283	880.2056	884.3047	1.013	1.294	0.822	2723.364	2713.714	2723.811	0	
09/11/2015 5:00	1819	13.22	13.15	6.85	6.85	185.4	10.39	10.39	0	0	1000.113	-5.503	75.94	884.7214	0.918	889.7744	880.1797	884.2098	0.941	1.049	0.735	2724.028	2712.001	2723.64	0.01	
09/11/2015 6:00	1820	13.17	13.1	7.224	7.224	191.8	9.91	10.13	0	0	999.5356	-5.432	74.68	884.8477	1.182	890.0657	880.3693	884.1082	1.225	1.409	0.841	2727.437	2714.847	2722.483	0.01	
09/11/2015 7:00	1821	13.12	13.07	6.122	6.122	190.9	10.58	9.25	0	0	999.1096	-5.379	74.83	884.8347	0.787	890.0574	880.1983	884.2485	0.805	0.951	0.555	2725.478	2713.117	2723.023	0.01	
09/11/2015 8:00	1822	13.08	13.03	5.993	5.993	185.7	12.22	9.23	0	0	998.4551	-5.424	76.01	884.7949	0.735	889.9948	880.1933	884.1964	0.848	0.784	0.535	2724.908	2711.899	2724.249	0.01	
09/11/2015 9:00	1823	13.04	13.02	6.781	6.781	179.8	12.7	10.7	3.94047	0.01418569	997.7394	-5.44	76.91	884.9456	0.897	890.2418	880.4176	884.1772	0.813	1.138	0.676	2725.775	2713.569	2723.6	0.01	
09/11/2015 10:00	1824	13.16	13.02	5.869	5.869	187.4	10.82	10.82	23.10854	0.08319073	997.2181	-5.167	77.62	884.9138	1.36	890.2335	880.3817	884.1261	1.585	1.425	1.005	2728.637	2713.134	2721.849	0.01	
09/11/2015 11:00	1825	13.37	13.14	9.92	9.92	215.9	10.02	16.91	34.48431	0.1241435	996.0087	-4.296	71.38	885.778	4.738	885.5737	883.1525	888.6076	6.43	3.485	3.724	2724.988	2717.192	2729.119	0.01	
09/11/2015 12:00	1826	14.35	13.37	9.26	9.26	220.6	10.62	15.13	68.45385	0.2464338	996.0061	-4.159	71.73	886.2469	3.589	888.1434	882.4781	888.1193	3.632	3.539	3.595	2719.754	2711.427	2721.879	0.01	
09/11/2015 13:00	1827	14.66	13.97	10.58	10.58	218.1	9.47	16.64	93.33437	0.3360038	995.5204	-3.883	72.49	886.3398	6.881	884.6535	884.4535	889.8981	8.38	5.951	6.032	2704.649	2729.545	2727.913	0.01	
09/11/2015 14:00	1828	14.64	14.16	11.79	11.79	214.7	8.52	18.54	88.87967	0.3199668	995.4395	-3.651	72.91	886.4334	4.302	886.2145	884.1936	888.892	4.422	4.625	3.817	2716.276	2713.492	2728.576	0.01	
09/11/2015 15:00	1829	14.65	14.21	11.11	11.11	203.8	10.22	16.99	55.54871	0.1999753	994.781	-3.569	75.03	885.4338	5.647	884.0471	889.8749	889.8749	6.688	5.122	4.969	2718.453	2730.011	2725.048	0.01	
09/11/2015 16:00	1830	14.24	14.06	10.47	10.47	194.1	9.29	16.21	24.77608	0.0891939	994.2017	-3.325	76.66	885.751	3.563	888.082	881.7639	887.4069	3.572	3.902	3.178	2722.096	2712.677	2725.03	0.01	
09/11/2015 17:00	1831	14.08	13.91	9.55	9.55	191.4	8.43	15.82	1.621918	0.005838904	994.1206	-3.061	76.91	884.9565	2.068	889.2956	881.1222	884.4517	2.248	2.157	1.767	2727.882	2713.801	2724.4	0.01	
09/11/2015 18:00	1832	13.92	13.81	8.71	8.71	189.7	9.72	12.37	0	0	993.5464	-2.875	77.56	884.9119	3.032	889.8657	880.7658	884.1041	3.251	3.251	3.251	2722.331	2713.338	2723.401	0.01	
09/11/2015 19:00	1833	13.82	13.72	7.845	7.845	201	7.885	12.17	0	0	993.7103	-2.662	77.89	884.9807	1.132	889.9844	880.4269	884.5306	1.295	0.796	0.796	2724.908	2713.075	2723.699	0.01	
09/11/2015 20:00	1834	13.74	13.65	7.638	7.638	202.6	10.51	13.09	0	0	993.3826	-2.498	76.32	885.3281	2.493	889.5253	881.244	885.215	2.394	2.583	2.499	2725.092	2718.704	2723.172	0.01	
09/11/2015 21:00	1835	13.66	13.58	8.41	8.41	205.6	9.7	13.68	0	0	993.0549	-2.444	73.74	884.8766	1.982	889.5881	880.5325	884.5093	2.42	1.93	1.483	2725.822	2712.038	2722.338	0.01	
09/11/2015 22:00	1836	13.6	13.52	8.08	8.08	214.1	8.23	13.41	0	0	992.8092	-2.932	78.29	885.561	2.7	889.6102	881.501	885.5719	2.421	3.235	2.355	2725.84	2715.424	2724.783	0.01	
09/11/2015 23:00	1837	13.53	13.46	7.361	7.361	209.6	10.1	11.51	0	0	992.8092	-2.92	77.18	885.0139	2.221	889.5179	881.1269	884.3969	2.752	2.384	1.239	2724.771	2716.838	2720.839	0.01	
10/11/2015 0:00	1838	13.47	13.4	7.263	7.263	220.4	9.44	11.64	0	0	992.7316	-3.1	73	885.2012	0.756	890.9628	880.0923	884.5486	0.918	0.645	0.645	2724.764	2711.217	2723.07	0.01	
10/11/2015 1:00	1839	13.42	13.34	7.731	7.731	215.5	6.896	10.19	0	0	992.1565	-3.562	72.22	885.1074	1.369	890.6974	880.2764	884.3483	1.678	1.363	0.975	2726.362	2713.414	2720.538	0.01	
10/11/2015 2:00	1840	13.36	13.29	5.313	5.313	229.6	57.7	12.23	0	0	992.2732	-4.231	74.21	885.1157	0.071	890.9528	880.4931	883.9009	0.076	0.073	0.065	2726.205	2713.562	2722.823	0.01	
10/11/2015 3:00	1841	13.3	13.24	2.355	2.355	356.1	13.3	5.116	0.2081832	0.00074946	992.1749	-6.078	94.5	885.1671	0.035	890.9857	880.5261	883.9895	0.034	0.034	0.036	2726.29	2713.518	2722.641	-0.01	
10/11/2015 4:00	1842	13.26	13.19	1.939	1.939	283.8	32.53	4.096	0.1118677	0.000402724	991.5255	-6.192	93	885.2161	0.021	880.5767	884.0356	884.0356	0.023	0.021	0.018	2726.287	2713.579	2722.912	-0.01	
10/11/2015 5:00	1843	13.2	13.13	1.14	1.14	218.8	17.78	2.96	0	0	990.7061	-6.341	91.9	885.8269	0.033	891.6417	881.1727	884.6662	0.036	0.037	0.026	2727.077	2714.348	2723.718	-0.01	
10/11/2015 6:00	1844	13.16	13.09	1.39	1.39	140.7	36.69	2.764	0.008154359	2.94E-05	989.8048	-6.572	91.8	886.6911	0.053	892.4644	882.0471	885.5616	0.059	0.042	0.056	2728.08	2715.439	2724.803	-0.01	
10/11/2015 7:00	1845	13.11	13.05	1.266	1.266	112.6	15.08	2.548	0.001274123	4.59E-06	989.0674	-6.474	92	887.257	0.024	893.0336	882.6184	886.119	0.028	0.022	0.022	2728.827	2716.149	2725.526	-0.01	
10/11/2015 8:00	1846	13.07	13.01	0.717	0.717	91.3	16.39	1.588	0	0	988.166	-6.362	92.1	887.4505	0.017	893.239	882.8113	886.3014	0.019	0.017	0.013	2729.091	2716.404	2725.728	-0.01	
10/11/2015 9:00	1847	13.03	12.98	0.758	0.758	47.07	23.79	1.588	0.9153137	0.003295129	987.3467	-6.613	91.9	887.4656	0.015	893.2902	882.8283	886.2784	0.021	0.011	0.01	2729.101	2716.389	2725.73	-0.01	
10/11/2015 10:00	1848	13.01	12.97	1.249	1.249	62.38	12.13	2.803	9.832831	0.03539819	986.0356	-6.74	92	887.5485	0.013	893.3663	882.8846	886.3946	0.018	0.011	0.008	2729.21	2716.473	2725.864	-0.01	
10/11/2015 11:00	1849	13.03	12.97	1.051	1.051	309.6	28.71	2.234	20.23092	0.07283131	985.5439	-6.782	91.7	887.7307	0.046	893.5219	883.0549	886.615	0.04	0.043	0.054	2729.478	2716.702	2726.241	-0.01	
10/11/2015 12:00	1850	13.08	13	2.62	2.62	303.5	10.77	3.998	28.09936	0.1011577	985.0524	-7.427	91.2	887.9314	0.206	893.9005	883.1698	886.7239	0.227	0.199	0.189	2730.343	2717.335	2725.805	0	
10/11/2015 13:00	1851	13.12	13.04	3.725	3.725	293.9	12.39	5.939	31.58579	0.1137088	984.7246	-8.56	90.3	888.3091												

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
12/11/2015 12:00	1898	14.05	13.48	14.24	14.24	160.1	5.041	19.09	83.20509	0.2995383	977.678	-8.15	82.2	891.2905	4.303	892.912	887.5347	893.4249	3.629	4.912	4.271	2725.674	2728.01	2734.905	0.01	
12/11/2015 13:00	1899	14.65	14.04	16.39	16.39	163.6	4.504	20.46	105.8849	0.3811858	977.6791	-8.34	80.7	890.8664	4.102	893.2247	887.058	892.3165	3.653	5.41	2.806	2730.257	2715.595	2735.184	0.03	
12/11/2015 14:00	1900	14.65	14.31	13.05	13.05	166.9	4.705	18.35	53.53391	0.1927221	977.6932	-8.55	79.12	891.0811	2.96	893.7863	887.1115	892.3455	3.46	2.981	2.331	2730.243	2726.174	2739.254	0.01	
12/11/2015 15:00	1901	14.51	14.29	13.11	13.11	171	5.178	15.78	32.75767	0.1179276	977.7236	-8.64	79.32	890.8111	2.572	894.2769	886.0273	892.1291	3.184	2.709	1.541	2732.917	2722.426	2731.947	0.01	
12/11/2015 16:00	1902	14.34	14.16	11.21	11.21	184.7	7.356	14.48	19.96051	0.07185785	977.2229	-8.35	79.6	893.5017	2.773	893.5017	885.996	892.9386	2.623	3.557	1.879	2730.158	2720.373	2734.562	0.01	
12/11/2015 17:00	1903	14.17	14	11.97	11.97	181.7	5.51	14.39	0.5372637	0.001934149	976.6984	-7.651	77.02	890.7847	1.645	893.6748	886.5422	892.1373	1.836	1.573	1.509	2734.204	2724.885	2729.46	0.01	
12/11/2015 18:00	1904	14.01	13.89	10.98	10.98	173.4	6.063	13.66	0	0	976.3669	-7.185	76.36	890.4744	2.078	893.6919	885.8134	891.9178	1.615	2.398	1.606	2730.369	2719.009	2730.693	0.01	
12/11/2015 19:00	1905	13.91	13.8	10.87	10.87	179.4	6.282	13.99	0	0	976.3669	-6.903	77.39	890.396	2.251	894.4419	885.7756	890.9703	2.145	3.167	1.571	2728.729	2718.272	2732.516	0.01	
12/11/2015 20:00	1906	13.82	13.73	11.01	11.01	178.9	6.154	13.39	0	0	976.5308	-6.774	78.34	890.5	2.198	893.8405	886.1407	891.5189	2.119	2.137	2.333	2730.589	2719.566	2729.847	0.01	
12/11/2015 21:00	1907	13.74	13.66	9.62	9.62	179.3	7.555	12.27	0	0	976.5308	-6.973	79.12	889.635	1.219	894.9274	884.9982	888.9795	1.369	1.369	0.816	2730.178	2719.249	2729.405	0.01	
12/11/2015 22:00	1908	13.67	13.59	9.92	9.92	166.1	5.853	12.84	0	0	976.203	-6.855	79.18	890.0797	1.83	894.4266	885.4539	890.3584	2.055	2.028	1.309	2732.471	2724.082	2731.343	0.01	
12/11/2015 23:00	1909	13.61	13.53	11.41	11.41	176	6.941	14.52	0	0	976.285	-6.266	77.65	890.4651	2.951	893.2854	886.0534	892.0565	3.355	3.255	2.068	2729.983	2724.452	2729.777	0.01	
13/11/2015 0:00	1910	13.54	13.47	11.54	11.54	185.6	6.979	14.66	0	0	976.6128	-6.073	77.86	890.3174	2.27	894.2109	885.6675	891.074	2.281	2.647	1.803	2730.733	2719.358	2731.539	0.01	
13/11/2015 1:00	1911	13.49	13.41	10.3	10.3	195.7	7.254	15.35	0	0	977.1044	-5.804	77.58	890.2969	1.62	894.5923	885.5078	890.7908	1.403	2.02	1.351	2731.183	2718.729	2732.042	0.01	
13/11/2015 2:00	1912	13.43	13.36	10.5	10.5	193.7	5.825	14.07	0	0	977.432	-5.82	76.08	890.3228	1.954	894.63	885.3975	890.9408	2.059	2.086	1.692	2732.574	2719.711	2729.683	0.01	
13/11/2015 3:00	1913	13.37	13.29	9.73	9.73	194.6	6.125	13.82	0	0	977.6779	-5.871	77.01	889.9987	2.262	894.8708	884.9197	890.2054	2.101	2.412	2.261	2730.781	2719.952	2733.788	0.01	
13/11/2015 4:00	1914	13.32	13.24	9.79	9.79	198.5	6.444	14.23	0	0	978.0056	-5.883	75.8	889.941	1.505	894.9075	885.1301	889.7855	1.707	1.732	0.937	2732.499	2721.257	2730.032	0.01	
13/11/2015 5:00	1915	13.27	13.19	10.4	10.4	198.3	10.17	15.15	0	0	978.1694	-5.995	76.18	890.4937	2.425	894.4384	885.865	891.1776	3.003	2.161	1.99	2732.849	2721.257	2730.032	0.01	
13/11/2015 6:00	1916	13.21	13.14	12.01	12.01	202.1	4.85	14.5	0	0	978.1694	-6.086	78.42	890.3276	3.503	892.5019	886.624	891.8568	4.189	3.651	2.438	2731.685	2715.686	2733.395	0.01	
13/11/2015 7:00	1917	13.16	13.1	11.25	11.25	202.6	5.557	15.19	0	0	978.4972	-6.193	78.62	890.6657	3.846	893.237	886.4117	892.3485	4.37	4.184	2.789	2724.614	2744.024	2728.869	0.01	
13/11/2015 8:00	1918	13.12	13.06	11.85	11.85	204.3	6.321	14.6	0	0	978.9889	-5.942	74.76	890.8675	3.95	893.1869	886.9724	892.4435	3.759	4.891	2.959	2715.825	2729.582	2735.835	0.01	
13/11/2015 9:00	1919	13.08	13.05	7.056	7.056	213.2	52.64	13.94	0.9843817	0.003543774	980.2999	-6.138	73.44	890.1039	0.163	894.9493	885.5339	889.8286	0.133	0.172	0.179	2731.223	2719.741	2730.208	0.01	
13/11/2015 10:00	1920	14.62	13.05	2.525	2.525	167.4	53.51	10.19	30.12659	0.1084557	980.4637	-6.481	73.62	890.2092	0.497	894.819	885.5652	890.2433	0.493	0.524	0.473	2731.847	2719.893	2731.442	0	
13/11/2015 11:00	1921	14.66	13.86	4.048	4.048	188.8	42.21	10.78	56.88368	0.2047812	981.1193	-6.691	74.1	890.2263	0.66	895.1028	885.2289	890.3472	0.75	0.736	0.448	2731.693	2719.739	2730.788	0.01	
13/11/2015 12:00	1922	14.65	14.57	6.092	6.092	175.3	28.72	10.62	72.02911	0.2593048	981.611	-6.578	75.32	889.7651	0.926	895.2623	884.7251	889.3079	0.996	1.037	0.709	2729.83	2715.788	2730.1	0.01	
13/11/2015 13:00	1923	14.58	14.56	5.7	5.7	158.1	20.46	8.98	72.18295	0.2598586	982.4303	-6.312	75.86	889.9124	0.633	895.0421	885.017	889.6781	0.608	0.519	0.519	2730.896	2718.285	2729.406	0.01	
13/11/2015 14:00	1924	14.58	14.48	5.824	5.824	120.8	38.77	9.33	190.4422	0.6855919	982.8562	-6.144	77.15	889.8273	0.792	895.0701	884.9457	889.4659	0.921	0.86	0.541	2731.97	2720.635	2728.366	0.04	
13/11/2015 15:00	1925	14.65	14.34	5	5	139.2	12.81	8.76	62.47129	0.2248967	983.0854	-6.751	83.1	889.8849	0.688	895.1638	885.0027	889.4882	0.728	0.754	0.566	2732.408	2720.095	2730.378	0	
13/11/2015 16:00	1926	14.36	14.09	5.599	5.599	157.5	9.34	7.977	16.84842	0.06065431	983.7413	-6.688	79.81	889.9191	0.127	895.4138	884.9543	889.3892	0.124	0.15	0.102	2731.887	2719.131	2729.713	0	
13/11/2015 17:00	1927	14.11	13.93	4.054	4.054	143.5	9.51	7.703	0.4140854	0.001490708	983.7413	-7.557	89.7	889.8693	0.739	895.1586	884.9979	889.4515	0.749	0.899	0.519	2731.185	2718.705	2729.960	0	
13/11/2015 18:00	1928	13.95	13.83	6.895	6.895	166.3	9.49	10.54	0	0	983.9053	-6.591	81	890.0372	0.87	895.5033	885.0074	889.6009	0.8	1.048	0.899	2731.718	2720.37	2729.757	0	
13/11/2015 19:00	1929	13.85	13.75	7.448	7.448	158.5	9.09	9.68	0	0	984.3969	-6.581	82.1	889.8519	1.133	895.0937	884.8706	889.5914	1.061	1.404	0.867	2734.015	2720.405	2729.599	0	
13/11/2015 20:00	1930	13.77	13.68	7.289	7.289	155	7.077	10.53	0	0	984.8884	-6.362	82	889.8201	1.151	895.0189	884.7738	889.6678	1.179	1.447	0.698	2733.226	2718.744	2729.346	0	
13/11/2015 21:00	1931	13.69	13.61	8.43	8.43	160	6.169	11.68	0	0	985.0524	-6.153	81.3	889.4689	1.364	895.1136	884.7447	889.5485	1.51	1.573	0.908	2731.677	2720.274	2727.022	0	
13/11/2015 22:00	1932	13.63	13.55	8.65	8.65	189.8	13.07	12.82	0	0	985.7079	-5.962	76.74	890.1038	0.967	895.0989	885.2111	890.0013	0.998	1.037	0.858	2734.413	2720.172	2729.487	0.01	
13/11/2015 23:00	1933	13.57	13.49	7.133	7.133	205.6	9.15	10.56	0	0	986.3634	-5.655	73.74	889.8459	1.023	895.4172	885.0175	889.103	1.132	1.078	0.835	2730.804	2716.379	2729.706	0.01	
14/11/2015 0:00	1934	13.51	13.43	6.957	6.957	215.6	7.998	10.17	0	0	987.0958	-5.437	72.15	889.6379	0.614	895.4465	884.8722	888.595	0.624	0.618	0.599	2731.861	2719.513	2728.512	0.01	
14/11/2015 1:00	1935	13.44	13.37	3.549	3.549	244.9	25.87	8.15	0	0	987.6744	-5.833	74.83	889.6087	0.319	895.4747	884.9508	888.4008	0.327	0.34	0.288	2731.818	2718.743	2728.261	0	
14/11/2015 2:00	1936	13.39	13.32	1.525	1.525	324.4	54.65	8.02	0	0	988.5758	-6.313	79.89	889.6867	0.013	895.4258	885.0991	888.5352	0.014	0.011	0.015	2731.776	2719.231	2728.523	-0.01	
14/11/2015 3:00	1937	13.33	13.26	1.041	1.041	254.7	37.28	2.862	0	0	989.2356	-8.04	90.2	889.705	0.024	895.5125	885.0994	888.5032	0.022	0.						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
16/11/2015 2:00	1984	13.45	13.38	4.934	4.934	157.5	14.9	7.311	0	0	996.984	-12	80.6	890.6033	0.15	896.2903	886.1235	889.3964	0.196	0.132	0.109	2732.83	2720.52	2729.672	0
16/11/2015 3:00	1985	13.4	13.33	2.155	2.155	123.8	29.42	4.939	0	0	996.7721	-12.67	85.4	890.6592	0.217	896.3962	886.1188	889.4626	0.294	0.154	0.176	2733.014	2720.404	2729.556	0
16/11/2015 4:00	1986	13.35	13.27	4.347	4.347	149	21.51	8.11	0	0	996.5261	-12.83	79.97	890.6633	0.132	896.3105	886.187	889.4924	0.14	0.145	0.109	2732.752	2720.26	2729.735	0
16/11/2015 5:00	1987	13.3	13.22	7.022	7.022	163.9	14.16	10.27	0	0	995.7828	-11.86	74.14	890.6326	1.243	896.116	886.0752	889.7068	1.255	1.428	1.01	2732.343	2717.671	2729.632	0
16/11/2015 6:00	1988	13.24	13.17	6.913	6.913	147.8	6.443	9.49	0	0	996.0343	-13.12	80.6	890.6204	0.428	896.2615	886.1077	889.4919	0.41	0.541	0.298	2733.227	2721.342	2729.681	0
16/11/2015 7:00	1989	13.19	13.12	6.059	6.059	144.8	3.518	7.585	0	0	995.3784	-13.07	79.87	890.5865	0.699	896.0593	886.1	889.6003	0.654	0.903	0.474	2733.606	2721.965	2730.049	0
16/11/2015 8:00	1990	13.14	13.07	8.22	8.22	143.3	6.838	10.88	0	0	994.3947	-12.45	77.59	890.5757	1.014	895.8046	886.2136	889.7091	1.022	1.197	0.779	2732.612	2719.905	2729.392	0
16/11/2015 9:00	1991	13.1	13.04	8.22	8.22	141	4.322	9.62	0.4752373	0.001710854	994.0668	-12.9	77.72	890.6273	0.711	896.2319	886.2264	889.4236	0.541	0.848	0.541	2732.649	2720.65	2730.179	0
16/11/2015 10:00	1992	13.2	13.04	5.292	5.292	127.9	11.02	7.213	18.43427	0.06636336	993.7406	-14.58	82.2	890.7357	0.327	896.424	886.3287	889.4543	0.349	0.336	0.295	2733.728	2721.153	2729.978	0
16/11/2015 11:00	1993	14.64	13.18	6.145	6.145	133.4	16.81	9.66	76.35846	0.2748904	992.7549	-13.21	76.35	890.5913	1.169	895.7053	886.2521	889.8166	1.311	1.315	0.808	2730.097	2718.599	2729.552	0.01
16/11/2015 12:00	1994	14.66	14.63	5.794	5.794	146.3	8.12	8.15	133.476	0.4805135	992.0172	-13.28	76.72	890.5513	0.589	895.7924	885.8543	890.0073	0.53	0.705	0.514	2732.667	2720.76	2729.881	0.02
16/11/2015 13:00	1995	14.66	14.64	6.042	6.042	138.9	7.987	8.72	130.5483	0.469974	990.948	-13.22	76.56	890.4925	0.566	895.9766	885.6281	889.8727	0.548	0.743	0.33	2730.706	2717.341	2731.484	0.02
16/11/2015 14:00	1996	14.66	14.59	7.603	7.603	131.9	17.74	13.68	128.5314	0.4627129	989.5872	-12.44	76.76	891.3192	1.882	894.9156	886.9891	892.0528	1.886	1.888	1.873	2736.88	2725.388	2731.738	0.02
16/11/2015 15:00	1997	14.66	14.63	11.83	11.83	114.1	6.193	15.64	81.33313	0.2927992	988.766	-12.31	78.51	891.4707	2.081	895.1317	887.1106	892.1698	1.964	2.042	2.228	2734.834	2723	2732.982	0.01
16/11/2015 16:00	1998	14.65	14.23	9.77	9.77	111.3	10.32	13.56	20.06978	0.07225122	988.6359	-12.39	76.59	891.3759	1.746	894.6123	887.7521	891.7632	1.605	2.166	1.37	2731.765	2724.127	2733.289	0.01
16/11/2015 17:00	1999	14.25	14.07	10.18	10.18	116.6	8.04	13.33	0.03467385	0.000124826	987.8207	-12.3	74.9	891.0994	1.824	894.5541	886.9203	891.8237	1.952	2.005	1.467	2730.425	2720.558	2731.572	0.01
16/11/2015 18:00	2000	14.09	13.97	9.14	9.14	118.9	7.048	13.43	0	0	987.3301	-12.37	74.37	890.6213	1.142	895.5513	886.6037	889.7087	1.306	1.344	0.633	2733.235	2724.056	2730.827	0.01
16/11/2015 19:00	2001	13.98	13.88	8.01	8.01	118.1	8.47	11.02	0	0	986.9241	-12.65	75.52	890.4578	0.59	896.306	886.1584	888.9091	0.573	0.608	0.588	2732.727	2718.878	2729.957	0
16/11/2015 20:00	2002	13.91	13.81	5.873	5.873	102.7	8.24	8.58	0	0	986.6885	-13.14	78.07	890.3863	0.472	896.3044	886.0715	888.783	0.539	0.518	0.33	2732.768	2720.612	2729.206	0
16/11/2015 21:00	2003	13.83	13.75	6.583	6.583	90.5	9.22	8.86	0	0	986.5231	-13.24	77.51	890.4443	0.548	896.3732	886.1788	888.7811	0.63	0.577	0.414	2733.067	2721.8	2728.608	0
16/11/2015 22:00	2004	13.76	13.68	6.582	6.582	92.8	10.86	9.13	0	0	986.1965	-12.97	75.55	890.5027	0.47	896.4691	886.1014	888.9376	0.504	0.48	0.422	2733.304	2720.572	2728.542	0
16/11/2015 23:00	2005	13.7	13.62	6.587	6.587	91.7	9.72	8.76	0	0	986.3605	-13.17	75.45	890.4463	0.565	896.3033	886.1333	888.9023	0.63	0.564	0.491	2732.744	2721.209	2729.563	0
17/11/2015 0:00	2006	13.64	13.56	4.407	4.407	89.1	8.06	6.664	0	0	986.5244	-13.09	75	890.4454	0.432	896.3969	886.0865	888.8527	0.477	0.444	0.368	2733.163	2720.371	2729.992	0
17/11/2015 1:00	2007	13.58	13.5	5.793	5.793	94.9	6.206	8.06	0	0	986.5186	-12.91	79.05	890.5502	0.668	896.3766	886.345	888.9289	0.676	0.743	0.573	2734.072	2722.102	2729.827	0
17/11/2015 2:00	2008	13.52	13.45	5.601	5.601	94.2	4.85	7.801	0	0	986.6885	-13.07	82.9	890.4192	0.442	896.373	886.0037	888.8808	0.467	0.485	0.364	2734.047	2720.578	2728.917	0
17/11/2015 3:00	2009	13.47	13.39	5.273	5.273	96.2	6.042	6.782	0	0	986.8489	-12.95	85.3	890.4968	0.423	896.4198	886.1372	888.9332	0.428	0.495	0.329	2732.51	2720.772	2728.169	0
17/11/2015 4:00	2010	13.41	13.33	4.553	4.553	96.3	4.566	6.429	0	0	986.9983	-12.87	86.5	890.512	0.231	896.5148	886.1414	888.8799	0.279	0.207	0.199	2732.879	2720.706	2729.061	0
17/11/2015 5:00	2011	13.36	13.28	4.119	4.119	96.8	4.862	5.272	0	0	986.9844	-12.76	86.3	890.5926	0.249	896.6313	886.1736	888.9728	0.306	0.219	0.21	2733.215	2720.286	2728.973	0
17/11/2015 6:00	2012	13.31	13.23	4.343	4.343	98.2	9.22	7.095	0	0	987.1652	-12.84	86.1	890.5994	0.439	896.6096	886.1932	888.9955	0.473	0.459	0.378	2733.158	2720.357	2729.194	0
17/11/2015 7:00	2013	13.25	13.18	3.616	3.616	136.6	13.76	6.488	0	0	987.3386	-13.02	85.8	890.6255	0.176	896.6749	886.153	889.0486	0.197	0.177	0.151	2733.449	2720.747	2729.023	0
17/11/2015 8:00	2014	13.2	13.13	2.827	2.827	149.6	5.723	3.744	0	0	987.5009	-13.01	85.9	890.6772	0.12	896.8191	886.204	889.0084	0.126	0.097	0.097	2733.543	2720.51	2729.065	0
17/11/2015 9:00	2015	13.15	13.07	2.99	2.99	153.4	3.557	3.489	0.3227728	0.001161982	987.8362	-13.31	85.5	890.7068	0.098	896.8889	886.2179	889.014	0.109	0.099	0.084	2733.588	2720.551	2729.102	0
17/11/2015 10:00	2016	13.12	13.07	3.607	3.607	163.5	10.85	5.821	12.47626	0.04491454	988.0001	-13.5	84.8	890.6621	0.413	896.8497	886.0679	889.0688	0.457	0.428	0.345	2734.168	2721.601	2728.656	0
17/11/2015 11:00	2017	13.26	13.09	5.685	5.685	164.9	12.02	7.115	41.85501	0.150678	988.41	-13.56	80	890.7811	0.41	896.8888	886.2887	889.1658	0.44	0.268	0.268	2733.661	2720.461	2728.939	0
17/11/2015 12:00	2018	13.5	13.24	4.548	4.548	149.8	10.39	6.84	77.18449	0.2778641	988.9805	-13.35	78.95	890.7062	0.298	896.8413	886.1724	889.1049	0.32	0.325	0.242	2732.84	2719.59	2729.986	0
17/11/2015 13:00	2019	13.74	13.48	2.424	2.424	148.4	72.58	6.331	69.47213	0.2500997	989.5574	-13.19	72.92	890.7238	0.034	896.8735	886.1792	889.1188	0.037	0.034	0.031	2733.586	2720.552	2729.227	0
17/11/2015 14:00	2020	13.92	13.62	1.045	1.045	23.04	13.98	2.019	61.46807	0.221285	990.1282	-13.42	79.29	890.7049	0.01	897.0034	886.0629	889.0486	0.007	0.004	0.015	2733.724	2720.429	2729.161	0
17/11/2015 15:00	2021	14.09	13.9	0.698	0.698	352.8	16.42	1.137	55.26775	0.1989639	990.7875	-13.69	83.4	890.7549	0.012	896.9518	886.1978	889.1151	0.014	0.011	0.012	2733.668	2720.599	2729.236	0
17/11/2015 16:00	2022	14.1	13.99	0.341	0.341	275.7	33.34	0.882	25.71373	0.09256945	991.605	-13.98	84.3	890.8372	0.007	897.1066	886.3298	889.075	0.01	0.004	0.007	2733.856	2720.769	2729.213	-0.01
17/11/2015 17:00	2023	14.01	13.89	0.933	0.933	219.9	24.87	3.214	0.9467123	0.003408164	992.2754	-14.31	79.84	890.9263	0.086	897.3173	886.3428	889.1189	0.096	0.061	0.096	2734.499	2720.954		

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
19/11/2015 16:00	2070	14.51	14.24	1.127	1.127	232.9	33.37	2.568	5.424449	0.01952802	1010.308	-21.57	77.18	891.6641	0.019	898.9402	887.5383	888.5139	0.017	0.013	0.025	2736.149	2722.28	2728.454	0	
19/11/2015 17:00	2071	14.26	14.11	0.338	0.338	241.3	45.02	1.49	0	0	1010.308	-19.77	78.18	891.7009	0.023	899.0899	887.5551	888.4578	0.023	0.021	0.026	2736.325	2722.265	2728.487	-0.01	
19/11/2015 18:00	2072	14.13	14.02	0.184	0.184	145.4	51.93	1.882	0	0	1010.145	-19.25	78.06	891.6777	0.018	898.9592	887.5258	888.5482	0.014	0.024	0.015	2736.169	2722.206	2728.516	-0.01	
19/11/2015 19:00	2073	14.05	13.95	0.303	0.303	40.02	48.47	2.646	0	0	1009.98	-18.46	77.01	891.7004	0.058	898.9221	887.6049	888.5744	0.065	0.046	0.061	2736.167	2722.4	2728.45	-0.01	
19/11/2015 20:00	2074	13.97	13.88	1.671	1.671	165.6	53.44	5.841	0	0	1009.269	-17.5	68.97	891.6526	0.021	898.7569	887.5276	888.6733	0.025	0.019	0.019	2735.899	2722.251	2728.701	0	
19/11/2015 21:00	2075	13.9	13.81	0.936	0.936	189.4	75.45	4.586	0	0	1009.185	-16.35	69.22	891.5735	0.195	898.4911	887.5264	888.7032	0.21	0.193	0.182	2735.47	2722.127	2728.767	0	
19/11/2015 22:00	2076	13.83	13.75	1.894	1.894	155.8	36.29	5.331	0	0	1008.724	-15.26	72.28	891.5715	0.141	898.4218	887.5568	888.7361	0.147	0.119	0.155	2735.477	2722.133	2728.837	0	
19/11/2015 23:00	2077	13.78	13.7	1.874	1.874	88.7	46.34	4.684	0.00484579	1.74E-05	1008.168	-14.42	76.06	891.5204	0.02	898.3948	887.4828	888.6836	0.02	0.021	0.02	2735.609	2722.332	2728.612	0	
20/11/2015 0:00	2078	13.72	13.63	3.102	3.102	268.2	80.3	9.21	0	0	1007.43	-12.08	79.14	891.3122	0.876	898.6078	887.0486	888.2802	0.854	0.923	0.85	2735.225	2721.268	2728.463	0	
20/11/2015 1:00	2079	13.66	13.58	5.907	5.907	235.3	19.86	13.47	0	0	1006.498	-9.64	72.9	891.6665	1.148	897.4195	887.5258	890.0541	1.176	1.001	1.252	2735.041	2722.186	2730.279	0	
20/11/2015 2:00	2080	13.6	13.52	4.626	4.626	283.7	49.24	12.76	0	0	1006.496	-9.75	73.49	892.3047	1.549	897.5999	887.8983	891.416	1.734	1.419	1.477	2734.272	2722.192	2729.945	0	
20/11/2015 3:00	2081	13.55	13.47	5.722	5.722	266.7	37.65	16.6	0.006627697	2.39E-05	1005.922	-9.65	75.68	892.5118	3.952	896.1817	888.0791	893.2747	4.601	3.26	3.881	2733.773	2719.854	2732.921	0	
20/11/2015 4:00	2082	13.49	13.41	6.283	6.283	251.8	51.04	15.97	0	0	1006.726	-8.39	73.72	892.012	0.032	896.8138	888.1664	893.0558	0.03	0.034	0.033	2733.549	2723.075	2731.612	0.01	
20/11/2015 5:00	2083	13.44	13.36	2.8	2.8	273.8	78.89	7.37	0	0	1006.905	-9.92	84.4	892.0966	0.116	896.8584	888.2729	891.1584	0.125	0.11	0.111	2733.57	2723.062	2731.854	0	
20/11/2015 6:00	2084	13.38	13.31	9.09	9.09	247.8	70.43	21.44	0	0	1004.755	-7.823	77.36	892.4006	8.33	890.3572	890.8116	896.0331	10.37	6.845	7.325	2739.47	2727.763	2741.786	0.01	
20/11/2015 7:00	2085	13.33	13.25	16.03	16.03	229.4	7.692	25.48	0	0	1004.289	-5.706	68.73	894.1294	14.07	882.8243	896.5063	903.0576	18.45	11.46	11.07	2718.984	2730.207	2751.963	0.01	
20/11/2015 8:00	2086	13.28	13.2	15.1	15.1	227.9	9.19	23.44	0	0	1004.662	-5.463	68.5	893.861	6.619	892.4928	891.6273	897.463	6.606	6.009	7.188	2723.724	2732.919	2738.508	0.01	
20/11/2015 9:00	2087	13.22	13.15	13.64	13.64	224.2	8.57	20.8	0.03694568	0.000133004	1004.333	-5.658	70.59	893.1907	4.292	896.1261	888.934	894.5119	6.306	3.776	5.068	2733.549	2723.075	2731.612	0.01	
20/11/2015 10:00	2088	13.17	13.14	14.16	14.16	221.3	9.13	22.46	6.297727	0.02267182	1003.268	-5.622	71.08	893.9467	10.02	887.7532	893.1157	900.9712	10.12	9.36	10.53	2725.597	2740.03	2758.287	0.01	
20/11/2015 11:00	2089	13.36	13.15	16.64	16.64	216	8.88	23.48	32.54351	0.1171566	1002.942	-5.898	74.64	892.6404	10.24	889.2537	891.6317	897.0361	13.76	9.11	6.491	2731.334	2724.92	2736.347	0.01	
20/11/2015 12:00	2090	13.64	13.36	16.93	16.93	212.3	6.494	24.32	41.84616	0.1506462	1002.37	-5.868	74.75	893.7239	10.19	889.6796	892.2101	899.2821	12.13	7.702	10.25	2732.709	2721.506	2759.105	0.01	
20/11/2015 13:00	2091	14.06	13.64	14.56	14.56	213.6	9.77	22.7	51.52119	0.1854763	1001.704	-5.62	74.11	893.7001	7.772	891.4063	892.9534	896.7406	8.16	8.13	6.967	2723.446	2734.683	2750.909	0.01	
20/11/2015 14:00	2092	14.33	13.66	16.43	16.43	217.4	8.75	26.54	43.87478	0.1579492	1001.366	-5.127	72.48	893.8664	12.14	883.3185	895.7678	902.5129	15.5	9.93	10.18	2715.596	2731.456	2751.159	0.01	
20/11/2015 15:00	2093	14.64	14.27	16.2	16.2	218.8	9.38	24.79	49.12776	0.1768599	1001.097	-4.802	69.72	894.0735	12.96	883.472	895.6522	903.0964	14.08	12.76	11.96	2730.021	2715.75	2730.904	0.02	
20/11/2015 16:00	2094	14.3	14.05	16.65	16.65	220.5	9.46	25.26	10.84862	0.03905501	1000.925	-4.187	65.1	893.8323	10.95	887.623	893.287	900.587	13.79	9.43	8.97	2704.511	2728.785	2740.225	0.02	
20/11/2015 17:00	2095	14.06	13.92	16.5	16.5	222.3	8.69	26.64	0	0	1000.84	-3.972	64.47	894.1124	9.46	889.7199	893.4065	892.2108	9.39	9.6	9.38	2732.056	2729.383	2730.054	0.02	
20/11/2015 18:00	2096	13.93	13.82	14.3	14.3	231.3	9.15	20.6	0	0	1001.249	-3.546	62.75	892.7993	7.398	892.0634	889.7668	896.5678	8.66	6.904	6.443	2731.559	2718.334	2750.098	0.02	
20/11/2015 19:00	2097	13.84	13.73	12.44	12.44	233.6	8.95	20.34	0	0	1001.335	-3.556	63.24	893.2664	5.744	888.8919	897.5587	892.416	6.67	4.653	5.731	2724.491	2712.096	2728.577	0.02	
20/11/2015 20:00	2098	13.75	13.66	13.68	13.68	233.8	7.605	20.21	0	0	1001.01	-3.788	66.52	892.7449	5.981	891.6956	890.466	896.0732	6.369	6.488	4.966	2733.172	2722.471	2737.539	0.02	
20/11/2015 21:00	2099	13.68	13.6	12.75	12.75	233.1	7.022	18.42	0	0	1000.844	-3.723	67.38	892.4763	4.971	894.6365	888.051	894.7415	5.24	4.732	4.927	2732.432	2725.147	2735.253	0.02	
20/11/2015 22:00	2100	13.61	13.53	10.64	10.64	225.2	8.8	17.89	0	0	1000.265	-3.957	70.96	892.306	3.228	895.8699	887.1602	893.8879	3.556	3.548	2.456	2735.335	2722.365	2733.504	0.01	
20/11/2015 23:00	2101	13.55	13.47	11.3	11.3	213.2	6.885	14.6	0	0	999.7756	-4.137	73.94	892.2816	3.267	896.0429	887.147	893.6548	3.696	2.933	3.124	2735.374	2723.724	2734.333	0.01	
21/11/2015 0:00	2102	13.49	13.41	11.6	11.6	214.7	6.933	15.76	0	0	998.3806	-3.351	68.32	892.7314	4.956	893.9164	888.9709	895.3068	5.247	5.027	4.571	2727.624	2714.605	2733.132	0.01	
21/11/2015 1:00	2103	13.43	13.36	11.11	11.11	209.1	7.256	15.09	0	0	997.6477	-3.759	72.63	892.4481	2.909	897.6746	887.6746	893.5184	3.012	3.418	3.012	2735.232	2723.918	2732.696	0.01	
21/11/2015 2:00	2104	13.37	13.3	11.59	11.59	198.3	14.04	15.56	0	0	996.0867	-4.137	76.46	891.8344	3.324	894.9366	887.8777	892.6889	3.815	3.598	2.378	2732.252	2723.31	2737.731	0.01	
21/11/2015 3:00	2105	13.32	13.25	13.69	13.69	188.4	15.04	18.09	0.000254738	9.17E-07	993.8041	-4.212	79.22	892.7078	5.8	893.4162	889.6653	895.0418	6.746	4.714	6.746	2730.305	2707.457	2732.093	0.01	
21/11/2015 4:00	2106	13.26	13.2	12.05	12.05	178.6	9.9	17.15	0.000254738	9.17E-07	992.8135	-4.346	80.4	891.5728	1.876	896.0544	886.7338	891.9304	1.961	2.243	1.295	2739.348	2723.185	2731.527	0.01	
21/11/2015 5:00	2107	13.22	13.15	12.05	12.05	183.1	9.65	18.8	0	0	991.3375	-4.013	81	892.3159	4.971	894.9998	887.8221	894.1256	4.311	5.479	5.053	2724.624	2738.624	2742.957	0.01	
21/11/2015 6:00	2108	13.17	13.11	14.2	14.2	189.2	8.12	21.21	0	0	991.009	-3.173	79.58	892.7161	4.75	894.4559	889.2083	894.4841	4.876	5.334	3.931	2730.735	2717.122	2734.154	0.01	
21/11/2015 7:00	2109	13.12	13.06	12.37	12.37	196.1	11.34	18.4	0	0	989.2051	-2.611	78.24	892.5745	4.35	895.981	888.045	893.6978	3.972	4.499	4.554	2708.715	2728.8			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
23/11/2015 6:00	2156	13.22	13.14	7.221	7.221	268	6.492	10.25	0	0	1012.547	-18.6	64.71	892.1968	0.496	899.0847	887.6054	889.9001	0.495	0.528	0.462	2736.113	2722.123	2730.144	0	
23/11/2015 7:00	2157	13.17	13.09	6.174	6.174	263.9	8.02	9.9	0	0	1012.957	-19.13	63.13	892.2314	0.695	899.1265	887.4639	890.1041	0.777	0.74	0.546	2736.972	2722.882	2729.675	0	
23/11/2015 8:00	2158	13.12	13.04	6.833	6.833	250.6	7.698	9.39	0	0	1013.203	-18.92	59.79	892.3057	0.681	899.2314	887.6472	890.0384	0.667	0.74	0.631	2736.629	2720.581	2730.133	0	
23/11/2015 9:00	2159	13.07	12.99	6.79	6.79	252	7.757	10.09	0	0	1013.859	-18.31	56.81	892.2695	0.593	899.2209	887.7009	889.8865	0.654	0.689	0.392	2736.17	2722.048	2730.612	0.01	
23/11/2015 10:00	2160	14.62	13	6.641	6.641	242.6	8.56	8.9	8.015368	0.02885533	1014.351	-17.85	54.33	898.1445	0.474	898.2396	887.7747	890.7996	0.564	0.469	0.37	2734.615	2722.73	2731.804	0.01	
23/11/2015 11:00	2161	14.66	14.61	6.241	6.241	238.7	5.501	7.997	58.52456	0.2106884	1014.493	-17.25	51.77	892.2464	0.532	897.3826	887.5718	891.7849	0.653	0.563	0.325	2734.459	2722.254	2732.947	0.01	
23/11/2015 12:00	2162	14.67	14.64	6.692	6.692	238.3	5.016	9.45	103.9362	0.3741704	1014.774	-16.7	50.29	892.1201	0.377	897.4653	887.174	891.7212	0.387	0.381	0.362	2734.576	2721.419	2732.823	0.03	
23/11/2015 13:00	2163	14.67	14.64	5.273	5.273	239.6	6.138	7.154	125.525	0.45189	1015.382	-15.96	49.71	892.0169	0.151	897.6151	886.7828	891.6528	0.197	0.12	0.124	2734.772	2721.374	2732.43	0.03	
23/11/2015 14:00	2164	14.66	14.61	4.101	4.101	239.1	8.18	5.41	112.3084	0.4043103	1015.3	-16.06	51.8	892.0193	0.059	898.1486	886.3904	891.519	0.067	0.053	0.056	2735.111	2720.8	2732.238	0.02	
23/11/2015 15:00	2165	14.66	14.37	2.603	2.603	274	27.67	5.704	51.11166	0.184002	1015.628	-16.26	53.99	892.1782	0.134	898.8284	887.6022	890.1039	0.145	0.121	0.134	2736.17	2722.607	2730.406	0.01	
23/11/2015 16:00	2166	14.44	14.2	0.961	0.961	280.2	30.1	3.195	8.294351	0.02985966	1015.805	-15.55	54.08	892.2601	0.021	898.9114	887.7121	890.1566	0.023	0.017	0.022	2736.078	2722.505	2730.6	0	
23/11/2015 17:00	2167	14.22	14.07	2.648	2.648	231.2	43.23	6.468	0	0	1015.741	-15.28	57.64	892.2613	0.269	898.8644	887.6277	890.2917	0.306	0.221	0.273	2735.883	2722.061	2730.986	0	
23/11/2015 18:00	2168	14.09	13.98	4.106	4.106	219.2	5.806	5.488	0	0	1015.605	-15.18	60.66	892.2788	0.05	898.7918	887.7536	890.2909	0.053	0.039	0.057	2736.038	2722.631	2730.769	0	
23/11/2015 19:00	2169	14	13.9	1.092	1.092	219.2	11.06	2.685	0	0	1015.414	-15.01	57.9	892.2847	0.019	898.8425	887.7451	890.2665	0.018	0.012	0.025	2736.05	2722.529	2730.633	0	
23/11/2015 20:00	2170	13.92	13.83	0.675	0.675	233.1	45.98	2.626	0	0	1015.827	-15.15	53.08	892.2656	0.031	898.9642	887.7863	890.0463	0.014	0.011	0.015	2736.245	2722.609	2730.324	0	
23/11/2015 21:00	2171	13.85	13.76	1.837	1.837	244.7	39.37	5.958	0	0	1015.335	-15.49	52.26	892.2842	0.236	898.9894	887.6494	890.2137	0.271	0.177	0.249	2736.758	2722.325	2731.302	0	
23/11/2015 22:00	2172	13.78	13.7	4.032	4.032	224.6	6.343	5.664	0	0	1014.79	-14.48	48.11	892.2729	0.134	898.8333	887.7363	890.249	0.159	0.122	0.118	2735.763	2722.365	2730.667	0.01	
23/11/2015 23:00	2173	13.72	13.64	5.374	5.374	224	4.466	7.468	0	0	1014.438	-14.4	46.69	892.2388	0.467	898.8434	887.6329	890.2402	0.524	0.44	0.432	2735.897	2722.87	2730.661	0.01	
24/11/2015 0:00	2174	13.66	13.58	5.197	5.197	232.1	13.74	7.899	0	0	1014.234	-14.27	45.99	892.2477	0.028	898.7186	887.7446	890.2802	0.024	0.028	0.031	2735.855	2722.561	2730.656	0.01	
24/11/2015 1:00	2175	13.6	13.52	2.114	2.114	301.7	63.02	6.821	0	0	1014.24	-14.23	44.32	892.2046	0.204	898.8581	887.6922	890.0634	0.232	0.178	0.198	2736.873	2722.724	2730.739	0	
24/11/2015 2:00	2176	13.55	13.47	3.831	3.831	255.2	16.23	6.899	0.00076498	2.75E-06	1013.241	-11.87	40.84	892.1572	0.296	898.6358	887.5749	890.2607	0.276	0.309	0.301	2735.772	2722.764	2729.833	0.01	
24/11/2015 3:00	2177	13.5	13.42	5.486	5.486	242.1	9.72	9.11	0	0	1013.192	-11.93	47.55	892.165	0.137	898.618	887.6221	890.2552	0.159	0.121	0.129	2735.654	2722.464	2730.75	0.01	
24/11/2015 4:00	2178	13.44	13.36	2.218	2.218	273.3	64.02	7.291	0.004079277	1.47E-05	1013.197	-12.41	49.34	892.1443	0.039	898.5189	887.6449	890.269	0.045	0.046	0.022	2735.626	2722.428	2730.697	0	
24/11/2015 5:00	2179	13.38	13.31	0.654	0.654	188.4	47.84	1.921	0.001784683	6.42E-06	1012.739	-12.43	50.07	892.1442	0.023	898.5601	887.6391	890.2333	0.025	0.019	0.024	2735.734	2722.375	2730.61	-0.01	
24/11/2015 6:00	2180	13.33	13.26	3.93	3.93	243.9	38.23	8.31	0.03084953	0.000111058	1013.08	-12.55	55.05	892.0776	0.579	898.6703	887.4203	890.1421	0.58	0.623	0.529	2734.139	2721.524	2730.404	0.01	
24/11/2015 7:00	2181	13.28	13.2	3.796	3.796	224.2	20.98	8.13	0	0	1013.405	-13.08	58.63	892.1087	0.069	898.5878	887.5653	890.173	0.073	0.084	0.045	2735.32	2721.835	2730.714	0	
24/11/2015 8:00	2182	13.22	13.15	2.545	2.545	202.3	35.53	4.743	0.00713994	2.57E-05	1013.988	-13.95	62.12	892.1685	0.093	898.671	887.549	890.2854	0.093	0.084	0.102	2735.773	2722.319	2730.646	0	
24/11/2015 9:00	2183	13.17	13.09	2.127	2.127	256.8	30.48	5.664	0.4734718	0.001704498	1013.706	-11.67	60.39	892.1634	0.041	898.4724	887.6136	890.4041	0.053	0.036	0.03	2735.528	2722.351	2730.829	0	
24/11/2015 10:00	2184	13.12	13.08	1.952	1.952	291.6	31.92	4.9	6.231645	0.02243392	1013.888	-11.04	63.15	892.0928	0.025	898.4135	887.531	890.3341	0.029	0.022	0.023	2735.453	2722.208	2730.839	0	
24/11/2015 11:00	2185	13.29	13.08	2.063	2.063	268.7	41.85	5.155	30.87591	0.1111533	1014.117	-9.4	64.52	892.0319	0.087	898.3172	887.4232	890.3555	0.101	0.074	0.083	2735.552	2722.088	2730.947	0	
24/11/2015 12:00	2186	14.64	13.28	1.444	1.444	223.5	77.86	5.841	86.21407	0.3103706	1014.594	-8.81	63.22	891.9897	0.024	898.1443	887.4047	890.4203	0.021	0.018	0.018	2735.078	2722.022	2730.856	0.01	
24/11/2015 13:00	2187	14.66	14.36	1.48	1.48	206.4	48.49	5.488	88.80825	0.3197097	1015.042	-8.6	62.43	891.9888	0.147	898.1174	887.3906	890.4585	0.157	0.118	0.118	2735.074	2722.059	2730.944	0.01	
24/11/2015 14:00	2188	14.65	14.3	0.984	0.984	148.2	74.8	2.862	66.26379	0.2385496	1015.209	-8.23	63.28	891.9702	0.016	898.0942	887.2546	890.5617	0.02	0.013	0.015	2735.079	2721.942	2731.009	0	
24/11/2015 15:00	2189	14.58	14.33	0.983	0.983	220.4	73.55	4.665	42.92869	0.1545433	1015.206	-6.539	62.53	891.9577	0.131	898.0623	887.2185	890.5922	0.144	0.159	0.076	2735.019	2721.931	2731.108	0	
24/11/2015 16:00	2190	14.37	14.1	1.592	1.592	247.7	77.74	5.116	6.274501	0.0225882	1014.878	-6.504	64.22	891.9252	0.334	898.1534	887.1374	890.4849	0.325	0.405	0.255	2734.93	2721.988	2730.977	0	
24/11/2015 17:00	2191	14.12	13.98	1.844	1.844	209	50.65	4.998	0.0145248	5.23E-05	1014.908	-7.728	60.63	891.9576	0.038	898.1558	887.223	890.494	0.031	0.024	0.031	2734.921	2721.871	2730.918	0	
24/11/2015 18:00	2192	14	13.89	1.079	1.079	228.3	92	3.959	0	0	1015.177	-7.321	56.07	891.9993	0.035	898.2224	887.3264	890.449	0.037	0.031	0.037	2735.278	2721.941	2730.897	0	
24/11/2015 19:00	2193	13.9	13.81	4.03	4.03	218.7	31.55	9.25	0	0	1015.101	-7.379	56.88	891.8098	0.867	898.1674	886.6102	890.6517	0.835	1.11	0.572	2734.212	2721.237	2731.438	0.01	
24/11/2015 20:00	2194	13.82	13.73	3.979	3.979	226.4	19.84	8.37	0	0	1015.37	-7.767	58.08	891.9314	0.052	898.1136	887.1633	890.5173	0.057	0.041	0.041	2734.994	2721.635	2731.013	0.01	
24/11/2015 21:00	2195	13.76	13.67	2.338	2.338	233.1	21.82	5.233	0	0	1015.914	-8.06	61.53	8												

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
26/11/2015 20:00	2242	13.67	13.58	9.95	9.95	197.7	9.27	14.31	0	0	1011.567	-1.425	40.32	891.5046	4.153	894.5535	887.6021	892.3581	3.308	6.05	2.047	2733.185	2723.628	2734.718	0.03
26/11/2015 21:00	2243	13.6	13.52	10.92	10.92	211.8	8.94	16.15	0	0	1011.563	-1.114	40.5	891.4121	5.111	892.7603	887.667	893.8091	6.21	4.738	4.165	2731.479	2714.411	2733.246	0.03
26/11/2015 22:00	2244	13.53	13.46	11.91	11.91	218.3	11.39	17.15	0	0	1012.282	-0.599	40.28	890.9265	2.22	896.0008	886.3282	890.4506	6.295	2.062	1.809	2733.173	2717.129	2725.461	0.04
26/11/2015 23:00	2245	13.47	13.39	9.79	9.79	225.8	9.65	15.68	0	0	1011.848	-0.092	39.12	892.0871	5.064	892.3521	888.5366	895.3725	5.755	5.164	4.139	2722.427	2729.789	2736.21	0.04
27/11/2015 0:00	2246	13.42	13.34	15.06	15.06	220	6.966	22.74	0	0	1010.69	0.112	39.07	893.6868	14.71	877.0925	897.0938	906.8744	15.51	12.37	15.99	2710.851	2724.305	2791.821	0.04
27/11/2015 1:00	2247	13.36	13.29	16.8	16.8	227.6	9.98	22.85	0	0	1012.082	0.71	37.32	893.2154	11.14	884.9374	894.3695	900.3394	12.07	10.67	10.63	2723.467	2719.792	2732.862	0.05
27/11/2015 2:00	2248	13.3	13.24	16.45	16.45	235.9	10.01	24.3	0	0	1013.065	1.998	32.02	893.1462	11.65	886.4736	892.6638	900.3011	10.28	8.32	15.25	2725.657	2736.852	2745.856	0.05
27/11/2015 3:00	2249	13.25	13.19	10.62	10.62	230.4	9.07	17.97	0	0	1013.556	1.578	31.84	890.8063	3.983	894.1448	886.4413	891.8327	14.829	3.483	3.444	2735.143	2723.055	2731.43	0.05
27/11/2015 4:00	2250	13.2	13.14	10.1	10.1	233.7	8.3	18.07	0	0	1013.72	0.763	33.72	891.0983	2.33	895.9796	886.6177	890.6977	1.893	3.061	1.827	2729.924	2720.152	2730.557	0.04
27/11/2015 5:00	2251	13.15	13.09	11.49	11.49	227.4	7.254	15.95	0	0	1013.229	0.043	34.19	892.2082	5.932	892.0403	888.839	895.7451	6.111	5.833	5.848	2723.161	2729.502	2739.206	0.04
27/11/2015 6:00	2252	13.12	13.06	12.31	12.31	221.1	7.68	16.5	0	0	1013.321	-0.282	34.06	891.2667	2.224	895.613	886.3281	891.8591	2.354	2.418	1.856	2730.595	2716.729	2727.275	0.04
27/11/2015 7:00	2253	13.07	13.02	6.495	6.495	208	19.13	15.17	0	0	1013.858	-0.691	33.31	890.7866	0.119	896.2903	886.3527	889.7169	0.102	0.158	0.086	2732.81	2720.819	2730.002	0.03
27/11/2015 8:00	2254	13.04	13	4.839	4.839	222.5	16.78	8.74	0	0	1013.451	-0.852	31.47	890.7961	0.877	896.1814	886.4214	889.7855	0.682	1.209	0.618	2733.461	2721.116	2730.794	0.03
27/11/2015 9:00	2255	13.01	12.97	5.963	5.963	226.1	50.86	14.17	0	0	1013.778	-0.592	30.87	890.8067	0.048	896.4783	886.2601	889.6818	0.049	0.06	0.03	2733.014	2720.625	2729.973	0.03
27/11/2015 10:00	2256	13.23	12.97	5.862	5.862	215.8	68.8	17.01	10.40693	0.03746495	1012.222	0.34	29.08	892.1002	7.867	889.1577	891.8882	895.2546	10.13	3.999	3.999	2726.271	2729.755	2735.35	0.04
27/11/2015 11:00	2257	13.8	13.23	14.05	14.05	222.1	8.19	20.07	28.95937	0.1042537	1012.246	0.565	29.26	891.7383	10.71	887.5513	898.1058	898.1058	15.54	6.635	7.66	2729.337	2728.845	2739.832	0.05
27/11/2015 12:00	2258	14.66	13.78	14.75	14.75	203	12.53	20.97	96.04591	0.3457653	1013.229	-0.304	32.7	891.6234	3.417	894.6747	887.6545	892.5408	2.668	4.361	2.981	2731.551	2724.939	2734.576	0.05
27/11/2015 13:00	2259	14.66	14.61	9.82	9.82	195.6	8.3	16.15	111.9076	0.4028675	1012.737	-0.354	32.17	891.2583	5.61	891.3909	888.113	894.2709	5.948	5.977	4.827	2732.164	2721.077	2738.25	0.05
27/11/2015 14:00	2260	14.62	14.25	13.46	13.46	200.7	5.985	18.27	79.62679	0.2866564	1012.41	-0.362	31.65	891.7353	5.988	890.0652	889.397	895.7436	7.458	5.301	4.885	2727.084	2720.33	2734.519	0.05
27/11/2015 15:00	2261	14.28	14.16	12.99	12.99	198.3	6.85	16.42	45.75874	0.1647314	1012.247	-0.603	32.06	891.8898	3.923	893.92	888.1074	893.6422	3.557	4.852	3.16	2726.333	2727.584	2734.371	0.05
27/11/2015 16:00	2262	14.18	13.95	10.62	10.62	197.3	9.44	16.58	5.518337	0.01986601	1012.281	-0.894	32.86	890.8162	2.213	894.8945	886.3622	891.1919	2.14	2.772	1.557	2733.03	2723.779	2732.828	0.04
27/11/2015 17:00	2263	13.96	13.82	9.3	9.3	190.7	11.16	12.82	0	0	1011.794	-0.881	34.56	891.4827	2.774	895.2155	887.3309	891.9017	2.743	3.351	2.082	2732.012	2721.889	2733.692	0.04
27/11/2015 18:00	2264	13.83	13.72	9.56	9.56	174.4	7.032	13.39	0	0	1011.479	-1.522	37.33	891.2884	2.661	894.6985	887.2955	891.8711	2.22	3.413	2.161	2731.138	2716.679	2732.052	0.03
27/11/2015 19:00	2265	13.74	13.64	12.18	12.18	175	6.503	17.13	0	0	1010.829	-1.617	39.4	892.5872	4.607	895.0564	888.5092	894.1958	3.585	5.79	4.159	2731.009	2727.831	2736.465	0.04
27/11/2015 20:00	2266	13.66	13.57	11.7	11.7	182.4	8.4	16.56	0	0	1009.84	-1.516	40.67	891.3425	5.923	892.1431	888.6154	893.269	5.914	6.884	4.784	2709.428	2736.915	2738.323	0.03
27/11/2015 21:00	2267	13.58	13.51	12.71	12.71	188.1	8.14	17.72	0	0	1009.928	-1.675	39.69	891.166	5.44	892.6882	887.7177	892.5923	6.765	5.829	3.006	2729.539	2729.093	2734.7	0.04
27/11/2015 22:00	2268	13.52	13.44	14.44	14.44	191.8	6.853	20.95	0	0	1009.591	-1.136	37.23	892.873	8.42	887.7772	892.2401	898.6021	9.48	8.3	7.332	2730.584	2718.195	2732.223	0.04
27/11/2015 23:00	2269	13.46	13.38	13.81	13.81	192.7	7.029	19.85	0	0	1008.993	-0.739	35.01	893.4265	8.98	887.6143	893.3365	899.3289	8.62	9.97	8.26	2730.086	2714.462	2739.457	0.04
28/11/2015 0:00	2270	13.4	13.33	16.77	16.77	192.1	5.699	20.95	0	0	1008.322	-0.585	35.95	893.163	11.75	883.5421	896.6628	899.2842	13.77	10.03	11.14	2710.57	2727.557	2765.024	0.04
28/11/2015 1:00	2271	13.35	13.28	16.01	16.01	193	7.457	22.89	0	0	1010.446	-0.622	42.31	890.7563	2.674	894.6755	886.7175	890.8761	3.184	3.076	1.359	2729.965	2720.134	2733.225	0.04
28/11/2015 2:00	2272	13.29	13.22	7.594	7.594	163.2	8.65	10.92	0	0	1010.218	-0.836	37.18	890.8083	2.226	895.1317	886.7269	890.5664	2.552	1.83	2.522	2730.806	2717.506	2731.248	0.03
28/11/2015 3:00	2273	13.24	13.17	8.62	8.62	159.3	7.091	12.7	0	0	1009.172	-1.37	38.17	890.9224	2.408	894.8491	886.6484	891.2695	2.468	2.654	2.065	2728.218	2719.084	2729.968	0.03
28/11/2015 4:00	2274	13.19	13.13	10.4	10.4	166.2	6.03	13.84	0	0	1008.695	-1.478	38.85	891.3386	2.597	895.3756	886.9327	891.7073	2.082	3.332	2.19	2736.139	2723.727	2733.944	0.03
28/11/2015 5:00	2275	13.15	13.08	10.5	10.5	175.1	6.85	15.39	0	0	1008.372	-1.639	46.2	890.949	3.23	894.2823	887.3494	891.215	3.388	3.458	2.805	2730.809	2728.206	2741.104	0.03
28/11/2015 6:00	2276	13.1	13.05	11.51	11.51	177.9	7.762	15.44	0	0	1008.454	-1.495	55.27	890.9178	3.307	893.8735	886.9696	891.9105	3.067	4.054	2.639	2724.734	2721.977	2733.859	0.02
28/11/2015 7:00	2277	13.06	13.02	12.28	12.28	190	8.77	19.31	0	0	1008.122	-1.399	59.92	891.533	5.028	894.0461	887.2809	893.2722	5.171	5.634	4.168	2736.27	2720.41	2731.244	0.02
28/11/2015 8:00	2278	13.03	12.98	11.65	11.65	195.2	11.49	17.7	0	0	1007.796	-1.64	61.67	891.5091	4.017	894.1823	887.493	892.8522	3.526	4.45	4.023	2739.568	2724.283	2731.596	0.02
28/11/2015 9:00	2279	13.01	12.96	8.98	8.98	211.4	10.73	15.6	0	0	1008.698	-1.284	61.2	890.8932	1.55	895.6809	886.2029	890.7958	1.95	1.515	1.054	2732.563	2723.125	2731.76	0.02
28/11/2015 10:00	2280	13.01	12.96	9.07	9.07	209	9.03	14.27	4.540954	0.01634743	1008.207	-1.119	61.04	891.7332	4.207	893.5093	888.4377	893.2524	4.423	3.309	2.729	2729.146	2718.225	2730.615	0.02
28/11/2015 11:00	2281	13.45	12.99	9.06	9.06	217.8	11.72	14.88	39.87862	0.143563	1009.166	-0.964	62.07	890.6586	0.829	896.0325	885.9392	890.0042	0.862	0.969	0.618	2732.992	2720.617	2731.418	0.02
28/11/2015 12:00	2282	13.98	13.45	6.667	6.667	225.1	10.51	10.43	65.37953	0.2353663	1009.173	-1.189	65.36	890.5464	0.954	896.1124	886.1506								

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
30/11/2015 10:00	2328	12.96	12.9	5.726	5.726	201.2	14.43	10.51	1.801044	0.006483757	1000.151	-4.561	69.38	891.9822	2.851	895.1981	887.1559	893.5926	2.988	2.129	3.306	2709.9	2730.784	2751.63	0.01	
30/11/2015 11:00	2329	13.41	12.95	7.627	7.627	212.4	8.48	11.39	14.16711	0.05100161	1000.731	-4.831	68.37	891.6704	0.807	896.5818	886.8976	891.5319	0.957	0.752	0.689	2734.75	2722.35	2721.117	0.01	
30/11/2015 12:00	2330	13.5	13.2	7.251	7.251	212.8	9.56	9.96	21.42717	0.07713781	1000.815	-4.939	70.65	891.1151	0.795	896.9877	886.369	889.9886	0.98	0.681	0.688	2733.744	2721.949	2729.605	0.01	
30/11/2015 13:00	2331	14.61	13.48	7.01	7.01	218.1	6.916	9.09	26.67542	0.09603152	1000.919	-5.629	71.92	891.5198	0.997	896.4117	886.5577	891.5901	0.961	1.048	0.981	2733.92	2721.654	2732.861	0.01	
30/11/2015 14:00	2332	14.63	13.96	6.02	6.02	202.8	12.71	9.11	36.73082	0.132231	1000.924	-5.544	68.38	891.5045	1.022	896.3531	886.7617	891.3987	1.038	1.152	0.854	2734.897	2721.527	2733.26	0.01	
30/11/2015 15:00	2333	14.64	14.1	4.087	4.087	169.4	22.65	8.64	23.14073	0.08330661	1001.066	-5.13	65.24	891.8059	0.135	896.4484	887.1157	891.8537	0.15	0.166	0.069	2733.177	2721.896	2732.765	0.01	
30/11/2015 16:00	2334	14.12	13.92	2.982	2.982	187.7	29.56	5.312	3.154212	0.01135516	1000.839	-5.243	66.63	891.8011	0.385	896.4675	887.0912	891.8447	0.387	0.481	0.254	2732.944	2721.777	2732.163	0	
30/11/2015 17:00	2335	13.94	13.81	3.491	3.491	158	10.22	5.645	0	0	1000.894	-5.115	72.32	891.8376	0.185	896.5265	887.1469	891.8395	0.193	0.223	0.127	2733.288	2721.902	2732.546	0	
30/11/2015 18:00	2336	13.82	13.71	2.944	2.944	145.3	26.76	5.919	0	0	1000.798	-5.038	73.31	891.8345	0.178	896.4953	887.1772	891.8309	0.18	0.235	0.088	2733.361	2722.276	2732.693	0	
30/11/2015 19:00	2337	13.73	13.63	3.922	3.922	126.1	10.02	5.586	0	0	1000.073	-5.889	82.1	891.8218	0.264	896.4281	887.2305	891.8069	0.264	0.326	0.182	2732.96	2721.809	2732.835	0	
30/11/2015 20:00	2338	13.65	13.56	4.899	4.899	158.2	14.72	7.35	0	0	999.5691	-4.899	79.98	891.8299	0.537	896.3511	887.1833	891.9553	0.497	0.708	0.342	2731.929	2720.835	2732.946	0	
30/11/2015 21:00	2339	13.58	13.49	5.532	5.532	147.3	6.381	7.664	0	0	999.4979	-5.253	83.5	891.8749	0.393	896.4511	887.2589	891.9147	0.369	0.543	0.178	2733.334	2722.7	2732.432	0	
30/11/2015 22:00	2340	13.51	13.43	3.713	3.713	129.3	9.4	4.861	0	0	998.9459	-5.595	85.7	891.8289	0.327	896.3753	887.2187	891.8928	0.341	0.416	0.177	2732.198	2720.649	2732.905	0	
30/11/2015 23:00	2341	13.45	13.37	3.721	3.721	142.1	14.76	6.35	0	0	998.8058	-6.027	90.7	891.896	0.033	896.6605	887.1933	891.8341	0.035	0.038	0.025	2733.309	2721.855	2732.617	0	
01/12/2015 0:00	2342	13.38	13.31	1.931	1.931	194.2	33.55	3.665	0	0	998.3682	-5.406	89.7	891.9202	0.032	896.6609	887.24	891.8599	0.034	0.038	0.023	2733.311	2721.892	2732.675	-0.01	
01/12/2015 1:00	2343	13.33	13.25	1.672	1.672	43.13	85.5	4.194	0.003822315	1.38E-05	998.0272	-5.25	90.2	891.96	0.063	896.6515	887.3384	891.8901	0.063	0.076	0.047	2733.307	2722.038	2732.635	-0.01	
01/12/2015 2:00	2344	13.27	13.2	3.091	3.091	143	27.42	7.252	0	0	997.4373	-4.666	90	891.9592	0.723	896.3616	887.4895	892.0266	0.739	0.923	0.412	2735.082	2724.183	2732.17	0	
01/12/2015 3:00	2345	13.22	13.15	5.567	5.567	149.1	7.011	7.291	0	0	997.4816	-4.705	93.1	891.9557	0.369	896.6087	887.2654	893.393	0.348	0.494	0.209	2733.379	2721.878	2732.625	0	
01/12/2015 4:00	2346	13.17	13.1	6.038	6.038	145.1	7.939	8.11	0	0	996.9047	-4.875	93.6	891.2192	0.856	896.9217	886.6074	890.1287	0.98	0.995	0.497	2732.602	2721.795	2730.345	0	
01/12/2015 5:00	2347	13.12	13.06	6.915	6.915	162.7	4.573	9.86	0	0	996.6621	-4.337	88.1	891.6538	0.689	897.213	886.7731	890.9755	0.81	0.774	0.41	2732.069	2721.891	2730.774	0	
01/12/2015 6:00	2348	13.08	13.02	5.415	5.415	158	6.199	9.737	0	0	996.021	-5.256	93.7	891.5424	0.612	897.131	886.7068	890.7894	0.572	0.831	0.324	2733.415	2720.69	2731.771	0	
01/12/2015 7:00	2349	13.04	12.99	3.071	3.071	146.2	26.1	6.566	0.001528685	5.50E-06	995.8859	-5.336	93.8	891.5718	0.296	897.1461	886.6715	890.8976	0.307	0.386	0.138	2733.846	2721.183	2731.334	-0.01	
01/12/2015 8:00	2350	13.01	12.96	1.587	1.587	97.4	38.76	4.038	0	0	995.7142	-5.455	93.3	891.7183	0.12	897.3544	886.9105	890.89	0.11	0.152	0.089	2734.021	2721.415	2731.526	-0.01	
01/12/2015 9:00	2351	12.98	12.94	3.952	3.952	107.4	30.59	9.64	0	0	994.9988	-5.897	92.7	891.5984	1.119	896.7938	886.6528	891.3486	1.183	1.359	0.715	2735.499	2721.709	2733.037	0	
01/12/2015 10:00	2352	12.96	12.93	7.891	7.891	157.5	7.975	11.54	0.9827617	0.003537942	995.1508	-4.829	84.4	892.0718	1.492	897.2565	887.5002	891.4588	1.462	1.636	1.364	2736.631	2726.041	2732.412	0	
01/12/2015 11:00	2353	13.08	12.93	11.26	11.26	161.6	7.932	15.84	20.43799	0.07357676	994.7792	-4.886	81.8	892.3394	3.16	895.3862	887.5801	894.052	2.909	3.555	2.909	2729.493	2717.21	2734.483	0.01	
01/12/2015 12:00	2354	13.36	13.08	12.47	12.47	183.5	9	17.21	34.08963	0.1227227	994.5402	-4.577	81.9	892.1	3.292	895.3954	887.327	893.5776	4.435	2.959	2.02	2731.398	2718.404	2736.316	0.01	
01/12/2015 13:00	2355	13.86	13.37	10.25	10.25	182	12.72	15.52	57.30452	0.2062963	993.876	-4.307	81.8	892.25	3.552	894.7604	888.1686	893.8209	3.65	4.012	2.905	2735.448	2720.526	2724.743	0.01	
01/12/2015 14:00	2356	14.05	13.75	14.51	14.51	186.7	6.899	17.52	49.73204	0.1790353	994.4478	-3.907	80.9	892.7717	4.357	895.1394	888.0751	895.1003	4.128	4.999	3.862	2731.867	2719.164	2732.603	0.01	
01/12/2015 15:00	2357	14.07	13.99	13.12	13.12	190.9	5.418	18.25	25.00484	0.09001742	995.0226	-3.713	79.3	892.6511	4.013	895.1486	887.8195	894.9852	4.161	4.428	3.374	2729.296	2719.194	2736.614	0.01	
01/12/2015 16:00	2358	14.02	13.86	11.79	11.79	181.5	7.634	16.27	5.723966	0.02060628	993.3888	-3.754	78.81	892.9033	4.53	894.6169	890.1024	893.9907	3.941	5.884	3.941	2739.149	2726.38	2732.646	0.01	
01/12/2015 17:00	2359	13.87	13.75	11.27	11.27	184.7	10.36	16.39	0	0	994.1199	-4.2	77.36	892.5527	2.6	895.668	887.9153	894.0745	2.676	2.75	2.358	2733.879	2721.354	2734.567	0.01	
01/12/2015 18:00	2360	13.77	13.66	7.749	7.749	178.4	12.46	14.54	0	0	994.3158	-4.691	78.11	891.6573	1.666	896.6853	886.8376	891.449	1.713	1.879	1.363	2734.099	2721.759	2732.168	0.01	
01/12/2015 19:00	2361	13.68	13.59	6.785	6.785	174.7	18.61	14.82	0	0	993.6829	-4.78	79.22	892.5115	2.401	896.3831	887.3029	893.8485	2.373	2.768	2.001	2735.806	2722.499	2732.075	0	
01/12/2015 20:00	2362	13.6	13.51	11.63	11.63	182.4	7.858	17.23	0	0	993.3301	-4.203	75.9	892.0818	2.615	896.4116	887.3541	892.48	2.231	3.514	1.785	2737.165	2724.258	2735.382	0.01	
01/12/2015 21:00	2363	13.53	13.45	12.28	12.28	186.9	5.58	17.25	0	0	992.571	-4.37	76.99	892.1736	3.647	895.0446	887.0195	894.4568	3.924	4.021	2.886	2735.769	2712.59	2734.256	0.01	
01/12/2015 22:00	2364	13.46	13.38	13.12	13.12	196.4	6.403	18.5	0	0	992.7355	-4.215	75.26	893.085	3.702	894.762	888.8423	895.6508	3.743	4.054	3.267	2735.116	2735.293	2742.394	0.01	
01/12/2015 23:00	2365	13.41	13.33	10.47	10.47	203.6	6.936	14.95	0	0	992.9188	-4.668	78	892.7639	2.008	896.2236	888.0555	894.0125	2.194	2.31	1.393	2724.433	2720.392	2734.823	0.01	
02/12/2015 0:00	2366	13.35	13.27	8.8	8.8	192.8	12.77	12.35	0	0	992.8555	-5.005	80	891.9033	1.221	896.8766	886.874	891.9594	1.167	1.207	1.287	2732.501	2722.99	2734.313	0.01	
02/12/2015 1:00	2367	13.29	13.21	6.567	6.567	154.3	24	9.86	0	0	993.0491	-6.143	85.9	892.2681	0.183	896.8579	887.3369	892.6093	0.202	0.172	0.173	2733.517	2721.792	2733.888	0	
02/12/2015 2:00	2368	13.23	13.16	2.957	2.957	136.3	17.41	4.626	0	0	9															

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
04/12/2015 0:00	2414	13.46	13.38	2.88	2.88	145.6	19.22	5.86	0	0	992.4816	-8.48	85.5	893.2974	0.131	899.1252	888.5754	892.1916	0.144	0.158	0.076	2736.25	2723.484	2733.081	0	
04/12/2015 1:00	2415	13.4	13.32	1.934	1.934	136.7	12.87	3.881	0	0	992.6455	-8.11	87.8	893.2795	0.095	899.0758	888.6019	892.1608	0.106	0.113	0.055	2736.195	2723.436	2733.15	-0.01	
04/12/2015 2:00	2416	13.34	13.27	2.97	2.97	123.6	8.96	4.528	0	0	992.5948	-7.755	89.5	893.3577	0.075	899.1986	888.6807	892.1938	0.079	0.089	0.05	2736.357	2723.549	2733.034	0	
04/12/2015 3:00	2417	13.29	13.22	1.998	1.998	134	7.428	2.626	0	0	992.7548	-7.785	89	893.3826	0.042	899.2584	888.6927	892.1969	0.048	0.041	0.036	2736.509	2723.632	2733.057	-0.01	
04/12/2015 4:00	2418	13.23	13.16	2.12	2.12	131.8	3.734	2.803	0	0	992.9187	-7.681	88.9	893.4106	0.043	899.2914	888.7238	892.2167	0.045	0.05	0.031	2736.638	2723.834	2733.165	-0.01	
04/12/2015 5:00	2419	13.18	13.12	1.621	1.621	114.9	12.24	2.666	0	0	992.9187	-7.589	89.9	893.4444	0.01	899.3588	888.7477	892.2267	0.015	0.007	0.006	2736.698	2723.794	2733.132	-0.01	
04/12/2015 6:00	2420	13.13	13.07	2.201	2.201	126.9	5.727	2.842	0	0	992.9187	-7.693	90.9	893.5054	0.089	899.399	888.8291	892.2881	0.093	0.105	0.064	2736.804	2723.965	2733.11	-0.01	
04/12/2015 7:00	2421	13.09	13.03	2.995	2.995	133.3	9.5	4.273	0	0	993.1002	-8.07	89.4	893.5107	0.273	899.3591	888.8254	892.3476	0.291	0.341	0.151	2736.539	2723.738	2732.936	0	
04/12/2015 8:00	2422	13.05	13	3.339	3.339	145.3	28.42	4.586	0	0	993.4297	-7.892	85.2	893.4993	0.034	899.5574	888.7753	892.165	0.03	0.034	0.037	2736.895	2723.776	2732.991	0	
04/12/2015 9:00	2423	13.01	12.96	0.525	0.525	284	61.74	2.215	0	0	993.7927	-7.893	83.1	893.5146	0.015	899.5249	888.9008	892.118	0.02	0.015	0.006	2736.859	2723.955	2732.982	-0.01	
04/12/2015 10:00	2424	12.98	12.94	3.195	3.195	155	27.85	5.468	0.3400515	0.001224185	994.1206	-8.65	81.2	893.5562	0.077	899.5961	888.7888	892.2839	0.084	0.095	0.044	2736.969	2723.877	2733.281	0	
04/12/2015 11:00	2425	13.04	12.94	4.373	4.373	165.8	15.27	7.252	10.48756	0.0377552	994.3665	-9.11	82.8	893.5498	0.204	899.5527	888.7857	892.311	0.199	0.252	0.146	2736.981	2723.856	2733.143	0	
04/12/2015 12:00	2426	13.16	13	2.399	2.399	184.1	31.77	4.822	22.01668	0.07926004	994.5304	-8.84	81.2	893.5991	0.334	899.483	888.8163	892.4979	0.188	0.427	0.188	2737.617	2724.155	2733.746	0	
04/12/2015 13:00	2427	13.44	13.15	4.077	4.077	158.7	10.99	6.056	46.78869	0.1684393	995.1041	-9.07	82.5	893.5872	0.18	899.5305	888.824	892.407	0.148	0.253	0.104	2736.982	2723.781	2733.263	0	
04/12/2015 14:00	2428	13.57	13.34	2.188	2.188	181.6	43.99	6.782	45.70418	0.164535	995.5958	-8.96	80.8	893.5225	0.015	899.6224	888.7924	892.1525	0.025	0.004	0.008	2736.994	2723.839	2733.01	0	
04/12/2015 15:00	2429	13.58	13.53	1.217	1.217	346.8	62.22	3.998	14.85183	0.0534666	996.0179	-9.89	83.8	893.5635	0.046	899.7648	888.7947	892.131	0.06	0.03	0.042	2737.067	2723.826	2733.011	-0.01	
04/12/2015 16:00	2430	13.55	13.45	0.992	0.992	292.6	71.26	4.214	1.574128	0.005666861	996.3024	-9.95	83.4	893.5996	0.021	899.8483	888.7823	892.1682	0.011	0.006	0.035	2737.295	2723.826	2732.998	-0.01	
04/12/2015 17:00	2431	13.47	13.39	1.59	1.59	299.8	77.67	3.763	0	0	996.484	-10.6	84.5	893.646	0.03	899.9395	888.9003	892.0983	0.03	0.033	0.027	2737.383	2724.009	2733.944	-0.01	
04/12/2015 18:00	2432	13.41	13.33	0.882	0.882	208.5	66.13	4.39	0	0	996.8008	-10.38	83.9	893.6954	0.019	899.7836	888.9095	892.3931	0.021	0.016	0.02	2737.236	2723.975	2733.314	-0.01	
04/12/2015 19:00	2433	13.34	13.27	1.208	1.208	280.4	46.44	2.43	0	0	997.0725	-10.72	86.7	893.6785	0.04	899.9985	888.941	892.0958	0.047	0.042	0.029	2737.442	2724.035	2732.982	-0.01	
04/12/2015 20:00	2434	13.29	13.21	1.046	1.046	341.1	18.88	2.176	0	0	997.3373	-10.71	87.2	893.726	0.019	899.9428	888.9927	892.2425	0.029	0.008	0.012	2737.344	2724.102	2733.134	-0.01	
04/12/2015 21:00	2435	13.23	13.16	0.675	0.675	313.3	50.45	2.195	0	0	997.51	-10.6	87	893.6953	0.024	900.0441	888.9243	892.1172	0.006	0.01	0.04	2737.527	2724.038	2732.939	-0.01	
04/12/2015 22:00	2436	13.17	13.1	0.439	0.439	338.2	46.3	1.98	0	0	997.674	-10.59	85.2	893.7573	0.025	900.0784	889.0705	892.1232	0.031	0.026	0.014	2737.505	2724.233	2733.022	-0.01	
04/12/2015 23:00	2437	13.12	13.05	0.524	0.524	317.1	51.56	1.333	0	0	998.0018	-11.07	86.9	893.7333	0.016	900.0426	888.9606	892.1968	0.015	0.021	0.01	2737.537	2724.025	2733.084	-0.01	
05/12/2015 0:00	2438	13.07	13	0.917	0.917	236	22.59	1.823	0	0	998.4938	-11.59	86.7	893.7567	0.035	900.1412	888.9045	892.2242	0.04	0.032	0.034	2737.614	2723.976	2733.189	-0.01	
05/12/2015 1:00	2439	13.03	12.96	0.695	0.695	242.4	6.419	2.156	0	0	998.7396	-11.61	85.2	893.7288	0.028	900.1711	888.9336	892.0815	0.018	0.032	0.031	2737.685	2724.02	2733.001	-0.01	
05/12/2015 2:00	2440	12.98	12.92	0.483	0.483	267.7	24.84	1.529	0	0	998.8217	-11.77	83.3	893.7603	0.013	900.2617	889.0035	892.0156	0.01	0.014	0.014	2737.823	2724.114	2732.844	-0.01	
05/12/2015 3:00	2441	12.95	12.89	0.957	0.957	262.2	80.3	2.489	0	0	999.3079	-11.99	82	893.7906	0.025	900.3281	888.9528	892.091	0.032	0.019	0.023	2737.87	2724	2733.013	-0.01	
05/12/2015 4:00	2442	12.92	12.86	0.276	0.276	328.2	44.84	1.45	0	0	999.3136	-12.15	82.3	893.7845	0.016	900.3858	888.9916	891.976	0.02	0.014	0.012	2737.91	2724.024	2732.825	-0.01	
05/12/2015 5:00	2443	12.89	12.84	0.597	0.597	51.39	65.22	1.744	0	0	999.1498	-11.98	81.5	893.8505	0.025	900.1092	889.2353	892.207	0.031	0.025	0.019	2737.535	2724.487	2733.108	-0.01	
05/12/2015 6:00	2444	12.87	12.83	2.034	2.034	131.3	27.2	3.156	0	0	998.9857	-12.09	79.71	893.8489	0.031	900.1751	889.0989	892.2728	0.029	0.024	0.038	2737.758	2724.194	2733.103	0	
05/12/2015 7:00	2445	12.86	12.82	0.806	0.806	175.2	30.86	3.508	0	0	998.9037	-12.08	79.82	893.8442	0.095	900.1368	889.1355	892.2603	0.108	0.099	0.074	2737.232	2724.039	2733.158	-0.01	
05/12/2015 8:00	2446	12.85	12.81	1.72	1.72	178.1	31.04	4.488	0	0	998.9834	-12.29	80.7	893.8228	0.029	900.2429	889.0648	892.1609	0.035	0.027	0.024	2737.768	2724.164	2733.011	0	
05/12/2015 9:00	2447	12.84	12.8	0.871	0.871	197.2	47.56	3.391	0	0	999.1495	-12.31	81.4	893.811	0.04	900.4034	889.0067	892.0231	0.053	0.032	0.032	2737.922	2724.196	2732.748	-0.01	
05/12/2015 10:00	2448	12.84	12.81	1.144	1.144	190.2	41.59	3.587	1.946099	0.007005956	998.983	-12.41	83	893.8505	0.011	900.1662	889.1914	892.1938	0.012	0.008	0.008	2737.648	2724.334	2733.083	-0.01	
05/12/2015 11:00	2449	12.92	12.81	0.412	0.412	42.25	31.5	1.607	12.3786	0.04456297	998.9856	-12.18	83.9	893.7917	0.011	900.1941	889.1119	892.0692	0.009	0.015	0.007	2737.704	2724.226	2732.909	-0.01	
05/12/2015 12:00	2450	13.27	12.88	1.045	1.045	215.7	36.3	3.43	38.51252	0.1386451	999.1495	-12.62	83	893.8535	0.039	900.1407	889.0713	892.3486	0.039	0.044	0.032	2737.6	2724.215	2733.327	0	
05/12/2015 13:00	2451	13.47	13.23	0.811	0.811	213.8	60.31	2.607	48.97567	0.1763124	998.9561	-12.06	81.5	893.8752	0.033	900.194	889.1531	892.2786	0.035	0.038	0.025	2737.776	2724.461	2733.188	0	
05/12/2015 14:00	2452	13.42	13.3	2.23	2.23	149.8	18.37	3.528	25.53845	0.09193841	998.7546	-11.63	84.6	893.8528	0.073	900.1342	889.1555	892.2659	0.069	0.077	0.072	2737.55	2724.346	2733.018	0	
05/12/2015 15:00	2453	13.41	13.34	3.695	3.695	151.8	4.859	5.116	14.55716	0.05240579	998.5542	-11.83	84.7	893.8098	0.148	900.0889	889.1225	892.2177	0.162	0.177	0.088	2737.186	2724.079	2732.964	0	
05/12/2015 16:																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
07/12/2015 14:00	2500	13.03	12.94	1.053	1.053	256	31.02	3.038	27.56288	0.09922636	989.9672	-7.704	89.7	894.029	0.012	900.4895	889.3881	892.2092	0.017	0.009	0.006	2738.062	2724.578	2733.088	-0.01
07/12/2015 15:00	2501	13.02	12.97	0.591	0.591	295	41.9	2.058	12.23483	0.0440454	990.1326	-7.834	90.3	894.0229	0.028	900.5571	889.395	892.1164	0.026	0.028	0.029	2738.169	2724.589	2732.876	-0.01
07/12/2015 16:00	2502	12.99	12.93	0.479	0.479	214.9	54.45	1.96	2.361459	0.008501253	990.2965	-8.04	90.9	894.0076	0.016	900.5668	889.3925	892.0637	0.018	0.018	0.01	2738.159	2724.576	2732.906	-0.01
07/12/2015 17:00	2503	12.95	12.91	0.37	0.37	122.6	45.09	1.705	0	0	990.5446	-7.832	89	893.9841	0.013	900.5637	889.3891	891.9995	0.015	0.012	0.011	2738.163	2724.622	2732.821	-0.01
07/12/2015 18:00	2504	12.93	12.89	0.774	0.774	337.9	35.45	2.548	0	0	990.6786	-8.29	88.9	894.0427	0.024	900.6783	889.4185	892.0313	0.029	0.024	0.019	2738.278	2724.615	2732.879	-0.01
07/12/2015 19:00	2505	12.92	12.89	0.671	0.671	226	87	1.842	0	0	991.0028	-8.51	88.5	894.0301	0.02	900.6264	889.451	892.0128	0.026	0.015	0.016	2738.242	2724.659	2732.877	-0.01
07/12/2015 20:00	2506	12.91	12.88	0.737	0.737	342.5	77.83	4.332	0	0	991.3342	-8.24	86.2	894.0402	0.024	900.6049	889.4998	892.0159	0.035	0.014	0.017	2738.296	2724.77	2732.83	-0.01
07/12/2015 21:00	2507	12.91	12.87	0.54	0.54	348.6	50.18	1.784	0	0	991.662	-8.43	87.5	894.0501	0.015	900.7022	889.5146	891.9337	0.02	0.01	0.014	2738.322	2724.737	2732.734	-0.01
07/12/2015 22:00	2508	12.9	12.87	0.587	0.587	193.7	79.46	2.587	0	0	991.665	-8.74	87.5	894.0603	0.017	900.6725	889.4646	892.0439	0.021	0.018	0.012	2738.283	2724.711	2732.874	-0.01
07/12/2015 23:00	2509	12.9	12.86	0.464	0.464	324.6	37.12	2.352	0	0	991.663	-8.34	86.4	894.1091	0.014	900.6955	889.5192	892.1124	0.021	0.009	0.008	2738.301	2724.736	2733.023	-0.01
08/12/2015 0:00	2510	12.9	12.86	0.434	0.434	91.3	32.71	1.96	0	0	991.7441	-8.03	86.8	894.1067	0.011	900.662	889.5106	892.1475	0.017	0.005	0.005	2738.261	2724.742	2733.001	-0.01
08/12/2015 1:00	2511	12.9	12.86	1.12	1.12	123.9	47.26	2.45	0	0	991.99	-7.618	85.5	894.1096	0.045	900.6496	889.452	892.2269	0.036	0.044	0.054	2738.252	2724.567	2733.105	-0.01
08/12/2015 2:00	2512	12.9	12.86	0.667	0.667	324.2	56.05	3.077	0	0	991.6477	-7.085	84.7	894.0966	0.018	900.5848	889.567	892.1379	0.019	0.02	0.015	2738.201	2724.774	2732.978	-0.01
08/12/2015 3:00	2513	12.9	12.86	0.622	0.622	342.7	33.38	1.901	0	0	991.8259	-7.041	84.3	894.0806	0.017	900.6464	889.5284	892.0672	0.022	0.007	0.018	2738.236	2724.754	2732.97	-0.01
08/12/2015 4:00	2514	12.9	12.86	3.516	3.516	145.3	64	7.35	0	0	991.3289	-7.381	84.5	894.0589	0.62	900.3646	889.391	892.4213	0.618	0.832	0.278	2738.568	2724.683	2733.404	0
08/12/2015 5:00	2515	12.9	12.86	4.477	4.477	174.3	10.97	7.33	0	0	990.7932	-7.21	86.7	894.0328	0.203	900.4095	889.3897	892.2992	0.198	0.247	0.153	2737.986	2724.641	2732.979	0
08/12/2015 6:00	2516	12.9	12.86	3.115	3.115	151.1	18.74	5.468	0	0	990.2966	-7.298	91.3	894.0383	0.096	900.4297	889.4489	892.2362	0.113	0.095	0.075	2737.957	2724.577	2733.124	0
08/12/2015 7:00	2517	12.9	12.87	4.236	4.236	135.9	12.41	6.429	0	0	989.5591	-7.945	93.7	894.1003	0.546	900.245	889.6172	892.4386	0.527	0.757	0.21	2738.076	2725.846	2733.518	0
08/12/2015 8:00	2518	12.9	12.87	4.415	4.415	139.2	7.015	5.978	0	0	988.9873	-8.08	91.4	894.0418	0.484	900.2475	889.5657	892.3121	0.419	0.663	0.297	2737.862	2724.382	2733.064	0
08/12/2015 9:00	2519	12.9	12.87	2.679	2.679	162.1	91.5	7.056	0	0	988.2186	-8.62	90.1	894.006	0.403	900.4384	889.4304	892.1493	0.342	0.516	0.323	2737.569	2723.582	2732.596	0
08/12/2015 10:00	2520	12.9	12.86	4.47	4.47	141	11.45	6.546	0.9158546	0.003297077	987.5643	-8.82	89.6	894.1325	0.316	900.4556	889.5901	892.3519	0.346	0.396	0.151	2737.721	2724.376	2733.466	0
08/12/2015 11:00	2521	12.94	12.86	3.545	3.545	134.1	5.146	5.488	11.06128	0.0398206	986.9907	-10.35	91.1	894.0583	0.542	900.4274	889.4952	892.2524	0.487	0.753	0.279	2737.201	2723.581	2733.159	0
08/12/2015 12:00	2522	12.98	12.9	4.493	4.493	142.7	9.5	6.84	21.4908	0.07736687	986.417	-9.68	89.6	894.1299	0.958	900.3584	889.5952	892.4363	0.87	1.35	0.417	2737.21	2724.208	2733.229	0
08/12/2015 13:00	2523	13.03	12.95	3.794	3.794	137.9	14.18	5.508	33.50946	0.1206341	986.2532	-9.23	89.7	894.0965	0.309	900.458	889.4983	892.3332	0.294	0.394	0.21	2738.343	2725.349	2732.849	0
08/12/2015 14:00	2524	12.98	12.89	3.463	3.463	122.9	17.05	5.488	27.60483	0.0993774	985.8798	-8.22	90.2	894.1292	0.111	900.4822	889.5701	892.3353	0.125	0.108	0.097	2737.521	2724.608	2733.468	0
08/12/2015 15:00	2525	12.98	12.92	1.58	1.58	84.4	43.86	3.959	12.90209	0.04644753	985.2983	-7.566	90.8	894.1208	0.03	900.5461	889.53	892.2861	0.027	0.039	0.019	2738.146	2724.777	2733.182	-0.01
08/12/2015 16:00	2526	12.94	12.89	0.546	0.546	326.5	40.83	3.685	1.539906	0.005543661	984.5608	-7.713	90.5	894.0926	0.077	900.5595	889.5205	892.1978	0.079	0.063	0.087	2738.16	2724.912	2733.475	-0.01
08/12/2015 17:00	2527	12.92	12.88	5.316	5.316	100.6	12.51	9.21	0.007644743	2.75E-05	983.7415	-7.654	90.7	894.1203	0.867	900.0174	889.7909	892.5526	0.932	1.056	0.519	2736.93	2724.502	2733.074	0
08/12/2015 18:00	2528	12.92	12.88	6.431	6.431	102	6.854	8.6	0.02446318	8.81E-05	983.9053	-8.07	91.4	894.1774	0.422	900.3455	889.688	892.4987	0.355	0.56	0.308	2738.191	2724.971	2733.412	0
08/12/2015 19:00	2529	12.91	12.88	5.176	5.176	113	10.89	8.49	0.002038612	7.34E-06	983.7415	-7.68	90.8	894.0757	0.625	900.0041	889.5856	892.6375	0.704	0.774	0.281	2737.369	2723.726	2734.075	0
08/12/2015 20:00	2530	12.91	12.87	5.326	5.326	125.8	10.24	7.33	0	0	983.5775	-7.812	90.7	894.2151	0.72	900.3097	889.6905	892.6454	0.68	0.983	0.354	2737.089	2724.493	2733.268	0
08/12/2015 21:00	2531	12.91	12.87	4.471	4.471	138	8.73	6.644	0	0	983.5775	-8.44	90.6	894.1546	0.206	900.4453	889.6058	892.4128	0.196	0.261	0.142	2738.123	2724.914	2733.274	0
08/12/2015 22:00	2532	12.91	12.87	4.431	4.431	133.2	23.18	11.07	0	0	982.9319	-8.49	89.1	894.2595	2.18	899.357	889.2566	894.165	2.349	2.166	2.012	2736.153	2723.946	2734.449	0
08/12/2015 23:00	2533	12.91	12.87	7.519	7.519	158.6	40.49	12.84	0	0	983.4148	-7.754	81.1	894.1529	0.028	900.7827	889.2606	892.4155	0.037	0.028	0.016	2738.38	2724.356	2733.349	0
09/12/2015 0:00	2534	12.91	12.87	2.094	2.094	113.2	90.1	7.115	0	0	983.7415	-7.826	77.98	894.1583	0.758	900.5031	889.3369	892.6348	0.733	1.044	0.311	2736.812	2723.362	2733.715	0
09/12/2015 1:00	2535	12.91	12.87	6.868	6.868	137.5	6.716	9.56	0	0	983.9456	-9.16	81.5	894.2342	0.861	900.5022	889.476	892.7244	0.798	1.155	0.505	2736.229	2721.337	2735.089	0
09/12/2015 2:00	2536	12.91	12.87	6.291	6.291	146.5	15.06	11.68	0.001274392	4.59E-06	984.286	-8.9	81.4	894.2261	0.47	900.668	889.3686	892.6415	0.482	0.558	0.344	2736.948	2722.59	2733.065	0
09/12/2015 3:00	2537	12.91	12.87	4.861	4.861	174.7	31.56	10.17	0	0	983.9259	-7.741	80	894.1508	1.025	900.7346	889.025	892.6929	1.221	1.116	0.645	2738.682	2725.122	2733.959	0
09/12/2015 4:00	2538	12.91	12.87	4.716	4.716	225.6	40.82	9.98	0	0	984.397	-6.848	80.1	894.174	0.137	900.7874	889.2514	892.4833	0.137	0.161	0.107	2738.399	2724.373	2733.462	0
09/12/2015 5:00	2539	12.91	12.87	5.666	5.666	211.7	20.61	10.25	0	0	984.0692	-6.155	78.25	894.03	0.817	900.7203	888.9097	892.4597	0.811	0.968	0.637	2739.359	2724.587	2733.321	0
09/12/2015 6:00	2540	12.91	12.87	7.401	7.401	215.7	12.49	11.45	0	0	984.3824	-5.43	75.59	894.1784	0.713	900.5955	889.3215	892.6182	0.804	0.7					

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	Max	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
11/12/2015 4:00	2586	12.92	12.88	1.545	1.545	123.8	9.59	2.803	0	0	996.1161	-10.88	86.8	894.7108	0.059	900.7642	890.052	893.3162	0.058	0.066	0.053	2738.365	2725.262	2734.476	-0.01	
11/12/2015 5:00	2587	12.91	12.86	0.732	0.732	84.1	52.31	2.411	0	0	996.1162	-10.75	86.3	894.7147	0.018	900.9252	890.1634	893.0554	0.026	0.012	0.011	2738.55	2725.531	2734.162	-0.01	
11/12/2015 6:00	2588	12.89	12.85	1.56	1.56	92.7	38.07	4.136	0	0	996.1982	-11.44	87.2	894.6965	0.166	900.7488	890.0546	893.286	0.187	0.185	0.115	2738.213	2725.009	2734.599	-0.01	
11/12/2015 7:00	2589	12.88	12.84	2.743	2.743	137.3	9.2	4.214	0	0	996.3608	-11.47	84.6	894.6897	0.074	900.8535	890.0126	893.2031	0.087	0.082	0.048	2738.587	2725.336	2734.4	0	
11/12/2015 8:00	2590	12.87	12.83	2.283	2.283	134	13.13	3.41	0	0	996.6697	-10.84	83.3	894.7307	0.028	900.7881	890.0366	893.3674	0.03	0.032	0.019	2738.441	2725.375	2734.551	0	
11/12/2015 9:00	2591	12.87	12.83	2.385	2.385	144.5	29.75	4.704	0	0	996.7748	-10.21	81.6	894.6917	0.065	900.768	890.0745	893.2325	0.071	0.071	0.05	2738.302	2725.434	2734.352	0	
11/12/2015 10:00	2592	12.86	12.82	1.308	1.308	113	25.4	2.705	0.2556772	0.000920438	996.5813	-10.38	86	894.7119	0.055	900.8635	890.0474	893.2249	0.059	0.065	0.036	2738.588	2725.417	2734.362	-0.01	
11/12/2015 11:00	2593	12.87	12.82	3.193	3.193	108.3	25.27	5.998	8.386077	0.03018988	996.4985	-10.79	88.6	894.7544	0.488	900.6292	890.2122	893.4218	0.516	0.575	0.343	2738.385	2724.264	2735.049	0	
11/12/2015 12:00	2594	12.9	12.83	5.273	5.273	118.9	15.53	7.526	21.76816	0.07836539	996.2516	-10.9	88.2	894.7968	0.963	900.6422	890.278	893.4703	0.951	1.247	0.568	2737.978	2723.72	2734.304	0	
11/12/2015 13:00	2595	12.93	12.86	5.398	5.398	133.2	7.824	7.154	28.79964	0.1036787	996.5793	-10.97	86.4	894.717	0.197	900.8823	890.0043	893.2645	0.213	0.239	0.119	2738.816	2725.606	2734.4	0	
11/12/2015 14:00	2596	12.89	12.78	0.844	0.844	140.4	70.57	4.214	20.43166	0.07355398	996.7444	-11.79	85.7	894.7877	0.148	901.0518	890.0637	893.2476	0.157	0.169	0.11	2738.824	2725.485	2734.359	-0.01	
11/12/2015 15:00	2597	12.89	12.85	3.887	3.887	143.5	16.14	6.644	14.15647	0.05096329	996.9568	-12.81	85	894.78	0.117	901.0694	890.0784	893.1922	0.138	0.126	0.078	2738.934	2725.617	2734.242	0	
11/12/2015 16:00	2598	12.88	12.83	1.045	1.045	185.3	81.3	2.92	1.966388	0.007078998	997.3407	-13.13	83.8	894.8194	0.019	901.2095	890.0856	893.1633	0.026	0.014	0.013	2738.907	2725.459	2734.28	-0.01	
11/12/2015 17:00	2599	12.87	12.83	1.658	1.658	199.2	77.88	3.41	0	0	997.182	-12.74	80.1	894.8646	0.04	901.1422	890.1736	893.2777	0.036	0.05	0.032	2738.89	2725.497	2734.313	0	
11/12/2015 18:00	2600	12.87	12.83	1.719	1.719	206.9	79.32	4.939	0	0	997.0181	-13.1	81.5	894.8784	0.017	901.249	890.1764	893.2097	0.02	0.02	0.008	2739.009	2725.546	2734.349	0	
11/12/2015 19:00	2601	12.86	12.82	0.696	0.696	358.1	45.27	2.019	0	0	997.0171	-12.74	81.5	894.9299	0.039	901.2797	890.2557	893.2541	0.051	0.037	0.023	2739.002	2725.672	2734.431	-0.01	
11/12/2015 20:00	2602	12.86	12.83	1.143	1.143	121.9	52.44	3.606	0	0	997.182	-12.96	82.8	894.9421	0.146	901.1977	890.2609	893.3677	0.147	0.177	0.104	2738.97	2725.636	2734.48	-0.01	
11/12/2015 21:00	2603	12.86	12.82	1.33	1.33	120.4	84.2	3.9	0	0	997.0181	-13	82.6	894.9802	0.149	901.1992	890.342	893.3993	0.139	0.198	0.091	2738.905	2725.672	2734.629	-0.01	
11/12/2015 22:00	2604	12.86	12.82	1.737	1.737	234.1	75.37	5.488	0	0	996.8491	-13.81	83.3	894.9075	0.022	901.4588	890.1978	893.066	0.018	0.02	0.026	2739.302	2725.573	2734.13	0	
11/12/2015 23:00	2605	12.85	12.81	0.772	0.772	321.1	40.16	1.882	0	0	997.0631	-14.03	86.2	894.9785	0.029	901.5334	890.1751	893.2272	0.042	0.021	0.019	2739.312	2725.583	2734.379	-0.01	
12/12/2015 0:00	2606	12.85	12.81	0.585	0.585	128.4	18.55	2.666	0	0	996.7455	-14.27	84.1	890.3627	0.098	901.4018	890.3627	893.3625	0.11	0.11	0.07	2739.271	2725.867	2734.538	-0.01	
12/12/2015 1:00	2607	12.85	12.81	3.669	3.669	153.3	6.614	5.821	0	0	996.7386	-14.96	79.69	895.0351	0.279	901.3904	890.3287	893.3862	0.277	0.341	0.2	2738.696	2725.57	2734.213	0	
12/12/2015 2:00	2608	12.84	12.8	1.458	1.458	191.8	44.49	5.331	0	0	996.4979	-14.88	80.9	894.9898	0.021	901.5931	890.3481	893.0283	0.02	0.009	0.028	2739.498	2725.763	2734.055	0	
12/12/2015 3:00	2609	12.84	12.8	0.231	0.231	307.3	56.83	2.313	0	0	996.4617	-15	81.7	895.0319	0.023	901.7587	890.3855	892.9515	0.02	0.026	0.024	2739.649	2725.78	2734.042	-0.01	
12/12/2015 4:00	2610	12.83	12.79	1.276	1.276	268.9	33.56	3.763	0	0	996.1449	-15.79	83.7	895.0836	0.019	901.8984	890.3652	892.9871	0.02	0.018	0.02	2739.82	2725.82	2734.044	0	
12/12/2015 5:00	2611	12.83	12.79	0.591	0.591	314.4	31.63	1.588	0	0	995.8989	-15.08	82.5	890.4203	0.02	901.8041	890.4203	893.0831	0.017	0.02	0.022	2739.782	2725.863	2734.129	-0.01	
12/12/2015 6:00	2612	12.83	12.79	0.683	0.683	307	33.6	1.921	0	0	995.6482	-14.51	79.83	895.1494	0.02	901.8775	890.467	893.1036	0.019	0.019	0.021	2739.764	2725.912	2734.213	-0.01	
12/12/2015 7:00	2613	12.83	12.78	0.494	0.494	305.7	16.07	1.607	0	0	995.6204	-14.03	77.08	895.1396	0.012	901.8746	890.4874	893.0568	0.013	0.014	0.009	2739.787	2725.929	2734.147	-0.01	
12/12/2015 8:00	2614	12.82	12.78	0.439	0.439	311.7	18.51	1.313	0	0	995.4282	-13.35	73.53	895.1582	0.014	901.704	890.4814	893.2892	0.007	0.003	0.023	2739.589	2725.951	2734.378	-0.01	
12/12/2015 9:00	2615	12.82	12.78	0.617	0.617	195.3	62.61	2.254	0	0	995.2169	-12.54	71.56	895.1674	0.025	901.6017	890.5414	893.3592	0.019	0.022	0.031	2739.428	2725.936	2734.462	-0.01	
12/12/2015 10:00	2616	12.82	12.78	0.638	0.638	269.9	22.67	1.529	0.5184438	0.001866398	995.3785	-12.25	70.04	890.4483	0.015	901.6185	890.4483	893.3031	0.015	0.014	0.015	2739.495	2725.906	2734.43	-0.01	
12/12/2015 11:00	2617	13.1	12.78	0.21	0.21	269.7	30.51	1.352	33.84532	0.1218432	995.3785	-11.35	67.29	895.1108	0.039	900.7755	890.4551	894.1016	0.044	0.026	0.044	2738.355	2725.864	2735.531	-0.01	
12/12/2015 12:00	2618	13.76	13.1	0.548	0.548	306.4	21.12	1.45	103.8771	0.3739575	994.9602	-11.06	63.35	895.0889	0.041	901.095	890.5406	893.6311	0.038	0.012	0.058	2738.888	2726.036	2734.56	0.01	
12/12/2015 13:00	2619	13.56	13.46	0.91	0.91	108.8	27.7	4.096	17.20772	0.06194778	994.9666	-11.58	66.68	895.09	0.104	901.4205	890.5286	893.3211	0.087	0.131	0.087	2739.041	2726.279	2734.336	0	
12/12/2015 14:00	2620	13.42	13.33	2.391	2.391	125	45.18	4.273	16.48315	0.05933934	994.8866	-11.78	70.11	895.076	0.038	901.525	890.3771	893.326	0.043	0.038	0.038	2739.343	2725.797	2734.445	0	
12/12/2015 15:00	2621	13.36	13.28	2.182	2.182	138.7	28.72	3.959	8.794725	0.03166101	994.5586	-10.94	70.15	895.1113	0.104	901.3275	890.4789	893.5274	0.098	0.121	0.092	2739.158	2725.942	2734.681	0	
12/12/2015 16:00	2622	13.3	13.2	2.02	2.02	224.4	67.91	4.43	0.4497402	0.001619065	994.5422	-10.4	69.22	895.0477	0.035	901.5291	890.3336	893.2803	0.033	0.034	0.039	2739.327	2725.746	2734.394	0	
12/12/2015 17:00	2623	13.22	13.14	0.631	0.631	243.2	33.58	2.372	0	0	994.3947	-11.21	72.14	895.0528	0.012	901.4637	890.3821	893.3125	0.014	0.01	0.012	2739.278	2725.805	2734.454	-0.01	
12/12/2015 18:00	2624	13.16	13.08	0.53	0.53	195.6	56.96	1.568	0	0	994.3947	-10.31	70.91	895.0749	0.018	901.6094	890.3339	893.2812	0.011	0.009	0.028	2739.469	2725.774	2734.377	-0.01	
12/12/2015 19:00	2625	13.11	13.03	0.401	0.401	321.6	49.07	1.49	0	0	994.2307	-10.34	70.57	895.0894	0.024	901.5788	890.5281	893.1613	0.024	0.027	0.021	2739.461	2725.91	27		

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	mm	mm	mm	Hz	Hz	Hz	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
14/12/2015 18:00	2672	12.86	12.82	9.9	9.9	241.5	10.28	15.46	0.04537423	0.000163347	997.5627	-9.85	73	895.2177	0.665	901.7523	890.1821	893.7188	0.709	0.688	0.593	2739.388	2725.873	2734.612	0.01
14/12/2015 19:00	2673	12.86	12.82	7.38	7.38	243.5	9.97	9.55	0.01019646	3.67E-05	997.5696	-11.65	81.1	894.9986	0.956	901.8096	889.7999	893.3864	1.125	1.079	0.558	2738.894	2725.437	2735.307	0
14/12/2015 20:00	2674	12.86	12.82	8.47	8.47	232.5	8.63	13.96	0.002804026	1.01E-05	997.4006	-10.63	77.34	895.3848	1.866	901.3669	890.1238	894.6636	1.689	1.748	2.13	2739.537	2725.983	2736.026	0
14/12/2015 21:00	2675	12.87	12.82	7.574	7.574	244.8	6.224	10.45	0.03313849	0.000119299	997.7267	-10.99	83.9	895.4199	0.582	901.6881	890.6262	893.9454	0.629	0.605	0.505	2739.542	2726.432	2735.315	0
14/12/2015 22:00	2676	12.87	12.83	7.591	7.591	246.9	4.786	10.09	0.001274557	4.59E-06	997.8934	-11.45	87.7	895.4331	0.952	901.7443	890.5994	893.9556	0.867	1.176	0.763	2738.854	2723.578	2733.782	0
14/12/2015 23:00	2677	12.87	12.83	6.959	6.959	250.9	3.889	9.23	0	0	998.5574	-11.6	87.4	895.4288	0.48	901.4708	890.805	894.0106	0.492	0.554	0.378	2738.536	2726.459	2735.741	0
15/12/2015 0:00	2678	12.87	12.83	5.254	5.254	255.5	3.928	6.605	0	0	999.5851	-12.36	86.5	895.4841	0.293	901.5271	890.8317	894.0935	0.321	0.265	0.29	2739.111	2726.133	2735.655	0
15/12/2015 1:00	2679	12.87	12.83	5.441	5.441	256	8.62	7.193	0	0	1000.236	-12.25	86.7	895.4649	0.401	901.5136	890.8383	894.043	0.482	0.482	0.321	2739.3	2727.091	2735.424	0
15/12/2015 2:00	2680	12.87	12.83	2.936	2.936	280.2	11.25	5.312	0	0	1001.225	-12.3	86.6	895.5447	0.089	901.4432	890.9797	894.2111	0.101	0.088	0.078	2739.129	2726.622	2735.5	0
15/12/2015 3:00	2681	12.86	12.83	2.71	2.71	264.3	12.8	5.096	0	0	1001.872	-11.93	86.9	895.5376	0.198	901.491	890.9586	894.1631	0.182	0.219	0.191	2739.846	2726.977	2735.17	0
15/12/2015 4:00	2682	12.86	12.83	2.361	2.361	277.1	18.14	4.194	0	0	1002.281	-11.98	86.9	895.5427	0.04	901.3829	891.0139	894.2314	0.041	0.04	0.039	2739.24	2726.687	2735.573	0
15/12/2015 5:00	2683	12.86	12.82	4.116	4.116	269.4	16.59	6.096	0	0	1002.744	-11.23	85.5	895.5112	0.205	901.4186	890.9378	894.1772	0.235	0.186	0.192	2739.164	2726.798	2735.369	0
15/12/2015 6:00	2684	12.86	12.82	7.851	7.851	239.8	5.219	10.09	0	0	1002.736	-10.41	76.04	895.4637	0.647	901.6166	890.7004	894.0742	0.733	0.606	0.606	2739.851	2726.174	2735.365	0
15/12/2015 7:00	2685	12.86	12.82	6.585	6.585	246.7	6.912	9.04	0	0	1003.309	-11.15	80.7	895.4509	0.494	901.5129	890.801	894.0389	0.54	0.564	0.35	2739.607	2727.17	2735.489	0
15/12/2015 8:00	2686	12.86	12.82	6.333	6.333	245.1	5.64	7.546	0	0	1003.71	-10.56	79.53	895.4243	0.479	901.4211	890.7443	894.1075	0.528	0.531	0.359	2738.871	2726.332	2735.221	0
15/12/2015 9:00	2687	12.86	12.82	6.406	6.406	243.5	5.729	7.566	0	0	1004.693	-10.63	81.4	895.4265	0.293	901.3471	890.7717	894.1607	0.298	0.261	0.317	2739.682	2727.095	2735.621	0
15/12/2015 10:00	2688	12.86	12.82	3.549	3.549	272.9	21.84	5.566	0.6992221	0.0025172	1005.439	-11.29	85	895.479	0.188	901.367	890.8837	894.1862	0.198	0.197	0.167	2739.512	2726.329	2735.214	0
15/12/2015 11:00	2689	12.9	12.82	3.819	3.819	269.8	6.808	4.88	11.73136	0.04223289	1006.301	-12.25	87.6	895.4646	0.156	901.475	890.8341	894.0847	0.189	0.158	0.11	2739.417	2726.532	2735.254	0
15/12/2015 12:00	2690	12.98	12.88	3.549	3.549	266.1	11.29	7.468	40.86349	0.1471086	1006.774	-11.43	86.1	895.531	0.227	901.3497	890.9131	894.3302	0.261	0.212	0.205	2738.746	2726.516	2735.591	0
15/12/2015 13:00	2691	12.97	12.92	3.723	3.723	272.4	8.01	5.39	25.25035	0.09090127	1007.234	-11.19	86.6	895.4789	0.214	901.395	890.8495	894.1921	0.253	0.214	0.167	2739.272	2726.3	2735.67	0
15/12/2015 14:00	2692	12.91	12.47	3.354	3.354	261.3	12.16	4.782	18.31156	0.06592163	1007.402	-11.27	87	895.4996	0.129	901.3676	890.9252	894.2076	0.142	0.094	0.094	2739.487	2726.663	2735.661	0
15/12/2015 15:00	2693	12.93	12.87	3.334	3.334	284.7	13.71	5.606	18.72019	0.06739267	1008.073	-11.67	88.1	895.5253	0.132	901.3926	890.946	894.2373	0.152	0.113	0.129	2739.008	2726.428	2735.602	0
15/12/2015 16:00	2694	12.9	12.85	2.16	2.16	282.7	21.03	4.273	1.600394	0.005761419	1008.433	-11.8	87.7	895.5555	0.024	901.4008	891.0132	894.2523	0.031	0.021	0.016	2739.167	2726.612	2735.654	0
15/12/2015 17:00	2695	12.88	12.84	2.174	2.174	260.3	34.81	7.056	0	0	1008.763	-11.71	85.2	895.4919	0.317	901.4862	890.8056	894.1841	0.352	0.28	0.314	2739.388	2726.258	2736.072	0
15/12/2015 18:00	2696	12.87	12.83	4.489	4.489	249.5	14.58	7.056	0	0	1009.065	-11.19	81.8	895.5173	0.104	901.3414	890.9529	894.2576	0.111	0.086	0.113	2738.993	2726.48	2735.533	0
15/12/2015 19:00	2697	12.86	12.83	4.706	4.706	236.9	7.95	7.311	0	0	1009.269	-11.92	79.09	895.5048	0.065	901.4464	890.926	894.142	0.065	0.06	0.07	2739.176	2726.477	2735.491	0
15/12/2015 20:00	2698	12.86	12.82	1.55	1.55	281.5	59.29	4.136	0	0	1009.642	-12.89	81.7	895.5286	0.151	901.7253	890.9119	893.9486	0.149	0.171	0.131	2739.588	2726.603	2735.125	0
15/12/2015 21:00	2699	12.86	12.82	2.231	2.231	273.1	23.2	3.979	0	0	1009.971	-12.79	83.8	895.5618	0.053	901.5907	890.9554	894.1394	0.051	0.055	0.052	2739.559	2726.806	2735.419	0
15/12/2015 22:00	2700	12.85	12.81	5.057	5.057	228.8	4.226	6.194	0	0	1009.889	-12.23	75.46	895.5794	0.282	901.4867	890.9144	894.3372	0.319	0.237	0.285	2739.109	2726.42	2735.798	0
15/12/2015 23:00	2701	12.85	12.81	3.777	3.777	220.5	28.43	7.507	0	0	1009.8	-12.66	74.6	895.5601	0.452	901.5048	890.8312	894.3441	0.509	0.427	0.414	2739.077	2726.251	2735.727	0
16/12/2015 0:00	2702	12.84	12.81	6.637	6.637	210.5	10.909	7.899	0	0	1009.807	-11.81	72.4	895.5056	0.508	901.4883	890.7869	894.2413	0.457	0.497	0.497	2738.911	2726.235	2735.235	0
16/12/2015 1:00	2703	12.84	12.81	5.686	5.686	213.6	6.896	7.683	0	0	1010.128	-11.61	71.41	895.5518	0.328	901.3539	890.8776	894.424	0.378	0.322	0.276	2739.045	2726.592	2735.755	0
16/12/2015 2:00	2704	12.84	12.8	6.247	6.247	214.2	5.693	8.53	0	0	1009.929	-11.36	70.83	895.4473	0.839	901.4143	890.5825	894.3448	0.957	0.784	0.762	2739.56	2726.452	2736.409	0.01
16/12/2015 3:00	2705	12.84	12.8	4.288	4.288	215.4	11.22	7.409	0	0	1009.965	-11.35	70.96	895.52	0.244	901.3495	890.8651	894.3452	0.248	0.212	0.268	2739.073	2726.317	2735.963	0
16/12/2015 4:00	2706	12.84	12.8	4.62	4.62	230	8.35	7.389	0	0	1009.744	-10.28	74.1	895.5182	0.073	901.3272	890.9193	894.3083	0.074	0.07	0.074	2739.089	2726.51	2735.726	0
16/12/2015 5:00	2707	12.85	12.8	2.37	2.37	227.4	17.32	4.449	0	0	1009.378	-9.91	74.79	895.5032	0.099	901.2711	890.9303	894.308	0.124	0.087	0.081	2739.069	2726.609	2735.673	0
16/12/2015 6:00	2708	12.85	12.81	4.757	4.757	231.4	7.541	7.193	0	0	1009.528	-9.72	73.46	895.4473	0.304	901.3357	890.7827	894.2233	0.338	0.285	0.287	2738.435	2726.277	2735.498	0
16/12/2015 7:00	2709	12.85	12.81	6.863	6.863	236	7.073	9.78	0	0	1009.364	-9.1	71.04	895.3208	1.034	901.4465	890.485	894.0308	1.328	0.915	0.779	2738.376	2725.251	2733.655	0.01
16/12/2015 8:00	2710	12.86	12.81	7.588	7.588	240.3	6.614	10.707	0	0	1009.528	-8.97	72.46	895.317	0.519	901.3535	890.5062	894.0912	0.55	0.533	0.472	2740.377	2725.234	2734.978	0.01
16/12/2015 9:00	2711	12.86	12.82	7.012	7.012	237.6	8.29	8.64	0	0	1009.692	-9.28	75.11	895.1949	0.722	901.2256	890.421	893.938	0.864	0.732	0.531	2739.544	2726.753	2735.548	0.01
16/12/2015 10:00	2712	12.86	12.82	6.692	6.692																				

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
18/12/2015 8:00	2758	12.82	12.78	5.176	5.176	153.2	7.021	7.036	0	0	995.2505	-16.25	82.6	895.8196	1.12	901.1147	891.124	895.2202	1.273	1.095	0.97	2739.619	2726.689	2737.65	0	
18/12/2015 9:00	2759	12.81	12.77	4.708	4.708	157.1	6.796	6.566	0	0	995.5636	-16.2	82.6	896.0461	0.295	901.4601	891.2996	895.3785	0.305	0.339	0.229	2739.915	2727.98	2736.586	0	
18/12/2015 10:00	2760	12.81	12.77	4.37	4.37	155.6	10.68	6.488	0.4524435	0.001628796	995.4741	-15.99	82.8	896.0601	0.565	901.2292	891.3999	895.5511	0.547	0.64	0.5	2739.431	2726.74	2736.519	0	
18/12/2015 11:00	2761	12.83	12.77	3.823	3.823	141.7	13.53	7.82	7.784374	0.02802374	995.7911	-15.79	83	896.0771	0.139	901.4771	891.3947	895.3594	0.15	0.16	0.099	2739.164	2727.094	2736.944	0	
18/12/2015 12:00	2762	13.02	12.8	5.821	5.821	142.7	24.68	10.15	33.13733	0.1192944	995.7064	-15.02	81.8	896.3423	0.437	900.8932	891.8218	896.312	0.419	0.532	0.337	2739.076	2727.204	2737.563	0	
18/12/2015 13:00	2763	13.19	12.99	7.001	7.001	147.3	11.44	11.03	51.52864	0.1855031	995.2146	-14.43	77.63	895.9066	1.144	900.4997	891.4014	895.8186	1.349	1.125	0.916	2737.47	2726.072	2736.982	0	
18/12/2015 14:00	2764	13.3	13.11	6.735	6.735	157.9	28.7	12.39	54.63523	0.1966868	995.047	-14.37	77.65	896.3135	0.374	901.0742	891.7296	896.1367	0.433	0.382	0.293	2738.366	2727.157	2738.098	0	
18/12/2015 15:00	2765	13.35	13.27	3.065	3.065	147.8	66.61	9.41	28.33726	0.1020141	995.3784	-13.48	73.82	896.0703	0.188	901.2274	891.5031	895.4805	0.199	0.183	0.182	2738.873	2727.508	2737.324	0	
18/12/2015 16:00	2766	13.3	13.18	2.472	2.472	168.7	56.3	8.09	1.308428	0.00471034	995.4604	-14.31	75.68	896.0817	0.132	901.2528	891.5183	895.4739	0.134	0.15	0.109	2738.675	2727.182	2736.824	0	
18/12/2015 17:00	2767	13.2	13.11	4.805	4.805	155.5	35.8	9.47	0	0	995.2144	-14.23	75.29	896.3857	0.514	900.8631	891.8106	896.4835	0.527	0.547	0.464	2738.393	2726.921	2737.8	0	
18/12/2015 18:00	2768	13.13	13.05	6.335	6.335	172.4	27.13	11.64	0	0	995.2145	-13.82	75.01	896.1624	0.598	901.3058	891.4258	895.7554	0.626	0.716	0.409	2738.73	2726.618	2736.815	0	
18/12/2015 19:00	2769	13.07	12.99	7.061	7.061	142.4	33.29	12.78	0	0	994.5586	-13.46	75.82	896.0962	1.498	900.6099	891.4573	896.2214	1.53	1.547	1.414	2738.229	2727.527	2739.458	0	
18/12/2015 20:00	2770	13.02	12.95	4.681	4.681	138	11.27	8.23	0	0	994.7225	-14	78.27	896.1978	0.456	900.7948	891.7162	896.0823	0.449	0.535	0.369	2738.215	2727.285	2738.081	0	
18/12/2015 21:00	2771	12.97	12.91	2.971	2.971	159.3	29.81	6.88	0	0	994.5582	-13.42	79.29	896.2365	0.318	900.9984	891.686	896.0249	0.32	0.37	0.252	2739.149	2727.858	2737.972	0	
18/12/2015 22:00	2772	12.93	12.87	5.634	5.634	151.4	13.02	8.11	0.000764864	2.75E-06	994.0668	-14.74	81.2	896.346	0.708	900.5266	892.1033	896.4081	0.795	0.763	0.538	2735.428	2725.764	2737.572	0	
18/12/2015 23:00	2773	12.9	12.84	5.393	5.393	142.6	9.84	7.958	0	0	994.238	-16.01	83.4	895.7785	0.192	901.6024	891.3365	894.3965	0.184	0.248	0.125	2739.512	2726.848	2735.976	0	
19/12/2015 0:00	2774	12.87	12.82	4.332	4.332	137.8	19.35	8.31	0.03009488	0.000108342	993.9028	-15	83.5	895.9118	0.723	901.3384	891.5061	894.891	0.755	0.861	0.506	2740.558	2728.166	2736.467	0	
19/12/2015 1:00	2775	12.85	12.81	7.91	7.91	152	5.443	10.72	0.08951034	0.000322237	993.411	-15.06	82.4	896.3229	1.652	900.7477	891.6752	896.5488	1.603	2.037	1.211	2737.323	2727.032	2737.527	0	
19/12/2015 2:00	2776	12.84	12.79	9.33	9.33	155.5	3.4	11.17	0.1504578	0.000541648	993.329	-15.94	82.3	896.5026	1.512	900.5361	891.9318	897.0399	1.585	1.346	1.591	2737.094	2729.501	2736.265	0	
19/12/2015 3:00	2777	12.83	12.79	8.09	8.09	158.4	4.399	9.76	0.2843623	0.001023704	993.2479	-15.74	83.3	896.4382	1.373	900.7603	891.8219	896.7325	1.544	1.138	1.406	2739.527	2728.183	2736.602	0	
19/12/2015 4:00	2778	12.83	12.78	7.268	7.268	164	9.61	9.92	0.02626686	9.46E-05	992.7516	-13.86	79.31	900.4864	1.428	900.4864	891.7591	896.707	1.566	1.192	1.497	2735.807	2730.276	2737.232	0	
19/12/2015 5:00	2779	12.83	12.78	7.31	7.31	165	13.15	10.98	0.06144572	0.000221205	991.853	-13.79	78.1	896.3652	1.899	900.4052	891.6743	897.0164	1.839	2.15	1.679	2739.696	2727.271	2742.079	0	
19/12/2015 6:00	2780	12.83	12.78	6.692	6.692	192.9	30.75	11.76	0.001274774	4.59E-06	991.9635	-11.69	74.24	896.4473	0.24	900.7972	891.9754	896.5393	0.262	0.279	0.161	2738.179	2727.115	2738.006	0	
19/12/2015 7:00	2781	12.83	12.78	7.303	7.303	161.8	10.9	9.55	0.001019819	3.67E-06	991.7568	-13.48	81.7	896.825	1.936	900.7917	892.3459	897.3372	1.845	2.039	1.92	2738.815	2726.417	2737.332	0	
19/12/2015 8:00	2782	12.83	12.79	6.508	6.508	173.4	12.39	9.43	0	0	991.5247	-13.46	79.68	896.3181	0.578	900.9783	891.7191	896.257	0.774	0.442	0.454	2739.08	2727.829	2739.287	0	
19/12/2015 9:00	2783	12.83	12.79	5.467	5.467	164.7	12.56	9.23	0.000254955	9.18E-07	991.1974	-13.24	80.3	896.2484	0.807	900.653	891.8133	896.2789	0.868	0.91	0.61	2740.185	2728.757	2739.17	0	
19/12/2015 10:00	2784	12.83	12.78	4.314	4.314	153.3	36.03	8.06	0.400279	0.001441004	991.4352	-13.79	81.3	896.287	0.368	900.7263	892.037	896.0977	0.426	0.417	0.228	2738.579	2727.932	2738.332	0	
19/12/2015 11:00	2785	12.87	12.79	3.497	3.497	126.8	21.01	9.02	8.344876	0.009004155	991.1154	-15.45	83.6	896.3133	0.119	901.1481	891.7945	895.9973	0.123	0.085	0.085	2738.49	2727.155	2737.703	0	
19/12/2015 12:00	2786	12.94	12.83	2.493	2.493	159.1	43.34	5.9	17.53738	0.06313456	990.7172	-14.83	83.7	896.3643	0.018	901.1782	891.7557	896.1587	0.02	0.02	0.014	2738.964	2727.518	2737.951	0	
19/12/2015 13:00	2787	12.98	12.9	0.367	0.367	289.4	67.37	1.411	19.66879	0.07080765	990.3105	-13.26	83.4	896.3705	0.011	901.314	891.7363	896.0612	0.012	0.008	0.013	2739.096	2727.503	2737.874	-0.01	
19/12/2015 14:00	2788	12.96	12.83	1.595	1.595	168.7	49.98	5.449	17.04948	0.06137813	990.1318	-13.29	81.8	896.4041	0.232	901.1158	891.8704	896.226	0.222	0.281	0.183	2738.174	2726.86	2737.944	0	
19/12/2015 15:00	2789	12.96	12.91	4.184	4.184	157.2	10.55	7.683	9.818233	0.03534564	989.5579	-13.91	82	896.2674	0.479	901.2748	891.7385	895.7888	0.551	0.54	0.306	2738.928	2727.565	2737.49	0	
19/12/2015 16:00	2790	12.93	12.86	1.876	1.876	170.9	34.6	4.782	0.5893243	0.002121567	989.3119	-14.39	82.7	896.1833	0.063	901.3309	891.6163	895.6027	0.057	0.064	0.067	2739.071	2727.442	2737.33	0	
19/12/2015 17:00	2791	12.88	12.82	3.075	3.075	175	33.98	7.585	0	0	988.7003	-15.25	84.4	896.2602	0.433	901.272	891.7382	895.7703	0.447	0.533	0.279	2739.046	2727.56	2737.805	0	
19/12/2015 18:00	2792	12.85	12.8	2.385	2.385	164.7	30.24	7.017	0	0	988.5442	-15.53	83.8	896.2468	0.191	901.4042	891.6242	895.7117	0.19	0.213	0.166	2738.969	2726.906	2737.224	0	
19/12/2015 19:00	2793	12.83	12.79	1.108	1.108	184.4	32.09	4.861	0	0	988.2018	-15.35	83.9	896.2869	0.115	901.3843	891.7532	895.7232	0.128	0.12	0.094	2739.086	2727.802	2737.389	-0.01	
19/12/2015 20:00	2794	12.82	12.77	1.106	1.106	177.7	41.89	3.822	0	0	987.7308	-16.38	83	896.239	0.02	901.6776	891.5983	895.4409	0.018	0.025	0.015	2739.585	2727.286	2737.073	0	
19/12/2015 21:00	2795	12.81	12.77	1.046	1.046	220.7	46.78	2.528	0	0	987.2877	-16.82	82.9	896.2778	0.052	901.699	891.6394	895.495	0.056	0.047	0.054	2739.571	2727.421	2737.198	0	
19/12/2015 22:00	2796	12.8	12.77	0.935	0.935	252.3	21.19	1.646	0	0	986.96	-17.51	82	896.3024	0.037	901.7289	891.7059	895.4724	0.04	0.036	0.036	2739.546	2727.388	2737.187	0	
19/12/2015 23:00	2797	12.8	12.75	0.895	0.895	240.9	13.17	1.705	0	0	986.6318	-16.97	82	896.3379	0.018	901.8123	891.7182	895.4832	0.02	0.014	0.019	2739.697	2727.501	2737.159	-0.01	
20/12/2015 0:00	2798	12.79	12.75	0.251	0.251																					

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
21/12/2015 22:00	2844	12.84	12.8	5.528	5.528	157.2	6.254	6.997	0	0	986.9449	-11.56	87	896.8683	0.629	901.8483	892.1635	896.5934	0.609	0.853	0.298	2739.954	2728.25	2738.392	0	
21/12/2015 23:00	2845	12.84	12.79	3.064	3.064	189.2	36.22	6.252	0	0	987.045	-11.69	86.8	896.8372	0.104	901.9587	892.2198	896.333	0.1	0.117	0.092	2740.115	2728.33	2738.291	0	
22/12/2015 0:00	2846	12.83	12.79	3.312	3.312	152.5	22.94	5.625	0	0	987.1438	-12.01	86.2	896.8486	0.098	901.9771	892.2203	896.3486	0.103	0.102	0.088	2740.026	2728.102	2738.433	0	
22/12/2015 1:00	2847	12.83	12.79	2.18	2.18	141.6	21.44	5.194	0	0	987.1781	-11.84	86.2	896.8603	0.152	901.9993	892.2471	896.3345	0.163	0.18	0.101	2739.856	2728.172	2738.307	0	
22/12/2015 2:00	2848	12.83	12.79	2.616	2.616	138.6	24.57	4.508	0.000254956	9.18E-07	987.3442	-12.36	85.7	896.8868	0.068	902.0255	892.325	896.3098	0.066	0.078	0.059	2740.061	2728.357	2738.063	0	
22/12/2015 3:00	2849	12.83	12.78	4.39	4.39	156.5	34.96	6.821	0.02932	0.000105552	987.1803	-12.4	85.4	896.9023	0.367	902.0319	892.2203	896.4547	0.399	0.411	0.276	2740.261	2728.411	2738.325	0	
22/12/2015 4:00	2850	12.83	12.78	5.082	5.082	186	7.61	7.605	0.09484322	0.000341436	986.9119	-11.8	83.7	896.8913	0.381	902.0182	892.1987	896.4567	0.384	0.448	0.297	2739.818	2727.549	2738.622	0	
22/12/2015 5:00	2851	12.83	12.78	5.54	5.54	189	9.94	7.879	0.09739273	0.000350614	986.9806	-11.77	82.5	896.8835	0.396	902.0792	892.0955	896.4758	0.427	0.388	0.372	2739.427	2727.368	2738.954	0	
22/12/2015 6:00	2852	12.83	12.78	3.667	3.667	227	31.86	7.35	0.01198287	4.31E-05	986.9656	-10.9	79.35	896.874	0.226	902.0604	892.1569	896.4047	0.234	0.263	0.171	2740.79	2727.758	2738.257	0	
22/12/2015 7:00	2853	12.83	12.78	3.88	3.88	198	8.28	6.37	0.006118915	2.20E-05	987.015	-10.34	75.21	896.9011	0.165	902.0142	892.2467	896.4425	0.167	0.194	0.128	2739.778	2727.796	2738.185	0	
22/12/2015 8:00	2854	12.83	12.79	3.473	3.473	167.6	29.84	6.468	0.001529469	5.51E-06	986.912	-10.5	77.59	896.8608	0.02	902.0402	892.2518	896.2903	0.018	0.022	0.022	2739.985	2728.121	2738.147	0	
22/12/2015 9:00	2855	12.82	12.79	5.476	5.476	192.7	37.87	8.39	0.001019646	3.67E-06	986.827	-10.47	76.69	896.8318	0.633	902.0974	891.9601	896.4382	0.74	0.575	0.569	2740.71	2727.872	2738.658	0	
22/12/2015 10:00	2856	12.84	12.79	6.943	6.943	204.6	10.56	9.66	1.476192	0.005314291	987.0731	-10.33	75.78	896.8278	0.54	902.1003	891.991	896.392	0.509	0.687	0.381	2739.968	2727.182	2738.526	0	
22/12/2015 11:00	2857	12.87	12.8	5.684	5.684	205.6	15.35	10	12.38436	0.0445837	987.4008	-10.34	76.95	896.8969	0.557	901.9614	892.1818	896.5474	0.588	0.626	0.439	2739.784	2727.739	2739.356	0	
22/12/2015 12:00	2858	12.95	12.84	3.704	3.704	210	28.17	8.6	33.25039	0.1197014	987.5645	-10.03	78.88	896.9063	0.059	901.943	892.2496	896.5261	0.054	0.062	0.062	2739.998	2728.136	2738.502	0	
22/12/2015 13:00	2859	13.06	12.92	1.394	1.394	263.5	42.2	4.332	60.00768	0.2160277	987.7284	-10.51	83	896.9401	0.014	901.9892	892.3251	896.5061	0.015	0.014	0.013	2739.911	2728.226	2738.463	0	
22/12/2015 14:00	2860	13.05	12.55	0.947	0.947	230.4	78.42	3.156	35.93538	0.1293674	988.0563	-11.11	83.1	896.9422	0.013	902.0648	892.232	896.5298	0.02	0.008	0.007	2740.001	2728.131	2738.452	0	
22/12/2015 15:00	2861	13.04	12.95	1.84	1.84	240	67.14	4.273	10.93519	0.03936669	988.384	-11.01	79.55	896.9866	0.017	902.1663	892.3359	896.4576	0.015	0.014	0.014	2740.127	2728.238	2738.299	0	
22/12/2015 16:00	2862	12.97	12.9	0.651	0.651	285.7	69.66	1.921	1.073687	0.003865273	988.7128	-11.37	84.8	897.3012	0.01	902.5381	892.6417	896.7236	0.011	0.009	0.009	2740.61	2728.621	2738.705	-0.01	
22/12/2015 17:00	2863	12.92	12.86	0.872	0.872	144.3	60.56	2.881	0.04104074	0.000147747	988.5735	-11.82	84.8	897.4583	0.014	902.6751	892.8072	896.8924	0.019	0.011	0.01	2740.75	2728.841	2738.909	-0.01	
22/12/2015 18:00	2864	12.89	12.84	0.68	0.68	261.6	70.72	4.194	0.9889357	0	988.9357	-11.61	80.9	897.4777	0.029	902.8063	892.8254	896.8016	0.03	0.035	0.019	2740.952	2728.854	2738.799	-0.01	
22/12/2015 19:00	2865	12.87	12.83	4.584	4.584	233.2	18.2	7.507	0	0	989.0881	-10.88	78.25	897.4854	0.2	902.7221	892.748	896.986	0.203	0.193	0.205	2740.655	2728.419	2739.092	0	
22/12/2015 20:00	2866	12.86	12.82	2.711	2.711	233.6	45.08	5.449	0	0	989.0642	-10.82	76.12	897.4914	0.013	902.7068	892.8593	896.908	0.016	0.009	0.012	2740.785	2728.894	2738.942	0	
22/12/2015 21:00	2867	12.85	12.81	2.702	2.702	241.6	46.19	6.213	0	0	989.0615	-10.39	76.33	897.48	0.271	902.7421	892.645	897.0528	0.269	0.289	0.254	2740.833	2729.101	2739.175	0	
22/12/2015 22:00	2868	12.85	12.8	4.463	4.463	229.5	9.62	6.664	0	0	989.2134	-10.43	74.68	897.4495	0.303	902.8065	892.6697	896.8722	0.31	0.33	0.266	2741.161	2728.381	2738.948	0	
22/12/2015 23:00	2869	12.84	12.8	5.682	5.682	226.6	7.154	8.84	0	0	989.2045	-10.13	72.13	897.5392	0.629	903.0126	892.6125	896.9926	0.657	0.577	0.577	2740.864	2728.652	2739.563	0	
23/12/2015 0:00	2870	12.84	12.8	4.795	4.795	234.5	14.46	8.47	0	0	989.7019	-10.65	72.77	897.4665	0.064	902.6733	892.7572	896.969	0.056	0.068	0.067	2740.811	2728.835	2738.905	0	
23/12/2015 1:00	2871	12.84	12.8	1.144	1.144	291.3	73.02	3.646	0	0	990.0931	-11.96	78.67	897.5081	0.087	902.8401	892.8401	896.8783	0.09	0.097	0.071	2740.905	2728.905	2738.886	-0.01	
23/12/2015 2:00	2872	12.84	12.79	4.213	4.213	221.2	20.5	6.782	0	0	990.2767	-11.99	77.63	897.424	0.329	902.628	892.6083	897.0357	0.381	0.364	0.219	2741.152	2728.991	2739.046	0	
23/12/2015 3:00	2873	12.84	12.79	4.588	4.588	221.9	8.65	6.586	0	0	990.3807	-10.95	76.19	897.5217	0.336	902.7986	892.7495	897.0169	0.384	0.304	0.314	2739.924	2728.208	2739.815	0	
23/12/2015 4:00	2874	12.84	12.79	4.787	4.787	243.4	10	8.11	0	0	990.6852	-11.15	77.31	897.5493	0.276	902.9449	892.7369	896.9661	0.287	0.296	0.296	2741.338	2728.871	2738.582	0	
23/12/2015 5:00	2875	12.83	12.79	4.155	4.155	242.6	6.668	5.919	0	0	991.0072	-13.17	84	897.66	0.135	903.0604	892.8708	897.0487	0.152	0.136	0.113	2741.118	2728.583	2739.016	0	
23/12/2015 6:00	2876	12.83	12.79	2.253	2.253	252.4	9.13	4.449	0.01325764	4.77E-05	991.4434	-13.46	85.8	897.7025	0.02	903.0253	892.9821	897.1	0.023	0.021	0.016	2741.241	2729.019	2739.174	0	
23/12/2015 7:00	2877	12.83	12.78	1.204	1.204	248.3	17.23	2.489	0	0	991.7712	-13.86	86.5	897.7075	0.06	903.2188	892.8708	897.0327	0.07	0.056	0.051	2741.463	2728.94	2739.114	-0.01	
23/12/2015 8:00	2878	12.82	12.78	0.757	0.757	305.6	28.28	2.019	0	0	992.3149	-14.57	85.6	897.7309	0.023	903.3458	893.0627	896.7842	0.026	0.023	0.019	2741.59	2729.119	2738.774	-0.01	
23/12/2015 9:00	2879	12.82	12.78	0.378	0.378	303.8	21.2	1.058	0	0	992.8479	-15.6	83.8	897.7621	0.03	903.3128	893.0982	896.8754	0.019	0.026	0.04	2741.627	2729.146	2738.81	-0.01	
23/12/2015 10:00	2880	12.81	12.77	0.265	0.265	296.9	12.62	0.843	0.5953754	0.002143351	993.1926	-15.57	83.4	897.8915	0.027	903.3724	893.1881	897.1141	0.028	0.03	0.023	2741.628	2729.341	2739.202	-0.01	
23/12/2015 11:00	2881	12.85	12.77	0.449	0.449	275.1	17.2	0.941	14.36814	0.05172531	993.4364	-15.42	83.3	897.875	0.024	903.1725	893.2122	897.2404	0.024	0.022	0.026	2741.434	2729.336	2739.295	-0.01	
23/12/2015 12:00	2882	12.87	12.81	0.46	0.46	264.6	19.84	1.215	17.8886	0.06439894	993.575	-15.03	83.5	897.8539	0.035	903.1873	893.1743	897.2001	0.034	0.042	0.029	2741.387	2729.294	2739.27	-0.01	
23/12/2015 13:00	2883	12.92	12.71	0.3	0.3	305.8	9.04	0.882	28.44592	0.1024053	994.0671	-15.23	83.2	896.7415	5.039	901.4931	892.5752</									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
25/12/2015 12:00	2930	13.12	12.8	0.064	0.064	186.3	6.12	0.333	120.2357	0.4328485	1010.415	-17.46	79.2	898.092	0.057	903.6538	893.6649	896.9575	0.053	0.02	0.08	2742.072	2729.91	2738.826	0.01	
25/12/2015 13:00	2931	13.07	12.99	0.197	0.197	202	7.83	0.49	17.17839	0.0618422	1010.743	-18.83	78.06	898.0627	0.017	903.8924	893.6018	896.6941	0.018	0.008	0.021	2742.31	2729.827	2738.662	-0.01	
25/12/2015 14:00	2932	12.94	12.85	0.3	0.3	187.8	6.157	1.078	16.21901	0.05838842	1010.989	-18.84	77.56	898.0744	0.108	903.9102	893.5695	896.7435	0.156	0.04	0.096	2742.395	2729.881	2738.623	-0.01	
25/12/2015 15:00	2933	12.92	12.84	0.724	0.724	198.5	10.44	1.254	10.96944	0.03948997	1010.746	-19.66	76.28	898.061	0.032	903.9854	893.5482	896.6496	0.038	0.022	0.033	2742.419	2729.775	2738.571	0	
25/12/2015 16:00	2934	12.87	12.79	0.258	0.258	175.6	28.72	0.745	2.227854	0.008020273	1010.537	-19.51	75.88	898.0593	0.014	904.0023	893.5567	896.6187	0.014	0.011	0.017	2742.414	2729.768	2738.555	-0.01	
25/12/2015 17:00	2935	12.82	12.76	0.283	0.283	143.9	16.11	0.921	0	0	1010.449	-19.11	73.72	898.0905	0.047	903.8573	893.6752	896.7389	0.052	0.036	0.052	2742.382	2729.985	2738.75	-0.01	
25/12/2015 18:00	2936	12.79	12.73	0.662	0.662	163.8	43.22	1.411	0	0	1010.279	-18.71	71.57	898.0999	0.018	904.064	893.5938	896.6422	0.015	0.006	0.027	2742.467	2729.82	2738.555	0	
25/12/2015 19:00	2937	12.77	12.71	0.33	0.33	165.5	32.5	1.431	0	0	1010.116	-18.72	73.34	898.118	0.008	904.0493	893.6071	896.6978	0.009	0.005	0.008	2742.485	2729.844	2738.673	-0.01	
25/12/2015 20:00	2938	12.75	12.7	0.488	0.488	119.3	20.31	1.568	0	0	1010.049	-18.59	70.78	898.1577	0.074	903.8364	893.7617	896.8748	0.082	0.071	0.069	2742.239	2730.004	2738.94	-0.01	
25/12/2015 21:00	2939	12.74	12.69	0.414	0.414	267.7	48.06	1.274	0	0	1009.934	-18.61	71.41	898.1379	0.011	904.0838	893.6464	896.6836	0.017	0.007	0.007	2742.505	2729.889	2738.641	-0.01	
25/12/2015 22:00	2940	12.74	12.69	0.243	0.243	264.1	33.31	0.843	0	0	1009.764	-18.61	70.96	898.1362	0.03	904.0985	893.6341	896.6761	0.035	0.022	0.032	2742.509	2729.859	2738.681	-0.01	
25/12/2015 23:00	2941	12.73	12.69	0.379	0.379	326	90.1	1.411	0	0	1009.271	-18.93	71.4	898.1348	0.055	903.882	893.7848	896.7377	0.065	0.059	0.035	2741.904	2729.789	2738.799	-0.01	
26/12/2015 0:00	2942	12.73	12.68	0.977	0.977	220.7	45.26	2.372	0	0	1009.021	-19.03	70.68	898.1269	0.016	904.0713	893.6941	896.6153	0.018	0.012	0.017	2742.476	2729.969	2738.532	0	
26/12/2015 1:00	2943	12.73	12.68	0.56	0.56	215.7	52.31	2.92	0	0	1009.111	-19.19	68.96	898.1472	0.017	904.0615	893.6999	896.6802	0.016	0.02	0.016	2742.479	2729.937	2738.662	0	
26/12/2015 2:00	2944	12.73	12.68	0.407	0.407	162.8	57.37	2.234	0	0	1009.119	-18.71	65.28	898.1655	0.127	903.7939	893.7909	896.9117	0.134	0.134	0.112	2742.311	2730.126	2738.886	-0.01	
26/12/2015 3:00	2945	12.73	12.68	0.952	0.952	174.3	46.78	3.175	0	0	1009.103	-18.75	66.24	898.1392	0.22	903.7428	893.7427	896.932	0.238	0.247	0.167	2742.188	2729.889	2738.836	0	
26/12/2015 4:00	2946	12.73	12.68	1.378	1.378	150.3	72.7	5.135	0	0	1008.036	-18.2	64.39	898.207	0.879	903.3629	894.0652	897.1929	0.803	1.193	0.5	2742.055	2730.77	2738.195	0	
26/12/2015 5:00	2947	12.73	12.68	2.6	2.6	167.8	48.61	8.66	0	0	1007.954	-17.98	62.4	898.0945	0.033	903.8249	893.6899	896.7686	0.041	0.029	0.029	2742.196	2729.935	2738.775	0	
26/12/2015 6:00	2948	12.73	12.69	0.834	0.834	152.5	59.43	1.784	0	0	1007.216	-17.59	58.94	898.1293	0.015	903.7573	893.7194	896.9113	0.013	0.016	0.017	2742.101	2729.911	2738.93	0	
26/12/2015 7:00	2949	12.74	12.69	0.794	0.794	286.6	52.71	2.176	0.009439433	3.40E-05	1006.97	-17.41	62.55	898.1159	0.009	903.7455	893.7389	896.8633	0.009	0.009	0.009	2742.103	2729.984	2738.845	0	
26/12/2015 8:00	2950	12.74	12.69	0.656	0.656	261.8	64.29	2.411	0	0	1006.296	-17.15	67.13	898.0958	0.051	903.7224	893.7158	896.8492	0.054	0.064	0.028	2742.084	2729.968	2738.841	-0.01	
26/12/2015 9:00	2951	12.74	12.69	0.538	0.538	261	63.6	2.587	0.07193396	0.000258962	1006.107	-17.52	75.26	898.1124	0.008	903.7648	893.7275	896.845	0.01	0.006	0.007	2742.141	2729.977	2738.865	-0.01	
26/12/2015 10:00	2952	12.74	12.7	2.319	2.319	145.6	52.44	7.154	0.8007096	0.002882555	1005.822	-19.22	78.97	898.1577	1.042	903.5334	893.9683	896.9715	1.289	0.691	0.691	2743.003	2730.447	2738.969	0	
26/12/2015 11:00	2953	12.74	12.7	3.261	3.261	125.9	35.66	7.801	6.423454	0.02312443	1005.658	-20.02	78.91	898.2693	0.234	903.8406	893.9193	897.0483	0.257	0.276	0.147	2742.264	2730.315	2739.089	0	
26/12/2015 12:00	2954	12.79	12.7	3.314	3.314	128.6	25.12	7.193	26.81804	0.09654497	1004.674	-19.54	79.02	898.2425	0.573	903.6154	893.8925	897.2198	0.515	0.714	0.458	2742.229	2730.226	2739.236	0	
26/12/2015 13:00	2955	12.81	12.74	2.756	2.756	139.4	41.46	6.507	32.20708	0.1159455	1004.264	-18.86	79.73	898.2547	0.427	903.7932	893.906	897.0649	0.498	0.404	0.37	2742.051	2729.509	2739.986	0	
26/12/2015 14:00	2956	12.78	12.64	2.582	2.582	118.3	31.55	8.66	27.03604	0.09732976	1003.854	-18.53	80.1	898.3196	0.507	903.7227	894.0192	897.2172	0.52	0.647	0.287	2742.428	2730.744	2739.092	0	
26/12/2015 15:00	2957	12.77	12.71	1.729	1.729	170.3	50.54	6.037	9.651928	0.03474694	1003.637	-16.95	81.6	898.3765	0.029	903.9117	893.955	897.2627	0.031	0.028	0.028	2742.282	2730.279	2739.344	0	
26/12/2015 16:00	2958	12.75	12.71	0.613	0.613	255.6	23.4	1.98	1.860872	0.00669914	1003.286	-16.41	82.1	898.3987	0.039	903.9754	893.9616	897.2593	0.046	0.035	0.035	2742.365	2730.234	2739.377	-0.01	
26/12/2015 17:00	2959	12.75	12.71	0.47	0.47	266.9	69.67	1.548	0.04284698	0.000154249	1003.274	-16.53	82.1	898.4628	0.016	904.075	894.0367	897.2768	0.017	0.016	0.016	2742.553	2730.369	2739.394	-0.01	
26/12/2015 18:00	2960	12.76	12.71	0.622	0.622	254.9	38.88	1.725	0	0	1003.284	-16.48	82.1	898.5263	0.01	904.1148	894.1114	897.3527	0.012	0.009	0.01	2742.562	2730.442	2739.485	-0.01	
26/12/2015 19:00	2961	12.76	12.71	0.563	0.563	181.5	71.76	1.94	0.00816133	2.94E-05	1002.963	-16.63	81.9	898.5654	0.006	904.1839	894.1279	897.3846	0.008	0.005	0.006	2742.655	2730.478	2739.519	-0.01	
26/12/2015 20:00	2962	12.76	12.71	0.344	0.344	272.7	34.14	1.588	0	0	1002.971	-16.21	82.4	898.5776	0.01	904.2645	894.1174	897.351	0.013	0.009	0.005	2742.738	2730.456	2739.47	-0.01	
26/12/2015 21:00	2963	12.76	12.72	0.707	0.707	270.3	14.56	1.725	0	0	1003.021	-16.4	82.4	898.6006	0.032	904.3989	894.0983	897.3049	0.035	0.028	0.033	2742.895	2730.433	2739.421	-0.01	
26/12/2015 22:00	2964	12.76	12.72	0.977	0.977	264.7	7.71	1.862	0	0	1003.021	-16.31	81.9	898.6074	0.009	904.3268	894.1084	897.3871	0.01	0.003	0.011	2742.845	2730.448	2739.498	-0.01	
26/12/2015 23:00	2965	12.76	12.72	0.307	0.307	286.5	28.56	1.274	0	0	1003.008	-15.99	82.2	898.6119	0.014	904.2671	894.1933	897.3753	0.014	0.015	0.015	2742.796	2730.545	2739.508	-0.01	
27/12/2015 0:00	2966	12.76	12.71	0.691	0.691	267.3	25.5	2.254	0	0	1002.987	-16.21	81.9	898.6069	0.009	904.2806	894.152	897.3879	0.01	0.006	0.009	2742.762	2730.517	2739.504	-0.01	
27/12/2015 1:00	2967	12.76	12.71	0.218	0.218	264.7	23.67	0.98	0	0	1003.305	-15.39	82.1	898.632	0.022	904.2489	894.1557	897.4913	0.03	0.019	0.016	2742.699	2730.507	2739.645	-0.01	
27/12/2015 2:00	2968	12.76	12.71	0.485	0.485	274.4	35.33	1.529	0	0	1003.591	-14.65	82	898.6396	0.014	904.1453	894.1812	897.5927	0.018	0.009	0.013	2742.577	2730.538	2739.757	-0.01	
27/12/2015 3:00	2969	12.76	12.72	0.856	0.856	263.1	10.65	1.529	0	0	1003.906	-15.2	81.4	898.5923	0.011	904.2008	894.1316	897.4446	0.007	0.006	0.017	2742.669	2730.479	2739.555	-0.01	
27/12/2015 4:00	2970	12.76	12.72	0.207																						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
29/12/2015 2:00	3016	13.05	13	16.14	16.14	230.7	9.09	23.62	0	0	1002.695	-5.45	67.53	901.6353	9.64	896.3769	900.6808	907.8484	9.91	10.91	7.844	2734.429	2735.448	2750.369	0.01	
29/12/2015 3:00	3017	13.03	12.99	13.44	13.44	229	9.27	19.99	0	0	1003.43	-5.715	69.25	899.1863	5.605	899.7935	894.7268	903.0389	5.997	5.941	4.793	2741.236	2726.282	2745.586	0.01	
29/12/2015 4:00	3018	13.01	12.98	9.76	9.76	240.6	12.86	19.64	0	0	1004.825	-5.34	67.28	898.0255	1.785	904.2104	892.6786	907.1874	1.291	1.796	2.161	2747.95	2732.26	2737.822	0.01	
29/12/2015 5:00	3019	13	12.96	9.74	9.74	235.7	9.67	16.68	0	0	1004.172	-5.896	69.05	898.77	3.001	903.0929	893.1193	900.0979	3.201	2.66	3.115	2737.013	2730.228	2745.473	0.01	
29/12/2015 6:00	3020	12.98	12.94	12.16	12.16	239.4	6.6	17.39	0	0	1005.251	-6.188	71.63	898.3408	2.099	903.3629	892.4477	899.2118	2.622	2.622	2.038	2742.052	2727.899	2741.614	0.01	
29/12/2015 7:00	3021	12.97	12.93	9.82	9.82	240.3	8.29	14.88	0	0	1005.124	-6.663	74.98	898.6279	2.105	903.3328	893.085	899.4659	2.023	2.145	2.145	2742.891	2729.497	2739.854	0.01	
29/12/2015 8:00	3022	12.96	12.92	9.45	9.45	237	7.016	13.31	0	0	1005.865	-6.633	73.33	897.847	1.369	904.04	892.4167	897.0844	1.148	1.611	1.308	2743.685	2730.655	2738.952	0.01	
29/12/2015 9:00	3023	12.94	12.91	6.723	6.723	234.1	8.83	8.9	0	0	1006.438	-7.12	73.77	897.8374	0.609	904.2978	892.6317	896.5826	0.585	0.643	0.598	2743.492	2729.07	2738.26	0.01	
29/12/2015 10:00	3024	12.93	12.9	7.801	7.801	242.3	5.418	10.15	0.06779111	0.000244048	1007.203	-7.775	76.04	897.9035	0.954	904.4511	892.7012	896.5581	0.805	1.264	0.698	2741.869	2728.61	2738.248	0.01	
29/12/2015 11:00	3025	13.1	12.9	6.591	6.591	231.4	8.77	9.39	7.027943	0.02530059	1008.041	-7.976	77.81	897.8784	0.545	904.2278	892.6833	896.7238	0.572	0.58	0.477	2742.643	2729.234	2738.756	0	
29/12/2015 12:00	3026	14.61	13.1	5.184	5.184	236.2	14.74	7.84	52.63343	0.1894803	1008.651	-7.241	72.36	897.9568	0.203	903.3069	892.9336	897.9336	0.213	0.169	0.222	2741.762	2729.063	2739.302	0.01	
29/12/2015 13:00	3027	14.12	13.63	4.817	4.817	252.7	8.72	7.468	24.82769	0.08937967	1009.228	-7.817	77.19	897.853	0.483	904.2665	892.6812	896.6114	0.515	0.506	0.424	2742.74	2728.764	2738.778	0	
29/12/2015 14:00	3028	13.6	13.52	2.404	2.404	199.8	69.16	7.036	20.2335	0.07284059	1009.527	-8.42	80.3	898.0394	0.018	904.1671	893.0953	896.8557	0.026	0.011	0.012	2742.588	2729.225	2738.84	0	
29/12/2015 15:00	3029	13.54	13.44	0.903	0.903	117.3	41.27	2.901	11.42861	0.04114299	1009.938	-7.216	73.46	898.0905	0.024	904.1318	893.1404	896.9991	0.021	0.023	0.028	2742.591	2729.25	2738.999	-0.01	
29/12/2015 16:00	3030	13.46	13.32	1.401	1.401	147.7	82.5	5.194	1.870524	0.006733886	1010.675	-7.237	72.84	898.0935	0.049	904.0571	893.2145	897.0089	0.052	0.057	0.036	2742.5	2729.26	2739.065	-0.01	
29/12/2015 17:00	3031	13.34	13.25	1.899	1.899	191.8	71.18	5.802	0	0	1011.331	-7.362	71.2	898.1236	0.197	904.3269	893.051	896.993	0.206	0.183	0.183	2742.653	2728.853	2739.424	0	
29/12/2015 18:00	3032	13.27	13.21	2.092	2.092	188.9	77.69	6.252	0	0	1011.905	-7.927	77.57	898.0996	0.072	904.2845	893.1493	896.8651	0.06	0.086	0.067	2742.663	2729.075	2738.916	0	
29/12/2015 19:00	3033	13.23	13.18	1.556	1.556	257.5	31.32	3.567	0	0	1012.642	-6.532	70.68	898.1138	0.073	904.2668	893.0926	896.982	0.07	0.085	0.063	2742.663	2729.149	2738.989	0	
29/12/2015 20:00	3034	13.2	13.16	1.97	1.97	272.2	28.99	4.822	0	0	1012.802	-6.21	68.04	898.1096	0.1	904.2389	893.2049	896.8848	0.117	0.107	0.071	2742.689	2729.301	2738.908	0	
29/12/2015 21:00	3035	13.18	13.13	2.488	2.488	275.5	26.06	5.018	0	0	1013.076	-4.638	58.66	898.0359	0.216	904.1771	893.0842	896.8464	0.225	0.245	0.173	2742.54	2729.33	2738.923	0	
29/12/2015 22:00	3036	13.16	13.12	3.191	3.191	269.7	30.7	6.762	0	0	1013.076	-5.078	59.11	898.0506	0.413	904.2035	893.0861	896.8624	0.409	0.534	0.242	2742.516	2729.21	2738.779	0.01	
29/12/2015 23:00	3037	13.14	13.1	1.742	1.742	301.7	46.88	6.35	0	0	1013.895	-4.814	57.66	898.0565	0.035	904.0544	893.1415	896.9736	0.047	0.032	0.019	2742.401	2729.182	2738.997	0	
30/12/2015 0:00	3038	13.12	13.08	1.284	1.284	300.3	47.32	3.41	0	0	1014.305	-5.743	61.14	898.035	0.03	904.0507	893.1199	896.9342	0.041	0.027	0.016	2742.443	2729.211	2738.97	0	
30/12/2015 1:00	3039	13.11	13.07	1.318	1.318	267.6	49.41	3.822	0	0	1014.551	-4.341	52.92	898.0645	0.027	904.1135	893.0649	897.0153	0.028	0.031	0.022	2742.558	2729.195	2739.027	0	
30/12/2015 2:00	3040	13.1	13.06	1.094	1.094	280.4	40.03	2.822	0	0	1015.042	-3.798	50.84	898.032	0.024	904.0883	893.0189	896.9888	0.028	0.022	0.02	2742.462	2729.041	2738.995	0	
30/12/2015 3:00	3041	13.09	13.04	1.244	1.244	157.3	56.64	3.469	0	0	1015.206	-3.874	48.82	898.0547	0.024	903.8207	893.0797	897.2635	0.028	0.022	0.02	2742.183	2729.169	2739.347	0	
30/12/2015 4:00	3042	13.07	13.04	0.847	0.847	188.7	47.48	1.784	0	0	1015.206	-2.926	41.97	898.0356	0.035	903.9132	892.991	897.2025	0.037	0.037	0.031	2742.341	2729.086	2739.318	-0.01	
30/12/2015 5:00	3043	13.07	13.03	0.599	0.599	266.6	63.81	2.078	0	0	1014.878	-2.519	39.69	898.0189	0.035	904.0139	893.0233	897.0196	0.021	0.014	0.056	2742.479	2729.072	2739.031	-0.01	
30/12/2015 6:00	3044	13.06	13.02	1.102	1.102	21.01	78.06	2.666	0	0	1014.223	-2.392	39.13	898.0747	0.023	903.9456	893.1175	897.1609	0.024	0.025	0.021	2742.31	2729.212	2739.252	0	
30/12/2015 7:00	3045	13.04	13.01	1.321	1.321	203.8	61.49	5.429	0	0	1014.022	-2.382	36.79	898.019	0.043	903.8229	892.9984	897.2355	0.041	0.049	0.039	2742.217	2729.119	2739.338	0	
30/12/2015 8:00	3046	13.04	13	4.274	4.274	143.9	60.76	9.06	0	0	1013.675	-3.589	45.27	897.9631	0.882	903.5003	893.0704	897.3184	0.971	1.052	0.531	2741.921	2728.268	2739.341	0.02	
30/12/2015 9:00	3047	13.03	12.99	4.039	4.039	177.5	65.63	10.07	0	0	1013.1	-3.333	44.72	898.3105	1.96	903.0838	893.3037	898.5443	1.992	1.92	1.966	2741.093	2731.216	2741.426	0.02	
30/12/2015 10:00	3048	13.03	12.99	9.98	9.98	179	10.61	12.82	0	0	1012.386	0.228	30.7	898.4683	3.117	901.1033	894.5622	899.7392	3.63	3.031	2.606	2743.878	2730.619	2742.638	0.04	
30/12/2015 11:00	3049	13.61	13	13.28	13.28	198.8	12.65	19.87	14.80686	0.05330469	1011.73	-1.977	42.25	899.627	6.787	898.6802	897.0477	903.153	6.698	7.364	6.252	2727.549	2733.873	2741.071	0.03	
30/12/2015 12:00	3050	14.6	13.61	16.13	16.13	190.8	5.723	19.97	48.222	0.1735992	1011.075	-2.401	46.4	899.096	4.094	900.8925	894.7962	901.5994	3.544	4.608	4.061	2745.327	2735.28	2747.019	0.03	
30/12/2015 13:00	3051	13.93	13.67	13.9	13.9	187.4	19.5	49.72267	0.1790016	0.101911	-2.63	46.05	898.2567	6.761	899.6972	895.1705	900.9023	6.122	6.83	7.281	2739.601	2727.453	2743.465	0.03		
30/12/2015 14:00	3052	13.72	13.23	11.8	11.8	198.3	10.35	17.58	39.91438	0.1436917	1011.157	-2.188	41.82	898.6351	5.182	898.4615	895.0488	902.3951	6.606	4.668	3.891	2735.302	2730.71	2741.759	0.03	
30/12/2015 15:00	3053	13.61	13.43	11.25	11.25	218.5	11.29	18.76	18.48336	0.06654008	1010.829	-1.142	40.56	898.492	7.055	898.0219	895.4011	902.0533	7.444	6.677	7.022	2739.468	2726.317	2745.772	0.04	
30/12/2015 16:00	3054	13.45	13.29	13.5	13.5	232.4	12.18	21.89	1.161653	0.004181952	1011.025	-0.204	41.49	899.122	5.352	898.3231	895.4933	903.5496	5.528	5.105	5.413	2742.859	2733.031	2742.323	0.04	
30/12/2015 17:00	3055	13.31	13.24	12.26	12.26	228.9	10.22	20.33	0	0	1011.936	-1.227	47.92	898.092	2.046	903.3459	892.2192	898.7109	1.635	1.614	2.698	2739.819	2726.614	2739.714	0.03	

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
01/01/2016 16:00	3102	13.62	13.39	6.093	6.093	171.7	16.43	8.68	2.453926	0.008834133	1012.82	-5.513	74.61	897.6306	0.798	903.6728	892.2828	896.9363	0.787	0.98	0.573	2741.715	2728.578	2738.779	0.01
01/01/2016 17:00	3103	13.41	13.28	5.664	5.664	167.8	18.81	8.8	0	0	1012.58	-5.612	78.1	897.9029	0.625	903.2695	892.8408	897.5984	0.642	0.792	0.366	2742.377	2729.293	2739.652	0
01/01/2016 18:00	3104	13.3	13.22	6.627	6.627	162.1	13.73	10.8	0	0	1012.404	-5.568	80.2	897.8587	0.781	903.3506	892.7094	897.5162	0.783	1.013	0.438	2741.867	2728.948	2739.397	0
01/01/2016 19:00	3105	13.23	13.17	8.37	8.37	183.1	11.75	13.45	0	0	1011.517	-4.35	77.18	897.6788	0.953	903.6334	892.4579	896.9451	1.018	1.078	0.724	2740.275	2727.633	2739.987	0.01
01/01/2016 20:00	3106	13.19	13.14	5.378	5.378	142.2	13.82	7.35	0	0	1011.051	-5.371	81.6	897.7233	0.747	903.1638	892.6637	897.3426	0.781	0.933	0.442	2742.165	2730.021	2739.937	0
01/01/2016 21:00	3107	13.15	13.11	7.018	7.018	147.2	7.362	9.02	0	0	1011.136	-5.346	80.5	897.8543	0.968	903.5604	892.6466	897.3561	1.002	1.187	0.633	2740.961	2728.148	2740.725	0
01/01/2016 22:00	3108	13.13	13.08	6.197	6.197	152.7	6.152	9.39	0	0	1010.504	-4.567	78.58	897.9881	1.955	902.787	893.028	898.1494	1.935	2.135	1.778	2741.124	2730.959	2741.958	0
01/01/2016 23:00	3109	13.11	13.06	7.996	7.996	150.6	7.61	10.68	0.004331019	1.56E-05	1010.833	-4.544	80.2	897.3508	0.797	903.0737	892.7586	896.2199	0.793	0.924	0.649	2741.624	2728.987	2737.73	0.01
02/01/2016 0:00	3110	13.08	13.05	3.566	3.566	133.2	18.77	6.899	0.01655925	5.96E-05	1011.169	-5.126	85.7	897.5119	0.1	903.6837	892.7256	896.1262	0.109	0.119	0.062	2742.072	2728.668	2738.073	0
02/01/2016 1:00	3111	13.07	13.03	2.646	2.646	116.3	32.36	8.21	0	0	1010.754	-4.624	87.1	897.5099	0.468	903.4409	892.7776	896.3113	0.543	0.515	0.31	2741.741	2728.458	2737.99	0
02/01/2016 2:00	3112	13.05	13.02	5.881	5.881	137.9	22.18	11.98	0	0	1009.847	-3.932	80.9	898.1428	1.998	902.5034	893.0306	898.8946	1.587	2.102	2.246	2740.827	2730.1	2740.898	0
02/01/2016 3:00	3113	13.04	13.01	11.68	11.68	156.4	7.619	17.13	0	0	1008.867	-3.226	69.47	898.1028	3.234	901.3491	893.3307	899.6286	3.474	3.235	2.974	2731.405	2732.44	2741.67	0.01
02/01/2016 4:00	3114	13.03	13	13.39	13.39	162.5	7.316	17.48	0	0	1008.372	-2.561	59.92	897.8259	3.522	900.8643	892.9045	899.7089	3.939	4.07	2.265	2740.912	2731.918	2744.366	0.02
02/01/2016 5:00	3115	13.02	12.99	12.63	12.63	168.1	7.935	15.99	0	0	1009.109	-2.229	50.11	898.2261	2.855	901.2521	893.467	899.9592	3.606	2.715	2.02	2733.489	2730.776	2742.762	0.03
02/01/2016 6:00	3116	13.02	12.98	7.322	7.322	141.4	9.83	11.49	0	0	1008.622	-3.704	58.74	897.8889	1.735	903.08	892.8763	897.7104	1.881	1.96	1.286	2740.344	2728.503	2739.67	0.02
02/01/2016 7:00	3117	13.01	12.97	8.88	8.88	149.3	5.232	12.74	0	0	1007.392	-4.205	57.23	898.5029	2.618	902.3622	893.5472	899.5994	2.889	2.772	2.127	2742.686	2733.28	2741.534	0.02
02/01/2016 8:00	3118	13	12.97	11.69	11.69	156	6.981	14.95	0	0	1007.229	-3.785	50.13	898.2	3.321	900.7747	893.8276	899.9976	4.168	3.338	2.137	2734.534	2724.246	2740.484	0.02
02/01/2016 9:00	3119	13	12.96	8.7	8.7	148.3	6.529	12.5	0	0	1007.311	-3.891	47.71	898.1142	0.468	902.8191	892.9056	898.6179	0.503	0.35	0.242	2741.866	2730.056	2741.426	0.02
02/01/2016 10:00	3120	12.98	12.95	6.358	6.358	146.5	7.702	9.84	0.00076433	2.75E-06	1007.235	-4.336	47.49	898.2552	1.559	902.1876	893.4534	899.1245	1.566	1.957	1.006	2739.71	2727.645	2743.08	0.02
02/01/2016 11:00	3121	13.04	12.95	11.66	11.66	161.2	4.937	14.56	8.92922	0.03214519	1007.48	-3.115	37.6	898.5089	3.361	901.0656	894.0229	900.4381	3.648	4.094	1.956	2743.158	2729.011	2740.144	0.03
02/01/2016 12:00	3122	13.26	13.02	7.475	7.475	153.6	7.477	11.39	32.7555	0.1179198	1007.558	-3.937	41.17	897.8538	1.888	902.1132	892.9916	898.4564	1.89	2.21	1.497	2738.121	2725.446	2740.777	0.03
02/01/2016 13:00	3123	13.55	13.26	5.945	5.945	145.8	10.71	9.45	47.30569	0.1703005	1007.73	-4.824	45	898.1318	0.135	903.2382	892.7155	898.4418	0.129	0.164	0.105	2741.542	2728.782	2740.77	0.02
02/01/2016 14:00	3124	13.84	13.49	4.513	4.513	156.1	16.31	10.92	54.67905	0.1968446	1007.822	-4.239	43.19	898.4502	1.169	902.8914	893.0856	899.3736	1.391	1.244	0.785	2742.08	2730.427	2742.282	0.02
02/01/2016 15:00	3125	13.82	13.72	8.04	8.04	182.6	7.756	11.82	30.40708	0.1094655	1007.315	-2.887	44.55	898.5132	2.084	902.4965	893.3874	899.6558	1.971	2.326	1.931	2738.635	2729.08	2744.592	0.03
02/01/2016 16:00	3126	13.73	13.45	7.866	7.866	180.2	7.738	12.39	5.001274	0.01800459	1007.808	-3.189	50.35	898.3296	2.074	902.3658	893.3793	899.2436	2.301	2.234	1.618	2741.341	2731.754	2738.737	0.02
02/01/2016 17:00	3127	13.46	13.31	7.248	7.248	179.2	7.031	11.35	0	0	1007.805	-3.02	51.76	898.3698	1.214	902.8339	893.4989	898.7767	0.935	1.503	1.135	2741.311	2730.667	2739.215	0.02
02/01/2016 18:00	3128	13.33	13.24	7.968	7.968	177.1	7.963	13.09	0	0	1007.308	-3.196	52.45	898.5656	2.664	901.1319	894.0998	900.465	2.89	2.619	2.467	2741.046	2725.314	2741.64	0.02
02/01/2016 19:00	3129	13.26	13.2	8.79	8.79	168.3	6.185	11.47	0	0	1006.986	-3.369	51.3	898.5298	2.265	902.2436	893.664	899.6818	2.92	2.012	1.677	2719.472	2736.698	2746.186	0.02
02/01/2016 20:00	3130	13.21	13.16	7.659	7.659	181.1	11.89	12.7	0	0	1007.31	-3.316	55.56	898.5036	4.011	900.6884	894.5258	900.2966	4.99	4.08	2.591	2741.534	2723.386	2739.302	0.02
02/01/2016 21:00	3131	13.18	13.13	9.42	9.42	198.5	10.33	14.05	0	0	1007.23	-3.468	61.71	898.8583	4.308	900.2683	894.8619	901.4448	4.781	4.576	3.448	2741.504	2728.947	2738.777	0.02
02/01/2016 22:00	3132	13.15	13.11	8.2	8.2	215.4	10.17	13.29	0	0	1007.8	-3.927	69.06	898.1985	1.287	903.3964	892.7325	898.4669	1.122	1.471	1.244	2741.024	2728.315	2739.823	0.01
02/01/2016 23:00	3133	13.13	13.09	5.355	5.355	216.8	16.51	10.98	0	0	1007.882	-4.154	71.48	898.1069	0.631	903.1547	892.9338	898.232	0.692	0.695	0.484	2741.635	2728.701	2740.689	0.01
03/01/2016 0:00	3134	13.11	13.07	7.182	7.182	226.3	10.61	11.98	0	0	1008.053	-4.366	71.5	898.5372	2.046	903.022	893.2614	899.3282	1.869	2.382	1.842	2739.433	2727.529	2742.715	0.01
03/01/2016 1:00	3135	13.09	13.05	6.148	6.148	227.7	15.22	13.48	0	0	1008.537	-4.311	67.96	898.2559	1.326	902.9476	893.1589	898.6609	1.301	1.212	1.453	2740.631	2728.477	2739.283	0.01
03/01/2016 2:00	3136	13.08	13.04	6.547	6.547	237.8	13.98	11.8	0	0	1008.784	-4.464	66.56	898.4494	1.683	903.3403	892.97	899.0379	1.199	1.478	2.207	2740.325	2730.822	2744.597	0.01
03/01/2016 3:00	3137	13.06	13.03	10.36	10.36	233.3	7.037	16.29	0	0	1008.581	-4.867	63.81	898.9685	3.469	902.2397	893.6676	900.9982	2.558	4.093	3.578	2743.378	2730.048	2744.323	0.01
03/01/2016 4:00	3138	13.05	13.01	10.57	10.57	233.4	9.55	16.11	0	0	1008.148	-4.453	53.92	899.0122	4.016	901.6307	893.6721	901.7337	3.842	3.765	4.411	2736.531	2733.441	2742.054	0.02
03/01/2016 5:00	3139	13.04	13	12.5	12.5	233.1	8.99	18.29	0	0	1008.382	-4.147	45.9	898.8638	3.474	902.3961	893.3903	900.8052	3.194	3.965	3.207	2740.985	2727.371	2739.321	0.03
03/01/2016 6:00	3140	13.02	12.99	11.26	11.26	243	8.15	16.6	0	0	1008.589	-5.037	51.61	898.9064	2.163	902.6773	893.1703	900.8716	2.215	2.518	1.669	2742.894	2730.469	2740.154	0.02
03/01/2016 7:00	3141	13.02	12.98	10.78	10.78	244.8	6.242	13.82	0	0	1008.795	-6.014	58.77	898.3952	1.72	903.5884	892.5577	899.0396	1.631	2.011	1.475	2738.082	2724.935	2738.39	0.02
03/01/2016 8:00																									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
05/01/2016 6:00	3188	13.09	13.05	0.405	0.405	250.5	26.08	1.058	0	0	1005.184	-6.72	33.48	899.1528	0.017	902.745	894.614	900.0997	0.019	0.018	0.014	2740.833	2731.073	2742.892	-0.01
05/01/2016 7:00	3189	13.08	13.04	0.497	0.497	244.9	13.19	1.196	0	0	1004.857	-6.204	32.13	899.1385	0.011	902.8293	894.627	899.9594	0.015	0.006	0.01	2740.947	2731.097	2742.743	-0.01
05/01/2016 8:00	3190	13.07	13.02	0.311	0.311	109.4	66.36	2.568	0	0	1004.775	-6.376	34.58	899.1548	0.022	902.7187	894.6497	900.0962	0.023	0.026	0.015	2740.873	2731.128	2742.888	-0.01
05/01/2016 9:00	3191	13.06	13.02	3.304	3.304	144	29.94	5.88	0	0	1004.775	-6.306	36.01	899.1483	0.293	902.4209	894.8065	900.2175	0.292	0.391	0.141	2740.612	2731.263	2743.021	0.01
05/01/2016 10:00	3192	13.07	13.02	1.506	1.506	175.3	51.9	3.43	0.07493122	0.000269752	1004.911	-5.752	35.56	899.1303	0.047	902.717	894.6696	900.0045	0.056	0.043	0.041	2740.756	2731.201	2742.849	0
05/01/2016 11:00	3193	14.01	13.03	0.605	0.605	289.6	48.08	1.666	10.82837	0.03898212	1005.004	-5.717	35.85	899.1185	0.03	902.0162	894.7107	900.6284	0.037	0.014	0.033	2739.915	2731.193	2743.624	-0.01
05/01/2016 12:00	3194	14.63	13.91	1.423	1.423	186.7	60.33	4.547	34.09162	0.1227298	1004.882	-6.001	36.23	899.0527	0.067	902.1053	894.4984	900.5542	0.075	0.051	0.073	2739.963	2730.896	2743.611	0.01
05/01/2016 13:00	3195	14.67	14.07	0.977	0.977	246.6	48.43	2.744	27.37534	0.09855121	1004.897	-6.983	37.14	899.0527	0.025	902.6467	894.5767	899.9347	0.027	0.022	0.022	2740.676	2730.995	2742.697	0
05/01/2016 14:00	3196	14.03	13.61	1.245	1.245	209.6	73.92	3.724	19.38649	0.06979135	1004.736	-5.922	35.11	899.0974	0.026	902.6823	894.618	899.9916	0.02	0.022	0.033	2740.819	2731.131	2742.674	0
05/01/2016 15:00	3197	13.96	13.82	0.956	0.956	279	49.65	2.352	12.58576	0.04530875	1004.761	-6.219	35.87	899.0694	0.035	902.707	894.5858	899.9155	0.034	0.02	0.045	2740.818	2731.047	2742.675	0
05/01/2016 16:00	3198	13.84	13.65	0.897	0.897	271.2	25.66	2.058	3.016911	0.01086088	1004.938	-6.364	36.8	899.0926	0.022	902.8256	894.5295	899.9227	0.025	0.022	0.017	2740.927	2730.922	2742.675	0
05/01/2016 17:00	3199	13.66	13.49	1.126	1.126	149.6	67.44	5.116	0	0	1005.102	-6.321	34.79	899.1694	0.45	902.4685	894.8013	900.2383	0.427	0.624	0.189	2741.236	2732.112	2743.008	0
05/01/2016 18:00	3200	13.51	13.38	1.505	1.505	191.8	49.13	4.116	0	0	1005.43	-6.467	35.66	899.1216	0.032	902.7531	894.5462	900.0655	0.033	0.032	0.031	2740.922	2731.059	2742.822	0
05/01/2016 19:00	3201	13.4	13.3	1	1	192.9	39.93	4.469	0	0	1005.512	-6.166	34.07	899.1133	0.159	902.5225	894.6961	900.1214	0.166	0.2	0.09	2740.699	2731.128	2742.931	0
05/01/2016 20:00	3202	13.32	13.25	2.408	2.408	152.2	25.87	4.861	0	0	1005.758	-6.681	33.03	899.1093	0.145	902.4609	894.72	900.147	0.137	0.195	0.078	2740.665	2731.313	2742.926	0.01
05/01/2016 21:00	3203	13.27	13.2	2.645	2.645	136.9	34.74	6.056	0	0	1005.758	-6.6	29.53	899.0761	0.184	902.548	894.6423	900.038	0.182	0.235	0.113	2740.931	2731.724	2743.019	0.01
05/01/2016 22:00	3204	13.22	13.17	2.295	2.295	126.4	38.43	5.919	0	0	1006.236	-6.149	24.23	899.0875	0.133	902.4492	894.7487	900.0644	0.137	0.148	0.112	2740.509	2731.468	2742.953	0.01
05/01/2016 23:00	3205	13.19	13.14	1.869	1.869	179	64.73	4.606	0	0	1006.414	-6.305	23.61	899.114	0.23	902.6544	894.5943	900.0932	0.211	0.299	0.156	2741.186	2731.519	2742.959	0.01
06/01/2016 0:00	3206	13.16	13.12	1.387	1.387	160.4	68.91	4.469	0	0	1006.741	-6.627	24.44	899.0913	0.048	902.655	894.6693	899.9496	0.043	0.065	0.029	2740.696	2731.156	2742.751	0
06/01/2016 1:00	3207	13.14	13.1	2.913	2.913	110.6	28.64	5.253	0	0	1007.069	-7.694	27.24	899.1279	0.261	902.444	894.7737	900.1661	0.279	0.279	0.222	2740.79	2731.332	2742.988	0.01
06/01/2016 2:00	3208	13.12	13.08	2.209	2.209	99.8	30.72	4.959	0	0	1007.315	-7.324	26.12	899.1455	0.152	902.5327	894.7941	900.1099	0.15	0.194	0.097	2740.325	2731.146	2742.986	0.01
06/01/2016 3:00	3209	13.11	13.07	7.567	7.567	154.7	12.35	9.49	0	0	1007.069	-8.28	31.1	898.9643	2.341	901.9573	894.3331	900.6022	3.057	1.907	1.86	2736.365	2731.446	2746.563	0.02
06/01/2016 4:00	3210	13.09	13.05	5.129	5.129	157.2	32.25	9.25	0	0	1007.725	-8.19	31.26	898.6686	0.143	903.4173	893.6947	898.8937	0.144	0.156	0.129	2741.646	2729.966	2741.48	0.02
06/01/2016 5:00	3211	13.08	13.04	3.957	3.957	143.7	16.74	6.978	0	0	1007.643	-8.32	31.86	898.7183	0.143	903.2277	893.7603	899.167	0.12	0.165	0.141	2741.267	2730.62	2741.751	0.02
06/01/2016 6:00	3212	13.07	13.03	5.234	5.234	145.3	9.42	8.11	0	0	1007.643	-9.32	35.96	898.1011	0.809	903.6901	893.3182	897.295	0.691	1.018	0.67	2741.885	2730.65	2740.1	0.02
06/01/2016 7:00	3213	13.06	13.02	3.385	3.385	173.4	50.06	9.23	0	0	1008.053	-8.91	33.74	898.1677	0.03	903.7217	897.3273	897.3273	0.038	0.028	0.02	2742.063	2729.654	2739.438	0.01
06/01/2016 8:00	3214	13.05	13.01	1.918	1.918	129.7	30.96	6.154	0	0	1008.057	-8.68	31.19	898.1892	0.089	903.5756	893.6197	897.3723	0.066	0.126	0.061	2741.932	2729.777	2739.488	0.01
06/01/2016 9:00	3215	13.04	13	1.549	1.549	219.3	46.72	3.391	0	0	1008.555	-7.927	27.5	898.2426	0.031	903.6147	893.6005	897.5125	0.042	0.022	0.025	2741.878	2729.872	2739.688	0
06/01/2016 10:00	3216	13.04	13	0.412	0.412	222.6	63.51	1.94	0.1822634	0.000656148	1008.573	-7.649	27.12	898.2314	0.047	903.7828	893.564	897.3477	0.043	0.05	0.048	2742.261	2729.873	2739.56	-0.01
06/01/2016 11:00	3217	14.62	13	0.976	0.976	247.1	53.32	2.117	13.06984	0.04705143	1008.872	-7.525	26.77	898.2387	0.03	902.0705	893.6685	898.9771	0.036	0.022	0.031	2739.927	2729.806	2741.571	0
06/01/2016 12:00	3218	14.67	14.61	0.588	0.588	301.4	74.86	2.058	47.75342	0.1719123	1009.107	-7.424	28.2	898.1467	0.061	902.0121	893.2342	899.1936	0.07	0.052	0.059	2739.988	2729.283	2741.771	0
06/01/2016 13:00	3219	14.66	13.58	2.481	2.481	156.4	55.54	8.08	25.81796	0.09294467	1009.199	-8.48	35.45	898.0651	1.228	902.8738	893.6565	897.665	2.072	0.355	0.32	2741.757	2729.892	2739.844	0.01
06/01/2016 14:00	3220	13.99	13.51	1.561	1.561	198.2	58.26	5.292	18.12369	0.06524529	1009.282	-7.948	32.85	898.2911	0.033	903.5739	893.6213	897.6783	0.031	0.027	0.039	2742.039	2729.839	2739.871	0.01
06/01/2016 15:00	3221	13.92	13.8	0.892	0.892	252.7	41.94	1.627	12.7374	0.04585465	1009.364	-7.579	30.67	898.3205	0.023	903.6147	893.6838	897.6628	0.017	0.026	0.025	2741.949	2729.844	2739.908	0
06/01/2016 16:00	3222	13.82	13.65	0.883	0.883	243.9	36	2.274	3.059189	0.01101308	1009.364	-7.503	30.33	898.3027	0.04	903.6677	893.5552	897.685	0.041	0.041	0.037	2742.004	2729.85	2739.906	0
06/01/2016 17:00	3223	13.67	13.5	0.799	0.799	260.1	33.18	2.215	0	0	1009.364	-7.539	31.82	898.3268	0.031	903.6802	893.6739	897.6264	0.017	0.04	0.031	2741.988	2729.812	2739.917	0
06/01/2016 18:00	3224	13.52	13.4	0.455	0.455	292.6	57.71	1.49	0	0	1009.371	-7.304	32.44	898.3157	0.019	903.6652	893.7139	897.5678	0.018	0.015	0.022	2742.077	2729.94	2739.671	-0.01
06/01/2016 19:00	3225	13.41	13.31	0.388	0.388	287	63.21	1.784	0	0	1009.529	-6.778	33.19	898.3626	0.045	903.5266	893.7308	897.8305	0.04	0.027	0.062	2741.953	2729.933	2739.906	-0.01
06/01/2016 20:00	3226	13.34	13.25	0.363	0.363	313.2	36.35	1.411	0	0	1009.538	-6.509	33.24	898.3521	0.017	903.7383	893.6755	897.6426	0.019	0.014	0.018	2742.078	2729.917	2739.869	-0.01
06/01/2016 21:00	3227	13.27	13.21	0.257	0.257	301.5	62.34	1.019	0	0	1009.542	-6.555	34.66	898.3773	0.031	903.6516	893.7753	897.705	0.034	0.032	0.027	2742.034	2729.927	2739.858	-0.01
06/01/2016 22:00	3228	13.23	13.17	0.751	0.751	250.7	35.95	1.764	0	0	1009.														

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
08/01/2016 20:00	3274	13.3	13.23	4.163	4.163	177.4	22.83	7.468	0	0	1006.656	-2.434	52.99	898.1572	0.058	903.0989	893.3992	897.9732	0.068	0.065	0.037	2741.311	2729.608	2740.257	0.01	
08/01/2016 21:00	3275	13.25	13.2	1.408	1.408	144.7	57.44	4.488	0	0	1006.491	-2.442	51.08	898.1751	0.436	903.1102	893.4554	897.9597	0.409	0.608	0.18	2741.022	2728.909	2740.54	0	
08/01/2016 22:00	3276	13.22	13.17	2.981	2.981	152.4	17.14	5.939	0	0	1006.417	-3.359	54.69	898.0649	0.555	902.811	893.4111	897.9726	0.537	0.74	0.299	2741.26	2729.935	2740.293	0.01	
08/01/2016 23:00	3277	13.19	13.15	2.571	2.571	210.2	63.73	6.076	0	0	1006.423	-4.078	57.98	898.1227	0.009	903.2134	893.4153	897.7396	0.011	0.007	0.01	2741.447	2729.585	2739.942	0	
09/01/2016 0:00	3278	13.17	13.13	1.114	1.114	93.4	59.24	5.076	0	0	1006.056	-4.206	58.24	898.1658	0.409	903.0349	893.4611	898.0015	0.403	0.524	0.255	2741.136	2729.216	2740.456	-0.01	
09/01/2016 1:00	3279	13.15	13.11	1.56	1.56	226.3	46.94	5.704	0	0	1006.287	-3.852	56.33	898.1612	0.007	903.2406	893.3959	897.8472	0.01	0.002	0.007	2741.474	2729.573	2740.089	0	
09/01/2016 2:00	3280	13.13	13.1	1.221	1.221	173.4	66.66	2.509	0	0	1006.177	-3.38	52.99	898.1494	0.022	903.2251	893.3906	897.8326	0.024	0.016	0.016	2741.462	2729.597	2740.084	0	
09/01/2016 3:00	3281	13.12	13.08	1.222	1.222	193.3	52.05	3.332	0	0	1006.086	-3.3	52.89	898.1497	0.019	903.2162	893.3842	897.8486	0.02	0.021	0.014	2741.451	2729.521	2740.11	0	
09/01/2016 4:00	3282	13.11	13.07	0.448	0.448	249.8	73.71	1.254	0	0	1006.001	-3.403	53.54	898.1288	0.013	903.1943	893.3884	897.8038	0.019	0.008	0.007	2741.37	2729.542	2740.048	-0.01	
09/01/2016 5:00	3283	13.1	13.06	0.957	0.957	134.2	28.96	2.568	0	0	1005.771	-3.364	56.78	898.147	0.015	903.1184	893.4194	897.9033	0.014	0.018	0.012	2741.333	2729.591	2740.153	-0.01	
09/01/2016 6:00	3284	13.08	13.05	0.973	0.973	47.66	95.3	2.822	0	0	1005.671	-3.208	63.27	898.1577	0.025	903.0854	893.4648	897.9231	0.031	0.026	0.014	2741.218	2729.725	2740.211	-0.01	
09/01/2016 7:00	3285	13.08	13.05	1.506	1.506	244.8	49.89	5.272	0	0	1005.347	-2.615	70.56	898.1291	0.02	903.1637	893.4105	897.813	0.023	0.014	0.014	2741.358	2729.554	2740.099	-0.01	
09/01/2016 8:00	3286	13.07	13.04	3.063	3.063	255.2	57.06	9.09	0	0	1005.178	-2.368	71.32	897.8563	1.055	903.3492	892.4976	897.7221	1.118	0.792	1.21	2741.726	2728.819	2739.294	0	
09/01/2016 9:00	3287	13.07	13.03	7.295	7.295	213.5	8.57	11.09	0	0	1005.096	-1.902	72.25	898.4873	1.723	902.4791	893.2473	899.7355	1.848	1.616	1.697	2738.91	2729.212	2742.926	0.01	
09/01/2016 10:00	3288	13.07	13.03	7.501	7.501	210.7	9.32	11.58	0.4197488	0.001511096	1005.259	-2.031	73.34	898.386	2.023	902.3748	892.9137	899.8696	2.175	1.617	2.222	2740.848	2729.497	2741.097	0.01	
09/01/2016 11:00	3289	13.11	13.03	6.515	6.515	193.2	11.99	9.41	8.888496	0.03199859	1005.26	-2.747	76.36	898.1521	0.805	902.8757	892.9634	898.6172	0.79	1.052	0.462	2740.984	2732.635	2742.041	0.01	
09/01/2016 12:00	3290	13.16	13.08	6.599	6.599	187.6	9.8	11.47	15.52858	0.05590291	1004.686	-3.13	78.11	898.791	2.43	902.3188	893.9757	900.0783	2.548	2.632	2.073	2739.145	2729.374	2742.729	0.01	
09/01/2016 13:00	3291	13.34	13.14	6.433	6.433	197.8	15.84	11.31	35.09116	0.1263282	1004.932	-3.253	79.05	898.4124	0.31	903.0484	893.2371	898.952	0.324	0.366	0.266	2741.399	2729.747	2742.62	0.01	
09/01/2016 14:00	3292	13.4	13.22	4.721	4.721	209.2	21.28	9.19	31.72379	0.1142056	1004.604	-3.199	78.1	898.2505	0.482	903.0905	892.9693	898.6917	0.478	0.524	0.441	2741.777	2728.611	2742.092	0.01	
09/01/2016 15:00	3293	13.42	13.37	9.8	9.8	215.3	10.71	14.68	22.96182	0.08266255	1004.359	-2.791	72.88	898.6166	4.633	899.955	893.886	902.0087	5.843	3.436	4.294	2736.124	2730.168	2748.243	0.01	
09/01/2016 16:00	3294	13.39	13.29	13.28	13.28	216.6	6.932	17.82	7.909423	0.02847392	1003.949	-3.229	72.31	896.1349	6.37	897.9279	905.0384	909.0384	7.502	5.452	5.978	2739.238	2729.401	2758.55	0.01	
09/01/2016 17:00	3295	13.31	13.21	12.41	12.41	220.9	7.646	18.56	0.1118299	0.000402588	1004.441	-3.82	74.18	899.2618	3.331	901.5669	894.397	901.8216	3.948	3.19	2.744	2745.088	2732.831	2744.039	0.01	
09/01/2016 18:00	3296	13.23	13.16	11.18	11.18	235	10.81	18.11	0	0	1004.615	-3.712	67.82	898.9792	3.829	901.6445	894.7606	900.5327	3.229	4.973	3.229	2742.149	2729.737	2745.727	0.01	
09/01/2016 19:00	3297	13.17	13.11	9.97	9.97	230.4	10.34	15.76	0	0	1005.26	-4.284	69.7	898.1089	1.5	903.3998	892.4855	898.4416	1.42	1.577	1.5	2740.916	2728.252	2739.786	0.01	
09/01/2016 20:00	3298	13.13	13.09	9.92	9.92	235.8	13.27	15.39	0	0	1005.545	-4.565	67.33	899.1733	1.749	902.4639	893.9959	901.0602	1.793	1.957	1.459	2740.667	2730.973	2742.631	0.01	
09/01/2016 21:00	3299	13.11	13.06	8.29	8.29	243.6	10.86	13.09	0	0	1005.602	-5.918	71.81	898.4964	2.475	902.0595	892.811	909.6187	2.447	2.939	1.937	2739.766	2726.688	2742.709	0.01	
09/01/2016 22:00	3300	13.08	13.04	11.52	11.52	237.4	5.773	15.37	0	0	1006.009	-5.549	68.94	899.6269	4.023	901.5662	894.8221	902.4925	4.644	3.926	3.403	2735.065	2732.529	2746.039	0.01	
09/01/2016 23:00	3301	13.07	13.03	13.05	13.05	234.2	5.49	17.88	0	0	1006.467	-5.092	66.1	898.8389	2.89	902.1545	893.3599	901.0022	3.06	3.304	2.186	2743.65	2731.514	2745.651	0.01	
10/01/2016 0:00	3302	13.05	13.01	10.31	10.31	230	8.98	15.35	0	0	1006.489	-5.617	69.24	899.9767	4.027	901.4739	895.4297	903.0267	4.274	3.835	3.958	2737.163	2727.34	2741.41	0.01	
10/01/2016 1:00	3303	13.04	13	12.03	12.03	229	7.919	19.82	0	0	1007.941	-5.296	66.27	898.657	1.106	903.3268	892.8976	899.7467	1.061	1.328	0.885	2741.271	2728.209	2740.954	0.01	
10/01/2016 2:00	3304	13.03	13	7.054	7.054	238.9	9.16	11.23	0	0	1008.076	-6.046	69.19	897.681	0.549	903.7509	892.6968	896.5952	0.603	0.586	0.445	2743.136	2727.862	2738.632	0.01	
10/01/2016 3:00	3305	13.03	12.99	7.209	7.209	241.7	7.624	11.02	0	0	1008.159	-6.181	67.57	898.8726	1.988	903.6002	893.3924	899.6253	2.004	1.867	2.087	2740.877	2729.519	2742.436	0.01	
10/01/2016 4:00	3306	13.02	12.98	4.597	4.597	225.5	42.23	10.19	0	0	1008.651	-6.467	68.54	898.1193	0.047	903.5198	893.1136	897.7245	0.042	0.059	0.039	2741.832	2729.175	2740.011	0.01	
10/01/2016 5:00	3307	13.01	12.98	4.81	4.81	237.5	9.44	8.21	0	0	1008.823	-6.992	71.17	898.0085	0.643	903.8134	892.7381	897.4738	0.754	0.686	0.449	2742.82	2726.114	2740.073	0.01	
10/01/2016 6:00	3308	13.01	12.97	7.304	7.304	240.5	4.584	8.92	0	0	1008.979	-7.092	76.1	898.0515	0.883	903.9581	892.7153	897.4808	0.972	0.919	0.742	2742.649	2728.447	2741.199	0.01	
10/01/2016 7:00	3309	13	12.97	6.08	6.08	235.1	8.04	8.08	0	0	1008.99	-7.599	76.65	898.1364	0.353	903.7504	892.9941	897.6649	0.424	0.308	0.315	2743.023	2729.165	2740.011	0	
10/01/2016 8:00	3310	13	12.96	3.902	3.902	236	12.42	6.096	0	0	1009.521	-7.785	74.83	898.2418	0.03	903.7456	893.1946	897.7851	0.031	0.034	0.024	2742.111	2729.327	2740.023	0	
10/01/2016 9:00	3311	12.99	12.95	3.529	3.529	231.8	7.504	5.606	0	0	1009.364	-7.722	74.88	898.2659	0.189	903.7795	893.1689	897.8495	0.229	0.17	0.159	2742.073	2729.122	2740.302	0	
10/01/2016 10:00	3312	12.98	12.94	3.797	3.797	238.3	8.91	5.174	0.2349598	0.000845855	1009.803	-7.221	76.12	898.2275	0.168	903.7181	893.1437	897.8209	0.19	0.171	0.14	2741.541	2729.003	2740.051	0	
10/01/2016 11:00	3313	13.07	12.94	3.853	3.853	244	6.352	5.351	11.13396	0.04008225	1009.963	-7.321	77.76	898.2346	0.19	903.702	893.1686	897.8329	0.221	0.15	0.191	2742.109	2729.345	2740.03	0	
10/0																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	mm	mm	mm	Hz	Hz	Hz	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
12/01/2016 10:00	3360	13.01	12.95	15.18	15.18	223.3	7.771	21.74	2.006063	0.007221826	994.775	-2.903	69.87	901.0911	6.358	900.6832	896.7974	905.7926	5.597	6.247	7.136	2744.055	2735.363	2746.174	0.02
12/01/2016 11:00	3361	13.33	12.98	11.48	11.48	222.7	9.5	17.66	43.35541	0.1560795	995.1846	-3.254	70.88	899.7468	1.836	903.5595	894.5595	901.1213	1.659	1.571	2.211	2741.52	2728.71	2740.568	0.01
12/01/2016 12:00	3362	14.61	13.33	8.64	8.64	222.4	8.71	13.33	47.02313	0.1692833	995.1865	-3.537	69.96	899.2166	2.137	902.4615	893.7863	901.4018	2.285	2.238	1.862	2738.35	2726.493	2745.918	0.01
12/01/2016 13:00	3363	14.62	14.08	7.092	7.092	224.9	11.73	11.78	35.44223	0.127592	995.3499	-3.821	69.29	898.748	0.706	904.3444	893.5802	898.3196	0.674	0.712	0.732	2743.875	2730.526	2740.302	0.01
12/01/2016 14:00	3364	14.49	13.96	7.696	7.696	216.8	10.88	11.56	24.44308	0.0879951	995.2665	-4.349	71.24	899.3152	1.227	903.7881	893.8681	900.2892	1.132	1.443	1.075	2743.593	2731.865	2742.496	0.01
12/01/2016 15:00	3365	14.01	13.86	8.91	8.91	213.6	6.281	11.49	17.23564	0.06204829	994.9841	-4.823	73.72	899.9359	1.656	903.1381	894.6467	902.0228	1.868	1.643	1.427	2743.4	2733.127	2744.028	0.01
12/01/2016 16:00	3366	13.89	13.66	7.654	7.654	201.5	6.939	10.29	4.679893	0.01684761	994.9172	-5.453	75.68	899.5964	0.383	904.0829	894.1469	900.5594	0.379	0.406	0.363	2742.43	2730.779	2743.232	0.01
12/01/2016 17:00	3367	13.69	13.49	2.765	2.765	182.4	34.88	6.174	0	0	994.7206	-5.327	72.11	899.6949	0.113	903.8567	894.467	900.7609	0.111	0.149	0.059	2742.334	2730.905	2743.67	0
12/01/2016 18:00	3368	13.51	13.38	5.688	5.688	154.1	5.672	8.33	0	0	994.5573	-5.573	73.6	898.9025	1.034	904.2498	893.8284	898.6293	1.088	1.051	0.959	2742.143	2730.385	2742.217	0.01
12/01/2016 19:00	3369	13.39	13.29	5.999	5.999	149.9	7.864	8.35	0	0	994.3934	-5.801	75	898.8408	0.633	904.2178	893.8181	898.4866	0.712	0.733	0.398	2743.018	2730.702	2741.715	0.01
12/01/2016 20:00	3370	13.31	13.23	3.02	3.02	144.3	32.12	7.272	0	0	994.3115	-5.887	76.12	898.9507	0.035	904.6122	893.7659	898.4739	0.041	0.04	0.018	2743.15	2730.03	2740.85	0
12/01/2016 21:00	3371	13.26	13.19	0.684	0.684	133.4	67.23	2.568	0	0	994.0913	-6.025	76.92	898.9785	0.021	904.6683	893.8003	898.4667	0.027	0.021	0.014	2743.196	2730.058	2740.908	-0.01
12/01/2016 22:00	3372	13.21	13.16	2.188	2.188	149.9	14.14	3.842	0	0	993.9563	-6.792	78.49	899.0342	0.145	904.6118	893.8551	898.6359	0.155	0.181	0.078	2743.479	2730.111	2741.036	0
12/01/2016 23:00	3373	13.17	13.12	2.101	2.101	218.9	13.86	3.626	0	0	994.1206	-7.093	78.85	899.0639	0.019	904.7439	893.8051	898.6427	0.025	0.019	0.012	2743.291	2730.027	2741.074	0
13/01/2016 0:00	3374	13.14	13.1	0.892	0.892	132.1	26.33	2.646	0	0	993.9545	-6.179	77.61	899.0839	0.031	904.5901	893.9539	898.7077	0.027	0.022	0.022	2743.172	2730.293	2741.106	-0.01
13/01/2016 1:00	3375	13.12	13.07	3.047	3.047	139.6	9.93	4.92	0	0	993.5909	-6.627	78.05	899.117	0.307	904.5538	893.985	898.8123	0.341	0.376	0.157	2742.91	2729.964	2741.362	0
13/01/2016 2:00	3376	13.1	13.06	3.928	3.928	143.5	6.413	5.057	0	0	993.738	-6.052	76.11	899.1013	0.083	904.5245	894.0045	898.7747	0.088	0.102	0.05	2742.85	2730.217	2741.248	0
13/01/2016 3:00	3377	13.08	13.04	3.251	3.251	133.1	6.988	4.841	0	0	993.9019	-5.875	74.89	899.0685	0.23	904.457	893.9697	898.7789	0.23	0.307	0.109	2743.098	2730.54	2741.08	0
13/01/2016 4:00	3378	13.07	13.03	3.244	3.244	134.9	10.87	4.332	0	0	993.9016	-6.114	75.21	899.0576	0.046	904.5942	893.9141	898.6646	0.053	0.054	0.025	2743.17	2730.204	2741.095	0
13/01/2016 5:00	3379	13.06	13.02	0.769	0.769	147.7	34.37	2.568	0	0	993.9838	-5.704	74.38	899.0762	0.014	904.6423	893.9012	898.6851	0.018	0.012	0.009	2743.203	2730.179	2741.128	-0.01
13/01/2016 6:00	3380	13.04	13.01	2.307	2.307	134.2	8.97	3.312	0	0	993.9019	-5.933	76.07	899.0794	0.137	904.5076	893.935	898.7958	0.142	0.17	0.083	2742.951	2730.184	2741.165	0
13/01/2016 7:00	3381	13.03	12.99	1.448	1.448	153.6	22.42	2.724	0	0	994.2296	-5.839	76.71	899.0717	0.055	904.5666	893.9361	898.7124	0.058	0.063	0.04	2743.044	2730.184	2741.135	-0.01
13/01/2016 8:00	3382	13.02	12.98	1.632	1.632	139.2	9.09	2.195	0	0	994.4008	-6.464	79.41	899.0606	0.021	904.6077	893.9487	898.6255	0.026	0.021	0.016	2743.187	2730.236	2741.067	-0.01
13/01/2016 9:00	3383	13.01	12.97	2.045	2.045	136.2	7.256	4.312	0	0	994.9181	-6.616	80.1	899.1281	0.161	904.5571	894.0148	898.8123	0.144	0.219	0.093	2743.331	2730.515	2741.065	0
13/01/2016 10:00	3384	13	12.97	3.817	3.817	146.4	12.52	5.214	0.7566424	0.002723913	995.1396	-6.957	80.7	899.187	0.208	904.6377	894.0099	898.9134	0.191	0.279	0.124	2742.788	2729.857	2741.553	0
13/01/2016 11:00	3385	13.12	12.97	2.871	2.871	137.8	14.04	4.449	15.36076	0.05529873	995.7046	-6.495	81.9	899.1368	0.355	904.5248	894.0268	898.8587	0.326	0.479	0.207	2743.316	2730.525	2741.905	0
13/01/2016 12:00	3386	13.35	13.11	3.118	3.118	140.5	12.47	4.214	38.46037	0.1384573	996.0266	-6.472	84.1	899.1272	0.098	904.6281	893.9637	898.7897	0.099	0.118	0.072	2743.26	2730.325	2741.269	0
13/01/2016 13:00	3387	13.44	13.28	2.261	2.261	130.1	8.89	3.606	33.62193	0.1210389	996.3381	-6.967	89.5	898.4406	4.658	902.5965	893.4406	898.2014	7.404	2.196	2.337	2743.066	2730.335	2741.369	0
13/01/2016 14:00	3388	13.4	12.81	2.75	2.75	146.3	42.11	5.625	36.47701	0.1313172	996.3374	-6.777	89.6	899.2805	0.015	904.7812	894.1063	898.954	0.019	0.013	0.011	2743.34	2730.452	2741.464	0
13/01/2016 15:00	3389	13.48	13.38	0.711	0.711	240.1	70.34	1.823	34.78839	0.1252382	996.8097	-6.054	87.7	899.2856	0.032	904.7817	894.129	898.946	0.036	0.034	0.026	2743.364	2730.503	2741.458	-0.01
13/01/2016 16:00	3390	13.48	13.38	0.405	0.405	237	24.44	1.764	15.30986	0.05511548	997.2216	-6.254	90.1	899.3057	0.006	904.851	894.1481	898.9183	0.009	0.003	0.002	2743.475	2730.502	2741.42	-0.01
13/01/2016 17:00	3391	13.4	13.28	0.784	0.784	257.4	13.18	1.333	0.6933775	0.002496159	997.8267	-6.6	91.1	899.4017	0.008	905.0106	894.2187	898.976	0.012	0.003	0.004	2743.664	2730.597	2741.496	-0.01
13/01/2016 18:00	3392	13.3	13.21	0.512	0.512	201.5	64.21	1.274	0	0	998.1626	-6.661	90.6	899.4961	0.008	905.1123	894.2967	899.0793	0.011	0.007	0.006	2743.793	2730.677	2741.625	-0.01
13/01/2016 19:00	3393	13.23	13.16	0.418	0.418	263.9	17.08	1.215	0	0	998.8181	-6.593	91.1	899.5241	0.013	905.1203	894.3412	899.1108	0.021	0.008	0.006	2743.781	2730.753	2741.666	-0.01
13/01/2016 20:00	3394	13.17	13.11	0.845	0.845	221.9	35.39	4.704	0	0	999.1385	-6.447	90.2	899.5747	0.243	905.1313	894.3943	899.1984	0.267	0.297	0.133	2743.156	2730.575	2742.052	-0.01
13/01/2016 21:00	3395	13.13	13.07	3.106	3.106	168.6	54.52	8.51	0	0	999.3005	-6.611	88.7	899.612	0.925	904.4144	893.4568	894.3144	0.911	1.177	0.594	2743.425	2731.315	2741.454	0
13/01/2016 22:00	3396	13.09	13.04	7.298	7.298	162.8	5.403	8.6	0	0	1000.047	-6.756	81.5	899.4572	0.697	904.7468	894.285	899.3398	0.613	0.989	0.321	2744.45	2731.748	2741.986	0
13/01/2016 23:00	3397	13.07	13.02	6.575	6.575	154.3	7.989	9.33	0	0	1000.129	-7.877	89.5	899.4988	1.133	904.6528	894.329	899.5145	1.181	1.398	0.708	2741.941	2731.873	2742.154	0
14/01/2016 0:00	3398	13.04	13	8.73	8.73	161	3.953	11.7	0	0	1000.621	-7.177	84.7	899.9238	1.557	903.9429	894.912	900.912	1.611	1.755	1.265	2742.442	2731.151	2743.299	0
14/01/2016 1:00	3399	13.02	12.98	8.34	8.34	163.4	6.123	11.05	0	0	1001.112	-7.308	82.6	899.9561	1.14	904.1276	894.9531	900.7875	1.204	1.166	1.045	27			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
16/01/2016 0:00	3446	13.21	13.15	3.311	3.311	158.9	46.6	9.78	0	0	1003.343	-11.31	83.4	900.8992	0.463	905.4044	896.1053	901.188	0.466	0.607	0.24	2744.286	2732.759	2744.217	0	
16/01/2016 1:00	3447	13.17	13.12	4.237	4.237	128	50.09	8.98	0	0	1003.533	-12.47	86.2	900.9039	0.433	905.4523	896.1352	901.1242	0.399	0.585	0.248	2743.95	2732.372	2744.071	0	
16/01/2016 2:00	3448	13.14	13.08	2.97	2.97	89.2	22.5	5.88	0	0	1003.274	-11.94	86.8	900.9388	0.184	905.5274	896.1968	901.0923	0.21	0.115	0.115	2743.933	2732.745	2743.863	0	
16/01/2016 3:00	3449	13.1	13.06	3.144	3.144	95.2	17.31	5.625	0	0	1002.681	-11.66	86.9	900.9637	0.139	905.5773	896.246	901.0679	0.168	0.142	0.099	2744.314	2733.329	2744.046	0	
16/01/2016 4:00	3450	13.08	13.03	5.006	5.006	123.7	20.24	7.86	0	0	1002.542	-12.58	87	900.8812	0.575	905.3792	896.0787	901.1857	0.495	0.79	0.35	2743.294	2731.594	2744.532	0	
16/01/2016 5:00	3451	13.06	13.02	7.633	7.633	133.9	6.351	10.45	0	0	1001.894	-12.42	86.7	900.2305	1.039	905.9069	895.272	899.5126	1.004	1.311	0.714	2745.214	2733.511	2741.4	0	
16/01/2016 6:00	3452	13.04	13	5.707	5.707	136.9	9.28	8.19	0	0	1001.555	-12.58	86.5	900.3096	0.538	906.0902	895.4089	899.4297	0.582	0.655	0.318	2744.181	2731.417	2741.778	0	
16/01/2016 7:00	3453	13.03	12.98	7.088	7.088	128.1	6.204	8.84	0	0	1000.979	-12.27	86.7	900.4626	0.911	906.0245	895.6691	899.6942	0.873	1.22	0.49	2745.667	2733.04	2743.267	0	
16/01/2016 8:00	3454	13.01	12.97	7.522	7.522	126.4	7.023	9.92	0	0	1000.558	-12.17	86.8	900.614	0.681	905.7747	895.7719	900.2955	0.73	0.801	0.464	2743.997	2730.626	2742.636	0	
16/01/2016 9:00	3455	13	12.96	6.541	6.541	130.5	8.66	9.53	0	0	1000.246	-12.47	86.5	900.3101	1.203	905.6039	895.4834	899.8431	1.285	1.504	0.652	2746.128	2732.365	2742.396	0	
16/01/2016 10:00	3456	12.98	12.95	8.42	8.42	116.3	8.53	12.35	1.664344	0.005991637	1000.073	-12.23	86.6	895.9846	0.928	905.9846	895.8695	900.2373	1.057	0.618	0.618	2745.367	2733.441	2743.722	0	
16/01/2016 11:00	3457	13.06	12.95	8.48	8.48	129.5	9.25	11.92	19.23174	0.06923425	999.8441	-12.93	85.2	900.6619	0.874	905.762	895.8212	900.4023	0.889	1.062	0.61	2744.589	2733.741	2743.298	0	
16/01/2016 12:00	3458	13.21	13.03	7.753	7.753	131.9	6.555	10.43	46.51596	0.1674574	999.2914	-13.23	84.5	900.6284	0.938	905.6495	895.9003	900.3356	1.052	1.055	0.65	2744.904	2733.851	2743.167	0	
16/01/2016 13:00	3459	13.35	13.19	7.9	7.9	133.3	7.03	10.58	52.80799	0.1901087	999.1488	-13.78	84.1	900.6934	0.714	905.8102	895.89	900.38	0.703	0.955	0.351	2745.746	2733.981	2742.599	0	
16/01/2016 14:00	3460	13.36	12.96	7.032	7.032	136.9	8.92	9.9	44.83326	0.1613997	999.1479	-13.37	81.3	900.721	0.782	905.8619	895.9201	900.3811	0.682	1.064	0.487	2744.149	2731.067	2743.357	0	
16/01/2016 15:00	3461	13.37	13.31	4.993	4.993	144.1	19.43	9.72	29.03653	0.1045315	999.4775	-14.39	81.6	901.1047	0.149	905.6401	896.6226	901.0515	0.147	0.113	0.113	2744.279	2733.508	2744.084	0	
16/01/2016 16:00	3462	13.36	13.25	5.277	5.277	123.7	16.01	9.45	11.19673	0.04030823	999.4747	-15.28	82.4	901.137	0.784	905.3778	896.83	901.2035	0.807	0.929	0.573	2745.073	2734.946	2744.623	0	
16/01/2016 17:00	3463	13.27	13.17	6.889	6.889	131.4	8.87	9.98	0.2697739	0.000971186	999.1495	-15.9	83	900.6487	1.092	906.1732	895.9307	899.6942	1.191	1.323	0.64	2746.138	2734.394	2742.843	0	
16/01/2016 18:00	3464	13.2	13.12	5.617	5.617	141.6	8.19	9.68	0.4187701	0.001507572	999.8062	-15.87	83.2	900.5974	0.523	906.3053	895.8697	899.6171	0.495	0.673	0.352	2745.605	2732.786	2743.478	0	
16/01/2016 19:00	3465	13.14	13.07	6.002	6.002	144.7	10.93	10.19	0.06605377	0.000237794	999.9695	-15.09	80.4	900.6096	0.984	906.4767	895.9562	899.3957	1.013	1.228	0.61	2745.359	2731.95	2741.705	0	
16/01/2016 20:00	3466	13.09	13.02	8.8	8.8	143.9	13.72	11.7	0.09408572	0.000338709	999.3956	-15.2	80.3	901.4163	1.763	905.3575	896.78	902.1115	1.926	1.899	1.419	2740.611	2732.153	2743.66	0	
16/01/2016 21:00	3467	13.05	12.99	8.71	8.71	143.2	7.279	11.64	0.1683081	0.000605909	999.4968	-17.04	81.9	901.8751	1.792	905.5215	897.2149	902.8887	2.017	1.827	1.493	2745.678	2734.121	2744.041	0	
16/01/2016 22:00	3468	13.01	12.95	4.621	4.621	152.8	49.83	12.03	0.3866426	0.001391913	999.6426	-15.33	83.5	901.325	0.383	906.4639	896.2806	901.2307	0.34	0.501	0.27	2745.564	2733.066	2744.159	0	
16/01/2016 23:00	3469	12.98	12.93	1.135	1.135	296.5	60.49	3.489	0.01172886	4.22E-05	1000.046	-14.32	81.4	901.2588	0.009	906.5538	896.1697	901.0529	0.007	0.007	0.011	2745.582	2733.008	2744.045	-0.01	
17/01/2016 0:00	3470	12.96	12.92	0.506	0.506	266.6	57.09	1.921	0.1820388	0.00065534	1000.133	-14.59	81.5	901.2408	0.008	906.5681	896.1537	901.0005	0.013	0.002	0.005	2745.594	2732.993	2743.987	-0.01	
17/01/2016 1:00	3471	12.95	12.9	0.596	0.596	295.9	65.48	2.705	0.1124351	0.000404766	1000.293	-13.93	81	901.2451	0.025	906.5364	896.1578	901.0414	0.025	0.02	0.03	2745.556	2732.978	2743.993	-0.01	
17/01/2016 2:00	3472	12.93	12.9	1.152	1.152	303.5	30.95	1.98	0	0	1000.379	-15	82.7	901.2162	0.049	906.6788	896.1187	900.8513	0.053	0.058	0.034	2745.741	2732.776	2743.843	-0.01	
17/01/2016 3:00	3473	12.93	12.88	0.815	0.815	277.7	34.76	2.685	0	0	1000.625	-15.02	83.6	901.2483	0.013	906.7124	896.127	900.9055	0.015	0.007	0.015	2745.773	2732.951	2743.851	-0.01	
17/01/2016 4:00	3474	12.92	12.87	1.094	1.094	287.9	60.16	2.979	0	0	1000.729	-15.23	83.7	901.2747	0.059	906.7498	896.1273	900.9468	0.072	0.053	0.05	2745.756	2732.945	2743.981	-0.01	
17/01/2016 5:00	3475	12.91	12.87	0.805	0.805	317.7	53.38	2.332	0	0	1000.507	-15.07	83	901.298	0.02	906.7514	896.1451	900.9976	0.028	0.007	0.019	2745.832	2732.964	2743.974	-0.01	
17/01/2016 6:00	3476	12.9	12.86	0.315	0.315	317.6	34.64	1.313	0	0	1000.073	-14.43	83.9	901.3049	0.021	906.6947	896.2344	900.9857	0.025	0.018	0.02	2745.724	2733.138	2743.971	-0.01	
17/01/2016 7:00	3477	12.9	12.86	0.986	0.986	318.3	88.7	2.313	0	0	1000.012	-14.67	84.6	901.3062	0.025	906.6686	896.2476	901.0022	0.028	0.026	0.019	2745.707	2733.094	2743.984	-0.01	
17/01/2016 8:00	3478	12.89	12.85	0.282	0.282	235.5	62.99	1.294	0	0	999.8557	-14.49	85	901.3375	0.03	906.8505	896.2039	900.9579	0.038	0.019	0.03	2745.911	2733.072	2743.993	-0.01	
17/01/2016 9:00	3479	12.89	12.85	0.461	0.461	267.2	53.22	1.45	0	0	999.5129	-14.16	85.6	901.3416	0.025	906.8265	896.1848	901.0132	0.036	0.008	0.008	2745.827	2733.094	2744.017	-0.01	
17/01/2016 10:00	3480	12.94	12.85	0.485	0.485	283.8	56.2	1.588	1.192329	0.004292384	999.037	-14.17	85.5	901.3384	0.036	906.8423	896.217	900.9558	0.037	0.03	0.039	2745.877	2733.068	2744.073	-0.01	
17/01/2016 11:00	3481	14.66	12.9	1.01	1.01	252.9	59.71	1.882	80.71881	0.2905877	998.9056	-14.88	85.3	901.2772	0.045	904.957	896.1622	902.7122	0.067	0.028	0.028	2743.483	2733.082	2746.148	0	
17/01/2016 12:00	3482	14.66	14.64	0.932	0.932	209.1	71.01	2.626	172.3122	0.6203241	998.3293	-15.32	84.3	901.2028	0.049	905.228	895.6174	902.7628	0.058	0.026	0.055	2744.044	2732.271	2746.078	0.02	
17/01/2016 13:00	3483	14.66	14.58	0.661	0.661	251.5	65.84	1.862	192.6237	0.6934453	997.8379	-14.82	84.4	901.1342	0.072	905.4803	895.3913	902.5309	0.089	0.042	0.076	2744.438	2732.03	2745.688	0.02	
17/01/2016 14:00	3484	14.66	14.5	0.763	0.763	235.5	78.55	2.097	191.858	0.690689	997.6737	-14.57	83.7	901.0591	0.062	906.0247	894.7019	902.4507	0.049	0.094	0.012	2745.02	2731.034	2745.793	0.02	
17/01/2016 15:00	3485	14.66	14.37	1.18	1.18	152	85.7	3.959	141.5119	0.5094427	997.5044	-15.75	83.9	901.0981	0.159	906.865	895.4337									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
19/01/2016 14:00	3532	14.57	14.45	0.667	0.667	169.5	55.84	3.273	98.71138	0.355361	1000.798	-8.39	74.78	900.8699	0.023	906.2506	895.6241	900.7349	0.029	0.011	0.025	2745.146	2732.323	2743.754	0	
19/01/2016 15:00	3533	14.57	14.35	0.916	0.916	211.9	61.31	4.43	73.49487	0.2645815	1000.835	-8.95	79.62	900.8682	0.009	906.3781	895.634	900.5923	0.012	0.006	0.009	2745.36	2732.356	2743.506	0	
19/01/2016 16:00	3534	14.37	14.18	0.772	0.772	38.52	86.7	4.096	43.08458	0.1551045	1000.805	-8.55	83	900.8494	0.114	906.4913	895.5249	900.5321	0.116	0.135	0.084	2745.351	2732.036	2743.525	0	
19/01/2016 17:00	3535	14.19	13.89	0.929	0.929	238.1	48.33	3.43	4.714245	0.01697128	1001.087	-9.1	86.8	900.872	0.016	906.5292	895.6255	900.4611	0.021	0.015	0.008	2745.526	2732.313	2743.363	-0.01	
19/01/2016 18:00	3536	13.9	13.71	0.757	0.757	302.5	68.24	1.666	0	0	1001.333	-9.73	88.4	900.8676	0.024	906.5598	895.685	900.358	0.017	0.023	0.031	2745.602	2732.393	2743.148	-0.01	
19/01/2016 19:00	3537	13.72	13.57	1.555	1.555	172.8	75.8	5.468	0	0	1001.496	-9.4	87.1	900.9206	0.024	906.5397	895.739	900.4832	0.024	0.026	0.022	2745.651	2732.479	2743.327	-0.01	
19/01/2016 20:00	3538	13.59	13.47	0.726	0.726	77.43	82.7	2.352	0	0	1001.824	-9.59	87.9	900.8845	0.024	906.6255	895.6376	900.3904	0.024	0.022	0.026	2745.714	2732.312	2743.222	-0.01	
19/01/2016 21:00	3539	13.49	13.38	0.879	0.879	300.2	69.62	2.411	0.000764734	2.75E-06	1001.824	-9.58	89.4	900.8791	0.033	906.6296	895.6368	900.3707	0.036	0.036	0.026	2745.68	2732.359	2743.217	-0.01	
19/01/2016 22:00	3540	13.4	13.31	1.385	1.385	287.9	74.45	4.841	0	0	1002.152	-9.04	87.4	900.9075	0.142	906.4427	895.6608	900.619	0.134	0.193	0.072	2745.657	2732.813	2743.632	-0.01	
19/01/2016 23:00	3541	13.33	13.25	1.06	1.06	236.9	49.63	4.057	0.02447109	8.81E-05	1002.478	-8.39	85.8	900.9025	0.021	906.5186	895.6565	900.5324	0.021	0.017	0.025	2745.554	2732.362	2743.372	-0.01	
20/01/2016 0:00	3542	13.27	13.21	1.64	1.64	199.6	20.29	5.174	0.00815634	2.94E-05	1002.712	-7.864	86.2	900.9399	0.324	906.4466	895.6406	900.7327	0.31	0.382	0.271	2745.866	2732.625	2743.982	-0.01	
20/01/2016 1:00	3543	13.23	13.17	3.317	3.317	206.4	47.38	5.527	0	0	1003.079	-7.504	84.3	900.8384	0.011	906.4891	895.6118	900.4143	0.014	0.01	0.009	2745.516	2732.323	2743.271	0	
20/01/2016 2:00	3544	13.19	13.14	1.061	1.061	213.5	58.83	4.724	0.001274177	4.59E-06	1003.298	-8.16	87.3	900.8484	0.073	906.5088	895.5427	900.4936	0.066	0.098	0.044	2745.532	2732.367	2743.304	-0.01	
20/01/2016 3:00	3545	13.16	13.11	0.986	0.986	325.9	83.8	2.724	0	0	1003.627	-8.98	90.1	900.8359	0.03	906.6451	895.5715	900.2911	0.024	0.032	0.032	2745.646	2732.222	2743.111	-0.01	
20/01/2016 4:00	3546	13.14	13.09	0.692	0.692	244.5	64.02	2.215	0	0	1003.627	-8.87	90.3	900.8613	0.042	906.7184	895.5487	900.317	0.055	0.034	0.033	2745.792	2732.274	2743.2	-0.01	
20/01/2016 5:00	3547	13.11	13.07	0.894	0.894	244.9	53.66	1.94	0	0	1003.811	-9.89	91.5	900.8474	0.035	906.6269	895.6972	900.2179	0.024	0.029	0.047	2745.701	2732.489	2743.012	-0.01	
20/01/2016 6:00	3548	13.1	13.05	1.13	1.13	187.8	64.05	3.861	0	0	1003.99	-10.17	89.6	900.8779	0.04	906.6437	895.6523	900.3378	0.033	0.037	0.049	2745.689	2732.311	2743.239	-0.01	
20/01/2016 7:00	3549	13.08	13.04	1.314	1.314	262	57.12	3.469	0	0	1003.977	-9.35	88.4	900.9119	0.014	906.7397	895.7216	900.2744	0.01	0.019	0.011	2745.842	2732.426	2743.073	-0.01	
20/01/2016 8:00	3550	13.06	13.03	0.894	0.894	254	79.25	3.077	0	0	1004.155	-9.24	88.9	900.9383	0.12	906.503	895.7628	900.549	0.111	0.159	0.074	2745.703	2733.186	2743.358	-0.01	
20/01/2016 9:00	3551	13.05	13.01	1.509	1.509	164.9	54.72	5.096	0	0	1004.387	-9.6	87.9	900.9254	0.163	906.4705	895.7819	900.5236	0.18	0.183	0.117	2745.993	2733.021	2743.193	-0.01	
20/01/2016 10:00	3552	13.08	13.01	1.852	1.852	137.8	62.63	4.547	1.193597	0.004296949	1004.634	-10.05	87.7	900.9294	0.036	906.7388	895.6938	900.3555	0.043	0.033	0.033	2745.933	2732.417	2743.31	-0.01	
20/01/2016 11:00	3553	13.21	13.04	4.427	4.427	196.1	40.23	8.08	13.71452	0.04937227	1004.447	-8.95	85.3	900.8972	0.562	906.4907	895.5653	900.6356	0.55	0.676	0.432	2744.955	2732.474	2742.296	0	
20/01/2016 12:00	3554	14.65	13.18	3.946	3.946	190.9	40.91	8.49	61.47852	0.12213227	1005.021	-9.28	85.2	900.8755	0.392	906.019	895.4103	901.1971	0.447	0.361	0.362	2745.007	2732.59	2744.341	0	
20/01/2016 13:00	3555	14.67	14.58	3.782	3.782	205.3	40.7	8.49	222.1088	0.7995915	1005.374	-8.37	82.5	900.4999	2.197	904.8676	894.5908	902.0414	3.69	0.919	0.125	2744.411	2731.663	2745.488	0.04	
20/01/2016 14:00	3556	14.67	14.2	2.037	2.037	187.2	56.02	6.429	208.1426	0.7493133	1005.209	-8.26	80.4	900.8406	0.105	906.1703	895.3176	901.0342	0.131	0.099	0.077	2745.096	2732.048	2743.961	0.04	
20/01/2016 15:00	3557	14.58	14.35	1.54	1.54	236.5	47.57	4.39	142.4086	0.5126708	1005.292	-8.35	81.7	900.5159	0.187	906.5483	894.5159	901.0414	0.264	0.185	0.185	2745.522	2731.56	2743.67	0.02	
20/01/2016 16:00	3558	14.36	14.05	1.574	1.574	234.8	30.61	2.666	12.60494	0.04537779	1005.512	-9.27	87.7	900.8577	0.021	906.6293	895.5848	900.3591	0.017	0.018	0.026	2745.721	2732.339	2743.196	-0.01	
20/01/2016 17:00	3559	14.06	13.83	1.624	1.624	225.9	66.39	3.783	0.3074189	0.001106708	1005.43	-9.45	87.7	901.0458	0.028	906.8488	895.2966	900.9921	0.024	0.023	0.035	2745.938	2731.974	2743.95	-0.01	
20/01/2016 18:00	3560	13.85	13.68	1.66	1.66	176.4	49.53	4.92	0	0	1005.114	-9.57	86.4	901.0861	0.07	906.8514	895.3257	901.0811	0.08	0.074	0.053	2745.896	2731.919	2744.13	-0.01	
20/01/2016 19:00	3561	13.7	13.56	2.317	2.317	143.4	30.23	5.998	0	0	1004.949	-9.75	85.5	901.0612	0.092	906.729	895.4213	901.0333	0.115	0.06	0.077	2745.792	2732.038	2743.971	0	
20/01/2016 20:00	3562	13.57	13.46	1.146	1.146	152	32.32	1.52	0	0	1004.628	-9.63	86.3	901.0667	0.034	906.7007	895.4304	901.0692	0.041	0.033	0.025	2745.598	2732.095	2744.075	-0.01	
20/01/2016 21:00	3563	13.48	13.38	1.234	1.234	222.4	59.82	3.822	0	0	1004.805	-9.43	85.9	901.074	0.052	906.8127	895.397	901.0125	0.062	0.054	0.035	2745.844	2732.064	2744.016	-0.01	
20/01/2016 22:00	3564	13.4	13.31	1.062	1.062	193.1	59.86	3.802	0	0	1004.41	-9.77	86.1	901.0698	0.106	906.7483	895.4748	900.9864	0.093	0.146	0.062	2745.86	2732.048	2743.925	-0.01	
20/01/2016 23:00	3565	13.33	13.25	1.613	1.613	236.2	48.27	5.351	0	0	1004.496	-10.1	87.2	901.0728	0.018	906.9302	895.3467	900.9414	0.025	0.015	0.012	2746.046	2731.952	2743.946	-0.01	
21/01/2016 0:00	3566	13.27	13.2	0.791	0.791	265.8	28.72	1.94	0	0	1004.349	-10.34	88.9	901.0759	0.012	906.9694	895.3404	900.9176	0.012	0.01	0.014	2746.09	2731.974	2743.865	-0.01	
21/01/2016 1:00	3567	13.23	13.16	0.435	0.435	266.2	48.75	1.49	0	0	1003.877	-10.42	89.5	901.0999	0.021	906.914	895.3882	900.9973	0.034	0.012	0.009	2745.994	2732.064	2743.984	-0.01	
21/01/2016 2:00	3568	13.18	13.13	0.583	0.583	230.3	47.6	3.136	0	0	1003.383	-10.65	90	901.1021	0.015	906.949	895.4164	900.9411	0.019	0.014	0.01	2746.066	2732.05	2743.913	-0.01	
21/01/2016 3:00	3569	13.15	13.1	0.471	0.471	284.9	45.45	1.529	0	0	1002.553	-10.87	90.6	901.0944	0.027	906.9732	895.4171	900.8929	0.04	0.013	0.019	2746.059	2732.078	2743.859	-0.01	
21/01/2016 4:00	3570	13.12	13.07	2.627	2.627	142.5	37.98	5.527	0	0	1001.889	-11.79	90.2	901.1058	0.194	906.694	895.552	901.0713	0.236	0.159	0.178	2745.851	2732.492	2743.909	0	
21/01/2016 5:00	3571	13.1	13.05	2.991	2.991	157.6	23.73	5.527	0	0	1001.067	-11.86	87.9	901.0759	0.356	906.7057	895.467	901.0551	0.314	0.474	0.237					

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
23/01/2016 1:00	3615	13.18	13.13	11.7	11.7	199.9	5.693	15.54	0	0	997.778	-5.141	77.96	901.2022	2.435	904.662	895.8092	903.1355	2.613	2.507	2.161	2739.684	2729.517	2743.465	0.01
23/01/2016 2:00	3616	13.15	13.1	11.7	11.7	190.7	6.555	15.8	0	0	996.9608	-5.426	78.12	901.1935	3.696	903.5195	896.0588	904.0024	4.271	3.297	3.445	2726.928	2742.347	2756.502	0.01
23/01/2016 3:00	3617	13.13	13.09	10.72	10.72	200.8	13.48	16.58	0	0	998.2719	-5.485	72.51	900.6616	1.026	906.2761	895.3166	900.3919	1.005	1.232	0.793	2746.375	2731.753	2742.547	0.01
23/01/2016 4:00	3618	13.11	13.06	8.83	8.83	222.7	9.62	13.58	0	0	998.111	-5.194	66.83	900.9624	2.335	905.2979	895.1459	902.4435	2.59	2.232	2.16	2742.391	2728.291	2745.651	0.01
23/01/2016 5:00	3619	13.09	13.05	11.52	11.52	217.7	8.57	15.92	0	0	997.4547	-5.379	70.18	901.1608	4.796	903.5811	896.0041	903.8973	5.62	3.591	4.951	2720.099	2733.927	2747.945	0.01
23/01/2016 6:00	3620	13.08	13.04	12.43	12.43	209.6	6.572	16.76	0	0	997.4574	-5.571	71.7	901.7151	4.735	902.8694	897.1805	905.0953	5.066	4.944	4.142	2747.358	2726.769	2740.723	0.01
23/01/2016 7:00	3621	13.07	13.03	13.06	13.06	211.7	6.956	17.33	0	0	997.7883	-5.658	70.9	902.106	3.108	904.9534	896.8234	904.5411	3.009	3.144	3.168	2747.492	2732.488	2746.977	0.01
23/01/2016 8:00	3622	13.05	13.01	10.21	10.21	221.4	8.28	14.21	0	0	997.7017	-5.624	68.62	900.9776	1.691	905.4025	895.5406	901.9897	1.245	1.728	2.011	2740.995	2731.252	2745.177	0.01
23/01/2016 9:00	3623	13.04	13	8.54	8.54	230.8	12.2	14.92	0	0	997.9617	-5.459	67.2	901.1208	1.343	905.6281	895.5409	902.1935	1.385	1.583	0.992	2747.86	2732.59	2743.99	0.01
23/01/2016 10:00	3624	13.11	13	10.55	10.55	218.5	9.58	16.17	7.701551	0.02772558	998.1985	-5.651	69.01	901.1483	3.134	905.028	895.8632	902.5537	4.221	2.116	2.677	2744.242	2731.273	2744.04	0.01
23/01/2016 11:00	3625	14.42	13.11	6.217	6.217	213.4	12.44	11.07	55.5556	0.2000002	998.2723	-5.705	71.23	900.3208	1.354	906.1899	894.9643	899.8083	1.127	1.386	1.52	2742.292	2729.679	2744.498	0.01
23/01/2016 12:00	3626	14.66	13.95	6.642	6.642	222.2	13.46	13.6	95.87566	0.3451524	998.2593	-5.477	71.99	900.3857	0.734	905.8961	895.0399	900.2211	0.796	0.794	0.593	2745.416	2731.913	2743.002	0.01
23/01/2016 13:00	3627	14.64	14.6	8.31	8.31	222.1	10.81	12.43	121.4924	0.4373725	998.4958	-5.47	73.03	900.7249	1.031	905.6995	895.4215	901.0538	0.963	1.091	1.034	2744.171	2732.607	2744.573	0.04
23/01/2016 14:00	3628	14.6	14.45	9.31	9.31	224	9.87	15.33	145.7463	0.5246868	998.0515	-5.351	73	901.8967	4.572	904.0386	896.1102	905.5411	3.189	5.263	4.983	2741.319	2733.11	2748.535	0.04
23/01/2016 15:00	3629	14.53	14.18	10.32	10.32	223.6	8.31	15.46	53.58854	0.1929187	998.417	-5.437	72.8	901.206	3.608	904.3026	895.7767	903.5385	3.33	3.699	3.78	2742.79	2730.299	2746.24	0.01
23/01/2016 16:00	3630	14.19	14.01	9.2	9.2	221.8	9.86	13.48	22.46058	0.0808581	998.7604	-5.488	72.93	901.2509	2.319	905.6127	895.3846	902.7553	2.098	2.548	2.29	2744.477	2729.146	2745.042	0.01
23/01/2016 17:00	3631	14.02	13.78	10.86	10.86	222.4	7.493	14.35	1.391928	0.005010942	998.7648	-5.669	73.92	901.3688	2.662	905.3503	895.6292	903.1268	2.808	3.007	2.082	2746.556	2732.282	2745.138	0.01
23/01/2016 18:00	3632	13.8	13.63	9.39	9.39	227	6.977	13.11	0	0	999.0874	-5.49	74.27	901.3608	1.757	905.897	895.3513	902.8342	1.758	1.808	1.704	2744.361	2734.434	2745.883	0.01
23/01/2016 19:00	3633	13.64	13.5	7.616	7.616	225.7	7.564	11.13	0.000764384	2.75E-06	999.4075	-5.244	74.51	900.4897	1.168	905.8911	895.1901	900.3876	1.2	1.175	1.128	2746.654	2731.987	2741.472	0.01
23/01/2016 20:00	3634	13.52	13.41	5.936	5.936	227.2	10.2	9.29	0	0	999.826	-5.426	76.13	900.1768	0.511	906.4487	895.0544	899.0275	0.518	0.555	0.454	2744.671	2730.051	2740.394	0.01
23/01/2016 21:00	3635	13.42	13.33	7.24	7.24	224.2	7.958	11.09	0	0	999.9094	-5.468	75.94	900.5162	1.212	906.0608	894.983	900.5162	1.128	1.436	1.034	2745.447	2732.876	2740.996	0.01
23/01/2016 22:00	3636	13.35	13.27	8.33	8.33	224.2	7.282	11.88	0	0	1000.327	-5.692	77.79	900.9768	1.893	905.7734	895.4464	901.7107	2.167	1.742	1.739	2748.278	2733.479	2742.104	0.01
23/01/2016 23:00	3637	13.29	13.22	7.201	7.201	219.4	10.06	10.41	0	0	1000.917	-5.819	76.97	900.2443	0.811	906.4888	894.6981	899.546	0.909	0.876	0.618	2744.594	2729.883	2741.849	0.01
24/01/2016 0:00	3638	13.24	13.18	9.83	9.83	214.5	6.84	14.21	0	0	1001.223	-5.687	78.45	901.4336	1.815	906.0906	895.897	902.313	1.732	1.979	1.721	2746.774	2732.04	2741.952	0.01
24/01/2016 1:00	3639	13.2	13.15	6.398	6.398	217.9	7.725	10.53	0	0	1001.555	-5.859	77.57	900.195	0.763	906.4337	894.957	899.1942	0.793	0.836	0.648	2743.588	2731.53	2742.585	0
24/01/2016 2:00	3640	13.17	13.13	6.231	6.231	218.7	13.67	12.68	0	0	1001.575	-5.495	68.26	901.2153	2.518	904.9788	896.0743	902.5928	2.391	1.64	1.64	2746.129	2736.066	2746.938	0.01
24/01/2016 3:00	3641	13.14	13.1	9.86	9.86	234.3	8.15	13.92	0	0	1002.04	-5.166	64.23	901.1087	1.746	905.5626	895.7047	902.0591	1.838	1.892	1.479	2743.437	2732.194	2745.744	0.01
24/01/2016 4:00	3642	13.13	13.09	9.29	9.29	234.7	9.07	14.09	0	0	1001.862	-4.854	63.75	901.405	2.574	905.3186	895.6864	903.2098	2.266	2.945	2.945	2743.399	2730.944	2747.75	0.01
24/01/2016 5:00	3643	13.11	13.07	9.41	9.41	226.4	8.22	15.33	0	0	1002.024	-4.978	65.28	900.8433	2.136	905.3763	895.2347	901.9186	2.351	2.33	1.654	2747.595	2731	2743.492	0.01
24/01/2016 6:00	3644	13.1	13.06	11.04	11.04	219.4	5.403	15.39	0	0	1001.545	-5.123	66.69	901.9375	4.855	903.5377	897.7881	904.4868	4.252	5.906	4.212	2743.95	2731.286	2749.504	0.01
24/01/2016 7:00	3645	13.09	13.05	12.68	12.68	215.8	5.021	16.84	0	0	1002.039	-5.758	73.02	902.3301	5.031	903.2159	898.0153	905.7591	5.423	5.377	5.423	2742.078	2732.025	2749.497	0.01
24/01/2016 8:00	3646	13.08	13.04	12.01	12.01	220.6	5.97	15.9	0	0	1001.88	-5.705	73.52	901.7335	7.106	901.6383	897.9253	905.6369	6.322	6.986	7.92	2720.318	2740.844	2746.259	0.01
24/01/2016 9:00	3647	13.06	13.03	11.59	11.59	215	5.681	15.54	0	0	1002.296	-5.862	75.96	901.5475	2.236	904.6379	896.3725	903.6322	2.194	2.105	2.399	2745.466	2735.664	2746.537	0.01
24/01/2016 10:00	3648	13.12	13.03	11.11	11.11	218.3	5.731	15.05	5.224922	0.01880972	1002.376	-5.718	74.42	901.1608	3.149	905.0678	896.8395	904.5751	2.572	3.368	3.435	2745.932	2736.997	2752.108	0.01
24/01/2016 11:00	3649	14.6	13.11	10.62	10.62	223.8	7.291	14.39	30.63251	0.110277	1002.285	-5.495	73.6	901.7435	3.848	904.4695	896.5295	904.2314	4.929	2.893	2.893	2741.535	2733.334	2739.225	0.01
24/01/2016 12:00	3650	14.66	14.6	10.13	10.13	217.9	10.13	14.74	108.1124	0.3892046	1002.983	-5.234	71.85	901.0995	1.566	904.8901	895.496	902.9125	1.118	1.48	1.979	2742.438	2732.632	2743.824	0.04
24/01/2016 13:00	3651	14.66	14.49	5.577	5.577	171	32.8	9.78	102.8536	0.370273	1002.899	-5.173	72.58	900.7308	1.13	905.9102	895.0178	901.2645	1.195	1.364	0.737	2745.413	2734.43	2743.644	0.03
24/01/2016 14:00	3652	14.66	14.36	6.012	6.012	181.3	23.41	9.49	143.1179	0.5152245	1003.295	-4.995	72.65	900.2559	0.91	905.7458	894.0642	900.9577	1.028	1.058	0.557	2743.371	2730.308	2743.432	0.04
24/01/2016 15:00	3653	14.65	14.36	5.173	5.173	169.3	38.73	9.56	117.9524	0.4246288	1003.458	-5.144	72.34	900.5735	0.778	906.033	894.9171	900.7706	0.757	0.952	0.579	2744.877	2731.695	2743.159	0.03
24/01/2016 16:00	3654	14.37	14.09	2.475	2.475	137.3	38.35	7.35	36.60073	0.1317626	1003.349	-5.722	75.87	900.695	0.121	906.039	895.5228	900.5231	0.136	0.096	0.096	2745.042	2732.107	2743.364	0
24/01/2016 17:00	3655	14.1	13.83	4.117	4.117	147.8	17.71	7.272																	

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
26/01/2016 15:00	3701	14.42	14.23	14.74	14.74	219.9	8.77	21.99	60.46961	0.2176906	990.7975	-1.159	72.3	902.0843	8.11	895.5764	901.9448	908.7317	9.38	8.02	6.698	2717.068	2757.418	2760.429	0.02
26/01/2016 16:00	3702	14.45	14.19	14.28	14.28	218.9	8.3	20.76	62.3415	0.2244294	992.1852	-1.381	72.17	901.4932	5.625	902.4459	898.2551	903.7788	4.979	7.325	4.057	2732.97	2741.635	2752.818	0.02
26/01/2016 17:00	3703	14.21	13.86	15.23	15.23	226.1	8.67	23.09	4.428381	0.01594217	993.3656	-1.532	71.04	901.7853	10.86	899.0667	899.9603	906.3289	10.42	10.42	10.42	2738.139	2724.354	2741.023	0.02
26/01/2016 18:00	3704	13.87	13.68	13.71	13.71	229.8	7.234	19.95	0	0	994.7416	-1.479	69.38	902.2197	10.14	897.5676	899.8329	909.2587	11.47	9.56	9.26	2730.664	2763.382	2749.453	0.02
26/01/2016 19:00	3705	13.7	13.54	13.63	13.63	229	9.71	18.66	0	0	995.8308	-1.767	69.54	902.2493	8.89	897.883	901.9754	906.8893	9.88	9.02	9.26	2742.212	2726.036	2746.807	0.02
26/01/2016 20:00	3706	13.56	13.44	15.64	15.64	220.5	6.903	22.09	0	0	996.0854	-2.71	72.83	903.2404	10.66	892.415	904.537	912.769	12.15	8.91	10.66	2695.588	2752.335	2802.051	0.01
26/01/2016 21:00	3707	13.46	13.35	19.03	19.03	218.4	6.117	24.05	0	0	996.8226	-3.527	74.16	902.8751	14.35	887.7669	907.5457	913.3128	16.76	13.41	12.53	2734.518	2732.204	2769.973	0.01
26/01/2016 22:00	3708	13.37	13.29	18.75	18.75	218	5.531	24.74	0	0	998.3917	-3.875	70.14	902.8987	16.33	883.6514	908.4473	916.5975	17.39	12.49	18.49	2741.112	2755.908	2760.882	0.02
26/01/2016 23:00	3709	13.31	13.24	15.4	15.4	218.3	8.24	21.48	0	0	999.4484	-4.222	67.57	901.6428	9.39	896.5385	899.6205	908.7692	12.16	7.144	8.09	2745.755	2733.37	2738.482	0.02
27/01/2016 0:00	3710	13.26	13.2	14.94	14.94	218.6	8.3	22.81	0	0	1000.687	-4.497	64.68	901.2914	5.799	902.9441	896.1578	904.7723	5.525	6.096	5.761	2737.377	2735.935	2753.94	0.02
27/01/2016 1:00	3711	13.21	13.16	14.41	14.41	216.7	7.452	19.89	0	0	1000.445	-4.402	59.22	902.8358	10.43	898.1461	900.5637	909.7974	11.43	9.2	10.54	2744.605	2738.847	2750.563	0.02
27/01/2016 2:00	3712	13.18	13.13	15.47	15.47	225.1	6.219	20.31	0	0	1000.681	-4.381	57.65	901.7906	5.688	902.2903	897.3203	905.7612	5.761	5.895	5.397	2758.19	2737.748	2748.048	0.02
27/01/2016 3:00	3713	13.15	13.11	8.05	8.05	240.5	6.29	18.64	0	0	1001.987	-3.744	48.56	899.9882	0.168	906.1677	894.8663	898.9306	0.17	0.207	0.113	2748.825	2731.137	2741.442	0.02
27/01/2016 4:00	3714	13.13	13.09	3.737	3.737	134.5	68.53	8.84	0	0	1001.648	-4.842	56.77	900.051	0.7	905.95	894.8416	899.3612	0.667	0.898	0.466	2744.425	2732.253	2743.639	0.01
27/01/2016 5:00	3715	13.11	13.07	5.846	5.846	159.5	19.49	8.7	0	0	1001.265	-5.194	63.87	900.0361	0.728	905.9229	894.7805	899.4047	0.639	0.966	0.498	2744.566	2730.822	2741.72	0.01
27/01/2016 6:00	3716	13.1	13.06	6.406	6.406	171.8	17.04	10.96	0.007897995	2.84E-05	1000.594	-3.898	63.45	899.6021	1.161	905.7984	894.7374	898.2702	1.152	1.396	0.875	2744.806	2733.925	2740.599	0.01
27/01/2016 7:00	3717	13.08	13.05	6.575	6.575	154.7	15.47	10.02	0.003311691	1.19E-05	1000.362	-5.228	73.32	899.667	1.023	905.7497	894.696	898.5553	1.005	1.27	0.719	2745.8	2732.371	2740.858	0.01
27/01/2016 8:00	3718	13.07	13.04	7.642	7.642	155.1	14.54	11.37	0.01222948	4.40E-05	999.3898	-5.046	74.68	900.049	1.591	905.5938	895.1448	899.4084	1.63	1.746	1.374	2739.361	2729.368	2742.064	0.01
27/01/2016 9:00	3719	13.06	13.02	9.09	9.09	145	6.136	10.98	0	0	998.7452	-5.375	76.88	899.8096	1.186	905.7768	895.0262	898.6259	1.131	1.556	0.719	2743.609	2728.4	2740.333	0.01
27/01/2016 10:00	3720	13.09	13.03	8.48	8.48	140.5	9.08	11.02	5.631138	0.0202721	997.7765	-5.352	77.53	900.322	1.615	905.8165	895.4916	899.6577	1.412	2.092	1.207	2744.65	2731.958	2741.217	0.01
27/01/2016 11:00	3721	13.29	13.07	7.447	7.447	117.2	7.544	11.98	32.92596	0.1185334	996.7948	-5.756	79.6	899.8615	1.328	906.0504	898.5641	896.5641	0.737	1.717	1.207	2746.877	2732.799	2740.127	0.01
27/01/2016 12:00	3722	13.49	13.26	7.964	7.964	104.7	10.62	11.6	40.15389	0.144554	995.5479	-5.365	79.36	899.5102	1.084	905.6411	894.7824	898.1069	1.041	1.427	0.637	2743.739	2730.358	2740.363	0.01
27/01/2016 13:00	3723	13.93	13.46	8.67	8.67	129.7	20.66	15.48	62.20326	0.2239317	994.3746	-3.95	74.96	899.8999	2.851	905.2426	895.028	899.4226	3.366	2.751	2.344	2745.972	2735.137	2739.869	0.01
27/01/2016 14:00	3724	14.08	13.34	8.18	8.18	139.1	8.4	12.41	59.82911	0.2153848	993.4646	-4.029	82.5	900.2835	1.878	905.6716	895.3813	899.7977	1.833	2.136	1.63	2743.955	2728.108	2741.952	0.01
27/01/2016 15:00	3725	14.13	14.04	7.267	7.267	140.4	8.41	11.09	46.83895	0.1686202	992.4921	-4.507	91.3	900.0652	0.676	905.7626	895.367	899.0662	0.637	0.91	0.372	2743.913	2731.575	2742.637	0
27/01/2016 16:00	3726	14.11	14.01	6.905	6.905	137.3	7.005	10.13	30.5938	0.1101377	991.4989	-4.768	92.6	899.9652	0.961	905.8275	895.318	898.7615	0.973	1.247	0.52	2744.96	2732.265	2740.316	0
27/01/2016 17:00	3727	14.04	13.82	9.53	9.53	146.4	16.68	18.66	7.554769	0.02719717	989.7786	-3.429	89.5	901.2432	3.995	903.2923	896.7375	903.6998	4.323	4.424	3.102	2745.589	2728.073	2746.804	0
27/01/2016 18:00	3728	13.84	13.67	17.88	17.88	162.6	3.929	20.85	0.02700224	9.72E-05	989.1232	-2.948	82.9	900.8609	4.979	902.1828	896.8684	903.5315	5.672	4.914	4.249	2737.093	2729.358	2743.509	0.01
27/01/2016 19:00	3729	13.69	13.55	16.76	16.76	163.7	4.299	19.17	0	0	989.0413	-3.505	83.4	902.0593	5.994	902.5745	899.6544	903.9489	5.733	6.336	5.896	2752.659	2736.84	2746.36	0.01
27/01/2016 20:00	3730	13.57	13.45	14.33	14.33	169.8	4.588	18.11	0	0	989.7784	-3.154	82.4	901.1528	3.622	903.6339	896.617	903.2076	3.55	4.411	2.703	2748.234	2735.645	2745.574	0.01
27/01/2016 21:00	3731	13.47	13.37	9.59	9.59	170.9	9.59	13.11	0	0	989.8604	-2.865	83.2	900.8524	2.544	904.1625	896.0259	903.3688	2.757	2.957	1.717	2738.283	2734.707	2746.143	0.01
27/01/2016 22:00	3732	13.38	13.3	8.2	8.2	169.4	7.226	11.7	0	0	990.0264	-2.866	83.5	900.2258	1.168	905.6518	894.967	900.0584	1.202	1.401	0.826	2744.112	2731.059	2742.331	0
27/01/2016 23:00	3733	13.32	13.24	7.745	7.745	154.6	4.655	9.96	0	0	989.5397	-3.685	88.6	900.262	1.376	905.8422	895.4125	899.5312	1.408	0.887	0.887	2746.307	2733.744	2742.566	0
28/01/2016 0:00	3734	13.26	13.2	11.27	11.27	173.4	7.885	15.74	0	0	988.6317	-2.571	84	900.8563	2.809	904.6545	895.6606	892.2537	3.074	3.086	2.168	2748.814	2737.472	2744.422	0.01
28/01/2016 1:00	3735	13.22	13.16	11.45	11.45	176.2	5.077	15.8	0	0	988.9594	-2.263	82.9	900.722	1.67	904.8038	895.6263	901.736	1.837	1.844	1.261	2740.614	2729.877	2744.418	0.01
28/01/2016 2:00	3736	13.18	13.13	10.15	10.15	170.4	5.502	13.39	0	0	988.5498	-2.364	82.5	900.7549	3.219	904.1711	896.3596	901.7341	3.803	3.701	1.712	2746.366	2732.596	2740.94	0.01
28/01/2016 3:00	3737	13.15	13.11	8.81	8.81	161.7	6.342	12.07	0	0	988.386	-2.356	83.2	900.659	1.475	904.9522	895.9424	901.0826	1.534	1.683	1.159	2742.136	2735.882	2745.869	0.01
28/01/2016 4:00	3738	13.13	13.08	10.73	10.73	166.1	13.61	15.35	0	0	986.9934	-1.861	78.9	901.1183	2.944	904.856	896.2603	902.2386	3.018	3.403	2.305	2746.812	2733.806	2741.836	0.01
28/01/2016 5:00	3739	13.11	13.07	12.24	12.24	187.8	9.86	16.25	0	0	987.157	-2.081	76.18	901.314	4.071	902.5225	897.488	903.9313	5.447	2.963	3.356	2740.334	2728.229	2746.1	0.01
28/01/2016 6:00	3740	13.1	13.06	9.89	9.89	203.8	8.31	14.25	0	0	987.1571	-1.689	67.75	901.5925	3.287	904.4155	896.8619	903.5002	3.36	2.647	2.647	2740.89			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
30/01/2016 5:00	3787	13.12	13.08	3.135	3.135	259.7	15.22	4.645	0	0	996.9254	-6.41	83.5	900.567	0.139	906.677	895.4585	899.5654	0.169	0.131	0.111	2745.811	2732.139	2742.207	0	
30/01/2016 6:00	3788	13.1	13.06	3.729	3.729	254.5	22.73	7.154	0	0	997.4801	-5.828	80.2	900.6025	0.182	906.6533	895.488	899.6664	0.232	0.178	0.12	2745.796	2732.281	2742.486	0	
30/01/2016 7:00	3789	13.08	13.04	2.83	2.83	270.3	13.34	4.9	0	0	997.806	-6.663	88.1	900.581	0.232	906.7628	895.4751	899.5051	0.237	0.242	0.215	2745.909	2732.633	2741.97	0	
30/01/2016 8:00	3790	13.07	13.03	3.417	3.417	264.4	9.87	4.802	0	0	998.1625	-7.045	90.4	900.5823	0.162	906.7508	895.451	899.5451	0.193	0.153	0.133	2745.646	2732.266	2742.484	0	
30/01/2016 9:00	3791	13.06	13.02	3.241	3.241	266.1	17.63	4.841	0.2318884	0.000834798	998.5623	-6.811	88.5	900.5876	0.221	906.8043	895.4116	899.5471	0.244	0.223	0.194	2745.666	2732.197	2742.523	0	
30/01/2016 10:00	3792	13.07	13.02	3.931	3.931	265.2	20.15	9.37	5.882037	0.02117533	999.2988	-6.67	88.2	900.5677	0.189	906.7161	895.4556	899.5314	0.212	0.205	0.142	2745.853	2732.081	2742.255	0	
30/01/2016 11:00	3793	13.23	13.04	3.89	3.89	272.6	10.64	6.88	27.8541	0.1002748	999.6278	-6.944	92.7	900.5126	0.338	906.5979	895.3836	899.5564	0.387	0.315	0.305	2744.997	2731.893	2742.454	0	
30/01/2016 12:00	3794	13.56	13.23	6.595	6.595	268.3	5.772	9.06	50.44647	0.1816073	1000.092	-6.572	92.8	900.4824	0.833	906.8636	895.1575	899.4261	0.796	0.985	0.69	2747.453	2734.348	2741.543	0	
30/01/2016 13:00	3795	13.68	13.55	7.492	7.492	280	6.375	10.21	34.52792	0.1243005	1000.732	-6.568	92	900.5822	1.154	906.9577	895.3801	899.4086	1.147	1.446	0.769	2748.117	2733.04	2740.765	0	
30/01/2016 14:00	3796	13.73	13.53	7.008	7.008	274.2	7.325	9.33	32.77227	0.1179802	1001.387	-6.621	92.6	900.5388	0.755	906.9639	895.274	899.3781	0.727	0.866	0.657	2747.364	2734.697	2740.041	0	
30/01/2016 15:00	3797	13.9	13.71	6.496	6.496	272.8	7.422	8.9	38.73256	0.1394372	1001.882	-6.716	92.7	900.6315	0.868	906.9229	895.4669	899.5048	0.919	0.959	0.703	2744.123	2732.457	2742.753	0	
30/01/2016 16:00	3798	13.93	13.83	6.699	6.699	269.7	6.656	8.76	21.07573	0.07587264	1002.385	-6.857	92.7	900.4624	0.728	906.9337	895.1629	899.2906	0.747	0.853	0.551	2746.485	2732.656	2741.99	0	
30/01/2016 17:00	3799	13.85	13.69	5.467	5.467	278.6	5.994	7.644	3.636599	0.01309176	1003.067	-7.004	92.2	900.5874	0.664	907.0613	895.4601	899.2408	0.661	0.432	0.432	2746.391	2733.281	2741.848	0	
30/01/2016 18:00	3800	13.71	13.59	4.729	4.729	276.6	5.574	6.135	0.2311242	0.000832047	1003.488	-7.132	92	900.6017	0.444	906.8104	895.3539	899.6409	0.511	0.515	0.256	2747.301	2732.362	2742.19	0	
30/01/2016 19:00	3801	13.61	13.5	4.209	4.209	281	6.186	5.547	0.1834718	0.000660498	1004.062	-7.217	91.8	900.5729	0.355	906.772	895.4176	899.5291	0.382	0.405	0.259	2745.825	2732.203	2742.035	0	
30/01/2016 20:00	3802	13.52	13.42	3.751	3.751	272.3	7.301	5.057	0.1793935	0.000645816	1004.554	-7.347	91.5	900.6297	0.409	906.8855	895.4689	899.5345	0.435	0.449	0.335	2746.87	2731.631	2741.632	0	
30/01/2016 21:00	3803	13.43	13.34	4.381	4.381	275	6.64	6.958	0.174809	0.000629312	1004.882	-7.444	91.3	900.5977	0.677	906.97	895.3627	899.4601	0.713	0.791	0.49	2745.822	2732.292	2741.059	0	
30/01/2016 22:00	3804	13.36	13.28	5.46	5.46	269.5	6.289	7.448	0.06039301	0.000217415	1005.373	-7.606	91.1	900.6543	0.698	907.0788	895.4712	899.413	0.619	0.918	0.484	2746.568	2732.942	2740.462	0	
30/01/2016 23:00	3805	13.3	13.22	4.815	4.815	274.2	7.905	6.292	0.01095745	3.94E-05	1005.783	-7.984	90.7	900.592	0.512	906.9011	895.4514	899.4237	0.498	0.606	0.414	2745.426	2731.8	2742.35	0	
31/01/2016 0:00	3806	13.24	13.18	4.904	4.904	268.9	6.964	6.35	0.02803111	0.000100912	1006.359	-8.54	90.3	900.6944	0.571	907.112	895.3169	899.6544	0.629	0.654	0.393	2747.135	2730.463	2742.547	0	
31/01/2016 1:00	3807	13.19	13.13	3.984	3.984	273.2	7.403	5.488	0.03898953	0.000140362	1006.533	-8.72	90.2	900.7005	0.844	907.2849	895.3799	899.4367	0.797	1.065	0.608	2747.739	2735.152	2742.961	0	
31/01/2016 2:00	3808	13.16	13.1	3.428	3.428	268.1	10.83	5.272	0.132264	0.00047615	1007.026	-8.75	90.3	900.7126	0.422	907.0576	895.5845	899.4957	0.452	0.502	0.28	2745.259	2731.886	2742.108	0	
31/01/2016 3:00	3809	13.12	13.07	2.853	2.853	288.5	8.17	4.441	0.0553003	0.000199081	1007.521	-8.52	90.3	900.7473	0.284	906.9691	895.7265	899.5462	0.313	0.206	0.206	2745.052	2732.135	2742.248	0	
31/01/2016 4:00	3810	13.09	13.04	3.101	3.101	277.6	7.503	4.39	0	0	1007.861	-8.95	90	900.7227	0.254	906.8414	895.6544	899.6721	0.3	0.263	0.186	2744.789	2730.747	2742.442	0	
31/01/2016 5:00	3811	13.07	13.02	2.853	2.853	280.3	9.54	3.587	0.06371678	0.00022938	1007.888	-9.42	89.7	900.7783	0.425	907.1015	895.5953	899.638	0.438	0.476	0.351	2744.756	2731.595	2741.918	0	
31/01/2016 6:00	3812	13.05	13.01	2.829	2.829	270.4	9.88	4.332	0.08232234	0.00029636	1008.046	-9.13	89.9	900.8399	0.71	907.2905	895.5941	899.6352	0.779	0.865	0.395	2745.669	2732.333	2742.314	0	
31/01/2016 7:00	3813	13.04	13	2.526	2.526	282.5	7.504	4.41	0.0275259	9.91E-05	1007.885	-9.42	89.6	900.7693	0.434	907.1187	895.5876	899.6016	0.452	0.505	0.324	2745.474	2731.694	2742.469	0	
31/01/2016 8:00	3814	13.02	12.99	2.606	2.606	270.7	6.412	3.802	0.06499258	0.000233973	1008.053	-9.4	89.8	900.7832	0.777	907.2827	895.5684	899.4985	0.83	0.88	0.59	2747.917	2733.878	2741.833	0	
31/01/2016 9:00	3815	13.01	12.97	3.093	3.093	263.6	5.752	4.018	0.2979491	0.001072617	1008.217	-9.52	89.7	900.7038	0.888	907.3025	895.3221	899.4869	0.825	1.139	0.622	2745.573	2730.563	2739.847	0	
31/01/2016 10:00	3816	13.06	12.97	2.894	2.894	263.7	7.42	4.234	8.813007	0.03172682	1008.38	-9.7	89.4	900.7	0.983	907.2534	895.4234	899.4234	0.748	1.396	0.623	2745.872	2728.972	2742.924	0	
31/01/2016 11:00	3817	13.3	13.04	2.884	2.884	259.1	6.603	3.744	34.28044	0.1234096	1008.708	-9.99	89	900.8112	0.872	907.3362	895.6072	899.4902	0.871	1.061	0.676	2744.978	2731.111	2740.191	0	
31/01/2016 12:00	3818	14.64	13.31	2.633	2.633	267.5	9.46	3.41	90.16846	0.3246064	1008.872	-10.06	88.8	900.8417	0.621	906.9037	895.7899	899.8315	0.592	0.817	0.371	2745.828	2733.024	2742.986	0	
31/01/2016 13:00	3819	14.66	14.32	4.093	4.093	265.5	9.65	6.723	99.32967	0.3575868	1008.872	-10.27	88.5	900.9868	0.392	906.9172	895.8841	900.159	0.392	0.445	0.331	2745.642	2731.585	2743.027	0.01	
31/01/2016 14:00	3820	14.65	14.36	4.2	4.2	276.2	10.24	6.233	72.36506	0.2605142	1009.036	-10.39	88.4	900.9914	0.282	906.9536	895.8224	900.198	0.286	0.273	0.286	2746.504	2732.855	2743.384	0	
31/01/2016 15:00	3821	14.64	14.36	3.725	3.725	275.2	9.22	4.978	58.65064	0.2111423	1008.872	-10.67	88.1	900.9372	0.397	907.085	895.6464	900.0801	0.445	0.401	0.339	2746.694	2732.581	2742.983	0	
31/01/2016 16:00	3822	14.66	14.43	3.977	3.977	281.6	11.65	6.37	91.05988	0.3278156	1008.79	-11.07	87.4	900.868	0.287	907.2073	894.796	900.6006	0.314	0.255	0.29	2745.827	2730.957	2742.997	0	
31/01/2016 17:00	3823	14.64	14.09	4.057	4.057	258	7.627	5.86	6.745734	0.02428464	1008.755	-12.42	86.2	901.0525	0.38	907.5958	895.7334	899.8283	0.425	0.366	0.344	2747.06	2732.5	2743.013	0	
31/01/2016 18:00	3824	14.1	13.92	4.299	4.299	249.8	6.521	6.742	0	0	1008.658	-12.87	85.4	901.033	0.404	907.5143	895.7512	899.8333	0.43	0.417	0.362	2746.699	2732.7	2742.329	0	
31/01/2016 19:00	3825	13.94	13.82	4.387	4.387	250.2	6.64	6.644	0	0	1008.658	-12.72	84	901.1006	0.317	907.6025	895.812	899.8873	0.351	0.288	0.308	2746.504	2732.554	2742.691	0	
31/01/2016 20:00	3826	13.82	13.71	4.7																						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
02/02/2016 19:00	3873	13.92	13.79	1.73	1.73	238.5	23.4	4.371	0	0	1008.145	-12.49	80.9	901.8286	0.04	908.3328	896.7624	900.3904	0.048	0.042	0.026	2747.684	2733.548	2743.249	0	
02/02/2016 20:00	3874	13.81	13.7	2.937	2.937	212.1	9.51	3.489	0	0	1008.167	-12.85	76.76	901.8672	0.077	908.353	896.7472	900.5015	0.078	0.072	0.082	2747.798	2733.792	2743.353	0	
02/02/2016 21:00	3875	13.72	13.62	2.158	2.158	215.1	19.24	3.136	0	0	1008.084	-12.34	75.58	901.884	0.032	908.3171	896.7967	900.5383	0.036	0.032	0.028	2747.743	2733.761	2743.413	0	
02/02/2016 22:00	3876	13.64	13.55	0.436	0.436	229.3	17.61	1.098	0	0	1008.004	-12.1	77.81	901.8979	0.013	908.3431	896.801	900.5496	0.018	0.009	0.008	2747.796	2733.798	2743.439	-0.01	
02/02/2016 23:00	3877	13.56	13.47	0.487	0.487	178.2	23.2	1.529	0	0	1007.837	-11.93	76.47	901.9249	0.02	908.3218	896.8438	900.6091	0.021	0.02	0.02	2747.795	2733.849	2743.484	-0.01	
03/02/2016 0:00	3878	13.5	13.41	1.131	1.131	193.7	26.69	3.293	0	0	1007.638	-11.67	77.25	901.9216	0.015	908.2806	896.8486	900.6355	0.014	0.016	0.014	2747.701	2733.821	2743.541	-0.01	
03/02/2016 1:00	3879	13.43	13.34	0.441	0.441	304.5	54.12	1.784	0	0	1007.655	-11.67	81.8	901.8773	0.016	908.3713	896.7771	900.4835	0.023	0.009	0.011	2747.808	2733.76	2743.386	-0.01	
03/02/2016 2:00	3880	13.36	13.28	0.418	0.418	243.7	41.97	1.45	0	0	1007.676	-12.08	84.1	901.8867	0.026	908.4108	896.761	900.4881	0.031	0.026	0.021	2747.893	2733.749	2743.373	-0.01	
03/02/2016 3:00	3881	13.31	13.23	0.716	0.716	341.9	51.15	1.686	0	0	1007.506	-11.76	82.1	901.9416	0.019	908.3483	896.9177	900.5587	0.024	0.018	0.013	2747.748	2733.918	2743.431	-0.01	
03/02/2016 4:00	3882	13.25	13.18	1.251	1.251	120.2	34.55	2.47	0	0	1007.132	-11.86	82.4	901.937	0.068	908.2407	896.9166	900.6535	0.07	0.071	0.062	2747.684	2733.893	2743.481	-0.01	
03/02/2016 5:00	3883	13.2	13.14	1.984	1.984	138.9	16.59	2.999	0	0	1006.789	-11.57	81.7	901.9265	0.101	908.2023	896.9227	900.6542	0.117	0.095	0.09	2747.767	2733.944	2743.571	0	
03/02/2016 6:00	3884	13.16	13.1	3.309	3.309	132.2	8.94	5.057	0	0	1006.112	-11.54	82.1	901.9095	0.22	908.1175	896.9425	900.6683	0.211	0.27	0.166	2747.94	2734.486	2743.542	0	
03/02/2016 7:00	3885	13.13	13.07	4.153	4.153	125.4	8.95	5.802	0	0	1005.77	-11.57	82.8	901.9291	0.454	908.1329	897.0219	900.6326	0.412	0.614	0.269	2748.24	2735.335	2743.105	0	
03/02/2016 8:00	3886	13.09	13.04	3.748	3.748	121.2	9.36	5.233	0	0	1005.458	-12.05	85.6	901.9036	0.3	908.1614	896.913	900.6364	0.329	0.347	0.203	2747.754	2733.909	2743.723	0	
03/02/2016 9:00	3887	13.07	13.01	4.283	4.283	126.4	7.61	5.606	0.4848669	0.001745521	1005.291	-11.92	85.8	901.8709	0.269	908.0904	896.9006	900.6219	0.24	0.316	0.244	2747.586	2733.613	2744.118	0	
03/02/2016 10:00	3888	13.13	13.01	4.062	4.062	129	8.61	5.782	12.4099	0.04467563	1004.793	-11.89	86	901.8577	0.431	908.0449	896.8404	900.6881	0.415	0.552	0.282	2747.725	2735.416	2743.503	0	
03/02/2016 11:00	3889	13.57	13.11	4.848	4.848	146.7	9.05	6.782	44.16796	0.1590046	1004.529	-10.85	82.6	901.8006	0.498	908.0528	896.7187	900.6305	0.496	0.617	0.342	2747.327	2733.485	2743.59	0	
03/02/2016 12:00	3890	14.64	13.58	5.76	5.76	146.3	5.184	7.958	122.4633	0.4408678	1004.119	-11.52	83.7	901.7639	0.8	907.9158	896.6664	900.7095	0.839	0.937	0.58	2745.513	2731.127	2743.011	0.01	
03/02/2016 13:00	3891	14.66	14.55	6.084	6.084	147.3	4.247	7.468	60.73332	0.2186399	1003.484	-12.62	85.9	901.4532	1.861	907.1631	896.5078	900.6888	2.965	1.098	0.626	2748.261	2733.118	2742.839	0	
03/02/2016 14:00	3892	14.67	14.14	5.956	5.956	150.5	9.89	7.722	113.4831	0.4085392	1002.832	-12.31	83.5	901.5685	0.883	907.5896	895.2117	901.9044	0.812	1.187	0.522	2747.15	2732.056	2745.539	0.01	
03/02/2016 15:00	3893	14.66	14.62	6.394	6.394	142.2	9.77	8.88	73.13979	0.2633032	1002.159	-12.62	86	901.7786	0.788	907.9598	896.6085	900.7676	0.867	0.62	0.62	2748.307	2733.69	2742.764	0	
03/02/2016 16:00	3894	14.66	14.36	4.314	4.314	128.2	29.73	8.66	42.38688	0.1525928	1001.699	-12.2	85.3	901.8514	0.284	908.2292	896.6855	900.6396	0.302	0.322	0.216	2747.526	2733.3	2744.08	0	
03/02/2016 17:00	3895	14.38	14.12	4.854	4.854	148.2	11.88	6.762	5.809243	0.02091327	1001.309	-12.35	86.8	901.8666	0.28	908.1807	896.8232	900.5959	0.355	0.294	0.149	2747.39	2733.701	2743.432	0	
03/02/2016 18:00	3896	14.13	13.97	3.546	3.546	125.1	31.76	8.39	0	0	1000.588	-12.44	87	901.9422	0.813	907.9616	897.0345	900.8306	0.818	1.015	0.534	2748.024	2735.147	2743.399	0	
03/02/2016 19:00	3897	13.98	13.86	3.804	3.804	136.2	10.62	7.546	0	0	1000.077	-12.35	86.8	901.9412	0.426	908.1868	896.9643	900.6727	0.437	0.516	0.296	2747.669	2734.79	2744.133	0	
03/02/2016 20:00	3898	13.87	13.76	4.39	4.39	120.6	11.43	6.723	0	0	999.9133	-12.4	86.7	901.9188	0.352	908.0569	896.9647	900.7347	0.327	0.451	0.246	2747.657	2733.863	2743.487	0	
03/02/2016 21:00	3899	13.78	13.68	3.955	3.955	130.9	13.57	6.194	0.000509909	1.84E-06	999.0868	-12.17	86.8	901.9517	0.437	908.0651	897.0024	900.7875	0.406	0.548	0.327	2746.599	2732.806	2742.901	0	
03/02/2016 22:00	3900	13.69	13.6	6.344	6.344	136.1	7.305	8.96	0.001019738	3.67E-06	998.4899	-11.94	87	901.8372	0.899	907.7734	896.9389	900.7994	0.875	1.078	0.704	2747.884	2735.419	2742.863	0	
03/02/2016 23:00	3901	13.61	13.52	5.955	5.955	127.3	13.21	8.55	0	0	998.5618	-11.72	87.1	901.9662	0.358	908.1099	897.0186	900.7703	0.377	0.404	0.283	2747.297	2734.034	2743.373	0	
04/02/2016 0:00	3902	13.54	13.45	3.875	3.875	148.7	16.99	6.899	0	0	998.5566	-11.69	87	901.9695	0.47	908.2307	896.9583	900.7196	0.506	0.495	0.403	2747.089	2733.732	2743.074	0	
04/02/2016 1:00	3903	13.47	13.39	8.45	8.45	157.5	6.408	12.8	0	0	998.2294	-11.65	85.9	902.3486	1.634	906.7144	897.618	902.7137	1.862	1.597	1.41	2746.844	2735.11	2745.65	0	
04/02/2016 2:00	3904	13.41	13.33	8.69	8.69	140.5	10.56	12.62	0	0	998.2394	-12	83.3	901.9771	0.919	907.5973	897.1639	901.17	1.06	0.991	0.655	2745.931	2734.808	2744.084	0	
04/02/2016 3:00	3905	13.35	13.27	7.743	7.743	142.9	6.581	10.9	0	0	998.2523	-12.01	81.1	902.3127	1.278	907.4321	897.4619	902.0441	1.478	1.19	1.139	2740.83	2737.042	2751.643	0	
04/02/2016 4:00	3906	13.29	13.22	6.113	6.113	142.1	8.05	10.19	0.001784514	6.42E-06	998.4882	-11.7	78.54	902.3831	0.648	907.2414	897.8662	902.0417	0.666	0.809	0.403	2745.665	2735.97	2751.117	0	
04/02/2016 5:00	3907	13.24	13.17	4.009	4.009	137.7	13.65	8.45	0.02931492	0.000105534	998.5718	-11.6	79.3	902.3278	0.29	907.6385	897.7809	901.5641	0.276	0.355	0.225	2747.237	2735.485	2744.707	0	
04/02/2016 6:00	3908	13.19	13.13	1.812	1.812	142.9	59.55	6.958	0	0	998.3984	-10.8	78.53	902.3186	0.512	907.525	897.6998	901.731	0.483	0.646	0.367	2745.581	2734.284	2744.937	0	
04/02/2016 7:00	3909	13.15	13.1	3.724	3.724	184.7	57.44	9	0	0	998.5527	-9.92	81.1	902.1589	0.15	907.8342	897.4459	901.1968	0.189	0.141	0.108	2746.457	2734.565	2744.118	0	
04/02/2016 8:00	3910	13.12	13.06	4.15	4.15	144	35.49	9.98	0.005608052	2.02E-05	998.887	-11.36	84.5	902.2573	0.24	907.61	897.6733	901.4888	0.254	0.213	0.25	2747.062	2735.089	2744.602	0	
04/02/2016 9:00	3911	13.09	13.05	5.598	5.598	113.6	23.65	10.45	0.2865686	0.001031647	998.8204	-13.45	86.2	902.0696	0.458	908.0787	897.1925	900.9378	0.484	0.5	0.382	2747.849	2734.091	2743.281	0	
04/02/2016 10:00	3912	13.27	13.05	8.8	8.8	201.5	14.61	15.21	11.86261	0.04270539	997.8918	-8.36	82.3	903.0998	2.691	907.1021	898.0666	904.1307	2.244	3.056	2.711	2750.047	2738.912	2757.912	0	
04/02/201																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
06/02/2016 9:00	3959	13.08	13.05	8.74	8.74	231.7	6.277	11.86	0.2923832	0.001052579	1002.152	-9.44	69.32	902.283	1.717	906.804	896.7621	903.2827	1.679	1.744	1.728	2746.425	2734.809	2746.821	0.01	
06/02/2016 10:00	3960	14.66	13.05	9.95	9.95	232.2	4.981	13.78	26.03841	0.09373829	1002.972	-9.33	68.27	902.2014	1.546	906.2014	897.2383	903.1646	1.432	1.497	1.696	2745.522	2733.912	2752.634	0.01	
06/02/2016 11:00	3961	14.67	14.21	8.81	8.81	228.5	5.168	11.17	100.0726	0.3602615	1004.27	-9.04	67.06	901.8423	1.052	906.9724	896.256	902.2988	1.064	1.064	0.876	2747.699	2733.175	2745.182	0.03	
06/02/2016 12:00	3962	14.67	14.55	6.661	6.661	235.8	10.06	10.72	165.2178	0.5947841	1005.373	-8.42	67.93	901.9411	0.83	907.3036	896.8087	901.7109	0.926	0.871	0.672	2746.331	2733.185	2743.839	0.04	
06/02/2016 13:00	3963	14.63	14.57	8.44	8.44	233.9	6.34	11.41	176.0806	0.6338901	1006.029	-8.33	75.97	902.0032	1.476	906.8474	895.9686	903.1935	1.323	1.737	1.331	2745.614	2733.214	2745.755	0.04	
06/02/2016 14:00	3964	14.59	14.52	8.13	8.13	232.9	5.837	10.84	202.8832	0.7303797	1006.845	-7.973	64.83	901.6277	1.436	906.6667	895.2551	902.9614	1.328	1.477	1.498	2745.979	2729.549	2744.557	0.05	
06/02/2016 15:00	3965	14.6	14.53	10.22	10.22	238.8	4.628	13.11	181.6393	0.6539016	1007.488	-7.778	57.97	902.3533	1.845	907.065	895.8182	904.1768	2	2.038	1.436	2746.83	2733.09	2747.393	0.06	
06/02/2016 16:00	3966	14.6	14.56	9.49	9.49	238.6	4.54	11.94	117.6832	0.4236595	1008.323	-7.984	59.9	902.2468	1.525	907.4889	895.8622	903.3891	1.49	1.778	1.262	2745.001	2731.55	2745.772	0.05	
06/02/2016 17:00	3967	14.63	14.12	9.25	9.25	240.6	5.439	12.78	23.56188	0.08482279	1008.851	-8.69	64.19	902.5835	2.056	907.4333	896.954	903.363	2.483	1.744	1.863	2749.115	2733.345	2747.988	0.01	
06/02/2016 18:00	3968	14.14	13.93	8.25	8.25	232.6	7.538	12.33	0.1113716	0.000400938	1009.364	-8.4	61.22	902.1149	1.199	907.795	896.5895	901.9603	1.164	1.272	1.158	2747.673	2734.566	2743.6	0.01	
06/02/2016 19:00	3969	13.94	13.8	7.167	7.167	236.4	8.28	10.15	0	0	1010.02	-8.97	66.82	901.5291	1.123	907.976	896.0992	900.5123	1.032	0.986	0.986	2746.15	2730.534	2742.914	0.01	
06/02/2016 20:00	3970	13.82	13.7	7.473	7.473	239.4	6.158	10.23	0	0	1010.921	-8.97	67.71	901.8303	1.058	907.8483	896.2983	901.3443	0.965	1.295	0.865	2744.292	2731.104	2744.103	0.01	
06/02/2016 21:00	3971	13.72	13.62	6.325	6.325	232.1	7.156	9.47	0	0	1011.741	-9.12	69.54	901.9947	0.345	907.8041	896.7828	901.3973	0.368	0.368	0.287	2748.543	2734.224	2744.578	0.01	
06/02/2016 22:00	3972	13.64	13.54	6.812	6.812	237.7	8.92	10.27	0	0	1011.986	-8.83	67.45	901.6074	0.903	908.0196	896.2548	900.5479	0.849	1.152	0.631	2747.032	2732.638	2743.176	0.01	
06/02/2016 23:00	3973	13.56	13.47	8.29	8.29	235.8	7.068	11.76	0	0	1012.478	-8.83	64.91	902.1376	0.505	907.4412	897.0926	901.8791	0.563	0.505	0.44	2747.27	2734.758	2744.793	0.01	
07/02/2016 0:00	3974	13.49	13.4	4.653	4.653	229.4	14.24	8.41	0	0	1013.298	-8.96	64.38	902.1904	0.353	907.3719	897.199	902.0002	0.425	0.281	0.339	2746.079	2734.435	2745.393	0.01	
07/02/2016 1:00	3975	13.42	13.34	5.013	5.013	232.8	8.37	8.27	0	0	1013.953	-8.77	64.23	902.2055	0.248	907.3436	897.2894	901.9835	0.216	0.262	0.263	2746.4	2734.416	2745.26	0.01	
07/02/2016 2:00	3976	13.36	13.29	3.76	3.76	236.5	9.08	6.586	0	0	1014.281	-9.1	67.59	902.261	0.128	907.4028	897.3377	902.0426	0.137	0.125	0.122	2746.817	2734.532	2745.117	0	
07/02/2016 3:00	3977	13.31	13.24	4.166	4.166	225.9	13.24	5.998	0	0	1014.308	-9.89	69.45	902.2149	0.403	907.4608	897.2267	901.9573	0.427	0.416	0.364	2746.939	2734.929	2745.238	0	
07/02/2016 4:00	3978	13.25	13.19	5.409	5.409	219.7	8.22	6.88	0	0	1014.317	-10.19	68.27	902.3232	0.468	907.4761	897.4709	902.0228	0.455	0.575	0.344	2746.726	2734.625	2745.596	0.01	
07/02/2016 5:00	3979	13.21	13.15	2.529	2.529	212.1	26.31	5.429	0	0	1014.335	-9.85	65.65	902.2938	0.029	907.4196	897.5074	901.9543	0.028	0.03	0.028	2746.64	2734.693	2745.145	0	
07/02/2016 6:00	3980	13.17	13.11	1.872	1.872	166	31.48	5.331	0	0	1014.524	-9.23	62.68	902.4006	0.506	907.1749	897.6353	902.3915	0.461	0.668	0.332	2745.575	2734.527	2745.849	0	
07/02/2016 7:00	3981	13.13	13.08	4.795	4.795	181.6	14.54	7.409	0	0	1014.301	-9.72	64.58	902.2832	0.074	907.2794	897.4967	902.0734	0.076	0.085	0.057	2746.47	2734.604	2745.265	0.01	
07/02/2016 8:00	3982	13.1	13.05	1.918	1.918	173.3	72.34	6.331	0	0	1014.009	-9.85	64.01	902.2798	0.213	907.3778	897.4718	901.9899	0.192	0.265	0.171	2746.821	2734.478	2745.856	0	
07/02/2016 9:00	3983	13.08	13.03	3.823	3.823	163.1	32.97	6.546	0.0550702	0.000198253	1013.686	-10.28	67.3	902.3002	0.628	907.18	897.5291	902.1916	0.6	0.852	0.312	2745.38	2733.545	2745.875	0	
07/02/2016 10:00	3984	14.66	13.03	4.782	4.782	145.5	4.82	6.154	20.98401	0.07554244	1013.491	-10.38	70.54	902.4072	0.447	905.9192	898.0851	903.2141	0.47	0.528	0.314	2745.041	2735.389	2746.713	0.01	
07/02/2016 11:00	3985	14.65	14.25	2.894	2.894	146.9	12.75	5.331	47.20821	0.1699496	1013.141	-10.45	71.67	902.2929	0.138	907.0773	897.5934	902.2078	0.145	0.161	0.102	2746.297	2734.647	2745.599	0	
07/02/2016 12:00	3986	14.64	14.62	4.448	4.448	146.7	12	6.546	96.01745	0.3456628	1012.807	-10.65	76.49	902.1612	0.696	907.3765	897.3765	902.1699	0.695	0.87	0.464	2745.359	2734.22	2744.856	0.01	
07/02/2016 13:00	3987	14.64	14.63	3.735	3.735	124.9	12.98	5.998	106.3236	0.3827648	1012.806	-10.64	78.92	902.3027	0.106	907.3484	897.5298	902.0297	0.1	0.14	0.062	2746.596	2734.735	2745.313	0.01	
07/02/2016 14:00	3988	14.64	14.44	4.186	4.186	138.3	19.35	9.41	96.63158	0.3478737	1012.642	-10.03	74.79	902.0649	0.176	907.3988	897.2932	901.5031	0.19	0.206	0.12	2746.596	2734.489	2744.153	0.01	
07/02/2016 15:00	3989	14.54	14.37	3.415	3.415	126.9	18.65	5.743	59.2309	0.2132312	1012.314	-9.88	75.27	902.0967	0.137	907.3839	897.3431	901.5633	0.15	0.139	0.121	2746.809	2734.164	2744.764	0	
07/02/2016 16:00	3990	14.66	14.36	3.893	3.893	95.2	27.04	7.272	83.54689	0.3007688	1011.481	-9.15	73.91	901.917	0.65	907.2446	896.7409	901.7656	0.718	0.768	0.401	2744.465	2733.736	2744.883	0.01	
07/02/2016 17:00	3991	14.64	14.16	2.975	2.975	99.7	36.15	7.311	21.96185	0.07906265	1011.331	-10.12	85.7	902.0645	0.478	907.2264	897.3096	901.6577	0.52	0.481	0.427	2746.856	2734.257	2744.76	0	
07/02/2016 18:00	3992	14.18	13.98	2.918	2.918	117.3	44.49	7.115	0.4843253	0.001743571	1011.577	-10.39	86	902.1883	0.053	907.5222	897.503	901.5397	0.056	0.041	0.041	2746.772	2734.623	2744.629	0	
07/02/2016 19:00	3993	14	13.86	6.137	6.137	161.8	66.4	13.86	0	0	1010.593	-9.53	80.2	903.23	1.814	906.8052	898.3228	904.5619	1.768	1.848	1.848	2748.7	2736.896	2746.026	0	
07/02/2016 20:00	3994	13.88	13.77	9.66	9.66	210.9	9.37	15.43	0	0	1010.505	-7.64	74.82	903.0029	1.853	907.383	904.7852	904.7852	1.633	2.136	1.633	2746.181	2735.05	2746.648	0.01	
07/02/2016 21:00	3995	13.79	13.68	12.02	12.02	221.4	8.09	17.58	0	0	1010.205	-5.899	70.69	903.3867	3.983	905.9679	898.8251	905.3672	3.721	4.178	4.035	2736.087	2731.766	2746.601	0.01	
07/02/2016 22:00	3996	13.71	13.61	12.15	12.15	222.9	7.474	17.86	0	0	1010.775	-6.406	73.73	902.8167	2.454	907.0466	897.2637	904.1397	2.241	2.877	2.182	2742.968	2734.3	2744.816	0.01	
07/02/2016 23:00	3997	13.62	13.53	8.26	8.26	233.1	14.33	17.86	0	0	1011.923	-6.378	71.66	901.6701	0.174	907.795	896.5422	900.673	0.165	0.21	0.14	2746.959	2733.294	2743.51	0.01	
08/02/2016 0:00	3998	13.55	13.46	7.521	7.521	233.9	10.08	11.62	0	0	1012.092	-6.379	69.37	901.8172	1.294											

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
09/02/2016 23:00	4045	13.51	13.42	2.756	2.756	100.3	11.86	4.92	0	0	1011.933	-8.21	89.6	903.0174	0.135	909.3113	898.0282	901.7126	0.119	0.186	0.075	2748.966	2735.373	2744.822	0	
10/02/2016 0:00	4046	13.44	13.36	2.229	2.229	90.1	22.27	4.43	0.010955786	3.94E-05	1011.445	-8.07	89.9	903.0589	0.075	909.3447	898.0439	901.7882	0.081	0.087	0.052	2749.039	2735.302	2744.958	-0.01	
10/02/2016 1:00	4047	13.38	13.3	1.915	1.915	114.4	24.93	3.195	0	0	1010.945	-7.704	91.5	903.0988	0.108	909.3259	898.0715	901.899	0.135	0.053	0.135	2749.316	2735.728	2745.117	-0.01	
10/02/2016 2:00	4048	13.32	13.25	3.344	3.344	111.1	14.35	6.194	0	0	1010.618	-7.527	91.3	903.09	0.355	909.2698	898.0785	901.9218	0.366	0.432	0.24	2748.872	2735.631	2744.896	0	
10/02/2016 3:00	4049	13.27	13.2	2.662	2.662	135.3	15.41	5.116	0	0	1010.372	-7.048	91.3	903.1113	0.094	909.2695	898.1061	901.9584	0.106	0.098	0.074	2748.867	2735.502	2745.108	-0.01	
10/02/2016 4:00	4050	13.22	13.16	2.735	2.735	124.5	12.17	5.449	0	0	1009.633	-6.794	91.6	903.1125	0.337	909.1492	898.2483	901.9399	0.376	0.377	0.239	2748.855	2735.567	2744.949	-0.01	
10/02/2016 5:00	4051	13.18	13.13	5.166	5.166	121.7	7.316	7.566	0	0	1008.807	-6.633	91.1	903.0639	0.56	909.0078	898.1094	902.0745	0.51	0.749	0.347	2748.552	2734.329	2745.49	0	
10/02/2016 6:00	4052	13.15	13.1	5.368	5.368	120.7	6.769	7.997	0	0	1008.113	-6.403	92	903.0403	0.966	908.7643	898.2118	902.1448	0.988	1.17	0.674	2747.419	2735.379	2745.108	0	
10/02/2016 7:00	4053	13.12	13.07	6.103	6.103	131.4	6.728	8.41	0.000509649	1.83E-06	1007.948	-6.419	92	903.2127	0.857	908.8792	898.5057	902.2534	0.771	1.112	0.609	2749.337	2737.362	2745.923	0	
10/02/2016 8:00	4054	13.09	13.05	6.843	6.843	123.6	8.91	9.06	0	0	1007.454	-6.328	92.1	903.2249	0.939	908.8038	898.4939	902.3771	0.906	1.17	0.674	2746.918	2735.284	2746.808	0	
10/02/2016 9:00	4055	13.08	13.04	7.318	7.318	121.3	7.077	9.6	1.570483	0.00565374	1006.964	-6.354	91.8	902.894	1.126	908.3231	898.3682	901.9909	1.212	1.292	0.815	2747.971	2735.73	2744.667	0	
10/02/2016 10:00	4056	13.16	13.04	7.877	7.877	117.5	7.132	10.84	13.79773	0.04967182	1006.885	-6.636	89.4	903.3862	0.708	909.0084	898.4306	902.7195	0.714	0.815	0.576	2747.783	2734.133	2746.742	0	
10/02/2016 11:00	4057	13.52	13.14	8.94	8.94	119.6	6.494	13.9	42.16555	0.151796	1006.151	-6.891	89.7	903.7493	2.204	907.4741	899.004	904.7698	2.133	2.517	1.921	2746.911	2740.838	2751.326	0	
10/02/2016 12:00	4058	14.04	13.52	10.42	10.42	120.5	6.065	13.56	63.49595	0.2285854	1005.989	-6.748	89.6	904.1765	2.209	907.9207	899.6565	904.9523	1.897	2.357	2.341	2747.497	2737.567	2748.91	0	
10/02/2016 13:00	4059	14.54	13.79	10.92	10.92	133.7	6.027	14.64	66.10784	0.2379882	1005.819	-6.794	86.7	909.3659	4.484	905.197	899.3659	905.9305	2.762	3.095	2.762	2747.967	2735.116	2749.253	0.01	
10/02/2016 14:00	4060	14.64	13.84	10.44	10.44	143.2	6.837	14.74	92.83656	0.3342116	1005.986	-7.056	85.2	903.6309	1.596	908.2123	898.6707	904.0096	1.705	1.797	1.228	2749.082	2734.751	2746.642	0.01	
10/02/2016 15:00	4061	14.48	14.27	10.5	10.5	156.5	4.85	13.78	51.53813	0.1855372	1005.978	-6.084	78.05	903.8213	2.039	907.2889	899.0593	905.1157	2.44	1.702	1.903	2746.356	2737.382	2749.125	0.01	
10/02/2016 16:00	4062	14.36	14.24	9.62	9.62	160.7	5.096	12.11	43.9149	0.1580936	1005.989	-6.547	79.14	903.7398	1.695	908.0854	898.7756	904.3584	1.51	2.032	1.487	2744.349	2731.823	2747.241	0.01	
10/02/2016 17:00	4063	14.39	14.08	10.09	10.09	162.6	5.038	12.39	21.12596	0.07605346	1005.836	-6.824	79.24	904.606	1.711	908.1326	899.9012	905.7841	1.718	1.812	1.595	2745.84	2736.203	2749.237	0.01	
10/02/2016 18:00	4064	14.09	13.91	9.98	9.98	158.6	4.039	12.8	0.7593771	0.002733757	1006.029	-7.477	80.5	904.2075	2.194	907.7539	899.5867	904.9219	2.29	2.436	1.807	2748.933	2736.382	2747.904	0.01	
10/02/2016 19:00	4065	13.93	13.8	9.5	9.5	153.3	9.87	12.37	0.02115043	7.61E-05	1005.865	-7.749	82.3	903.989	1.409	907.5953	899.3119	905.0595	1.486	1.547	1.162	2746.382	2734.975	2748.969	0	
10/02/2016 20:00	4066	13.81	13.7	6.346	6.346	161.5	46.31	11.64	0.1075357	0.000387129	1006.111	-7.812	83.4	904.2021	0.307	908.5439	899.367	904.6956	0.334	0.338	0.238	2748.039	2737.217	2748.159	0	
10/02/2016 21:00	4067	13.72	13.62	4.388	4.388	160.4	43.62	10.43	0.2512568	0.000904525	1006.029	-7.675	83.6	909.0769	0.922	908.3351	899.2274	904.6682	1.048	0.924	0.774	2747.559	2735.308	2748.606	0	
10/02/2016 22:00	4068	13.63	13.54	2.767	2.767	161.9	75.22	9.37	0.05274867	0.000189895	1006.52	-7.905	84.3	903.9554	1.079	908.9327	898.9675	903.9661	1.127	1.201	0.884	2748.581	2736.521	2747.95	0	
10/02/2016 23:00	4069	13.56	13.47	5.311	5.311	168.2	36.23	12.99	0.1460148	0.000525653	1006.357	-8.26	84.4	908.2029	1.752	908.2029	899.4714	905.2193	1.769	2.003	1.437	2746.053	2738.078	2750.931	0	
11/02/2016 0:00	4070	13.49	13.4	9.53	9.53	158.4	8.15	14.19	0.00356761	1.28E-05	1007.521	-8.58	83.8	903.9392	1.138	908.431	899.3923	903.9943	1.071	1.327	0.988	2748.303	2737.166	2747.664	0	
11/02/2016 1:00	4071	13.42	13.34	8.46	8.46	155.1	6.233	11.51	0.004077317	1.47E-05	1007.347	-8.37	82.9	904.2138	2.026	908.0964	899.5397	905.0051	2.108	2.326	1.568	2744.702	2732.883	2747.877	0	
11/02/2016 2:00	4072	13.36	13.29	7.683	7.683	150.6	8.64	12.52	0.1761123	0.000634004	1008.05	-9.67	85.5	908.8716	0.766	908.8797	899.0944	903.6408	0.86	0.684	0.684	2748.637	2736.83	2747.736	0	
11/02/2016 3:00	4073	13.3	13.23	7.057	7.057	161.3	33.51	11.86	0.4335946	0.001560941	1008.708	-9.85	86.5	903.7041	0.522	909.8226	897.9053	903.3843	0.551	0.514	0.501	2749.443	2734.647	2746.233	0	
11/02/2016 4:00	4074	13.25	13.18	2.046	2.046	353.8	68.6	7.879	0.01783829	6.42E-05	1009.307	-6.98	83.8	904.1431	0.064	908.8572	899.381	904.191	0.077	0.064	0.047	2748.418	2737	2747.97	0	
11/02/2016 5:00	4075	13.21	13.14	1.943	1.943	323.6	55.32	6.566	0.05529697	0.000199069	1009.798	-5.789	81.3	904.1436	0.114	908.7883	899.4017	904.241	0.132	0.075	0.075	2748.326	2737.019	2748.007	-0.01	
11/02/2016 6:00	4076	13.17	13.11	4.344	4.344	216.9	70.22	11.98	0.07313443	0.000263284	1010.239	-4.949	81.6	904.2944	1.826	908.4216	899.5712	904.8901	1.913	1.864	1.695	2749.248	2736.258	2747.932	0	
11/02/2016 7:00	4077	13.13	13.08	8.72	8.72	218.1	13.41	14.82	0.00356734	1.28E-05	1010.505	-2.897	76.08	908.5673	1.321	908.5679	898.543	903.891	1.296	1.547	1.078	2749.469	2740.563	2747.393	0.01	
11/02/2016 8:00	4078	13.1	13.06	9.87	9.87	218.2	8.59	14.33	0	0	1010.842	-2.907	71.54	904.1941	1.994	908.1755	899.0672	905.3396	1.991	2.073	1.914	2745.82	2732.67	2747.907	0.01	
11/02/2016 9:00	4079	13.32	13.06	8.64	8.64	213.1	11.72	13.47	2.338496	0.008418586	1011.321	-3.58	71.69	904.0483	1.633	908.3175	899.2477	904.58	1.756	1.925	1.1	2750.459	2739.722	2749.58	0.01	
11/02/2016 10:00	4080	13.87	13.32	9	9	202.2	8.08	14.39	23.97374	0.08630546	1011.731	-4.234	78.27	903.6993	1.728	908.7823	898.4717	903.8438	1.325	1.689	2.086	2747.733	2739.043	2751.999	0.01	
11/02/2016 11:00	4081	14.66	13.82	9.06	9.06	196.2	7.7	13.25	110.906	0.3992615	1011.813	-4.433	76.04	903.9717	3.33	906.319	898.8814	906.7148	3.949	2.978	2.968	2738.015	2735.418	2756.751	0.03	
11/02/2016 12:00	4082	14.67	14.63	10.88	10.88	204.1	6.489	16.09	194.0177	0.6984638	1011.895	-3.419	68.87	906.4458	3.341	906.4458	898.6079	908.1178	3.375	3.828	2.727	2738.81	2739.878	2754.556	0.06	
11/02/2016 13:00	4083	14.66	14.4	12.5	12.5	199.1	6.36	16.17	238.2457	0.8576844	1012.299	-3.215	68.01	903.9001	6.994	903.4865	899.4063	908.8077	8.48	6.685	5.491	2750.023	2733.917	2752.73	0.07	
11/02/2016 14:00	4084																									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	Max	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
13/02/2016 10:00	4128	13.3	13.06	10.24	10.24	224	8.89	14.6	25.92801	0.09334084	999.6897	-4.365	70.72	904.3796	1.474	908.5382	898.9054	905.6951	1.393	1.357	1.655	2748.024	2736.974	2750.102	0.01
13/02/2016 11:00	4129	14.66	13.3	9.41	9.41	229.2	8.14	14.07	98.79032	0.3556451	999.527	-4.496	69.66	904.4506	2.45	907.2713	898.9396	907.1409	2.139	2.669	2.512	2749.209	2733.219	2750.737	0.02
13/02/2016 12:00	4130	14.67	14.61	10.53	10.53	224.5	8.04	13.84	232.2728	0.8361819	1000.018	-4.514	70.02	904.6849	2.642	907.0158	898.5418	908.497	2.442	2.688	2.688	2746.967	2733.369	2751.42	0.06
13/02/2016 13:00	4131	14.67	14.4	9.24	9.24	223.4	6.973	13.5	286.2566	1.030524	999.6078	-4.14	67.74	904.7567	2.796	906.5063	898.9441	908.8196	2.488	3.124	2.74	2750.624	2741.152	2755.787	0.08
13/02/2016 14:00	4132	14.47	14.37	8.48	8.48	225.7	9.35	12.9	256.6502	0.9239407	1000.181	-3.624	63.04	904.4428	0.441	908.3476	897.5673	904.4134	0.461	0.444	0.444	2747.484	2733.594	2748.821	0.08
13/02/2016 15:00	4133	14.44	14.28	2.888	2.888	224.6	28.35	6.723	196.5694	0.7076499	1000.128	-3.162	62.09	903.6614	0.558	908.732	898.4988	903.7537	0.571	0.655	0.425	2749.49	2737.642	2747.449	0.05
13/02/2016 16:00	4134	14.48	14.38	2.285	2.285	220.4	42.49	6.84	133.9811	0.4823318	1000.017	-3.737	67.18	903.2988	0.159	909.1072	896.4147	904.3747	0.147	0.163	0.167	2749.013	2733.507	2747.797	0.03
13/02/2016 17:00	4135	14.48	14.17	5.074	5.074	228	10.5	8.53	70.69086	0.2544871	999.6896	-3.816	69.11	903.6257	0.526	908.9473	898.2639	903.6659	0.541	0.615	0.399	2748.411	2735.734	2747.722	0.01
13/02/2016 18:00	4136	14.18	13.92	8.11	8.11	220	6.845	12.5	8.254258	0.02971533	998.708	-4.326	70.57	905.0993	2.854	907.5681	900.076	907.6539	3.138	3.251	2.007	2744.166	2742.211	2753.961	0.01
13/02/2016 19:00	4137	13.94	13.78	10.79	10.79	220	5.348	14.09	0	0	998.543	-4.387	71.75	904.4561	2.797	907.597	899.05	906.7211	3.237	2.899	2.14	2746.044	2737.243	2751.157	0.01
13/02/2016 20:00	4138	13.8	13.67	10.57	10.57	225.1	6.042	13.31	0	0	998.5444	-4.465	71.53	904.6547	2.361	908.2761	898.9619	906.7263	2.154	3.032	1.702	2745.987	2741.62	2754.86	0.01
13/02/2016 21:00	4139	13.69	13.59	10.94	10.94	224.9	5.727	15.03	0	0	998.4008	-4.518	71.77	904.4915	2.151	908.2014	899.1578	906.1152	2.057	2.444	1.918	2752.346	2732.047	2750.384	0.01
13/02/2016 22:00	4140	13.6	13.51	9.31	9.31	227.2	6.04	13.66	0	0	998.8066	-4.448	69.75	904.0276	1.098	908.4318	898.8353	904.8159	0.972	1.412	0.824	2748.316	2737.557	2748.934	0.01
13/02/2016 23:00	4141	13.52	13.44	7.47	7.47	221.5	6.221	9.94	0	0	998.8442	-4.831	71.78	903.0991	1.356	909.2437	898.0613	901.9924	1.323	1.318	1.423	2749.65	2739.686	2752.953	0.01
14/02/2016 0:00	4142	13.45	13.38	7.682	7.682	221.1	5.459	10.47	0	0	999.0095	-5.143	73.61	903.2943	0.933	909.0294	898.2802	902.5734	0.999	1.063	0.696	2748.561	2736.344	2746.442	0.01
14/02/2016 1:00	4143	13.39	13.32	7.761	7.761	223.1	6.402	10.7	0	0	999.1865	-5.342	72.58	903.8235	1.563	908.9164	898.4244	904.1299	1.553	1.468	1.663	2748.744	2736.81	2749.007	0.01
14/02/2016 2:00	4144	13.33	13.26	6.376	6.376	219.8	8.08	10.68	0	0	999.5773	-4.629	71.63	903.7747	0.795	908.7858	898.6756	903.8628	0.708	0.977	0.665	2747.848	2736.665	2747.676	0.01
14/02/2016 3:00	4145	13.28	13.21	4.192	4.192	226.4	23.4	9.27	0	0	999.3938	-4.661	74.67	903.7104	0.544	908.6242	898.7076	903.7993	0.591	0.578	0.452	2748.098	2735.894	2747.707	0
14/02/2016 4:00	4146	13.23	13.17	4.007	4.007	221.9	13.97	7.213	0	0	999.3726	-4.678	73.25	903.8647	0.141	908.6934	898.9072	903.9938	0.14	0.146	0.138	2748.391	2736.455	2747.738	0
14/02/2016 5:00	4147	13.19	13.13	3.622	3.622	182.3	33.34	6.076	0	0	999.0941	-5.379	74.13	903.9149	0.292	908.6016	899.1115	904.0314	0.317	0.31	0.244	2748.704	2737.069	2748.125	0
14/02/2016 6:00	4148	13.16	13.1	4.033	4.033	177.1	15.41	6.782	0	0	998.8177	-5.96	74.52	903.9028	0.407	908.5031	899.0049	904.2004	0.444	0.459	0.3	2747.425	2735.979	2748.503	0
14/02/2016 7:00	4149	13.12	13.07	3.938	3.938	162.3	10.41	5.919	0	0	998.8181	-6.391	75.83	903.8936	0.418	908.4609	899.08	904.1398	0.387	0.509	0.34	2747.733	2736.981	2747.459	0
14/02/2016 8:00	4150	13.09	13.05	2.101	2.101	215.5	26.96	4.586	0	0	998.6543	-6.224	73.81	903.9534	0.13	908.6918	899.0616	904.1068	0.132	0.146	0.11	2748.223	2736.535	2747.695	0
14/02/2016 9:00	4151	13.16	13.05	1.469	1.469	198.4	19.2	3.606	3.953857	0.01423388	998.4084	-6.198	74.05	903.9695	0.256	908.5451	899.1391	904.2244	0.292	0.279	0.184	2748.198	2736.762	2747.954	-0.01
14/02/2016 10:00	4152	14.52	13.15	3.721	3.721	165	15.73	6.135	49.34385	0.1776379	998.1626	-6.834	76.86	903.9865	0.572	908.1786	899.3247	904.4561	0.68	0.617	0.37	2748.242	2736.53	2748.992	0
14/02/2016 11:00	4153	14.67	14.04	4.582	4.582	155.7	8.23	6.723	141.7005	0.5101218	997.959	-6.252	76.88	904.0054	0.644	907.7323	899.2513	905.0328	0.745	0.663	0.499	2749.033	2738.743	2749.695	0.03
14/02/2016 12:00	4154	14.67	14.62	1.914	1.914	161.1	64.31	5.9	121.2018	0.4363266	997.771	-5.585	74.34	903.9409	0.041	908.3185	899.0683	904.436	0.046	0.044	0.033	2747.884	2736.566	2748.151	0.02
14/02/2016 13:00	4155	14.64	14.46	3.625	3.625	247.9	30.29	6.742	187.2755	0.6741919	997.5663	-5	69.61	903.9399	0.35	908.232	898.9945	904.5934	0.383	0.294	0.294	2748.014	2736.271	2748.059	0.04
14/02/2016 14:00	4156	14.5	14.43	3.198	3.198	214.1	63.27	6.782	179.5324	0.6463168	997.5629	-4.857	71.6	903.8309	0.104	908.5204	898.5664	904.406	0.1	0.127	0.079	2747.919	2735.888	2748.291	0.04
14/02/2016 15:00	4157	14.48	14.33	2.39	2.39	205.3	35.08	4.743	131.7034	0.4741324	997.0685	-4.906	72.96	903.89	0.178	908.488	899.009	904.1727	0.229	0.154	0.136	2747.935	2736.725	2747.917	0.02
14/02/2016 16:00	4158	14.64	14.33	2.321	2.321	240.1	26.63	4.626	76.47609	0.2753139	996.8384	-5.388	76.03	903.8808	0.064	908.5436	898.843	904.2557	0.075	0.069	0.043	2747.806	2736.042	2747.925	0.01
14/02/2016 17:00	4159	14.55	14.13	0.742	0.742	263.2	69.33	2.744	43.40619	0.1562623	996.7946	-5.621	78.56	903.9269	0.018	908.6749	899.0687	904.037	0.02	0.017	0.016	2748.174	2736.604	2747.742	0
14/02/2016 18:00	4160	14.14	13.93	2.818	2.818	229.7	23.25	5.586	4.345719	0.01564459	996.6537	-6.16	81	904.0042	0.446	908.7437	899.0875	904.1815	0.442	0.531	0.344	2748.12	2736.484	2748.988	0
14/02/2016 19:00	4161	13.94	13.79	3.316	3.316	206.1	29.12	6.194	0	0	996.6388	-5.938	81.5	903.9824	0.082	908.6365	899.1734	904.137	0.08	0.095	0.068	2748.185	2736.846	2747.922	0
14/02/2016 20:00	4162	13.81	13.69	3.389	3.389	216.3	34.77	6.801	0	0	996.724	-6.069	82.5	903.9933	0.111	908.7028	899.1182	904.1591	0.128	0.114	0.086	2748.205	2736.827	2747.979	0
14/02/2016 21:00	4163	13.71	13.6	1.159	1.159	252.8	39.51	3.744	0	0	997.1429	-6.192	86.9	903.9885	0.01	908.7139	899.167	904.0845	0.011	0.006	0.011	2748.22	2736.699	2747.793	-0.01
14/02/2016 22:00	4164	13.62	13.53	1.984	1.984	248.8	69.05	4.43	0	0	997.165	-6.479	88.8	903.9789	0.22	908.7723	899.0781	904.0862	0.219	0.233	0.206	2748.096	2735.98	2747.617	-0.01
14/02/2016 23:00	4165	13.55	13.46	3.992	3.992	210.8	51.98	8.53	0	0	997.4845	-6.252	82.7	903.5853	0.101	909.1202	898.7266	902.909	0.088	0.139	0.057	2748.805	2736.206	2746.365	0
15/02/2016 0:00	4166	13.48	13.39	4.106	4.106	232.6	17.58	6.527	0	0	997.8293	-6.522	84.4	903.6497	0.079	909.118	898.7573	903.0737	0.087	0.086	0.062	2748.593	2736.2	2746.511	0
15/02/2016 1:00	4167	13.41	13.33	4.919	4.919	241.1	5.089	6.703	0	0	998.1626	-6.738	80.5	903.6094	0.372	909.1785	898.637								

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
17/02/2016 0:00	4214	13.52	13.44	2.184	2.184	271.4	26.53	4.116	0	0	999.8574	-10.32	88.7	904.4631	0.124	910.2161	899.5706	903.6025	0.112	0.133	0.127	2750.089	2737.408	2747.378	0
17/02/2016 1:00	4215	13.46	13.38	2.723	2.723	290.2	10.91	4.508	0	0	999.9393	-10.81	88.2	904.4937	0.075	910.2495	899.598	903.6335	0.079	0.084	0.06	2749.9	2736.928	2747.277	0
17/02/2016 2:00	4216	13.4	13.32	1.612	1.612	301.6	11.28	3.43	0	0	999.6935	-11.01	87.9	904.5208	0.036	910.2819	899.6373	903.6434	0.039	0.036	0.06	2750.231	2737.198	2747.159	-0.01
17/02/2016 3:00	4217	13.34	13.27	1.542	1.542	285.4	11.47	2.528	0	0	999.5297	-11.18	87.8	904.5256	0.059	910.3214	899.6294	903.626	0.058	0.072	0.042	2750.242	2737.188	2747.094	-0.01
17/02/2016 4:00	4218	13.29	13.21	0.703	0.703	288.5	18.59	2.136	0	0	999.2074	-11.35	87.6	904.6069	0.008	910.3889	899.7391	903.693	0.002	0.004	0.004	2750.306	2737.436	2747.31	-0.01
17/02/2016 5:00	4219	13.24	13.17	0.186	0.186	209.3	43.48	0.941	0	0	998.7159	-11.45	87.4	904.639	0.011	910.4257	899.7792	903.7121	0.018	0.004	0.005	2750.35	2737.486	2747.344	-0.01
17/02/2016 6:00	4220	13.19	13.12	0.203	0.203	347.7	16.33	1.058	0	0	998.3938	-11.5	87.3	904.6726	0.01	910.4682	899.8138	903.7358	0.017	0.003	0.005	2750.4	2737.53	2747.372	-0.01
17/02/2016 7:00	4221	13.15	13.09	0.22	0.22	110.7	9.49	0.902	0	0	997.7393	-11.7	87.5	904.6924	0.013	910.5342	899.8304	903.7124	0.022	0.005	0.005	2750.469	2737.556	2747.346	-0.01
17/02/2016 8:00	4222	13.11	13.05	1.095	1.095	100.5	31.56	2.215	0	0	997.6102	-11.8	87.1	904.722	0.027	910.5685	899.9012	903.6964	0.033	0.02	0.026	2750.505	2737.638	2747.392	-0.01
17/02/2016 9:00	4223	13.08	13.04	0.439	0.439	345.5	27.63	1.568	3.319175	0.01194903	997.1155	-12.14	86.9	904.7294	0.011	910.5859	899.8706	903.7316	0.017	0.006	0.006	2750.546	2737.593	2747.37	-0.01
17/02/2016 10:00	4224	13.15	13.04	0.541	0.541	74.9	45.2	1.823	17.53296	0.06311864	996.4504	-12.2	87.5	904.7518	0.051	910.5511	899.892	903.8123	0.068	0.043	0.035	2750.338	2737.463	2747.419	-0.01
17/02/2016 11:00	4225	13.53	13.13	0.928	0.928	82	38.5	1.98	58.23683	0.2096526	995.9323	-12.25	87.1	904.7407	0.017	910.5561	899.78	903.8862	0.016	0.013	0.021	2750.525	2737.506	2747.549	0
17/02/2016 12:00	4226	14.51	13.53	1.121	1.121	100.2	22.32	3.156	97.67606	0.3516338	995.5959	-11.85	87.4	904.7607	0.174	910.4608	899.8477	903.9735	0.21	0.177	0.126	2750.266	2737.311	2747.705	0
17/02/2016 13:00	4227	14.64	14.23	1.996	1.996	111.1	24.85	3.724	103.32756	0.3717921	995.1042	-11.59	87.2	904.0854	3.386	909.0396	899.6464	903.5703	5.379	0.943	2.138	2750.574	2737.441	2747.507	0.01
17/02/2016 14:00	4228	14.65	14.31	1.488	1.488	331.7	46.64	2.705	110.0361	0.3961299	994.2847	-11.81	86.7	904.7278	0.051	910.3812	899.7831	904.0192	0.056	0.051	0.044	2750.416	2737.513	2747.731	0.01
17/02/2016 15:00	4229	14.64	14.63	1.475	1.475	316.3	11.2	3.116	90.13312	0.3244792	993.793	-12.25	86.1	904.7426	0.06	910.4573	899.7915	903.9789	0.066	0.063	0.049	2750.381	2737.576	2747.729	0
17/02/2016 16:00	4230	14.64	14.53	1.595	1.595	326.4	9.84	2.862	62.71612	0.2257778	993.3076	-12.76	85.8	904.7598	0.013	910.5421	899.8371	903.9003	0.017	0.012	0.01	2750.505	2737.568	2747.574	0
17/02/2016 17:00	4231	14.64	14.3	0.966	0.966	323.4	18.08	2.313	40.18897	0.1446803	992.847	-12.89	85.6	904.7807	0.011	910.647	899.9248	903.7851	0.015	0.007	0.009	2750.639	2737.68	2747.406	0
17/02/2016 18:00	4232	14.31	14.08	1.094	1.094	246	12.68	1.568	5.92388	0.02132596	992.231	-13.75	85.2	904.8171	0.016	910.7981	899.9684	903.685	0.02	0.011	0.016	2750.825	2737.734	2747.325	-0.01
17/02/2016 19:00	4233	14.1	13.95	0.472	0.472	238.2	19.98	0.823	0	0	991.6073	-14.11	84.8	904.8467	0.009	910.8918	899.9847	903.6635	0.014	0.003	0.004	2750.923	2737.745	2747.29	-0.01
17/02/2016 20:00	4234	13.96	13.85	0.298	0.298	148.4	19.84	0.862	0	0	991.2794	-14.03	84.9	904.8855	0.009	910.8918	900.0372	903.7275	0.015	0.004	0.004	2750.93	2737.813	2747.365	-0.01
17/02/2016 21:00	4235	13.87	13.76	0.019	0.019	126.6	8.96	0.431	0	0	990.7056	-13.89	84.9	904.9046	0.006	910.9075	900.0684	903.7379	0.01	0.002	0.004	2750.954	2737.851	2747.378	-0.01
17/02/2016 22:00	4236	13.79	13.69	0.579	0.579	141.7	62.79	1.333	0.02116125	7.62E-05	989.9677	-14.26	84.6	904.9069	0.016	910.967	900.0713	903.6823	0.017	0.018	0.013	2751.025	2737.861	2747.298	-0.01
17/02/2016 23:00	4237	13.71	13.62	0.086	0.086	235.9	18.45	0.686	0	0	989.3109	-14.41	84.4	904.915	0.008	910.9996	900.0896	903.656	0.011	0.005	0.005	2751.073	2737.868	2747.272	-0.01
18/02/2016 0:00	4238	13.64	13.55	0.169	0.169	111.1	73.34	0.647	0	0	988.8199	-14.75	84.2	904.9204	0.008	911.0369	900.1025	903.6217	0.008	0.006	0.009	2751.12	2737.885	2747.225	-0.01
18/02/2016 1:00	4239	13.57	13.49	0.005	0.005	219.6	0.767	0.176	0	0	988.4921	-14.98	83.7	904.9358	0.01	911.1001	900.1147	903.5925	0.011	0.01	0.009	2751.176	2737.903	2747.197	-0.01
18/02/2016 2:00	4240	13.51	13.43	0.02	0.02	305.3	3.537	0.216	0	0	988.1641	-15.3	83.5	904.9541	0.009	911.1547	900.1389	903.5688	0.011	0.007	0.009	2751.269	2737.936	2747.165	-0.01
18/02/2016 3:00	4241	13.45	13.36	0	0	0	0	0	0	0	987.7542	-15.57	83.2	904.9693	0.009	911.1939	900.1674	903.5466	0.011	0.007	0.007	2751.307	2737.954	2747.132	-0.01
18/02/2016 4:00	4242	13.38	13.31	0.256	0.256	266.2	2.231	1.254	0	0	987.3444	-15.66	83.1	904.9947	0.039	911.2339	900.1935	903.5567	0.043	0.042	0.029	2751.533	2738.144	2747.18	-0.01
18/02/2016 5:00	4243	13.33	13.25	0.533	0.533	285.5	11.97	0.98	0	0	987.0984	-15.79	83	905.0136	0.02	911.2436	900.2299	903.5672	0.024	0.019	0.017	2751.377	2738.04	2747.171	-0.01
18/02/2016 6:00	4244	13.27	13.2	0.278	0.278	281.5	9.3	0.784	0	0	986.8528	-15.82	83	905.0198	0.007	911.2494	900.248	903.562	0.009	0.006	0.007	2751.385	2738.069	2747.156	-0.01
18/02/2016 7:00	4245	13.22	13.15	0	0	0	0	0	0	0	986.6887	-16.08	82.7	905.027	0.03	911.2979	900.2562	903.527	0.035	0.027	0.026	2751.556	2738.138	2747.086	-0.01
18/02/2016 8:00	4246	13.17	13.11	0	0	0	0	0	0.03723604	0.00013405	986.696	-16.18	82.6	905.0436	0.047	911.3408	900.2788	903.5111	0.05	0.044	0.046	2751.497	2738.144	2747.131	-0.01
18/02/2016 9:00	4247	13.15	13.11	0	0	0	0	0	5.523687	0.01988527	986.9402	-16.41	82.3	905.054	0.068	911.3519	900.2823	903.5276	0.068	0.065	0.072	2751.454	2738.124	2747.258	-0.01
18/02/2016 10:00	4248	13.35	13.12	0	0	0	0	0	27.00786	0.0972283	987.1886	-16.58	82.1	905.0681	0.053	911.3108	900.3347	903.5585	0.058	0.053	0.048	2751.485	2738.187	2747.166	-0.01
18/02/2016 11:00	4249	13.9	13.34	0	0	0	0	0	58.7193	0.2113895	987.5089	-16.23	82.3	905.077	0.047	911.2205	900.3442	903.6663	0.049	0.051	0.041	2751.344	2738.176	2747.291	0
18/02/2016 12:00	4250	14.64	13.86	0.217	0.217	314.4	2.957	2.293	77.6037	0.2793733	987.8363	-15.61	82.7	905.0671	0.064	911.1484	900.304	903.7489	0.075	0.067	0.047	2751.146	2738.02	2747.335	0
18/02/2016 13:00	4251	14.65	14.62	1.946	1.946	317.4	10.43	2.705	91.40549	0.3290597	988.0002	-15.57	82.6	905.0927	0.063	911.1271	900.3211	903.8299	0.063	0.075	0.048	2751.115	2738.199	2747.535	0
18/02/2016 14:00	4252	14.65	14.59	1.615	1.615	331	14.89	2.332	90.49345	0.3257764	988.2451	-15.49	82.6	905.1213	0.066	911.1652	900.3166	903.827	0.066	0.075	0.056	2751.154	2738.062	2747.494	0
18/02/2016 15:00	4253	14.64	14.63	2.048	2.048	345.1	9.52	3.587	77.78874	0.2800395	988.5718	-15.62	82.6	905.1379	0.136	911.2336	900.3522	903.8278	0.139	0.159	0.105	2751.455	2738.15	2747.342	0
18/02/2016 16:00	4254	14.65	14.42	2.505	2.505	348.8	7.949	3.998	56.5492	0.2035771	989.1478	-15.71	82.6	905.1725	0.115	91									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
20/02/2016 14:00	4300	14.58	14.06	10.71	10.71	233	9.76	15.41	312.0696	1.123451	1006.25	-5.709	64.69	905.2879	1.974	909.7092	898.3278	907.8267	1.813	2.22	1.863	2748.738	2732.1	2749.36	0.08
20/02/2016 15:00	4301	14.61	14.51	6.681	6.681	251.7	15.24	14.17	278.5749	1.00287	1007.881	-7.267	66.06	905.0417	0.848	910.2479	898.5328	906.3441	0.94	0.936	0.632	2750.611	2734.503	2749.665	0.06
20/02/2016 16:00	4302	14.58	14.52	5.747	5.747	244.4	13.62	11.29	204.7859	0.737229	1008.127	-6.36	66.03	905.3184	0.438	911.2756	898.361	906.3185	0.471	0.427	0.414	2750.813	2735.343	2751.029	0.05
20/02/2016 17:00	4303	14.6	14.31	11.03	11.03	223.6	10.97	16.9	104.602	0.3765672	1007.663	-5.802	64.19	906.5598	4.712	908.7295	901.9715	908.9785	4.837	5.083	4.17	2750.503	2738.399	2754.834	0.05
20/02/2016 18:00	4304	14.33	14.05	14.77	14.77	219	6.622	20.29	5.522724	0.01988181	1007.631	-6.378	70.66	906.835	6.799	907.8255	903.2769	909.4026	6.677	6.992	6.17	2750.521	2743.175	2753.272	0.01
20/02/2016 19:00	4305	14.07	13.91	12.03	12.03	217.9	7.91	17.13	0	0	1009.224	-6.628	68.95	906.2419	2.003	910.11	900.6251	907.9907	2.02	1.894	2.089	2748.236	2735.601	2752.878	0.01
20/02/2016 20:00	4306	13.92	13.8	10.77	10.77	222.8	8.74	16.44	0	0	1009.306	-6.493	64.45	905.8555	2.249	909.0615	900.8036	907.7013	3.013	1.954	1.509	2745.942	2738.177	2753.692	0.01
20/02/2016 21:00	4307	13.82	13.72	8.51	8.51	218.9	8.44	12.15	0	0	1009.798	-6.843	63.59	906.1135	1.747	909.766	900.6619	907.9122	1.838	1.745	1.653	2748.89	2739.397	2753.042	0.01
20/02/2016 22:00	4308	13.73	13.64	8.9	8.9	215.1	9.06	12.17	0	0	1009.798	-6.777	60.52	905.713	1.699	910.4948	900.378	906.2661	1.814	1.843	1.404	2746.67	2736.39	2754.691	0.01
20/02/2016 23:00	4309	13.66	13.57	9.91	9.91	212.9	8.49	12.35	0	0	1009.962	-7.239	62.74	905.5732	1.414	910.2215	900.3356	906.1623	1.248	1.711	1.23	2751.116	2739.252	2750.273	0.01
21/02/2016 0:00	4310	13.58	13.5	8.64	8.64	225.3	6.476	10.94	0	0	1010.29	-6.656	60.09	905.3799	1.017	910.6548	899.8045	905.6805	1.013	0.829	0.829	2750.404	2737.782	2750.766	0.01
21/02/2016 1:00	4311	13.52	13.44	5.641	5.641	228	13.66	11.09	0	0	1010.536	-6.911	62.63	906.0876	0.128	909.9091	901.1865	907.1674	0.154	0.127	0.098	2750.162	2739.555	2751.664	0.01
21/02/2016 2:00	4312	13.46	13.38	4.065	4.065	173	56.46	9.66	0	0	1010.666	-7.775	67.49	905.1706	0.262	910.5825	900.134	904.795	0.29	0.274	0.216	2750.599	2737.971	2748.514	0
21/02/2016 3:00	4313	13.4	13.32	2.081	2.081	168	43.06	5.037	0	0	1010.429	-7.424	67.35	905.2922	0.264	910.6597	900.1922	905.0247	0.278	0.304	0.198	2750.636	2737.931	2748.885	0
21/02/2016 4:00	4314	13.34	13.27	1.553	1.553	175.9	62.85	5.37	0	0	1010.183	-6.53	64.9	905.3096	0.064	910.7783	900.1184	905.0321	0.074	0.066	0.051	2750.743	2737.835	2748.939	0
21/02/2016 5:00	4315	13.29	13.22	3.035	3.035	151.7	43.48	6.821	0	0	1010.175	-6.776	66.37	905.2788	0.022	910.6867	900.2072	904.9425	0.028	0.017	0.02	2750.617	2737.965	2748.824	0
21/02/2016 6:00	4316	13.24	13.17	5.791	5.791	160	17.6	9.78	0	0	1009.482	-6.731	67.85	904.9268	1.472	910.54	899.6904	904.5497	1.515	1.557	1.335	2750.899	2737.986	2748.171	0.01
21/02/2016 7:00	4317	13.19	13.13	5.38	5.38	158.8	26.1	8.92	0	0	1009.307	-6.296	68.41	904.5511	0.128	911.205	899.3758	903.0725	0.149	0.143	0.08	2752.011	2737.768	2746.462	0.01
21/02/2016 8:00	4318	13.16	13.1	4.227	4.227	162.4	27.72	8.35	0	0	1009.307	-5.653	68.76	904.6169	0.267	911.1845	899.4364	903.2299	0.152	0.283	0.333	2751.221	2737.046	2746.482	0.01
21/02/2016 9:00	4319	13.43	13.1	4.263	4.263	165.5	26.09	7.664	10.30149	0.03708535	1008.975	-5.618	68.65	904.5978	0.352	910.7986	899.5146	903.4802	0.369	0.337	0.349	2750.5	2736.924	2747.132	0.01
21/02/2016 10:00	4320	14.66	13.43	4.127	4.127	145.5	14.55	6.507	50.39018	0.1814046	1008.921	-5.075	66.86	904.5735	0.532	910.5025	899.4916	903.7265	0.571	0.624	0.367	2750.086	2737.254	2746.953	0.01
21/02/2016 11:00	4321	14.67	14.62	3.32	3.32	155.5	15.01	6.938	111.4331	0.4011593	1009.076	-4.166	64.02	904.6059	0.51	909.973	899.5347	904.3099	0.581	0.549	0.375	2750.066	2737.181	2747.706	0.03
21/02/2016 12:00	4322	14.66	14.33	4.928	4.928	153.3	7.362	6.408	272.9419	0.9825908	1009.028	-3.75	61.53	904.3513	0.716	909.1266	898.7328	905.1949	0.807	0.8	0.497	2749.674	2737.349	2748.989	0.08
21/02/2016 13:00	4323	14.42	14.21	3.319	3.319	149.9	19.93	5.586	273.0413	0.9829487	1008.946	-3.904	61.44	904.3112	0.078	909.5267	897.9816	905.4253	0.072	0.104	0.049	2749.422	2735.264	2749.492	0.08
21/02/2016 14:00	4324	14.28	14.15	2.561	2.561	160.6	16.63	7.526	310.384	1.117382	1008.4	-2.864	56.36	904.2733	0.54	910.3646	897.5385	904.9167	0.556	0.666	0.35	2750.636	2735.651	2749.294	0.09
21/02/2016 15:00	4325	14.38	14.27	5.149	5.149	197.6	28.59	8.17	275.6692	0.992409	1008.163	-2.684	56	904.0205	0.802	910.4775	897.1552	904.4289	0.812	0.849	0.74	2750.518	2733.917	2748.347	0.09
21/02/2016 16:00	4326	14.42	14.33	6.916	6.916	195.1	19.87	9.9	209	0.7523999	1007.754	-2.533	55.76	904.2997	1.338	910.5662	897.9012	904.4318	1.467	1.344	1.188	2749.86	2733.649	2747.482	0.08
21/02/2016 17:00	4327	14.46	14.28	7.559	7.559	164.1	9.12	9.29	95.37618	0.3433543	1007.389	-3.416	59.11	903.9662	0.995	910.5093	898.5001	902.8895	1.086	1.119	0.732	2748.16	2735.438	2747.453	0.02
21/02/2016 18:00	4328	14.63	14.04	4.535	4.535	156	17.7	7.82	16.68785	0.06007624	1007.271	-5.277	65.93	904.2198	0.485	910.75	899.243	902.6664	0.494	0.596	0.327	2749.819	2736.343	2746.552	0.01
21/02/2016 19:00	4329	14.05	13.87	6.474	6.474	140	3.462	7.448	0	0	1006.684	-6.372	70.29	904.3269	0.776	910.6073	899.4612	902.9122	0.752	0.874	0.69	2750.507	2737.861	2746.767	0.01
21/02/2016 20:00	4330	13.88	13.76	6.143	6.143	151.6	7.865	8.13	0	0	1006.848	-6.568	71.25	904.3484	0.75	910.5334	899.4823	903.0295	0.888	0.774	0.548	2748.327	2736.821	2747.337	0.01
21/02/2016 21:00	4331	13.77	13.67	3.545	3.545	189.1	30.02	7.174	0	0	1007.34	-4.997	61.51	904.3293	0.176	910.8831	899.2554	902.8495	0.199	0.19	0.133	2750.792	2736.831	2746.366	0.01
21/02/2016 22:00	4332	13.68	13.59	3.539	3.539	198	18.77	7.272	0	0	1007.323	-5.007	62.31	904.2668	0.588	910.8966	899.0649	902.839	0.529	0.472	0.373	2750.56	2736.273	2746.135	0.01
21/02/2016 23:00	4333	13.61	13.51	5.578	5.578	208	10.74	8.84	0	0	1007.602	-3.961	59.17	904.3296	0.287	910.7883	899.2665	902.9338	0.284	0.322	0.252	2750.946	2737.418	2746.453	0.01
22/02/2016 0:00	4334	13.53	13.45	1.294	1.294	231.5	69.43	4.273	0	0	1007.932	-3.678	57.88	904.3434	0.073	910.7731	899.3901	902.8672	0.077	0.087	0.048	2750.756	2736.96	2746.35	0
22/02/2016 1:00	4335	13.47	13.39	1.047	1.047	259.7	32.79	2.92	0	0	1008.267	-4.199	60.46	904.3286	0.029	910.7745	899.3113	902.8998	0.035	0.029	0.021	2750.741	2736.938	2746.36	-0.01
22/02/2016 2:00	4336	13.41	13.33	3.139	3.139	225.6	52.96	8.62	0	0	1008.518	-4.027	60.33	904.2686	0.677	910.8825	899.0757	902.8476	0.79	0.614	0.612	2750.853	2736.904	2746.167	0.01
22/02/2016 3:00	4337	13.35	13.28	7.614	7.614	228.1	11.02	7.819	0	0	1008.463	-3.628	59.96	904.9058	1.438	910.4733	899.6309	904.613	1.283	1.385	1.274	2751.745	2739.523	2747.587	0.02
22/02/2016 4:00	4338	13.3	13.23	7.455	7.455	239.7	12.93	12.17	0	0	1008.869	-4.3	64.26	904.9541	0.365	910.3477	899.7551	904.7596	0.392	0.329	0.372	2750.453	2737.744	2748.728	0.01
22/02/2016 5:00	4339	13.25	13.18	2.886	2.886	276.7	64.18	8.31	0	0	1009.306	-5.984	70.09	904.9321	0.437	910.3312	899.7383	904.7268	0.443	0.496	0.36	2750.317	2737.618	2748.318	0
22/02/2016 6:00	4340	13.21	13.14	5.356	5.356	222.4	27.63	10.7	0	0	1009.798</														

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
24/02/2016 4:00	4386	13.32	13.25	9.34	9.34	141	6.917	13.45	0	0	1009.194	-8.49	58.72	905.8035	1.97	908.6046	901.0809	907.7251	1.745	2.491	1.545	2744.709	2738.673	2755.691	0.01	
24/02/2016 5:00	4387	13.27	13.2	9.25	9.25	159.5	23.56	20.93	0	0	1007.668	-7.173	50.33	905.2581	5.129	906.947	901.2994	907.5281	5.722	5.957	3.27	2744.262	2735.925	2755.238	0.02	
24/02/2016 6:00	4388	13.22	13.16	11.86	11.86	157.6	10.38	19.99	0.00127414	4.59E-06	1009.285	-6.236	41.9	904.5451	1.263	909.938	899.7851	903.912	1.282	1.339	1.161	2750.679	2737.119	2747.023	0.02	
24/02/2016 7:00	4389	13.18	13.12	3.163	3.163	140.8	63.31	7.703	0	0	1009.208	-6.812	46	904.6249	0.938	910.2735	899.6108	903.9905	0.966	1.036	0.795	2750.498	2738.901	2748.836	0.01	
24/02/2016 8:00	4390	13.14	13.08	7.335	7.335	151.7	11.11	11.21	0.1633409	0.000588027	1008.487	-7.359	51.06	904.398	1.142	910.6232	899.4189	903.1518	1.193	1.238	0.979	2750.371	2737.986	2743.709	0.02	
24/02/2016 9:00	4391	13.17	13.09	6.743	6.743	177.1	9.87	9.62	12.52233	0.04508038	1008.897	-7.771	56.43	904.1287	0.606	910.3173	899.3016	902.767	0.519	0.778	0.475	2749.671	2738.267	2746.572	0.01	
24/02/2016 10:00	4392	13.58	13.16	7.859	7.859	132.6	8.99	10.96	56.77321	0.2043836	1008.162	-8.79	73.63	904.9725	1.914	909.8732	900.2776	904.7665	1.703	1.996	2.026	2752.455	2740.253	2747.81	0.01	
24/02/2016 11:00	4393	14.5	13.58	7.554	7.554	148.3	14.49	11.13	87.96674	0.3166803	1008.406	-8.79	74.47	904.7095	0.693	910.219	899.8645	904.0449	0.714	0.82	0.51	2750.404	2738.344	2747.155	0.01	
24/02/2016 12:00	4394	14.64	14.3	4.849	4.849	197	27.55	11.03	135.4203	0.487513	1008.457	-6.682	71.59	904.6207	1.037	910.4953	899.4282	903.9386	1.127	1.195	0.725	2750.147	2736.395	2747.236	0.05	
24/02/2016 13:00	4395	14.67	14.55	5.658	5.658	131	22.77	11.37	205.4851	0.7397463	1008.594	-7.074	72.45	903.9001	3.335	908.6069	898.8439	904.2497	5.706	0.699	0.569	2750.159	2736.23	2748.047	0.05	
24/02/2016 14:00	4396	14.63	14.04	3.959	3.959	192.5	49.18	9.41	282.9504	1.018621	1008.135	-5.295	68.19	904.3538	0.255	909.6824	897.9617	905.4175	0.275	0.263	0.223	2749.665	2735.329	2749.512	0.07	
24/02/2016 15:00	4397	14.45	14.35	3.391	3.391	249.2	52.15	8.31	273.3242	0.9839672	1008.208	-4.599	66.9	904.407	0.69	910.5831	898.1951	904.4429	0.784	0.77	0.468	2754.306	2736.905	2746.542	0.07	
24/02/2016 16:00	4398	14.49	14.41	6.611	6.611	236.6	34.7	10.66	194.7118	0.7009624	1008.208	-4.213	66.99	903.9188	1.089	910.8781	897.3337	903.5446	1.019	1.351	0.834	2752.108	2734.039	2746.839	0.06	
24/02/2016 17:00	4399	14.53	14.46	5.212	5.212	244.7	39.4	12.11	119.2892	0.429441	1008.372	-4.375	68.66	904.4427	0.89	911.168	897.9944	904.1658	0.88	1.143	0.544	2750.8	2734.517	2746.66	0.03	
24/02/2016 18:00	4400	14.52	14.07	6.303	6.303	232.9	29	10.13	24.78371	0.08922137	1008.221	-4.669	70.78	904.3727	0.171	910.7005	899.417	903.0009	0.213	0.159	0.129	2751.028	2737.48	2746.2	0.01	
24/02/2016 19:00	4401	14.09	13.9	4.116	4.116	133.7	40.11	6.507	0	0	1007.821	-6.223	77.14	904.3505	0.479	910.4294	899.4734	903.1487	0.533	0.511	0.378	2749.636	2736.405	2746.597	0	
24/02/2016 20:00	4402	13.92	13.79	2.758	2.758	146.9	53.48	6.409	0	0	1007.989	-4.858	72.93	904.4502	0.033	910.6965	899.5385	903.1158	0.021	0.026	0.047	2750.704	2737.173	2746.582	0	
24/02/2016 21:00	4403	13.81	13.7	1.696	1.696	147.3	49.29	5.841	0	0	1007.663	-4.053	71.41	904.4688	0.248	910.4522	899.6174	903.3369	0.245	0.288	0.203	2750.309	2737.21	2746.87	0	
24/02/2016 22:00	4404	13.72	13.62	3.372	3.372	122.2	52.52	8.53	0	0	1007.769	-3.766	70.93	904.4563	0.204	910.5848	899.6675	903.1165	0.219	0.245	0.129	2750.49	2737.399	2746.584	0	
24/02/2016 23:00	4405	13.64	13.55	4.788	4.788	241	82.6	14.31	0	0	1007.239	-2.916	68.86	906.145	3.293	908.2443	901.8558	908.3348	3.055	3.876	2.86	2746.284	2733.051	2746.458	0.01	
25/02/2016 0:00	4406	13.57	13.48	3.442	3.442	257.6	72.3	13.07	0	0	1008.047	-2.744	70.46	904.6778	0.112	910.2756	899.6192	904.1386	0.093	0.073	0.073	2750.079	2737.073	2747.553	0	
25/02/2016 1:00	4407	13.5	13.42	6.09	6.09	193.6	21.54	10.15	0.002292643	8.25E-06	1007.717	-1.941	73.65	904.5937	1.505	909.9822	899.3965	904.4024	1.441	1.491	1.581	2750.64	2736.196	2746.121	0.01	
25/02/2016 2:00	4408	13.44	13.36	7.284	7.284	196.9	11.82	12.05	0	0	1007.799	-2.215	75.74	904.586	1.963	910.0248	899.1845	904.5486	1.633	1.668	2.471	2749.266	2739.286	2748.176	0.01	
25/02/2016 3:00	4409	13.38	13.31	5.119	5.119	259.4	44.46	14.8	0	0	1007.881	-1.961	72.46	904.9391	1.986	910.0514	899.3703	905.3957	1.706	2.694	1.288	2750.378	2736.627	2748.563	0.01	
25/02/2016 4:00	4410	13.33	13.26	13.82	13.82	204.6	6.812	19.01	0	0	1006.568	-1.791	72.99	906.2424	7.337	903.1595	902.1274	913.4401	7.54	6.912	7.541	2750.038	2747.283	2758.534	0.01	
25/02/2016 5:00	4411	13.28	13.21	12.97	12.97	203.5	4.801	17.82	0	0	1003.707	-2.239	75.44	905.6272	4.027	907.963	900.8881	908.0305	4.995	3.726	3.132	2750.308	2739.433	2753.136	0.01	
25/02/2016 6:00	4412	13.23	13.17	7.296	7.296	178.8	17.61	11.92	0	0	1007.553	-2.553	78.24	904.1159	0.399	910.3712	899.0698	902.9066	0.461	0.393	0.332	2749.986	2736.996	2746.018	0.01	
25/02/2016 7:00	4413	13.18	13.13	8.7	8.7	185.6	7.705	13.84	0	0	1006.245	-3.089	79.73	905.6318	3.58	907.844	899.5187	908.5327	3.021	4.103	3.534	2742.126	2749.903	2752.619	0.01	
25/02/2016 8:00	4414	13.15	13.1	14.16	14.16	196.2	7.277	19.54	0.3186771	0.001147238	1005.753	-2.629	76.89	906.8078	6.252	906.5025	903.2651	910.6559	6.952	5.878	5.863	2746.676	2738.063	2753.425	0.01	
25/02/2016 9:00	4415	13.59	13.1	12.94	12.94	202	8.18	16.23	23.10776	0.08318795	1005.751	-2.224	75.64	905.9139	6.632	905.1292	902.6428	909.9697	7.759	6.551	5.369	2748.647	2736.411	2749.355	0.01	
25/02/2016 10:00	4416	13.98	13.58	11.19	11.19	187.9	9.26	14.43	56.32999	0.202788	1005.978	-1.788	74.52	900.1166	2.436	908.9274	900.1166	906.6593	1.883	2.187	3.078	2749.653	2736.294	2748.727	0.01	
25/02/2016 11:00	4417	14.64	13.98	9.93	9.93	195.3	11.78	12.86	83.50017	0.3006006	1006.058	-1.914	76.59	905.0835	2.64	908.4276	899.9008	906.9222	3.254	2.413	2.119	2749.736	2737.309	2747.373	0.01	
25/02/2016 12:00	4418	14.66	14.61	4.694	4.694	143.2	22.42	8.96	180.9984	0.6515941	1006.224	-2.216	77.47	904.1113	0.184	908.5453	898.6157	905.1729	0.159	0.172	0.172	2748.177	2736.39	2749.075	0.06	
25/02/2016 13:00	4419	14.67	14.33	6.521	6.521	152.2	5.506	8.57	275.522	0.9918794	1005.703	-2.499	80.1	904.0306	1.063	909.2588	898.2636	904.5695	1.017	1.368	0.698	2749.152	2736.219	2748.43	0.07	
25/02/2016 14:00	4420	14.37	13.87	9.19	9.19	177	13.85	14.03	327.1906	1.177886	1005.121	-1.628	77.87	905.3501	3.672	906.757	900.637	908.6564	4.058	4.181	2.55	2744.98	2740.619	2750.525	0.08	
25/02/2016 15:00	4421	14.39	14.34	10.94	10.94	187.8	7.781	15.99	291.9633	1.051068	1004.63	-1.365	76.89	905.5031	4.696	905.9237	909.7795	904.9237	4.881	4.21	4.962	2734.491	2747.379	2771.241	0.08	
25/02/2016 16:00	4422	14.46	14.27	12.62	12.62	197.8	5.437	16.78	98.92626	0.3561345	1004.548	-1.388	75.82	905.6343	3.811	908.2704	900.7787	907.8537	3.941	4.901	2.004	2751.188	2738.894	2749.645	0.02	
25/02/2016 17:00	4423	14.66	14.14	9.74	9.74	214.8	9.27	14.48	49.44226	0.1779921	1004.595	-1.385	73.4	905.3333	2.486	909.3582	899.5591	907.0829	1.71	2.862	2.724	2742.866	2747.109	2759.711	0.01	
25/02/2016 18:00	4424	14.15	13.95	6.011	6.011	237.9	24.14	11.31	10.53086	0.03791109	1005.334	-1.209	70.49	904.3831	0.529	910.1802	898.7455	904.2235	0.504	0.663	0.383	2750.65	2737.325	2748.361	0.01	
25/02/2016 19:00	4425	13.96	13.8	3.95																						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
27/02/2016 18:00	4472	14.51	14.05	4.673	4.673	168.7	19.59	8.08	29.83149	0.1073934	1003.801	-4.688	66.6	904.5978	0.189	910.0092	899.8502	903.9341	0.205	0.209	0.145	2749.941	2737.517	2747.534	0.01
27/02/2016 19:00	4473	14.06	13.86	3.471	3.471	146.3	9.73	5.429	0	0	1003.483	-5.162	69.02	904.6202	0.338	909.9465	899.9133	904.0008	0.372	0.409	0.19	2749.805	2737.462	2747.672	0
27/02/2016 20:00	4474	13.88	13.75	5.091	5.091	155.5	8.82	7.036	0	0	1003.243	-5.689	69.11	904.6358	0.588	909.8145	899.9585	904.1346	0.515	0.794	0.374	2748.346	2737.118	2746.661	0.01
27/02/2016 21:00	4475	13.77	13.67	3.492	3.492	162.8	39.92	6.664	0	0	1003.407	-5.727	65.1	904.7322	0.075	910.1088	899.9542	904.1338	0.078	0.09	0.053	2749.984	2737.727	2747.864	0
27/02/2016 22:00	4476	13.68	13.59	1.857	1.857	171.2	81.6	5.331	0	0	1002.751	-5.261	63.13	904.7634	0.255	909.9568	899.9568	904.2196	0.259	0.3	0.194	2750.169	2737.681	2747.932	0
27/02/2016 23:00	4477	13.61	13.52	2.369	2.369	195.6	63.73	8.29	0	0	1002.098	-5.505	63.78	904.855	0.652	909.9675	900.2152	904.3823	0.679	0.797	0.424	2748.971	2736.941	2748.977	0
28/02/2016 0:00	4478	13.53	13.46	5.974	5.974	143.1	10.58	8.39	0	0	1001.85	-6.094	74.93	904.804	0.513	909.9282	900.1193	904.3647	0.485	0.653	0.357	2749.148	2737.787	2748.431	0.01
28/02/2016 1:00	4479	13.47	13.39	5.598	5.598	144.6	6.527	6.527	0	0	1001.686	-6.34	75.12	904.8152	0.572	910.0198	900.1627	904.2633	0.51	0.738	0.42	2749.285	2737.051	2747.865	0
28/02/2016 2:00	4480	13.41	13.33	3.594	3.594	116.8	27.94	6.331	0	0	1001.199	-6.977	76.92	904.8056	0.126	910.0997	900.1953	904.1218	0.168	0.105	0.09	2749.986	2737.996	2747.828	0
28/02/2016 3:00	4481	13.36	13.28	4.645	4.645	133	12.33	7.154	0	0	1000.952	-6.42	77.12	904.7634	0.582	909.682	900.1589	904.4492	0.612	0.627	0.498	2748.72	2737.186	2748.069	0
28/02/2016 4:00	4482	13.3	13.23	6.707	6.707	135.9	5.317	8.33	0	0	1000.129	-6.425	81.7	904.6987	0.928	909.6259	900.0794	904.3909	0.926	1.165	0.607	2750.202	2736.747	2748.617	0
28/02/2016 5:00	4483	13.25	13.18	6.366	6.366	122.3	10.4	8.88	0	0	999.6278	-6.523	85.9	904.8484	0.518	909.824	900.3276	904.3936	0.603	0.551	0.371	2749.419	2738.045	2748.239	0
28/02/2016 6:00	4484	13.21	13.14	5.213	5.213	122.6	11.51	9.64	0	0	999.1082	-5.957	85.4	904.8845	0.442	909.9795	900.3744	904.3744	0.414	0.54	0.35	2749.2	2738.588	2748.809	0
28/02/2016 7:00	4485	13.16	13.1	6.574	6.574	124.1	10.24	10.29	0	0	998.9293	-5.953	84.6	904.477	1.033	910.3689	899.4634	903.5986	0.899	1.389	0.681	2750.327	2736.38	2747.266	0
28/02/2016 8:00	4486	13.13	13.07	6.887	6.887	124.6	8.22	10.49	0.9038625	0.003253905	998.4425	-6.029	83.1	904.7114	1.376	909.7723	899.9542	904.4077	1.427	1.398	1.299	2752.087	2739.016	2747.388	0
28/02/2016 9:00	4487	13.23	13.07	10.61	10.61	123.2	6.311	13.25	24.06304	0.08662695	998.271	-6.287	85.3	905.5872	1.714	908.7756	900.8914	907.0945	1.783	1.767	1.585	2744.521	2738.417	2751.543	0
28/02/2016 10:00	4488	13.88	13.23	10.88	10.88	123.4	5.47	14.92	80.18642	0.2886711	997.6237	-6.486	87.5	905.5742	2.431	907.9803	901.0803	907.6619	2.169	2.989	2.024	2749.231	2739.995	2750.583	0.01
28/02/2016 11:00	4489	14.66	13.88	12.24	12.24	121.3	6.938	15.56	175.4833	0.63174	997.9432	-6.652	88.5	905.8306	2.266	908.5214	901.1935	907.7767	3.058	1.802	1.802	2750.296	2742.449	2754.868	0.03
28/02/2016 12:00	4490	14.66	14.61	8.02	8.02	108.6	10.54	13.13	215.899	0.7772366	998.4299	-6.422	87.5	904.7028	0.526	910.2053	899.445	904.4583	0.459	0.689	0.379	2749.549	2738.268	2748.019	0.04
28/02/2016 13:00	4491	14.63	14.5	5.527	5.527	104.5	8.47	7.958	209.4279	0.7539406	998.7161	-6.074	86.1	904.6638	0.643	910.1198	899.2767	904.595	0.684	0.657	0.583	2750.63	2736.976	2748.361	0.05
28/02/2016 14:00	4492	14.56	14.45	7.003	7.003	122.4	8.43	11.07	213.7938	0.7696576	998.7103	-6.03	86.2	904.9221	1.052	909.4751	898.8221	906.4693	1.041	1.328	0.688	2749.056	2736.802	2751.948	0.04
28/02/2016 15:00	4493	14.57	14.45	5.724	5.724	122	12.24	9.25	239.9394	0.8637819	998.7128	-5.88	84	904.8995	0.852	910.0355	899.5256	905.1375	0.868	1.038	0.588	2749.824	2736.912	2748.958	0.05
28/02/2016 16:00	4494	14.57	14.43	6.149	6.149	137	15.69	11.43	176.9995	0.637198	998.9845	-5.818	81.8	905.3024	0.161	909.6708	899.9125	906.3239	0.156	0.192	0.129	2749.648	2737.874	2750.697	0.04
28/02/2016 17:00	4495	14.52	14.27	5.439	5.439	122	46.88	9.21	65.85333	0.237072	999.1646	-6.096	78.86	904.5652	0.576	910.0425	899.775	903.8781	0.532	0.751	0.383	2749.323	2736.941	2747.389	0.01
28/02/2016 18:00	4496	14.29	14.06	6.58	6.58	150.6	11.32	10.15	18.31066	0.06591837	999.0944	-6.425	79.18	904.8046	0.909	910.3644	900.0891	903.9603	0.85	1.123	0.703	2750.311	2738.384	2747.807	0.01
28/02/2016 19:00	4497	14.08	13.91	3.231	3.231	182.2	24.86	8.49	0.2115025	0.000761409	999.535	-6.599	79.39	904.9835	0.101	910.1135	900.0716	904.7653	0.117	0.114	0.062	2749.97	2737.848	2748.623	0
28/02/2016 20:00	4498	13.92	13.8	2.419	2.419	188.3	81.8	7.311	0	0	999.8833	-7.136	80.5	905.0119	0.044	910.2264	900.1042	904.7051	0.048	0.054	0.023	2750.078	2737.872	2748.559	0
28/02/2016 21:00	4499	13.82	13.72	0.623	0.623	350.5	52.51	2.038	0	0	1000.211	-7.822	82.9	905.0112	0.01	910.256	900.1301	904.6478	0.015	0.007	0.007	2750.15	2737.918	2748.517	-0.01
28/02/2016 22:00	4500	13.73	13.64	1.283	1.283	198.7	73.2	3.842	0.1875508	0.000675183	1000.621	-7.685	83.5	905.0933	0.027	910.242	900.2057	904.832	0.023	0.033	0.024	2750.069	2738.021	2748.713	0
28/02/2016 23:00	4501	13.66	13.57	1.107	1.107	235.4	42.69	2.43	0.1821995	0.000655918	1000.949	-7.842	87.1	905.2112	0.029	910.3784	900.3508	904.9045	0.035	0.028	0.021	2750.267	2738.195	2748.892	-0.01
29/02/2016 0:00	4502	13.59	13.51	0.646	0.646	84	70.58	2.94	0.1174741	0.000422907	1001.44	-7.514	87.6	905.2796	0.012	910.4792	900.4197	904.9399	0.017	0.006	0.009	2750.419	2738.295	2748.881	-0.01
29/02/2016 1:00	4503	13.52	13.44	0.569	0.569	166	80.9	2.019	0.003057894	1.10E-05	1002.096	-7.309	87.3	905.3301	0.023	910.5035	900.4778	905.0087	0.026	0.02	0.023	2750.433	2738.369	2748.925	-0.01
29/02/2016 2:00	4504	13.47	13.38	0.561	0.561	327.5	73.41	2.195	0.01095745	3.94E-05	1002.096	-7.074	87.2	905.4003	0.011	910.5776	900.5283	905.0952	0.014	0.009	0.009	2750.54	2738.399	2749.069	-0.01
29/02/2016 3:00	4505	13.41	13.33	0.608	0.608	238.2	61.93	1.96	0	0	1002.423	-6.971	88.3	905.447	0.011	910.6291	900.6025	905.109	0.016	0.008	0.008	2750.627	2738.497	2749.067	-0.01
29/02/2016 4:00	4506	13.35	13.27	0.452	0.452	321	46.95	1.49	0	0	1002.833	-6.66	86.9	905.4933	0.011	910.6766	900.619	905.1844	0.015	0.006	0.009	2750.663	2738.54	2749.165	-0.01
29/02/2016 5:00	4507	13.29	13.22	1.383	1.383	262.6	45.45	4.92	0.006880261	2.48E-05	1003.407	-7.04	88.2	905.5436	0.011	910.7656	900.5666	905.2986	0.226	0.169	0.155	2750.64	2738.339	2749.542	0
29/02/2016 6:00	4508	13.24	13.18	4.389	4.389	233.8	7.66	6.644	0	0	1003.653	-6.917	87	905.5852	0.326	910.8458	900.6644	905.2454	0.356	0.328	0.291	2750.199	2738.392	2749.462	0
29/02/2016 7:00	4509	13.19	13.13	4.792	4.792	230.1	5.594	6.625	0	0	1004.062	-6.697	82.7	905.5724	0.311	910.756	900.5757	905.3856	0.361	0.317	0.244	2750.761	2738.741	2748.973	0
29/02/2016 8:00	4510	13.16	13.11	4.697	4.697	225.3	7.896	6.723	1.142123	0.004111644	1004.472	-6.742	80.6	905.6194	0.067	910.7983	900.731	905.3291	0.068	0.049	0.049	2750.809	2738.762	2749.336	0
29/02/2016 9:00	4511	14.66	13.12	2.554	2.554	211.4	48.42	5.645	28.84513	0.1038424	1004.718	-6.711	77.25	905.7814	0.201	908.7361	901.9022	906.7061	0.273	0.134	0.171	2748.864	2739.829	2750.712	0
29/02/2016 10:00	4512	14.67	14.61																						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
02/03/2016 8:00	4558	13.15	13.1	0.628	0.628	144.3	54.13	1.666	2.692372	0.009692539	1007.725	-10.96	89.6	905.4246	0.011	911.7789	900.5012	903.9937	0.016	0.008	0.005	2752.04	2738.381	2747.694	0
02/03/2016 9:00	4559	13.54	13.1	1.93	1.93	179.5	30.63	2.862	37.89969	0.1364389	1007.397	-10.81	88.3	905.4437	0.137	911.6733	900.5373	904.1204	0.17	0.146	0.08	2752.048	2738.342	2747.941	0
02/03/2016 10:00	4560	14.66	13.54	1.602	1.602	156.2	10.91	2.47	122.1338	0.4396817	1007.561	-10.51	87.4	905.4827	0.21	910.9664	900.8951	904.5867	0.292	0.114	0.185	2750.273	2738.993	2748.857	0.02
02/03/2016 11:00	4561	14.67	14.64	1.736	1.736	153.3	6.709	2.43	350.1609	1.260579	1007.511	-9.08	83.8	905.4268	0.032	908.9455	900.8566	906.4785	0.03	0.036	0.029	2748.565	2738.789	2750.806	0.07
02/03/2016 12:00	4562	14.67	14.11	1.298	1.298	180.2	23.17	2.274	425.9914	1.533569	1007.779	-7.794	78.49	905.4041	0.111	909.26	900.5986	906.3537	0.098	0.09	0.138	2748.716	2738.336	2750.795	0.1
02/03/2016 13:00	4563	14.17	13.73	1.539	1.539	204.6	16.58	3.665	419.2373	1.509254	1007.884	-7.621	73.35	903.9592	4.048	907.0925	899.1896	905.5953	5.833	1.738	3.482	2748.781	2737.41	2750.981	0.1
02/03/2016 14:00	4564	14.36	13.74	2.389	2.389	213.5	18.87	3.528	390.5218	1.405878	1007.477	-7.724	67.83	905.0412	0.101	910.6743	898.5884	905.861	0.103	0.123	0.07	2750.595	2735.968	2750.107	0.09
02/03/2016 15:00	4565	14.3	14.27	2.649	2.649	202.7	8.42	3.842	380.3663	1.369319	1007.31	-7.161	64.25	904.9108	0.201	911.5585	897.8442	905.3296	0.21	0.236	0.145	2751.891	2734.918	2749.197	0.09
02/03/2016 16:00	4566	14.36	14.28	1.78	1.78	202.7	9.63	3.489	278.9203	1.004113	1007.072	-6.782	62.91	904.8928	0.036	912.2459	897.8252	904.6072	0.038	0.031	0.038	2752.676	2735.097	2748.382	0.06
02/03/2016 17:00	4567	14.43	14.34	0.96	0.96	212.4	6.535	1.725	179.4308	0.6459507	1006.651	-7.1	64.25	904.9612	0.018	912.7896	898.1559	903.9383	0.016	0.025	0.012	2753.286	2735.531	2747.61	0.03
02/03/2016 18:00	4568	14.57	14.17	0.373	0.373	268.3	64.75	1.47	60.3013	0.2170847	1006.374	-8.44	74.06	905.1836	0.048	911.8803	900.0181	903.6524	0.057	0.058	0.018	2752.036	2737.897	2747.331	0
02/03/2016 19:00	4569	14.18	13.93	2.113	2.113	142.8	6.96	3.097	0.3886588	0.001399172	1006.255	-9.48	77.46	905.2817	0.078	911.6199	900.2654	903.9597	0.085	0.084	0.064	2751.845	2738.107	2747.535	0
02/03/2016 20:00	4570	13.94	13.8	0.751	0.751	150	43.78	3.156	0	0	1006.143	-10.16	82.1	905.3018	0.016	911.889	900.2674	903.7487	0.006	0.01	0.025	2752.186	2738.119	2747.349	-0.01
02/03/2016 21:00	4571	13.82	13.72	0.248	0.248	147.1	16.79	1.392	0	0	1005.872	-10.44	83	905.3469	0.018	911.7772	900.4014	903.8622	0.024	0.015	0.011	2752.026	2738.291	2747.546	-0.01
02/03/2016 22:00	4572	13.73	13.64	1.467	1.467	134	9.89	2.45	0	0	1005.38	-11.13	84.6	905.4315	0.055	911.7737	900.5122	904.0084	0.068	0.046	0.05	2751.934	2738.301	2747.718	-0.01
02/03/2016 23:00	4573	13.66	13.57	2.238	2.238	120.8	8.98	3.41	0	0	1005.037	-11.52	85.8	905.4639	0.078	911.7995	900.5705	904.0216	0.074	0.085	0.076	2752.205	2738.495	2747.801	0
03/03/2016 0:00	4574	13.59	13.5	2.205	2.205	121.1	7.707	3.038	0	0	1004.668	-11.87	88.8	905.4496	0.066	911.8455	900.5505	903.9529	0.062	0.072	0.064	2752.126	2738.65	2747.621	0
03/03/2016 1:00	4575	13.53	13.45	1.517	1.517	105.8	21.48	2.862	0.09535283	0.00034327	1004.409	-12.37	91.2	905.4349	0.068	911.848	900.5492	903.9073	0.078	0.064	0.06	2752.052	2738.321	2747.592	-0.01
03/03/2016 2:00	4576	13.47	13.39	2.007	2.007	115.4	11.07	3.822	0.1641875	0.000591075	1003.847	-12.78	87.7	905.4536	0.285	911.7247	900.6377	903.9986	0.336	0.253	0.26	2752.043	2738.601	2747.259	0
03/03/2016 3:00	4577	13.4	13.33	3.261	3.261	110.7	11.15	5.958	0.0550702	0.000198253	1003.524	-12.95	86.1	905.5829	0.53	911.6516	900.8423	904.2548	0.551	0.588	0.439	2751.822	2738.73	2748.537	0
03/03/2016 4:00	4578	13.35	13.27	3.024	3.024	119.2	10.71	5.782	0.05150083	0.000185403	1003.196	-12.92	86.2	905.6187	0.326	911.8067	900.8738	904.1754	0.362	0.293	0.293	2751.523	2738.497	2747.902	0
03/03/2016 5:00	4579	13.29	13.22	2.965	2.965	112.1	13.45	4.92	0.01453241	5.23E-05	1002.871	-13	86.4	905.6317	0.34	911.9233	900.7708	904.2009	0.366	0.353	0.298	2752.059	2738.695	2747.931	0
03/03/2016 6:00	4580	13.24	13.17	1.816	1.816	135.9	7.321	3.704	0	0	1002.746	-13.74	85.4	905.6033	0.223	911.896	900.753	904.1611	0.265	0.217	0.18	2752.134	2738.591	2747.923	0
03/03/2016 7:00	4581	13.2	13.12	0.639	0.639	179.6	41.36	1.803	0	0	1002.511	-14.22	84.9	905.6157	0.017	912.1419	900.7761	903.9289	0.02	0.014	0.017	2752.468	2738.727	2747.598	-0.01
03/03/2016 8:00	4582	13.15	13.1	0.212	0.212	113.5	9.52	0.608	2.868941	0.01032819	1002.101	-14.27	84.6	905.7148	0.109	912.1039	900.9233	904.1172	0.125	0.087	0.112	2752.652	2739.13	2747.857	-0.01
03/03/2016 9:00	4583	13.36	13.1	0.12	0.12	105.7	13.51	0.549	31.94581	0.1150049	1001.937	-13.49	85.3	905.6849	0.016	912.0881	900.8309	904.1355	0.025	0.009	0.008	2752.388	2738.781	2747.872	-0.01
03/03/2016 10:00	4584	14.66	13.36	0.07	0.07	60.08	9.74	0.255	92.81481	0.3341333	1001.56	-12.77	85.8	905.6516	0.029	911.4889	900.8119	904.6539	0.045	0.015	0.017	2751.785	2738.761	2748.493	0
03/03/2016 11:00	4585	14.66	14.62	0	0	0	0	0	148.4718	0.5344985	1001.497	-11.52	86.3	905.6015	0.082	911.6691	900.4694	904.6694	0.097	0.068	0.079	2751.774	2738.308	2748.643	0.03
03/03/2016 12:00	4586	14.66	14.58	0.269	0.269	102.2	2.257	3.626	189.8963	0.6836267	1001.497	-10.85	86.7	905.5459	0.169	911.6683	900.4019	904.5676	0.196	0.171	0.133	2751.914	2738.192	2748.303	0.04
03/03/2016 13:00	4587	14.63	14.58	3.169	3.169	107.5	9.04	4.998	191.6593	0.6899736	1001.495	-10.1	86.7	905.586	0.27	912.024	900.4985	904.2355	0.274	0.297	0.237	2752.382	2738.282	2747.871	0.04
03/03/2016 14:00	4588	14.63	14.55	3.888	3.888	117.1	8.81	6.684	207.2377	0.7460557	1001.316	-9.54	85.3	905.525	0.363	911.8801	900.3897	904.3052	0.371	0.395	0.32	2751.636	2738.304	2748.666	0.04
03/03/2016 15:00	4589	14.63	14.58	5.112	5.112	111.4	8.28	6.919	179.9308	0.647751	1001.139	-9.83	84.1	905.5649	0.555	911.7598	900.5964	904.3386	0.649	0.536	0.465	2751.631	2738.257	2748.734	0.03
03/03/2016 16:00	4590	14.64	14.59	4.397	4.397	131.4	17.37	6.625	144.5928	0.5205342	1001.146	-9.56	81.7	905.601	0.552	911.8393	900.749	904.2146	0.615	0.601	0.417	2752.885	2739.349	2747.683	0.03
03/03/2016 17:00	4591	14.65	14.5	5.028	5.028	113.6	6.506	7.193	96.30615	0.3467022	1000.841	-10.18	85.6	905.556	0.694	911.7825	900.6683	904.217	0.595	0.772	0.595	2752.139	2740.954	2747.221	0.02
03/03/2016 18:00	4592	14.59	14.24	5.81	5.81	113.9	6.484	7.683	41.56781	0.1496441	1000.677	-10.7	83.3	905.6439	0.593	911.7831	900.9139	904.2346	0.595	0.7	0.458	2752.902	2740.538	2747.557	0
03/03/2016 19:00	4593	14.25	14.04	5.704	5.704	123.3	9.72	7.762	1.771888	0.006378796	1000.513	-10.97	82	905.6065	0.64	911.8257	900.8435	904.1505	0.522	0.665	0.522	2752.63	2739.225	2748.043	0
03/03/2016 20:00	4594	14.06	13.93	5.04	5.04	129	7.734	7.84	0	0	1000.513	-11.43	82.2	905.6445	0.131	912.0875	900.8044	904.0417	0.127	0.152	0.111	2752.347	2738.771	2747.775	0
03/03/2016 21:00	4595	13.95	13.84	2.4	2.4	143.7	12.51	4.077	0	0	1000.594	-12.47	85.4	905.629	0.166	912.0685	900.7626	904.056	0.176	0.181	0.138	2752.569	2738.875	2747.729	0
03/03/2016 22:00	4596	13.86	13.76	2.24	2.24	148.2	7.492	3.293	0	0	1000.257	-12.29	86.3	905.6987	0.038	912.1555	900.8365	904.1041	0.039	0.042	0.033	2752.472	2738.768	2747.775	0
03/03/2016 23:00	4597	13.78	13.7	0.896	0.896	124.3	2																		

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
05/03/2016 22:00	4644	13.86	13.76	8.23	8.23	141.9	5.852	10.45	0	0	992.9734	-11.14	86.6	906.3129	1.141	911.0353	901.4874	906.4161	1.165	1.235	1.012	2752.509	2740.539	2751.547	0	
05/03/2016 23:00	4645	13.78	13.69	6.359	6.359	144.9	11.73	8.43	0	0	993.1373	-11.51	88.1	906.1753	0.469	911.5964	901.236	905.6936	0.48	0.541	0.368	2751.435	2738.736	2749.184	0	
06/03/2016 0:00	4646	13.71	13.62	5.006	5.006	170.4	22.18	8.53	0.007647336	2.75E-05	993.1373	-10.83	86.1	906.2304	0.128	911.9006	901.2481	905.5425	0.129	0.138	0.115	2752.136	2739.301	2749.608	0	
06/03/2016 1:00	4647	13.64	13.56	5.966	5.966	167.3	24.42	9.64	0.01121604	4.04E-05	992.9734	-10.78	84.3	906.6364	1.304	911.4682	901.6177	906.8231	1.172	1.395	1.334	2750.644	2737.765	2748.983	0	
06/03/2016 2:00	4648	13.58	13.5	9.08	9.08	152.6	6.594	12.07	0	0	992.9774	-11.66	85.3	906.4219	1.002	911.2452	901.5466	906.4738	1.013	1.211	0.721	2751.059	2740.417	2750.23	0	
06/03/2016 3:00	4649	13.51	13.44	7.015	7.015	142.7	5.851	8.82	0.04308146	0.000155093	993.3234	-12.28	86	906.4123	0.742	911.3738	901.6844	906.1788	0.738	0.843	0.628	2751.088	2738.608	2749.902	0	
06/03/2016 4:00	4650	13.46	13.38	7.076	7.076	142	6.504	9.47	0.08974115	0.000323068	993.1895	-12.82	86.2	906.3511	0.962	911.4736	901.4412	906.1383	1.124	0.991	0.729	2752.511	2740.6	2751.398	0	
06/03/2016 5:00	4651	13.4	13.33	8.54	8.54	144	3.862	10.23	0.02371075	8.54E-05	993.0452	-13	85.9	910.3999	902.3575	907.4542	902.3575	907.4542	1.712	1.508	1.112	2748.467	2738.468	2751.36	0	
06/03/2016 6:00	4652	13.34	13.27	8.14	8.14	149.9	10.27	10.94	0.001019818	3.67E-06	993.0543	-13.26	84.7	906.6679	0.478	911.3943	901.876	906.7334	0.462	0.503	0.468	2752.086	2740.661	2751.347	0	
06/03/2016 7:00	4653	13.29	13.22	5.684	5.684	153.1	13.05	8.27	0.01759187	6.33E-05	993.0829	-13.74	84.8	906.4125	0.516	911.8363	901.5859	905.8152	0.561	0.572	0.398	2751.747	2738.975	2749.436	0	
06/03/2016 8:00	4654	13.25	13.22	5.642	5.642	148.6	10.26	9.37	6.466924	0.02328092	992.4271	-13.77	84.9	906.423	1.18	911.2608	901.762	906.2463	1.246	0.938	0.728	2748.691	2740.106	2752.207	0	
06/03/2016 9:00	4655	13.56	13.22	5.742	5.742	136.4	21.01	9.51	41.39315	0.1490154	993.0737	-13.71	84.5	906.626	0.61	911.3937	902.0234	906.461	0.69	0.644	0.473	2750.84	2739.202	2750.421	0	
06/03/2016 10:00	4656	14.63	13.56	4.279	4.279	128.4	33.43	7.605	112.1629	0.4037866	992.8666	-13.39	83.3	906.6476	0.723	911.3778	902.0651	906.5	0.85	0.529	0.529	2752.338	2739.978	2750.827	0.01	
06/03/2016 11:00	4657	14.66	14.62	6.383	6.383	133.7	6.983	8.92	213.063	0.7670268	993.0203	-13.45	83.8	906.6309	0.637	911.114	902.028	906.7506	0.674	0.749	0.45	2751.854	2740.871	2750.624	0.03	
06/03/2016 12:00	4658	14.67	14.64	5.716	5.716	126.9	8.04	7.33	309.7396	1.115062	992.811	-13.03	83.3	906.4365	0.542	910.3594	901.5553	907.395	0.595	0.598	0.411	2751.349	2740.22	2751.519	0.04	
06/03/2016 13:00	4659	14.66	14.58	5.67	5.67	135.2	6.285	7.174	334.8206	1.205354	992.8094	-12.06	78.48	906.4225	0.467	910.7131	901.3883	907.166	0.473	0.481	0.447	2751.672	2740.241	2750.774	0.05	
06/03/2016 14:00	4660	14.67	14.55	4.313	4.313	123.3	10.85	6.605	353.1111	1.2712	992.4817	-11.18	76.97	906.0771	0.545	910.7053	899.8267	907.6994	0.523	0.57	0.541	2751.101	2738.01	2751.787	0.06	
06/03/2016 15:00	4661	14.66	14.58	6.419	6.419	119.8	8.12	9.49	240.7631	0.8667471	992.6405	-10.86	77.5	906.374	0.944	911.8188	905.9263	907.8188	0.983	1.081	0.734	2750.598	2739.376	2748.762	0.04	
06/03/2016 16:00	4662	14.64	14.61	7	7	113.8	6.599	10.11	158.1238	0.5692457	992.8093	-11.02	79.82	906.1492	0.729	911.5102	901.2495	905.6879	0.74	0.806	0.629	2751.771	2738.613	2750.715	0.03	
06/03/2016 17:00	4663	14.64	14.42	7.072	7.072	111.1	7.281	9.92	89.66185	0.3227826	992.8093	-11.43	82.9	906.3611	1.115	911.7173	901.4959	905.8702	1.161	1.24	0.92	2753.602	2738.552	2749.152	0.01	
06/03/2016 18:00	4664	14.45	14.23	6.366	6.366	111.7	13.09	9.76	32.55522	0.1171988	992.8093	-11.63	81.6	905.9265	0.802	910.8125	900.8125	905.2275	0.916	0.855	0.6	2751.213	2738.72	2749.549	0	
06/03/2016 19:00	4665	14.25	14.06	6.297	6.297	127.6	11.42	9.07	2.881516	0.01037346	992.9741	-11.79	80.9	906.1415	0.625	911.6971	901.4324	905.295	0.624	0.661	0.587	2751.407	2738.913	2749.996	0	
06/03/2016 20:00	4666	14.08	13.95	5.604	5.604	126.7	9.05	8.06	0	0	993.085	-12.11	82.5	906.5052	0.574	911.4344	901.7375	906.3437	0.507	0.484	0.484	2752.54	2740.167	2750.256	0	
06/03/2016 21:00	4667	13.97	13.86	9.9	9.9	120.6	8.5	14.33	0	0	993.1719	-12.23	82.4	907.3699	1.995	909.9842	903.1277	908.9979	2.422	1.836	1.644	2748.054	2741.804	2754.495	0	
06/03/2016 22:00	4668	13.88	13.78	12.09	12.09	125.3	5.943	16.39	0.01351206	4.86E-05	993.2635	-12.39	80.1	907.2617	1.555	910.7618	902.6633	908.3599	1.643	1.591	1.424	2752.858	2742.462	2751.738	0	
06/03/2016 23:00	4669	13.8	13.72	11.55	11.55	126.4	5.726	14.27	0.00076486	2.75E-06	993.3523	-12.66	79.01	907.2258	1.97	909.8981	902.4312	908.3599	1.82	2.226	1.838	2748.993	2737.047	2750.896	0	
07/03/2016 0:00	4670	13.73	13.65	12.61	12.61	136.7	4.071	14.72	0.01070809	3.85E-05	993.0812	-14.06	83.9	907.5401	2.179	910.4299	903.2037	908.9869	2.383	2.224	1.902	2752.844	2744.864	2753.587	0	
07/03/2016 1:00	4671	13.67	13.58	9.93	9.93	135.5	4.687	14.19	0.01529728	5.51E-05	993.9028	-15.03	83.9	907.0442	1.237	910.4838	902.3052	908.3435	1.285	1.347	1.062	2748.407	2739.698	2754.551	0	
07/03/2016 2:00	4672	13.61	13.52	8.1	8.1	138.6	4.53	9.96	0	0	994.0624	-14.94	83.9	906.6362	1.286	911.0406	902.1343	906.7336	1.404	1.468	0.915	2749.456	2741.31	2748.848	0	
07/03/2016 3:00	4673	13.55	13.46	8.13	8.13	141.3	5.308	11.09	0	0	994.3947	-15.68	83.2	907.1125	1.165	911.341	902.2145	907.7822	1.163	1.346	0.951	2750.94	2737.576	2751.588	0	
07/03/2016 4:00	4674	13.48	13.41	10.44	10.44	149.6	6.477	12.76	0.02779837	0.000100074	994.5586	-15.47	83	907.2781	1.48	910.7911	902.679	908.3644	1.607	1.361	1.067	2753.501	2741.18	2753.011	0	
07/03/2016 5:00	4675	13.43	13.35	6.627	6.627	162.3	21.28	9.72	0	0	994.4844	-16.21	80.2	907.3356	1.485	910.8021	902.8182	908.3865	1.496	1.487	1.487	2747.16	2742.334	2755.348	0	
07/03/2016 6:00	4676	13.37	13.29	7.646	7.646	151.5	15.03	11.54	0	0	994.682	-15.93	76.98	907.1607	0.504	911.3933	902.6292	907.4597	0.524	0.528	0.456	2751.974	2739.923	2752.357	0	
07/03/2016 7:00	4677	13.31	13.24	2.098	2.098	250.1	58.13	7.232	0	0	995.0834	-15.58	76.13	907.1187	0.08	911.7086	902.6085	907.0391	0.086	0.085	0.068	2751.844	2740.983	2751.458	0	
07/03/2016 8:00	4678	13.29	13.24	1.505	1.505	311.3	64.92	3.116	6.151343	0.02214484	995.5884	-15.88	76.79	907.1519	0.021	911.667	902.6464	907.1424	0.032	0.013	0.013	2751.862	2741.041	2751.573	0	
07/03/2016 9:00	4679	13.6	13.25	0.981	0.981	273.2	28.66	1.98	37.4819	0.1349348	995.7151	-15.61	76.26	907.1743	0.036	911.5055	902.6875	907.3297	0.048	0.029	0.029	2751.594	2741.065	2751.838	0	
07/03/2016 10:00	4680	14.65	13.6	0.988	0.988	271	13.48	1.725	110.8372	0.3990138	995.7064	-15.19	73.44	907.1646	0.053	910.996	902.8031	907.6947	0.083	0.012	0.038	2750.907	2741.269	2752.349	0.01	
07/03/2016 11:00	4681	14.66	14.64	0.768	0.768	308.8	15.34	1.725	253.8029	0.9136904	995.6177	-13.9	68.72	907.1509	0.028	910.0245	902.6971	908.731	0.023	0.022	0.022	2749.889	2741.04	2753.551	0.05	
07/03/2016 12:00	4682	14.67	14.51	1.213	1.213	126.4	65.3	3.763	339.0034	1.220412	995.9237	-13.19	69.11	901.9507	0.15	910.1716	901.9507	908.7023	0.163	0.082	0.184	2749.782	2740.008	2753.817	0.06	
07/03/2016 13:00	4683	14.57	14.41	2.109	2.109	136	18.65	6.233	381.3773	1.372958	995.9237	-12.97	68.85	906.7935	0.316	910.1566	901.1536	909.0704	0.354	0.386	0.161	2750.033</				

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
09/03/2016 12:00	4730	14.42	14.27	3.32	3.32	221.4	26.34	6.076	401.3508	1.444863	996.4951	-4.911	66.24	906.2342	0.415	909.0056	900.8685	908.8287	0.427	0.507	0.28	2748.491	2739.219	2753.747	0.1	
09/03/2016 13:00	4731	14.36	13.73	2.778	2.778	149.6	30.51	6.35	436.2726	1.570581	996.7408	-4.337	65.07	905.0921	3.804	908.2083	899.2731	907.7948	6.251	0.622	1.988	2749.909	2736.798	2753.058	0.12	
09/03/2016 14:00	4732	14.36	13.72	1.617	1.617	121.5	47.28	4.626	404.5744	1.456468	996.6863	-4.329	64.93	905.7895	0.108	910.8649	899.0345	907.4691	0.142	0.087	0.084	2750.742	2736.88	2752.076	0.11	
09/03/2016 15:00	4733	14.51	14.27	4.2	4.2	157.2	39.61	6.84	250.1559	0.9005612	996.0034	-5.295	67.99	906.0471	0.408	911.3452	900.5883	906.2076	0.416	0.455	0.344	2752.321	2738.409	2751.385	0.06	
09/03/2016 16:00	4734	14.51	14.49	4.545	4.545	150.5	10.51	6.742	157.8517	0.5682661	995.8407	-5.359	68.85	906.1245	0.461	911.1599	900.8606	906.3531	0.466	0.55	0.343	2750.7	2738.438	2750.585	0.04	
09/03/2016 17:00	4735	14.52	14.2	4.536	4.536	156.7	5.542	5.821	89.40675	0.3218643	995.6907	-5.356	71.79	906.0851	0.481	911.1799	900.9562	906.1192	0.363	0.632	0.404	2751.579	2739.569	2749.967	0.02	
09/03/2016 18:00	4736	14.22	14.05	4.989	4.989	153.8	9	5.841	28.59099	0.1029276	995.4778	-5.973	78.77	906.1143	0.45	911.1691	900.8394	906.3344	0.468	0.474	0.405	2751.563	2739.09	2749.569	0.01	
09/03/2016 19:00	4737	14.06	13.91	4.082	4.082	145.3	12.33	6.762	6.790227	0.02444482	995.4865	-6.206	79.04	906.1589	0.409	911.2491	900.9816	906.2462	0.385	0.492	0.333	2751.812	2738.915	2750.231	0	
09/03/2016 20:00	4738	13.93	13.8	5.507	5.507	176.9	10.9	7.624	0	0	995.3413	-6.28	77.41	906.1709	0.527	911.4324	900.9576	906.1227	0.533	0.595	0.442	2751.613	2739.481	2750.036	0	
09/03/2016 21:00	4739	13.82	13.71	4.408	4.408	170.7	9.36	6.546	0	0	995.3715	-6.475	77.35	906.1402	0.413	911.33	900.926	906.1646	0.443	0.439	0.352	2751.936	2738.872	2750.271	0	
09/03/2016 22:00	4740	13.73	13.63	5.445	5.445	179.8	8.09	6.958	0	0	994.885	-7.201	76.5	906.1501	0.531	911.4796	900.9056	906.0652	0.488	0.579	0.523	2749.814	2738.174	2750.437	0	
09/03/2016 23:00	4741	13.66	13.57	4.693	4.693	184.8	18.14	6.566	0	0	994.7268	-7.493	76.86	906.1924	0.115	911.4314	900.9981	906.1479	0.129	0.095	0.119	2751.669	2739.164	2750.398	0	
10/03/2016 0:00	4742	13.58	13.5	3.813	3.813	145.5	12.98	5.762	0	0	994.27	-7.268	79.42	906.2361	0.471	911.3586	906.2899	906.2899	0.473	0.561	0.358	2750.384	2739.563	2750.48	0	
10/03/2016 1:00	4743	13.52	13.45	5.395	5.395	147.5	6.125	6.88	0	0	993.9191	-7.442	80.4	906.1137	0.949	911.065	900.8134	906.4627	1.104	0.985	0.717	2751.028	2738.517	2752.069	0	
10/03/2016 2:00	4744	13.46	13.38	5.964	5.964	156.8	3.702	6.821	0	0	993.5742	-6.942	79.21	906.2576	0.63	911.3867	901.0697	906.3166	0.697	0.729	0.418	2751.959	2738.843	2750.805	0	
10/03/2016 3:00	4745	13.4	13.33	5.286	5.286	159.2	8.4	7.134	0	0	993.4103	-6.92	79.89	906.2358	0.257	901.0181	906.3375	906.3375	0.289	0.286	0.18	2751.41	2739.417	2750.619	0	
10/03/2016 4:00	4746	13.34	13.28	2.886	2.886	151.7	13.6	4.292	0	0	993.0825	-6.728	82.2	906.2595	0.138	911.3788	901.0802	906.3193	0.167	0.128	0.112	2751.593	2738.989	2750.517	0	
10/03/2016 5:00	4747	13.29	13.22	2.801	2.801	140.6	8.24	3.724	0	0	992.5909	-7.08	84	906.2469	0.171	911.3889	901.0827	906.2692	0.169	0.196	0.145	2751.501	2739.151	2750.837	0	
10/03/2016 6:00	4748	13.24	13.18	3.292	3.292	137.1	3.578	3.861	0	0	992.0992	-6.803	83.1	906.2751	0.159	911.4006	901.1238	906.3011	0.167	0.205	0.078	2751.39	2738.988	2750.325	0	
10/03/2016 7:00	4749	13.19	13.13	2.051	2.051	133	6.45	2.842	0	0	991.6077	-6.37	80.3	906.2617	0.09	911.4474	901.1425	906.195	0.085	0.101	0.082	2751.597	2739.21	2750.23	0	
10/03/2016 8:00	4750	14.61	13.13	2.821	2.821	133.4	5.029	3.822	13.36433	0.0481116	991.2806	-6.733	77.72	906.4399	0.09	909.97	902.1989	907.1509	0.072	0.097	0.072	2749.743	2740.597	2751.665	0	
10/03/2016 9:00	4751	14.67	14.6	3.322	3.322	136.7	6.711	5.076	95.29723	0.34307	991.2799	-6.217	73.75	906.4839	0.079	908.9768	902.5526	907.9224	0.078	0.092	0.063	2748.571	2740.966	2752.672	0.02	
10/03/2016 10:00	4752	14.67	14.46	3.249	3.249	102.3	11.58	5.233	214.2047	0.7711367	991.2211	-6.275	75.12	906.3035	0.244	908.5886	901.6693	908.6529	0.279	0.228	0.221	2748.408	2739.894	2753.13	0.05	
10/03/2016 11:00	4753	14.54	14.45	6.562	6.562	122.2	8.95	9.88	282.759	1.017932	991.089	-5.808	73.88	905.1528	1.106	909.9534	900.2361	905.2689	1.014	1.392	0.838	2749.62	2736.985	2748.377	0.07	
10/03/2016 12:00	4754	14.56	14.46	6.749	6.749	118.3	6.765	9.58	219.0385	0.7885385	991.2207	-6.105	80.2	905.0571	0.345	910.2969	899.7142	905.1602	0.338	0.381	0.313	2749.903	2736.988	2750.023	0.06	
10/03/2016 13:00	4755	14.49	14.33	4.105	4.105	121.1	12.05	7.272	355.2862	1.27903	991.1764	-5.126	71.19	905.051	0.5	911.5253	899.8065	903.8209	0.574	0.522	0.386	2751.933	2737.542	2747.415	0.09	
10/03/2016 14:00	4756	14.55	14.43	6.355	6.355	107.7	7.159	8.27	345.7907	1.244847	991.0914	-5.206	72.27	904.8187	0.659	911.1481	898.3142	904.9937	0.791	0.675	0.471	2751.17	2736.376	2748.696	0.08	
10/03/2016 15:00	4757	14.49	14.46	6.383	6.383	109.6	7.497	8.66	408.4599	1.470456	990.8433	-4.824	69	904.8194	0.473	912.1453	898.0631	904.2498	0.453	0.549	0.406	2752.552	2735.799	2747.529	0.1	
10/03/2016 16:00	4758	14.49	14.46	5.972	5.972	110	8.38	8.53	351.4043	1.265055	990.8433	-4.595	65.93	904.6335	0.661	912.7567	897.0872	904.0565	0.641	0.698	0.641	2752.69	2732.037	2747.694	0.09	
10/03/2016 17:00	4759	14.53	14.46	6.181	6.181	113.2	7.16	7.624	209.4649	0.7540735	990.8431	-4.874	70.21	904.8732	0.566	912.3159	898.8759	903.4279	0.587	0.64	0.456	2753.29	2736.776	2747.391	0.05	
10/03/2016 18:00	4760	14.53	14.2	5.307	5.307	113.9	13.9	7.35	70.22887	0.2528239	991.0271	-5.325	71.77	900.0345	0.629	911.7993	903.5826	903.5826	0.698	0.701	0.458	2751.769	2737.821	2746.115	0.01	
10/03/2016 19:00	4761	14.21	13.97	6.518	6.518	112.6	9.73	9.15	6.012087	0.02164351	991.225	-5.58	71.28	905.2087	0.339	911.8982	900.0854	903.6424	0.297	0.459	0.214	2752.063	2737.676	2747.065	0.01	
10/03/2016 20:00	4762	13.99	13.84	2.116	2.116	136.2	47.41	6.115	0	0	991.6064	-5.794	70.99	905.2495	0.331	911.8652	900.1917	903.6915	0.37	0.328	0.291	2752.031	2738.341	2747.284	0	
10/03/2016 21:00	4763	13.86	13.76	4.4	4.4	149.3	15.6	7.781	0	0	992.181	-5.847	69.91	905.2842	0.057	912.0355	900.2031	903.6143	0.072	0.054	0.041	2752.146	2737.96	2747.197	0.01	
10/03/2016 22:00	4764	13.77	13.68	0.732	0.732	86.2	34.16	2.411	0	0	992.2532	-5.225	68.82	905.3149	0.033	912.0694	900.2628	903.6127	0.031	0.036	0.033	2752.416	2738.095	2747.235	-0.01	
10/03/2016 23:00	4765	13.69	13.6	1.064	1.064	136.6	56.31	3.567	0	0	992.7184	-4.978	68.77	905.3284	0.055	912.0569	900.278	903.6502	0.068	0.056	0.037	2752.266	2738.286	2747.163	-0.01	
11/03/2016 0:00	4766	13.62	13.54	2.763	2.763	136.9	40.91	8.11	0	0	993.1927	-4.949	72.17	905.1928	0.76	911.7532	900.014	903.8111	0.818	0.9	0.504	2753.151	2739.264	2747.295	0	
11/03/2016 1:00	4767	13.55	13.47	7.768	7.768	158.9	5.963	10.56	0	0	993.6831	-5.478	75.86	905.7795	1.736	910.5928	900.7787	905.9667	1.714	1.822	1.669	2749.034	2738.334	2748.044	0.01	
11/03/2016 2:00	4768	13.49	13.41	7.262	7.262	159.5	6.227	9.58	0	0	994.8374	-6.053	80.4	905.4252	0.339	911.8384	900.2374	904.1998	0.396	0.343	0.265	2752.107	2738.385	2747.332	0	
11/03/2016 3:00	4769	13.43	13.35	5.464	5.464	207	22.5	10.78	0	0	994.676	-5.644	71.99	906.3874	1.673	911.2153										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
13/03/2016 2:00	4816	13.48	13.4	5.926	5.926	123.6	8.65	8.7	0	0	994.8315	-5.977	64.86	905.4138	0.476	911.3663	900.4867	904.3881	0.542	0.491	0.382	2752.738	2740.276	2748.834	0.01
13/03/2016 3:00	4817	13.41	13.34	6.096	6.096	125.5	6.054	8.2	0	0	994.6737	-5.933	67.29	905.3921	0.858	911.005	900.522	904.6044	0.857	1.025	0.65	2752.176	2737.441	2749.467	0.01
13/03/2016 4:00	4818	13.36	13.29	3.732	3.732	122.3	17.7	7.801	0	0	994.8567	-6.268	70.24	905.4661	0.169	911.6138	900.4423	904.3422	0.187	0.191	0.119	2751.971	2738.44	2747.973	0
13/03/2016 5:00	4819	13.3	13.24	2.612	2.612	149.4	15.48	4.136	0	0	994.8849	-6.66	70.59	905.489	0.167	911.6289	900.4445	904.3937	0.19	0.151	0.156	2751.675	2738.146	2748.195	0
13/03/2016 6:00	4820	13.26	13.19	3.235	3.235	157.3	5.984	4.645	0	0	994.7197	-6.618	71.58	905.5007	0.049	911.6811	900.4735	904.3475	0.048	0.049	0.05	2751.985	2738.42	2748.094	0
13/03/2016 7:00	4821	13.21	13.13	2.355	2.355	154.3	11.2	3.685	0.01299627	4.68E-05	994.5573	-7.102	73.91	905.5258	0.12	911.647	900.55	904.3803	0.122	0.137	0.099	2751.686	2738.342	2748.139	0
13/03/2016 8:00	4822	13.25	13.13	4.466	4.466	126	11.31	8.76	17.05981	0.0614153	994.3934	-6.507	75.85	905.5113	0.367	911.363	900.621	904.5499	0.361	0.404	0.334	2751.558	2738.32	2748.771	0
13/03/2016 9:00	4823	13.87	13.24	4.145	4.145	126.8	13.61	8.06	68.60366	0.2469732	994.1814	-5.878	77.2	905.4749	0.776	910.9753	900.6713	904.7781	0.837	0.885	0.568	2749.632	2737.776	2749.137	0.01
13/03/2016 10:00	4824	14.67	13.88	5.247	5.247	110.9	10.53	7.977	245.6658	0.8843969	994.1323	-5.564	79.36	905.5605	0.415	909.4529	901.1393	906.0892	0.441	0.469	0.319	2749.111	2739.096	2750.155	0.06
13/03/2016 11:00	4825	14.67	14.61	9.11	9.11	112.5	6.349	12.82	201.9055	0.7268597	993.9561	-5.34	76.73	905.2585	1.578	910.9562	900.5262	904.2932	1.449	1.962	1.235	2751.796	2741.361	2749	0.06
13/03/2016 12:00	4826	14.66	14.48	7.453	7.453	114.3	8.65	11.72	228.6439	0.8231182	993.7952	-5.535	77.24	905.1702	0.852	911.1177	900.2217	904.1715	0.949	0.96	0.596	2752.088	2738.624	2747.703	0.06
13/03/2016 13:00	4827	14.54	14.47	7.295	7.295	115.2	9.01	10.6	286.4919	1.031371	993.468	-5.257	79.01	905.1815	0.951	911.0039	900.1305	904.4102	1.077	1.108	0.57	2752.635	2739.589	2747.152	0.07
13/03/2016 14:00	4828	14.51	14.44	6.136	6.136	110.9	9	10.41	205.6682	0.7404055	993.4652	-5.011	77.28	905.3386	1.124	910.0611	900.4091	904.5453	1.192	1.351	0.739	2751.448	2740.398	2748.418	0.06
13/03/2016 15:00	4829	14.54	14.48	8.09	8.09	119.2	6.222	11.23	190.9064	0.6872629	993.1387	-5.2	77.15	905.5869	1.667	910.5817	900.7521	905.427	1.589	1.927	1.448	2748.35	2741.403	2753.952	0.05
13/03/2016 16:00	4830	14.54	14.49	7.73	7.73	113.1	7.56	11.11	176.2502	0.6345007	993.301	-5.36	80.1	905.5679	1.078	911.412	900.6359	904.6558	1.204	1.218	0.745	2750.802	2738.986	2747.535	0.05
13/03/2016 17:00	4831	14.64	14.47	7.206	7.206	107.9	6.384	9.51	122.3514	0.4404649	992.9919	-5.584	83.2	905.5068	0.995	911.142	900.701	904.6772	1.069	1.132	0.739	2752.116	2739.993	2748.82	0.03
13/03/2016 18:00	4832	14.61	14.21	6.541	6.541	103.9	7.196	9.64	58.21542	0.2095755	993.0238	-5.825	86.1	905.5315	0.657	911.3579	900.5979	904.6386	0.596	0.773	0.585	2751.789	2739.287	2748.114	0.02
13/03/2016 19:00	4833	14.23	13.99	5.654	5.654	109.5	6.81	8.84	6.829879	0.02458757	992.7819	-6.259	90	905.4626	0.953	911.142	900.667	904.5787	1.02	1.179	0.542	2751.734	2738.973	2748.108	0
13/03/2016 20:00	4834	14.01	13.87	6.229	6.229	110.9	7.442	8.78	0	0	992.6238	-6.412	89.3	905.5889	0.459	911.3907	900.6569	904.7191	0.476	0.448	0.453	2749.321	2738.107	2750.121	0
13/03/2016 21:00	4835	13.89	13.78	3.99	3.99	113.5	12.11	7.33	0	0	992.5685	-6.516	87.6	905.5856	0.56	911.4529	900.7277	904.5761	0.586	0.574	0.517	2752.052	2738.731	2747.837	0
13/03/2016 22:00	4836	13.8	13.7	5.41	5.41	109.8	9.01	8.06	0	0	992.5813	-6.613	87.9	905.5317	0.668	911.2555	900.6898	904.65	0.784	0.59	0.613	2752.116	2738.542	2748.82	0
13/03/2016 23:00	4837	13.72	13.63	7.236	7.236	118.4	6.985	10.41	0	0	992.5715	-6.585	89.1	905.5439	1.082	911.5129	900.7736	904.3453	1.069	1.308	0.813	2752.909	2738.916	2748.675	0
14/03/2016 0:00	4838	13.64	13.56	5.205	5.205	120.4	19.95	9	0	0	992.9026	-6.656	89.6	905.4761	0.052	911.8172	900.4373	904.1741	0.058	0.036	0.036	2752.107	2738.336	2747.922	0
14/03/2016 1:00	4839	13.58	13.5	1.419	1.419	110.4	36.72	3.332	0	0	993.2278	-6.578	88.2	905.5539	0.009	911.8861	900.5201	904.2553	0.014	0.005	0.006	2752.159	2738.405	2748.005	0
14/03/2016 2:00	4840	13.52	13.44	1.183	1.183	313.5	51.14	2.999	0	0	993.3983	-6.329	81.7	905.5801	0.072	911.9444	900.5102	904.2855	0.104	0.049	0.049	2752.169	2738.417	2748.066	0
14/03/2016 3:00	4841	13.46	13.38	1.851	1.851	17.21	32.33	4.038	0	0	993.5557	-6.492	81.1	905.5916	0.048	911.9008	900.5793	904.2944	0.056	0.043	0.045	2752.2	2738.503	2748.038	0
14/03/2016 4:00	4842	13.4	13.33	1.313	1.313	57.77	36.28	4.802	0	0	993.8198	-6.841	80.1	905.6082	0.027	911.9807	900.6116	904.2323	0.031	0.028	0.022	2752.261	2738.483	2748.013	0
14/03/2016 5:00	4843	13.35	13.27	1.441	1.441	103.9	25.45	3.45	0	0	993.92	-7.547	85.8	905.6077	0.065	911.9685	900.5561	904.2983	0.059	0.086	0.044	2752.311	2738.45	2748.059	0
14/03/2016 6:00	4844	13.29	13.22	1.225	1.225	120.9	37.58	3.352	0	0	994.0984	-7.818	89.7	905.6823	0.08	911.987	900.6487	904.4113	0.086	0.089	0.064	2752.491	2738.804	2748.087	0
14/03/2016 7:00	4845	13.25	13.17	1.256	1.256	89.6	28.24	3.254	0.2545832	0.0009165	994.231	-7.62	89.3	905.6796	0.021	912.0285	900.671	904.3393	0.017	0.02	0.025	2752.344	2738.607	2748.079	0
14/03/2016 8:00	4846	13.87	13.18	0.956	0.956	143.4	55.77	3.214	36.06012	0.1298164	994.3365	-7.894	86.2	905.7378	0.033	911.2007	901.241	2739.339	0.034	0.015	0.015	2751.241	2739.339	2748.717	0
14/03/2016 9:00	4847	14.67	13.76	1.911	1.911	137.8	26.59	4.253	163.9106	0.5900782	994.7213	-7.17	82.4	905.7549	0.273	910.7302	901.2437	905.2906	0.355	0.201	0.24	2750.071	2739.659	2749.677	0.04
14/03/2016 10:00	4848	14.67	14.63	3.217	3.217	110.3	19.76	5.351	348.6119	1.255003	995.441	-6.243	79.12	905.6526	0.298	909.0115	901.0302	906.9161	0.332	0.348	0.186	2748.687	2739.107	2751.38	0.08
14/03/2016 11:00	4849	14.66	14.3	3.19	3.19	99.3	13.71	5.664	553.3488	1.992055	995.8068	-5.463	74.2	905.3628	0.476	910.0441	900.1874	906.957	0.607	0.415	0.374	2749.808	2739.533	2749.97	0.14
14/03/2016 12:00	4850	14.49	14.39	4.767	4.767	107.2	15.91	7.134	511.842	1.842631	996.0817	-5.426	74.08	905.4673	0.433	911.4152	900.1304	904.8563	0.456	0.464	0.372	2751.931	2738.95	2748.732	0.12
14/03/2016 13:00	4851	14.44	14.34	5.912	5.912	132.6	14.74	9.68	533.6414	1.921109	996.0836	-5.08	71.17	905.4673	1.212	909.6356	906.485	906.485	1.208	1.03	1.03	2747.985	2734.93	2750.264	0.12
14/03/2016 14:00	4852	14.53	13.93	7.042	7.042	148.5	8.42	10.25	237.473	0.8549028	996.0927	-5.451	71.1	905.4346	0.762	911.0426	900.0238	905.2376	0.828	0.896	0.504	2750.656	2737.152	2749.553	0.07
14/03/2016 15:00	4853	14.54	14.49	6.569	6.569	148.1	13.46	8.66	140.2031	0.5047313	996.4316	-5.698	73.01	905.5018	0.678	911.6239	900.3154	904.566	0.712	0.799	0.484	2751.352	2737.918	2749.271	0.05
14/03/2016 16:00	4854	14.53	14.22	3.103	3.103	180.4	22.3	6.409	464.6913	1.672889	997.0514	-4.13	66.99	905.1414	0.423	912.6248	898.0096	904.7897	0.447	0.516	0.268	2752.757	2735.852	2748.968	0.15
14/03/2016 17:00	4855	14.48	14.33	4.02	4.02	172.4	14.4	6.978	254.1118	0.9148026	997.2322	-5.146	72	905.1531	0.571	912.									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
16/03/2016 16:00	4902	14.51	14.42	5.606	5.606	222.4	11.34	7.526	226.5809	0.8156912	1017.555	-5.014	70.8	906.2347	0.365	912.0193	901.2007	905.4841	0.35	0.369	0.375	2752.479	2739.737	2749.009	0.06
16/03/2016 17:00	4903	14.51	14.49	4.579	4.579	220.6	9.95	6.742	127.2323	0.4580362	1017.713	-5.259	74.98	906.1606	0.33	911.9114	901.1795	905.3912	0.324	0.369	0.294	2751.939	2738.864	2749.313	0.03
16/03/2016 18:00	4904	14.52	14.28	4.708	4.708	222.9	7.012	7.193	72.46422	0.2608712	1017.889	-5.218	72.33	906.1272	0.634	912.1347	900.9943	905.2527	0.692	0.71	0.474	2753.66	2740.559	2748.888	0.01
16/03/2016 19:00	4905	14.37	14.04	6.198	6.198	231.6	6.461	8.21	19.2889	0.06944002	1018.172	-5.143	66.62	906.202	0.554	912.165	901.0567	905.3842	0.516	0.624	0.516	2753.177	2738.946	2748.985	0.01
16/03/2016 20:00	4906	14.05	13.89	5.11	5.11	229.2	8.75	7.546	0	0	1018.43	-5.708	65.34	906.2171	0.294	912.0828	901.2097	905.3588	0.311	0.296	0.274	2752.103	2738.969	2749.451	0.01
16/03/2016 21:00	4907	13.91	13.79	5.492	5.492	222.2	6.075	7.762	0	0	1018.808	-6.088	68.17	906.1828	0.681	912.1456	901.0649	905.3378	0.686	0.784	0.553	2753.49	2739.141	2748.652	0.01
16/03/2016 22:00	4908	13.81	13.71	7.071	7.071	225	4.442	8.88	0	0	1019.044	-5.828	65.21	906.3325	0.754	912.4544	901.1884	905.3546	0.791	0.78	0.688	2752.403	2738.081	2750.154	0.01
16/03/2016 23:00	4909	13.73	13.64	7.514	7.514	221.1	5.919	9.41	0	0	1019.303	-6.113	63.36	906.1631	0.901	912.2109	900.9144	905.3641	0.914	1.049	0.706	2753.61	2738.398	2750.776	0.01
17/03/2016 0:00	4910	13.66	13.57	7.634	7.634	224.2	5.689	10.11	0	0	1019.631	-6.311	61.44	906.3139	0.892	912.3992	901.0854	905.4571	0.902	0.985	0.778	2753.165	2739.735	2751.134	0.01
17/03/2016 1:00	4911	13.59	13.51	7.188	7.188	217.4	6.587	8.72	0	0	1019.795	-7.084	61.55	906.2097	0.772	912.0126	901.0999	905.5165	0.818	0.895	0.562	2752.537	2738.611	2749.301	0.01
17/03/2016 2:00	4912	13.53	13.45	7.203	7.203	215.7	5.298	8.98	0	0	1020.055	-7.575	61.58	906.2718	1.162	912.2139	901.1454	905.4561	1.225	1.312	0.91	2752.394	2740.694	2749.572	0.01
17/03/2016 3:00	4913	13.47	13.39	8.48	8.48	209.6	5.757	9.94	0	0	1020.006	-7.917	63.25	906.5187	1.408	911.4681	901.0822	907.0059	1.484	1.412	1.322	2752.422	2741.064	2754.986	0.01
17/03/2016 4:00	4914	13.41	13.34	7.931	7.931	208.4	7.091	10.13	0	0	1020.175	-8.05	63.11	906.3353	0.865	912.2759	900.9798	905.7502	0.81	1.033	0.721	2753.273	2739.369	2749.672	0.01
17/03/2016 5:00	4915	13.36	13.28	7.431	7.431	206.5	5.915	9.06	0	0	1020.346	-8.5	62.33	906.1613	1.114	912.5122	900.7822	905.1896	1.255	1.062	1.009	2751.568	2739.655	2749.401	0.01
17/03/2016 6:00	4916	13.3	13.22	7.345	7.345	211.4	5.539	8.94	0	0	1020.51	-8.59	64.82	906.2188	1.099	912.4444	901.2037	905.0082	1.206	1.22	0.825	2753.923	2741.308	2749.018	0.01
17/03/2016 7:00	4917	13.25	13.19	6.352	6.352	211.4	6.127	9.23	0.3433654	0.001236115	1020.51	-9.07	65.63	906.3412	1.396	912.2133	901.037	905.7734	1.351	1.625	1.175	2752.354	2737.508	2749.65	0.01
17/03/2016 8:00	4918	14.63	13.19	5.995	5.995	203.4	18.27	9.58	38.35037	0.1380613	1020.673	-8.82	67.7	906.6862	0.117	910.3434	902.9269	906.7885	0.139	0.112	0.095	2750.223	2741.453	2751.197	0.01
17/03/2016 9:00	4919	14.67	14.6	1.28	1.28	145.9	23.21	3.587	141.8725	0.5107411	1020.698	-6.663	58.7	906.7712	0.132	909.5715	903.1183	907.6239	0.145	0.095	0.095	2749.523	2741.418	2752.081	0.03
17/03/2016 10:00	4920	14.67	14.4	3.369	3.369	150.1	7.16	4.959	270.5432	0.9739553	1020.728	-6.554	60.88	906.5602	0.168	909.4153	902.3581	907.9072	0.154	0.194	0.153	2749.05	2740.794	2752.406	0.07
17/03/2016 11:00	4921	14.43	14.27	3.213	3.213	179.3	26.11	4.939	395.1329	1.422478	1020.988	-6.322	58.62	906.4311	0.354	909.1091	901.9315	908.2526	0.382	0.418	0.237	2748.835	2739.812	2752.762	0.1
17/03/2016 12:00	4922	14.37	14.27	4.623	4.623	201.3	8.27	7.487	447.1844	1.609864	1020.987	-6.883	63.55	901.0763	0.346	910.0956	901.0763	907.7792	0.262	0.408	0.262	2749.656	2738.927	2752.825	0.1
17/03/2016 13:00	4923	14.37	14.27	2.357	2.357	224.8	19.54	4.978	487.2062	1.753942	1020.989	-6.358	59.79	906.2676	0.045	910.1708	900.7872	907.845	0.043	0.043	0.05	2750.024	2738.796	2752.405	0.12
17/03/2016 14:00	4924	14.36	14.21	2.059	2.059	216.7	16.2	3.842	451.0482	1.623774	1020.741	-5.616	56.69	906.147	0.047	911.4072	900.4366	906.5974	0.045	0.05	0.046	2751.55	2738.181	2750.846	0.12
17/03/2016 15:00	4925	14.35	14.09	1.603	1.603	205.5	38.21	7.958	382.2299	1.376027	1020.396	-4.491	50.76	906.0204	0.957	912.0176	899.8263	906.2173	1.003	1.126	0.69	2752.259	2738.435	2750.994	0.11
17/03/2016 16:00	4926	14.49	14.33	6.616	6.616	196.9	8.19	8.86	275.3256	0.991172	1020.005	-6.212	64.42	906.0475	0.635	912.3641	900.1479	905.6307	0.713	0.695	0.468	2751.638	2737.898	2750.575	0.07
17/03/2016 17:00	4927	14.54	14.47	5.654	5.654	198.5	14.13	8.72	171.3737	0.6169453	1019.735	-6.454	65.97	906.0634	0.308	912.451	900.5231	905.216	0.342	0.336	0.232	2752.966	2738.068	2749.354	0.04
17/03/2016 18:00	4928	14.52	14.26	3.226	3.226	177.7	25.55	7.193	96.28146	0.3466133	1019.282	-6.309	65.9	906.1071	0.627	912.3005	900.8633	905.1573	0.62	0.767	0.456	2752.199	2738.354	2749.175	0.01
17/03/2016 19:00	4929	14.33	14.02	7.274	7.274	195.1	10.03	10.23	18.90842	0.0680703	1018.482	-6.478	64.26	906.2395	1.251	911.8304	900.91	905.978	1.184	1.606	0.846	2750.823	2739.49	2750.426	0.01
17/03/2016 20:00	4930	14.03	13.88	7.327	7.327	197.1	10.78	10.37	0	0	1018.156	-6.568	65.85	906.4089	0.742	912.103	901.1688	905.9547	0.793	0.849	0.548	2751.942	2737.946	2749.259	0.01
17/03/2016 21:00	4931	13.89	13.78	6.443	6.443	204.3	7.19	8.49	0	0	1017.988	-6.48	67.79	906.394	0.628	911.9747	901.3449	905.8627	0.638	0.746	0.47	2751.044	2738.445	2749.505	0.01
17/03/2016 22:00	4932	13.8	13.71	5.474	5.474	190.9	12.71	8.58	0	0	1017.5	-6.622	67.81	906.3353	0.953	911.6238	901.2402	905.1418	0.899	1.098	0.844	2752.052	2739.75	2748.516	0.01
17/03/2016 23:00	4933	13.72	13.63	7.34	7.34	191.6	8.1	8.84	0	0	1016.845	-7.188	69.67	906.2755	0.866	912.0645	901.1863	905.5756	1.033	0.897	0.617	2753.526	2741.125	2750.847	0.01
18/03/2016 0:00	4934	13.65	13.57	5.573	5.573	186.8	9.44	8.31	0	0	1016.353	-7.307	69.82	906.3658	0.71	912.1986	901.3264	905.5724	0.675	0.79	0.658	2753.87	2740.724	2748.565	0.01
18/03/2016 1:00	4935	13.58	13.51	3.749	3.749	195.5	14.98	7.095	0	0	1015.862	-7.215	71.69	906.4038	0.532	912.1222	901.5673	905.5219	0.51	0.635	0.43	2752.302	2739.299	2749.688	0
18/03/2016 2:00	4936	13.52	13.44	5.931	5.931	180.3	7.004	7.428	0	0	1015.124	-7.01	72.46	906.507	1.014	911.9326	901.6774	905.911	0.94	1.303	0.708	2754.563	2743.976	2750.914	0.01
18/03/2016 3:00	4937	13.46	13.38	6.712	6.712	164.8	4.165	7.918	0	0	1014.551	-7.112	76.44	906.4299	0.67	911.8709	901.6772	905.7417	0.728	0.817	0.384	2751.944	2738.738	2749.827	0.01
18/03/2016 4:00	4938	13.41	13.33	5.701	5.701	156.9	6.858	7.84	0	0	1013.895	-7.605	80.7	906.4647	0.825	911.9099	901.618	905.8662	0.872	1.011	0.507	2752.605	2740.967	2749.579	0
18/03/2016 5:00	4939	13.35	13.28	5.066	5.066	146.2	5.782	6.938	0	0	1013.403	-8.03	86.5	906.3939	0.194	911.9199	901.6443	905.6176	0.219	0.213	0.141	2752.611	2739.954	2749.629	0
18/03/2016 6:00	4940	13.29	13.22	3.346	3.346	121.3	29.59	5.468	0	0	1012.749	-8.38	89	906.4915	0.377	912.0266	901.7388	905.7089	0.367	0.393	0.37	2752.03	2739.507	2749.83	0
18/03/2016 7:00	4941	13.24	13.17	4.575	4.575	144.2	5.736	5.664	0.9683641	0.003486111	1011.767	-8.2	86.3	906.4505	0.535	911									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
20/03/2016 6:00	4988	13.28	13.21	6.823	6.823	152.5	9.77	9.43	0	0	1010.349	-5.081	87.1	906.8838	0.742	912.3041	901.7486	906.5985	0.747	0.836	0.63	2753.039	2740.132	2750.844	0	
20/03/2016 7:00	4989	13.22	13.18	3.633	3.633	159.3	32.09	7.193	1.350331	0.004861191	1010.542	-4.328	77.28	906.9036	0.121	912.4382	901.8503	906.4222	0.156	0.123	0.064	2753.459	2740.321	2750.632	0	
20/03/2016 8:00	4990	13.94	13.18	2.203	2.203	196.3	82.3	5.508	31.15464	0.1121567	1010.562	-4.781	78.92	906.96	0.415	912.0198	902.1362	906.7241	0.406	0.496	0.325	2753.803	2740.024	2751.253	0	
20/03/2016 9:00	4991	14.66	13.97	4.858	4.858	148.9	16.68	8.02	184.5497	0.664379	1010.529	-4.919	80.2	907.1938	0.448	909.8738	903.3713	908.3365	0.43	0.503	0.405	2750.315	2742.982	2753.474	0.04	
20/03/2016 10:00	4992	14.67	14.63	5.225	5.225	130.9	8.67	7.311	279.7442	1.007079	1010.667	-5.489	87.8	907.0269	0.412	909.7488	902.6458	908.6862	0.436	0.49	0.282	2749.812	2742.017	2753.329	0.06	
20/03/2016 11:00	4993	14.65	14.4	6.349	6.349	129.5	11.38	9.49	413.2153	1.487575	1010.502	-5.049	86.1	906.0977	1.337	910.3903	901.0372	906.8656	1.28	1.714	0.886	2751.777	2740.965	2750.336	0.08	
20/03/2016 12:00	4994	14.43	14.39	7.677	7.677	135.1	7.423	9.58	493.4443	1.776399	1010.502	-4.595	84.2	906.1939	1.011	910.8889	900.606	907.0869	1.068	1.158	0.764	2751.834	2738.675	2751.658	0.1	
20/03/2016 13:00	4995	14.43	14.27	5.008	5.008	141.1	11.37	8.43	525.6045	1.892176	1010.389	-3.45	78.76	906.0521	0.64	911.5588	899.79	906.8073	0.649	0.8	0.408	2752.924	2736.086	2750.851	0.13	
20/03/2016 14:00	4996	14.42	14.24	6.97	6.97	144.3	9.78	9.94	531.2807	1.912611	1010.035	-3.136	76.63	906.2907	0.773	911.4476	899.8301	907.5944	0.743	0.997	0.498	2752.637	2739.033	2751.577	0.13	
20/03/2016 15:00	4997	14.4	14.34	5.489	5.489	133.3	11.95	8.58	481.1905	1.732285	1010.117	-3.004	74.59	906.2354	1.018	912.4178	899.3055	906.9828	1.006	1.315	0.608	2752.29	2737.104	2751.243	0.12	
20/03/2016 16:00	4998	14.42	14.35	6.992	6.992	153.9	10.73	9.39	396.4362	1.42717	1009.461	-2.913	72.43	906.1204	0.968	912.5483	899.5925	906.2203	1.06	1.165	0.577	2752.752	2738.271	2750.565	0.1	
20/03/2016 17:00	4999	14.43	14.35	4.253	4.253	153.3	31.16	9.29	297.3033	1.070292	1009.497	-3.056	70.77	906.1211	0.134	914.1462	898.7834	905.4336	0.1	0.181	0.106	2754.606	2736.407	2749.507	0.08	
20/03/2016 18:00	5000	14.52	14.4	4.876	4.876	140.9	12.38	8.29	184.6733	0.6648237	1009.109	-4.002	74.68	906.2673	0.298	913.9565	899.8008	905.4006	0.319	0.332	0.233	2755.888	2738.576	2749.404	0.04	
20/03/2016 19:00	5001	14.46	14.01	4.247	4.247	134.6	27.55	7.134	43.79676	0.1576683	1008.727	-5.421	83.2	906.5542	0.367	912.3895	901.5908	905.6825	0.377	0.425	0.287	2752.597	2739.827	2749.853	0	
20/03/2016 20:00	5002	14.02	13.85	5.687	5.687	135.8	15.18	8.33	0.000509539	1.83E-06	1008.485	-6.119	89	906.702	0.803	912.1637	901.8497	906.0925	0.778	1.02	0.538	2751.869	2739.709	2750.609	0	
20/03/2016 21:00	5003	13.87	13.75	6.401	6.401	123.8	9.15	8.7	0	0	1008.442	-5.637	90.8	906.7561	0.702	911.9017	901.9138	906.4528	0.698	0.825	0.556	2751.006	2739.342	2751.933	0	
20/03/2016 22:00	5004	13.77	13.67	6.693	6.693	113.6	6.415	9.55	0	0	1008.43	-5.603	89.7	906.8369	0.938	912.0436	902.2206	906.2467	0.903	1.164	0.685	2754.067	2740.988	2751.031	0	
20/03/2016 23:00	5005	13.69	13.6	7.995	7.995	115.9	5.469	10.58	906.72	0	1008.096	-5.491	86.8	906.72	1.159	911.7179	901.9736	906.4688	1.059	1.548	0.717	2750.336	2740.329	2748.457	0	
21/03/2016 0:00	5006	13.62	13.53	5.692	5.692	123.3	16.48	10.13	0	0	1008.019	-5.528	87.7	906.7168	0.164	912.405	901.8239	905.9216	0.166	0.205	0.106	2753.513	2740.628	2749.961	0	
21/03/2016 1:00	5007	13.55	13.47	2.864	2.864	141.2	20.14	4.214	0	0	1007.938	-5.746	87.5	906.7446	0.094	912.4907	901.865	905.8783	0.099	0.113	0.064	2753.153	2740.545	2750.032	0	
21/03/2016 2:00	5008	13.49	13.41	3.771	3.771	151.9	10.93	6.684	0	0	1007.586	-6.172	86.8	906.7242	0.39	912.2993	901.8545	906.0187	0.396	0.455	0.304	2752.608	2740.702	2750.259	0	
21/03/2016 3:00	5009	13.43	13.36	4.175	4.175	147.8	9.8	6.409	0	0	1007.258	-6.49	88.2	906.804	0.203	912.4761	901.9456	905.9906	0.209	0.239	0.151	2753.019	2740.379	2750.325	0	
21/03/2016 4:00	5010	13.37	13.3	4.736	4.736	150.8	15.1	7.33	0	0	1006.684	-7.107	90.5	906.8474	0.369	912.4747	902.0249	906.0428	0.349	0.437	0.311	2753.003	2739.966	2749.111	0	
21/03/2016 5:00	5011	13.32	13.24	6.948	6.948	126.6	12.38	10.54	0	0	1006.684	-7.39	87.3	906.6673	1.053	911.7163	902.0358	906.2496	0.965	1.327	0.797	2752.811	2741.768	2749.931	0	
21/03/2016 6:00	5012	13.27	13.19	8.45	8.45	119.8	5.992	10.41	0	0	1006.521	-7.392	85.5	906.7619	0.914	911.9426	902.0216	906.3215	0.983	1.076	0.619	2752.509	2740.125	2751.004	0	
21/03/2016 7:00	5013	13.21	13.17	4.923	4.923	113.6	9.15	7.526	2.307637	0.008307494	1006.382	-8.32	87.4	906.9741	0.31	912.502	902.2468	906.1737	0.356	0.325	0.237	2753.461	2740.425	2750.539	0	
21/03/2016 8:00	5014	13.56	13.17	6.048	6.048	111.9	6.929	8.33	40.04415	0.1441589	1006.208	-7.939	86.2	906.9099	0.694	912.1533	902.3561	906.2205	0.791	0.792	0.436	2752.633	2740.718	2751.322	0	
21/03/2016 9:00	5015	14.67	13.56	5.618	5.618	113.7	7.207	7.566	132.2192	0.4759892	1006.195	-7.67	85.4	907.1215	0.616	909.7883	903.5839	907.9924	0.485	0.799	0.516	2750.034	2742.806	2751.488	0.02	
21/03/2016 10:00	5016	14.67	14.64	5.253	5.253	117.1	10.33	7.84	327.491	1.178968	1006.061	-7.04	81	907.0191	0.476	909.9939	902.7477	908.3158	0.442	0.568	0.401	2750.257	2741.281	2752.797	0.07	
21/03/2016 11:00	5017	14.67	14.46	5.199	5.199	114	7.193	405.0594	1.458214	1.006.094	1006.094	-6.864	76.86	906.8784	0.583	910.9564	901.976	907.7028	0.599	0.716	0.386	2751.418	2741.191	2751.307	0.09	
21/03/2016 12:00	5018	14.55	14.47	6.293	6.293	109.6	9.22	7.193	314.062	1.130623	1006.299	-7.193	85.5	906.7703	0.765	911.5377	901.9169	906.8563	0.807	0.837	0.635	2750.705	2740.114	2750.445	0.07	
21/03/2016 13:00	5019	14.55	14.46	6.388	6.388	110	7.391	8.8	419.2486	1.509295	1006.294	-7.212	74.69	906.6669	0.783	910.9963	900.9494	908.0549	0.842	0.895	0.572	2751.555	2739.404	2751.912	0.09	
21/03/2016 14:00	5020	14.55	14.08	6.6	6.6	113.2	7.273	8.86	551.0326	1.983177	1006.082	-7.295	75.77	906.5744	0.897	911.9249	900.949	906.8494	0.906	1.119	0.585	2753.268	2738.464	2752.223	0.11	
21/03/2016 15:00	5021	14.55	14.5	6.241	6.241	111.6	7.434	8.21	533.3716	1.920138	1006.166	-7.426	76.91	906.5861	0.819	912.2884	900.6453	906.8245	0.918	0.834	0.687	2752.781	2739.856	2750.646	0.1	
21/03/2016 16:00	5022	14.55	14.52	6.161	6.161	106.8	6.949	7.938	444.0899	1.598724	1005.92	-7.583	77.54	906.608	0.566	912.4758	901.1264	906.2217	0.652	0.551	0.481	2753.51	2739.554	2749.998	0.08	
21/03/2016 17:00	5023	14.58	14.54	5.472	5.472	110	8.44	7.82	191.8575	0.6906868	1005.972	-7.872	78.62	906.8022	0.439	912.4808	901.8334	906.0923	0.412	0.513	0.38	2752.818	2741.802	2750.01	0.04	
21/03/2016 18:00	5024	14.58	14.38	5.015	5.015	121.5	7.773	6.782	81.25444	0.292516	1006.029	-8.18	79.63	906.8259	0.524	912.2927	901.9381	906.2466	0.573	0.624	0.328	2753.237	2740.683	2750.5	0.01	
21/03/2016 19:00	5025	14.44	14.07	4.392	4.392	126.7	9.75	6.644	21.91265	0.07888553	1006.029	-8.27	79.85	906.9041	0.252	912.5639	902.0265	906.122	0.309	0.256	0.172	2753.001	2740.083	2750.107	0	
21/03/2016 20:00	5026	14.09	13.93	3.308	3.308	136.8	8.63	5.174	0.4398295	0.001583386	1006.116	-8.41	81.9	906.9046	0.137	912.5944	902.0442	906.0752	0.152	0.146	0.11	2753.222	2740.37	2750.251	0	
21/03/2016 21:00	5027	13.94	13.83	3.733	3.733																					

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
23/03/2016 20:00	5074	14.14	13.96	5.792	5.792	148.8	6.744	8.6	0.3947847	0.001421225	1003.463	-9.23	81	906.966	0.67	912.6364	902.123	906.1385	0.679	0.774	0.534	2752.546	2739.271	2750.145	0	
23/03/2016 21:00	5075	13.97	13.85	3.441	3.441	166.6	23.78	7.683	0	0	1003.463	-9.31	80.8	907.032	0.028	912.9429	902.1006	906.0527	0.028	0.022	0.034	2753.473	2740.368	2750.197	0	
23/03/2016 22:00	5076	13.87	13.77	0.698	0.698	169.3	71.63	2.783	0	0	1003.304	-9.25	81.6	907.0525	0.023	912.9562	902.1499	906.0513	0.024	0.029	0.012	2753.58	2740.359	2750.218	-0.01	
23/03/2016 23:00	5077	13.79	13.69	1.32	1.32	238.3	11.67	1.842	0	0	1003.314	-9.29	81.3	907.0853	0.034	913.0303	902.1312	906.0942	0.037	0.038	0.025	2753.58	2740.392	2750.299	-0.01	
24/03/2016 0:00	5078	13.72	13.63	0.719	0.719	306.4	34.76	1.47	0	0	1003.353	-9.44	81.9	907.0963	0.012	913.1778	902.1918	905.9192	0.019	0.008	0.004	2753.748	2740.465	2750.077	-0.01	
24/03/2016 1:00	5079	13.65	13.57	0.307	0.307	306.7	30.63	1.156	0	0	1003.213	-9.97	85.8	907.123	0.02	913.2325	902.1589	905.9777	0.023	0.016	0.019	2753.878	2740.448	2750.124	-0.01	
24/03/2016 2:00	5080	13.58	13.51	0.434	0.434	223.4	44.58	1.274	0	0	1003.134	-10.1	86.2	907.1362	0.014	913.0911	902.2866	906.0309	0.021	0.008	0.009	2753.647	2740.622	2750.208	-0.01	
24/03/2016 3:00	5081	13.53	13.45	1.034	1.034	158.4	34.5	2.489	0	0	1002.883	-9.79	81.6	907.1863	0.033	913.1631	902.2491	906.1467	0.039	0.032	0.028	2753.767	2740.564	2750.296	-0.01	
24/03/2016 4:00	5082	13.47	13.39	0.872	0.872	253.7	25.6	1.646	0	0	1003.029	-9.49	80.3	907.1728	0.019	913.2567	902.2571	906.0045	0.016	0.005	0.029	2753.846	2740.576	2750.122	-0.01	
24/03/2016 5:00	5083	13.41	13.33	0.443	0.443	50.43	46.53	1.411	0	0	1003.081	-9.81	81.9	907.2336	0.012	913.194	902.5417	905.9652	0.011	0.009	0.014	2753.816	2740.894	2750.099	-0.01	
24/03/2016 6:00	5084	13.36	13.28	0.663	0.663	249	22.53	1.607	0	0	1003.085	-10.06	82.2	907.228	0.024	913.3293	902.2999	906.0547	0.039	0.01	0.011	2753.895	2740.602	2750.232	-0.01	
24/03/2016 7:00	5085	13.38	13.28	0.169	0.169	223.6	20.59	0.804	4.922667	0.0177216	1003.231	-9.82	81.6	907.3376	0.052	912.0808	903.4571	906.475	0.077	0.043	0.017	2752.264	2742.141	2750.808	-0.01	
24/03/2016 8:00	5086	14.66	13.37	0.186	0.186	145.9	36.06	1.862	144.0947	0.5187408	1003.31	-8.3	73.16	907.4822	0.093	910.4618	904.4308	907.5543	0.083	0.028	0.135	2750.219	2743.349	2752.31	0.02	
24/03/2016 9:00	5087	14.67	14.64	0.465	0.465	246.8	36.52	1.725	285.4495	1.027618	1003.452	-8.19	71.88	907.5835	0.115	908.9677	904.7311	909.0518	0.099	0.045	0.166	2748.369	2743.535	2754.228	0.06	
24/03/2016 10:00	5088	14.67	14.18	0.747	0.747	227.6	39.39	1.666	387.026	1.393294	1003.641	-7.897	70.03	907.3232	0.06	909.4841	903.5959	908.8893	0.088	0.029	0.048	2748.995	2742.318	2753.873	0.09	
24/03/2016 11:00	5089	14.3	14.1	1.469	1.469	144.4	21.2	4.057	457.7372	1.647854	1003.708	-6.311	63.13	907.1234	0.063	910.0797	902.7578	908.5327	0.071	0.043	0.043	2749.859	2741.167	2753.332	0.12	
24/03/2016 12:00	5090	14.3	14.02	1.852	1.852	172.2	14.04	3.646	524.8602	1.889497	1004.115	-5.918	62.61	907.061	0.065	910.3066	902.1959	908.6807	0.067	0.062	0.065	2750.126	2740.574	2753.64	0.14	
24/03/2016 13:00	5091	14.49	14.02	3.455	3.455	223.8	15.18	4.998	577.0081	2.077229	1004.61	-6.808	69.06	906.9191	0.333	910.7234	901.5117	908.5222	0.322	0.396	0.269	2750.937	2739.942	2752.829	0.13	
24/03/2016 14:00	5092	14.49	14.31	4.056	4.056	226.8	13.88	5.625	565.8323	2.036996	1004.932	-6.361	69.3	906.6924	0.335	911.5845	900.5176	907.975	0.348	0.311	0.345	2751.837	2738.514	2752.616	0.13	
24/03/2016 15:00	5093	14.49	14.41	3.969	3.969	235.2	8.58	5.39	500.2071	1.800746	1005.178	-5.703	67.91	906.7455	0.303	912.4451	900.4763	907.3152	0.332	0.32	0.252	2752.806	2738.561	2751.37	0.12	
24/03/2016 16:00	5094	14.52	14.46	4.39	4.39	236.7	7.811	6.742	363.7951	1.309662	1005.26	-5.375	67.94	906.6393	0.461	913.0157	900.4879	906.4144	0.461	0.531	0.378	2754	2738.362	2751.217	0.09	
24/03/2016 17:00	5095	14.53	14.47	5.371	5.371	236.8	5.819	6.899	275.5869	0.9921129	1005.589	-5.342	68.51	906.7509	0.363	913.0555	901.0627	906.1343	0.384	0.377	0.324	2754.356	2739.558	2750.062	0.07	
24/03/2016 18:00	5096	14.57	14.43	4.805	4.805	242.6	6.096	6.292	147.7926	0.5320534	1005.751	-5.55	69.25	906.8774	0.239	912.9744	901.5693	906.0884	0.293	0.188	0.225	2752.831	2739.524	2750.247	0.04	
24/03/2016 19:00	5097	14.47	14.08	5.429	5.429	250.5	4.109	6.723	42.06857	0.1514469	1006.136	-6.09	71.77	906.8533	0.427	912.8867	901.6462	906.0272	0.443	0.447	0.389	2752.333	2739.689	2750.502	0.01	
24/03/2016 20:00	5098	14.09	13.89	5.572	5.572	248.7	6.438	7.134	1.197665	0.004311594	1006.405	-6.05	72.34	906.8994	0.29	912.9899	901.757	905.9512	0.292	0.282	0.295	2753.073	2739.45	2749.505	0.01	
24/03/2016 21:00	5099	13.9	13.78	3.139	3.139	254.6	6.542	6.448	0	0	1006.745	-6.099	72.33	906.9136	0.196	912.8731	901.8845	905.9832	0.233	0.165	0.183	2753.129	2740.03	2750.287	0	
24/03/2016 22:00	5100	13.8	13.69	5.038	5.038	237.1	5.975	6.527	0	0	1006.682	-6.711	81.2	906.8806	0.44	912.9077	901.7787	905.9551	0.462	0.466	0.389	2753.391	2740.075	2751.021	0	
24/03/2016 23:00	5101	13.71	13.62	6.008	6.008	235.9	5.594	7.35	0	0	1007.161	-6.071	80.5	906.9438	0.427	913.1337	901.7891	905.9086	0.487	0.376	0.411	2754.026	2740.169	2750.592	0	
25/03/2016 0:00	5102	13.64	13.55	3.597	3.597	250.7	5.92	6.174	0	0	1007.291	-5.915	82.2	906.9592	0.053	912.8505	901.9966	906.0307	0.064	0.055	0.036	2753.44	2740.259	2750.116	0	
25/03/2016 1:00	5103	13.58	13.49	2.927	2.927	248.1	12.69	4.41	0	0	1007.49	-6.087	81.2	906.9383	0.137	912.8739	901.9081	906.0328	0.136	0.158	0.114	2753.487	2740.141	2749.991	0	
25/03/2016 2:00	5104	13.51	13.43	4.523	4.523	237.4	3.843	5.841	0	0	1007.786	-5.834	80.3	906.8967	0.403	912.9709	901.7777	905.9414	0.399	0.385	0.385	2753.919	2740.542	2750.337	0	
25/03/2016 3:00	5105	13.45	13.38	5.674	5.674	236.3	4.815	6.586	0	0	1007.807	-5.974	75.69	906.8804	0.406	912.8966	901.8062	905.9383	0.406	0.469	0.331	2752.747	2739.665	2750.482	0	
25/03/2016 4:00	5106	13.39	13.32	4.737	4.737	233.8	4.234	5.704	0	0	1007.995	-6.27	73.98	906.9385	0.168	912.9648	901.9096	905.9412	0.185	0.184	0.13	2753.501	2740.072	2750.194	0	
25/03/2016 5:00	5107	13.33	13.27	3.86	3.86	229.1	5.557	4.939	0	0	1008.008	-6.637	73.56	906.97	0.118	912.9536	901.9433	905.0129	0.107	0.139	0.104	2753.414	2740.151	2750.075	0	
25/03/2016 6:00	5108	13.28	13.21	2.288	2.288	231.5	10.22	3.704	0	0	1008.035	-6.15	71.9	907.0139	0.055	912.9932	901.9594	906.0889	0.056	0.059	0.049	2753.566	2740.213	2750.343	0	
25/03/2016 7:00	5109	13.31	13.21	1.529	1.529	234.1	11.41	2.509	5.065509	0.01823583	1007.996	-5.128	69.52	907.1106	0.073	911.8742	902.9606	906.497	0.102	0.065	0.037	2751.999	2741.545	2750.834	0	
25/03/2016 8:00	5110	14.66	13.3	1.06	1.06	170.4	33.93	1.98	81.59309	0.2937351	1008.07	-4.061	65.08	907.2643	0.046	910.3549	904.0467	907.3914	0.054	0.043	0.041	2750.245	2742.841	2751.946	0	
25/03/2016 9:00	5111	14.67	14.64	1.154	1.154	187	19.98	2.078	198.407	0.7142652	1008.217	-3.156	60.22	907.2658	0.049	909.3696	904.2034	908.2244	0.075	0.033	0.023	2748.917	2742.953	2752.944	0.05	
25/03/2016 10:00	5112	14.67	14.13	0.827	0.827	209.7	18.29	1.862	325.1575	1.170567	1008.336	-2.817	59	907.1445	0.057	909.2183	903.6335	908.5277	0.048	0.07	0.05	2749.022	2742.192	2753.32	0.1	
25/03/2016 11:00	5113	14.29	14.09	4.262	4.262	200.2	8.3	6.174	443.6679	1.597204	1008.155	-3.535	67.26	906.9244	0.422	909.427	902.6043	908.7419	0.377	0.551	0.296	2748.958	2740.703	2753.55	0.12	
25/03/2016 12:00	5114	14.25	14.2																							

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m ²	MJ/m ²	kPa	degC	percent	mm	mm	mm	mm	mm	mm	mm	mm	Hz	Hz	Hz	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
27/03/2016 10:00	5160	14.67	14.33	8.44	8.44	198.9	11.24	11.62	335.1027	1.20637	1002.12	-2.456	77.14	907.345	2.673	909.0964	902.8758	910.0629	3.259	2.565	2.056	2748.257	2741.981	2753.817	0.09
27/03/2016 11:00	5161	14.42	14.35	7.313	7.313	198.2	10.4	12.54	272.2283	0.980022	1003.341	-2.092	73.37	907.0836	0.421	911.8308	901.8873	907.5327	0.438	0.495	0.306	2751.99	2740.063	2752.725	0.09
27/03/2016 12:00	5162	14.41	14.32	5.938	5.938	211	11.14	10.45	364.079	1.310684	1003.237	-1.876	68.88	906.9448	1.99	910.2056	901.6683	908.9607	2.425	1.988	1.433	2750.151	2738.865	2752.423	0.12
27/03/2016 13:00	5163	14.36	14.32	6.187	6.187	217	8.87	10.72	452.7421	1.629872	1004.466	-2.047	70.38	906.4273	0.559	912.0032	901.3214	905.9573	0.552	0.708	0.364	2752.17	2738.972	2750.367	0.13
27/03/2016 14:00	5164	14.42	14.22	5.382	5.382	223.2	11.66	9.96	468.0315	1.684913	1004.875	-2.124	66.78	906.3655	0.749	912.1027	900.8254	906.1685	0.799	0.808	0.625	2751.603	2737.661	2750.657	0.13
27/03/2016 15:00	5165	14.43	14.34	6.7	6.7	233.9	8.87	10.37	419.4542	1.510035	1005.367	-1.958	64.05	906.6657	0.547	911.9849	901.4248	906.5873	0.618	0.588	0.412	2752.503	2739.803	2750.695	0.12
27/03/2016 16:00	5166	14.43	14.35	6.726	6.726	229.2	9.5	11.62	397.5228	1.431082	1005.858	-1.782	58.83	906.7583	0.727	911.9652	901.3156	906.9941	0.82	0.811	0.507	2753.881	2739.887	2751.619	0.12
27/03/2016 17:00	5167	14.48	14.39	8.32	8.32	238.1	9.33	13.23	256.7157	0.9241764	1005.858	-1.904	56.72	906.7233	1.322	913.2902	899.5487	907.3312	1.178	1.422	1.354	2754.791	2740.602	2755.617	0.1
27/03/2016 18:00	5168	14.48	14.28	8.82	8.82	235.9	7.561	12	167.3175	0.6023429	1005.87	-2.082	57.28	907.4683	2.198	911.8776	901.1343	909.393	2.078	2.191	2.319	2758.239	2748.005	2752.482	0.08
27/03/2016 19:00	5169	14.39	14.04	8.63	8.63	233.5	7.199	13.37	74.36959	0.2677305	1006.234	-2.199	57.58	907.3975	1.918	912.3298	901.3281	908.5345	2.179	1.907	1.907	2750.295	2737.79	2753.599	0.02
27/03/2016 20:00	5170	14.05	13.86	8.26	8.26	228.9	8.29	12.78	1.956369	0.007042927	1006.57	-2.428	56.44	907.5178	1.469	911.8342	901.9766	908.7424	1.591	1.443	1.363	2755.969	2742.612	2750.952	0.02
27/03/2016 21:00	5171	13.88	13.76	8.63	8.63	225.7	8.55	13.39	0	0	1006.654	-2.499	54.62	907.006	2.094	910.7839	901.4915	908.7427	2.516	1.879	1.816	2747.88	2738.848	2748.127	0.02
27/03/2016 22:00	5172	13.77	13.67	10.98	10.98	222.7	8.58	15.72	0	0	1006.652	-2.459	55.07	908.2026	3.281	910.2123	903.6844	910.7109	3.049	3.871	2.832	2746.792	2749.333	2756.975	0.02
27/03/2016 23:00	5173	13.69	13.6	10.38	10.38	218.4	6.975	14.68	0	0	1006.576	-2.933	60.31	908.6181	5.065	909.0199	903.8298	913.0045	5.562	4.3	5.249	2752.846	2737.601	2754.991	0.02
28/03/2016 0:00	5174	13.62	13.53	11.55	11.55	223.1	7.42	16.7	0	0	1006.572	-3.186	62.33	908.9179	4.739	909.7519	904.4882	912.5136	4.006	4.731	5.381	2746.861	2744.512	2760.102	0.02
28/03/2016 1:00	5175	13.55	13.47	9.64	9.64	222.4	9.4	17.78	0	0	1007.8	-3.403	65.46	907.5747	0.517	911.7071	902.0075	909.0096	0.488	0.612	0.436	2752.458	2740.133	2753.41	0.01
28/03/2016 2:00	5176	13.48	13.41	5.181	5.181	219.9	14.4	10.82	0	0	1008.209	-3.211	66.82	907.8288	1.347	911.3641	902.5916	909.5305	1.026	1.678	1.256	2751.611	2742.439	2754.368	0.01
28/03/2016 3:00	5177	13.43	13.35	7.07	7.07	228.3	10.56	12.47	0	0	1008.127	-3.256	67.88	907.4546	2.462	911.3804	902.0892	908.8942	2.204	3.076	1.967	2754.244	2744.052	2754.112	0.01
28/03/2016 4:00	5178	13.37	13.3	7.014	7.014	227.7	9.68	11.86	0	0	1008.293	-3.363	68.56	907.3177	1.389	911.6923	902.0471	908.2137	1.363	1.403	1.4	2751.098	2737.664	2754.539	0.01
28/03/2016 5:00	5179	13.32	13.25	9.18	9.18	229	9.04	14.13	0	0	1008.627	-3.557	70.22	907.6519	1.055	911.1114	902.3026	909.5417	1.226	1.028	0.884	2752.131	2739.845	2754.405	0.01
28/03/2016 6:00	5180	13.26	13.19	8.79	8.79	223	8.62	14.56	0	0	1008.548	-3.652	71.23	907.6648	1.727	911.5021	901.9041	909.5883	1.737	1.97	1.432	2749.204	2738.834	2755.489	0.01
28/03/2016 7:00	5181	13.28	13.2	11.02	11.02	223.8	7.747	15.78	13.092	0.0471312	1008.211	-3.987	72.51	908.2529	4.214	909.3915	903.4916	913.8755	4.163	4.616	3.827	2743.733	2735.501	2756.761	0.01
28/03/2016 8:00	5182	14.66	13.27	11.77	11.77	226.1	7.198	15.41	96.79073	0.3484466	1008.946	-4.128	71.29	907.9868	3.798	908.8419	903.009	912.1094	4.303	3.561	4.28	2748.153	2734.743	2753.411	0.02
28/03/2016 9:00	5183	14.66	14.61	10.14	10.14	227.1	7.696	15.07	205.0459	0.7381653	1009.849	-3.711	69.4	907.784	2.274	909.4838	903.2431	910.6252	2.223	1.853	2.672	2749.101	2739.479	2754.743	0.07
28/03/2016 10:00	5184	14.67	14.33	9.05	9.05	211.7	11.76	14.25	352.1874	1.267874	1010.338	-3.228	68.66	907.4704	1.75	909.9922	902.5214	909.8973	1.611	2.182	1.352	2750.653	2740.175	2752.822	0.1
28/03/2016 11:00	5185	14.4	14.34	7.9	7.9	213.6	10.37	12.7	425.2692	1.530969	1010.948	-2.654	67.55	907.403	1.925	909.986	902.4948	909.7283	2.015	1.899	1.858	2749.713	2737.906	2752.894	0.12
28/03/2016 12:00	5186	14.42	14.33	6.853	6.853	214.4	11.65	11.68	391.1112	1.408	1011.104	-2.238	67.43	907.1694	1.355	910.9729	901.8859	908.6495	1.35	1.584	1.084	2750.208	2738.505	2750.935	0.12
28/03/2016 13:00	5187	14.37	14.28	8.59	8.59	214.4	10.74	12.23	532.5499	1.91718	1011.099	-1.74	68.03	906.8181	1.41	909.9459	901.3621	909.1464	1.339	1.254	1.613	2749.806	2738.653	2755.664	0.14
28/03/2016 14:00	5188	14.37	13.93	9.83	9.83	216.8	7.562	14.76	662.3736	2.384545	1011.263	-1.109	68.54	907.7109	3.744	909.4018	902.0382	911.6928	3.368	4.535	3.184	2749.618	2742.866	2765.533	0.17
28/03/2016 15:00	5189	14.37	14.28	11.7	11.7	217.1	7.745	15.54	473.1523	1.703348	1011.263	-1.055	70.77	907.8647	3.836	907.9637	903.9898	911.6404	3.653	4.731	2.901	2749.602	2743.186	2756.11	0.12
28/03/2016 16:00	5190	14.42	14.34	8.78	8.78	208.7	13.43	13.05	272.7495	0.9818983	1011.591	-0.864	71.75	907.5291	3.259	909.845	902.9744	909.7681	3.962	3.309	2.285	2752.459	2741.344	2755.616	0.09
28/03/2016 17:00	5191	14.39	14.37	8.27	8.27	205.9	9.31	12.8	194.5109	0.7002392	1011.755	-0.642	72.83	907.1309	1.137	911.8216	901.5721	907.9989	1.243	1.363	0.692	2752.958	2739.299	2753.076	0.07
28/03/2016 18:00	5192	14.4	14.17	7.438	7.438	208.4	10.19	12.09	89.92715	0.3237377	1011.345	-0.565	73.78	907.314	1.384	911.7466	901.8108	908.3847	1.44	1.349	1.36	2745.876	2740.279	2760.352	0.02
28/03/2016 19:00	5193	14.19	14	7.128	7.128	212.6	16.07	12.6	31.46242	0.1132647	1011.509	-0.598	73.3	907.2319	1.398	911.5589	901.6712	908.4654	1.73	1.258	1.133	2752.761	2740.306	2752.151	0.01
28/03/2016 20:00	5194	14.02	13.84	9.57	9.57	214.5	15.31	15.31	1.518232	0.005465634	1011.509	-0.787	74.83	907.8256	5.026	908.5941	904.1583	910.7244	6.266	4.933	3.492	2754.028	2741.385	2755.744	0.01
28/03/2016 21:00	5195	13.85	13.73	7.238	7.238	203.4	9.93	11.37	0	0	1012.002	-1.063	78.27	907.0002	0.881	911.9985	901.4463	907.5557	0.906	1.065	0.612	2751.04	2738.666	2751.293	0.01
28/03/2016 22:00	5196	13.75	13.65	6.441	6.441	198.4	11.99	11.51	0	0	1011.755	-0.865	77.61	907.3484	1.582	911.6933	901.9893	908.3627	1.429	2.039	1.146	2751.297	2740.698	2755.04	0.01
28/03/2016 23:00	5197	13.67	13.58	8.11	8.11	203.3	10.45	13.6	0	0	1011.846	-0.852	78.77	907.0034	1.104	911.9155	901.4966	907.5983	1.097	1.293	0.884	2751.805	2743.529	2752.988	0.01
29/03/2016 0:00	5198	13.59	13.51	7.085	7.085	205.5	8.78	10.41	0	0	1011.767	-0.979	80.4	907.2057	1.522	911.769	901.7597	908.0804	1.205	1.821	1.476	2751.731	2743.243	2753.657	0.01
29/03/2016 1:00	5199	13.53	13.45	7.465	7.465	206																			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
31/03/2016 0:00	5246	13.47	13.39	4.373	4.373	223.2	13.76	6.429	0	0	1017.323	2.831	63.94	906.309	0.124	912.2284	901.134	905.5646	0.103	0.154	0.109	2752.688	2738.826	2749.038	0.01	
31/03/2016 1:00	5247	13.4	13.33	2.714	2.714	188.1	70.11	8.25	0	0	1016.832	2.953	62.27	906.3271	0.846	912.2994	901.0876	905.5943	0.977	0.899	0.618	2754.6	2741.989	2751.628	0.01	
31/03/2016 2:00	5248	13.35	13.27	6.987	6.987	225.7	4.485	8.53	0	0	1016.668	3.499	57.72	906.1943	0.909	911.9012	901.0678	905.6138	1.06	0.906	0.732	2752.648	2738.628	2748.834	0.03	
31/03/2016 3:00	5249	13.29	13.22	6.285	6.285	232.3	8.5	8.55	0	0	1016.996	3.38	56.18	906.2676	0.396	912.2054	901.0841	905.5135	0.43	0.408	0.344	2752.548	2739.359	2749.708	0.02	
31/03/2016 4:00	5250	13.24	13.17	5.667	5.667	238	15.02	7.644	0	0	1016.996	3.324	54.48	906.3161	0.415	912.2564	901.1106	905.5814	0.439	0.471	0.32	2751.846	2738.312	2750.302	0.02	
31/03/2016 5:00	5251	13.19	13.13	4.742	4.742	248.5	24.67	7.37	0	0	1016.996	3.435	52.26	906.1619	0.656	912.1349	900.8856	905.4654	0.65	0.759	0.542	2753.67	2740.062	2749.472	0.02	
31/03/2016 6:00	5252	13.14	13.08	5.801	5.801	239.1	10.86	7.742	0.2551213	0.000918437	1017.16	3.393	51.57	906.3252	0.313	912.2819	901.1616	905.5322	0.335	0.327	0.273	2753.144	2739.297	2749.949	0.03	
31/03/2016 7:00	5253	13.24	13.08	6.294	6.294	241.4	10.86	8.35	20.17478	0.0726292	1017.078	3.765	49.66	906.2824	0.721	911.8154	901.3242	905.7074	0.715	0.788	0.655	2752.857	2740.551	2751.532	0.03	
31/03/2016 8:00	5254	14.62	13.24	5.966	5.966	244	8.71	10.09	96.5439	0.3475581	1017.282	4.311	48.28	906.3996	0.45	911.2052	901.799	906.1945	0.423	0.543	0.366	2751.105	2739.125	2750.888	0.04	
31/03/2016 9:00	5255	14.66	14.15	4.32	4.32	250.9	6.971	7.154	202.8964	0.7304271	1017.375	4.993	46.48	906.4446	0.188	910.2074	902.2443	906.8823	0.213	0.168	0.168	2749.867	2740.571	2751.622	0.13	
31/03/2016 10:00	5256	14.67	14.14	4.063	4.063	255.4	6.306	6.664	370.0952	1.332343	1017.501	6.057	43.22	906.4595	0.693	908.1261	902.9211	908.3314	0.817	0.622	0.621	2746.513	2742.391	2753.246	0.19	
31/03/2016 11:00	5257	14.18	14.13	5.935	5.935	271.6	13.03	9.15	489.9302	1.763749	1017.556	6.154	42.74	906.8765	1.819	906.1616	904.6751	909.7928	1.882	2.091	1.417	2747.042	2743.385	2754.037	0.24	
31/03/2016 12:00	5258	14.17	14.08	6.083	6.083	288.3	13.63	9	567.7966	2.044068	1017.474	6.563	40.23	906.8449	1.058	905.4302	904.5909	910.5136	0.982	0.834	1.303	2743.559	2744.228	2758.295	0.28	
31/03/2016 13:00	5259	14.11	14.08	4.663	4.663	247	17.9	8.29	595.2747	2.142989	1017.638	7.112	39.11	907.3235	0.832	903.7986	906.2836	911.8884	0.797	0.386	1.137	2741.135	2744.776	2757.727	0.29	
31/03/2016 14:00	5260	14.17	13.86	5.498	5.498	242.2	8.54	7.605	587.207	2.113945	1017.474	7.165	39.82	907.5535	0.985	903.2263	907.0617	912.3727	0.932	0.417	1.366	2742.862	2747.275	2759.281	0.29	
31/03/2016 15:00	5261	14.16	14.09	5.017	5.017	247.6	7.796	6.88	553.9955	1.994384	1017.388	7.412	40.89	907.9924	0.856	902.2048	907.9924	913.3928	0.878	0.399	1.126	2740.95	2747.36	2759.811	0.28	
31/03/2016 16:00	5262	14.17	14.09	5.137	5.137	239.9	9.55	8.08	478.8221	1.72376	1017.14	7.655	41.51	907.8269	1.367	901.9552	908.4597	913.0659	1.203	0.742	1.9	2739.647	2748.392	2758.297	0.25	
31/03/2016 17:00	5263	14.17	14.14	5.975	5.975	243.5	6.333	7.468	369.4813	1.330133	1016.983	7.689	41.88	907.8713	1.24	902.4252	908.6571	912.5318	1.138	0.573	1.73	2741.691	2749.252	2760.321	0.21	
31/03/2016 18:00	5264	14.19	14.05	5.24	5.24	234.2	8.69	7.232	235.3498	0.8472592	1016.656	7.607	42.53	907.645	0.677	904.3931	907.3464	911.1955	0.639	0.359	0.915	2743.646	2745.943	2755.128	0.15	
31/03/2016 19:00	5265	14.1	13.8	4.567	4.567	223.7	5.054	6.272	99.73515	0.3590465	1016.221	6.544	45.72	906.7542	0.729	908.6485	903.8582	907.7559	0.754	0.447	0.909	2749.151	2743.099	2752.311	0.04	
31/03/2016 20:00	5266	13.81	13.64	4.849	4.849	218.9	4.757	6.135	7.947474	0.02861091	1016.195	4.952	47.18	906.3115	0.377	911.6016	901.4179	905.915	0.382	0.338	0.409	2749.515	2739.413	2750.919	0.03	
31/03/2016 21:00	5267	13.65	13.53	4.857	4.857	217.4	6.958	7.428	0	0	1015.348	4.724	47.48	906.56	1.128	910.1539	902.6506	906.8755	1.11	1.184	1.089	2749.181	2742.001	2751.235	0.03	
31/03/2016 22:00	5268	13.54	13.45	7.843	7.843	210.7	5.014	9.76	0	0	1015.311	5.02	48.68	906.4136	1.293	909.903	903.1097	906.228	1.341	1.481	1.013	2750.674	2739.843	2749.982	0.04	
31/03/2016 23:00	5269	13.46	13.37	8.82	8.82	206	6.351	11.19	0	0	1014.972	5.834	45.88	906.5195	2.381	907.9305	904.8444	906.7836	2.556	2.678	1.819	2744.723	2743.458	2749.694	0.04	
01/04/2016 0:00	5270	13.39	13.31	8.38	8.38	204.7	6.89	10.43	0	0	1014.766	6.204	43.49	905.9843	1.856	910.3611	901.9159	905.6758	2.195	2.003	1.228	2753.032	2739.543	2749.009	0.05	
01/04/2016 1:00	5271	13.33	13.26	7.495	7.495	199.2	5.013	9.43	0	0	1014.294	5.991	45.8	906.0701	1.912	910.1572	902.0642	905.9888	1.966	1.818	1.818	2744.011	2741.813	2751.309	0.04	
01/04/2016 2:00	5272	13.27	13.2	9.6	9.6	200	4.807	12.11	0	0	1013.643	5.528	47.9	906.6795	2.61	907.6766	904.6799	907.6821	3.245	2.392	2.047	2746.22	2742.507	2755.679	0.04	
01/04/2016 3:00	5273	13.22	13.16	5.634	5.634	203.4	13.74	9.07	0	0	1012.971	6.118	45.9	906.003	1.012	911.4623	901.062	905.4846	1.168	0.892	0.954	2752.332	2739.142	2749.326	0.03	
01/04/2016 4:00	5274	13.17	13.11	7.068	7.068	217.5	13.08	11.8	0	0	1012.322	6.417	43.74	906.5251	3.056	906.812	905.3577	907.4055	3.321	3.132	2.678	2744.168	2745.874	2756.248	0.04	
01/04/2016 5:00	5275	13.13	13.07	9.11	9.11	226.1	6.374	12.54	0	0	1011.967	6.968	39.78	906.5823	3.211	905.5297	905.8951	908.322	3.744	2.954	2.861	2745.592	2746.171	2751.808	0.05	
01/04/2016 6:00	5276	13.09	13.03	6.953	6.953	223.3	15	12.9	0	0	1011.147	7.255	36.87	906.2087	1.741	909.7815	902.7858	906.0588	1.754	1.943	1.497	2750.596	2740.96	2751.361	0.05	
01/04/2016 7:00	5277	13.23	13.03	11.29	11.29	206.9	7.586	14.72	19.34084	0.069672	1010.341	5.898	43.4	907.0613	4.697	904.6288	906.0622	910.4928	6.012	3.939	3.812	2733.573	2746.104	2754.862	0.05	
01/04/2016 8:00	5278	14.62	13.23	7.048	7.048	192.6	28.63	15.33	111.8737	0.4027453	1010.493	6.456	40.94	905.9742	0.104	910.4345	901.6987	905.7892	0.122	0.115	0.066	2750.129	2740.071	2749.83	0.06	
01/04/2016 9:00	5279	14.66	14.3	6.078	6.078	224.7	13.97	10.68	146.3915	0.5270094	1009.649	8.05	31.51	906.1657	1.793	909.0068	902.9582	906.532	1.957	1.748	1.66	2745.306	2742.228	2749.18	0.18	
01/04/2016 10:00	5280	14.65	14.06	11.3	11.3	218.9	8.56	16.31	321.2445	1.15648	1008.717	8.66	30.06	907.9842	6.058	900.9215	910.0376	912.9937	5.602	7.32	5.015	2746.624	2742.365	2757.991	0.28	
01/04/2016 11:00	5281	14.07	14.02	12.4	12.4	215.1	17.68	16.512	496.1203	1.786033	1008.871	9.13	29.11	908.0521	5.936	901.5339	909.5967	913.0256	5.808	5.78	6.209	2738.887	2752.013	2760.183	0.34	
01/04/2016 12:00	5282	14.16	14.02	13.32	13.32	223.7	8.11	20.97	396.992	1.429171	1008.47	8.54	31.77	909.1587	11.89	890.8153	915.5051	921.1558	12.23	11.59	11.84	2726.581	2742.955	2763.019	0.31	
01/04/2016 13:00	5283	14.16	14.04	12.94	12.94	217.4	8.13	18.76	458.5132	1.650648	1008.143	8.45	33.31	908.2681	7.758	895.7413	912.9852	916.0779	9.44	7.82	5.502	2739.897	2748.231	2757.153	0.31	
01/04/2016 14:00	5284	14.11	13.99	13.67	13.67	215.5	7.818	20.72	601.9581	2.167049	1007.324	8.84	33.38	909.8792	11.76	888.1947	916.8561	924.587	13.92	10.77	10.26	2699.083	2744.849	2757.179	0.35	
01/04/2016 15:00	5285	14.05	13.96	14.19	14.19	211	7.009	20.																		

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
03/04/2016 14:00	5332	14.11	14.04	3.72	3.72	192.3	7.648	4.822	626.9954	2.257184	1011.034	1.2	53.72	906.5881	0.5	912.0892	900.6311	907.0439	0.495	0.61	0.363	2751.641	2738.038	2751.286	0.23
03/04/2016 15:00	5333	14.17	14.08	4.107	4.107	188.3	6.331	5.214	584.751	2.105103	1010.683	1.658	49.25	906.4106	0.476	912.8242	900.0174	906.3904	0.499	0.585	0.296	2752.753	2737.376	2750.791	0.22
03/04/2016 16:00	5334	14.23	14.15	3.887	3.887	200.7	9.19	5.645	501.3401	1.804825	1010.545	1.276	46.74	906.4314	0.481	913.6422	899.8032	905.8489	0.474	0.566	0.385	2754.667	2737.653	2749.511	0.19
03/04/2016 17:00	5335	14.29	14.21	3.808	3.808	203.8	6.624	5.214	392.7693	1.413969	1010.435	0.876	44.67	906.4334	0.233	914.2458	899.8663	905.1882	0.252	0.253	0.187	2755.467	2738.012	2749.093	0.15
03/04/2016 18:00	5336	14.34	14.17	3.636	3.636	200.9	7.649	4.488	257.6111	0.9274001	1009.953	0.728	44.9	906.4704	0.235	914.5408	900.2381	904.6322	0.244	0.148	0.148	2755.846	2738.491	2748.999	0.1
03/04/2016 19:00	5337	14.19	13.97	3.728	3.728	199	4.37	4.312	116.4048	0.4190574	1009.789	-0.552	48.39	906.6529	0.232	913.7443	901.3353	904.8792	0.235	0.266	0.19	2753.678	2738.362	2749.01	0.05
03/04/2016 20:00	5338	13.98	13.8	2.836	2.836	199.9	4.693	4.194	12.83449	0.04620416	1009.601	-2.283	49.54	906.8134	0.061	912.7636	902.1755	905.5012	0.062	0.072	0.048	2753.298	2740.479	2749.54	0.01
03/04/2016 21:00	5339	13.81	13.68	0.764	0.764	229.9	25.56	1.666	0	0	1009.52	-1.51	43.27	906.8806	0.02	912.7563	902.2506	905.635	0.024	0.019	0.017	2753.222	2740.536	2749.743	-0.01
03/04/2016 22:00	5340	13.7	13.6	0.416	0.416	155.8	27.57	1.842	0	0	1009.207	-1.905	46.04	906.9476	0.044	912.6747	902.4303	905.7378	0.045	0.051	0.033	2753.134	2740.818	2749.829	-0.02
03/04/2016 23:00	5341	13.62	13.53	1.42	1.42	130.5	10.35	2.528	0	0	1009.067	-1.873	46.98	906.9822	0.026	912.6653	902.4825	905.799	0.027	0.029	0.021	2753.11	2740.811	2749.882	0
04/04/2016 0:00	5342	13.55	13.46	1.838	1.838	121.4	10.79	3.352	0	0	1008.834	-2.377	54.32	907.0132	0.056	912.6898	902.507	905.8427	0.067	0.059	0.039	2753.183	2740.93	2750.007	0
04/04/2016 1:00	5343	13.48	13.4	2.787	2.787	132.7	6.533	4.116	0	0	1008.592	-2.695	59.83	907.0222	0.223	912.65	902.5474	905.8689	0.243	0.269	0.134	2753.206	2741.271	2750.119	0.01
04/04/2016 2:00	5344	13.42	13.35	3.473	3.473	124.9	8.85	4.547	0	0	1008.347	-2.982	63.96	907.095	0.131	912.6866	902.6824	905.9159	0.14	0.145	0.103	2753.458	2741.115	2750.056	0.01
04/04/2016 3:00	5345	13.36	13.29	2.615	2.615	123.7	10.51	3.508	0	0	1007.939	-3.027	61.8	907.1194	0.101	912.7023	902.6866	905.9692	0.107	0.112	0.083	2753.095	2741.075	2750.093	0
04/04/2016 4:00	5346	13.31	13.24	2.647	2.647	118	8.45	4.038	0	0	1007.535	-3.32	62.58	907.1292	0.09	912.7234	902.7265	905.9379	0.096	0.106	0.064	2753.203	2740.991	2750.133	0
04/04/2016 5:00	5347	13.25	13.18	2.533	2.533	106.7	10.53	3.508	0	0	1007.211	-3.538	67.74	907.1503	0.021	912.8075	902.7538	905.8897	0.026	0.02	0.016	2753.254	2741.151	2750.016	0
04/04/2016 6:00	5348	13.2	13.13	2.695	2.695	121.5	5.814	3.234	0.3508885	0.001263199	1006.848	-4.246	71.15	907.1988	0.141	912.771	902.817	906.0086	0.16	0.153	0.103	2753.411	2741.618	2750.236	0
04/04/2016 7:00	5349	13.38	13.13	3	3	123.7	4.965	4.018	27.6593	0.09957346	1006.649	-3.808	68.76	907.3226	0.121	912.0865	903.5267	906.3546	0.136	0.143	0.072	2753.379	2741.911	2750.564	0.01
04/04/2016 8:00	5350	14.62	13.38	2.636	2.636	99.2	8.73	4.057	99.2225	0.357201	1006.491	-3.192	66.19	907.2739	0.08	911.8681	903.3488	906.6047	0.087	0.094	0.054	2752.19	2741.952	2750.957	0.01
04/04/2016 9:00	5351	14.66	14.61	2.077	2.077	99.6	15.73	3.724	197.1565	0.7097635	1006.324	-2.155	62.04	907.2337	0.157	911.8754	903.1016	906.7242	0.17	0.169	0.13	2752.265	2741.45	2751.066	0.08
04/04/2016 10:00	5352	14.66	14.33	3.614	3.614	109.1	8.39	5.155	313.048	1.126973	1006.193	-1.319	58.15	907.0849	0.316	911.3197	902.9225	907.0124	0.366	0.229	0.229	2751.209	2740.95	2751.657	0.12
04/04/2016 11:00	5353	14.36	14.27	3.822	3.822	109.2	13.86	5.606	448.872	1.615939	1006.186	-0.185	52.47	907.0024	0.382	911.2878	902.549	907.1703	0.449	0.401	0.276	2751.084	2741.162	2751.44	0.16
04/04/2016 12:00	5354	14.3	14.21	3.876	3.876	108	14.07	6.017	516.2268	1.858417	1006.104	0.667	46.62	906.9004	0.354	911.4529	901.9774	907.2708	0.391	0.377	0.286	2751.727	2739.964	2751.765	0.2
04/04/2016 13:00	5355	14.25	14.19	3.942	3.942	112.7	20.22	7.801	544.7117	1.960962	1005.805	1.556	41.39	906.7844	0.352	911.9279	901.7117	906.7136	0.347	0.428	0.261	2751.302	2739.512	2750.966	0.21
04/04/2016 14:00	5356	14.29	14.17	3.978	3.978	122.9	20.33	6.096	469.4016	1.689846	1005.632	1.597	42.35	906.7403	0.44	912.3348	901.4727	906.4135	0.478	0.543	0.238	2753.61	2740.212	2750.622	0.19
04/04/2016 15:00	5357	14.24	14.15	3.717	3.717	143.3	16.55	7.076	473.5371	1.704733	1005.708	1.855	41.99	906.6517	0.477	912.6565	901.1463	906.1508	0.472	0.584	0.346	2753.783	2739.275	2750.515	0.19
04/04/2016 16:00	5358	14.3	14.15	3.475	3.475	154.2	14.62	5.664	349.8388	1.25942	1005.635	1.695	43.37	906.8159	0.262	912.6929	901.9486	905.8059	0.26	0.314	0.2	2753.524	2740.903	2749.817	0.14
04/04/2016 17:00	5359	14.33	14.27	3.5	3.5	155.5	19.96	5.312	112.0692	0.7634493	1005.53	1.087	46.06	906.854	0.245	912.7269	902.0851	905.7501	0.252	0.307	0.151	2753.128	2740.224	2749.524	0.09
04/04/2016 18:00	5360	14.4	14.24	3.735	3.735	156.3	14.93	6.409	113.3512	0.4080644	1005.203	0.614	53.54	906.9003	0.191	912.6281	902.3011	905.7717	0.187	0.241	0.127	2753.155	2740.644	2749.834	0.05
04/04/2016 19:00	5361	14.3	13.97	4.894	4.894	165.7	16.41	7.076	40.87171	0.1471381	1005.203	-0.324	62.09	906.9332	0.651	912.576	902.2131	906.0105	0.637	0.744	0.558	2752.777	2740.242	2750.715	0.02
04/04/2016 20:00	5362	13.98	13.8	4.509	4.509	151.3	14.8	7.448	4.868174	0.01752543	1005.217	-1.428	70.7	906.9666	0.35	912.559	902.4003	905.9406	0.319	0.488	0.166	2752.414	2740.03	2750.106	0.01
04/04/2016 21:00	5363	13.82	13.7	2.849	2.849	141.3	16.49	4.92	0	0	1005.091	-2.655	89.8	907.0703	0.253	912.7413	902.5786	905.8909	0.255	0.326	0.146	2753.958	2742.087	2749.957	-0.01
04/04/2016 22:00	5364	13.71	13.61	5.031	5.031	155.7	8.76	8.04	0	0	1004.604	-2.464	83.6	907.0927	0.793	912.5182	902.6787	906.0811	0.703	1.097	0.436	2753.162	2741.64	2750.29	0
04/04/2016 23:00	5365	13.63	13.54	3.889	3.889	129.9	14.03	7.311	0	0	1004.604	-2.511	82.9	907.1346	0.502	912.5522	902.6896	906.162	0.535	0.596	0.34	2753.314	2741.428	2750.697	0
05/04/2016 0:00	5366	13.56	13.47	5.552	5.552	149	14.43	9.78	0	0	1004.522	-2.651	83.8	907.0728	0.867	912.5333	902.7367	905.9483	0.881	1.01	0.677	2752.189	2739.436	2749.888	0
05/04/2016 1:00	5367	13.49	13.41	7.708	7.708	159.6	6.46	9.74	0	0	1004.277	-2.646	83.2	907.0605	1.241	912.4351	902.388	906.3585	1.294	1.57	0.691	2754.01	2741.777	2749.691	0
05/04/2016 2:00	5368	13.43	13.36	6.011	6.011	148.7	8.36	9.23	0	0	1004.277	-2.804	86.8	907.2696	0.41	912.7253	902.887	906.1965	0.409	0.474	0.337	2752.921	2740.908	2750.783	0
05/04/2016 3:00	5369	13.37	13.3	6.975	6.975	147.1	9	9.98	0	0	1003.703	-3.071	87.5	907.147	1.331	912.4039	902.7581	906.2788	1.307	1.65	0.939	2752.323	2740.89	2749.579	0
05/04/2016 4:00	5370	13.32	13.25	7.33	7.33	152.5	6.331	9.96	0	0	1003.212	-3.098	86.5	906.9492	1.223	912.1508	902.5162	906.1806	1.237	1.612	0.599	2750.741	2739.276	2751.43	0
05/04/2016 5:00	5371	13.26	13.2	7.579	7.579	155.3	9.7	10.47	0	0	1002.966	-3.103	85.7	907.2319	0.26	912.									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
07/04/2016 4:00	5418	13.37	13.3	1.651	1.651	163.6	39.46	4.724	0	0	1014.293	-3.142	58.11	907.5464	0.041	913.0946	903.067	906.4778	0.038	0.051	0.03	2753.654	2741.542	2750.767	0
07/04/2016 5:00	5419	13.31	13.24	2.641	2.641	146.1	35.51	5.684	0	0	1014.058	-3	57.92	907.5295	0.399	912.9034	903.0311	906.6539	0.389	0.468	0.326	2753.514	2741.586	2750.94	0.01
07/04/2016 6:00	5420	13.26	13.19	4.067	4.067	144.4	13.46	5.449	0.6870876	0.002473515	1013.956	-3.694	64.68	907.6035	0.31	913.0195	903.162	906.6288	0.317	0.374	0.22	2753.299	2741.378	2751.031	0.01
07/04/2016 7:00	5421	13.35	13.19	5.705	5.705	152.2	4.136	6.586	29.42908	0.1059447	1013.951	-3.347	63.17	907.6067	0.519	912.8996	903.1718	906.7487	0.516	0.628	0.386	2752.88	2741.771	2751.344	0.01
07/04/2016 8:00	5422	13.98	13.35	5.438	5.438	151.3	7.404	6.782	98.72936	0.3554257	1013.783	-3.117	63.86	907.5977	0.434	912.9225	903.1773	906.6934	0.261	0.522	0.261	2753.417	2741.395	2751.028	0.02
07/04/2016 9:00	5423	14.63	13.98	4.037	4.037	140.3	15.7	7.958	183.5944	0.6609399	1013.615	-2.529	62.12	907.3974	0.829	912.459	903.0019	906.7311	0.902	0.946	0.595	2754.025	2742.285	2750.571	0.08
07/04/2016 10:00	5424	14.64	14.61	6.841	6.841	153.9	11.06	9.8	195.0204	0.7020735	1013.359	-2.14	61.18	907.5026	1.162	912.6592	903.0736	906.7748	1.226	1.305	0.918	2754.557	2742.421	2750.244	0.09
07/04/2016 11:00	5425	14.63	14.43	7.302	7.302	143.7	12.4	10.17	195.1176	0.7024235	1013.107	-2.379	68.27	907.5062	0.88	912.5916	903.2192	906.7077	1.012	0.999	0.549	2753.666	2742.168	2751.983	0.08
07/04/2016 12:00	5426	14.45	14.42	7.39	7.39	121.2	7.99	10.33	267.0116	0.9612416	1012.435	-2.27	71.48	907.2444	1.389	912.3403	903.2073	906.1859	1.427	1.771	0.784	2754	2743.495	2748.51	0.09
07/04/2016 13:00	5427	14.45	14.4	8.36	8.36	131.7	11.84	13.29	243.1812	0.8754525	1011.755	-1.469	68.3	907.4863	2.024	912.8091	902.1662	907.4837	1.809	2.318	1.909	2753.806	2740.529	2750.481	0.1
07/04/2016 14:00	5428	14.45	13.95	9.98	9.98	134.6	13.96	14.9	220.3089	0.7931119	1011.099	-0.894	70.54	907.7133	3.032	911.6061	903.3201	908.2137	3.746	2.919	2.243	2756.537	2745.898	2751.142	0.09
07/04/2016 15:00	5429	14.38	14.34	9.09	9.09	151.1	8.09	11.98	352.4683	1.268886	1011.263	-0.238	71.48	907.0002	0.992	912.7183	901.8497	906.4324	1.123	1.178	0.549	2751.214	2738.194	2751.303	0.11
07/04/2016 16:00	5430	14.39	14.34	6.993	6.993	132.8	13.41	10.19	256.8542	0.924675	1010.608	-0.392	73.11	907.3101	0.953	912.9673	902.8847	906.0783	0.965	1.196	0.601	2752.893	2741.224	2750.709	0.09
07/04/2016 17:00	5431	14.4	14.33	8.26	8.26	145.4	18.73	13.54	120.0438	0.4321576	1009.134	-0.578	76.69	907.8909	3.074	910.9643	903.4866	909.2217	2.926	3.933	2.076	2753.336	2743.17	2753.363	0.06
07/04/2016 18:00	5432	14.55	14.33	13.59	13.59	163.1	5.584	16.93	90.64928	0.3263374	1008.315	-0.451	78.39	907.8813	3.76	909.8725	903.8638	909.9075	3.84	3.622	3.814	2746.63	2742.667	2752.74	0.05
07/04/2016 19:00	5433	14.42	14.05	10.98	10.98	156.1	6.278	14.21	33.33718	0.1200138	1007.742	-0.444	79.44	907.5334	2.9	911.0612	903.5396	907.9992	3.754	2.883	1.683	2750.667	2741.523	2754.79	0.01
07/04/2016 20:00	5434	14.06	13.88	9.59	9.59	149.3	8.83	13.33	4.86258	0.01750529	1007.168	-0.718	84.5	907.0355	1.308	912.2963	902.3301	906.4801	1.437	1.543	0.83	2754.666	2742.624	2751.629	0.01
07/04/2016 21:00	5435	13.89	13.77	9.58	9.58	148.6	4.985	12.11	0	0	1006.603	-1.493	92.9	907.5317	2.428	911.5122	903.405	907.6779	2.132	2.974	2.073	2754.789	2738.724	2753.443	0
07/04/2016 22:00	5436	13.78	13.68	8.12	8.12	147.9	5.816	11.13	0	0	1005.961	-1.384	93.1	907.0706	1.36	912.2162	902.3738	906.6219	1.335	1.68	0.972	2750.041	2740.799	2750.528	0
07/04/2016 23:00	5437	13.69	13.61	8.43	8.43	142.9	8.39	11.86	0	0	1004.918	-1.264	90.2	907.2168	1.633	912.3503	902.6533	906.6467	1.379	2.269	0.973	2752.274	2741.347	2752.292	0
08/04/2016 0:00	5438	13.62	13.54	9.75	9.75	145.2	7.328	14.11	0	0	1003.941	-1.355	91	907.5147	2.92	911.3479	903.2368	907.9594	1.833	2.401	1.833	2753.241	2744.019	2752.758	0
08/04/2016 1:00	5439	13.55	13.47	10.34	10.34	150.2	7.925	15.27	0	0	1003.099	-0.817	89.7	907.1875	1.974	912.1901	902.7549	906.6174	2.276	2.284	1.136	2752.229	2742.242	2749.208	0.01
08/04/2016 2:00	5440	13.49	13.42	10.68	10.68	158.6	7.734	14.01	0	0	1001.941	-0.517	85.4	907.5952	2.968	911.3013	903.3684	908.1161	3.068	3.621	1.976	2755.95	2742.364	2750.025	0.01
08/04/2016 3:00	5441	13.43	13.35	11.09	11.09	158.5	11.03	14.45	0	0	1001.763	-0.167	83.4	907.4648	0.522	912.8255	902.6846	906.8843	0.574	0.604	0.352	2753.773	2741.298	2751.175	0.01
08/04/2016 4:00	5442	13.37	13.3	1.433	1.433	250.8	90.4	5.116	0	0	1000.998	-1.436	90.8	907.5413	0.126	913.1537	902.6168	906.8533	0.12	0.168	0.073	2754.196	2741.056	2751.106	0
08/04/2016 5:00	5443	13.32	13.24	4.317	4.317	106.5	76.75	12.41	0	0	999.8489	-0.892	87.3	907.3777	1.992	912.1097	903.0636	906.96	1.775	2.611	1.392	2754.017	2739.72	2750.059	0
08/04/2016 6:00	5444	13.27	13.19	7.206	7.206	157.7	36.24	12.84	0.8612948	0.003100661	1000.295	-0.449	82.1	907.3423	0.235	913.0439	902.7544	906.2284	0.287	0.238	0.163	2753.696	2741.036	2749.871	0.01
08/04/2016 7:00	5445	13.33	13.2	3.642	3.642	142.9	7.23	7.958	21.61629	0.07781865	1000.224	-0.769	84.5	907.301	0.626	913.0737	902.535	906.2944	0.617	0.783	0.425	2753.619	2740.535	2750.129	0.01
08/04/2016 8:00	5446	13.79	13.32	4.02	4.02	178.5	20.55	8.92	66.8995	0.2408382	999.7976	-0.34	79.55	907.2984	0.685	912.9816	902.5389	906.3748	0.682	0.843	0.482	2752.998	2741.576	2750.958	0.03
08/04/2016 9:00	5447	14.63	13.79	6.064	6.064	159.5	8.67	8.62	167.2991	0.6022767	999.0604	-0.137	77.66	907.3847	1.077	912.6401	902.8248	906.6892	1.252	1.155	0.762	2754.203	2742.128	2751.185	0.07
08/04/2016 10:00	5448	14.66	14.59	6.621	6.621	174	14.69	10.13	262.0679	0.9434443	999.3062	0.962	69.36	907.273	1	912.7136	902.5746	906.5309	1.017	0.591	1.272	2754.397	2741.318	2750.7	0.11
08/04/2016 11:00	5449	14.64	14.34	6.907	6.907	211.1	12.95	10.64	194.7447	0.701081	999.3062	0.851	67.96	907.2734	0.938	913.1089	902.3626	906.3486	0.923	1.182	0.624	2752.896	2740.168	2751.229	0.1
08/04/2016 12:00	5450	14.39	14.27	4.511	4.511	225.2	17.99	8.08	279.2059	1.005141	999.3059	0.332	77.16	907.2676	0.528	912.4022	902.5064	906.8942	0.535	0.644	0.369	2753.307	2741.307	2751.503	0.1
08/04/2016 13:00	5451	14.35	14.22	7.078	7.078	230.7	10.6	11.03	523.9487	1.886215	999.4653	1.448	64.9	906.9759	1.314	911.9637	901.3912	907.5726	1.345	1.528	1.016	2755.672	2739.413	2750.494	0.18
08/04/2016 14:00	5452	14.3	14.22	8.53	8.53	236.6	8.29	12.72	638.434	2.298362	999.8688	2.401	60.83	906.8098	2.358	910.6252	902.5353	907.2686	2.416	2.749	1.814	2754.05	2739.933	2750.332	0.22
08/04/2016 15:00	5453	14.3	14.27	8.28	8.28	237.7	7.84	10.9	549.3516	1.977666	1000.51	2.752	58.17	906.9306	1.281	912.8094	901.7502	906.2322	1.35	1.294	1.193	2751.677	2737.446	2749.757	0.2
08/04/2016 16:00	5454	14.35	14.27	7.285	7.285	242.9	8.31	9.8	401.4664	1.4452379	1001.172	2.658	58.76	906.8511	1.389	913.0513	901.6806	905.8213	1.622	1.423	1.065	2753.052	2740.601	2750.617	0.16
08/04/2016 17:00	5455	14.35	14.3	7.024	7.024	241.7	7.065	10.29	150.7261	0.5426137	1001.91	2.191	61.84	906.907	0.518	913.2986	902.0464	905.3762	0.531	0.421	0.21	2754.37	2740.756	2749.115	0.09
08/04/2016 18:00	5456	14.34	14.26	5.934	5.934	238.6	8.7	8.8	110.2739	0.3969861	1002.247	2.352	61.5	906.9668	0.501	913.3729	902.158	905.3694	0.545	0.534	0.413	2754.015	2740.649	2749.253	0.07
08/04/2016 19:00	5457	14.42	14	6.497	6.497	236.2	7.93	9.09	73.83055	0.26579	1002.823	1.695	65.43	906.9685	0.669	913.366	902.2031	905.3364	0.72</						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
10/04/2016 18:00	5504	14.27	14.15	5.057	5.057	161.5	8.71	7.036	242.2434	0.8720765	1005.757	3.571	48.66	907.4299	0.706	913.9565	902.2141	906.1189	0.793	0.816	0.45	2754.061	2739.955	2750.504	0.12	
10/04/2016 19:00	5505	14.24	14.03	4.966	4.966	157.7	4.527	6.174	89.30035	0.3214813	1005.52	2.77	52.5	907.6009	0.482	913.6311	902.7807	906.391	0.44	0.611	0.36	2753.923	2741.168	2750.66	0.03	
10/04/2016 20:00	5506	14.04	13.83	5.568	5.568	158.3	4.182	7.056	17.68267	0.06365763	1005.285	2.284	54.28	907.5988	0.555	913.5421	902.8441	906.4102	0.584	0.652	0.398	2755.521	2742.151	2750.062	0.02	
10/04/2016 21:00	5507	13.84	13.69	5.539	5.539	160.3	5.406	7.409	0	0	1005.203	2.052	55.54	907.6465	0.498	913.6076	902.8546	906.4774	0.573	0.573	0.295	2754.054	2742.009	2750.34	0.02	
10/04/2016 22:00	5508	13.71	13.6	4.425	4.425	171.2	12.65	6.213	0	0	1004.957	2.18	55.05	907.7153	0.584	913.7097	902.9229	906.5134	0.595	0.665	0.476	2755.17	2741.881	2750.056	0.02	
10/04/2016 23:00	5509	13.62	13.53	4.997	4.997	183.8	10.27	7.546	0	0	1005.038	2.07	56.4	907.6572	0.473	913.6509	902.8774	906.4432	0.501	0.532	0.369	2754.363	2740.969	2749.998	0.02	
11/04/2016 0:00	5510	13.54	13.46	4.956	4.956	182.5	8.45	7.33	0	0	1004.875	1.56	60.13	907.6133	0.567	913.6462	902.8041	906.3896	0.56	0.724	0.356	2752.827	2739.164	2750.503	0.02	
11/04/2016 1:00	5511	13.48	13.39	4.785	4.785	187.9	10.95	7.605	0	0	1004.711	0.929	64.73	907.7007	0.731	913.8297	902.8116	906.4606	0.734	0.896	0.511	2752.213	2739.369	2750.731	0.01	
11/04/2016 2:00	5512	13.42	13.34	3.705	3.705	207	21.86	7.605	0	0	1004.711	0.649	67.21	907.7092	0.063	913.7226	902.9343	906.4706	0.066	0.07	0.05	2754.452	2741.476	2750.72	0.01	
11/04/2016 3:00	5513	13.35	13.28	2.905	2.905	203.2	17.37	6.644	0	0	1004.547	0.105	71.34	907.7314	0.31	913.8056	902.882	906.507	0.295	0.366	0.259	2754.375	2741.078	2750.688	0	
11/04/2016 4:00	5514	13.3	13.23	4.583	4.583	198.5	8.71	6.586	0	0	1004.384	-0.523	74.64	907.679	0.514	913.8082	902.8398	906.3891	0.592	0.582	0.323	2754.068	2741.005	2750.65	0.01	
11/04/2016 5:00	5515	13.24	13.17	5.242	5.242	200.5	9.58	8.72	0	0	1004.066	-0.995	74.42	907.7214	0.966	913.8254	902.8597	906.4793	1.011	1.129	0.71	2756.62	2742.437	2750.11	0.01	
11/04/2016 6:00	5516	13.19	13.12	6.908	6.908	227.1	10.81	11.64	1.402573	0.005049261	1004.079	-1.093	71.7	907.7022	1.133	914.0073	902.6863	906.4131	1.25	1.378	0.626	2754.431	2740.327	2750.339	0.01	
11/04/2016 7:00	5517	13.36	13.12	8.14	8.14	232.9	8.63	12.15	41.17302	0.1482228	1003.736	-1.034	67.8	907.915	1.823	913.6342	903.0424	907.0683	1.832	2.056	1.545	2754.783	2744.853	2750.232	0.02	
11/04/2016 8:00	5518	14.62	13.37	8.42	8.42	229.5	9.6	12.17	139.9892	0.503961	1004.057	-1.031	67.14	907.8316	0.965	912.1818	903.8533	907.4597	0.989	1.093	0.787	2754.719	2746.971	2754.523	0.06	
11/04/2016 9:00	5519	14.67	14.59	7.304	7.304	218.7	13.86	11.84	273.351	0.9840636	1004.22	-0.857	67.22	907.8171	0.998	912.725	903.1822	907.5443	1.051	1.173	0.713	2751.54	2741.817	2750.31	0.1	
11/04/2016 10:00	5520	14.67	14.27	6.717	6.717	215.6	10.41	10.56	340.5693	1.22605	1004.056	-0.63	64.44	907.6365	1.653	911.9111	903.168	907.8306	1.799	1.904	1.156	2749.615	2738.96	2752.451	0.12	
11/04/2016 11:00	5521	14.3	14.27	8.04	8.04	220.5	12.14	12.41	598.0993	2.153157	1004.22	0.111	60.05	907.6267	1.883	911.7152	902.4841	908.6808	1.712	2.407	1.384	2752.74	2740.383	2752.98	0.19	
11/04/2016 12:00	5522	14.3	14.27	8.81	8.81	224.6	10.08	12.78	635.4484	2.287614	1004.384	0.447	59.85	908.0416	2.299	911.738	903.4062	908.9805	2.638	2.495	1.636	2757.968	2741.156	2751.95	0.2	
11/04/2016 13:00	5523	14.35	14.28	8.67	8.67	232.9	10.43	12.39	673.285	2.423826	1004.37	1.055	57.08	907.8109	3.821	911.4718	902.867	909.0938	3.239	3.263	4.76	2752.167	2742.802	2758.255	0.22	
11/04/2016 14:00	5524	14.37	14.23	9.79	9.79	240.5	8.4	13.35	665.2116	2.394762	1004.657	1.45	56.11	910.8461	2.85	910.8461	903.3435	908.8939	3.31	2.947	2.176	2753.055	2743.313	2752.698	0.22	
11/04/2016 15:00	5525	14.39	14.28	9.62	9.62	239.4	7.439	12.92	467.596	1.683346	1004.929	1.571	56	908.5037	3.289	910.8761	904.3979	910.2374	3.432	3.488	2.917	2752.821	2739.173	2756.417	0.17	
11/04/2016 16:00	5526	14.36	14.27	9.08	9.08	241.5	7.802	12.43	579.0001	2.0844	1004.953	2.296	55.64	907.4268	2.328	912.593	902.1805	907.507	2.724	2.708	1.226	2751.513	2741.5	2753.871	0.21	
11/04/2016 17:00	5527	14.36	14.28	8.21	8.21	237.4	9.27	11.56	325.9135	1.173289	1004.98	2.189	54.81	907.3091	1.585	913.327	902.1761	906.4243	1.39	1.926	1.376	2754.139	2739.291	2750.023	0.14	
11/04/2016 18:00	5528	14.44	14.27	8.21	8.21	239.6	10.2	11.64	175.9723	0.6335001	1005.202	1.829	54.7	907.5074	1.017	914.5934	901.719	906.2097	1.007	1.289	0.655	2754.211	2737.497	2749.843	0.1	
11/04/2016 19:00	5529	14.34	14.03	6.881	6.881	248.1	6.979	9.62	131.4288	0.4731436	1005.203	1.779	54.12	901.7191	0.766	914.6605	902.3094	906.3094	0.676	0.932	0.659	2756.769	2741.117	2752.95	0.08	
11/04/2016 20:00	5530	14.08	13.85	7.024	7.024	243.2	4.595	8.74	46.09951	0.1659582	1005.121	1.008	57.87	907.8237	0.595	913.7864	902.9766	906.7083	0.588	0.721	0.444	2753.6	2741.26	2751.665	0.02	
11/04/2016 21:00	5531	13.87	13.72	5.905	5.905	239	4.568	7.115	0	0	1005.216	-0.522	64.09	907.8857	0.545	913.8317	902.9715	906.8539	0.582	0.677	0.305	2754.314	2740.771	2750.278	0.01	
11/04/2016 22:00	5532	13.73	13.62	5.034	5.034	238.1	6.229	7.232	0	0	1005.213	-0.079	61.96	907.9285	0.163	913.6638	903.1617	906.96	0.18	0.166	0.142	2754.498	2741.769	2751.529	0.01	
11/04/2016 23:00	5533	13.64	13.55	3.946	3.946	231.5	9.29	5.233	0	0	1005.006	-0.841	63.27	907.9412	0.3	913.7195	903.1661	906.938	0.327	0.362	0.178	2754.836	2741.995	2751.06	0.01	
12/04/2016 0:00	5534	13.56	13.48	4.847	4.847	210.7	9.02	5.919	0	0	1004.85	-1.765	63.72	908.0245	0.269	913.8098	903.2332	907.9306	0.277	0.336	0.166	2754.522	2741.561	2751.374	0.01	
12/04/2016 1:00	5535	13.5	13.41	5.282	5.282	214.8	5.732	7.095	0	0	1004.689	-2.122	63.66	908.0296	0.665	913.7491	903.2076	907.1321	0.598	0.871	0.457	2753.29	2741.777	2751.963	0.01	
12/04/2016 2:00	5536	13.43	13.35	6.169	6.169	209.6	4.479	7.272	0	0	1004.61	-1.996	62.83	908.0674	0.551	913.7833	903.3096	907.1094	0.529	0.706	0.365	2754.439	2740.836	2751.398	0.01	
12/04/2016 3:00	5537	13.37	13.3	5.498	5.498	208.5	4.65	6.527	0	0	1004.36	-1.901	62.36	908.0004	0.357	913.6931	903.2104	907.0977	0.334	0.286	0.286	2754.096	2741.307	2751.45	0.01	
12/04/2016 4:00	5538	13.31	13.24	3.647	3.647	206.6	7.08	4.998	0	0	1004.033	-2.034	63.11	908.085	0.12	913.7592	903.4127	907.0833	0.138	0.135	0.078	2754.526	2742.161	2751.492	0.01	
12/04/2016 5:00	5539	13.26	13.19	1.336	1.336	208.8	28.48	3.195	0	0	1003.467	-1.515	60.04	908.1229	0.017	913.8246	903.4033	907.1409	0.016	0.018	0.016	2754.574	2742.197	2751.569	0	
12/04/2016 6:00	5540	13.21	13.17	0.235	0.235	285.9	40.78	0.784	6.213944	0.0223702	1003.376	-0.844	57.72	908.1854	0.01	913.5475	903.7581	907.2506	0.008	0.008	0.012	2754.201	2742.405	2751.712	-0.02	
12/04/2016 7:00	5541	13.47	13.17	2.315	2.315	136.3	8.87	3.587	46.69219	0.1680919	1003.294	-0.778	59.26	908.1887	0.072	913.4904	903.7296	907.3463	0.068	0.088	0.057	2754.152	2742.38	2751.748	0.01	
12/04/2016 8:00	5542	14.64	13.47	2.251	2.251	126	17.17	3.058	151.3095	0.5447142	1003.239	-0.041	58.96	908.1956	0.121	912.134	904.5178	907.9348	0.135	0.083	0.083	2752.609	2743.308	2752.516	0.04	
12/04/2016 9:00	5543	14.66	14.6	2.782	2.782	121.6	11.88	5.449	265.6958	0.9565048	1002.91	0.3														

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
14/04/2016 8:00	5590	14.66	13.75	3.441	3.441	233.3	13.13	5.586	206.4741	0.7433068	1005.665	-1.78	61.15	908.3716	0.333	911.0835	905.7001	908.3312	0.376	0.356	0.256	2750.399	2744.357	2753.615	0.08
14/04/2016 9:00	5591	14.66	14.59	4.098	4.098	238.8	14.4	6.527	341.2998	1.228679	1005.53	-1.214	59.11	908.3425	0.445	910.8557	905.1671	909.0044	0.462	0.491	0.375	2750.89	2744.885	2753.676	0.12
14/04/2016 10:00	5592	14.67	14.27	4.033	4.033	241	11.92	6.899	468.5309	1.686711	1005.693	-0.937	57.85	908.2466	0.169	910.6194	904.9111	909.2095	0.177	0.168	0.161	2750.393	2743.687	2754.212	0.16
14/04/2016 11:00	5593	14.33	14.21	3.562	3.562	233.2	20.35	8.41	571.8345	2.508604	1005.612	-0.216	52.04	908.098	0.293	911.0453	904.0906	909.158	0.296	0.365	0.193	2751.106	2742.817	2753.91	0.2
14/04/2016 12:00	5594	14.24	14.14	4.482	4.482	205.8	17.34	8.51	651.2562	2.344522	1005.53	0.221	52.52	907.7932	1.007	911.8525	902.8563	908.6707	1.106	1.228	0.558	2751.339	2742.106	2753.785	0.22
14/04/2016 13:00	5595	14.24	14.15	5.95	5.95	211.2	11.32	8.45	691.5219	2.489479	1005.53	0.072	56.14	907.7833	0.755	912.713	902.3509	908.286	0.749	0.96	0.478	2753.299	2740.137	2753.266	0.22
14/04/2016 14:00	5596	14.24	14.12	5.249	5.249	205.2	13.24	7.546	690.8931	2.487215	1005.491	0.745	54.7	907.6187	0.713	913.3883	901.6643	907.8034	0.692	0.914	0.46	2754.429	2740.819	2752.693	0.23
14/04/2016 15:00	5597	14.24	14.15	5.602	5.602	201.1	13.96	7.84	661.1125	2.380005	1005.458	1.335	49.46	907.5278	0.779	914.0466	901.0196	907.517	0.699	1.054	0.471	2755.915	2740.13	2752.161	0.24
14/04/2016 16:00	5598	14.29	14.16	4.969	4.969	213	22.82	8.98	572.733	2.061838	1005.272	1.671	43.89	907.3296	0.559	914.5491	900.5319	906.9078	0.63	0.59	0.44	2756.525	2738.654	2751.576	0.22
14/04/2016 17:00	5599	14.36	14.25	5.607	5.607	234	17.72	9.31	450.237	1.620853	1005.126	1.837	41.75	907.3884	0.718	915.0481	900.7343	906.3826	0.731	0.722	0.702	2756.392	2739.079	2751.155	0.19
14/04/2016 18:00	5600	14.35	14.25	5.584	5.584	236.8	10.69	9.29	312.6937	1.125697	1005.182	1.868	40.81	907.4669	0.47	915.6127	900.9507	905.8371	0.413	0.607	0.353	2757.05	2740.101	2749.579	0.14
14/04/2016 19:00	5601	14.29	14	3.648	3.648	213	20.88	7.291	166.8429	0.6006343	1005.121	1.717	40.91	907.6359	0.208	915.0735	902.0349	905.7993	0.259	0.216	0.129	2755.768	2740.445	2750.064	0.08
14/04/2016 20:00	5602	14.07	13.84	3.646	3.646	182.7	16.46	4.547	52.08304	0.1874989	1005.121	0.337	45.77	907.7727	0.239	913.9068	902.9189	906.4924	0.252	0.284	0.163	2754.5	2741.313	2750.954	0.02
14/04/2016 21:00	5603	13.86	13.7	4.169	4.169	161	5.72	5.841	0.0527127	0.000189766	1004.931	-0.735	50.03	907.8903	0.579	913.6544	903.1647	906.8518	0.593	0.719	0.369	2754.168	2741.53	2750.786	0.02
14/04/2016 22:00	5604	13.72	13.61	7.05	7.05	168.2	5.491	8.76	0	0	1004.768	-0.86	53.12	908.0439	1.122	913.9291	903.2798	906.9227	1.114	1.434	0.692	2755.689	2741.587	2751.948	0.02
14/04/2016 23:00	5605	13.62	13.53	7.341	7.341	177.2	4.397	9.07	0	0	1005.008	-1.216	61.41	907.91	0.767	913.8107	903.21	906.7094	0.803	0.93	0.503	2756.158	2742.94	2750.867	0.02
15/04/2016 0:00	5606	13.55	13.46	4.798	4.798	156.4	11.92	7.213	0	0	1005.096	-1.449	63.54	907.9209	0.191	913.7686	903.3047	906.6894	0.191	0.215	0.164	2754.568	2742.003	2750.983	0.01
15/04/2016 1:00	5607	13.48	13.41	3.168	3.168	152.3	18.69	6.546	0	0	1004.932	-1.438	65.6	907.9563	0.186	913.7455	903.3777	906.7457	0.228	0.203	0.103	2754.505	2742.001	2751.141	0
15/04/2016 2:00	5608	13.42	13.35	5.444	5.444	161.1	13.63	7.526	0	0	1004.932	-1.645	70.48	908.0275	0.755	913.806	903.4328	906.8438	0.737	0.929	0.552	2754.951	2741.648	2751.56	0.01
15/04/2016 3:00	5609	13.36	13.29	4.526	4.526	150.9	15.87	6.703	0	0	1005.096	-1.677	74.57	907.9802	0.132	913.8058	903.4289	906.7061	0.154	0.145	0.089	2754.674	2742.079	2750.93	0
15/04/2016 4:00	5610	13.31	13.23	3.26	3.26	123.4	5.783	4.822	0	0	1004.932	-2.906	85.1	908.0176	0.227	913.7947	903.5209	906.737	0.213	0.265	0.196	2754.664	2741.969	2750.867	0
15/04/2016 5:00	5611	13.25	13.18	3.354	3.354	120.4	16.86	5.958	0	0	1004.604	-2.954	90.2	908.0673	0.144	913.8757	903.5275	906.7986	0.154	0.158	0.116	2754.667	2742.399	2751.08	0
15/04/2016 6:00	5612	13.21	13.18	6.591	6.591	167.7	8.65	9.06	8.544418	0.03075991	1004.443	-2.752	84.7	908.0366	0.941	913.5249	903.4917	907.517	0.933	1.19	0.609	2751.588	2739.324	2751.683	0
15/04/2016 7:00	5613	13.6	13.19	7.073	7.073	164.7	5.349	8.74	69.15675	0.2489643	1004.604	-2.129	80.6	908.1971	0.99	913.409	904.1079	907.0744	1.092	1.091	0.746	2753.65	2742.071	2751.749	0.01
15/04/2016 8:00	5614	14.06	13.6	5.905	5.905	160	10.74	8.49	92.83123	0.341924	1005.012	-1.752	81.3	908.0616	0.341	913.7791	903.5161	906.8897	0.325	0.428	0.247	2754.66	2742.307	2751.029	0.04
15/04/2016 9:00	5615	14.55	14.06	3.688	3.688	136.8	8.16	5.399	115.9099	0.4172755	1005.23	-1.949	86	908.0862	0.249	913.8413	903.5322	906.8853	0.223	0.306	0.205	2754.856	2742.281	2751.103	0.05
15/04/2016 10:00	5616	14.64	14.38	3.469	3.469	150	26.87	5.802	187.3038	0.6742936	1005.531	-1.004	77.9	908.0189	0.414	913.5923	903.4045	907.0598	0.487	0.429	0.304	2755.011	2742.431	2751.464	0.08
15/04/2016 11:00	5617	14.66	14.6	4.519	4.519	160.9	10.52	6.762	289.1179	1.040824	1005.858	-0.023	69.39	907.9887	0.752	913.4292	903.3687	907.1682	0.675	1.031	0.424	2752.969	2741.401	2751.294	0.11
15/04/2016 12:00	5618	14.67	14.12	3.921	3.921	152	19.9	7.115	611.8864	2.202791	1006.175	1.279	60.81	907.8791	0.326	912.5049	902.9415	908.1909	0.341	0.355	0.277	2753.546	2741.854	2752.298	0.22
15/04/2016 13:00	5619	14.27	14.11	4.535	4.535	147.9	15.05	8.11	597.7209	2.151795	1005.861	1.62	58.07	907.7482	0.652	912.7244	902.4387	908.0817	0.68	0.774	0.462	2753.736	2741.536	2752.128	0.22
15/04/2016 14:00	5620	14.19	14.12	5.362	5.362	141.7	12.03	8.78	730.449	2.629616	1005.909	2.246	54.58	907.6098	0.814	913.083	901.5935	907.1529	0.926	0.433	0.433	2753.827	2739.674	2752.764	0.26
15/04/2016 15:00	5621	14.23	14.14	6.301	6.301	158.2	10.04	9.02	636.1723	2.29022	1006.072	2.673	52.6	907.7624	0.805	913.7834	902.2998	907.2038	0.81	0.965	0.597	2753.989	2740.726	2750.049	0.24
15/04/2016 16:00	5622	14.32	14.21	5.812	5.812	161.4	7.101	7.507	257.9495	0.9286182	1006.172	1.704	58.43	907.8015	1.05	913.4487	902.9534	907.0021	1.042	1.383	0.554	2754.609	2740.384	2751.121	0.12
15/04/2016 17:00	5623	14.37	14.28	6.161	6.161	173.4	13.63	8.53	238.9405	0.8601857	1006.349	1.411	66.24	907.7617	1.317	913.3452	902.9661	906.9736	1.376	1.653	0.76	2754.578	2739.678	2751.507	0.09
15/04/2016 18:00	5624	14.44	14.34	7.273	7.273	179.1	7.103	9.17	93.67948	0.3372461	1006.349	-0.106	76.61	907.8582	1.14	913.3877	903.2509	906.9357	1.143	1.251	1.015	2755.723	2742.154	2752.773	0.04
15/04/2016 19:00	5625	14.5	14.27	6.337	6.337	171.3	7.314	8.74	98.06328	0.3530278	1006.759	-0.211	75.99	907.9062	0.461	913.6939	903.1454	906.8792	0.487	0.559	0.296	2754.236	2742.045	2751.388	0.04
15/04/2016 20:00	5626	14.32	13.93	2.841	2.841	194.5	34.13	6.546	20.06042	0.0722175	1007.169	-0.809	79.44	907.9932	0.022	913.8499	903.3711	906.7586	0.021	0.027	0.017	2754.606	2741.944	2751.092	0
15/04/2016 21:00	5627	13.94	13.78	3.236	3.236	175.3	41.18	6.566	0.2462497	0.000886499	1007.225	-1.676	83.6	907.9567	0.492	913.7825	903.3342	906.7534	0.525	0.536	0.403	2755.485	2743.252	2750.578	0
15/04/2016 22:00	5628	13.8	13.69	7.341	7.341	199	8.64	10.23	0	0	1007.389	-1.341	77.2	907.9576	1.193	913.7186	903.2607	906.8936	1.15	1.558	0.723	2753.508	2742.434	2751.875	0.01
15/04/2016 23																									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
17/04/2016 22:00	5676	13.78	13.67	5.179	5.179	184.6	47.1	10	0.07614077	0.000274107	1012.082	-0.424	94.4	908.9363	0.251	915.0468	904.2134	907.5487	0.227	0.293	0.227	2756.207	2743.692	2752.059	0	
17/04/2016 23:00	5677	13.69	13.59	5.714	5.714	217	7.534	8.53	0.2577094	0.000927754	1012	-0.698	87.8	909.0988	0.309	915.1449	904.47	907.6815	0.253	0.431	0.19	2756.17	2743.231	2752.228	0	
18/04/2016 0:00	5678	13.61	13.53	1.681	1.681	178.2	38.19	4.606	0.001018619	3.67E-06	1011.684	-1.005	93.8	909.3557	0.009	915.353	904.7969	907.9171	0.006	0.011	0.009	2756.467	2743.73	2752.562	-0.01	
18/04/2016 1:00	5679	13.54	13.46	1.669	1.669	115.3	41.99	3.058	0.009423007	3.39E-05	1011.351	-1.213	96.2	909.9368	0.026	915.9329	905.384	908.4934	0.015	0.031	0.03	2757.177	2744.474	2753.305	-0.01	
18/04/2016 2:00	5680	13.48	13.4	1.474	1.474	124.2	8.01	2.587	0	0	1010.697	-1.037	96.4	910.2678	0.012	916.2413	905.7188	908.8434	0.012	0.015	0.009	2757.558	2744.817	2753.676	-0.01	
18/04/2016 3:00	5681	13.42	13.34	2.257	2.257	137.1	6.459	3.136	0	0	1009.889	-1.153	96.2	910.3401	0.023	916.308	905.8062	908.906	0.021	0.028	0.02	2757.648	2744.962	2753.74	-0.01	
18/04/2016 4:00	5682	13.36	13.29	2.479	2.479	126.6	5.346	3.116	0	0	1009.077	-1.306	96.1	910.4349	0.041	916.3806	905.9296	908.9943	0.037	0.055	0.024	2757.704	2745.126	2753.853	-0.01	
18/04/2016 5:00	5683	13.31	13.24	2.584	2.584	119.6	9.35	3.9	0	0	1008.161	-1.028	96.3	910.4952	0.01	916.4529	905.9783	909.0544	0.009	0.013	0.006	2757.791	2745.16	2753.932	-0.01	
18/04/2016 6:00	5684	13.25	13.18	1.302	1.302	111.3	55.31	2.881	6.241162	0.02246818	1007.177	-1.029	96.2	910.5674	0.007	916.5356	906.0426	909.1241	0.007	0.007	0.007	2757.901	2745.236	2754.012	-0.01	
18/04/2016 7:00	5685	13.23	13.18	0.61	0.61	293.5	43	1.254	28.94663	0.1042079	1005.865	-1.413	96.4	910.8133	0.014	916.8239	906.2897	909.3265	0.017	0.014	0.012	2758.304	2745.573	2754.293	-0.01	
18/04/2016 8:00	5686	13.33	13.2	0.975	0.975	297	18.7	1.646	49.61593	0.1786173	1004.793	-1.264	96.6	911.4965	0.033	917.6957	906.85	909.9438	0.027	0.034	0.036	2759.286	2746.326	2755.106	0.02	
18/04/2016 9:00	5687	13.56	13.3	2.26	2.26	304.7	7.839	3.43	82.45007	0.2968202	1003.729	-1.281	95.2	912.3071	0.136	918.0164	907.6655	911.2396	0.147	0.15	0.107	2759.912	2747.574	2756.579	0.03	
18/04/2016 10:00	5688	13.79	13.55	2.302	2.302	311.3	11.5	3.508	85.71826	0.3085857	1002.582	-1.396	94.9	912.9859	0.099	918.4733	908.3564	912.1281	0.104	0.121	0.101	2760.393	2748.126	2757.795	0.03	
18/04/2016 11:00	5689	14.17	13.79	3.44	3.44	308.2	7.959	4.861	118.9159	0.4280973	1001.272	-1.164	93.2	913.1508	0.375	918.9854	908.4331	912.034	0.331	0.431	0.355	2760.972	2748.212	2758.143	0.04	
18/04/2016 12:00	5690	14.34	14.14	4.208	4.208	301.4	10.08	5.527	122.3932	0.4406154	1000.289	-1.631	94.3	913.5291	0.428	919.1075	908.8615	912.6183	0.488	0.451	0.329	2760.351	2748.442	2758.389	0.04	
18/04/2016 13:00	5691	14.33	14.08	4.686	4.686	290	13.57	6.821	58.65364	0.2111531	999.9613	-2.166	95.1	914.1262	0.127	909.4102	912.6884	912.6884	0.129	0.143	0.106	2762.614	2749.449	2758.667	0.02	
18/04/2016 14:00	5692	14.23	13.67	5.979	5.979	273.9	8.08	10.11	93.31671	0.3359402	999.3909	-2.295	95.1	914.2036	0.839	920.8527	909.2968	912.4612	0.723	1.153	0.51	2763.205	2747.894	2757.472	0.03	
18/04/2016 15:00	5693	14.18	14.12	8.23	8.23	273.1	8.3	11.02	67.08074	0.2414907	1000.294	-2.419	95.2	912.0668	0.897	921.0668	909.5339	912.3293	0.814	1.19	0.579	2763.837	2749.362	2758.793	0.02	
18/04/2016 16:00	5694	14.18	14.12	8.95	8.95	261.9	6.8	13.23	90.72374	0.3266055	1000.484	-2.314	94.6	914.272	1.502	920.473	909.7401	912.6031	1.523	1.806	1.088	2761.469	2750.335	2753.991	0.03	
18/04/2016 17:00	5695	14.26	14.13	11.05	11.05	260.5	7.08	14.54	166.6663	0.5999987	1001.612	-2.176	94.8	914.2881	1.532	920.1028	909.2277	913.5336	1.646	1.118	1.118	2762.052	2745.582	2758.823	0.03	
18/04/2016 18:00	5696	14.26	14.07	10.13	10.13	266.6	13.72	18.13	85.86352	0.3091086	1002.691	-2.359	95.1	915.6843	4.945	918.1619	912.9468	915.9441	6.349	4.636	3.4	2764.643	2751.706	2759.908	0.02	
18/04/2016 19:00	5697	14.08	14.02	11.88	11.88	250.1	7.561	16.64	52.23029	0.1880291	1003.212	-2.792	88.8	915.5843	2.646	919.3458	912.1043	915.3029	2.871	2.995	1.948	2763.242	2748.52	2759.683	0.02	
18/04/2016 20:00	5698	14.03	13.91	13.41	13.41	241.8	4.569	17.4	21.36538	0.07691538	1003.785	-2.44	72.21	915.5724	1.463	921.5223	910.5917	914.6034	1.36	1.715	1.278	2764.361	2750.002	2759.741	0.02	
18/04/2016 21:00	5699	13.92	13.8	13.83	13.83	241	5.755	17.93	1.405134	0.005058483	1004.197	-2.527	67.84	915.7969	3.237	919.2771	912.6006	915.5132	3.692	3.326	2.597	2765.146	2753.897	2760.865	0.02	
18/04/2016 22:00	5700	13.81	13.71	13.82	13.82	243.1	6.198	18.17	0	0	1005.014	-3.003	67.76	915.3821	1.585	921.3736	910.6568	914.116	1.652	1.993	0.914	2766.517	2750.954	2761.006	0.02	
18/04/2016 23:00	5701	13.72	13.63	12.12	12.12	246.1	6.353	17.93	0	0	1006.245	-3.639	67.63	915.6509	1.318	921.8132	910.4075	914.7319	1.251	1.567	1.09	2764.218	2750.124	2760.944	0.02	
19/04/2016 0:00	5702	13.65	13.56	13.05	13.05	245.2	5.402	18.42	0	0	1006.981	-3.802	70.52	915.3799	1.546	921.2731	910.7137	914.153	1.716	1.131	1.131	2762.828	2749.597	2760.51	0.02	
19/04/2016 1:00	5703	13.58	13.5	11.12	11.12	251.1	4.668	15.64	0	0	1007.656	-4.681	78.61	915.6906	1.262	922.2866	910.217	914.5681	0.948	1.755	0.892	2764.96	2749.879	2760.495	0.01	
19/04/2016 2:00	5704	13.52	13.44	10.29	10.29	253.9	3.922	14.33	0	0	1008.427	-5.094	85.5	915.646	1.261	922.1646	910.3372	914.436	1.149	1.669	0.813	2764.098	2747.852	2761.421	0.01	
19/04/2016 3:00	5705	13.46	13.38	10.41	10.41	255.1	4.3	13.45	0	0	1009.199	-4.343	86.1	915.8953	1.374	922.3901	910.6602	914.6357	1.162	1.896	0.848	2765.188	2752.779	2760.555	0.01	
19/04/2016 4:00	5706	13.4	13.33	9.92	9.92	257.7	5.791	13.88	0	0	1009.933	-3.814	83.8	915.8807	1.538	921.7446	911.0665	914.8311	1.547	0.882	0.882	2766.436	2750.33	2760.905	0.01	
19/04/2016 5:00	5707	13.35	13.27	11.53	11.53	263.6	5.12	15.7	0.03362543	0.000121052	1010.426	-3.34	80.5	916.0388	1.682	922.0595	911.0228	915.0339	1.414	2.278	1.14	2765.229	2754.092	2765.436	0.01	
19/04/2016 6:00	5708	13.42	13.27	11.35	11.35	261.8	4.614	14.8	19.43346	0.06996047	1011.172	-3.65	81.7	916.0345	1.145	922.2179	910.6791	915.2064	0.895	1.648	0.643	2765.617	2751.591	2761.283	0.01	
19/04/2016 7:00	5709	14.01	13.42	10.97	10.97	268	5.724	14.54	70.45191	0.2536269	1011.819	-3.463	79.46	915.8294	1.612	921.7238	910.8858	914.8787	1.491	2.069	1.136	2766.453	2747.449	2761.657	0.04	
19/04/2016 8:00	5710	14.66	14.01	11.31	11.31	267.9	5.844	14.88	159.4369	0.5739729	1012.632	-3.112	74.31	915.9496	1.662	921.524	911.2123	915.1126	1.31	2.331	1.066	2765.423	2753.26	2762.211	0.06	
19/04/2016 9:00	5711	14.66	14.61	10.66	10.66	278.4	7.172	14.03	238.65	0.58591401	1013.369	-2.687	70.84	915.3859	1.709	921.3819	911.1091	914.6034	1.756	2.14	1.046	2764.721	2750.744	2761.419	0.08	
19/04/2016 10:00	5712	14.67	14.38	11.86	11.86	286.3	7.925	16.99	488.4819	1.758535	1014.048	-1.966	66.24	915.9612	2.157	920.1653	911.5593	916.1589	2.027	2.571	1.801	2763.333	2750.598	2760.887	0.13	
19/04/2016 11:00	5713	14.44	14.39	11.16	11.16	288.3	6.949	14.58	400.3076	1.441107	1014.457	-1.546	64.2	916.0814	3.678	919.519	912.3166	916.4083	4.58	3.621	2.547	2760.447	2758.089	2769.124	0.13	
19/04/2016 12:00	5714	14.43	14.34	11.63	11.63	283.5	8.54	15.74	574.4899	2.068163	1015.358	-1.071	57.61	912.0478	3.489	919.2022	912.0478	917.7567	3.155	4.093	3.134	2763.853	2754.111	2761.113	0.17	
19/04																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
21/04/2016 12:00	5762	14.43	14.33	10.81	10.81	116.9	8.35	14.05	667.0908	2.401527	1014.211	-1.322	66.88	916.1108	2.379	918.7358	911.5433	918.0533	2.633	2.519	1.922	2757.425	2751.508	2766.784	0.17	
21/04/2016 13:00	5763	14.37	14.33	9.58	9.58	114.4	7.362	13.03	690.2708	2.484975	1014.211	-0.978	66.37	916.064	2.249	919.9213	911.5339	916.7368	1.821	3.117	1.462	2755.39	2765.9	2765.242	0.18	
21/04/2016 14:00	5764	14.4	14.3	9.74	9.74	110.9	8.67	13.35	658.31	2.369916	1013.884	-0.819	67.16	916.4426	2.953	918.8972	911.9063	916.5244	3.68	2.984	1.927	2764.523	2748.963	2765.271	0.18	
21/04/2016 15:00	5765	14.42	14.34	9.78	9.78	113.4	7.758	14.09	577.8916	2.08041	1013.966	-0.557	65.9	916.2098	2.227	920.8414	911.0984	916.6896	2.175	2.392	2.104	2763.925	2754.115	2763.863	0.16	
21/04/2016 16:00	5766	14.42	14.35	8.97	8.97	115.8	7.212	12.7	437.4523	1.574828	1013.884	-0.574	65.63	916.0958	1.668	921.3531	910.8736	916.6067	1.325	1.961	1.657	2762.403	2748.944	2762.49	0.13	
21/04/2016 17:00	5767	14.42	14.35	8.44	8.44	114.2	7.072	11.35	429.5616	1.546422	1013.72	-0.315	64.75	915.8727	1.79	921.1314	910.6075	915.8793	1.965	2.062	1.224	2764.98	2752.13	2767.99	0.13	
21/04/2016 18:00	5768	14.4	14.37	8.33	8.33	118.2	6.428	10.9	276.0516	0.9937857	1013.474	-0.314	64.69	915.9475	1.493	921.3177	911.3032	915.2217	1.575	1.881	0.816	2763.986	2754.282	2761.815	0.1	
21/04/2016 19:00	5769	14.4	14.24	6.991	6.991	130.4	9.04	11.15	165.1089	0.5943921	1013.392	-0.614	66.07	915.2166	0.959	921.0742	911.7031	915.8726	0.865	1.219	0.726	2763.79	2751.769	2761.935	0.06	
21/04/2016 20:00	5770	14.33	14.01	6.496	6.496	122.7	6.499	10	41.79482	0.1504613	1013.072	-1.38	69.75	916.291	1.135	920.798	912.0196	916.0553	1.173	1.318	0.867	2761.416	2752.78	2763.219	0.01	
21/04/2016 21:00	5771	14.03	13.85	7.642	7.642	127.8	6.912	10.19	1.739698	0.006262911	1012.795	-2.215	73.11	916.2598	0.927	921.0845	911.7664	915.9285	0.912	1.212	0.526	2760.356	2748.883	2761.693	0.01	
21/04/2016 22:00	5772	13.86	13.74	7.518	7.518	131	6.595	10.39	0	0	1012.55	-2.193	71.4	916.2585	1.467	920.7052	912.0439	916.0264	1.358	1.893	1.013	2763.48	2754.008	2764.907	0.01	
21/04/2016 23:00	5773	13.76	13.66	7.009	7.009	132.3	6.092	9.96	0	0	1012.468	-2.274	69.52	916.2376	0.629	921.3757	911.6623	915.6749	0.674	0.773	0.367	2765.209	2753.482	2761.807	0.01	
22/04/2016 0:00	5774	13.67	13.58	7.746	7.746	130.4	8.58	10.17	0	0	1012.304	-2.212	64.04	916.1838	1.517	921.0287	911.7437	915.7789	1.499	1.876	1.065	2762.462	2754.199	2761.491	0.02	
22/04/2016 1:00	5775	13.61	13.52	7.291	7.291	152.6	8.56	10.02	0	0	1012.14	-2.463	63.92	916.3344	1.19	921.3708	911.8798	915.7525	1.23	1.456	0.783	2764.363	2753.471	2759.947	0.01	
22/04/2016 2:00	5776	13.54	13.46	5.966	5.966	142.7	9.62	9.49	0	0	1011.976	-3.007	66.13	916.3701	0.504	921.6379	911.8699	915.6027	0.549	0.598	0.322	2764.359	2752.532	2761.961	0.01	
22/04/2016 3:00	5777	13.47	13.4	6.065	6.065	141	9.88	8.8	0	0	1011.731	-3.563	69.73	916.3135	0.691	921.4571	911.8287	915.6547	0.723	0.86	0.411	2764.432	2750.685	2761.819	0.01	
22/04/2016 4:00	5778	13.42	13.34	6.165	6.165	118	10.33	9.55	0.000764214	2.75E-06	1011.176	-3.957	71.95	916.4244	1.191	921.1314	912.153	915.9888	1.104	1.501	0.884	2762.046	2751.938	2763.602	0.01	
22/04/2016 5:00	5779	13.36	13.28	7.941	7.941	126.1	9.96	9.96	0.346953	0.001249031	1010.924	-4.256	72.41	916.2247	1.158	920.951	911.8659	915.8572	1.252	1.197	1.011	2762.947	2750.769	2761.133	0.01	
22/04/2016 6:00	5780	13.3	13.26	7.931	7.931	135	6.234	10.51	7.314559	0.02633241	1010.423	-5.056	76.56	916.3644	1.505	920.9798	912.1968	915.9165	1.548	1.851	0.984	2766.359	2754.087	2759.652	0.01	
22/04/2016 7:00	5781	13.52	13.26	7.566	7.566	124.7	7.658	10.62	48.67649	0.1752354	1010.283	-5.437	79.92	916.2175	1.298	921.2004	911.7551	915.6968	1.202	1.729	0.787	2762.834	2750.034	2762.362	0.01	
22/04/2016 8:00	5782	13.88	13.53	8.26	8.26	123.6	9.58	11.88	64.5234	0.2322842	1010.024	-5.527	84.5	916.3091	1.157	922.1033	911.5964	915.2274	1.171	1.403	0.821	2763.93	2750.541	2761.677	0.03	
22/04/2016 9:00	5783	14.6	13.88	6.175	6.175	122.9	15.15	10.9	86.98467	0.3131448	1009.605	-5.033	83.6	916.456	1.657	920.7936	912.2295	916.3449	1.731	1.974	1.161	2759.851	2750.736	2763.729	0.03	
22/04/2016 10:00	5784	14.64	14.6	6.35	6.35	133.2	11.5	10.53	116.4314	0.4191529	1009.851	-3.969	77.09	916.6283	0.685	921.6671	915.3543	916.547	0.709	0.883	0.356	2764.152	2752.547	2761.386	0.05	
22/04/2016 11:00	5785	14.66	14.6	7.113	7.113	132.2	10.16	10.94	191.8703	0.690733	1009.765	-3.206	77.47	916.459	1.234	921.3985	911.8165	916.1619	1.313	1.543	0.679	2763.605	2753.353	2762.716	0.07	
22/04/2016 12:00	5786	14.62	14.43	7.034	7.034	135.1	7.475	10.53	219.1583	0.7889699	1009.847	-3.563	86	916.2595	0.945	921.7123	911.6602	915.406	1.005	1.16	0.568	2762.493	2750.509	2761.575	0.06	
22/04/2016 13:00	5787	14.48	14.33	5.228	5.228	139.1	8.98	8.23	399.8076	1.439307	1009.501	-2.906	85.9	916.2353	0.828	921.3217	911.452	915.934	0.741	1.1	0.546	2763.84	2750.745	2761.675	0.11	
22/04/2016 14:00	5788	14.37	14.28	5.662	5.662	140.3	9.74	8.51	424.453	1.528031	1009.625	-1.452	79.92	916.1584	1.018	921.3365	911.4985	915.6401	1.176	1.18	0.577	2765.13	2752.188	2761.681	0.12	
22/04/2016 15:00	5789	14.45	14.36	6.492	6.492	116.4	11.47	9.6	220.0016	0.7920059	1009.134	-1.44	80.6	916.0844	1.04	921.3654	911.6562	915.2318	1.125	1.23	0.683	2763.804	2752.083	2761.598	0.08	
22/04/2016 16:00	5790	14.45	14.4	5.031	5.031	121.6	16.49	9.62	172.4781	0.6209212	1009.134	-1.474	79.62	916.3516	1.086	921.4885	912.0021	915.5642	1.246	1.201	0.739	2765.083	2754.171	2761.601	0.06	
22/04/2016 17:00	5791	14.46	14.32	5.445	5.445	128.1	10.09	8.68	126.8619	0.4567029	1008.806	-1.447	78.21	916.2214	0.771	921.7521	911.6638	915.2274	0.702	1.064	0.399	2763.719	2750.786	2760.51	0.05	
22/04/2016 18:00	5792	14.54	14.29	5.719	5.719	118.6	11.51	8.62	109.1743	0.3930723	1008.724	-1.201	76.61	916.1779	0.597	921.778	911.546	915.2098	0.521	0.368	0.368	2763.785	2751.773	2761.571	0.05	
22/04/2016 19:00	5793	14.32	14.13	4.856	4.856	148.1	16.88	11.13	54.68303	0.1968589	1008.315	-0.868	74.37	916.2031	1.352	921.3314	911.6609	915.6169	1.309	1.482	1.253	2764.513	2752.514	2761.174	0.04	
22/04/2016 20:00	5794	14.14	13.97	8.06	8.06	145	10.23	12.78	19.03684	0.06853262	1007.987	-0.879	73.76	916.1748	2.097	920.7328	912.2964	915.4953	2.108	2.514	1.557	2761.326	2752.029	2762.075	0.02	
22/04/2016 21:00	5795	13.98	13.82	8.45	8.45	146.1	11.96	14.56	1.508831	0.00543179	1007.905	-0.727	73.45	916.5316	2.921	920.1843	912.8416	915.828	3.172	2.121	1.212	2751.188	2752.579	2773.882	0.02	
22/04/2016 22:00	5796	13.84	13.73	9.45	9.45	134.1	18.28	14.86	0	0	1007.582	-0.925	71.2	916.3935	3.444	919.5408	912.8903	916.7495	3.217	4.555	2.116	2761.416	2751.133	2767.299	0.02	
22/04/2016 23:00	5797	13.74	13.65	11.48	11.48	156	7.606	16.62	0	0	1008.479	-0.275	69.91	916.1199	1.117	921.6505	911.3381	915.3711	1.29	1.169	0.846	2764.856	2753.323	2761.58	0.02	
23/04/2016 0:00	5798	13.66	13.58	4.03	4.03	162.4	38.75	8.17	0	0	1008.479	0.027	65.07	916.1699	0.034	921.9849	911.3495	915.1752	0.031	0.043	0.026	2764.607	2751.731	2761.446	0.02	
23/04/2016 1:00	5799	13.59	13.51	7.174	7.174	147.5	47.47	12.88	0	0	1007.987	-0.101	66.2	915.9666	1.385	921.1827	911.2218	915.4952	1.455	1.628	0.995	2762.883	2750.993	2762.179	0.02	
23/04/2016 2:00	5800	13.53	13.45	7.252	7.252	156.8	6.649	11.31	0	0	1008.315	-0.731	66.12	916.0417	0.425	921.9956	911.1949	914.9344	0.431	0.503	0.323	2764.244	2750.563	2761.682	0.02	
23/04/2016 3:																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
25/04/2016 2:00	5848	13.37	13.29	7.352	7.352	162.5	7.401	9.86	0	0	1009.461	2.831	69.73	916.0847	0.904	920.5319	911.8309	915.8913	0.965	0.938	0.799	2764.77	2753.247	2762.22	0.02	
25/04/2016 3:00	5849	13.31	13.24	5.248	5.248	153.6	10.38	8.25	0	0	1009.543	2.053	75.92	916.0018	0.511	921.5216	910.9612	915.5225	0.573	0.526	0.423	2764.464	2752.777	2762.478	0.01	
25/04/2016 4:00	5850	13.25	13.18	2.035	2.035	214.6	69.54	7.37	0	0	1009.789	1.613	78.65	916.0833	0.091	922.0057	910.9366	915.3074	0.097	0.102	0.072	2764.96	2751.358	2761.528	0	
25/04/2016 5:00	5851	13.2	13.13	1.118	1.118	119.2	39	4.41	0.08529715	0.00030707	1009.789	1.658	79.31	916.1406	0.038	922.03	911.0347	915.3569	0.036	0.042	0.035	2764.663	2751.395	2761.699	0	
25/04/2016 6:00	5852	13.15	13.12	1.466	1.466	101.5	70.38	5.429	6.593392	0.02373621	1009.789	1.39	80.4	916.1464	0.149	922.0485	910.9903	915.4005	0.129	0.065	0.065	2764.688	2751.338	2761.716	0	
25/04/2016 7:00	5853	13.25	13.12	3.551	3.551	170.8	22.67	6.782	25.44883	0.09161577	1009.865	1.026	82.5	916.2161	0.543	922.0622	911.1333	915.4529	0.445	0.716	0.418	2764.538	2751.81	2763.113	0.01	
25/04/2016 8:00	5854	13.83	13.25	5.534	5.534	155.4	18.58	9.43	90.0949	0.3243416	1009.953	0.696	83.9	916.2502	0.909	921.6224	911.3834	915.7448	0.942	1.134	0.552	2762.911	2751.434	2763.464	0.05	
25/04/2016 9:00	5855	14.64	13.83	6.104	6.104	164.7	8.13	8.86	159.8645	0.575512	1009.953	0.364	87.4	916.0694	0.708	921.6124	910.9995	915.5964	0.734	0.835	0.517	2763.348	2751.982	2761.764	0.06	
25/04/2016 10:00	5856	14.63	14.59	5.824	5.824	167.7	15.01	9.84	258.3257	0.9299727	1010.444	1.193	77.04	916.1995	0.629	921.6718	911.246	915.6808	0.63	0.677	0.576	2765.258	2751.67	2762.058	0.1	
25/04/2016 11:00	5857	14.67	14.22	5.35	5.35	206	13.81	9.84	436.2636	1.570549	1010.495	1.867	71.32	916.1364	0.555	921.1808	911.3483	915.8801	0.586	0.626	0.436	2763.843	2751.107	2762.233	0.16	
25/04/2016 12:00	5858	14.28	14.21	4.74	4.74	200.5	17.74	8.15	376.2168	1.35438	1010.625	2.456	66.99	916.263	1.002	921.1102	911.5913	916.0876	0.909	1.178	0.892	2762.408	2751.884	2762.975	0.16	
25/04/2016 13:00	5859	14.29	14.21	3.672	3.672	205.6	24.74	8.84	297.7678	1.071964	1010.716	2.383	65.96	916.1617	0.112	921.8338	910.9592	915.6921	0.091	0.111	0.131	2763.965	2751.265	2762.059	0.14	
25/04/2016 14:00	5860	14.29	14.17	4.128	4.128	218	19.13	8.15	369.9556	1.33184	1011	2.73	65.05	916.4246	1.398	919.9807	912.3398	916.9533	1.124	1.464	1.568	2763.38	2753.957	2763.78	0.16	
25/04/2016 15:00	5861	14.27	14.21	4.497	4.497	182.6	30.22	8.74	371.9264	1.338935	1011	2.416	63.83	916.2806	0.885	921.3824	911.2889	916.1704	0.773	0.986	0.884	2764.724	2751.055	2761.804	0.15	
25/04/2016 16:00	5862	14.35	14.27	6.723	6.723	197.1	29.22	10.72	254.2804	0.9154094	1010.434	1.358	66.84	916.6066	2.584	919.327	913.2482	917.2445	2.871	2.926	1.797	2763.504	2755.227	2765.054	0.11	
25/04/2016 17:00	5863	14.35	14.27	7.009	7.009	193.4	9.44	11.54	293.1219	1.055239	1011.094	1.517	62.45	916.0341	0.568	922.178	910.5406	915.3836	0.544	0.674	0.466	2763.945	2749.456	2761.507	0.12	
25/04/2016 18:00	5864	14.34	14.29	3.42	3.42	204.5	14.97	5.998	140.5735	0.5060645	1010.935	1.135	61.84	916.1729	0.319	922.326	910.7825	915.4101	0.335	0.385	0.21	2765.065	2751.307	2761.742	0.05	
25/04/2016 19:00	5865	14.34	14.21	3.018	3.018	193.8	12.35	5.057	88.13635	0.3172908	1010.772	1.158	61.55	916.189	0.201	922.2026	910.9621	915.4101	0.223	0.221	0.149	2764.212	2751.156	2761.693	0.02	
25/04/2016 20:00	5866	14.28	13.97	2.686	2.686	172.7	18.6	4.9	45.87421	0.1651471	1010.608	0.989	61.39	916.2194	0.097	922.2816	910.9692	915.4073	0.11	0.113	0.057	2764.836	2751.262	2761.699	0.01	
25/04/2016 21:00	5867	13.99	13.82	2.802	2.802	152.2	7.043	3.626	10.05705	0.03620539	1010.444	0.341	64.38	916.2197	0.095	922.0892	911.0992	915.4706	0.094	0.115	0.07	2764.646	2751.488	2761.929	0.01	
25/04/2016 22:00	5868	13.83	13.7	2.266	2.266	153.7	16.13	4.41	0	0	1010.444	0.315	61.13	916.2714	0.184	922.049	911.1754	915.5899	0.173	0.251	0.092	2764.711	2751.579	2761.872	0	
25/04/2016 23:00	5869	13.72	13.62	4.083	4.083	170.4	9.67	5.821	0	0	1010.449	-0.123	62.44	916.2502	0.397	922.1188	911.1592	915.4727	0.408	0.504	0.231	2764.769	2751.891	2762.373	0.01	
26/04/2016 0:00	5870	13.63	13.55	4.215	4.215	177.6	7.291	5.488	0	0	1010.502	-1.281	63.24	916.3039	0.564	922.0627	911.2713	915.5775	0.537	0.349	0.349	2765.409	2752.03	2762.076	0.01	
26/04/2016 1:00	5871	13.56	13.48	5.187	5.187	184.9	7.954	6.429	0	0	1010.255	-1.295	61.89	916.2168	0.466	922.1243	911.0983	915.4276	0.459	0.598	0.289	2764.777	2752.219	2762.16	0.01	
26/04/2016 2:00	5872	13.5	13.42	5.503	5.503	188.3	5.91	6.605	0	0	1010.174	-1.758	63.24	916.2781	0.506	922.1632	911.2194	915.4517	0.447	0.644	0.393	2764.573	2751.131	2762.429	0.01	
26/04/2016 3:00	5873	13.43	13.36	4.79	4.79	182	9.03	5.978	0	0	1010.092	-1.63	63.01	916.2742	0.396	922.0405	911.2292	915.5529	0.458	0.441	0.257	2764.542	2750.965	2761.599	0.01	
26/04/2016 4:00	5874	13.37	13.3	4.645	4.645	182.6	3.823	5.351	0	0	1009.847	-1.775	63.6	916.35	0.295	922.2287	911.3156	915.5057	0.284	0.337	0.26	2764.431	2751.921	2762.047	0.01	
26/04/2016 5:00	5875	13.32	13.25	4.483	4.483	174.1	6.72	5.547	0.567556	0.002043202	1009.607	-2.49	63.09	916.3	0.534	922.0623	911.2789	915.5589	0.547	0.62	0.415	2765.003	2751.911	2762.164	0.01	
26/04/2016 6:00	5876	13.43	13.25	3.619	3.619	160.3	8.39	5.018	43.41294	0.1562866	1009.602	-2.018	61.55	916.6769	0.086	920.9334	913.2056	915.8916	0.088	0.106	0.056	2763.285	2754.226	2762.337	0.01	
26/04/2016 7:00	5877	14.04	13.42	1.971	1.971	123.6	14.15	2.999	147.872	0.5323392	1009.842	-0.84	58.48	916.6783	0.111	920.2917	913.4192	916.324	0.103	0.096	0.096	2762.436	2754.358	2762.858	0.04	
26/04/2016 8:00	5878	14.66	14.05	2.442	2.442	128.9	12.96	4.606	276.1786	0.9942429	1009.789	-0.304	57.64	916.6347	0.189	919.7659	916.9463	916.9463	0.211	0.118	0.118	2762.515	2753.989	2763.414	0.11	
26/04/2016 9:00	5879	14.66	14.59	3.544	3.544	133.3	16.19	5.664	410.4014	1.477445	1009.789	0.441	54.53	916.6057	0.286	919.4218	913.0212	917.3738	0.301	0.338	0.2	2761.416	2753.744	2764.079	0.16	
26/04/2016 10:00	5880	14.66	14.14	4.322	4.322	152.9	22.67	7.938	539.3162	1.941538	1009.769	1.603	48.75	916.4686	0.642	919.4797	912.4	917.5261	0.688	0.727	0.484	2760.093	2750.732	2765.932	0.21	
26/04/2016 11:00	5881	14.19	14.15	5.263	5.263	157.5	15.27	10.29	628.1576	2.261367	1009.722	2.106	45.99	916.4526	1.013	919.5562	911.9352	917.8663	1.133	1.143	0.699	2756.942	2754.223	2766.142	0.24	
26/04/2016 12:00	5882	14.24	14.08	5.439	5.439	144.5	16.86	8.21	695.652	2.504347	1009.727	2.243	46.36	916.2142	0.533	920.3602	910.8801	917.4024	0.515	0.619	0.451	2762.031	2751.043	2764.603	0.26	
26/04/2016 13:00	5883	14.11	14.08	4.91	4.91	179.1	14.2	7.977	704.9762	2.537914	1009.862	3.347	42.68	916.0295	0.706	920.6115	910.5953	916.8818	0.645	0.752	0.716	2763.583	2750.606	2764.853	0.28	
26/04/2016 14:00	5884	14.11	14.04	4.878	4.878	166.9	15.62	8.51	755.1298	2.718467	1009.674	3.893	39.58	916.0186	0.823	920.675	910.2419	917.1388	0.934	0.762	0.762	2762.07	2751.227	2763.163	0.31	
26/04/2016 15:00	5885	14.11	14.08	4.343	4.343	165.9	20.62	7.468	702.3591	2.528492	1009.659	4.444	36.84	916.3162	0.64	919.6956	911.4363	917.8167	0.603	0.606	0.705	2762.2	2751.573	2764.171	0.3	
26/04/2016 16:00	5886	14.17	14.08	4.97	4.97	184.7	13.24	8.08	619.9509	2.231823	1009.494	4.751	37.24	916.1505	1.014	919.2806	911.7429	917.428	0.897	0.9	0.9	2762.756	2751.697	2763.549	0.28	
26/04/																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
28/04/2016 16:00	5934	14.3	14.22	5.978	5.978	154.1	10.14	9.11	385.8289	1.388984	1008.911	2.355	58.03	915.9639	0.775	922.5132	910.4891	914.8891	0.816	0.899	0.571	2766.269	2751.329	2760.619	0.16
28/04/2016 17:00	5935	14.39	14.26	6.026	6.026	182.9	11.92	9.62	221.3333	0.7968	1008.888	1.156	72.55	915.7878	0.697	923.0328	909.8516	914.4791	0.699	0.838	0.516	2766.122	2750.719	2760.002	0.09
28/04/2016 18:00	5936	14.35	14.3	4.485	4.485	155.6	15.62	6.919	239.5863	0.8625105	1008.642	1.325	70.64	915.9335	0.573	922.5983	910.3431	914.8591	0.665	0.665	0.426	2765.33	2750.208	2761.048	0.08
28/04/2016 19:00	5937	14.34	14.13	4.97	4.97	161	17.58	7.33	79.91532	0.2876951	1008.966	0.753	74.79	916.0345	0.352	922.5044	910.7637	914.8353	0.352	0.382	0.318	2764.489	2751.461	2761.427	0.01
28/04/2016 20:00	5938	14.24	13.95	3.945	3.945	149.8	9.66	6.252	38.38968	0.1382029	1008.806	-0.183	84.2	916.129	0.142	922.6253	910.9161	914.8455	0.165	0.166	0.078	2765.423	2751.38	2761.146	0
28/04/2016 21:00	5939	13.97	13.8	2.428	2.428	131.8	7.236	3.704	7.208675	0.02595123	1008.97	-0.45	85.6	916.1432	0.11	922.6226	910.9451	914.8622	0.128	0.117	0.079	2765.247	2751.051	2761.069	-0.01
28/04/2016 22:00	5940	13.82	13.69	3.307	3.307	149.6	7.575	4.508	0	0	1008.977	-0.531	84.8	916.1796	0.274	922.579	911.0107	914.9492	0.264	0.345	0.193	2765.784	2751.417	2760.995	0
28/04/2016 23:00	5941	13.71	13.61	3.512	3.512	156.6	13.22	6.154	0	0	1008.979	-0.492	81.4	916.1191	0.367	922.5456	910.9317	914.88	0.44	0.411	0.205	2765.02	2750.576	2760.941	0
29/04/2016 0:00	5942	13.63	13.54	5.875	5.875	164.5	5.845	7.977	0	0	1009.053	-0.27	75.41	916.1108	0.544	922.4985	910.8859	914.9481	0.575	0.65	0.367	2765.365	2751.658	2761.773	0.01
29/04/2016 1:00	5943	13.56	13.47	2.701	2.701	152.1	15.33	5.722	0	0	1009.166	-0.515	76.06	916.1978	0.031	922.6887	911.0346	914.8701	0.028	0.037	0.026	2765.504	2751.42	2761.06	0
29/04/2016 2:00	5944	13.49	13.41	1.757	1.757	129.4	14.51	2.626	0	0	1009.109	-1.088	78.83	916.1901	0.041	922.7219	911.048	914.8004	0.044	0.031	0.031	2765.463	2751.474	2761.016	-0.01
29/04/2016 3:00	5945	13.43	13.36	2.461	2.461	136.9	6.584	3.626	0	0	1008.946	-0.972	78	916.2487	0.104	922.6796	911.1005	914.966	0.101	0.123	0.085	2765.487	2751.572	2761.147	0
29/04/2016 4:00	5946	13.37	13.3	2.691	2.691	150.5	8.4	3.273	0	0	1009.012	-0.396	74.74	916.2471	0.089	922.6398	911.0967	915.0048	0.088	0.112	0.058	2765.552	2751.405	2761.284	0
29/04/2016 5:00	5947	13.32	13.24	3.355	3.355	138.4	8.6	4.567	1.586186	0.005710269	1008.98	-0.493	75.5	916.2541	0.396	922.6077	911.1228	915.0317	0.421	0.5	0.206	2765.737	2751.845	2761.404	0
29/04/2016 6:00	5948	13.35	13.24	1.809	1.809	223.9	50.3	4.586	22.81998	0.08215192	1009.385	-0.637	78.55	916.2554	0.006	922.709	911.1013	914.9561	0.009	0.005	0.003	2765.486	2751.483	2761.201	0
29/04/2016 7:00	5949	13.64	13.34	0.378	0.378	29.02	16.61	1.176	57.36806	0.206525	1009.462	-0.874	86.6	916.3833	0.015	922.8548	911.18	915.1151	0.017	0.016	0.01	2765.679	2751.598	2761.391	-0.01
29/04/2016 8:00	5950	14.28	13.64	0.243	0.243	24.57	13.32	1.137	114.8406	0.4134261	1009.543	-0.964	92.1	916.5716	0.019	922.9767	911.3588	915.3795	0.024	0.009	0.02	2765.858	2751.807	2761.686	0.05
29/04/2016 9:00	5951	14.66	14.26	1.634	1.634	299.8	60.63	5.057	194.6583	0.7007699	1009.789	-0.404	90.9	916.6849	0.372	922.8886	911.5336	915.6326	0.399	0.376	0.337	2765.896	2752.974	2762.338	0.07
29/04/2016 10:00	5952	14.66	14.6	3.347	3.347	256.9	15.31	5.233	250.5755	0.9202718	1009.784	0.472	79.95	916.6809	0.143	922.9152	911.5384	915.5891	0.155	0.144	0.129	2765.841	2751.978	2761.955	0.1
29/04/2016 11:00	5953	14.63	14.35	3.567	3.567	259.5	16.63	6.782	219.4824	0.7901365	1009.707	0.491	80.5	916.696	0.5	923.1566	911.4122	915.5189	0.571	0.525	0.386	2766.578	2753.155	2761.774	0.09
29/04/2016 12:00	5954	14.42	14.37	5.018	5.018	262.8	9.9	7.252	248.8039	0.8956938	1009.789	-0.209	91.9	916.9084	0.514	923.113	911.7593	915.8531	0.605	0.488	0.435	2766.055	2751.969	2762.104	0.08
29/04/2016 13:00	5955	14.42	14.36	4.667	4.667	269.9	11.88	6.919	255.6396	0.9203025	1010.116	-0.239	91.5	916.959	0.268	923.1184	911.8693	915.8895	0.277	0.297	0.225	2765.592	2752.06	2762.367	0.08
29/04/2016 14:00	5956	14.42	14.32	5.943	5.943	257.5	8.49	8.96	251.015	0.9036541	1010.197	-0.064	92.7	917.0665	0.916	923.4287	911.9385	915.8323	1.037	1.037	0.606	2765.698	2753.778	2762.892	0.08
29/04/2016 15:00	5957	14.42	14.37	7.15	7.15	250.2	7.686	9.96	255.3126	0.9191254	1010.444	0.048	88.9	917.0917	1.316	923.4957	911.9523	915.8272	1.222	1.628	1.024	2768.548	2755.073	2762.549	0.08
29/04/2016 16:00	5958	14.4	14.37	7.636	7.636	252.3	8.23	11.37	241.1985	0.8683146	1010.444	0.635	78	917.1503	1.794	923.3082	912.1602	915.9824	2.287	1.796	1.096	2766.586	2753.036	2760.369	0.09
29/04/2016 17:00	5959	14.46	14.37	7.533	7.533	272.9	14.63	11.05	161.0423	0.5797523	1010.772	-0.375	86.6	917.2112	0.49	923.7164	911.9523	915.9652	0.502	0.608	0.316	2766.584	2752.923	2762.305	0.05
29/04/2016 18:00	5960	14.39	14.37	7.765	7.765	250.2	7.297	10.98	181.397	0.653029	1010.772	1.178	66.38	917.3574	2.551	922.7847	913.0616	916.2261	2.203	3.173	2.145	2764.485	2751.062	2762.104	0.08
29/04/2016 19:00	5961	14.4	14.35	9.38	9.38	243.8	6.917	13.47	133.3856	0.4801882	1010.935	1.137	61.05	917.0989	1.149	923.3723	911.8326	916.0262	1.111	1.525	0.634	2767.465	2753.061	2762.476	0.08
29/04/2016 20:00	5962	14.4	14.06	9.83	9.83	241.3	5.624	12.72	55.22171	0.1987981	1010.935	0.608	62.02	917.1873	2.165	922.3765	912.6372	916.5485	2.518	1.759	2.152	2763.265	2753.13	2762.018	0.03
29/04/2016 21:00	5963	14.08	13.88	10.18	10.18	239.2	5.405	13.68	10.64672	0.03832819	1011.181	0.333	56.37	917.4316	2.392	922.9048	912.9114	916.4786	2.651	2.57	1.879	2767.034	2751.197	2768.237	0.03
29/04/2016 22:00	5964	13.89	13.76	8.92	8.92	242.6	6.393	12.35	0	0	1011.774	-0.361	54.1	917.3259	1.274	923.6663	912.0613	916.7451	1.072	1.371	1.356	2768.746	2755.377	2763.152	0.03
29/04/2016 23:00	5965	13.78	13.67	9.54	9.54	240.5	5.988	13.25	0	0	1012.118	-0.762	55.45	918.0581	3.984	922.7005	912.8206	918.6533	2.244	3.811	5.296	2765.585	2750.421	2761.944	0.02
30/04/2016 0:00	5966	13.69	13.6	9.15	9.15	232.4	6.976	13.03	0	0	1012.468	-1.122	56.2	917.2393	1.081	923.1436	912.2369	916.3374	1.292	1.191	0.648	2765.502	2753.784	2763.235	0.02
30/04/2016 1:00	5967	13.62	13.53	7.923	7.923	229.5	7.131	12.37	0	0	1012.877	-1.772	58.24	917.3592	0.704	923.3742	912.1631	916.5402	0.538	0.873	0.659	2765.469	2752.846	2762.795	0.02
30/04/2016 2:00	5968	13.55	13.46	8.84	8.84	226.8	6.08	12.25	0	0	1013.042	-2.256	59.06	917.1901	1.43	923.1013	912.274	916.195	1.493	1.755	0.909	2766.387	2753.644	2762.231	0.02
30/04/2016 3:00	5969	13.48	13.41	9.8	9.8	224.7	5.817	12.5	0	0	1012.884	-2.605	58.89	917.3655	1.599	922.9945	912.7347	916.3672	1.691	2.007	0.885	2765.51	2750.305	2765.279	0.02
30/04/2016 4:00	5970	13.42	13.35	10.43	10.43	225.8	5.808	13.74	0	0	1012.798	-3.077	59.47	918.2643	2.973	922.3039	913.3287	919.1605	3.012	2.751	3.142	2764.149	2759.291	2777.824	0.02
30/04/2016 5:00	5971	13.36	13.32	10.17	10.17	227.1	7.046	13.52	3.787456	0.01363484	1013.125	-3.379	60.03	917.5439	1.541	923.448	912.3425	916.8412	1.504	2.007	0.912	2767.542	2754.289	2762.797	0.02
30/04/2016 6:00	5972	13.55	13.33	8.07	8.07	223.1	10.58	12.82	64.93046	0.2337496	1013.539	-3.07	56.42	917.7658	0.756	922.3489	914.2791	916.6694	0.668	0.973	0.568	2765.282	2756.327	2762.492	0.02
30/04/2016 7:00	5973	14.18	13.55	8.57	8.57	202.3																			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
02/05/2016 6:00	6020	13.35	13.24	5.358	5.358	133.4	5.215	7.33	29.25306	0.105311	1009.267	3.827	94	917.9637	0.587	923.6143	913.2731	917.0037	0.645	0.697	0.365	2765.707	2752.806	2764.304	0	
02/05/2016 7:00	6021	13.68	13.32	5.785	5.785	131.3	6.582	8.19	73.65008	0.2651403	1008.416	4.588	90.8	918.1805	0.663	923.3681	913.7584	917.415	0.758	0.678	0.535	2764.319	2755.943	2765.617	0.01	
02/05/2016 8:00	6022	14.27	13.69	5.305	5.305	122.3	9.46	8.02	129.2228	0.4652022	1008.04	5.596	85.8	918.1468	0.715	922.9697	913.9771	917.4938	0.673	0.748	0.673	2765.426	2755.057	2763.771	0.07	
02/05/2016 9:00	6023	14.66	14.27	6.423	6.423	140.6	13.78	15.01	218.6871	0.7872738	1007.709	7.269	75.12	918.4562	0.4788	917.402	917.8073	920.1593	4.839	5.658	3.655	2762.71	2757.233	2765.001	0.12	
02/05/2016 10:00	6024	14.65	14.59	10.55	10.55	153.2	9.29	17.42	363.5117	1.308642	1007.735	8.42	67.16	912.2756	6.458	912.2756	923.6629	924.6748	5.429	6.401	5.429	2750.103	2757.045	2768.525	0.19	
02/05/2016 11:00	6025	14.65	14.02	12.57	12.57	160.3	7.988	18.09	506.5716	1.823658	1007.652	9.04	62.1	918.9179	6.369	909.8332	922.7952	924.1252	8.49	5.728	4.099	2758.059	2761.005	2768.285	0.25	
02/05/2016 12:00	6026	14.05	13.99	11.77	11.77	159.2	7.63	16.84	607.6592	2.187573	1007.896	9.51	57.86	919.5837	6.082	912.4799	922.4117	923.8596	6.952	6.716	4.188	2722.796	2777.734	2776.935	0.3	
02/05/2016 13:00	6027	14.05	13.95	11.7	11.7	164.8	8.92	16.05	795.4122	2.863484	1008.253	10.75	49.33	918.9734	4.225	910.7658	922.0938	924.0606	4.489	3.285	4.489	2754.646	2759.026	2773.977	0.39	
02/05/2016 14:00	6028	14.11	13.88	9.54	9.54	197.3	20.24	15.41	399.4555	1.43804	1009.286	9.57	54.67	918.2839	2.095	918.6353	916.7848	919.4315	2.265	1.989	2.021	2760.437	2760.511	2768.218	0.25	
02/05/2016 15:00	6029	14.11	13.89	6.789	6.789	207.9	11.58	11.58	663.1142	2.387211	1009.588	9.44	55.11	919.4966	1.641	912.0162	922.2376	924.236	2.009	1.317	1.52	2753.321	2765.447	2772.074	0.32	
02/05/2016 16:00	6030	14.1	13.9	9.4	9.4	189	10.92	15.01	515.4687	1.855687	1009.405	9.17	49.5	918.707	3.997	914.8123	919.5551	921.7537	5.059	3.42	3.26	2751.43	2759.572	2774.875	0.28	
02/05/2016 17:00	6031	14.11	14.03	7.254	7.254	188.4	14.16	12.86	444.1646	1.598992	1009.615	8.68	48.42	919.2429	1.062	915.6193	919.6554	922.4541	1.007	0.692	1.375	2755.531	2762.915	2771.848	0.24	
02/05/2016 18:00	6032	14.14	14.03	5.884	5.884	192.1	19.67	10.66	361.9352	1.302967	1009.942	8.69	49	918.7527	1.401	918.4382	917.0547	919.5069	1.68	1.47	0.95	2761.992	2757.537	2769.27	0.2	
02/05/2016 19:00	6033	14.21	14.12	4.323	4.323	202.9	15.22	7.958	121.0077	0.4356279	1009.962	7.217	57.68	918.1547	0.785	921.3359	914.8335	918.2947	0.689	0.923	0.723	2764.358	2755.75	2764.861	0.07	
02/05/2016 20:00	6034	14.18	13.86	4.743	4.743	204	14.5	9.43	43.6406	0.1571061	1010.329	6.175	59.31	917.8342	0.437	922.9052	913.3555	917.2417	0.478	0.347	0.474	2766.205	2754.067	2763.795	0.03	
02/05/2016 21:00	6035	13.88	13.68	4.85	4.85	180.5	15.58	8.23	2.722058	0.009799408	1010.335	5.198	62.54	917.8716	0.91	922.8631	913.5274	917.2245	0.918	1.08	0.688	2765.366	2754.257	2763.923	0.02	
02/05/2016 22:00	6036	13.7	13.58	5.73	5.73	185.2	8.82	8.15	0	0	1010.523	4.641	63.92	917.8089	0.601	923.5809	912.7776	917.0682	0.702	0.558	0.53	2766.161	2752.949	2763.604	0.02	
02/05/2016 23:00	6037	13.59	13.5	4.556	4.556	193.2	8.76	7.82	0	0	1010.713	3.948	69.34	917.7874	0.422	924.2232	912.4959	916.643	0.269	0.568	0.269	2767.478	2753.05	2763.541	0.01	
03/05/2016 0:00	6038	13.51	13.43	3.683	3.683	188	17.92	5.9	0	0	1010.758	3.347	71.92	917.76	0.28	924.1093	912.4846	916.6862	0.269	0.359	0.186	2766.681	2752.269	2763.171	0.01	
03/05/2016 1:00	6039	13.44	13.36	5.026	5.026	167.3	12.77	7.252	0	0	1010.608	2.963	70.71	917.7446	0.449	924.0735	912.4598	916.7007	0.481	0.513	0.332	2767.441	2753.218	2762.692	0.01	
03/05/2016 2:00	6040	13.38	13.3	4.739	4.739	172.6	9.53	6.899	0	0	1010.444	2.758	67.28	917.7756	0.281	924.1064	912.577	916.6434	0.281	0.353	0.182	2766.934	2752.567	2763.131	0.01	
03/05/2016 3:00	6041	13.32	13.24	4.386	4.386	160.5	6.847	6.507	0	0	1010.443	2.146	71.09	917.8332	0.228	924.1782	912.6595	916.6619	0.24	0.281	0.141	2767.814	2753.857	2762.966	0.01	
03/05/2016 4:00	6042	13.26	13.19	3.96	3.96	163.2	6.538	5.096	0	0	1010.28	1.458	73.06	917.7961	0.347	924.1518	912.5417	916.6945	0.372	0.425	0.206	2768.132	2754.251	2763.776	0.01	
03/05/2016 5:00	6043	13.2	13.16	4.205	4.205	172.7	5.173	5.253	3.713867	0.01336992	1009.953	1.081	74.21	917.8742	0.392	924.1635	912.796	916.6632	0.341	0.523	0.268	2767.165	2754.72	2763.122	0.01	
03/05/2016 6:00	6044	13.44	13.16	4.181	4.181	171.6	4.421	5.978	66.42136	0.2391169	1009.789	1.762	70.28	918.0952	0.181	923.447	913.9067	916.9318	0.17	0.241	0.107	2766.161	2754.711	2763.356	0.01	
03/05/2016 7:00	6045	14.07	13.44	2.521	2.521	151.6	10.4	3.763	156.203	0.5623308	1009.461	3.168	65.76	918.0044	0.229	923.6619	913.4081	916.9432	0.178	0.323	0.145	2766.59	2753.578	2763.489	0.05	
03/05/2016 8:00	6046	14.64	14.07	2.57	2.57	165	11.23	3.763	138.8861	0.4999899	1009.133	2.754	70.02	917.9459	0.167	923.6592	913.2106	916.9679	0.169	0.199	0.123	2766.853	2754.109	2763.597	0.08	
03/05/2016 9:00	6047	14.64	14.36	2.3	2.3	150.2	21.76	4.018	199.9057	0.7196605	1009.098	3.333	66.34	917.8796	0.198	924.204	912.6809	916.7537	0.197	0.246	0.136	2767.286	2753.293	2763.559	0.1	
03/05/2016 10:00	6048	14.64	14.21	3.104	3.104	137.2	12.52	5.37	280.1908	1.008687	1008.554	3.624	65.56	917.8897	0.4	924.2178	912.7308	916.7206	0.392	0.527	0.222	2767.05	2753.465	2763.068	0.14	
03/05/2016 11:00	6049	14.23	14.19	2.45	2.45	149.1	14.01	4.194	251.0024	0.9036087	1008.528	3.861	68.9	917.8408	0.115	924.2281	912.5964	916.6979	0.109	0.145	0.081	2767.387	2753.179	2763.312	0.13	
03/05/2016 12:00	6050	14.27	14.21	1.743	1.743	166.6	30.01	3.822	191.7982	0.6904736	1008.705	3.362	77.91	917.8323	0.067	924.2281	912.7426	916.5262	0.063	0.082	0.054	2767.365	2753.471	2763.16	0.09	
03/05/2016 13:00	6051	14.32	14.15	3.66	3.66	187.9	35.23	6.88	348.9797	1.256327	1008.57	3.735	79.17	917.7899	0.621	923.9155	912.6406	916.8137	0.734	0.673	0.406	2766.575	2752.75	2764.209	0.15	
03/05/2016 14:00	6052	14.29	14.06	3.234	3.234	239.2	29.09	6.409	472.6105	1.701398	1008.528	3.885	81.9	917.8438	0.147	923.4932	912.9852	917.0532	0.151	0.148	0.141	2766.474	2753.886	2763.806	0.18	
03/05/2016 15:00	6053	14.32	14.25	3.992	3.992	260.2	10.81	6.194	313.5461	1.128766	1008.856	3.171	86.3	917.7849	0.49	924.0676	912.5469	916.7401	0.511	0.386	0.386	2766.722	2753.604	2763.39	0.12	
03/05/2016 16:00	6054	14.32	14.22	4.905	4.905	253.3	12.27	7.722	347.655	1.251558	1008.95	3.245	80.1	917.7654	0.585	924.1547	912.2607	916.8807	0.517	0.596	0.637	2768.152	2754.022	2764.776	0.13	
03/05/2016 17:00	6055	14.29	14.24	5.613	5.613	219.3	16.41	6.417	265.4279	0.9555407	1008.726	3.266	67.6	917.7836	0.783	924.032	912.5222	916.7967	0.857	0.912	0.524	2767.846	2753.637	2762.622	0.11	
03/05/2016 18:00	6056	14.34	14.25	4.62	4.62	232.4	13.46	7.624	191.3223	0.6887603	1008.753	2.916	62.58	917.7791	0.451	924.2679	912.4468	916.6225	0.436	0.552	0.34	2766.834	2751.707	2762.683	0.08	
03/05/2016 19:00	6057	14.34	14.22	4.11	4.11	223.1	16.16	7.213	118.6814	0.4272529	1008.624	2.468	60.78	917.7651	0.383	924.2529	912.4717	916.5709	0.335	0.475	0.319	2767.405	2753.124	2762.705	0.06	
03/05/2016 20:00	6058	14.27	14.02	3.708	3.708	236.1	13.15	6.096	61.99511	0.2231824	1008.806	1.968	59.53	917.8113	0.164	924.4816	912.4633	916.4891	0.169	0.179	0.142	2767.224	2752.6			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
05/05/2016 20:00	6106	14.15	13.98	6.057	6.057	185.7	11.15	10	69.99453	0.2519803	1013.72	1.592	53.18	917.3386	0.419	924.9719	911.7214	915.3224	0.384	0.563	0.249	2769.617	2753.004	2761.637	0.03
05/05/2016 21:00	6107	13.99	13.79	4.895	4.895	165	9.34	8.11	11.49187	0.04137075	1013.391	1.234	59.09	917.3405	0.244	924.9001	911.7964	915.3248	0.285	0.273	0.153	2768.311	2752.376	2761.809	0.02
05/05/2016 22:00	6108	13.81	13.68	4.133	4.133	167.4	18.85	7.468	0	0	1013.065	0.872	67.13	917.4026	0.58	924.8611	911.9492	915.3975	0.682	0.644	0.358	2768.443	2752.712	2762.324	0.01
05/05/2016 23:00	6109	13.69	13.59	7.256	7.256	166.2	9.73	10.09	0	0	1012.573	0.139	77.65	917.4582	1.211	924.3732	912.202	915.7994	1.291	1.329	0.984	2766.42	2751.852	2760.601	0.01
06/05/2016 0:00	6110	13.6	13.52	6.02	6.02	157.1	11.07	10.07	0	0	1012.25	-0.43	81.9	917.4651	0.816	924.7708	912.1691	915.4554	0.722	1.034	0.638	2768.158	2754.576	2762.292	0
06/05/2016 1:00	6111	13.53	13.45	6.196	6.196	179.5	19.87	11.58	0	0	1011.918	-0.08	75.41	917.489	1.895	924.1413	912.6634	915.662	1.987	2.322	1.195	2770.495	2753.242	2763.877	0.01
06/05/2016 2:00	6112	13.47	13.39	8.73	8.73	188.3	14.34	14.05	0	0	1011.673	-0.093	73.55	917.7519	1.421	923.5812	912.9948	916.6797	1.815	1.467	0.78	2766.502	2752.459	2762.108	0.01
06/05/2016 3:00	6113	13.41	13.33	9.34	9.34	188.8	12.43	15.66	0	0	1011.099	-0.318	73.72	918.4546	4.688	921.3616	914.7923	919.21	4.245	5.001	4.786	2762.4	2775.748	2777.32	0.01
06/05/2016 4:00	6114	13.35	13.28	7.078	7.078	187	38.22	12.58	0	0	1011.018	-0.321	73.83	917.6885	0.603	924.1328	912.4462	916.4866	0.644	0.735	0.368	2767.551	2753.175	2763.128	0.01
06/05/2016 5:00	6115	13.29	13.24	6.259	6.259	154.3	46.43	12.29	4.690422	0.01688552	1010.122	-0.704	81.3	917.5019	2.971	921.1091	914.1635	917.233	3.567	3.232	1.821	2761.963	2754.008	2760.136	0
06/05/2016 6:00	6116	13.39	13.24	5.268	5.268	148	22.58	11.39	30.74308	0.1106751	1009.959	-0.695	83.4	917.459	1.773	923.2591	912.8438	916.274	2.29	1.848	0.876	2764.711	2750.495	2762.731	0
06/05/2016 7:00	6117	13.77	13.39	8.31	8.31	171.5	11.96	14.35	74.18854	0.2670787	1009.052	-0.174	81.1	918.1501	3.041	922.0824	914.2103	918.1577	2.454	3.74	2.78	2766.806	2753.84	2765.104	0.01
06/05/2016 8:00	6118	14.58	13.77	9.43	9.43	171.4	8.16	14.62	140.2272	0.5048179	1008.97	0.062	81.7	917.7681	2.452	922.6744	913.9325	916.6975	2.197	3.161	1.795	2767.029	2752.368	2762.005	0.06
06/05/2016 9:00	6119	14.66	14.55	10.65	10.65	162.8	6.477	14.01	228.5984	0.8229543	1008.151	0.252	82.8	917.6083	3.745	919.1641	915.5786	918.0823	4.421	4.022	2.52	2765.172	2751.73	2760.809	0.08
06/05/2016 10:00	6120	14.66	14.6	9.85	9.85	159.4	6.836	13.78	433.2383	1.559658	1008.149	1.376	80.2	917.9396	3.138	920.0829	915.0734	918.6627	3.439	3.404	2.477	2763.51	2750.459	2761.7	0.13
06/05/2016 11:00	6121	14.63	14.27	9.56	9.56	158.3	7.73	13.33	498.023	1.792883	1007.823	1.983	80.9	917.8605	3.429	920.4119	915.4849	917.6847	3.894	3.578	2.702	2766.751	2755.096	2762.819	0.15
06/05/2016 12:00	6122	14.3	14.27	10.22	10.22	159.1	6.735	13.29	499.1844	1.797064	1007.168	2.232	81.1	918.822	4.564	917.8293	918.5122	920.1241	4.695	5.432	3.309	2762.799	2770.042	2767.101	0.15
06/05/2016 13:00	6123	14.31	14.27	11.32	11.32	158.6	6.758	14.62	460.5711	1.658056	1006.185	2.341	81.8	918.9012	4.409	917.8906	918.2762	920.5369	4.941	4.334	3.888	2761.113	2760.027	2767.789	0.14
06/05/2016 14:00	6124	14.32	14.25	11.55	11.55	165.5	7.491	16.56	354.9344	1.277764	1006.267	2.688	81.6	918.2343	3.466	920.5594	916.0751	918.0683	4.203	3.193	2.861	2759.4	2757.324	2762.701	0.12
06/05/2016 15:00	6125	14.32	14.27	10.83	10.83	166.6	7.671	15.54	356.4687	1.283287	1005.53	2.742	84.6	918.6611	5.492	917.0381	917.6873	921.258	7.486	4.74	3.46	2765.234	2758.781	2770.811	0.11
06/05/2016 16:00	6126	14.34	14.2	10.87	10.87	169.5	7.099	15.35	163.4092	0.588273	1004.793	2.353	86	918.5184	3.151	922.4258	915.351	917.7783	3.376	2.05	2762.06	2757.088	2762.706	0.07	
06/05/2016 17:00	6127	14.28	14.19	8.69	8.69	169.2	9.08	14.8	90.61748	0.3262229	1004.875	1.818	87.8	920.1616	4.687	923.3681	917.1689	919.9478	5.062	5.075	3.81	2767.176	2757.095	2766.547	0.04
06/05/2016 18:00	6128	14.62	14.2	10.15	10.15	176.5	13.25	16.78	138.0576	0.4970074	1003.892	1.887	84.3	920.6038	5.6	917.0712	919.8306	924.9098	7.352	4.404	4.543	2773.49	2763.984	2764.151	0.05
06/05/2016 19:00	6129	14.64	14.27	12.68	12.68	188.2	11.38	21.09	187.731	0.6758314	1003.565	2.395	74.92	922.3793	9.59	914.3348	923.5284	929.2746	10.35	9.76	8.59	2765.404	2757.522	2770.721	0.09
06/05/2016 20:00	6130	14.47	14.06	13.11	13.11	199.8	10.33	19.85	56.03941	0.2017419	1003.729	1.626	72.61	919.3687	2.043	925.057	915.2578	917.7914	2.474	2.252	1.151	2770.354	2751.573	2763.974	0.06
06/05/2016 21:00	6131	14.07	13.89	9.32	9.32	216.3	12.53	14.97	13.68953	0.04928232	1004.056	1.659	67.03	920.7374	3.914	923.0728	918.3033	920.8361	4.142	4.049	3.523	2767.501	2760.474	2770.114	0.02
06/05/2016 22:00	6132	13.9	13.77	8.88	8.88	210.6	9.91	13.82	0.1751916	0.00063069	1004.547	1.406	60.02	919.871	2.66	924.6815	916.1891	918.7424	3.076	2.695	2.122	2766.132	2758.187	2763.608	0.03
06/05/2016 23:00	6133	13.78	13.67	9.52	9.52	204.8	8.15	14.27	0	0	1004.384	0.699	58.1	921.2891	4.739	924.3752	917.3873	922.1049	3.886	5.706	4.441	2770.921	2756.235	2766.146	0.03
07/05/2016 0:00	6134	13.69	13.59	12.17	12.17	208.5	7.197	17.64	0	0	1003.981	0.176	57.32	921.0561	6.25	921.0125	919.0982	923.0574	5.96	7.728	4.683	2768.719	2754.174	2769.085	0.03
07/05/2016 1:00	6135	13.62	13.53	10.75	10.75	217	7.332	16.15	0	0	1003.657	-0.298	57.11	920.4063	5.031	921.7161	917.4143	922.0886	6.669	2.843	4.836	2765.935	2755.692	2765.667	0.03
07/05/2016 2:00	6136	13.54	13.46	12.12	12.12	217	9.78	18.05	0	0	1003.598	-0.655	56.37	920.4969	3.566	923.5799	916.1412	923.7698	4.036	3.648	2.924	2773.836	2765.876	2770.598	0.03
07/05/2016 3:00	6137	13.48	13.41	11.75	11.75	224.5	9.44	18.93	0	0	1003.373	-1.014	57.31	920.9211	6.294	921.2089	918.3262	923.2281	6.62	7.431	4.451	2768.083	2758.043	2772.534	0.03
07/05/2016 4:00	6138	13.42	13.35	8.5	8.5	224.1	12.6	15.19	0	0	1003.949	-1.266	55.23	920.0493	3.326	925.2155	915.1577	919.7747	3.961	3.362	2.49	2770.563	2760.386	2767.7	0.03
07/05/2016 5:00	6139	13.43	13.35	8.97	8.97	214.3	8.41	12.86	18.53812	0.06673722	1003.703	-1.722	58.52	919.6512	1.985	925.5186	915.2605	919.7746	2.234	2.435	0.947	2769.584	2756.876	2763.514	0.02
07/05/2016 6:00	6140	13.75	13.42	9.23	9.23	221.4	7.426	12.62	103.0245	0.3708884	1003.62	-1.695	58.33	919.8647	2.277	925.1494	915.9666	918.4781	2.495	1.439	2.695	2769.895	2755.839	2764.343	0.08
07/05/2016 7:00	6141	14.37	13.75	9.56	9.56	217.2	8.17	12.58	213.2111	0.7675599	1003.425	-1.523	58.68	919.5643	1.799	924.7424	915.92	918.0305	1.561	2.032	1.774	2767.489	2761.283	2766.939	0.1
07/05/2016 8:00	6142	14.66	14.38	7.969	7.969	225.6	11.81	12.19	342.4663	1.232879	1003.237	-0.945	57.91	919.2421	1.283	924.1805	915.5967	917.9493	1.327	1.604	0.778	2767.937	2754.523	2760.6	0.13
07/05/2016 9:00	6143	14.66	14.59	5.476	5.476	231.2	12.75	10.53	481.1613	1.73218	1003.234	-0.092	55.26	919.6317	0.587	923.8849	916.1932	918.8168	0.528	0.791	0.36	2766.289	2756.066	2765.969	0.17
07/05/2016 10:00	6144	14.65	14.21	4.742	4.742	231.2	21.09	9.25	599.7809	2.159211	1003.065	0.716	52.57	919.5012	0.297	923.8922	915.6716	918.9396	0.316	0.352	0.2	2766.585	2756.324	2766.395	0.22
07/05/2016 11:00	6145	14.31	14.15	4.655	4.655	234.4	22.2	8.58	6																

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
09/05/2016 10:00	6192	14.63	14.14	5.391	5.391	302	15.73	8.35	358.4724	1.290501	1018.679	4.879	52.3	922.605	1.435	924.6313	920.2026	922.981	1.679	1.443	1.13	2768.674	2760.658	2769.666	0.19	
09/05/2016 11:00	6193	14.24	14.14	5.178	5.178	285.8	20.25	9.56	418.5696	1.506851	1018.678	5.462	47.41	923.0552	1.261	922.139	922.1278	924.8988	1.405	0.762	1.488	2765.612	2764.733	2772.601	0.22	
09/05/2016 12:00	6194	14.24	14.08	4.826	4.826	297.1	22.81	11.54	481.1718	1.732218	1018.549	6.205	43.02	921.9882	0.66	927.5896	917.006	921.3691	0.657	0.632	0.689	2772.187	2757.817	2768.352	0.25	
09/05/2016 13:00	6195	14.2	14.08	3.297	3.297	317.9	20.27	7.134	327.5837	1.179301	1018.496	5.985	43.04	921.9839	0.308	927.3643	916.9394	921.6481	0.367	0.25	0.295	2770.348	2759.493	2770.41	0.19	
09/05/2016 14:00	6196	14.19	13.99	2.451	2.451	323.7	22.82	7.899	334.4192	1.203909	1018.466	6.595	45.41	926.1725	0.231	926.3875	918.4959	922.494	0.275	0.128	0.262	2769.528	2760.927	2770.894	0.19	
09/05/2016 15:00	6197	14.26	14.11	2.713	2.713	199.8	89.6	7.742	247.5979	0.8913525	1018.511	5.802	51.07	922.1406	0.321	928.8798	916.3757	921.1664	0.294	0.28	0.379	2772.619	2758.635	2769.627	0.15	
09/05/2016 16:00	6198	14.16	13.97	4.16	4.16	193.8	24.57	6.429	483.1378	1.739296	1017.972	7.072	47.24	922.7548	0.622	923.8132	920.4284	924.0228	0.598	0.298	0.845	2766.624	2763.315	2771.825	0.23	
09/05/2016 17:00	6199	14.16	14.09	3.303	3.303	220.4	17.41	5.468	237.1933	0.8538957	1017.646	7.163	43.29	922.7642	0.32	924.4362	920.2867	923.5697	0.312	0.166	0.427	2767.555	2762.798	2772.152	0.15	
09/05/2016 18:00	6200	14.14	14.12	1.257	1.257	200.6	40.32	3.352	134.3648	0.4837132	1017.499	7.166	41.97	922.1779	0.101	925.1889	919.2704	922.0745	0.165	0.03	0.052	2769.198	2761.457	2770.109	0.08	
09/05/2016 19:00	6201	14.21	14.13	2.689	2.689	177.3	10.16	4.175	103.8459	0.3738452	1017.202	6.954	44.14	922.4523	0.373	926.0605	919.0126	922.2839	0.355	0.208	0.497	2769.211	2761.306	2770.606	0.08	
09/05/2016 20:00	6202	14.19	13.9	3.41	3.41	176.8	8.08	4.214	53.42299	0.1923227	1017.042	6.238	47.38	922.1323	0.267	927.5615	917.6538	921.1816	0.236	0.187	0.352	2771.952	2759.914	2768.047	0.07	
09/05/2016 21:00	6203	13.92	13.74	3.371	3.371	161.5	5.465	4.018	16.40281	0.05905011	1017.042	5.734	46.58	922.0422	0.237	928.1942	917.074	920.8585	0.185	0.265	0.265	2772.543	2758.754	2767.985	0.03	
09/05/2016 22:00	6204	13.76	13.62	4.329	4.329	166.9	13.72	7.84	0.05574971	0.000200699	1017.215	5.169	51.16	922.0159	0.482	928.5719	916.8239	920.6518	0.459	0.425	0.425	2772.785	2758.439	2768.9	0.03	
09/05/2016 23:00	6205	13.63	13.54	5.86	5.86	177.9	5.935	7.958	0	0	1017.021	3.952	62.95	921.926	0.556	928.9604	916.3495	920.4678	0.52	0.59	0.557	2773.156	2758.154	2768.092	0.02	
10/05/2016 0:00	6206	13.55	13.46	5.113	5.113	167.1	10.95	8.08	0	0	1017.487	3.386	68.6	922.0247	0.541	929.399	916.2601	920.415	0.429	0.713	0.431	2773.979	2757.758	2767.551	0.02	
10/05/2016 1:00	6207	13.48	13.39	3.281	3.281	162.9	8.5	4.959	0	0	1017.569	2.483	75.62	921.9089	0.372	929.4926	916.0514	920.1829	0.41	0.448	0.214	2773.351	2757.897	2768.288	0.01	
10/05/2016 2:00	6208	13.41	13.33	3.178	3.178	147.5	13.73	4.547	0	0	1017.815	1.766	82.8	921.9836	0.036	929.6015	916.1889	920.1602	0.038	0.043	0.024	2773.862	2757.709	2767.606	0	
10/05/2016 3:00	6209	13.35	13.27	1.077	1.077	127.8	21.48	2.019	0	0	1017.979	1.72	83.2	922.021	0.024	929.6392	916.2272	920.1965	0.023	0.03	0.017	2773.99	2757.807	2767.614	0	
10/05/2016 4:00	6210	13.29	13.22	1.317	1.317	138.3	11.18	2.783	0.03666883	0.000132008	1018.305	1.906	81.7	922.0466	0.017	929.6187	916.2855	920.2354	0.019	0.019	0.012	2773.938	2757.856	2767.689	0	
10/05/2016 5:00	6211	13.24	13.17	0.576	0.576	51.8	37.81	1.627	2.593451	0.009336424	1018.798	2.072	80.7	922.0768	0.008	929.6655	916.3124	920.2526	0.009	0.009	0.007	2774.021	2757.884	2767.685	0	
10/05/2016 6:00	6212	13.29	13.17	0.917	0.917	57.17	18.39	1.744	27.21438	0.09797175	1019.289	1.801	85.2	922.1014	0.008	929.6886	916.3336	920.2819	0.01	0.006	0.006	2774.011	2757.917	2767.751	0	
10/05/2016 7:00	6213	13.83	13.28	0.628	0.628	63.56	26.57	1.568	93.62677	0.3370564	1019.862	2.262	85.1	922.1086	0.013	929.6124	916.3072	920.4063	0.01	0.017	0.01	2773.946	2757.882	2767.882	0.04	
10/05/2016 8:00	6214	14.63	13.83	0.652	0.652	328.6	24.7	2.92	184.5908	0.6645269	1020.265	3.101	78.24	922.166	0.092	928.9436	916.6443	920.9102	0.095	0.107	0.071	2773.113	2758.262	2768.538	0.08	
10/05/2016 9:00	6215	14.66	14.58	2.797	2.797	327.4	14.33	5.449	373.0379	1.342936	1020.824	3.727	75.59	922.2083	0.281	926.7823	917.5802	922.2625	0.253	0.341	0.237	2770.212	2758.73	2770.028	0.15	
10/05/2016 10:00	6216	14.65	14.14	3.65	3.65	328.7	20.47	6.703	375.266	1.350958	1021.135	5.197	62.76	922.2065	0.787	927.5817	917.5111	921.5267	0.771	0.864	0.72	2771.964	2758.993	2770.616	0.18	
10/05/2016 11:00	6217	14.2	14.09	4.349	4.349	336.3	20.06	7.272	365.3224	1.315161	1021.431	5.847	55.37	922.2581	0.721	927.859	917.636	922.037	0.672	0.724	0.764	2772.03	2759.606	2767.735	0.19	
10/05/2016 12:00	6218	14.23	14.15	4.134	4.134	356.9	20.13	9.25	251.9972	0.90719	1022.279	5.841	54.76	922.1321	1.104	927.9534	916.7506	921.6924	1.391	1.089	0.73	2773.409	2757.406	2768.632	0.16	
10/05/2016 13:00	6219	14.27	14.02	3.057	3.057	105.1	19.69	6.997	606.614	2.18381	1022.412	6.713	44.99	923.1025	0.483	919.6448	922.5363	927.1265	0.697	0.18	0.427	2761.062	2765.509	2777.48	0.29	
10/05/2016 14:00	6220	14.16	13.93	4.412	4.412	8.53	28.05	8.47	380.7721	1.37078	1022.631	7.667	35.62	923.2722	1.285	921.5633	922.6007	925.6523	1.176	1.315	1.356	2763.629	2764.473	2773.717	0.24	
10/05/2016 15:00	6221	14.16	14.03	5.254	5.254	350.2	21.4	8.64	595.1597	2.142575	1023.008	8.14	32.64	923.3846	1.184	919.9245	923.8004	926.429	1.405	0.842	1.234	2761.851	2765.58	2774.131	0.32	
10/05/2016 16:00	6222	14.14	14.03	5.043	5.043	334.6	21.98	13.9	400.6435	1.442317	1023.685	8.1	32.04	923.6379	0.388	923.3391	920.0933	924.4819	0.478	0.226	0.478	2765.983	2762.489	2772.852	0.25	
10/05/2016 17:00	6223	14.14	14.04	4.703	4.703	354.2	28.53	8.04	325.7411	1.172668	1024.022	8.05	31.91	922.685	0.336	924.0436	920.09	923.9213	0.348	0.249	0.394	2766.658	2762.379	2772.954	0.21	
10/05/2016 18:00	6224	14.15	14.12	3.506	3.506	347.6	16.26	6.076	198.3655	0.7141157	1024.276	7.666	31.88	923.0039	0.802	922.9989	921.0042	925.0085	0.803	0.52	1.007	2765.612	2764.553	2771.908	0.14	
10/05/2016 19:00	6225	14.15	14.07	4.842	4.842	340.5	21.12	7.722	271.207	0.9763451	1024.678	8.08	30.05	922.8841	0.828	923.0546	921.0612	924.5366	0.705	0.537	1.128	2765.42	2764.646	2772.923	0.19	
10/05/2016 20:00	6226	14.09	13.92	4.749	4.749	349.3	18.05	8.11	155.2676	0.5589635	1025.359	7.167	33.34	922.4473	0.366	926.1345	918.7489	922.4583	0.345	0.239	0.475	2770.211	2760.435	2770.06	0.13	
10/05/2016 21:00	6227	13.99	13.79	3.389	3.389	341.2	12.9	4.782	55.7622	0.2007439	1026.048	5.706	39.28	921.9116	0.2	930.2347	915.6667	919.4366	0.225	0.189	0.189	2774.516	2757.059	2767.189	0.04	
10/05/2016 22:00	6228	13.81	13.64	1.068	1.068	323.3	21.64	3.077	1.33392	0.004802112	1026.494	4.636	41.98	921.9339	0.009	929.8901	915.7484	920.1632	0.009	0.009	0.01	2774.274	2757.189	2767.578	0	
10/05/2016 23:00	6229	13.66	13.55	1.033	1.033	263.7	25.79	1.784	0	0	1026.823	4.084	43.01	921.9974	0.054	929.9277	915.7957	920.2687	0.053	0.068	0.034	2774.337	2757.358	2767.653	0	
11/05/2016 0:00	6230	13.56	13.47	1.902	1.902	232.6	8.7	2.822	0	0	1026.987	3.574	43.89	922.0208	0.105	929.8943	915.8406	920.3276	0.109	0.089	0.0					

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
13/05/2016 0:00	6278	13.4	13.31	5.13	5.13	137.9	6.313	6.782	0	0	1027.194	7.469	39.38	922.7333	0.38	924.2849	920.2853	923.6297	0.362	0.258	0.485	2766.909	2762.8	2772.508	0.04	
13/05/2016 1:00	6279	13.33	13.25	3.71	3.71	132.7	7.758	5.37	0	0	1027.371	7.857	36.32	922.8456	0.333	924.3453	920.267	923.9246	0.324	0.187	0.439	2767.329	2762.822	2772.919	0.03	
13/05/2016 2:00	6280	13.27	13.2	1.501	1.501	114.5	18.27	3.587	0	0	1027.376	8.95	32.38	922.2767	0.128	926.2836	921.9895	923.9246	0.161	0.086	0.126	2770.33	2760.428	2769.501	0.01	
13/05/2016 3:00	6281	13.21	13.15	0.955	0.955	151.8	15.59	2.489	0	0	1027.403	8.4	33.68	922.1238	0.115	929.0791	916.4351	920.8575	0.137	0.122	0.078	2773.487	2757.871	2768.383	-0.01	
13/05/2016 4:00	6282	13.16	13.09	0.598	0.598	237.6	19.65	1.411	0	0	1027.421	8.13	34.25	922.1422	0.073	929.0809	916.3826	920.9628	0.085	0.064	0.064	2773.537	2757.828	2768.404	-0.02	
13/05/2016 5:00	6283	13.19	13.09	0.553	0.553	44.48	40.3	1.333	24.64224	0.08871208	1027.341	8.08	34.32	922.3703	0.016	928.9977	917.5454	920.5676	0.02	0.013	0.014	2773.166	2759.428	2768.082	-0.01	
13/05/2016 6:00	6284	13.44	13.18	0.85	0.85	81.8	18.28	2.274	105.8961	0.3812259	1027.364	8.66	33.97	923.0342	0.185	925.2881	920.3973	923.4173	0.264	0.076	0.165	2768.257	2763.067	2772.032	0.02	
13/05/2016 7:00	6285	13.95	13.44	1.675	1.675	69.41	19.57	3.116	221.6311	0.7978718	1027.31	8.99	33.57	923.5475	0.276	921.3906	923.0795	926.1725	0.367	0.11	0.287	2763.452	2766.311	2775.419	0.13	
13/05/2016 8:00	6286	14.61	13.95	2.096	2.096	66.04	41.11	3.998	351.7531	1.266311	1027.297	9.61	32.39	923.8182	0.299	917.5746	924.9536	928.9264	0.389	0.151	0.306	2760.357	2768.619	2778.855	0.2	
13/05/2016 9:00	6287	14.59	14.48	2.16	2.16	45.74	35.47	5.331	482.9468	1.738609	1027.238	10.32	31.7	923.9151	0.458	914.2514	926.8111	930.6828	0.45	0.219	0.615	2754.84	2770.795	2780.988	0.27	
13/05/2016 10:00	6288	14.54	13.89	2.953	2.953	2.411	28.98	5.88	600.8116	2.162922	1027.073	10.68	31.66	924.3729	0.448	912.3288	928.3893	932.4006	0.48	0.225	0.567	2752.933	2772.863	2782.187	0.34	
13/05/2016 11:00	6289	13.92	13.76	2.836	2.836	26.41	55.72	6.076	705.3682	2.539325	1026.909	11.66	28.26	924.9991	0.619	907.0908	931.7941	936.1124	0.678	0.16	0.816	2747.99	2777.032	2786.462	0.4	
13/05/2016 12:00	6290	13.82	13.71	2.722	2.722	117	37.34	10.19	774.4714	2.788097	1026.582	13.11	22.96	925.1705	0.864	905.1232	933.4461	936.9424	0.936	0.495	1.057	2742.646	2778.719	2788.464	0.45	
13/05/2016 13:00	6291	13.86	13.76	3.857	3.857	136.3	25.97	8.27	808.5809	2.910891	1026.418	13.29	23.43	925.2364	1.289	904.4901	933.8942	937.325	1.15	0.83	1.725	2741.481	2779.57	2788.429	0.48	
13/05/2016 14:00	6292	13.79	13.73	3.379	3.379	144.5	39.21	8.39	805.1049	2.898378	1026.254	13.76	22.84	926.5457	1.042	905.3782	935.1454	939.1133	1.539	0.433	0.837	2739.019	2781.599	2790.511	0.48	
13/05/2016 15:00	6293	13.79	13.69	2.497	2.497	159.1	44.3	5.586	756.2726	2.722581	1025.869	14.71	22.63	926.3796	0.889	901.8738	936.9102	940.3549	1.297	0.182	0.811	2739.317	2782.719	2789.095	0.46	
13/05/2016 16:00	6294	13.78	13.7	3.22	3.22	154.3	43.88	6.801	676.9877	2.437156	1025.539	14.8	23.62	925.9481	0.937	900.7228	937.2857	939.8356	0.815	0.423	1.338	2739.1	2783.305	2791.41	0.42	
13/05/2016 17:00	6295	13.85	13.76	2.859	2.859	131.8	46.63	5.939	574.0756	2.066672	1025.218	14.8	23.52	925.4097	0.94	901.1045	937.9486	937.9486	0.571	0.199	1.512	2737.591	2783.461	2793.414	0.36	
13/05/2016 18:00	6296	13.86	13.81	2.024	2.024	165	39.63	4.096	446.4307	1.607151	1024.747	14.93	23.17	925.5693	0.511	901.7031	936.3599	938.6451	0.778	0.114	0.407	2742.063	2782.333	2789.442	0.27	
13/05/2016 19:00	6297	13.83	13.75	2.443	2.443	168	25.05	4.645	311.8371	1.122614	1024.617	14.74	23.24	923.8709	0.264	902.4949	934.7001	934.4178	0.352	0.129	0.263	2741.188	2780.275	2784.963	0.2	
13/05/2016 20:00	6298	13.77	13.69	4.543	4.543	123.4	19.66	7.879	180.0312	0.6481124	1024.454	12.87	26.22	924.8392	0.812	909.7538	931.6812	933.0825	0.842	0.488	1.016	2743.477	2776.334	2782.387	0.17	
13/05/2016 21:00	6299	13.71	13.59	4.367	4.367	116.2	7.336	6.174	61.86372	0.2227094	1024.673	10.47	32.1	923.6678	0.465	915.8439	928.506	928.506	0.503	0.24	0.581	2756.53	2770.447	2778.882	0.06	
13/05/2016 22:00	6300	13.6	13.45	3.855	3.855	136.6	10.32	6.233	3.40715	0.01226574	1024.701	9.19	35	923.5669	0.712	919.64	924.1061	926.9546	0.71	0.417	0.917	2759.993	2767.865	2777.614	0.04	
13/05/2016 23:00	6301	13.47	13.37	5.307	5.307	153.7	7.303	7.585	0	0	1024.574	8.84	36.95	923.6187	0.85	919.2963	924.4048	927.155	0.856	0.598	1.037	2763.325	2768.45	2775.365	0.05	
14/05/2016 0:00	6302	13.38	13.29	6.197	6.197	155.1	7.281	7.899	0	0	1024.41	8.84	37.38	923.4087	1.118	919.5078	924.0505	926.6677	0.779	1.007	1.458	2760.75	2767.042	2776.36	0.05	
14/05/2016 1:00	6303	13.31	13.23	6.15	6.15	162.3	7.899	8.01	0	0	1024.246	8.65	38.37	923.263	0.896	920.7263	922.946	926.5169	0.774	0.528	1.238	2763.599	2766.655	2774.46	0.05	
14/05/2016 2:00	6304	13.24	13.18	7.64	7.64	159.4	5.449	10.76	0	0	1024.001	8.66	38.45	923.6553	2.654	918.0005	925.4892	927.476	2.863	2.218	2.863	2761.036	2766.252	2772.865	0.06	
14/05/2016 3:00	6305	13.19	13.12	11.48	11.48	172.3	4.318	13.92	0	0	1023.667	8.65	36.62	924.0329	4.921	912.9611	929.7175	929.42	5.399	2.853	3.557	2761.224	2764.801	2775.061	0.07	
14/05/2016 4:00	6306	13.14	13.07	11.23	11.23	175.9	4.752	13.03	0.1573211	0.000566356	1023.591	8.09	35.4	924.2101	3.801	915.7915	928.8738	927.9651	4.665	3.721	2.782	2764.334	2768.357	2775.794	0.07	
14/05/2016 5:00	6307	13.17	13.07	10.58	10.58	176.2	4.897	12.82	27.31125	0.0983205	1023.591	8.05	34.8	923.4672	3.783	916.551	927.6356	926.215	4.223	3.987	3.033	2760.963	2767.771	2770.805	0.07	
14/05/2016 6:00	6308	13.45	13.16	8.99	8.99	167.3	6.195	11.88	111.4123	0.4010843	1023.39	9.21	32.14	923.8578	2.887	918.3046	925.3981	928.8708	3.619	2.567	2.307	2758.848	2770.157	2772.611	0.08	
14/05/2016 7:00	6309	14	13.45	5.721	5.721	156.2	11.43	9.72	223.833	0.8057988	1023.368	10.06	31.85	923.1121	0.606	918.7488	924.8314	925.7563	0.499	0.822	0.822	2761.217	2768.424	2775.191	0.21	
14/05/2016 8:00	6310	14.62	14	4.665	4.665	135.9	11.02	6.625	351.8682	1.266725	1023.202	10.73	30.84	923.4886	0.885	915.7155	926.8531	927.8973	0.793	0.526	1.202	2755.555	2771.869	2775.143	0.25	
14/05/2016 9:00	6311	14.55	14.47	4.817	4.817	121.1	16.29	8.76	479.3292	1.725585	1022.572	11.71	30.69	923.8411	1.44	912.2848	929.0645	930.174	1.626	0.916	1.654	2753.919	2773.562	2779.165	0.32	
14/05/2016 10:00	6312	14.49	13.88	5.514	5.514	127	18.35	8.9	596.5649	2.214634	1021.999	12.21	30.94	923.7646	1.786	910.7505	930.063	930.4805	1.504	1.851	1.97	2753.352	2773.094	2783.201	0.38	
14/05/2016 11:00	6313	13.92	13.83	5.774	5.774	117.2	24.37	9.72	700.2637	2.520949	1021.589	12.68	30.47	923.3179	1.556	911.8639	928.6969	929.3928	1.728	0.94	1.841	2751.539	2772.119	2777.83	0.43	
14/05/2016 12:00	6314	13.9	13.84	5.613	5.613	100.8	20.45	10.04	765.0608	2.754219	1021.18	13.27	29.59	923.5518	1.653	909.9612	929.8325	930.8615	1.522	0.804	2.287	2750.746	2774.147	2776.29	0.46	
14/05/2016 13:00	6315	13.92	13.78	5.676	5.676	142.2	18.81	9.92	801.5839	2.885702	1020.525	13.64	28.52	923.8345	0.753	909.028	930.8692	931.6063	0.881	0.339	0.901	2749.291	2776.006	2782.108	0.49	
14/05/2016 14:00	6316	13.86	13.73	5.481	5.481	128.2	24.83	9.92	800.6782	2.882442	1019.707	13.92	26.97	924.0257	1.507	908.5796	931.5028	931.9948	1.298	1.815	2.745	2745.74	2776.359	2784.564	0.49	
14/05/2016 15:0																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	ETos
16/05/2016 14:00	6364	13.98	13.83	8.6	8.6	223.6	15.71	13.29	816.3533	2.938872	1009.231	12.17	37.2	924.088	5.599	909.048	931.9366	931.2792	5.579	6.422	4.656	2741.75	2787.417	2789.668	0.46
16/05/2016 15:00	6365	13.96	13.84	8.29	8.29	219.8	13.76	13.72	854.1408	3.074907	1009.559	12.32	41.13	924.209	4.061	911.205	930.5603	930.8615	3.729	3.728	4.655	2751.454	2771.788	2779.078	0.47
16/05/2016 16:00	6366	14.06	13.94	10.58	10.58	218.8	8.63	14.27	473.6335	1.705081	1009.559	10.3	50.87	923.8689	4.375	913.3874	929.3104	928.9089	5.147	4.329	3.493	2759.156	2769.512	2779.14	0.28
16/05/2016 17:00	6367	14.1	14.04	7.818	7.818	209.6	10.87	13.09	246.1696	0.8862107	1010.435	8.96	58.06	923.1631	0.962	919.155	924.6271	925.707	1.085	0.547	1.14	2761.935	2767.897	2775.145	0.17
16/05/2016 18:00	6368	14.26	14.06	5.327	5.327	196.2	13.73	8.35	219.8837	0.7915812	1010.435	8.29	60.76	923.9056	0.766	920.6963	923.9056	924.3305	0.833	0.461	0.925	2761.808	2766.843	2772.579	0.13
16/05/2016 19:00	6369	14.14	13.95	4.847	4.847	213.5	19.36	10.09	155.9984	0.5615941	1010.277	7.648	61.53	922.5407	1.334	922.6924	921.9213	923.0085	1.245	1.369	1.384	2766.245	2763.775	2769.59	0.09
16/05/2016 20:00	6370	13.97	13.84	6.8	6.8	213.7	9.25	10.39	54.30001	0.19548	1009.919	6.394	66.6	922.3257	1.421	924.4212	920.6541	921.9019	1.539	1.316	1.398	2770.868	2762.42	2768.502	0.03
16/05/2016 21:00	6371	13.86	13.72	5.808	5.808	204.5	11.23	10.07	22.95276	0.08262995	1010.348	5.548	69.52	921.9156	1.154	926.7636	918.4754	920.5078	1.323	1.24	0.841	2771.121	2758.328	2768.438	0.02
16/05/2016 22:00	6372	13.73	13.59	5.181	5.181	203.7	15.49	10.05	3.920554	0.01411399	1010.386	4.98	69.5	921.6206	0.563	929.0769	916.4195	919.3654	0.68	0.516	0.471	2772.895	2757.869	2766.154	0.02
16/05/2016 23:00	6373	13.61	13.5	3.691	3.691	202.4	23.8	7.82	0	0	1010.584	4.58	65.75	921.6367	1.257	928.7993	916.6253	919.4855	1.453	1.341	0.912	2773.845	2757.466	2765.595	0.01
17/05/2016 0:00	6374	13.52	13.43	5.643	5.643	180.6	10.1	9.55	0	0	1010.689	3.888	63.06	921.5679	1.412	928.6049	916.7068	919.3919	1.561	1.59	1.008	2774.664	2757.828	2767.036	0.02
17/05/2016 1:00	6375	13.44	13.36	5.217	5.217	156.7	29.02	9.09	0	0	1010.444	3.123	60.48	921.5578	0.49	930.0359	915.7866	918.8507	0.517	0.608	0.291	2773.224	2756.239	2766.112	0.02
17/05/2016 2:00	6376	13.38	13.3	4.39	4.39	168.1	40.56	9.06	0	0	1010.608	2.366	59	921.581	0.231	930.119	915.8766	918.7474	0.263	0.283	0.101	2774.621	2757.218	2765.773	0.02
17/05/2016 3:00	6377	13.32	13.24	4.044	4.044	154	24.21	9.02	0	0	1009.871	1.667	61.34	921.5825	1.056	929.9334	915.8524	918.9616	1.041	1.337	0.687	2775.235	2756.958	2765.487	0.01
17/05/2016 4:00	6378	13.26	13.19	9.04	9.04	174.6	6.754	13.78	0.3285003	0.001182601	1009.625	1.165	63.25	923.2986	4.04	924.6487	920.8766	924.3707	5.143	3.548	3.151	2775.378	2761.482	2768.55	0.02
17/05/2016 5:00	6379	13.28	13.19	5.331	5.331	149.1	19.24	11.17	28.49167	0.10257	1009.789	1.097	65.16	922.3447	0.952	928.2894	920.4854	920.4854	1.205	0.866	0.719	2774.06	2762.749	2769.362	0.02
17/05/2016 6:00	6380	13.35	13.27	6.16	6.16	161.3	11.11	10.04	23.40344	0.08425237	1009.789	1.679	61.57	922.2263	0.659	929.2681	917.1301	920.2808	0.618	0.841	0.461	2772.267	2757.311	2767.506	0.02
17/05/2016 7:00	6381	13.59	13.34	5.251	5.251	149.8	15.56	9.72	60.67665	0.2184359	1009.789	1.89	60.97	922.1588	0.761	928.9857	917.0662	920.4246	0.995	0.412	0.773	2773.886	2759.017	2767.933	0.07
17/05/2016 8:00	6382	14.66	13.59	6.44	6.44	149.4	17.47	10.47	196.1614	0.7061812	1009.789	2.548	60.92	922.5283	1.296	927.0262	918.8965	921.6622	1.243	1.429	1.206	2771.009	2760.464	2769.379	0.12
17/05/2016 9:00	6383	14.67	14.58	6.429	6.429	135.1	12.49	10.62	500.6083	1.80219	1009.682	4.599	54.99	922.8718	2.853	924.4681	920.5799	923.5676	3.746	1.733	2.717	2771.28	2759.879	2769.062	0.22
17/05/2016 10:00	6384	14.65	14.17	6.086	6.086	156.5	19.6	9.8	463.2231	1.667603	1009.592	5.366	53.52	922.9694	2.36	924.9505	920.3179	922.9694	2.257	2.653	2.14	2772.713	2759.295	2769.322	0.22
17/05/2016 11:00	6385	14.23	14.14	6.034	6.034	148.9	25.01	11.47	363.1119	1.307203	1009.346	5.201	55.99	922.4683	2.193	926.082	918.7185	922.6043	2.537	1.946	2.051	2764.245	2760.629	2771.17	0.19
17/05/2016 12:00	6386	14.17	13.96	5.395	5.395	174.8	29.89	11.98	629.8416	2.26743	1008.826	7.176	51.15	923.488	4.186	916.274	926.5556	927.6345	5.18	3.963	3.169	2759.373	2767.552	2771.595	0.3
17/05/2016 13:00	6387	14.13	13.96	11.21	11.21	176.4	8.46	14.68	648.486	2.334549	1008.315	7.108	51.41	923.9648	5.756	917.9675	926.3934	927.5336	5.438	6.495	5.257	2755.073	2765.149	2774.474	0.3
17/05/2016 14:00	6388	14.17	14.08	10.68	10.68	181.3	6.56	14.7	379.572	1.366459	1008.67	6.832	54.13	923.5274	5.024	919.3373	925.4473	925.7975	4.695	6.097	4.062	2767.853	2767.957	2772.134	0.22
17/05/2016 15:00	6389	14.16	14.03	8.46	8.46	181.8	8.77	12.11	563.8494	2.029858	1008.796	7.763	51.56	923.0439	3.235	920.8216	923.7521	924.5581	3.462	2.945	2.945	2763.852	2765.528	2773.11	0.28
17/05/2016 16:00	6390	14.13	14.03	6.207	6.207	178.4	16.94	9.55	447.7791	1.612005	1008.961	8.06	49.21	922.4918	0.769	924.7417	920.1656	922.568	0.822	0.562	0.884	2768.648	2762.36	2769.294	0.24
17/05/2016 17:00	6391	14.13	14.02	4.098	4.098	150.9	16.55	6.99	403.2041	1.451535	1008.475	7.671	51.08	923.4561	0.823	920.0225	924.2879	926.058	0.86	0.413	1.058	2761.656	2766.867	2774.706	0.2
17/05/2016 18:00	6392	14.13	14.03	4.411	4.411	149.3	16.17	7.546	390.0384	1.404138	1008.306	7.897	49.56	922.6746	0.787	924.005	921.0114	923.0076	0.641	0.609	1.038	2767.957	2763.498	2770.878	0.2
17/05/2016 19:00	6393	14.18	13.99	4.078	4.078	177.7	17.05	6.35	109.3718	0.3937386	1008.357	6.825	53.43	922.2063	0.252	927.0045	918.4745	921.14	0.262	0.103	0.334	2771.507	2760.414	2767.895	0.06
17/05/2016 20:00	6394	14.01	13.83	6.888	6.888	241.6	8.66	11.52	34.72809	0.1250211	1008.661	3.159	82.5	922.013	1.26	929.2285	916.7672	920.0433	1.524	1.036	1.036	2774.198	2757.88	2767.663	0.01
17/05/2016 21:00	6395	13.85	13.68	6.014	6.014	214.4	11.65	9.39	7.847865	0.02825231	1008.969	1.41	92.5	923.8589	0.305	931.7963	918.316	921.4644	0.33	0.357	0.206	2776.435	2760.289	2769.39	0
17/05/2016 22:00	6396	13.69	13.58	3.76	3.76	188.5	25.5	7.683	1.657116	0.005965638	1008.642	1.997	88.7	924.1461	0.038	931.9489	918.7524	921.737	0.045	0.025	0.025	2776.704	2760.884	2769.588	0
17/05/2016 23:00	6397	13.59	13.5	3.489	3.489	148.4	14.77	5.704	0	0	1008.806	2.083	87.4	924.0688	0.457	918.6804	921.6941	921.6941	0.442	0.601	0.263	2777.842	2762.654	2769.268	0
18/05/2016 0:00	6398	13.52	13.43	4.808	4.808	154.5	5.173	6.292	0	0	1008.97	1.596	90.7	924.1232	0.301	931.9042	918.6752	921.7902	0.332	0.345	0.208	2776.509	2760.532	2769.716	0
18/05/2016 1:00	6399	13.45	13.37	2.569	2.569	175.1	22.73	3.959	0.001527862	5.50E-06	1009.134	2.111	84.7	924.1378	0.027	931.9323	918.7079	921.7731	0.026	0.034	0.019	2776.774	2760.859	2769.545	-0.01
18/05/2016 2:00	6400	13.39	13.31	2.07	2.07	161.2	23.71	4.057	0.1820649	0.000655434	1009.297	2.439	81.5	924.1431	0.151	931.8633	918.7413	921.8248	0.152	0.198	0.079	2776.931	2761.173	2769.54	-0.01
18/05/2016 3:00	6401	13.33	13.25	2.526	2.526	169.9	22.56	4.057	0.01858854	6.69E-05	1009.461	2.291	82.6	924.1382	0.066	931.9838	918.6885	921.7425	0.061	0.083	0.05	2776.808	2760.735	2769.524	-0.01
18/05/2016 4:00	6402	13.27	13.19	1.888	1.888	182.4	64.53	6.056	1.056795	0.003804462	1009.461	1.921	83.5	924.1362	0.009	932.0394	918.6827	921.6862	0.01	0.008	0.009	2776.91	2760.808	2769	

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
20/05/2016 4:00	39	13.33	13.27	3.203	3.203	206.2	8.89	4.194	1.861356	0.006700882	1021.582	3.991	69.12	936.0893	0.2	944.0117	930.6565	933.5995	0.189	0.266	0.118	2791.616	2775.698	2784.029	0.005
20/05/2016 5:00	40	13.42	13.27	4.902	4.902	201.5	4.616	5.939	42.97569	0.1547125	1021.746	4.53	67.74	936.3156	0.349	943.2706	931.9945	933.6818	0.35	0.462	0.172	2790.888	2777.485	2784.031	0.024
20/05/2016 6:00	41	13.7	13.4	3.788	3.788	220.4	8.97	5.116	128.3781	0.4621612	1021.519	5.597	64.31	936.461	0.129	942.9274	932.9274	934.2594	0.131	0.158	0.088	2789.218	2778.644	2785.001	0.054
20/05/2016 7:00	42	14.14	13.69	2.931	2.931	198.7	11.72	4.567	243.5561	0.8768018	1021.299	7.595	56.62	936.5378	0.238	941.5706	933.2299	934.8131	0.243	0.268	0.196	2788.799	2778.628	2785.399	0.11
20/05/2016 8:00	43	14.63	14.15	3.065	3.065	193.6	17.1	4.469	371.9467	1.339008	1021.078	8.4	53.74	936.904	0.265	939.979	934.3717	936.3171	0.247	0.334	0.196	2787.097	2780.447	2787.342	0.178
20/05/2016 9:00	44	14.6	14.5	3.059	3.059	188.7	24.09	6.39	505.091	1.818327	1020.667	8.95	52.75	936.822	0.444	939.619	933.7537	937.0931	0.36	0.625	0.268	2786.78	2779.365	2787.957	0.246
20/05/2016 10:00	45	14.54	13.89	4.11	4.11	203.6	16.13	6.546	628.6123	2.263004	1020.391	9.39	52.06	936.6821	0.694	939.812	932.9269	937.3074	0.666	0.929	0.371	2785.416	2776.76	2787.714	0.31
20/05/2016 11:00	46	13.93	13.84	5.023	5.023	205	12.58	7.193	707.993	2.548775	1019.96	9.8	49.34	936.544	0.681	940.5724	932.1037	936.9561	0.69	0.869	0.4	2787.683	2777.043	2788.086	0.354
20/05/2016 12:00	47	13.92	13.83	5.738	5.738	199	12.43	9.19	766.089	2.75792	1019.409	10.57	46.73	936.2254	1.302	941.1398	930.8248	936.7118	1.162	1.787	0.735	2787.358	2775.354	2787.375	0.393
20/05/2016 13:00	48	13.89	13.83	5.863	5.863	193.5	15.54	9.02	800.477	2.881717	1018.892	11.14	41.78	936.3438	0.632	942.2109	930.774	936.0465	0.614	0.426	0.426	2789.574	2775.029	2787.091	0.425
20/05/2016 14:00	49	13.92	13.33	4.929	4.929	209.1	21.47	9.66	790.9096	2.847275	1018.397	11.6	36.03	935.9956	0.705	942.3552	929.7176	935.914	0.753	0.877	0.393	2789.503	2774.21	2786.784	0.436
20/05/2016 15:00	50	13.85	13.83	4.749	4.749	195	17.43	9.21	734.4071	2.643866	1017.906	12.24	36.28	936.0152	0.588	943.0886	929.6779	935.2792	0.515	0.819	0.318	2791.211	2774.547	2785.708	0.417
20/05/2016 16:00	51	13.91	13.83	5.207	5.207	188.5	12.33	8.23	569.7643	2.051152	1017.415	12.17	38.26	935.9813	0.715	943.8727	929.2443	934.8272	0.717	0.871	0.51	2791.666	2773.446	2784.724	0.337
20/05/2016 17:00	52	13.99	13.88	4.823	4.823	199.7	17.5	7.605	428.6884	1.543278	1016.761	11.86	38.6	936.0502	0.807	943.7133	929.7753	934.6619	0.736	1.118	0.401	2791.757	2776.093	2786.14	0.263
20/05/2016 18:00	53	14.02	13.93	4.807	4.807	196.1	8.42	6.938	236.8548	0.8526771	1016.437	11.37	39.2	936.1292	0.655	943.2972	930.4994	934.5908	0.596	0.916	0.306	2790.996	2775.222	2785.44	0.168
20/05/2016 19:00	54	14.02	13.96	4.42	4.42	181.4	12.88	6.546	260.1823	0.9366564	1016.031	11.51	38.87	936.1269	0.539	943.1757	930.6548	934.55	0.5	0.736	0.285	2789.876	2774.411	2785.135	0.175
20/05/2016 20:00	55	14.01	13.86	3.763	3.763	169.7	7.722	4.939	117.1236	0.4216448	1015.673	10.58	42.17	936.0784	0.391	943.076	930.7083	934.4509	0.394	0.517	0.193	2790.303	2775.456	2785.153	0.087
20/05/2016 21:00	56	13.88	13.72	4.733	4.733	169.6	3.856	5.802	35.13589	0.1264892	1015.512	9.18	45.5	942.9943	0.543	942.9943	930.9503	934.6325	0.564	0.678	0.325	2790.833	2775.838	2785.106	0.04
20/05/2016 22:00	57	13.73	13.58	5.511	5.511	162.8	3.766	6.919	7.070679	0.02545444	1015.202	8.91	45.68	936.1335	0.891	942.7086	930.8578	934.8339	0.892	1.16	0.489	2789.712	2774.886	2784.746	0.04
20/05/2016 23:00	58	13.59	13.48	6.831	6.831	164.5	4.508	8.55	0	0	1014.551	8.91	44.26	936.2075	0.909	942.6994	930.9034	935.0196	0.933	1.087	0.652	2790.211	2774.828	2784.537	0.047
21/05/2016 0:00	59	13.5	13.4	8.01	8.01	166	4.223	9.29	0	0	1014.223	8.87	43.02	936.2151	1.209	942.538	930.9869	935.1203	1.209	1.478	0.728	2791.153	2775.269	2785.149	0.052
21/05/2016 1:00	60	13.42	13.33	8.32	8.32	162.8	4.206	10.09	0	0	1013.908	8.52	43.4	936.21	1.308	942.3722	931.0482	935.2547	1.359	1.68	0.68	2784.765	2773.126	2787.671	0.052
21/05/2016 2:00	61	13.35	13.28	8.57	8.57	165.3	3.97	10.13	0	0	1013.822	8.34	43.25	936.2164	1.28	942.6141	930.9341	935.101	1.407	1.52	0.792	2787.179	2773.772	2786.123	0.052
21/05/2016 3:00	62	13.29	13.22	8.64	8.64	168.2	4.013	10.68	0	0	1013.274	7.774	44.29	936.2854	1.621	942.6345	931.0291	935.1927	1.594	2.073	1.023	2788.988	2774.074	2784.729	0.049
21/05/2016 4:00	63	13.23	13.17	9.58	9.58	169.4	4.376	10.92	0.7922283	0.002852022	1012.948	7.322	45.44	936.3735	1.433	942.838	931.0901	935.1925	1.335	1.773	1.111	2788.618	2774.542	2783.528	0.049
21/05/2016 5:00	64	13.3	13.17	8.85	8.85	175	4.434	10.07	41.72443	0.150208	1012.621	7.691	44.75	936.3493	1.366	941.9309	932.2055	934.9113	1.199	1.851	0.857	2788.419	2778.133	2785.984	0.107
21/05/2016 6:00	65	13.58	13.29	7.66	7.66	175.9	4.853	9.39	134.1061	0.4827819	1012.428	8.93	40.83	936.6461	1.155	941.5222	933.2172	935.1989	1.139	1.528	0.609	2786.853	2777.285	2785.383	0.143
21/05/2016 7:00	66	14.03	13.58	5.098	5.098	182.8	9.18	8.11	246.7919	0.8884508	1012.4	10.27	35.8	933.4468	0.443	940.4774	933.4468	935.7985	0.5	0.548	0.194	2785.497	2777.046	2786.821	0.175
21/05/2016 8:00	67	14.62	14.03	3.243	3.243	213.1	18.12	5.841	371.8351	1.338607	1011.872	11.09	34.51	936.5783	0.415	939.9176	933.3329	936.4843	0.415	0.496	0.312	2785.778	2777.633	2787.829	0.215
21/05/2016 9:00	68	14.53	14.44	4.975	4.975	192.3	17.15	8.15	501.1188	1.804028	1011.523	12.16	32.17	936.5288	0.973	940.2811	932.7641	936.5411	0.983	1.248	0.563	2787.138	2777.373	2788.11	0.312
21/05/2016 10:00	69	14.47	13.83	5.79	5.79	174.1	15.35	9.37	617.7875	2.224035	1011.195	12.95	30.15	936.3365	1.094	940.1942	932.0349	936.7803	1.011	1.468	0.645	2786.412	2776.225	2788.488	0.387
21/05/2016 11:00	70	13.86	13.76	5.839	5.839	186.7	11.83	8.27	720.6557	2.59436	1010.95	13.28	31.18	936.1528	0.898	940.3344	931.2735	936.8506	0.826	1.226	0.481	2787.431	2776.175	2787.666	0.438
21/05/2016 12:00	71	13.78	13.73	4.818	4.818	196.7	15.08	8.17	787.7924	2.836053	1010.704	13.67	29.15	935.9695	0.686	940.8834	930.4615	936.5635	0.643	0.907	0.417	2786.882	2776.955	2788.765	0.474
21/05/2016 13:00	72	13.78	13.69	4.366	4.366	192.2	17.16	8.08	818.279	2.945804	1010.459	14.2	27.92	935.9394	0.672	941.8029	929.8096	936.2055	0.636	0.918	0.33	2788.903	2774.848	2787.326	0.496
21/05/2016 14:00	73	13.73	13.66	4.027	4.027	164.7	23.17	8.08	819.2033	2.949132	1009.886	15.02	26.67	935.7621	0.518	942.592	928.8608	935.8336	0.513	0.689	0.258	2789.909	2773.721	2786.64	0.508
21/05/2016 15:00	74	13.74	13.7	4.232	4.232	176.9	32.58	7.86	773.9088	2.786071	1009.501	15.7	26.53	935.6018	0.75	943.4406	928.1801	935.1848	0.657	1.013	0.48	2790.082	2771.844	2785.553	0.494
21/05/2016 16:00	75	13.77	13.7	3.377	3.377	190.2	33.59	6.37	693.8581	2.497889	1009.01	15.94	28.34	935.5184	0.27	943.9279	927.8965	934.7308	0.291	0.329	0.159	2792.82	2773.366	2785.164	0.441
21/05/2016 17:00	76	13.77	13.7	2.933	2.933	193.9	23.29	6.605	591.0773	2.127878	1008.683	16.49	28.44	935.5026	0.197	944.5643	927.8568	934.0869	0.183	0.275	0.087	2792.222	2771.698	2784.451	0.38
21/05/2016 18:00	77	13.82	13.75	2.121	2.121	182.7	38.67	5.214	468.8506	1.687862	1008.437	16.69	27.79	945.5149	0.138	945.0837	927.9014	933.5595	0.116	0.193	0.081	2792.893	2772.007	2783.864	0.293
21/05/20																									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
23/05/2016 18:00	125	14.3	14.09	1.298	1.298	81.6	29.74	5.547	131.5733	0.473664	1008.554	8	79.12	944.6701	0.029	952.0234	938.7893	943.1974	0.038	0.032	0.008	2801.164	2785.439	2795.671	0.029	
23/05/2016 19:00	126	14.13	13.9	2.98	2.98	269.9	24.82	7.507	69.35319	0.2496715	1008.354	8.02	70.15	944.665	0.183	951.881	938.9373	943.1765	0.198	0.228	0.098	2801.047	2785.641	2795.756	0.019	
23/05/2016 20:00	127	14.15	13.9	1.767	1.767	273.9	12.03	3.195	116.9393	0.4209814	1008.349	8.64	61.52	944.5584	0.225	953.311	938.0986	942.2659	0.308	0.158	0.178	2802.091	2784.742	2794.903	0.035	
23/05/2016 21:00	128	13.98	13.83	2.08	2.08	246.8	20.64	3.116	92.65116	0.3335442	1008.49	8.95	62.27	944.5418	0.064	952.8347	938.6428	942.1478	0.073	0.074	0.037	2802.122	2785.247	2794.444	0.021	
23/05/2016 22:00	129	13.85	13.67	2.79	2.79	235.6	15.25	4.351	13.13045	0.04726962	1008.691	8.665	75.03	944.5427	0.174	951.921	938.821	942.8862	0.171	0.215	0.123	2801.082	2785.794	2795.239	0.002	
23/05/2016 23:00	130	13.68	13.56	3.802	3.802	234.2	11.74	5.429	0	0	1008.743	6.514	75.1	944.6364	0.144	951.914	938.9294	943.0656	0.146	0.181	0.091	2800.887	2785.363	2795.533	0.005	
24/05/2016 0:00	131	13.57	13.47	4.063	4.063	254	16.03	5.958	0	0	1008.909	6.5	75.11	944.6646	0.3	952.0617	938.8762	943.0557	0.321	0.359	0.197	2802.488	2786.37	2795.527	0.006	
24/05/2016 1:00	132	13.49	13.4	3.117	3.117	269	11	4.606	0	0	1009.077	6.767	72.89	944.6743	0.228	952.0168	938.9549	943.0511	0.228	0.307	0.101	2801.278	2785.575	2795.445	0.003	
24/05/2016 2:00	133	13.42	13.34	3.207	3.207	300.7	12.43	4.488	0	0	1009.24	6.4	74.94	944.657	0.2	951.9929	938.9445	943.0339	0.203	0.254	0.12	2800.993	2785.16	2795.424	0.002	
24/05/2016 3:00	134	13.36	13.28	2.687	2.687	273.4	10.82	4.39	0	0	1009.422	6.069	77.72	944.6987	0.128	952.0342	938.9713	943.0906	0.135	0.148	0.096	2801.154	2785.646	2795.618	-0.002	
24/05/2016 4:00	135	13.3	13.22	2.306	2.306	277.7	13.36	3.9	1.834275	0.00660339	1009.743	6.041	77.42	944.7148	0.111	951.9778	939.0526	943.114	0.113	0.065	0.065	2801.142	2785.481	2795.505	-0.004	
24/05/2016 5:00	136	13.31	13.22	3.114	3.114	275.1	10.45	4.292	21.92983	0.0789474	1009.978	5.658	79.71	944.6802	0.148	951.9343	939.0053	943.1011	0.159	0.175	0.098	2800.975	2785.67	2795.648	-0.011	
24/05/2016 6:00	137	13.62	13.29	3.987	3.987	276.2	6.636	5.508	72.90519	0.2624587	1010.209	5.658	81.3	944.692	0.341	951.8035	939.1629	943.1096	0.421	0.224	0.224	2800.558	2785.844	2795.507	0.014	
24/05/2016 7:00	138	14.63	13.62	3.987	3.987	285	8.05	5.802	248.6208	0.8950351	1010.248	6.306	77.41	945.064	0.554	949.5165	941.3894	944.286	0.497	0.763	0.3	2797.657	2788.094	2796.817	0.092	
24/05/2016 8:00	139	14.63	14.57	4.437	4.437	294.3	13.15	6.723	391.6957	1.410105	1010.609	7.417	71.27	944.9377	0.642	949.0853	941.0233	944.7044	0.565	0.915	0.28	2797.134	2787.347	2797.639	0.165	
24/05/2016 9:00	140	14.64	14.08	4.492	4.492	315.2	13.57	8.55	472.2754	1.700191	1010.762	8.41	67	944.9376	0.769	949.0118	940.7078	945.0931	0.63	1.053	0.52	2798.492	2786.636	2797.666	0.212	
24/05/2016 10:00	141	14.09	13.96	4.96	4.96	326	17.63	7.703	621.2619	2.236543	1010.747	9.15	62.9	944.8198	0.674	948.9354	940.1592	945.3651	0.611	0.923	0.372	2797.009	2786.411	2798.244	0.288	
24/05/2016 11:00	142	14.05	13.89	3.928	3.928	343.4	24.55	8.31	624.0829	2.246699	1010.624	10.14	57.05	944.6247	0.904	949.9758	939.174	944.7244	0.81	1.202	0.593	2798.635	2783.65	2797.042	0.31	
24/05/2016 12:00	143	14.05	13.92	4.389	4.389	335.4	17.94	7.644	330.4453	1.1899603	1010.721	10.11	56.61	944.4982	0.427	951.1433	938.8222	943.5291	0.437	0.556	0.215	2799.69	2784.565	2796.467	0.174	
24/05/2016 13:00	144	14.61	13.99	4.155	4.155	57.25	72.85	9.74	243.9959	0.8783851	1011.253	8.45	63.57	944.8045	0.432	951.4174	939.0234	943.9727	0.437	0.573	0.204	2800.745	2785.826	2796.742	0.116	
24/05/2016 14:00	145	14.61	14.27	3.42	3.42	132.9	41.79	6.429	253.9324	0.9141567	1011.605	7.705	76.59	944.9201	0.799	951.8807	939.0109	943.8687	0.711	1.129	0.367	2801.213	2785.303	2796.197	0.099	
24/05/2016 15:00	146	14.62	14.01	4.581	4.581	135.4	10.23	6.468	470.0855	1.692308	1011.515	8.23	70.79	944.8171	0.415	952.6691	937.9582	943.824	0.367	0.584	0.205	2801.909	2784.804	2796.374	0.204	
24/05/2016 16:00	147	14.02	13.89	3.086	3.086	126	45.55	7.154	614.1269	2.210857	1011.052	10.35	58.47	944.5405	0.253	952.9604	936.9514	943.7095	0.269	0.338	0.076	2801.565	2783.415	2796.355	0.306	
24/05/2016 17:00	148	14.07	13.9	4.199	4.199	78.26	24.51	8.51	487.5468	1.755168	1011.032	10.6	57.09	944.6448	0.098	952.6869	938.0366	943.2113	0.099	0.12	0.067	2801.952	2784.529	2795.803	0.249	
24/05/2016 18:00	149	14.08	14.03	2.688	2.688	96	28.15	5.547	176.5934	0.6357362	1011.161	10.28	55.91	944.808	0.121	952.0968	938.8666	943.4607	0.107	0.163	0.077	2801.247	2785.316	2795.835	0.085	
24/05/2016 19:00	150	14.08	13.89	1.553	1.553	100.9	23.73	2.842	225.6516	0.8123458	1011.087	10.41	54.5	944.5999	0.072	954.3765	937.2197	942.2035	0.084	0.079	0.049	2803.77	2783.708	2794.596	0.097	
24/05/2016 20:00	151	14.04	13.83	0.749	0.749	138.7	16.29	2.626	90.58307	0.326099	1011.253	10.13	53.16	944.7581	0.024	952.1931	938.988	943.0934	0.027	0.028	0.015	2801.362	2785.607	2795.584	0.007	
24/05/2016 21:00	152	13.85	13.73	1.278	1.278	221.2	43.47	4.312	36.09828	0.1299538	1011.617	8.87	60.28	944.827	0.13	952.0412	939.118	943.3218	0.134	0.166	0.072	2801.18	2785.65	2795.875	0.001	
24/05/2016 22:00	153	13.74	13.58	4.176	4.176	219.2	19.26	6.997	5.998956	0.02159624	1011.802	7.682	68.37	944.7417	0.783	951.7224	938.8895	943.6133	0.768	1.049	0.388	2801.38	2786.592	2796.61	0.013	
24/05/2016 23:00	154	13.59	13.48	5.042	5.042	183.9	5.684	6.919	0	0	1011.966	7.029	72.59	944.9243	0.301	952.0383	939.1918	943.5429	0.301	0.369	0.214	2801.117	2785.71	2796.263	0.012	
25/05/2016 0:00	155	13.5	13.41	2.504	2.504	215	47.25	5.194	0	0	1012.378	6.457	77.53	944.955	0.05	952.0452	939.2672	943.5527	0.066	0.062	0.02	2801.207	2785.941	2796.088	-0.003	
25/05/2016 1:00	156	13.42	13.33	7.628	7.628	168	16.86	11.23	0.01527923	5.50E-05	1012.182	5.136	83.4	945.2462	1.141	952.4969	939.0859	944.1557	1.023	1.526	0.728	2801.576	2785.781	2796.111	0.007	
25/05/2016 2:00	157	13.35	13.28	7.06	7.06	184.6	8.82	9.02	0	0	1012.018	5.347	81.1	945.5745	1.31	952.7418	939.6635	944.3183	1.252	1.79	0.616	2801.069	2785.795	2796.094	0.008	
25/05/2016 3:00	158	13.29	13.22	5.921	5.921	170.3	8.33	8.7	0	0	1012.352	5.316	83.2	945.5585	0.723	952.7208	939.713	944.2418	0.731	0.942	0.38	2802.383	2786.305	2796.573	0.004	
25/05/2016 4:00	159	13.24	13.17	4.335	4.335	162.3	14.81	6.919	4.676784	0.01683642	1012.552	4.477	84.2	945.5662	0.285	952.6989	939.7692	944.2308	0.29	0.377	0.134	2801.847	2786.599	2796.791	0	
25/05/2016 5:00	160	13.38	13.17	3.642	3.642	153.4	11.96	7.056	57.27835	0.206202	1012.369	4.608	86.3	945.7839	0.446	952.3361	940.8527	944.1629	0.634	0.205	0.205	2801.496	2787.674	2796.974	0	
25/05/2016 6:00	161	13.9	13.36	4.114	4.114	140	12.07	7.526	109.2908	0.3934469	1012.354	4.951	84.1	945.7729	0.739	951.7048	941.0853	944.5286	0.741	0.945	0.443	2801.26	2788.226	2797.393	0.025	
25/05/2016 7:00	162	14.39	13.9	5.601	5.601	133.4	10.9	9.41	213.9123	0.7700841	1012.297	5.714	75.54	945.8257	1.019	951.7362	941.0363	944.7049	1.074	1.306	0.508	2799.773	2787.911	2797.237	0.082	
25/05/2016 8:00	163	14.63	14.34	5.707	5.707	135	12.63	9.64	331.3822	1.192976	1012.294	6.344	67.82	945.7661	0.707	950.9931	941.1722	945.1331	0.661	0.962	0.373	2801.115	2789.389	2799.004	0.14	
25/05/2016																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
27/05/2016 8:00	211	14.64	14.09	1.471	1.471	302.3	31.37	2.528	122.4998	0.4409992	1016.505	-1.217	96.5	952.2658	0.039	958.917	946.6587	951.2218	0.042	0.046	0.028	2809.49	2794.966	2805.374	0.012
27/05/2016 9:00	212	14.66	14.59	1.264	1.264	282.5	16.98	1.98	312.6069	1.125385	1016.505	-0.694	96.6	952.5588	0.058	958.9144	947.1451	951.6169	0.058	0.03	0.077	2809.661	2795.503	2805.714	0.086
27/05/2016 10:00	213	14.65	14.29	1.829	1.829	355.4	16.47	3.489	305.1381	1.098497	1016.75	-0.086	96.9	952.593	0.156	959.5432	946.777	951.4589	0.156	0.207	0.079	2810.179	2794.825	2805.686	0.081
27/05/2016 11:00	214	14.38	14.27	2.649	2.649	7.165	20.06	4.645	354.1708	1.275015	1016.75	0.293	97.4	952.7438	0.206	959.5876	946.8116	951.8322	0.203	0.247	0.157	2810.276	2795.105	2805.964	0.095
27/05/2016 12:00	215	14.33	14.27	3.66	3.66	14.68	18.65	6.154	360.8277	1.29898	1016.832	1.217	96.5	952.9111	0.359	960.0024	947.2159	951.5148	0.318	0.471	0.251	2810.504	2795.726	2805.802	0.096
27/05/2016 13:00	216	14.3	14.16	3.719	3.719	5.054	15.67	6.488	593.4215	2.136317	1016.933	2.39	91.7	952.9092	0.622	960.0892	946.858	951.7802	0.633	0.808	0.328	2811.933	2796.489	2806.264	0.189
27/05/2016 14:00	217	14.62	14.15	4.196	4.196	51.41	43.63	8.45	144.8533	0.5214719	1016.993	1.27	93	953.6068	0.467	961.4557	947.4511	951.9135	0.423	0.635	0.271	2812.246	2795.613	2806.612	0.024
27/05/2016 15:00	218	14.65	14.58	3.823	3.823	51.03	16.64	6.801	603.0954	2.171143	1016.953	2.17	90.9	953.5115	0.529	961.4456	946.4699	952.619	0.488	0.718	0.295	2812.161	2794.478	2807.131	0.191
27/05/2016 16:00	219	14.65	14.31	4.057	4.057	71.81	18.31	7.977	298.5309	1.074711	1017.184	2.531	83.6	953.7593	0.134	961.1724	947.8185	952.2867	0.159	0.149	0.078	2812.334	2796.347	2806.633	0.09
27/05/2016 17:00	220	14.31	14.21	2.03	2.03	353.5	35.23	4.626	288.4908	1.038567	1016.76	3.296	73.97	953.7429	0.244	960.973	947.8514	952.4044	0.256	0.303	0.144	2812.552	2796.912	2806.972	0.097
27/05/2016 18:00	221	14.35	14.25	3.539	3.539	75.03	43.49	6.723	120.5497	0.4339789	1016.942	3.293	72.48	953.7668	0.074	960.9929	948.0425	952.2648	0.082	0.087	0.048	2812.137	2796.794	2806.745	0.036
27/05/2016 19:00	222	14.4	14.11	3.417	3.417	79.36	15.04	5.272	97.4556	0.3508402	1016.794	3.734	64.44	953.7398	0.235	960.8872	948.0986	952.2337	0.278	0.25	0.159	2811.571	2795.766	2806.613	0.035
27/05/2016 20:00	223	14.17	13.96	3.352	3.352	56.34	11.1	4.371	39.16137	0.1409809	1016.987	3.466	65.11	953.7925	0.139	960.973	948.1343	952.2701	0.132	0.173	0.105	2811.884	2796.594	2806.797	0.01
27/05/2016 21:00	224	13.98	13.86	2.407	2.407	65.16	5.522	3.391	25.73069	0.09263048	1017.16	3.137	66.85	953.7971	0.038	961.0123	948.1094	952.2695	0.041	0.045	0.027	2812.057	2796.633	2806.607	0.005
27/05/2016 22:00	225	13.88	13.72	2.7	2.7	131.4	17.44	4.292	5.540468	0.01994568	1017.405	2.605	69.9	953.8022	0.088	961.0253	948.0801	952.3011	0.105	0.091	0.062	2811.933	2796.597	2806.521	0.002
27/05/2016 23:00	226	13.73	13.62	2.269	2.269	135.1	9.07	3.685	0.06520456	0.000234736	1017.487	2.218	69.92	953.8016	0.111	961.0294	948.1028	952.2726	0.113	0.114	0.067	2812.106	2796.867	2806.626	-0.001
28/05/2016 0:00	227	13.64	13.54	2.167	2.167	144.9	16.28	4.116	0	0	1017.323	1.881	75.58	953.822	0.094	961.0929	948.0974	952.2759	0.108	0.112	0.049	2812.358	2796.866	2806.639	-0.004
28/05/2016 1:00	228	13.56	13.47	3.881	3.881	141.9	12.55	5.841	0	0	1017.323	1.677	70.51	953.8093	0.279	961.0039	948.0778	952.3459	0.272	0.37	0.152	2812.168	2796.708	2806.617	0.006
28/05/2016 2:00	229	13.49	13.41	3.023	3.023	130.2	14.89	4.626	0	0	1017.323	0.952	79.38	953.813	0.147	961.0974	948.0755	952.2664	0.143	0.185	0.099	2812.22	2796.677	2806.586	-0.002
28/05/2016 3:00	230	13.43	13.35	2.202	2.202	155.1	7.925	3.587	0	0	1017.16	1.003	79.9	953.8018	0.163	961.1086	948.0225	952.2742	0.178	0.206	0.076	2812.282	2796.704	2806.596	-0.005
28/05/2016 4:00	231	13.37	13.29	4.05	4.05	142.8	7.132	5.625	1.741151	0.006268144	1017.078	0.143	90.6	953.8356	0.445	961.0982	948.0941	952.3146	0.434	0.579	0.266	2812.322	2797.064	2806.614	-0.004
28/05/2016 5:00	232	13.33	13.29	3.723	3.723	133.3	6.19	5.488	12.53401	0.04512243	1017.161	-0.209	93.8	953.8492	0.453	961.1163	948.107	952.3244	0.432	0.611	0.235	2812.204	2797.14	2806.933	-0.021
28/05/2016 6:00	233	13.46	13.29	2.328	2.328	171	34.49	5.194	35.80616	0.1289022	1017.243	0.22	88.1	953.9062	0.016	961.174	948.1467	952.3979	0.02	0.018	0.009	2812.356	2796.778	2806.803	-0.015
28/05/2016 7:00	234	14.06	13.45	1.26	1.26	128.4	51.72	3.058	100.8876	0.3631952	1017.324	0.796	85	953.8948	0.121	961.0603	948.162	952.4621	0.132	0.151	0.062	2812.062	2796.731	2806.896	0.007
28/05/2016 8:00	235	14.64	14.06	2.15	2.15	103.4	25.14	5.096	165.0256	0.5940922	1017.322	1.36	74.2	953.8963	0.308	961.0032	948.1664	952.5193	0.265	0.423	0.186	2812.116	2796.751	2806.969	0.042
28/05/2016 9:00	236	14.64	14.34	2.695	2.695	69.18	23.88	5.253	161.4135	0.5810885	1017.487	1.89	72.43	953.8394	0.111	961.0524	948.0916	952.3741	0.136	0.117	0.07	2811.934	2796.522	2806.854	0.045
28/05/2016 10:00	237	14.49	14.31	3.092	3.092	58.28	22.31	5.253	181.0011	0.6516039	1017.323	2.392	69.29	953.8076	0.251	960.8549	948.137	952.4309	0.282	0.279	0.179	2812.366	2797.011	2806.756	0.058
28/05/2016 11:00	238	14.33	14.28	3.938	3.938	7.874	15.72	5.704	347.8004	1.252082	1017.302	1.907	79.63	953.7939	0.516	960.824	948.0165	952.5412	0.475	0.695	0.302	2811.525	2796.052	2807.254	0.109
28/05/2016 12:00	239	14.32	14.28	3.319	3.319	1.196	23.7	4.959	419.4113	1.509881	1017.319	1.253	88.9	953.7151	0.073	961.0878	947.4821	952.5757	0.084	0.081	0.049	2812.261	2795.951	2806.918	0.125
28/05/2016 13:00	240	14.29	14.21	2.437	2.437	46.43	42.68	5.978	421.2269	1.516417	1016.935	2.578	77.1	953.7681	0.342	961.2308	947.7626	952.311	0.334	0.45	0.191	2812.574	2796.389	2806.762	0.146
28/05/2016 14:00	241	14.33	14.18	3.337	3.337	37.62	35.51	6.958	317.813	1.144127	1016.917	2.685	77.93	953.7681	0.414	960.8649	948.0948	952.3444	0.372	0.543	0.283	2812.967	2797.788	2806.275	0.104
28/05/2016 15:00	242	14.32	14.23	3.306	3.306	25.77	19.72	5.978	330.3432	1.189235	1016.755	3.104	69.97	953.7333	0.233	961.0559	947.7103	952.4338	0.243	0.295	0.129	2811.907	2795.565	2806.808	0.118
28/05/2016 16:00	243	14.26	14.23	3.835	3.835	358.4	15.38	6.292	297.3482	1.070453	1016.391	3.826	59.71	953.7023	0.484	960.8034	947.7687	952.535	0.411	0.698	0.214	2811.297	2795.767	2807.011	0.119
28/05/2016 17:00	244	14.27	14.14	3.809	3.809	22.02	31.25	6.115	170.4981	0.613793	1016.248	3.794	62.05	953.7516	0.268	960.9231	947.9757	952.356	0.238	0.355	0.183	2812.302	2796.802	2806.735	0.068
28/05/2016 18:00	245	14.19	14.07	2.675	2.675	45.72	25.17	4.528	98.27867	0.3538032	1016.284	3.348	67.52	953.811	0.197	960.9813	948.0289	952.423	0.202	0.238	0.139	2812.195	2796.622	2806.799	0.026
28/05/2016 19:00	246	14.09	13.95	2.777	2.777	46.02	15.84	3.9	45.18901	0.1626804	1016.252	3.022	65.57	953.8361	0.19	961.0184	948.1104	952.3798	0.208	0.224	0.123	2812.189	2796.471	2806.723	0.006
28/05/2016 20:00	247	13.99	13.95	2.657	2.657	49.57	11.38	4.018	52.70292	0.1897305	1016.013	2.96	63.83	953.8439	0.107	961.0104	948.1066	952.4147	0.108	0.14	0.058	2812.158	2796.719	2806.896	0.009
28/05/2016 21:00	248	13.98	13.87	2.446	2.446	33.99	8.34	3.92	30.00498	0.1080179	1016.013	2.767	63.67	953.8267	0.152	961.0262	948.0909	952.3627	0.158	0.2	0.067	2812.133	2796.599	2806.882	0.007
28/05/2016 22:00	249	13.88	13.75	1.808	1.808	45.53	14.32	3.273	10.99216	0.03957176	1015.846	2.267	60.54	953.8581	0.015	961.2773									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
30/05/2016 22:00	297	13.8	13.68	2.369	2.369	109.9	14.61	3.802	9.907542	0.03566715	1019.289	0.483	95.8	957.467	0.125	964.8733	951.5867	955.9412	0.131	0.153	0.08	2816.409	2800.683	2810.935	-0.009	
30/05/2016 23:00	298	13.69	13.58	3.354	3.354	130.5	13.2	5.076	0.005094809	1.83E-05	1018.798	0.491	93.5	957.5473	0.272	964.8835	951.613	956.1454	0.266	0.356	0.154	2816.689	2800.79	2811.4	-0.007	
31/05/2016 0:00	299	13.59	13.5	2.999	2.999	168.7	14.58	4.234	0	0	1018.634	1.305	87.7	957.4731	0.257	964.8771	951.5087	956.0334	0.208	0.366	0.143	2816.278	2800.302	2811.227	-0.006	
31/05/2016 1:00	300	13.52	13.44	4.712	4.712	200.9	15.51	8.39	0	0	1018.224	1.522	82.9	957.5363	0.65	965.1226	951.4642	956.022	0.637	0.857	0.358	2817.606	2802.345	2811.52	0.001	
31/05/2016 2:00	301	13.45	13.37	6.704	6.704	213.2	17.427	8.74	0	0	1017.897	1.704	80.2	957.4983	0.719	965.1917	951.3447	955.9585	0.67	0.965	0.412	2817.485	2801.058	2811.397	0.006	
31/05/2016 3:00	302	13.39	13.32	6.167	6.167	222.5	6.35	7.546	0.01069911	3.85E-05	1017.815	1.292	82.8	957.5101	0.544	965.1236	951.3137	956.0931	0.541	0.685	0.357	2816.261	2798.848	2811.164	0.004	
31/05/2016 4:00	303	13.33	13.26	4.947	4.947	222.9	6.309	6.311	4.524951	0.01628982	1017.651	1.566	82.9	957.5176	0.311	964.9955	951.4894	956.0678	0.289	0.411	0.196	2816.731	2800.452	2811.171	0.002	
31/05/2016 5:00	304	13.36	13.26	4.626	4.626	228.6	8.19	5.841	28.62553	0.1030519	1017.487	1.733	82.3	957.4774	0.263	964.9063	951.4943	956.0316	0.274	0.307	0.194	2816.33	2800.257	2811.218	-0.002	
31/05/2016 6:00	305	13.6	13.34	4.292	4.292	232.5	5.626	5.233	60.42036	0.2175133	1017.242	1.891	83.8	957.4838	0.287	964.8967	951.4694	956.0853	0.281	0.376	0.161	2816.51	2800.246	2811.145	0.005	
31/05/2016 7:00	306	14.16	13.59	3.096	3.096	244.3	8.87	4.998	120.3614	0.4333008	1016.996	2.467	83.5	957.5568	0.089	964.7467	951.6663	956.2576	0.091	0.104	0.069	2816.545	2801.13	2811.52	0.024	
31/05/2016 8:00	307	14.67	14.17	2.489	2.489	249.2	13.49	4.567	263.6868	0.9492725	1016.634	3.555	77.47	957.6763	0.213	962.9989	952.8521	957.1778	0.219	0.238	0.179	2814.286	2802.359	2812.597	0.086	
31/05/2016 9:00	308	14.65	14.52	3.336	3.336	252.8	18.95	5.586	402.1824	1.447857	1016.062	4.676	66.37	957.6812	0.353	962.1227	953.2401	957.681	0.34	0.443	0.248	2813.188	2803.514	2813.524	0.158	
31/05/2016 10:00	309	14.63	14.17	2.613	2.613	295.2	49.31	5.978	239.4434	0.8619962	1015.896	4.804	63.18	957.4844	0.19	964.5737	951.5084	956.3713	0.201	0.237	0.108	2816.413	2800.688	2812.437	0.091	
31/05/2016 11:00	310	14.63	14.17	1.666	1.666	359.3	36.21	4.116	282.8054	1.018099	1015.57	4.358	72.52	957.6025	0.131	964.658	951.6398	956.5096	0.124	0.182	0.053	2816.43	2800.8	2811.899	0.099	
31/05/2016 12:00	311	14.63	14.5	2.154	2.154	4.355	33.74	5.116	665.6464	2.396327	1014.888	5.844	66.34	957.4968	0.236	963.6954	951.3147	957.4805	0.251	0.295	0.132	2815.341	2800.58	2812.761	0.285	
31/05/2016 13:00	312	14.63	14.06	2.139	2.139	323	38.63	5.684	427.1362	1.53769	1014.369	6.445	59.58	957.5174	0.404	964.5331	951.4954	956.5237	0.419	0.506	0.239	2816.895	2801.103	2811.838	0.183	
31/05/2016 14:00	313	14.18	14.02	1.797	1.797	311.9	54.73	5.076	502.8167	1.81014	1013.881	7.054	56	957.5037	0.087	964.3855	950.9912	957.1343	0.104	0.085	0.07	2816.15	2800.116	2812.357	0.225	
31/05/2016 15:00	314	14.11	13.97	3.121	3.121	255.9	52.77	7.722	730.9499	2.63142	1013.358	8.48	46.27	957.2031	0.875	965.1351	949.2477	957.2263	0.844	1.159	0.491	2817.112	2798.325	2812.111	0.355	
31/05/2016 16:00	315	14.1	13.95	2.977	2.977	260.6	39.23	6.821	760.4885	2.737758	1012.505	8.84	40.49	957.0358	0.219	965.7651	948.5624	956.78	0.237	0.249	0.161	2817.796	2797.076	2811.979	0.378	
31/05/2016 17:00	316	14.09	13.99	3.806	3.806	326.1	44.75	8.33	556.6185	2.003827	1012.178	8.85	45.18	957.0862	0.39	966.0264	949.0696	956.1628	0.357	0.53	0.22	2818.384	2797.814	2811.96	0.28	
31/05/2016 18:00	317	14.14	14.02	2.98	2.98	326.4	35.66	6.448	397.2434	1.430076	1011.651	8.72	43.18	957.2639	0.189	965.8195	950.0212	955.9509	0.223	0.211	0.113	2818.368	2798.568	2812.832	0.201	
31/05/2016 19:00	318	14.12	13.98	2.288	2.288	305.4	56.14	6.684	316.2706	1.138574	1011.171	8.81	42.3	957.1862	0.124	966.3017	950.0047	955.2522	0.152	0.148	0.029	2818.292	2799.145	2810.194	0.155	
31/05/2016 20:00	319	14.02	13.93	2.443	2.443	15.09	23.29	4.136	180.9964	0.651587	1010.926	8.06	48.44	957.1956	0.138	966.0366	950.2206	955.3297	0.175	0.106	0.123	2817.886	2799.349	2810.527	0.083	
31/05/2016 21:00	320	14.03	13.89	2.847	2.847	113.2	36.64	6.135	113.356	0.4080816	1010.298	7.275	53.4	957.2264	0.591	966.2054	950.6589	954.8149	0.593	0.773	0.315	2818.951	2800.214	2809.482	0.032	
31/05/2016 22:00	321	13.91	13.69	4.502	4.502	144.7	9.59	6.88	16.79316	0.06045537	1010.352	5.959	54.32	957.4583	0.504	964.7374	951.4498	956.1877	0.477	0.661	0.314	2816.316	2800.434	2811.229	0.024	
31/05/2016 23:00	322	13.7	13.56	5.294	5.294	154.3	12.96	7.468	0.0331049	0.000119178	1009.913	5.16	60.93	957.4063	0.711	964.6886	956.2567	956.3728	0.645	0.979	0.376	2816.357	2800.727	2811.005	0.02	
01/06/2016 0:00	323	13.58	13.47	5.306	5.306	168.4	4.132	6.625	0	0	1009.419	5.43	57.75	957.4697	0.436	964.7822	951.3638	956.2631	0.433	0.568	0.244	2815.652	2799.402	2810.906	0.023	
01/06/2016 1:00	324	13.49	13.4	5.536	5.536	168.8	4.993	6.566	0	0	1009.091	5.542	54.8	957.5119	0.724	964.6857	951.4377	956.4122	0.766	0.914	0.388	2814.246	2798.592	2811.439	0.026	
01/06/2016 2:00	325	13.41	13.34	6.403	6.403	182.6	3.363	8.19	0	0	1008.604	5.184	54.95	957.4665	0.741	964.7987	951.2604	956.3405	0.758	0.943	0.426	2817.196	2801.13	2811.802	0.028	
01/06/2016 3:00	326	13.35	13.28	7.078	7.078	183.7	3.665	8.35	0	0	1008.291	4.963	55.88	957.4648	0.875	964.6509	951.3211	956.4222	0.89	1.149	0.427	2817.499	2802.541	2811.954	0.029	
01/06/2016 4:00	327	13.29	13.24	6.517	6.517	177	4.344	8.04	4.641581	0.01670969	1007.766	5.455	54.87	957.3879	0.816	964.628	951.2337	956.3022	0.676	1.169	0.415	2817.019	2800.243	2811.094	0.029	
01/06/2016 5:00	328	13.39	13.24	6.472	6.472	176.8	5.188	8.19	38.47086	0.1384951	1007.601	5.558	54.04	957.5787	0.867	964.4407	952.1973	956.098	0.818	1.143	0.529	2816.386	2804.408	2811.14	0.058	
01/06/2016 6:00	329	13.86	13.39	6.226	6.226	172.3	6.743	8.11	173.1941	0.6234987	1007.055	6.841	49.96	957.8757	1.031	963.2551	953.7551	956.6167	1.075	1.291	0.603	2813.542	2802.627	2811.644	0.115	
01/06/2016 7:00	330	14.23	13.86	4.506	4.506	164.5	15.84	6.938	296.8134	1.068528	1006.888	7.779	49.54	957.9648	0.408	962.6794	954.0884	957.1268	0.582	0.206	0.206	2814.259	2803.745	2812.38	0.156	
01/06/2016 8:00	331	14.62	14.23	4.727	4.727	123.6	11.84	7.076	429.6136	1.546609	1006.671	7.998	49.35	957.7136	0.822	962.2557	953.2678	957.6171	0.68	1.153	0.487	2813.937	2802.669	2813.496	0.215	
01/06/2016 9:00	332	14.62	14.18	4.421	4.421	137.8	19.04	7.409	300.8709	1.083135	1006.342	7.802	48.3	957.4841	0.148	964.4215	951.6815	956.3491	0.169	0.087	0.087	2815.388	2801.14	2811.639	0.159	
01/06/2016 10:00	333	14.21	14.08	4.135	4.135	156.9	19.61	8.72	182.4479	0.6568125	1006.057	7.459	49.31	957.4837	0.598	964.0604	951.6052	956.7858	0.62	0.765	0.323	2815.356	2799.675	2812	0.102	
01/06/2016 11:00	334	14.1	13.96	6.259	6.259	116.5	21.98	11.35	804.6993	2.896918	1005.662	9.34	44.18	957.4434	1.904	962.0905	951.9051	958.3347	1.829	2.597	0.887	2812.964	2799.316	2813.952	0.395	
01/06/2016 12:00	335	14.12	13.99	5.341	5.341	115.6	13.94	10.29	486.8957	1.752824	1005.354	8.67	47.62	957.4363	0.729	964.3957	956.8051	958.9509	0.735	0.854						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
03/06/2016 12:00	383	13.98	13.94	5.267	5.267	184.5	16.14	8.55	626.1798	2.254247	1007.65	9.42	41.49	957.613	0.535	964.2346	951.1707	957.4338	0.481	0.685	0.399	2815.912	2800.594	2813.013	0.326
03/06/2016 13:00	384	13.98	13.89	3.822	3.822	155	30.53	7.801	577.4902	2.078964	1007.44	9.98	40.29	957.5568	0.796	964.688	950.9414	957.0411	0.616	1.185	0.343	2817.037	2804.227	2811.599	0.306
03/06/2016 14:00	385	14.05	13.92	5.714	5.714	152.1	21.65	10.17	419.0623	1.508624	1007.784	9.72	40.95	957.5486	1.001	964.4937	951.0698	957.0824	0.959	1.33	0.565	2816.592	2798.877	2812.529	0.244
03/06/2016 15:00	386	14.05	13.9	7.839	7.839	179.8	16.82	12.7	845.1813	3.042653	1007.758	10.2	46.1	957.1861	1.868	964.635	949.6779	957.2455	1.646	2.523	1.179	2817.245	2801.17	2815.166	0.417
03/06/2016 16:00	387	14.06	13.96	7.553	7.553	171.2	14.38	12.56	585.2319	2.106835	1007.761	9.36	49.66	957.3659	1.999	964.9338	949.7518	957.4122	1.827	2.745	1.054	2816.846	2798.445	2812.322	0.298
03/06/2016 17:00	388	14.13	14.05	7.952	7.952	173	14.69	12.49	358.3945	1.29022	1008.307	8.17	50.21	956.9592	1.747	965.9774	948.7073	956.1929	1.692	2.313	0.972	2817.958	2797.331	2809.607	0.202
03/06/2016 18:00	389	14.25	14.05	7.18	7.18	199	11.94	11.64	435.2023	1.566728	1008.482	8.07	52.55	957.2798	1.36	966.6285	949.4564	955.7543	1.228	1.791	0.914	2818.667	2800.616	2810.931	0.222
03/06/2016 19:00	390	14.21	14.12	5.727	5.727	200.5	16.57	9.35	328.4342	1.182363	1008.961	8.14	55.44	957.5357	0.525	965.4901	950.7975	956.3196	0.44	0.731	0.314	2817.24	2798.616	2811.177	0.17
03/06/2016 20:00	391	14.16	14.06	5.624	5.624	197.4	12.56	9.27	258.0501	0.9289805	1009.455	7.546	59.64	957.5114	0.735	965.742	950.6294	956.1629	0.703	0.959	0.453	2816.77	2799.313	2811.411	0.132
03/06/2016 21:00	392	14.08	13.89	5.906	5.906	182	12.09	8.58	78.42132	0.2823167	1010.165	5.956	70.6	957.6545	1.07	965.0965	951.1897	956.6776	1.053	1.435	0.518	2817.53	2800.455	2812.01	0.023
03/06/2016 22:00	393	13.9	13.7	4.882	4.882	194.1	16.71	9.37	13.37542	0.04815152	1010.516	4.979	74.04	957.5007	1.017	964.899	950.8002	956.8029	0.915	1.309	0.745	2814.709	2798.392	2811.758	0.01
03/06/2016 23:00	394	13.72	13.59	5.527	5.527	206.2	13.63	9.04	0.1140849	0.000410706	1011.178	5.094	70.45	957.8232	0.751	965.2151	951.3918	956.8627	0.64	1.025	0.483	2818.426	2801.693	2811.57	0.013
04/06/2016 0:00	395	13.6	13.5	5.579	5.579	204.9	13.27	8.57	0	0	1011.692	4.637	76.88	957.5979	0.95	964.8644	951.2668	956.6625	0.829	1.28	0.616	2815.429	2797.997	2812.552	0.008
04/06/2016 1:00	396	13.52	13.43	8.33	8.33	224.7	10.22	14.39	0	0	1011.658	4.35	73.57	957.9145	2.612	964.4404	951.399	957.9041	2.337	3.39	1.873	2817.084	2805.21	2812.92	0.015
04/06/2016 2:00	397	13.45	13.36	10.71	10.71	224.3	10.26	16.11	0	0	1012.288	4.538	68.42	958.2474	3.23	964.7331	951.5523	958.4568	2.939	4.34	1.955	2822.66	2806.248	2812.789	0.023
04/06/2016 3:00	398	13.38	13.3	10.2	10.2	230.6	8.79	14.92	0	0	1012.717	4.077	71.73	958.6379	3.786	964.5574	951.863	959.4933	3.3	4.856	2.922	2818.631	2805.623	2813.117	0.019
04/06/2016 4:00	399	13.32	13.27	11.45	11.45	220.6	8.23	15.27	6.771883	0.02437878	1013.063	3.177	76.16	959.2131	3.732	964.8772	952.7403	960.0216	3.511	4.791	2.552	2816.812	2799.022	2815.517	0.016
04/06/2016 5:00	400	13.48	13.27	11.82	11.82	225.4	8.05	15.41	53.51918	0.1926691	1013.72	2.893	74.4	964.1096	3.944	964.1096	951.9828	959.0292	3.543	5.129	2.795	2811.614	2800.609	2817.655	0.045
04/06/2016 6:00	401	13.86	13.48	12.51	12.51	225.9	6.824	16.9	92.62105	0.3334358	1014.375	3.016	73.55	958.6323	2.857	964.7985	951.7827	959.3156	2.555	3.749	1.974	2815.807	2800.303	2812.905	0.058
04/06/2016 7:00	402	14.43	13.86	9.37	9.37	226.9	8.24	14.23	148.055	0.5329978	1015.676	3.276	72.07	958.4667	1.175	964.9817	952.5052	957.9134	1.045	1.587	0.729	2815.566	2803.11	2812.647	0.068
04/06/2016 8:00	403	14.64	14.42	8.96	8.96	226.3	7.606	13.27	216.134	0.7780824	1015.807	3.661	71.27	957.9048	2.52	965.373	951.2608	957.0807	2.161	3.512	1.433	2811.81	2801.282	2812.383	0.089
04/06/2016 9:00	404	14.64	14.51	9.88	9.88	228	7.922	13.62	292.5791	1.053285	1016.447	3.892	71.26	957.5837	2.133	964.4745	951.4442	956.8325	1.982	2.712	1.539	2817.835	2805.82	2815.216	0.113
04/06/2016 10:00	405	14.65	14.14	8.83	8.83	228.9	9.94	12.49	522.9687	1.882687	1016.879	4.947	66.89	957.6306	2.08	963.9879	951.7001	957.2017	1.612	2.977	1.233	2816.765	2804.291	2814.044	0.195
04/06/2016 11:00	406	14.23	14.03	7.692	7.692	225.9	16.19	11.78	775.0358	2.790129	1017.409	6.618	60.18	957.4791	1.408	963.4303	951.7897	957.2173	1.068	2.053	0.772	2815.872	2800.54	2813.787	0.311
04/06/2016 12:00	407	14.12	14.03	8.41	8.41	221.7	14.5	11.66	845.904	3.045254	1017.821	6.947	59.53	957.2691	1.771	963.4543	950.5472	957.806	1.704	2.261	1.179	2814.554	2800.741	2814.413	0.337
04/06/2016 13:00	408	14.11	14.03	9.93	9.93	222.4	13.5	13.54	875.0436	3.150157	1017.807	7.644	56.73	957.9761	3.597	963.3373	951.2285	959.3627	2.741	4.909	2.685	2815.427	2801.249	2816.052	0.355
04/06/2016 14:00	409	14.11	13.99	10.21	10.21	232.3	11.46	15.52	883.2076	3.179547	1017.72	8.25	52.12	959.1401	4.818	964.9119	951.5574	960.951	3.39	5.459	3.324	2808.191	2793.431	2821.413	0.377
04/06/2016 15:00	410	14.11	14.02	10.22	10.22	227.2	11.22	15.56	849.4225	3.057921	1017.944	8.64	48.89	957.8724	2.223	965.2147	950.0844	958.3181	1.855	3.057	1.428	2815.762	2800.194	2814.815	0.381
04/06/2016 16:00	411	14.11	14.03	9.07	9.07	223.8	11.26	12.94	747.2224	2.690001	1017.777	8.87	47.26	957.4473	2.17	965.7292	949.1589	957.4536	1.947	2.925	1.334	2811.558	2792.393	2814.171	0.356
04/06/2016 17:00	412	14.08	14.03	8.18	8.18	221.5	12.85	12.49	646.587	2.327713	1017.937	9.3	45.4	957.4221	2.183	965.8152	949.507	956.9442	2.231	2.682	1.458	2813.934	2787.892	2809.973	0.33
04/06/2016 18:00	413	14.08	14.04	8.42	8.42	214.9	10.8	12.45	500.7169	1.802581	1018.047	9.2	46.57	957.6922	2.671	966.295	949.9561	956.8255	2.329	3.781	1.298	2824.396	2802.969	2810.585	0.273
04/06/2016 19:00	414	14.1	14.03	8.15	8.15	206	10.53	12.17	388.4812	1.398532	1017.965	9.08	46.62	957.0046	1.689	966.4027	949.168	955.4429	1.539	2.259	1.043	2821.159	2799.678	2809.915	0.23
04/06/2016 20:00	415	14.05	13.89	9.05	9.05	206.3	9.87	13.37	153.5049	0.5526176	1017.806	7.823	50.49	957.674	2.136	965.8524	950.8243	956.3453	1.717	2.951	1.423	2821.598	2801.29	2813.918	0.135
04/06/2016 21:00	416	13.91	13.79	9.03	9.03	205.9	6.831	11.82	50.42847	0.1815425	1017.86	7.044	53.83	957.5598	2.093	965.1271	951.2013	956.3507	1.894	2.78	1.353	2816.574	2801.269	2812.026	0.043
04/06/2016 22:00	417	13.8	13.66	9.29	9.29	208.3	6.057	11.82	8.881268	0.03197256	1017.779	6.296	56.38	957.5167	2.436	965.1037	951.0126	956.4338	1.849	3.384	1.711	2816.609	2803.888	2812.643	0.036
04/06/2016 23:00	418	13.67	13.55	9.4	9.4	207.7	6.953	12.56	0.3425095	0.001233034	1017.866	6.097	56.85	957.2744	1.987	964.5441	950.5872	956.6917	1.638	2.777	1.206	2819.569	2803.106	2813.633	0.035
05/06/2016 0:00	419	13.57	13.47	9.19	9.19	216.2	6.411	12.19	0	0	1017.804	5.546	57.81	957.7526	2.318	965.2498	951.1116	956.8964	2.265	3.116	1.133	2817.605	2799.257	2812.906	0.032
05/06/2016 1:00	420	13.48	13.4	9.81	9.81	210.4	6.174	12.64	0	0	1017.601	4.758	60.76	957.8604	2.747	965.6272	951.119	956.8348	2.566	3.801	1.267	2815.563	2802.06	2812.857	0.029
05/06/2016 2:00	421	13.42	13.34	8.81	8.81	205.3	6.458	12.56	0	0	1017.646	3.995	64.39	957.6763	2.062	965.2016	951.1677	956.6597	1.779	2.775	1.375	2816.673	2801.68	2812.718	0.023
05/																									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
07/06/2016 2:00	469	13.49	13.41	7.734	7.734	229.7	7.169	11.15	0	0	1009.379	2.855	66.26	961.0036	1.592	968.2366	954.5535	960.2208	1.633	2.013	0.941	2822.307	2802.388	2817.568	0.019	
07/06/2016 3:00	470	13.43	13.34	7.929	7.929	232.4	5.821	11.09	0	0	1009.625	2.367	67.65	961.1655	0.831	968.0397	954.9968	960.46	0.707	1.098	0.605	2821.586	2806.157	2816.329	0.017	
07/06/2016 4:00	471	13.36	13.34	7.024	7.024	227.5	5.672	9.29	8.835504	0.03180781	1009.789	1.454	71.01	961.3137	0.844	967.9713	955.7118	960.258	0.783	1.162	0.418	2821.334	2808.386	2815.286	0.014	
07/06/2016 5:00	472	13.56	13.34	6.482	6.482	230.8	7.082	8.58	74.41655	0.2678996	1009.871	1.714	68.48	961.5297	0.545	967.0692	956.9438	960.5761	0.551	0.701	0.31	2818.863	2807.634	2816.507	0.038	
07/06/2016 6:00	473	13.92	13.56	5.605	5.605	231	9.83	9.76	177.7546	0.6399165	1009.953	2.458	63.92	961.6252	0.631	966.4415	957.5648	960.8691	0.616	0.752	0.498	2817.989	2807.442	2816.796	0.074	
07/06/2016 7:00	474	14.34	13.92	5.818	5.818	237.5	11.56	9.68	302.3853	1.088587	1010.266	2.895	62.57	961.5123	0.597	965.5899	957.5405	961.4064	0.628	0.756	0.319	2816.943	2808.284	2817.808	0.119	
07/06/2016 8:00	475	14.63	14.34	4.904	4.904	237.4	13.7	8.19	343.9512	1.238224	1010.151	3.102	62.19	961.4673	0.58	965.4658	957.0693	961.8666	0.717	0.584	0.393	2817.761	2807.26	2817.978	0.133	
07/06/2016 9:00	476	14.64	14.43	4.719	4.719	236.9	17.37	8.64	336.4961	1.211386	1010.379	3.415	61.64	961.3784	0.235	966.2827	956.1328	961.7197	0.255	0.269	0.168	2817.534	2805.176	2818.137	0.132	
07/06/2016 10:00	477	14.64	14.16	4.835	4.835	223.5	15.11	7.86	427.3675	1.538523	1010.493	4.152	61.14	961.2318	0.373	967.2929	955.3943	961.0081	0.4	0.397	0.316	2819.742	2805.511	2816.641	0.17	
07/06/2016 11:00	478	14.26	14.14	4.531	4.531	220	15.57	6.84	352.8462	1.270246	1010.656	4.05	62.09	961.1572	0.772	967.4236	955.2797	960.7684	0.655	1.043	0.519	2820.156	2806.395	2817.688	0.141	
07/06/2016 12:00	479	14.23	14.07	4.584	4.584	214.7	13.85	7.703	523.6043	1.884975	1010.82	4.683	61.23	961.0634	0.797	966.685	954.9058	961.5994	0.766	0.971	0.613	2818.401	2805.092	2818.403	0.21	
07/06/2016 13:00	480	14.31	14.03	5.185	5.185	240.7	22.75	8.96	500.4848	1.801745	1010.984	4.389	73.02	961.183	1.272	967.3296	955.415	960.8044	1.316	1.524	0.893	2819.707	2806.675	2817.772	0.183	
07/06/2016 14:00	481	14.29	14.14	6.771	6.771	249.2	11.13	11.6	786.8245	2.832568	1010.82	4.771	75.51	960.9922	0.862	967.8724	953.5016	961.6025	0.862	1.095	0.537	2819.615	2802.874	2818.284	0.271	
07/06/2016 15:00	482	14.27	14.14	5.174	5.174	254.3	13.97	9.47	510.6964	1.838507	1010.82	5.161	75.59	961.3235	0.719	968.0394	954.9827	960.9486	0.769	0.846	0.492	2820.944	2805.808	2817.028	0.188	
07/06/2016 16:00	483	14.24	14.17	4.538	4.538	263.6	19.19	8.27	406.2147	1.462373	1010.902	5.547	75.39	961.3096	0.933	967.8746	955.0447	961.0096	0.879	1.213	0.605	2820.33	2804.562	2817.551	0.154	
07/06/2016 17:00	484	14.33	14.19	5.11	5.11	262.4	26.07	8.82	278.17	1.001412	1011.065	5.086	80.9	961.8073	0.584	968.5553	955.9868	961.8044	0.548	0.746	0.41	2821.576	2805.974	2818.498	0.095	
07/06/2016 18:00	485	14.29	14.19	5.732	5.732	249.7	13.71	9.35	489.0041	1.760415	1010.984	5.382	80	961.7636	1.06	969.966	954.1742	961.1506	0.855	1.495	0.635	2824.042	2805.754	2817.846	0.173	
07/06/2016 19:00	486	14.21	14.14	6.479	6.479	246.6	10.06	9.36	384.6624	1.384784	1010.984	6.166	73.2	961.7307	0.891	970.6208	954.1755	960.3328	0.93	1.125	0.501	2823.344	2803.97	2817.719	0.15	
07/06/2016 20:00	487	14.2	13.93	5.525	5.525	291.4	25.24	8.94	59.06264	0.2126255	1011.331	4.061	86.9	962.7025	1.535	970.0361	956.3582	961.7133	1.489	2.072	0.75	2821.052	2805.557	2817.362	0.007	
07/06/2016 21:00	488	14.08	13.82	4.855	4.855	262.7	27.56	8.15	33.66141	0.1211811	1011.341	2.699	94.1	962.8295	0.252	969.624	956.7212	962.1434	0.274	0.288	0.18	2821.468	2805.902	2818.56	-0.002	
07/06/2016 22:00	489	13.84	13.76	5.978	5.978	242.8	6.328	7.977	40.91093	0.1472793	1011.263	2.841	88.9	962.6904	0.657	969.9205	956.3923	962.7587	0.602	0.859	0.442	2822.389	2805.626	2817.724	0.003	
07/06/2016 23:00	490	13.77	13.63	5.316	5.316	252.2	5.319	8.21	0.7371081	0.002653589	1011.589	2.262	89.9	962.8706	0.218	969.7281	956.6982	962.1857	0.2	0.277	0.16	2822.772	2807.306	2818.4	-0.002	
08/06/2016 0:00	491	13.65	13.54	4.101	4.101	246.8	5.364	5.625	0	0	1011.591	2.219	90.5	962.9075	0.14	969.7082	956.7211	962.2932	0.148	0.153	0.115	2822.685	2807.516	2818.898	-0.004	
08/06/2016 1:00	492	13.56	13.47	2.948	2.948	251.3	8	4.253	0	0	1011.754	2.457	90.1	962.9097	0.201	969.6672	956.7726	962.2894	0.214	0.25	0.116	2822.396	2807.498	2818.95	-0.007	
08/06/2016 2:00	493	13.49	13.4	2.575	2.575	249.7	15.16	4.312	0	0	1011.754	2.506	90	962.94	0.059	969.6846	956.8353	962.3002	0.063	0.073	0.032	2822.417	2807.097	2818.712	-0.008	
08/06/2016 3:00	494	13.42	13.34	2.216	2.216	265	14.65	4.41	0.2623463	0.000944447	1011.591	2.693	89.6	962.9023	0.235	969.6695	956.7663	962.2712	0.2	0.323	0.147	2822.27	2807.004	2818.795	-0.01	
08/06/2016 4:00	495	13.36	13.29	2.127	2.127	266.8	14.53	3.92	4.550994	0.01638358	1011.754	2.698	90.9	962.9525	0.025	969.6259	956.8987	962.3328	0.027	0.031	0.014	2822.43	2807.334	2818.767	-0.01	
08/06/2016 5:00	496	13.42	13.29	2.185	2.185	288.3	16.65	3.312	32.98533	0.1187472	1011.591	2.733	93.4	963.0002	0.123	969.4366	957.238	962.3262	0.117	0.168	0.059	2822.313	2808.198	2818.672	-0.021	
08/06/2016 6:00	497	13.87	13.42	1.013	1.013	266.2	21.34	2.685	110.5857	0.3981085	1011.427	3.232	89.4	963.0271	0.267	968.7578	957.9854	962.3381	0.263	0.37	0.092	2821.19	2808.923	2818.987	0.01	
08/06/2016 7:00	498	14.39	13.86	1.247	1.247	346.8	26.13	3.489	155.5417	0.5599499	1011.468	3.797	87.6	962.9216	0.139	969.1791	957.092	962.4937	0.142	0.181	0.073	2821.846	2807.469	2818.948	0.033	
08/06/2016 8:00	499	14.64	14.37	1.846	1.846	349.4	25.5	3.548	225.6811	0.8124518	1011.504	4.121	85.9	962.8963	0.202	969.0944	957.0241	962.5706	0.214	0.251	0.117	2821.493	2806.922	2819.262	0.066	
08/06/2016 9:00	500	14.62	14.29	2.184	2.184	349.3	20.93	3.998	167.0493	0.6013774	1011.483	4.633	79.65	962.8469	0.264	969.4836	956.7995	962.2576	0.242	0.364	0.133	2822.367	2807.456	2818.688	0.045	
08/06/2016 10:00	501	14.38	14.14	3.231	3.231	350.8	28.85	5.547	271.8249	0.9785697	1011.639	4.892	81.1	962.8215	0.375	968.3503	957.0139	963.1004	0.385	0.481	0.204	2821.167	2806.938	2819.731	0.092	
08/06/2016 11:00	502	14.19	14.14	2.431	2.431	311.3	25.26	4.802	322.6665	1.161599	1011.475	5.577	77.18	962.7446	0.345	968.6672	956.7275	962.8392	0.353	0.415	0.245	2821.506	2807.461	2819.66	0.12	
08/06/2016 12:00	503	14.17	13.95	1.671	1.671	354.7	55.37	6.292	540.8417	1.94703	1011.282	6.835	67.42	962.6804	0.271	968.5178	956.1964	963.327	0.252	0.295	0.263	2820.941	2806.699	2820.292	0.237	
08/06/2016 13:00	504	14.09	13.96	2.08	2.08	357.9	34.84	5.429	407.8541	1.468275	1011.417	7.894	62.07	961.8766	3.59	967.9409	956.0514	962.5319	3.922	1.339	0.635	2821.502	2806.739	2819.3	0.181	
08/06/2016 14:00	505	14.03	13.48	2.048	2.048	321.6	67.85	5.429	827.937	2.980573	1011.039	9.35	53.5	962.3528	0.439	968.4777	954.7047	963.8759	0.408	0.623	0.152	2820.925	2804.604	2820.721	0.412	
08/06/2016 15:00	506	14.06	13.84	2.801	2.801	350.2	43.09	7.428	635.9864	2.289551	1010.868	10.21	47.93	962.3963	0.107	969.3519	955.5594	962.2796	0.105	0.145	0.046	2822.156	2805.088	2818.687	0.326	
08/06/2016 16:00	507	14.08	14.02	3.024	3.024	336.9	29.91	7.056	305.9855	1.101548	1010.736	9.63	49.86	962.4382	0.612	969.507	955.588	962.2197	0.613							

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
10/06/2016 16:00	555	13.85	13.72	6.517	6.517	231.4	16.46	12.66	768.3325	2.765997	1010.561	17.43	27.09	961.4807	1.438	969.5166	953.2803	961.6451	1.527	1.627	1.107	2825.579	2802.659	2818.865	0.537	
10/06/2016 17:00	556	13.81	13.73	5.829	5.829	227.5	21.78	9.96	574.2175	2.067183	1010.222	17.57	24.26	961.6954	1.15	969.233	954.8247	961.0285	0.968	1.418	1.009	2822.132	2804.156	2816.56	0.435	
10/06/2016 18:00	557	14.13	13.81	5.898	5.898	231.2	14.48	9.96	425.8179	1.532944	1010.074	17.08	24.75	961.5922	0.963	970.4131	953.9026	960.4609	0.871	1.261	0.657	2822.59	2800.739	2816.206	0.351	
10/06/2016 19:00	558	13.96	13.89	6.015	6.015	247.9	25.52	9.62	427.2838	1.538222	1010.074	17.53	23.98	961.4661	1.231	969.8998	954.0334	960.465	1.421	1.391	0.769	2823.484	2803.366	2817.391	0.36	
10/06/2016 20:00	559	13.91	13.78	5.211	5.211	247.1	14.23	8.23	211.9378	0.7629761	1010.187	16.46	24.68	961.5798	0.528	971.3725	953.8034	959.5634	0.487	0.671	0.384	2823.552	2802.204	2814.931	0.218	
10/06/2016 21:00	560	13.79	13.69	4.253	4.253	233.2	8.46	6.919	137.347	0.4944491	1010.294	16.07	24.66	961.6753	0.368	970.6234	954.4995	959.903	0.404	0.47	0.147	2824.073	2805.199	2815.635	0.093	
10/06/2016 22:00	561	13.71	13.54	5.562	5.562	193.7	23.46	8.09	22.60433	0.0813756	1010.541	13.33	35.62	961.697	0.898	969.3961	954.8134	960.8817	0.966	1.075	0.574	2823.117	2805.924	2816.787	0.064	
10/06/2016 23:00	562	13.56	13.41	7.397	7.397	182.4	3.742	8.74	0.9684268	0.003486337	1010.589	12.54	46.14	961.6902	0.87	969.085	954.9901	960.9955	0.921	1.011	0.631	2823.117	2805.634	2818.083	0.057	
11/06/2016 0:00	563	13.43	13.33	8.1	8.1	183.1	3.26	9.13	0	0	1010.598	11.85	46.61	961.9543	1.234	969.3264	955.1775	961.3591	1.152	1.566	0.89	2822.339	2804.581	2817.719	0.057	
11/06/2016 1:00	564	13.34	13.25	8.05	8.05	190.5	4.044	8.84	0	0	1010.762	11.45	45.91	961.9216	1.351	969.4128	955.1671	961.1848	1.413	1.762	0.613	2821.05	2804.018	2817.039	0.056	
11/06/2016 2:00	565	13.28	13.19	7.517	7.517	201.5	4.96	9.25	0	0	1010.762	11.3	42.29	961.9053	0.79	969.3893	955.1304	961.196	0.649	0.509	0.509	2821.785	2804.873	2816.291	0.058	
11/06/2016 3:00	566	13.21	13.14	6.224	6.224	216.4	5.028	7.624	0.3828693	0.00137833	1010.933	10.47	38.81	961.9587	0.68	969.4391	955.2079	961.229	0.638	0.896	0.423	2823.004	2806.695	2817.836	0.053	
11/06/2016 4:00	567	13.19	13.14	6.912	6.912	213.6	5.702	8.7	15.77529	0.05679103	1010.772	10.15	37.46	962.1121	1.025	969.2695	955.9946	961.0721	0.899	1.418	0.577	2822.99	2808.143	2817.765	0.059	
11/06/2016 5:00	568	13.32	13.18	7.002	7.002	218.6	6.607	9.47	35.34108	0.1272279	1010.844	11.05	34.54	961.9577	1.049	969.3963	955.1747	961.3021	0.951	1.431	0.591	2823.046	2804.526	2816.556	0.12	
11/06/2016 6:00	569	13.64	13.3	6.263	6.263	229.6	9.85	8.62	82.31717	0.2963418	1010.926	11.13	34.44	962.1221	0.656	969.1978	955.8725	961.296	0.701	0.778	0.439	2820.458	2805.734	2816.963	0.128	
11/06/2016 7:00	570	14.08	13.64	6.539	6.539	229.8	9.98	9.13	147.9883	0.5327579	1010.892	12.46	31.49	962.1094	1.271	969.2178	955.833	962.2776	1.161	1.674	0.836	2822.843	2806.64	2819.602	0.175	
11/06/2016 8:00	571	14.56	14.06	6.263	6.263	227	11.56	9.84	207.0334	0.7453204	1011.033	12.42	33.69	962.0709	0.645	969.1099	955.6271	961.4756	0.659	0.794	0.427	2820.999	2804.425	2818.114	0.192	
11/06/2016 9:00	572	14.56	14.27	6.396	6.396	211.1	19.3	10.82	442.4415	1.5927898	1010.95	13.17	34.04	962.034	1.283	967.531	956.5576	962.0135	1.123	1.662	0.957	2820.927	2808.337	2818.217	0.307	
11/06/2016 10:00	573	14.48	13.89	7.606	7.606	212.4	11.38	10.37	525.3615	1.891301	1011.277	13.52	35.67	961.9858	0.871	968.6872	955.6088	961.6613	0.826	1.128	0.568	2823.034	2808.802	2818.629	0.355	
11/06/2016 11:00	574	13.99	13.89	7.322	7.322	208.3	10.64	10.11	350.3662	1.261318	1011.195	13.13	43.07	962.034	0.971	969.1893	955.4868	961.426	0.872	1.279	0.659	2821.321	2806.623	2817.462	0.255	
11/06/2016 12:00	575	13.97	13.75	4.564	4.564	216.1	46.77	9.29	598.508	2.154629	1011.114	14.25	40.17	962.0184	0.897	967.7944	952.8362	961.426	0.952	1.085	0.574	2819.609	2804.171	2818.743	0.367	
11/06/2016 13:00	576	13.77	13.63	3.982	3.982	156.2	29.01	8.76	824.9225	2.969721	1010.525	15.92	34.88	961.7183	0.736	967.9533	954.7924	962.4092	0.809	0.833	0.526	2820.245	2804.755	2818.785	0.512	
11/06/2016 14:00	577	13.79	13.6	4.503	4.503	189.4	32.89	8.94	767.7494	2.763898	1009.914	16.13	37.06	961.7488	0.84	968.9161	954.7089	961.6217	0.901	1.019	0.517	2820.965	2802.885	2818.222	0.483	
11/06/2016 15:00	578	13.85	13.7	3.875	3.875	197.7	24.45	7.899	537.5674	1.935242	1009.671	16.03	37.4	961.6063	0.974	969.6404	953.7097	961.4688	1.008	1.244	0.532	2823.388	2804.076	2817.37	0.349	
11/06/2016 16:00	579	13.85	13.7	5.812	5.812	187	15.8	11	300.6736	1.082425	1009.545	15.19	40.1	962.34	3.083	968.6139	956.4648	961.9412	2.253	4.35	2.126	2821.103	2807.268	2820.937	0.237	
11/06/2016 17:00	580	14.04	13.84	8.92	8.92	204.7	10.44	11.86	153.2168	0.5515805	1009.558	12.35	53.97	961.8579	1.489	969.4373	955.3711	961.426	1.59	1.833	0.875	2823.921	2808.265	2819.937	0.152	
11/06/2016 18:00	581	14.23	14	6.232	6.232	188.3	9.42	10.49	228.7476	0.8234914	1009.232	12.77	54.66	961.7986	1.486	969.17	955.08	961.1459	1.371	1.867	1.124	2820.24	2802.775	2817.417	0.161	
11/06/2016 19:00	582	14.08	13.96	7.255	7.255	199.4	8.48	11.47	185.4509	0.6676233	1010.05	12.2	55.44	961.6577	0.784	969.4324	954.9625	960.5784	0.776	0.95	0.583	2822.402	2802.885	2817.968	0.147	
11/06/2016 20:00	583	14.01	13.9	4.303	4.303	186	12.83	6.723	131.9293	0.4749454	1010.068	11.64	54.75	961.7376	0.659	969.9992	954.9963	960.2175	0.645	0.843	0.422	2822.064	2803.968	2817.026	0.089	
11/06/2016 21:00	584	13.91	13.77	2.904	2.904	185.4	14.61	6.233	36.63572	0.1318886	1010.189	10.39	57.87	961.8184	0.049	969.4634	955.3697	960.6219	0.048	0.063	0.029	2822.277	2805.469	2816.757	0.02	
11/06/2016 22:00	585	13.79	13.64	2.68	2.68	185.6	26.6	5.018	15.59633	0.05616677	1010.119	9.09	64.82	961.7905	0.178	969.6044	955.3585	960.4084	0.171	0.229	0.114	2822.181	2804.764	2816.42	0.009	
11/06/2016 23:00	586	13.66	13.52	5.242	5.242	190.4	8.57	7.076	0.4378751	0.00157635	1009.837	7.314	71.35	961.7852	0.629	969.4802	955.2134	960.662	0.595	0.85	0.333	2822.436	2806.031	2816.841	0.014	
12/06/2016 0:00	587	13.53	13.43	5.958	5.958	208.1	12.31	9.13	0	0	1009.674	7.828	68.22	962.0024	0.582	969.8055	955.4837	960.7181	0.589	0.728	0.375	2823.41	2807.125	2816.246	0.019	
12/06/2016 1:00	588	13.44	13.36	5.221	5.221	206.9	10.62	8.23	0	0	1009.674	8.19	64.98	961.8865	0.794	969.4907	955.386	960.7828	0.757	1.007	0.551	2822.561	2805.28	2816.403	0.02	
12/06/2016 2:00	589	13.37	13.29	5.411	5.411	208.8	11.54	8.84	0	0	1009.51	7.325	67.48	961.9892	0.556	969.757	955.5351	960.6756	0.54	0.683	0.41	2821.772	2807.001	2816.484	0.017	
12/06/2016 3:00	590	13.31	13.23	5.213	5.213	222.5	13.22	8.82	0.002037209	7.33E-06	1009.674	6.818	67.29	961.9514	0.774	969.7245	955.4536	960.6757	0.834	0.959	0.426	2822.052	2806.103	2817.252	0.016	
12/06/2016 4:00	591	13.25	13.2	2.866	2.866	190.8	41.08	6.958	5.632434	0.02027676	1009.838	6.64	65.98	962.106	0.143	969.6536	955.7889	960.8753	0.174	0.126	0.124	2822.546	2806.069	2816.975	0.007	
12/06/2016 5:00	592	13.31	13.2	4.544	4.544	203.6	28.14	7.507	28.03273	0.1009178	1009.434	6.205	65.91	961.9479	1.047	969.6214	955.4503	960.7719	1.037	1.389	0.532	2822.278	2805.172	2816.673	0.019	
12/06/2016 6:00	593	13.53	13.29	3.908	3.908	199.9	31.8	8.04	51.28931	0.1846415	1009.348	6.24	64.27	962.1502	0.032	969.6747	955.8539	960.9221	0.038	0.037</						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
14/06/2016 6:00	641	13.28	13.16	0.344	0.344	320.7	40.19	1.215	32.77829	0.1180018	1008.716	5.262	95.6	964.7028	0.013	972.2188	958.4816	963.4078	0.015	0.015	0.009	2825.523	2809.219	2820.074	-0.031	
14/06/2016 7:00	642	13.87	13.27	0.796	0.796	338.7	39.24	1.803	108.4846	0.3905445	1009.02	5.563	94.9	964.6846	0.032	972.1126	958.4221	963.519	0.028	0.043	0.021	2825.464	2809.144	2820.211	0.009	
14/06/2016 8:00	643	14.63	13.88	1.854	1.854	317.8	18.91	3.744	188.177	0.6774372	1009.346	6.33	94.8	964.6724	0.232	971.5923	958.816	963.6088	0.277	0.252	0.144	2824.378	2809.666	2820.568	0.049	
14/06/2016 9:00	644	14.66	14.43	2.225	2.225	108	33.64	4.488	429.6651	1.546794	1009.459	8.25	83.5	964.7446	0.348	970.8369	959.4526	963.9442	0.398	0.392	0.225	2824.412	2809.71	2820.174	0.18	
14/06/2016 10:00	645	14.62	14.12	1.537	1.537	65.29	51.25	3.116	370.7692	1.334769	1009.449	9.31	74.68	958.4239	0.143	971.455	958.4239	963.7849	0.148	0.158	0.12	2824.916	2808.965	2820.305	0.162	
14/06/2016 11:00	646	14.13	13.96	3.357	3.357	1.737	23.94	6.076	435.5997	1.568159	1009.584	9.83	68.02	964.4724	0.622	970.3231	958.5428	964.5511	0.542	0.866	0.343	2823.527	2810.416	2822.054	0.204	
14/06/2016 12:00	647	14.07	13.95	4.532	4.532	4.4	15.31	7.762	584.5331	2.104319	1009.562	10.71	61.73	964.3904	0.596	970.5789	958.1281	964.4643	0.579	0.74	0.428	2822.131	2807.272	2820.936	0.289	
14/06/2016 13:00	648	14.05	13.9	4.632	4.632	351.4	19.69	8.58	629.1458	2.264925	1009.559	11.35	57.82	964.3557	0.552	971.2209	958.0529	963.7933	0.587	0.66	0.367	2824.595	2808.847	2820.954	0.323	
14/06/2016 14:00	649	13.98	13.87	5.211	5.211	351.9	21.89	8.92	706.9242	2.544927	1009.395	12.38	51.82	964.3091	0.634	971.4688	957.7081	963.7504	0.518	0.904	0.345	2824.004	2806.938	2820.803	0.381	
14/06/2016 15:00	650	13.98	13.89	5.93	5.93	356.8	17.33	9.27	641.4395	2.309182	1009.395	13.07	43.49	964.1751	1.002	971.8991	956.8671	963.7593	0.85	1.386	0.605	2825.466	2808.04	2821.143	0.375	
14/06/2016 16:00	651	13.95	13.86	4.854	4.854	16.71	22.54	9.02	594.4185	2.139906	1009.312	13.66	34.56	964.0542	0.549	972.682	956.156	963.3245	0.48	0.776	0.267	2825.507	2807.334	2820.102	0.369	
14/06/2016 17:00	652	13.95	13.87	4.894	4.894	18.42	20.19	10.13	498.6799	1.795247	1009.467	14.1	34.01	964.2539	0.705	972.0304	957.6215	963.11	0.636	0.984	0.346	2825.858	2808.67	2819.279	0.326	
14/06/2016 18:00	653	14.12	13.93	6.311	6.311	357.5	13.51	10.82	258.6035	0.9309728	1009.722	13.32	39.64	964.2634	1.828	971.6472	958.449	962.6937	1.61	2.416	1.265	2825.321	2808.721	2818.4	0.211	
14/06/2016 19:00	654	14.12	13.77	8.51	8.51	48.26	25.68	16.46	125.2822	0.4510161	1011.575	9.4	65.05	966.2366	0.277	973.757	960.7233	964.2298	0.306	0.336	0.152	2827.026	2811.514	2821.258	0.106	
14/06/2016 20:00	655	13.87	13.77	3.516	3.516	127.3	38.81	7.33	60.8642	0.2191111	1011.229	7.141	79.72	967.0656	0.131	974.6479	961.4624	965.0863	0.131	0.165	0.083	2828.459	2812.839	2822.046	0.009	
14/06/2016 21:00	656	13.89	13.81	1.827	1.827	51.82	47.48	4.488	87.57028	0.315253	1011.966	7.948	72.7	967.0281	0.178	974.8867	961.3688	964.829	0.173	0.232	0.104	2828.683	2812.999	2821.806	0.012	
14/06/2016 22:00	657	13.86	13.73	1.469	1.469	299.1	41.39	2.999	35.55089	0.1279832	1012.296	7.293	79.65	967.0706	0.056	974.9885	961.5217	964.7015	0.061	0.069	0.033	2828.896	2812.863	2821.583	-0.004	
14/06/2016 23:00	658	13.74	13.59	1.973	1.973	296	33.16	4.077	4.651504	0.01674541	1012.974	7.271	73.75	967.0972	0.115	974.824	961.515	964.9525	0.12	0.136	0.083	2828.601	2812.875	2821.85	-0.004	
15/06/2016 0:00	659	13.6	13.49	2.14	2.14	250.7	18.81	3.293	0.23912	0.000860832	1013.242	6.942	74.03	967.127	0.076	974.8702	961.5396	964.9711	0.075	0.083	0.068	2828.793	2812.921	2821.934	-0.004	
15/06/2016 1:00	660	13.51	13.42	2.478	2.478	262.8	12.27	3.469	0	0	1013.686	6.234	78.34	967.1247	0.133	974.9064	961.5783	964.8894	0.143	0.158	0.089	2828.465	2812.455	2821.903	-0.004	
15/06/2016 2:00	661	13.44	13.35	2.312	2.312	270	11.94	3.646	0	0	1013.86	5.928	80.7	967.1646	0.07	974.8787	961.6439	964.9709	0.073	0.06	0.027	2828.807	2813.137	2821.97	-0.006	
15/06/2016 3:00	662	13.37	13.28	2.458	2.458	270.1	15.83	3.646	0.1604376	0.000577575	1014.009	5.631	80.2	967.1545	0.066	974.8942	961.6373	964.932	0.066	0.071	0.059	2828.589	2812.934	2821.942	-0.005	
15/06/2016 4:00	663	13.3	13.24	2.511	2.511	261.8	12.97	3.724	4.838165	0.01741739	1014.539	5.278	80.1	967.1662	0.134	974.9667	961.6409	964.8909	0.139	0.155	0.104	2828.801	2812.973	2821.903	-0.004	
15/06/2016 5:00	664	13.31	13.24	2.455	2.455	246.9	12.82	3.822	16.50673	0.05942422	1014.703	4.638	82.6	967.1954	0.036	974.9537	961.7238	964.9086	0.036	0.039	0.034	2828.781	2813.189	2821.908	-0.021	
15/06/2016 6:00	665	13.48	13.29	2.729	2.729	259.9	16.71	3.979	46.2546	0.1665165	1014.703	4.529	83.5	967.2647	0.142	974.5926	962.1861	965.0154	0.142	0.157	0.124	2828.426	2813.713	2822.203	-0.007	
15/06/2016 7:00	666	14.01	13.47	2.457	2.457	256.7	16.73	3.665	148.4207	0.5343144	1015.026	4.889	83.1	967.5931	0.12	972.8411	963.9897	965.9486	0.137	0.09	0.027	2826.143	2816.099	2823.227	0.036	
15/06/2016 8:00	667	14.63	14.01	2.522	2.522	317.6	27.13	5.86	375.1502	1.350541	1015.077	6.886	75.58	967.533	0.381	972.0897	963.8336	966.6758	0.416	0.466	0.215	2826.435	2815.923	2823.652	0.151	
15/06/2016 9:00	668	14.64	14.4	3.125	3.125	18.46	25.86	5.018	460.5497	1.657979	1014.857	7.894	67.9	967.1724	0.364	971.3879	963.689	967.1724	0.273	0.534	0.192	2825.161	2816.414	2824.399	0.203	
15/06/2016 10:00	669	14.57	13.96	2.755	2.755	335.1	25.77	6.017	560.5256	2.017892	1014.726	9.55	58.22	967.1486	0.127	972.824	962.2238	966.3979	0.109	0.159	0.107	2826.192	2813.487	2824.052	0.272	
15/06/2016 11:00	670	14.05	13.96	3.927	3.927	339	19.79	7.174	499.4652	1.798075	1014.479	10.04	56.22	967.0254	0.644	973.5461	961.7151	965.8149	0.715	0.75	0.412	2828.03	2814.862	2822.705	0.251	
15/06/2016 12:00	671	14.05	13.96	6.072	6.072	322.8	10.6	9.72	420.0541	1.512195	1014.401	10.18	56.19	966.8479	1.419	974.4257	961.2112	964.9068	1.37	1.851	0.857	2827.485	2810.704	2821.493	0.223	
15/06/2016 13:00	672	14.05	13.88	6.336	6.336	341.4	18.29	11.13	677.5723	2.43926	1013.978	11.66	48.96	966.0356	3.513	972.6788	960.7926	964.6353	5.091	2.591	2.097	2827.692	2812.689	2822.742	0.364	
15/06/2016 14:00	673	14.04	13.48	6.588	6.588	3.014	15.61	10.45	489.899	1.763636	1013.651	11.79	45.27	966.9235	1.02	974.05	960.9802	965.7401	0.854	1.428	0.592	2827.619	2812.406	2822.945	0.292	
15/06/2016 15:00	674	14.03	13.96	6.293	6.293	4.688	17.91	15.7	351.4613	1.26526	1013.814	11.77	45.14	967.0889	0.2	974.4708	960.6373	966.1584	0.126	0.276	0.167	2828.416	2812.165	2822.154	0.23	
15/06/2016 16:00	675	14.61	14.03	4.321	4.321	24.08	29.82	11.17	488.6749	1.75923	1013.324	11.72	48.65	966.9368	1.278	974.6948	960.5966	965.519	1.256	1.672	0.728	2826.819	2809.199	2822.872	0.273	
15/06/2016 17:00	676	14.54	14.28	7.276	7.276	7.982	20.3	11.02	429.7287	1.547023	1013.16	12.9	37.48	967.0696	1.434	975.6328	960.2375	965.3384	1.338	1.821	1.031	2831.668	2811.552	2819.836	0.299	
15/06/2016 18:00	677	14.54	13.93	6.778	6.778	354.9	15.62	11.45	459.6412	1.654708	1012.914	13.18	36.05	966.8486	2.52	975.1516	960.1736	965.2208	2.414	2.987	2.075	2825.822	2806.854	2822.345	0.314	
15/06/2016 19:00	678	14.02	13.92	5.854	5.854	355	13.58	10.17	317.2098	1.141955	1013.16	13	35.85	966.9783	0.723	976.3533	959.9958	964.5858	0.68	0.904	0.539	2831.404	2812.174	2821.718	0.237	
15/06/2016 20:00	679	13.96	13.87	5.538	5.538	358.7	14.22	10.25	220.9326	0.7953575	1013.487	12.49	36.8	967.0599	0.504											

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
17/06/2016 20:00	727	13.91	13.82	7.391	7.391	312.5	10.9	11.86	266.0879	0.9579163	1010.865	15.47	25.5	966.7961	1.856	975.3609	959.7172	965.3101	1.691	2.425	1.261	2828.582	2810.206	2820.313	0.28
17/06/2016 21:00	728	13.84	13.76	6.289	6.289	310.3	11.35	10.07	149.5914	0.5385292	1011.359	14.51	25.39	967.1013	0.401	975.5151	960.3111	965.4778	0.384	0.556	0.164	2829.22	2811.292	2822.761	0.104
17/06/2016 22:00	729	13.77	13.61	3.932	3.932	282.4	5.731	5.684	32.56063	0.1172183	1011.939	12.59	31.24	967.215	0.167	974.4014	960.903	966.3407	0.112	0.226	0.112	2827.883	2811.729	2823.611	0.054
17/06/2016 23:00	730	13.63	13.48	2.122	2.122	277.9	16.01	3.508	0.809907	0.002915665	1012.399	12.06	30.25	967.2598	0.066	974.2477	960.9733	966.5586	0.066	0.084	0.042	2827.997	2812.237	2823.818	0.021
18/06/2016 0:00	731	13.49	13.38	2.576	2.576	256.6	18.35	4.782	0	0	1012.728	11.44	29.74	967.3271	0.136	974.1745	961.1373	966.6698	0.127	0.18	0.085	2827.934	2812.535	2823.82	0.029
18/06/2016 1:00	732	13.4	13.31	4.113	4.113	243.5	17.5	6.37	0	0	1013.054	10.97	35.38	967.3651	0.091	974.1805	961.1686	966.7461	0.087	0.118	0.058	2827.983	2812.455	2824.112	0.043
18/06/2016 2:00	733	13.33	13.24	5.401	5.401	225.4	8.39	6.566	0	0	1013.243	10.06	41.75	967.3013	0.476	974.2008	960.9962	966.7067	0.397	0.659	0.298	2827.367	2811.808	2824.084	0.045
18/06/2016 3:00	734	13.26	13.18	6.439	6.439	229.3	3.896	7.899	0.2087766	0.000751596	1013.251	9.57	53.32	967.3347	0.72	974.2659	961.0347	966.7035	0.739	0.904	0.436	2827.865	2812.437	2824.114	0.037
18/06/2016 4:00	735	13.24	13.18	7.625	7.625	230	3.852	8.84	15.99932	0.05759754	1013.34	9.62	56.48	967.4782	0.871	974.1656	961.6719	966.5973	0.836	1.146	0.514	2827.175	2810.802	2823.172	0.04
18/06/2016 5:00	736	13.44	13.22	6.447	6.447	233.5	6.791	8.17	70.91612	0.255298	1013.468	9.95	55.68	967.6468	0.56	973.5706	962.6517	966.7184	0.595	0.678	0.358	2826.757	2813.982	2824.902	0.08
18/06/2016 6:00	737	13.79	13.44	6.331	6.331	239.4	5.647	8.72	166.6947	0.6001009	1013.709	10.57	56.69	967.6855	0.833	973.3198	962.496	967.2408	0.849	1.074	0.457	2826.908	2813.973	2824.594	0.119
18/06/2016 7:00	738	14.07	13.79	5.732	5.732	250.6	7.011	8.02	274.446	0.9880056	1014.019	11.28	58.14	967.665	0.695	972.0687	963.3423	967.584	0.627	0.904	0.488	2826.761	2816.447	2824.671	0.162
18/06/2016 8:00	739	14.61	14.07	6.358	6.358	256.2	7.983	9.17	351.7731	1.266383	1014.307	11.93	58.36	967.613	0.755	971.8539	962.998	967.987	0.811	0.879	0.53	2825.193	2816.441	2825.908	0.205
18/06/2016 9:00	740	14.54	14.46	7.639	7.639	251.3	8.34	10.35	531.1162	1.912018	1014.469	13.58	51.04	967.4169	1.936	971.5028	962.5253	968.2227	1.849	2.681	0.801	2824.159	2814.447	2826.451	0.321
18/06/2016 10:00	741	14.49	13.88	7.102	7.102	250.8	11.64	11.17	645.5002	2.323801	1014.623	14.72	47.15	966.606	1.163	972.4427	961.1048	966.2704	1.161	1.48	0.72	2826.483	2812.159	2824.596	0.394
18/06/2016 11:00	742	13.92	13.81	6.935	6.935	271.5	17.72	12.33	629.8019	2.267287	1014.666	15.91	39.75	966.6977	1.253	973.313	960.6425	966.1704	1.131	1.748	0.615	2826.708	2813.333	2824.303	0.42
18/06/2016 12:00	743	13.86	13.76	8.13	8.13	287.5	12.79	12.99	716.4324	2.579157	1014.74	17.1	28.8	966.5178	1.865	973.4364	960.0597	966.0574	1.384	2.378	1.694	2826.366	2811.565	2823.956	0.517
18/06/2016 13:00	744	13.86	13.76	7.519	7.519	294.1	13.86	12.86	558.8475	2.011851	1014.738	17.32	29.35	966.2772	1.749	973.1852	959.9155	965.7307	1.706	2.113	1.341	2829.589	2809.595	2823.875	0.435
18/06/2016 14:00	745	13.83	13.71	6.931	6.931	291	13.04	13.03	596.3005	2.146682	1014.727	17.92	31.14	967.117	4.134	971.783	962.1559	967.4122	4.215	4.946	3.006	2824.713	2806.718	2820.725	0.45
18/06/2016 15:00	746	13.86	13.76	8.2	8.2	261.2	19.18	13.09	690.3968	2.485428	1014.89	17.69	37.02	966.8428	2.714	973.3115	960.3567	966.8604	2.582	3.453	1.873	2826.633	2810.703	2823.542	0.49
18/06/2016 16:00	747	13.81	13.76	7.638	7.638	281.6	28.49	14.13	465.7805	1.67681	1015.611	18.04	35.56	966.7098	1.242	974.4814	960.2307	965.4174	1.303	1.458	0.898	2827.372	2809.856	2823.437	0.382
18/06/2016 17:00	748	13.95	13.8	4.934	4.934	37.45	17.83	12.25	323.6922	1.165292	1015.589	15.45	43.18	966.7221	0.153	974.8148	959.5634	965.7881	0.141	0.201	0.099	2828.724	2810.756	2822.911	0.233
18/06/2016 18:00	749	13.9	13.81	1.945	1.945	264.9	66.59	4.077	145.4812	0.5237323	1015.444	16.41	40.9	966.8403	0.068	974.282	960.3884	965.8503	0.063	0.084	0.054	2828.106	2811.507	2822.908	0.079
18/06/2016 19:00	750	13.84	13.74	2.321	2.321	245.6	81.2	7.134	84.37385	0.3037458	1016.028	14.4	49.05	968.8677	0.731	977.2477	962.1779	967.1778	0.647	1.037	0.329	2832.395	2813.714	2824.171	0.043
18/06/2016 20:00	751	13.9	13.82	5.71	5.71	182.5	16.39	8.11	252.0179	0.9072643	1015.86	14.29	57.93	968.6104	0.406	978.73	960.9018	966.1995	0.486	0.45	0.238	2833.813	2812.936	2823.266	0.17
18/06/2016 21:00	752	13.86	13.73	2.916	2.916	128.7	44.16	5.958	112.3261	0.404374	1016.353	13.83	5.938	968.6951	0.402	978.4666	961.3561	966.2629	0.38	0.504	0.292	2833.441	2813.127	2823.38	0.041
18/06/2016 22:00	753	13.75	13.6	5.098	5.098	181.5	19.66	8.27	30.7489	0.110696	1016.459	12.88	56.53	968.5505	0.935	976.7729	961.5165	967.3622	0.855	1.28	0.506	2831.184	2812.855	2824.571	0.039
18/06/2016 23:00	754	13.61	13.46	6.558	6.558	208.8	6.311	7.781	0.9107409	0.003278667	1016.819	12.41	56.52	968.7551	0.419	976.9822	961.7534	967.5295	0.428	0.507	0.295	2830.881	2813.505	2825.028	0.041
19/06/2016 0:00	755	13.48	13.38	5.508	5.508	211.3	8.76	6.958	0	0	1017.065	12.47	53.85	968.8171	0.372	976.9199	961.8266	967.7049	0.377	0.453	0.259	2831.075	2813.58	2825.626	0.038
19/06/2016 1:00	756	13.39	13.3	4.911	4.911	216.2	6.014	6.174	0	0	1017.142	12.53	53.07	968.886	0.364	976.9267	961.9595	967.7719	0.364	0.469	0.213	2830.985	2812.753	2825.239	0.036
19/06/2016 2:00	757	13.32	13.24	4.473	4.473	206.7	5.469	5.429	0	0	1017.474	12.21	51.35	968.9307	0.182	977.0004	962.0749	967.717	0.161	0.225	0.151	2831.128	2813.532	2825.355	0.034
19/06/2016 3:00	758	13.26	13.18	4.638	4.638	213.3	4.696	5.723	0	0	1017.802	12.15	50.57	968.9031	0.19	976.9247	962.0441	967.7407	0.177	0.244	0.13	2831.098	2813.011	2825.306	0.036
19/06/2016 4:00	759	13.19	13.16	3.784	3.784	217.8	7.413	4.743	6.768183	0.02436546	1018.129	12.35	49.3	968.9852	0.288	976.9125	962.2921	967.7511	0.281	0.382	0.157	2830.92	2813.813	2824.948	0.031
19/06/2016 5:00	760	13.39	13.16	4.004	4.004	208.8	4.348	5.135	69.21152	0.2491615	1018.282	13.33	47.04	969.2394	0.119	976.0416	963.8911	967.7856	0.112	0.148	0.08	2829.875	2815.629	2825.424	0.069
19/06/2016 6:00	761	13.71	13.38	3.483	3.483	207.2	5.266	4.194	161.6516	0.5819459	1018.397	14.79	45.76	969.2556	0.133	975.6052	964.0403	968.1211	0.144	0.152	0.098	2829.41	2815.808	2825.929	0.114
19/06/2016 7:00	762	14.01	13.71	2.069	2.069	231.9	37.7	3.508	272.4493	0.9808174	1018.561	16.02	44.76	969.2349	0.067	973.8596	965.0245	968.8207	0.092	0.042	0.092	2827.497	2817.201	2826.639	0.157
19/06/2016 8:00	763	14.43	14.01	1.918	1.918	250	25.98	4.371	394.1833	1.41906	1018.705	16.08	49.36	969.1628	0.221	973.6231	964.6205	969.2449	0.215	0.245	0.202	2826.535	2816.305	2827.144	0.227
19/06/2016 9:00	764	14.42	14.23	3.159	3.159	204.6	41.94	6.017	520.2885	1.873099	1018.831	17.15	42.5	969.103	0.18	973.5577	964.315	969.4363	0.191	0.2	0.145	2826.641	2815.65	2827.477	0.333
19/06/2016 10:00	765	14.29	13.73	3.872	3.872	199.6	22.98	6.899	631.5653	2.273635	1018.897	17.95	40.04	968.9803	0.638	974.1274	963.3195	969.4363	0.55	0.879	0.383				

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
21/06/2016 10:00	813	14.63	14.3	2.555	2.555	292.6	16.05	3.959	244.3198	0.8795512	1014.866	7.637	68.45	968.9834	0.171	976.7534	962.3581	967.8387	0.17	0.213	0.118	2831.099	2814.17	2825.247	0.098	
21/06/2016 11:00	814	14.62	14.49	1.837	1.837	297.3	30.57	3.724	336.9659	1.213077	1015.019	8.54	62.86	969.0213	0.14	976.1125	962.5009	968.4505	0.156	0.16	0.094	2830.079	2813.961	2826.177	0.147	
21/06/2016 12:00	815	14.57	14.02	1.907	1.907	321.4	31.36	5.037	307.5844	1.107304	1015.174	9.03	60.23	968.925	0.09	976.6307	962.2402	967.9042	0.156	0.118	0.055	2830.825	2813.612	2825.617	0.136	
21/06/2016 13:00	816	14.05	13.85	1.624	1.624	290.4	65.88	4.116	522.197	1.879909	1014.962	10.03	54.66	968.8552	0.097	976.5269	961.9828	968.0555	0.097	0.121	0.064	2830.722	2813.635	2825.548	0.257	
21/06/2016 14:00	817	13.96	13.86	1.282	1.282	311.8	50.73	4.43	394.7878	1.421236	1015.124	10.66	52.93	968.8465	0.148	976.5842	962.0552	967.9002	0.146	0.179	0.11	2830.774	2813.582	2825.445	0.189	
21/06/2016 15:00	818	13.99	13.88	1.463	1.463	212.7	86.6	3.783	477.4651	1.718874	1014.878	11.11	51.45	968.7759	0.132	976.8229	961.7736	967.731	0.155	0.149	0.077	2830.983	2813.301	2825.384	0.241	
21/06/2016 16:00	819	13.98	13.89	1.259	1.259	84.2	85.5	2.979	367.2034	1.321932	1014.878	11.5	51.13	968.7476	0.055	977.0569	961.6569	967.5291	0.071	0.053	0.033	2831.691	2813.289	2825.059	0.178	
21/06/2016 17:00	820	14.06	13.9	1.125	1.125	169.9	66.05	4.782	285.4657	1.027676	1014.964	10.92	59.34	968.946	0.056	977.4011	961.7617	967.6751	0.054	0.072	0.035	2831.688	2813.224	2825.172	0.125	
21/06/2016 18:00	821	14.02	13.9	1.669	1.669	163.5	46.45	5.135	169.3494	0.6096578	1014.817	11.17	58.34	968.9348	0.118	977.0754	962.1904	967.5382	0.117	0.148	0.08	2831.396	2813.738	2825.057	0.068	
21/06/2016 19:00	822	14.03	13.93	2.105	2.105	294.2	97.6	4.077	108.8282	0.3917814	1015.18	10.69	61.02	968.8834	0.035	976.9716	962.0688	967.6099	0.031	0.044	0.026	2831.238	2813.47	2825.063	0.038	
21/06/2016 20:00	823	13.94	13.78	1.7	1.7	331.7	45.27	4.665	47.91722	0.172502	1015.51	9.82	68.1	968.9233	0.049	977.0177	962.1984	967.554	0.049	0.059	0.037	2831.295	2813.677	2825.033	-0.005	
21/06/2016 21:00	824	13.8	13.69	0.611	0.611	285.2	46.26	1.98	28.4115	0.1022814	1015.678	9.43	69.19	968.9446	0.033	977.0728	962.3056	967.4556	0.035	0.037	0.024	2831.369	2813.842	2824.971	-0.013	
21/06/2016 22:00	825	13.71	13.59	2.479	2.479	254.3	9.61	3.646	12.74312	0.04587523	1015.882	8.54	76.6	968.9416	0.127	977.0374	962.4034	967.3839	0.151	0.135	0.087	2831.183	2813.849	2824.794	0	
21/06/2016 23:00	826	13.61	13.48	2.441	2.441	249.2	11	3.861	0.1079656	0.000388676	1016.06	8.22	75.4	969.0244	0.081	977.0698	962.5759	967.4276	0.081	0.094	0.066	2831.357	2814.293	2825.015	-0.002	
22/06/2016 0:00	827	13.5	13.4	2.222	2.222	242.2	11	2.979	0	0	1016.06	8.12	71.99	969.0612	0.064	977.198	962.4528	967.5327	0.061	0.078	0.049	2831.482	2814.116	2825.025	-0.002	
22/06/2016 1:00	828	13.42	13.33	1.546	1.546	245.8	15.98	2.391	0	0	1016.223	8.78	64.98	969.0743	0.046	977.1949	962.4454	967.5826	0.05	0.051	0.034	2831.469	2814.029	2825.043	-0.005	
22/06/2016 2:00	829	13.34	13.27	1.499	1.499	259.7	12.84	2.47	0	0	1016.387	8.92	65.56	969.0767	0.034	977.1893	962.4622	967.5783	0.032	0.038	0.031	2831.522	2814.091	2825.033	-0.006	
22/06/2016 3:00	830	13.28	13.21	3.09	3.09	264.6	11.14	5.292	0.04303651	0.000154931	1016.469	8.01	71.89	969.0898	0.182	977.2575	962.4316	967.5803	0.177	0.231	0.121	2831.604	2813.933	2825.128	0.004	
22/06/2016 4:00	831	13.22	13.19	3.383	3.383	260.1	11.48	5.508	7.448117	0.02681322	1016.714	7.315	75.12	969.1318	0.208	977.2607	962.6698	967.4649	0.197	0.264	0.148	2831.828	2814.525	2824.768	0.004	
22/06/2016 5:00	832	13.34	13.19	3.107	3.107	265.3	10.6	5.116	44.96195	0.161863	1016.884	7.165	75.76	969.2336	0.268	976.9355	963.2972	967.4679	0.281	0.195	0.133	2830.473	2814.451	2825.218	0.003	
22/06/2016 6:00	833	13.72	13.33	3.572	3.572	263.6	12.56	6.135	151.9222	0.5469199	1016.878	7.858	74.91	969.4061	0.239	975.9366	964.2388	968.0427	0.228	0.319	0.193	2829.979	2814.052	2825.174	0.056	
22/06/2016 7:00	834	14.11	13.72	2.449	2.449	268.8	13.68	3.9	242.8139	0.87413	1017.152	9.01	72.54	969.4763	0.127	974.6442	965.0739	968.7107	0.14	0.138	0.1	2828.725	2817.183	2826.513	0.099	
22/06/2016 8:00	835	14.62	14.11	2.459	2.459	275.3	30.64	5.174	373.3098	1.343915	1017.138	10.13	67.75	969.3786	0.345	974.0541	964.5956	969.4861	0.364	0.405	0.247	2827.4	2815.96	2827.521	0.174	
22/06/2016 9:00	836	14.61	14.27	3.861	3.861	305.6	17.28	6.096	471.0881	1.695917	1017.088	10.78	64.83	969.069	0.529	975.1686	963.1963	968.842	0.613	0.586	0.346	2827.954	2815.157	2827.152	0.232	
22/06/2016 10:00	837	14.54	13.96	3.958	3.958	304	18.97	7.742	482.2048	1.735937	1017.088	11.41	61.7	969.0131	0.473	975.8237	962.7756	968.44	0.508	0.57	0.299	2829.598	2814.56	2826.661	0.247	
22/06/2016 11:00	838	14.01	13.89	3.032	3.032	319.1	22.74	5.684	384.8755	1.385552	1016.924	11.77	58.05	968.9965	0.528	975.938	962.423	968.6296	0.497	0.682	0.352	2830.039	2814.057	2826.123	0.2	
22/06/2016 12:00	839	14.01	13.85	2.555	2.555	294.5	28.3	7.33	435.1507	1.566543	1016.924	12.2	52.44	968.8972	0.148	975.3105	962.0023	969.3789	0.16	0.099	0.175	2829.053	2813.374	2827.508	0.232	
22/06/2016 13:00	840	13.99	13.79	3.841	3.841	324.9	41.5	7.703	241.0317	0.8677139	1017.252	12.55	54.55	966.8021	6.466	973.9852	961.0745	965.3467	8.58	3.427	6.33	2831.294	2813.005	2825.087	0.142	
22/06/2016 14:00	841	14.47	13.87	2.153	2.153	325.4	29.71	4.802	473.6698	1.705211	1016.761	13.13	53.66	968.7537	0.25	976.687	961.272	968.3022	0.172	0.341	0.203	2830.677	2811.735	2826.205	0.256	
22/06/2016 15:00	842	14.48	14.29	3.315	3.315	316.3	30.02	7.409	535.911	1.92928	1016.586	14.13	45.65	968.6448	0.298	977.0762	960.9366	967.9216	0.24	0.431	0.149	2831.176	2812.311	2825.479	0.314	
22/06/2016 16:00	843	14.44	13.89	3.087	3.087	334.8	33.21	8.06	251.6007	0.9057627	1016.432	14.06	45.23	968.6867	1.223	976.7911	961.7202	967.5487	1.226	0.639	0.391	2831.808	2814.555	2825.458	0.155	
22/06/2016 17:00	844	13.97	13.87	3.521	3.521	316.5	12.42	6.899	145.9379	0.5253763	1016.433	13.42	48.32	968.8378	0.09	976.9144	962.007	967.592	0.095	0.111	0.053	2831.223	2813.733	2825.173	0.099	
22/06/2016 18:00	845	14.17	13.84	5.465	5.465	320.5	19.69	8.88	206.9042	0.744855	1016.27	13.64	46.55	968.8608	0.675	977.1747	961.9796	967.428	0.652	0.881	0.407	2830.947	2812.344	2825.044	0.163	
22/06/2016 19:00	846	14.15	13.82	2.89	2.89	290.7	19.99	6.605	97.2259	0.3500132	1016.27	13.05	50.14	968.8508	0.115	976.8366	962.2564	967.4592	0.12	0.132	0.09	2831.065	2813.781	2824.862	0.058	
22/06/2016 20:00	847	13.83	13.75	3.446	3.446	253.3	14.45	6.84	60.60809	0.2181891	1016.397	11.46	62.81	968.9655	0.337	977.1529	962.2283	967.5154	0.356	0.388	0.251	2831.146	2813.384	2825.173	0.032	
22/06/2016 21:00	848	13.77	13.61	3.712	3.712	238.2	7.486	5.527	33.19617	0.1195062	1016.321	11.3	63.66	969.0091	0.158	977.2191	962.2923	967.516	0.188	0.169	0.105	2831.427	2813.929	2824.903	0.022	
22/06/2016 22:00	849	13.63	13.47	4.137	4.137	227.5	7.053	5.155	4.875689	0.01755248	1016.328	10.92	61.24	969.0202	0.189	977.0908	962.3497	967.6199	0.193	0.234	0.124	2831.497	2813.899	2825.034	0.021	
22/06/2016 23:00	850	13.49	13.38	3.566	3.566	211.1	5.316	4.312	0.1942349	0.000699246	1016.328	10.88	56.44	969.0356	0.155	976.9739	962.4688	967.6644	0.167	0.112	0.112	2831.39	2814.125	2825.097	0.021	
23/06/2016 0:00	851	13.39	13.3	2.928	2.928	199.7	6.704	3.783	0	0	1016.166	10.6	56.21	969.0467	0.141	976.9341	962									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
25/06/2016 0:00	899	13.46	13.36	4.015	4.015	231.4	11.93	6.801	0	0	1012.727	10.12	62.44	969.8089	0.268	977.7083	963.1757	968.5427	0.287	0.291	0.221	2832.36	2815.281	2826.388	0.018	
25/06/2016 1:00	900	13.38	13.3	6.922	6.922	233.2	7.6	9.66	0	0	1012.902	9.57	68.59	969.6174	0.824	977.5015	962.8539	968.4967	0.741	1.066	0.592	2832.609	2814.989	2826.243	0.023	
25/06/2016 2:00	901	13.31	13.23	5.803	5.803	207.1	7.862	10.33	0	0	1013.006	9.52	66.21	969.6993	0.693	977.6876	962.8263	968.584	0.698	0.877	0.43	2831.576	2813.965	2825.695	0.022	
25/06/2016 3:00	902	13.25	13.18	6.623	6.623	218.6	7.128	8.41	0.1583535	0.000570073	1013.403	9.35	65.79	969.8115	0.536	977.7392	963.0895	968.6055	0.524	0.686	0.341	2831.843	2814.279	2825.723	0.025	
25/06/2016 4:00	903	13.21	13.17	6.395	6.395	220.5	5.588	8.66	13.69612	0.04930604	1013.573	9.02	65.39	969.8533	0.493	977.6267	963.3698	968.5632	0.475	0.611	0.359	2832.197	2815.069	2826.179	0.026	
25/06/2016 5:00	904	13.19	13.15	1.327	1.327	149.5	72.13	5.312	9.595861	0.0345451	1013.67	8.6	69.1	969.9284	0.026	977.6271	963.363	968.795	0.026	0.031	0.018	2832.03	2815.11	2826.505	-0.031	
25/06/2016 6:00	905	13.24	13.15	1.542	1.542	182	63.61	4.057	16.56524	0.05963488	1013.928	8.51	70.9	970.0308	0.156	977.8083	963.6053	968.679	0.154	0.211	0.066	2832.277	2815.451	2826.391	-0.025	
25/06/2016 7:00	906	13.83	13.22	2.065	2.065	216.3	50.12	4.116	128.3188	0.4619477	1014.255	8.74	75.86	970.247	0.21	977.2407	964.277	969.2233	0.228	0.26	0.115	2831.055	2816.739	2827.324	0.036	
25/06/2016 8:00	907	14.18	13.84	2.309	2.309	217.7	22.69	4.371	159.6583	0.5747699	1014.384	8.53	76.52	970.0196	0.154	977.4918	963.8083	968.7587	0.158	0.176	0.124	2832.134	2815.899	2826.012	0.052	
25/06/2016 9:00	908	14.61	14.14	2.611	2.611	243	23.6	4.92	450.0918	1.62033	1014.528	10.05	67.94	970.3615	0.304	974.2275	965.7831	971.074	0.323	0.383	0.163	2827.928	2818.031	2828.893	0.213	
25/06/2016 10:00	909	14.54	14.38	3.263	3.263	257.2	21.97	5.664	692.038	2.491336	1014.387	12.27	59.58	970.1245	0.432	974.1718	964.9354	971.2662	0.409	0.545	0.308	2827.928	2815.945	2829.615	0.364	
25/06/2016 11:00	910	14.49	13.97	4.295	4.295	259.3	11.23	7.624	346.3868	1.246992	1014.469	11.65	61.39	969.8865	0.728	977.0764	963.3702	969.213	0.641	0.932	0.557	2831.528	2815.349	2827.448	0.184	
25/06/2016 12:00	911	14.05	13.84	4.794	4.794	245.3	19.87	9.06	684.8414	2.465429	1014.469	13.28	54.08	969.7991	0.611	975.8071	963.0388	970.5153	0.561	0.824	0.355	2830.159	2814.869	2828.61	0.377	
25/06/2016 13:00	912	13.89	13.77	4.992	4.992	235	18.74	9.55	864.1392	3.110901	1014.305	14.3	49.12	969.5928	1.118	976.6834	962.3067	969.7881	1.243	1.38	0.549	2830.841	2814.499	2827.554	0.489	
25/06/2016 14:00	913	13.93	13.79	5.129	5.129	228.5	16.56	8.27	497.0196	1.789271	1014.469	14.19	45.35	969.6763	0.682	977.4942	962.5163	969.0182	0.63	0.936	0.347	2831.986	2814.242	2826.923	0.309	
25/06/2016 15:00	914	13.94	13.89	3.893	3.893	347.6	88.4	7.82	375.4646	1.351673	1014.633	13.79	51.27	969.6873	0.71	977.6458	962.6802	968.5782	0.714	0.897	0.444	2832.086	2816.107	2825.389	0.224	
25/06/2016 16:00	915	14.02	13.93	3.443	3.443	78.98	20.59	6.86	143.1467	0.515328	1014.796	11.94	65.77	970.6484	0.126	979.1497	963.4305	969.3652	0.13	0.143	0.101	2833.642	2815.272	2827.354	0.071	
25/06/2016 17:00	916	14.08	14	1.998	1.998	98.8	33.14	3.802	111.9807	0.4031307	1015.263	10.96	71.81	970.7955	0.028	978.7067	963.8988	969.781	0.028	0.038	0.014	2833.31	2815.697	2827.688	0.032	
25/06/2016 18:00	917	14.11	13.97	2.221	2.221	66.14	73.19	5.978	114.4934	0.4121763	1015.837	10.32	74.49	970.793	0.259	978.6382	964.0886	969.652	0.217	0.368	0.134	2833.295	2815.799	2827.5	0.033	
25/06/2016 19:00	918	14.01	13.93	2.562	2.562	115.4	34.2	6.429	159.3011	0.5734841	1015.673	10.07	74.77	970.538	0.624	980.4662	962.6735	968.4744	0.683	0.748	0.378	2835.705	2815.719	2826.376	0.058	
25/06/2016 20:00	919	14.01	13.94	3.982	3.982	128.7	13.28	5.37	270.351	0.9732636	1015.802	10.73	71.06	970.5901	0.237	980.3513	962.9664	968.4526	0.218	0.296	0.181	2835.104	2814.673	2826.134	0.127	
25/06/2016 21:00	920	13.96	13.78	3.936	3.936	171	46.34	6.527	64.98718	0.2339538	1016.164	10.59	67.89	970.7896	0.476	978.9366	964.0172	969.4147	0.475	0.628	0.244	2833.362	2816.049	2827.618	0.024	
25/06/2016 22:00	921	13.8	13.63	5.932	5.932	221.5	6.816	8.51	12.33964	0.04442272	1016.337	10.01	63.22	970.7378	0.885	978.8502	963.7569	969.6004	0.877	1.135	0.543	2833.203	2814.839	2827.344	0.028	
25/06/2016 23:00	922	13.65	13.51	6.013	6.013	231.2	9.07	7.938	0.9785571	0.003522805	1016.66	9.82	64.72	970.7839	0.741	978.8846	963.8752	969.5919	0.809	0.903	0.422	2833.302	2816.383	2827.31	0.025	
26/06/2016 0:00	923	13.52	13.42	6.335	6.335	232.9	6.334	9.02	0	0	1016.996	9.52	67.3	970.7269	0.481	978.7335	963.8922	969.5551	0.56	0.548	0.285	2834.153	2816.285	2827.609	0.023	
26/06/2016 1:00	924	13.44	13.35	5.375	5.375	231.9	7.928	8.27	0	0	1017.415	9.29	67.13	970.8533	0.284	978.7845	964.098	969.6777	0.299	0.329	0.21	2833.808	2816.213	2827.191	0.019	
26/06/2016 2:00	925	13.37	13.28	4.853	4.853	226.4	8.77	8.11	0	0	1017.531	9.04	66.6	970.8736	0.212	978.7002	964.1434	969.7772	0.201	0.273	0.139	2833.467	2816.342	2827.717	0.018	
26/06/2016 3:00	926	13.3	13.22	4.739	4.739	208.9	11.42	7.84	0.00076396	2.75E-06	1017.697	8.44	69.75	970.7951	0.817	978.7045	964.1096	969.5712	0.715	1.043	0.637	2833.473	2816.602	2827.308	0.014	
26/06/2016 4:00	927	13.24	13.18	5.486	5.486	199.7	14.45	8.62	6.391049	0.02300777	1017.697	8.03	71.18	970.9598	0.921	978.8254	964.3359	969.7181	0.88	1.193	0.591	2833.304	2816.399	2827.718	0.016	
26/06/2016 5:00	928	13.43	13.18	7.395	7.395	230.8	9.24	10.29	54.22601	0.1952136	1018.092	8.33	65.53	970.9118	1.144	978.8441	964.5021	969.3892	1.137	1.381	0.853	2834.083	2817.295	2827.438	0.057	
26/06/2016 6:00	929	13.84	13.43	7.564	7.564	234.1	9.06	12.13	123.65	0.4451401	1018.298	8.57	63.43	970.6202	1.204	978.674	963.6652	969.5215	1.165	0.685	0.685	2830.574	2812.668	2827.205	0.089	
26/06/2016 7:00	930	14.6	13.84	8.01	8.01	240.8	7.383	12.05	231.393	0.8330148	1018.626	8.95	61.16	970.7474	1.117	978.1141	964.4147	969.7134	0.979	1.453	0.821	2831.618	2811.222	2823.871	0.138	
26/06/2016 8:00	931	14.54	14.33	7.035	7.035	232.8	8.88	9	245.1392	0.8825011	1018.949	9.29	58.78	970.6585	0.763	978.3528	963.9709	969.6517	0.685	0.966	0.585	2833.364	2815.497	2827.231	0.145	
26/06/2016 9:00	932	14.62	14.34	5.979	5.979	235.5	11.62	8.72	474.317	1.707541	1019.083	10.46	54.46	970.9473	0.941	977.0045	965.1914	970.646	0.912	1.264	0.478	2832.171	2816.933	2829.118	0.252	
26/06/2016 10:00	933	14.62	14.47	6.065	6.065	227	12.91	9.04	312.3487	1.124455	1019.476	10.4	54.11	970.6631	0.673	978.2465	963.9775	969.7654	0.67	0.87	0.393	2830.516	2811.922	2828.933	0.183	
26/06/2016 11:00	934	14.56	13.94	5.07	5.07	223.4	16.58	8.51	441.0089	1.587632	1019.72	10.9	53.48	970.6782	0.733	977.2008	964.2267	969.7067	0.77	0.911	0.436	2831.968	2817.067	2829.189	0.239	
26/06/2016 12:00	935	13.98	13.89	4.972	4.972	217	15.59	8.31	476.9716	1.717098	1019.871	11.61	52.42	970.7617	0.763	978.1503	964.2391	969.8956	0.699	0.955	0.59	2833.079	2816.297	2827.991	0.263	
26/06/2016 13:00	936	13.98	13.85	6.054	6.054	222.9	12.68	8.39	570.818	2.054945	1019.871	12.06	48.44	970.554	0.527	977.8672	963.613	970.1816	0.475	0.664	0.41	2832.116	2814.8	2827.999	0.322	
26/06/2016 14:00	937	13.95	13.8	5.537	5.537	220.5	17.44	10.74	837.1254	3.013651	1020.034	13.19	45.09	970.1332	0.812	978.2155	961.8662	970.3178	0.818	1.014	0.529	283				

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
28/06/2016 14:00	985	13.79	13.65	4.994	4.994	234.5	25.68	10	720.144	2.592518	1022.253	17.89	32.21	970.4292	1.316	976.8401	963.2079	971.2397	1.713	1.392	0.57	2832.707	2815.12	2828.856	0.492	
28/06/2016 15:00	986	13.79	13.7	4.377	4.377	243.1	31.85	9.11	609.1548	2.192957	1022.045	18.14	31.05	970.3754	0.27	978.2531	962.6036	970.2695	0.251	0.345	0.192	2833.374	2814.38	2828.788	0.427	
28/06/2016 16:00	987	13.78	13.63	4.402	4.402	179.7	71.15	14.74	683.0416	2.45895	1021.88	18.86	30.1	980.2658	0.704	980.2658	969.3444	967.8253	0.715	0.692	0.704	2834.512	2810.288	2825.788	0.48	
28/06/2016 17:00	988	13.87	13.65	7.227	7.227	136.4	45.74	12.41	585.974	2.109506	1021.604	16.85	41.88	969.4316	1.192	979.5632	960.8675	967.864	1.185	1.472	0.831	2833.642	2810.884	2825.656	0.41	
28/06/2016 18:00	989	13.85	13.78	4.764	4.764	141.9	16.64	8.25	470.7438	1.694678	1021.366	17.29	38.07	980.5809	0.37	980.5809	960.8624	967.454	0.421	0.441	0.198	2835.11	2812.11	2824.831	0.334	
28/06/2016 19:00	990	13.95	13.81	3.708	3.708	177.7	17.35	6.37	205.5746	0.7400685	1021.456	17.59	33.88	969.861	0.191	979.0865	962.384	968.1125	0.185	0.261	0.086	2833.946	2814.028	2825.785	0.171	
28/06/2016 20:00	991	13.91	13.82	4.578	4.578	131.3	13.58	7.801	224.806	0.8093014	1021.321	15.97	45.33	969.72	0.351	980.9772	961.3066	966.8763	0.298	0.501	0.171	2835.988	2812.851	2824.216	0.174	
28/06/2016 21:00	992	13.84	13.69	4.783	4.783	153.5	9.06	6.056	95.63016	0.3442686	1021.344	15.4	45.06	969.772	0.549	979.7475	962.1431	967.4252	0.541	0.697	0.355	2834.695	2812.488	2826.114	0.066	
28/06/2016 22:00	993	13.71	13.57	4.356	4.356	163.8	10.24	5.723	38.5666	0.1388398	1021.507	14.82	42.7	969.8828	0.29	978.9445	962.6359	968.0682	0.299	0.381	0.135	2833.451	2814.146	2825.701	0.053	
28/06/2016 23:00	994	13.58	13.42	3.816	3.816	149.8	7.499	4.43	2.675127	0.009630457	1021.671	13.85	48.34	969.934	0.311	978.7557	962.7885	968.2578	0.294	0.417	0.173	2832.956	2813.469	2826.265	0.034	
29/06/2016 0:00	995	13.44	13.33	4.029	4.029	157.4	9.72	5.292	0	0	1021.597	13.39	49.37	969.9414	0.601	978.5715	962.8555	968.3972	0.546	0.856	0.231	2832.02	2813.738	2825.657	0.034	
29/06/2016 1:00	996	13.35	13.26	4.71	4.71	173.5	8.08	5.998	0	0	1021.546	13	50.61	969.9913	0.556	978.7831	962.9228	968.2681	0.561	0.725	0.293	2833.865	2815.177	2826.552	0.038	
29/06/2016 2:00	997	13.28	13.2	6.422	6.422	170.4	6.37	8.08	0	0	1021.711	12.73	52.16	970.0309	0.437	978.7191	963.022	968.3516	0.413	0.573	0.274	2832.936	2814.125	2825.791	0.046	
29/06/2016 3:00	998	13.21	13.14	3.122	3.122	204.1	24.91	4.724	0.05880507	0.000211698	1021.649	11.93	53.24	970.0654	0.087	978.8322	963.0056	968.3583	0.083	0.114	0.054	2833.628	2815.016	2826.08	0.02	
29/06/2016 4:00	999	13.16	13.14	2.418	2.418	210.2	8.62	3.254	11.36872	0.04092741	1021.404	12.41	51.75	970.2099	0.142	978.6376	963.6347	968.3574	0.126	0.2	0.065	2833.219	2815.644	2826.002	0.016	
29/06/2016 5:00	1000	13.38	13.14	2.672	2.672	198	18.04	4.449	68.0774	0.2450786	1021.24	13.28	50	970.446	0.029	977.9026	965.0127	968.4225	0.028	0.04	0.014	2832.377	2817.133	2826.072	0.038	
29/06/2016 6:00	1001	13.9	13.38	1.441	1.441	121.8	16.99	3.234	167.0163	0.6012588	1021.18	14.53	50.21	970.3267	0.099	977.8116	964.5483	968.6203	0.127	0.101	0.057	2831.999	2816.695	2826.375	0.073	
29/06/2016 7:00	1002	14.2	13.9	1.12	1.12	74.45	22.66	2.254	238.6478	0.8591321	1021.016	14.93	48.43	970.114	0.08	978.2498	963.4142	968.6776	0.099	0.055	0.079	2832.928	2815.07	2826.288	0.112	
29/06/2016 8:00	1003	14.32	14.12	1.268	1.268	39.36	50.21	2.862	200.2469	0.720889	1020.689	14.72	50.71	970.0823	0.131	978	963.3174	968.9294	0.147	0.155	0.077	2832.234	2815.208	2826.722	0.09	
29/06/2016 9:00	1004	14.44	14.23	2.353	2.353	337.4	23.65	5.155	361.4529	1.30123	1020.682	15.16	50.04	970.1459	0.328	976.4787	964.2178	969.7412	0.346	0.381	0.241	2830.471	2815.691	2827.823	0.208	
29/06/2016 10:00	1005	14.38	14.27	2.97	2.97	64.54	73.81	6.938	480.1808	1.728651	1020.302	16.09	49.54	970.0222	0.624	978.2011	963.0067	968.8586	0.676	0.733	0.419	2831.963	2814.65	2827.785	0.292	
29/06/2016 11:00	1006	14.35	13.92	5.643	5.643	245.9	10.89	8.33	137.4472	0.4948099	1020.361	12.52	67.14	974.144	0.401	982.837	967.1547	972.4402	0.443	0.468	0.257	2838.495	2819.965	2831.434	0.091	
29/06/2016 12:00	1007	14.6	14.02	5.26	5.26	250.7	7.543	7.154	203.4508	0.7324228	1020.413	11.39	81.9	974.5818	0.326	983.0782	967.7235	972.9436	0.387	0.35	0.217	2837.537	2819.833	2831.687	0.086	
29/06/2016 13:00	1008	14.61	13.69	5.727	5.727	246.2	7.88	8.53	258.8307	0.9317904	1020.503	11.4	80.1	972.6472	5.52	980.6756	966.1978	971.0683	7.91	2.208	4.896	2838.548	2819.844	2831.705	0.115	
29/06/2016 14:00	1009	14.6	13.5	6.364	6.364	236.4	12.47	8.45	323.0622	1.163204	1020.055	11.67	74.52	974.5049	0.489	983.5529	967.0856	972.8761	0.469	0.622	0.333	2837.75	2818.417	2831.466	0.157	
29/06/2016 15:00	1010	14.08	13.96	4.117	4.117	259.7	17.32	7.409	263.2065	0.9475433	1019.489	11.35	72.27	974.4634	0.245	983.4586	967.0302	972.9012	0.263	0.303	0.138	2838.776	2819.925	2831.793	0.125	
29/06/2016 16:00	1011	14.01	13.94	2.354	2.354	290.9	18.99	3.822	259.7221	0.9349995	1019.216	12.25	64.01	974.4598	0.112	983.3263	967.1717	972.8814	0.108	0.157	0.038	2838.841	2819.656	2831.459	0.125	
29/06/2016 17:00	1012	14.02	13.92	2.148	2.148	321.8	22.33	4.214	291.7961	1.050466	1018.889	12.3	68.13	974.4178	0.066	983.7018	966.6656	972.886	0.076	0.038	0.038	2839.313	2819.061	2831.375	0.139	
29/06/2016 18:00	1013	14.05	13.92	2.455	2.455	278.7	33.45	5.135	183.7442	0.6614791	1018.725	12.19	68.14	974.5037	0.079	983.5773	967.133	972.8007	0.08	0.098	0.05	2839.273	2819.488	2831.217	0.081	
29/06/2016 19:00	1014	14.15	14.01	2.552	2.552	51.22	55.35	6.056	259.7675	0.9351628	1018.234	12.36	70.03	974.3293	0.528	984.76	966.1694	972.0582	0.561	0.655	0.304	2840.581	2819.909	2831.165	0.122	
29/06/2016 20:00	1015	14.05	13.91	1.577	1.577	96	18.23	4.41	130.649	0.4703364	1018.099	11.09	82.1	974.479	0.025	984.6782	966.6825	972.0764	0.036	0.021	0.014	2840.411	2819.124	2830.429	0.034	
29/06/2016 21:00	1016	13.93	13.82	0.772	0.772	115.8	12.05	1.921	119.9071	0.4316656	1017.783	11.36	78.13	974.5161	0.037	985.4937	966.676	971.3787	0.033	0.047	0.028	2841.41	2819.153	2829.598	0.014	
29/06/2016 22:00	1017	13.84	13.64	2.195	2.195	159.2	20.72	2.862	27.26615	0.09815814	1017.474	10.49	76.98	974.4976	0.109	983.715	967.3235	972.4543	0.118	0.132	0.064	2839.339	2819.961	2831.04	0.001	
29/06/2016 23:00	1018	13.65	13.5	2.733	2.733	152	15.19	3.548	0.6998058	0.002519301	1017.51	9.7	79.14	974.5667	0.198	983.6769	967.4318	972.5916	0.191	0.264	0.108	2839.099	2819.433	2831.117	-0.002	
30/06/2016 0:00	1019	13.52	13.42	2.216	2.216	168.1	26.05	3.626	0	0	1017.206	9.34	79.65	974.6084	0.089	983.6682	967.5226	972.6343	0.082	0.121	0.049	2839.081	2820.1	2831.214	-0.006	
30/06/2016 1:00	1020	13.43	13.34	1.487	1.487	170.5	68.31	3.704	0	0	1017.042	9.87	73.4	974.6854	0.031	983.6271	967.7232	972.7057	0.035	0.016	0.016	2839.204	2820.37	2831.206	-0.01	
30/06/2016 2:00	1021	13.36	13.28	1.002	1.002	315.8	55.27	1.921	0	0	1016.878	9.94	72.44	974.6898	0.03	983.7657	967.6203	972.6833	0.033	0.038	0.014	2839.355	2820.201	2831.191	-0.015	
30/06/2016 3:00	1022	13.29	13.22	0.501	0.501	316.3	34.09	1.627	0.1275706	0.000459254	1016.541	9.86	73.42	974.7081	0.025	983.7314	967.6625	972.7302	0.027	0.031	0.015	2839.226	2820.121	2831.186	-0.023	
30/06/2016 4:00	1023	13.23	13.18	0.359	0.359	65.68	66.04	1.568	6.744094	0.02427874	1016.188	9.79	74.78	974.6984	0.009	983.6365	967.6672	9								

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
02/07/2016 4:00	1071	13.26	13.21	4.768	4.768	207.7	10.54	7.115	5.361993	0.01930317	1008.374	5.895	81.3	976.0439	0.371	984.9284	969.0311	974.1722	0.347	0.495	0.218	2840.122	2821.996	2833.227	0.004
02/07/2016 5:00	1072	13.59	13.21	5.236	5.236	197	20.35	7.683	80.65678	0.2903644	1008.448	6.346	75.96	976.0568	0.525	984.6299	969.4155	974.125	0.565	0.635	0.321	2840.481	2823.108	2832.845	0.031
02/07/2016 6:00	1073	13.92	13.59	3.332	3.332	197	16.16	5.9	99.87937	0.3595657	1008.609	6.907	71.84	976.1118	0.226	984.7457	969.2877	974.3019	0.209	0.314	0.102	2840.309	2821.157	2833.063	0.033
02/07/2016 7:00	1074	14.3	13.91	2.954	2.954	192.9	24.51	6.213	135.3816	0.4873739	1008.691	7.18	70.28	976.1829	0.481	984.29	969.7983	974.4606	0.635	0.279	0.097	2840.487	2823.089	2833.51	0.047
02/07/2016 8:00	1075	14.63	14.3	3.966	3.966	205.4	22.35	8.15	235.1494	0.8465379	1008.667	7.905	66.89	976.1963	0.144	983.8152	969.9695	974.8041	0.635	0.199	0.097	2839.527	2822.913	2833.602	0.104
02/07/2016 9:00	1076	14.62	14.51	4.432	4.432	221	15.97	8.15	370.981	1.335531	1008.798	8.4	65.12	976.1753	0.356	983.1577	970.2668	975.1013	0.359	0.43	0.256	2839.776	2824.287	2833.914	0.17
02/07/2016 10:00	1077	14.61	14	4.025	4.025	205.3	18.49	8.41	402.767	1.449961	1008.716	9.17	61.12	976.049	0.465	984.2313	969.4053	974.5103	0.407	0.642	0.267	2840.208	2822.713	2833.417	0.193
02/07/2016 11:00	1078	14.04	13.89	3.218	3.218	205.1	25.08	6.88	489.1051	1.760778	1008.78	9.8	57.68	976.0352	0.156	983.2076	969.6862	975.2119	0.173	0.182	0.098	2838.748	2822.604	2834.074	0.24
02/07/2016 12:00	1079	13.92	13.77	2.542	2.542	225.9	51.61	7.272	669.0801	2.408688	1008.413	11.26	50.01	975.7847	0.735	983.1437	968.6276	975.5826	0.794	0.884	0.456	2838.817	2821.389	2834.47	0.351
02/07/2016 13:00	1080	14.03	13.83	5.452	5.452	218.9	16.86	7.801	651.9171	2.346901	1008.577	11.01	53.81	975.696	0.774	983.6392	968.2236	975.2252	0.726	1.034	0.449	2839.65	2822.126	2834.154	0.336
02/07/2016 14:00	1081	14.03	13.73	4.732	4.732	227.8	23.22	7.899	638.7217	2.299398	1008.249	11.75	50.91	975.6635	0.546	984.3953	967.9253	974.67	0.525	0.735	0.279	2840.169	2821.146	2833.787	0.342
02/07/2016 15:00	1082	13.98	13.87	5.957	5.957	229.4	18.59	9.39	742.0537	2.671393	1008.085	12.2	46.72	975.3979	0.678	985.0578	966.6124	974.5238	0.79	0.46	0.267	2840.487	2818.592	2833.153	0.404
02/07/2016 16:00	1083	13.98	13.84	3.801	3.801	225.6	26.51	7.742	688.8315	2.479794	1008.004	12.72	42.09	975.4866	0.459	985.402	966.8372	974.2206	0.621	0.236	0.102	2841.183	2820.268	2832.944	0.388
02/07/2016 17:00	1084	13.98	13.86	2.534	2.534	13.07	102.4	5.116	255.7144	0.9205719	1007.84	12.18	44.51	975.6777	0.116	984.942	968.1508	973.9402	0.116	0.146	0.076	2840.666	2820.787	2832.752	0.14
02/07/2016 18:00	1085	13.99	13.87	4.422	4.422	351.3	95.3	9.64	76.51464	0.2754527	1008.091	10.85	54.04	975.7437	0.811	984.7368	968.5703	973.924	0.76	1.026	0.584	2839.192	2819.741	2832.072	0.063
02/07/2016 19:00	1086	14.02	13.87	5.674	5.674	228.9	16.42	7.997	140.1505	0.5045418	1008.306	10.11	56.81	975.8409	0.548	984.8272	968.6706	974.0249	0.56	0.722	0.259	2841.118	2821.154	2832.889	0.1
02/07/2016 20:00	1087	13.94	13.83	3.027	3.027	202.9	15.46	5.488	61.4126	0.2210854	1008.306	9.96	54.9	975.8895	0.1	984.798	968.7604	974.1102	0.095	0.128	0.066	2840.484	2821.601	2833.011	0.032
02/07/2016 21:00	1088	13.85	13.74	2.951	2.951	205.2	10.28	3.822	40.47622	0.1457144	1008.313	9.55	55.43	975.8952	0.064	984.8686	968.7726	974.0444	0.076	0.037	0.037	2840.554	2821.502	2833.834	0.022
02/07/2016 22:00	1089	13.75	13.6	2.729	2.729	213.4	6.227	3.861	11.98906	0.04316061	1008.325	8.77	57.71	975.8818	0.1	984.935	968.7693	973.9412	0.099	0.119	0.079	2840.901	2821.592	2832.54	0.013
02/07/2016 23:00	1090	13.62	13.49	3.414	3.414	221.2	5.562	4.292	0.5178798	0.001864367	1008.446	7.975	62.86	975.8765	0.156	984.9497	968.7728	973.9067	0.158	0.193	0.103	2840.783	2821.522	2832.608	0.012
03/07/2016 0:00	1091	13.51	13.41	4.213	4.213	214.7	4.569	5.547	0	0	1008.378	7.174	66.24	975.9355	0.437	985.0076	968.866	973.933	0.457	0.566	0.212	2840.435	2821.379	2832.903	0.013
03/07/2016 1:00	1092	13.42	13.33	3.715	3.715	215.2	8	4.959	0	0	1008.741	7.004	66.72	975.9539	0.129	984.9523	968.8726	974.037	0.126	0.166	0.082	2840.705	2821.522	2832.854	0.011
03/07/2016 2:00	1093	13.35	13.27	2.873	2.873	208.1	6.658	4.155	0	0	1008.911	7.117	65.52	976.0048	0.086	984.9131	968.9562	974.1451	0.091	0.107	0.05	2840.553	2821.791	2832.959	0.006
03/07/2016 3:00	1094	13.29	13.21	2.716	2.716	238.6	9.7	4.038	0	0	1009.067	7.688	63.59	975.9932	0.125	985.0211	968.947	974.0115	0.125	0.156	0.081	2841.06	2822.181	2832.743	0.007
03/07/2016 4:00	1095	13.26	13.21	3.572	3.572	246	6.27	4.92	12.22797	0.04402069	1009.221	7.176	65.82	976.1404	0.162	984.795	969.8501	973.7762	0.169	0.193	0.115	2840.479	2823.087	2832.695	0.012
03/07/2016 5:00	1096	13.48	13.23	3.372	3.372	239.1	7.486	4.822	71.46786	0.2572843	1009.347	7.456	66.24	976.3406	0.111	983.7969	971.1644	974.6060	0.111	0.121	0.075	2839.697	2824.94	2832.738	0.027
03/07/2016 6:00	1097	13.82	13.47	2.909	2.909	242.2	9.2	4.155	146.7046	0.5281366	1009.502	8.44	64.13	976.4056	0.164	982.9057	971.5506	974.7604	0.173	0.199	0.107	2838.498	2824.701	2833.702	0.061
03/07/2016 7:00	1098	14.13	13.82	2.92	2.92	253	12.22	4.586	245.1542	0.8825551	1009.699	9.37	62.52	976.4817	0.164	981.8706	972.053	975.5215	0.16	0.199	0.125	2837.004	2825.519	2834.638	0.113
03/07/2016 8:00	1099	14.62	14.13	2.982	2.982	278.7	20.35	5.684	371.1078	1.335988	1009.76	10.61	58.34	976.1878	0.41	982.5656	970.6476	975.3503	0.39	0.548	0.226	2837.229	2823.708	2834.715	0.186
03/07/2016 9:00	1100	14.6	14.32	2.997	2.997	316.8	28.04	5.292	543.9776	1.958319	1009.722	11.52	55.08	976.144	0.386	981.4493	970.7341	976.2489	0.471	0.386	0.278	2838.667	2825.056	2833.898	0.284
03/07/2016 10:00	1101	14.55	13.96	3.11	3.11	311.3	24.28	5.723	359.5956	1.294544	1009.886	11.44	54.58	975.9414	0.502	983.145	969.6741	975.0051	0.564	0.378	0.283	2838.069	2823.254	2833.749	0.189
03/07/2016 11:00	1102	13.98	13.78	3.437	3.437	336.2	24.74	6.938	650.7784	2.342802	1010.048	12.68	48.65	975.8235	0.318	984.0786	968.8662	974.5259	0.298	0.444	0.135	2839.573	2821.121	2833.344	0.359
03/07/2016 12:00	1103	14.08	13.91	2.565	2.565	291.4	23.81	4.116	181.7586	0.654331	1010.541	11.92	51.47	975.8867	0.136	984.4584	969.0012	974.2005	0.148	0.161	0.088	2840.526	2822.299	2832.829	0.094
03/07/2016 13:00	1104	14.34	14.08	2.992	2.992	278.7	20.8	5.468	338.1077	1.217188	1010.704	12.64	49.67	975.767	0.401	984.428	968.5955	974.2776	0.442	0.478	0.241	2840.571	2821.675	2833.312	0.189
03/07/2016 14:00	1105	14.42	14.21	3.266	3.266	257.4	24.97	5.88	384.2837	1.383421	1010.868	13.28	47.84	975.8226	0.364	984.4709	968.7431	974.2537	0.394	0.448	0.204	2839.894	2821.121	2832.939	0.223
03/07/2016 15:00	1106	14.4	14.3	4.513	4.513	249.8	14.28	5.33	337.4352	1.214767	1011.032	13.33	48.9	975.7859	0.356	984.5577	968.6568	974.1434	0.39	0.417	0.233	2840.1	2821.239	2832.355	0.21
03/07/2016 16:00	1107	14.38	14.3	4.014	4.014	247.8	14.34	6.115	336.1073	1.209986	1011.195	13.41	48.05	975.736	0.295	984.5506	968.4639	974.1936	0.329	0.346	0.181	2841.413	2822.104	2832.46	0.206
03/07/2016 17:00	1108	14.48	14.28	2.834	2.834	259.5	19.82	5.233	432.6043	1.557376	1011.359	14.14	43.63	975.5493	0.265	985.869	967.0307	973.7481	0.29	0.304	0.185	2841.883	2819.293	2832.688	0.254
03/07/2016 18:00	1109	14.31	14.03	2.825	2.825	253	30.83	5.821	344.7304	1.24103	1011.353	14.59	42.48	975.6328	0.252	984.8518									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
05/07/2016 18:00	1157	13.89	13.83	1.768	1.768	3.741	33.2	4.116	462.3333	1.6644	1013.467	14.48	60.88	989.6309	0.162	1000.324	980.5087	988.0601	0.123	0.244	0.06	2858.875	2835.918	2849.502	0.252	
05/07/2016 19:00	1158	13.89	13.79	1.243	1.243	29.07	26.17	2.842	389.8451	1.403442	1013.217	14.78	58.63	989.5521	0.064	1002.347	979.4601	986.8495	0.071	0.066	0.054	2861.386	2834.435	2848.122	0.206	
05/07/2016 20:00	1159	14	13.78	0.689	0.689	23.6	39.97	2.136	259.18	0.9330478	1012.802	15.17	54.33	989.7292	0.022	1002.47	980.1686	986.6066	0.011	0.025	0.027	2861.606	2835.281	2847.7	0.117	
05/07/2016 21:00	1160	13.96	13.72	0.798	0.798	211.9	62.9	1.744	59.13354	0.2128808	1012.832	13.88	60.93	989.8201	0.032	999.4142	982.3096	987.7367	0.033	0.042	0.014	2857.9	2837.727	2849.12	0.001	
05/07/2016 22:00	1161	13.74	13.58	2.288	2.288	228.1	10.78	3.528	15.73032	0.05662914	1013.052	11.96	66.92	989.9072	0.067	999.4051	982.3157	988.001	0.069	0.078	0.051	2858.036	2837.75	2849.357	0.006	
05/07/2016 23:00	1162	13.6	13.46	1.127	1.127	254.4	17.05	2.45	0.9902573	0.003564926	1012.89	12.05	65.95	989.9732	0.006	999.3281	982.4337	988.158	0.006	0.006	0.006	2857.858	2837.931	2849.626	-0.012	
06/07/2016 0:00	1163	13.48	13.37	0.576	0.576	206.8	30.15	1.901	0	0	1012.89	12.09	65.45	989.9984	0.006	999.2858	982.4825	988.2268	0.008	0.006	0.005	2857.826	2837.992	2849.706	-0.022	
06/07/2016 1:00	1164	13.39	13.3	0.386	0.386	210.7	15.9	1.019	0	0	1012.89	12.28	64.58	990.0104	0.01	999.2489	982.5037	988.2784	0.008	0.014	0.006	2857.783	2838.003	2849.77	-0.026	
06/07/2016 2:00	1165	13.31	13.23	0.548	0.548	195.6	21.54	2.156	0	0	1012.808	12.14	65.23	990.0025	0.035	999.2632	982.5321	988.2123	0.037	0.041	0.027	2857.687	2837.98	2849.725	-0.022	
06/07/2016 3:00	1166	13.25	13.17	3.605	3.605	212	13.25	7.762	0.02800241	0.000100809	1012.563	10.75	74.71	989.9101	0.786	999.3892	982.1316	988.2095	0.755	1.038	0.453	2857.7	2837.111	2849.843	0.006	
06/07/2016 4:00	1167	13.19	13.14	6.944	6.944	229.8	5.628	9.23	7.969232	0.02868924	1012.727	9.85	79.96	990.1072	0.614	999.3032	982.7218	988.2966	0.577	0.83	0.332	2857.091	2837.04	2849.867	0.013	
06/07/2016 5:00	1168	13.18	13.14	4.196	4.196	226.2	12.86	6.86	16.71642	0.06017912	1012.91	9.3	82	990.1898	0.098	999.2995	982.755	988.515	0.098	0.123	0.064	2857.715	2838.115	2850.147	-0.008	
06/07/2016 6:00	1169	13.21	13.15	3.508	3.508	210.3	14.83	6.88	19.51259	0.07024533	1013.069	9.48	80.3	991.3484	0.157	1000.308	984.1316	989.606	0.166	0.184	0.111	2859.313	2840.412	2851.572	-0.01	
06/07/2016 7:00	1170	13.25	13.18	3.396	3.396	172.5	29.36	5.88	21.84756	0.07865123	1013.103	8.57	86.1	994.208	0.101	1003.289	986.8671	992.4675	0.101	0.126	0.069	2862.706	2843.295	2854.876	-0.016	
06/07/2016 8:00	1171	14.25	13.23	1.979	1.979	203.1	60.45	3.489	137.0184	0.4932663	1012.909	8.86	88	994.7312	0.078	1003.447	987.5002	993.2468	0.087	0.091	0.048	2862.565	2843.959	2855.715	0.032	
06/07/2016 9:00	1172	14.62	14.25	1.091	1.091	263.8	84.9	2.842	446.8469	1.608649	1012.724	11.05	82.5	994.9196	0.093	1000.342	989.4489	994.9489	0.125	0.079	0.064	2858.912	2846.318	2857.863	0.213	
06/07/2016 10:00	1173	14.43	14.33	1.781	1.781	290.4	28.01	3.469	766.6585	2.759971	1012.505	12.39	75.36	994.6353	0.135	999.8309	988.6351	995.4398	0.113	0.196	0.06	2858.49	2845.29	2858.365	0.404	
06/07/2016 11:00	1174	14.36	13.75	1.434	1.434	282.5	48.75	4.096	701.1006	2.523962	1012.365	13.82	69.97	994.413	0.204	1002.409	987.2248	993.6049	0.267	0.118	0.06	2861.596	2843.661	2855.899	0.386	
06/07/2016 12:00	1175	13.94	13.86	2.448	2.448	306.5	25.9	4.665	314.533	1.132319	1012.177	13.14	72.96	994.4269	0.089	1003.09	986.9517	993.239	0.093	0.116	0.043	2862.726	2843.427	2855.736	0.153	
06/07/2016 13:00	1176	13.94	13.81	2.238	2.238	342.7	50.34	4.155	324.0411	1.166548	1012.014	13.55	71.9	992.5452	5.548	1000.957	985.4786	991.1999	7.041	3.208	5.698	2862.63	2843.023	2855.494	0.16	
06/07/2016 14:00	1177	13.94	13.41	3.356	3.356	323.3	21.62	5.174	315.3789	1.135364	1011.523	13.62	72.76	994.3467	0.226	1003.367	986.5385	993.1346	0.187	0.329	0.101	2862.581	2842.938	2857.569	0.159	
06/07/2016 15:00	1178	13.91	13.83	2.556	2.556	269.2	42.68	6.899	381.6577	1.373968	1011.523	14.53	62.47	994.3425	0.621	1003.772	986.298	992.9577	0.639	0.736	0.454	2862.252	2841.589	2853.277	0.208	
06/07/2016 16:00	1179	13.85	13.76	4.121	4.121	181.9	23.08	7.448	508.9026	1.832049	1011.491	15.9	49.97	994.1354	0.799	1003.889	985.9816	992.5353	0.793	1.071	0.373	2863.359	2843.073	2855.402	0.316	
06/07/2016 17:00	1180	13.94	13.8	2.077	2.077	61.75	86	5.704	245.3345	0.8832042	1011.604	14.15	60.63	994.2087	0.178	1004.02	985.8805	992.725	0.235	0.184	0.078	2864.267	2842.001	2854.904	0.124	
06/07/2016 18:00	1181	13.94	13.85	2.142	2.142	342.3	24.34	5.018	276.2794	0.9946058	1011.523	14.24	60.76	994.1878	0.053	1003.765	986.0828	992.716	0.062	0.063	0.026	2862.977	2842.234	2855.04	0.143	
06/07/2016 19:00	1182	14.06	13.91	2.565	2.565	362.0	28.91	5.39	207.2545	0.746116	1011.523	13.9	64.84	994.243	0.055	1003.937	986.3345	992.4573	0.055	0.075	0.024	2863.317	2842.587	2854.719	0.103	
06/07/2016 20:00	1183	14.01	13.83	1.712	1.712	123.5	15.84	3.156	122.244	0.4400786	1011.359	13.63	63.64	994.2695	0.052	1003.841	986.5081	992.4594	0.055	0.06	0.038	2863.21	2842.819	2854.702	0.043	
06/07/2016 21:00	1184	13.84	13.63	1.992	1.992	168.2	49.38	5.174	23.61407	0.08501065	1011.686	12.59	66.44	994.2976	0.238	1004.223	986.4576	992.2127	0.221	0.316	0.144	2863.776	2842.983	2854.498	0.005	
06/07/2016 22:00	1185	13.65	13.5	1.996	1.996	163	30.86	3.391	5.322424	0.01916073	1011.581	11.11	66.23	994.6484	0.063	1004.046	987.0807	992.8185	0.065	0.076	0.043	2863.45	2843.464	2855.184	0.001	
06/07/2016 23:00	1186	13.51	13.4	0.534	0.534	244.3	49.83	1.529	0.2899522	0.001043828	1011.417	11.63	58.51	994.6797	0.009	1003.961	987.1774	992.9006	0.007	0.011	0.01	2863.344	2843.563	2855.241	-0.022	
07/07/2016 0:00	1187	13.41	13.32	0.816	0.816	201.6	29.18	2.215	0	0	1011.499	11.21	57.99	994.6697	0.082	1003.953	987.1395	992.9165	0.091	0.1	0.041	2863.402	2843.776	2855.388	-0.015	
07/07/2016 1:00	1188	13.34	13.25	1.642	1.642	238.1	48.16	2.803	0	0	1011.663	10.67	59	994.6584	0.025	1004.001	987.149	992.8247	0.027	0.027	0.02	2863.38	2843.55	2855.16	-0.002	
07/07/2016 2:00	1189	13.27	13.19	3.053	3.053	229.1	7.227	4.312	0	0	1011.754	9.72	63.84	994.6655	0.158	1004.059	987.1505	992.787	0.168	0.195	0.092	2863.239	2843.24	2855.201	0.01	
07/07/2016 3:00	1190	13.21	13.13	4.077	4.077	225.8	3.423	4.567	0	0	1011.638	8.56	66.39	994.7521	0.143	1004.127	987.2709	992.8582	0.147	0.185	0.076	2863.368	2843.282	2855.109	0.014	
07/07/2016 4:00	1191	13.15	13.09	4.373	4.373	224.4	4.763	5.331	2.198413	0.007914286	1011.805	7.958	67.15	994.7701	0.234	1004.104	987.2902	992.9158	0.232	0.306	0.131	2863.747	2843.733	2854.959	0.014	
07/07/2016 5:00	1192	13.26	13.09	3.28	3.28	226.9	5.098	4.724	48.54034	0.1747452	1011.966	8.43	62.85	995.1692	0.079	1003.083	989.4377	992.9863	0.082	0.103	0.038	2862.237	2846.379	2855.302	0.02	
07/07/2016 6:00	1193	13.59	13.26	2.051	2.051	253.5	18.28	2.822	147.8495	0.5322583	1011.754	9.99	59.1	995.2769	0.063	1001.755	990.2505	993.8252	0.075	0.074	0.031	2860.647	2847.277	2856.392	0.058	
07/07/2016 7:00	1194	13.97	13.59	1.911	1.911	293.9	17.34	3.254	252.6461	0.909526	1011.745	10.74	61.34	995.2405	0.077	1000.907	990.3715	994.4428	0.088	0.091	0.044	2859.545	2847.258	2857.213	0.113	
07/07/2016 8:00	1195	14.56	13.97	2.082	2.082	309.1	19.88	4.096	376.28	1.354608	1011.525	11.48	63.02	990.551	0.206	1000.551	989.88									

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
09/07/2016 8:00	1243	14.56	14.06	3.315	3.315	158.1	17.51	6.566	284.5104	1.024238	1014.469	13.11	53.71	995.5022	0.493	1001.609	990.1683	994.7289	0.436	0.665	0.309	2860.375	2847.277	2857.219	0.162
09/07/2016 9:00	1244	14.47	14.3	3.757	3.757	187.7	32.51	6.233	497.7083	1.79175	1014.305	15	46.01	995.3294	0.53	1000.905	989.8079	995.2749	0.442	0.684	0.425	2860.022	2846.541	2858.167	0.304
09/07/2016 10:00	1245	14.38	13.78	4.438	4.438	220.3	11.76	7.095	564.9882	2.033958	1014.138	14.97	43.71	995.2057	0.498	1001.176	989.0833	995.3582	0.531	0.621	0.275	2859.722	2846.323	2858.596	0.35
09/07/2016 11:00	1246	13.8	13.73	4.039	4.039	228.5	19.97	7.017	697.6207	2.211435	1014.085	15.99	43.49	995.0113	0.66	1001.152	988.3094	995.5722	0.658	0.883	0.305	2860.4	2844.536	2858.544	0.43
09/07/2016 12:00	1247	13.86	13.74	4.491	4.491	244.1	18.64	7.389	722.4818	2.600934	1013.6	16.25	40.34	994.8403	0.403	1001.732	987.301	995.4877	0.458	0.449	0.275	2860.815	2843.311	2857.677	0.455
09/07/2016 13:00	1248	13.78	13.63	3.448	3.448	237.9	26.11	7.291	809.1556	2.91296	1013.347	17.26	36.64	994.8434	0.417	1003.172	986.8967	994.4619	0.411	0.501	0.319	2863.062	2844.215	2856.94	0.515
09/07/2016 14:00	1249	13.87	13.63	2.866	2.866	342.8	35.52	5.468	296.1694	1.06621	1013.281	15.71	50.45	994.7868	0.085	1004.054	986.556	993.7501	0.084	0.118	0.028	2863.589	2842.552	2856.348	0.179
09/07/2016 15:00	1250	13.84	13.74	1.907	1.907	344.7	28.85	4.371	425.2248	1.530809	1012.774	16.28	46.5	994.7534	0.151	1003.883	986.3848	993.992	0.139	0.196	0.104	2863.301	2842.813	2856.267	0.249
09/07/2016 16:00	1251	13.88	13.75	3.697	3.697	331.3	25.88	7.703	288.5275	1.038699	1012.789	16.16	48.54	994.8965	0.549	1004.033	987.0848	993.5719	0.537	0.724	0.302	2863.468	2843.601	2856.014	0.192
09/07/2016 17:00	1252	13.87	13.83	3.291	3.291	344.7	20.93	6.978	321.8713	1.158737	1012.636	15.85	53	994.8493	0.148	1003.866	986.9692	993.713	0.141	0.185	0.108	2863.182	2843.106	2856.222	0.198
09/07/2016 18:00	1253	13.89	13.81	2.923	2.923	21.43	19.32	5.508	288.6538	1.039154	1012.175	15.64	54.57	994.5186	0.297	1006.031	984.7897	992.7344	0.332	0.308	0.243	2865.41	2839.747	2854.61	0.171
09/07/2016 19:00	1254	13.83	13.82	2.09	2.09	23.51	45.81	5.057	266.9689	0.9610882	1012	15.53	56.24	994.6108	0.267	1005.843	985.5089	992.481	0.316	0.305	0.143	2865.96	2840.996	2854.549	0.145
09/07/2016 20:00	1255	13.86	13.72	1.912	1.912	112.5	17.96	3.214	182.1451	0.6557222	1012.095	15.2	58.28	994.7068	0.046	1005.178	986.2217	992.7202	0.063	0.039	0.031	2864.931	2842.409	2854.969	0.089
09/07/2016 21:00	1256	13.74	13.65	2.351	2.351	312.7	33.58	4.39	83.40158	0.3002457	1012.341	13.81	64.37	994.885	0.09	1004.263	987.0833	993.3094	0.108	0.103	0.047	2863.541	2843.42	2855.773	0.025
09/07/2016 22:00	1257	13.66	13.51	2.137	2.137	259.8	19.28	3.9	20.97811	0.0755212	1012.354	12.53	70.8	994.9541	0.048	1004.212	987.2791	993.3706	0.053	0.058	0.029	2863.715	2843.819	2855.802	0.003
09/07/2016 23:00	1258	13.52	13.39	0.946	0.946	171.2	41.8	2.313	0.2458768	0.000885157	1012.235	12.56	68.86	995.0314	0.02	1004.083	987.3649	993.6458	0.025	0.02	0.014	2863.469	2843.79	2856.15	-0.016
10/07/2016 0:00	1259	13.4	13.3	4.119	4.119	178.3	68.66	12.23	0	0	1012.235	11.92	68.9	994.8953	2.169	1004.548	986.7371	993.4011	1.789	3.067	1.226	2868.301	2839.996	2855.065	0.015
10/07/2016 1:00	1260	13.32	13.23	7.044	7.044	226.1	22.4	14.07	1.441647	0.005189928	1012.268	9.19	79.04	1010.9	0.89	1019.75	1003.305	1009.646	0.844	1.221	0.417	2884.366	2865.653	2855.268	0.013
10/07/2016 2:00	1261	13.25	13.17	4.17	4.17	167.8	17.12	8.74	1.495761	0.005384739	1011.752	10.85	69.54	1011.46	0.875	1020.067	1003.79	1010.522	0.863	1.176	0.409	2881.603	2862.509	2875.776	0.014
10/07/2016 3:00	1262	13.19	13.11	6.669	6.669	159.7	3.006	8.45	2.592263	0.009332146	1011.754	10.76	69.23	1011.398	0.721	1020.151	1003.631	1010.413	0.691	0.997	0.298	2882.195	2861.419	2875.504	0.024
10/07/2016 4:00	1263	13.13	13.07	4.047	4.047	198.9	15.44	5.292	6.939768	0.02498316	1011.757	10.39	68.91	1011.401	0.248	1020.481	1003.468	1010.255	0.242	0.334	0.119	2882.676	2862.785	2875.825	0.014
10/07/2016 5:00	1264	13.11	13.07	4.224	4.224	208.3	5.129	4.939	18.32505	0.06597017	1011.745	11	68.41	1011.429	0.244	1020.437	1003.503	1010.347	0.244	0.313	0.147	2883.141	2863.261	2875.917	0.013
10/07/2016 6:00	1265	13.25	13.09	3.799	3.799	211.6	4.973	4.508	36.13944	0.1310102	1011.826	11.53	68.14	1011.422	0.167	1020.371	1003.523	1010.373	0.15	0.226	0.102	2882.726	2863.013	2875.851	0.017
10/07/2016 7:00	1266	13.64	13.23	5.868	5.868	222.8	13.23	10.98	78.39054	0.2822059	1011.906	11.04	73.88	1011.137	1.701	1020.551	1002.586	1010.274	1.507	2.31	1.038	2883.681	2858.801	2877.309	0.047
10/07/2016 8:00	1267	13.8	13.64	8.51	8.51	227.3	8.99	13.23	47.55527	0.171199	1012.245	9.2	78.7	1016.102	1.085	1024.65	1008.443	1015.212	0.927	1.548	0.525	2887.139	2868.121	2881.188	0.036
10/07/2016 9:00	1268	14.64	13.8	4.258	4.258	232.2	14.39	8.19	184.1206	0.662834	1012.248	9.33	80.8	1009.388	0.525	1023.618	1009.388	1016.092	0.627	0.59	0.29	2885.49	2870.817	2882.716	0.07
10/07/2016 10:00	1269	14.61	14.38	3.632	3.632	245.1	17.58	6.35	491.1483	1.768134	1012.027	11.88	72.52	1016.281	0.205	1023.952	1008.842	1016.049	0.225	0.227	0.155	2887.225	2869.271	2882.505	0.241
10/07/2016 11:00	1270	14.56	14.01	2.192	2.192	236.1	28.71	4.841	470.0937	1.692337	1011.768	12.88	63.08	1016.202	0.139	1020.374	1009.061	1017.172	0.154	0.093	0.093	2884.666	2869.303	2884.072	0.246
10/07/2016 12:00	1271	14.03	13.69	1.752	1.752	254.6	39.39	4.214	806.0826	2.901897	1011.687	14.37	55.59	1016.032	0.118	1022.242	1008.255	1017.601	0.123	0.15	0.062	2884.933	2868.191	2884.532	0.46
10/07/2016 13:00	1272	13.79	13.69	2.266	2.266	267.3	36.55	6.135	750.4628	2.701666	1011.188	15.04	52.24	1015.9	0.09	1023.033	1007.544	1017.123	0.084	0.109	0.074	2885.869	2867.716	2883.805	0.435
10/07/2016 14:00	1273	13.73	13.21	2.996	2.996	217.9	37	6.703	746.5038	2.687414	1011.162	16.16	48.73	1015.801	0.256	1024.329	1007.015	1016.059	0.234	0.339	0.165	2887.181	2867.317	2882.407	0.449
10/07/2016 15:00	1274	13.93	13.67	4.89	4.89	208.2	38.83	11.31	531.9209	1.914915	1011.056	16.1	53.29	1015.538	1.712	1024.518	1006.755	1015.34	1.74	2.034	1.277	2885.566	2866.71	2878.658	0.331
10/07/2016 16:00	1275	14.02	13.93	7.759	7.759	299.1	10.19	12.35	332.6224	1.197441	1012.096	12.08	77.89	1016.057	1.658	1025.031	1008.127	1015.014	1.366	2.334	0.968	2886.508	2867.164	2881.477	0.157
10/07/2016 17:00	1276	14.03	13.86	3.565	3.565	277.1	37.78	8.6	108.0794	0.3890857	1012.302	10.65	83.9	1016.529	0.023	1024.822	1008.835	1015.93	0.029	0.022	0.017	2887.963	2869.232	2881.411	0.03
10/07/2016 18:00	1277	14.22	13.93	0.944	0.944	244.3	25.35	2.43	290.6505	1.046342	1011.898	11.63	77.2	1016.268	0.138	1026.898	1006.83	1015.077	0.146	0.182	0.048	2890.443	2866.712	2881.372	0.126
10/07/2016 19:00	1278	14.15	13.94	1.318	1.318	288.8	24.05	3.508	290.3526	1.045269	1011.85	13.53	62.71	1016.312	0.029	1025.742	1007.958	1015.235	0.025	0.034	0.027	2888.974	2868.22	2881.569	0.139
10/07/2016 20:00	1279	13.97	13.89	0.824	0.824	155.6	78.94	1.901	196.1915	0.7062893	1011.687	13.58	64.83	1016.311	0.027	1026.302	1007.903	1014.728	0.032	0.024	0.024	2889.657	2868.129	2881.01	0.075
10/07/2016 21:00	1280	13.91	13.78	0.329	0.329	132.6	21.8	1.274	116.3575	0.4188869	1012.096	13.56	64.54	1016.339	0.026	1026.922	1007.795	1014.299	0.033	0.022	0.022	2890.283	2868.055	2880.551	0.011
10/07/2016 22:00	1281	13.79	13.61	3.359	3.359	203.9	30.75	7.918	30.52362	0.1098851	1														

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
12/07/2016 22:00	1329	13.7	13.53	7.997	7.997	168	5.915	10.51	6.434914	0.02316569	1021.076	10.75	80.5	1023.605	1.028	1032.229	1015.855	1022.73	0.973	1.345	0.644	2898.676	2879.578	2890.774	0.015	
12/07/2016 23:00	1330	13.54	13.43	5.109	5.109	166.4	15.42	7.272	1.429396	0.005145825	1021.732	10.92	73.42	1024.327	0.092	1032.733	1016.515	1023.732	0.09	0.121	0.05	2897.161	2878.199	2891.592	0.014	
13/07/2016 0:00	1331	13.45	13.35	2.27	2.27	231.1	43.31	3.704	0.8100334	0.00291612	1022.237	10.3	79.42	1024.272	0.065	1032.843	1016.386	1023.589	0.068	0.032	0.032	2897.292	2878.229	2891.453	-0.005	
13/07/2016 1:00	1332	13.37	13.29	1.119	1.119	203.2	51.26	2.136	1.065623	0.003836243	1022.393	10.41	76.5	1024.342	0.016	1032.684	1016.603	1023.74	0.013	0.021	0.011	2897.109	2878.407	2891.565	-0.015	
13/07/2016 2:00	1333	13.3	13.23	1.862	0.876	74.21	22.61	1.862	0.4984434	0.001794396	1022.56	10.82	74.81	1016.56	0.035	1032.713	1016.56	1023.64	0.032	0.048	0.02	2897.124	2878.3	2891.402	-0.018	
13/07/2016 3:00	1334	13.24	13.16	1.235	1.235	100.4	33.31	2.45	0.002545676	9.16E-06	1022.75	10.4	77.92	1024.297	0.015	1032.762	1016.549	1023.578	0.017	0.017	0.01	2897.159	2878.304	2891.41	-0.014	
13/07/2016 4:00	1335	13.18	13.12	2.328	2.328	137.1	13.96	3.861	3.858606	0.01389098	1022.935	10.02	78.25	1024.359	0.246	1032.717	1016.684	1023.675	0.23	0.336	0.127	2897.508	2878.565	2891.527	-0.004	
13/07/2016 5:00	1336	13.26	13.12	2.465	2.465	137	12.14	4.136	37.26102	0.1341397	1023.428	9.86	77.03	1024.687	0.078	1031.829	1018.515	1023.716	0.084	0.096	0.043	2895.882	2880.801	2891.483	-0.007	
13/07/2016 6:00	1337	13.68	13.25	1.608	1.608	109.5	25	3.744	136.3423	0.4908322	1023.621	11.15	73.94	1024.788	0.101	1031.061	1019.116	1024.188	0.118	0.119	0.051	2895.182	2881.263	2892.094	0.041	
13/07/2016 7:00	1338	14.2	13.68	2.425	2.425	119.7	16.46	4.214	279.6331	1.006679	1023.801	12.41	69.71	1024.653	0.223	1030.778	1018.897	1024.284	0.215	0.31	0.083	2893.97	2880.224	2892.356	0.133	
13/07/2016 8:00	1339	14.56	14.18	3.133	3.133	124	14.24	5.214	204.5469	0.7363687	1024.127	12.36	70.09	1024.427	0.475	1030.924	1017.897	1024.46	0.406	0.66	0.277	2895.746	2879.941	2892.427	0.097	
13/07/2016 9:00	1340	14.56	14.46	3.444	3.444	118.8	16.47	5.566	283.7483	1.021494	1024.29	12.78	67.8	1024.376	0.215	1031.592	1017.225	1024.31	0.196	0.296	0.112	2895.796	2878.78	2892.158	0.145	
13/07/2016 10:00	1341	14.49	14.02	2.587	2.587	140.6	22.61	5.429	363.7783	1.309602	1024.454	13.67	62.96	1024.687	0.236	1031.213	1017.133	1024.714	0.236	0.302	0.144	2895.068	2878.861	2892.787	0.193	
13/07/2016 11:00	1342	14.03	13.71	2.972	2.972	149.4	21.27	5.86	583.2083	2.09955	1024.372	14.91	56.23	1024.275	0.311	1030.416	1017.071	1025.337	0.285	0.418	0.184	2895.414	2879.176	2893.219	0.334	
13/07/2016 12:00	1343	13.73	13.65	2.669	2.669	150	26.66	5.782	586.5298	2.111507	1024.364	15.65	51.6	1024.123	0.348	1032.131	1016.174	1024.065	0.396	0.413	0.191	2896.025	2877.911	2892.417	0.346	
13/07/2016 13:00	1344	13.82	13.24	2.649	2.649	138.1	39.08	5.174	479.4042	1.725855	1024.412	15.98	49.77	1022.567	0.4791	1030.714	1014.934	1022.053	5.776	3.141	5.063	2897.082	2877.798	2891.393	0.287	
13/07/2016 14:00	1345	14.21	13.29	2.766	2.766	83.8	35.32	5.802	224.2341	0.8072427	1024.29	15.11	57.15	1024.168	0.151	1032.603	1016.217	1023.684	0.14	0.201	0.091	2896.663	2877.315	2891.537	0.127	
13/07/2016 15:00	1346	14.12	13.87	3.385	3.385	165.8	66.51	10.43	76.33619	0.2748103	1024.454	12.96	64.89	1025.776	0.062	1034.375	1017.834	1025.118	0.043	0.07	0.07	2899.171	2880.067	2893.518	0.039	
13/07/2016 16:00	1347	14.13	13.87	2.115	2.115	80.2	49.39	3.489	130.9886	0.4715588	1024.093	12.43	70.68	1026.241	0.135	1034.832	1018.158	1025.733	0.133	0.185	0.052	2899.627	2880.187	2893.925	0.047	
13/07/2016 17:00	1348	14.49	14.12	2.457	2.457	136.7	19.09	3.959	397.4034	1.430652	1023.799	15.11	59.42	1026.003	0.064	1035.965	1016.603	1025.44	0.058	0.088	0.034	2900.941	2878.156	2893.494	0.223	
13/07/2016 18:00	1349	14.36	13.98	1.198	1.198	92.5	26.1	2.136	474.4593	1.708053	1023.851	16.35	53.18	1025.577	0.036	1037.331	1014.983	1024.418	0.033	0.047	0.024	2902.526	2876.439	2892.373	0.269	
13/07/2016 19:00	1350	14	13.93	1.033	1.033	35.45	46.86	1.823	271.7585	0.9783304	1023.928	16.54	50.86	1025.712	0.174	1036.996	1015.69	1024.449	0.223	0.158	0.125	2901.909	2877.438	2892.453	0.136	
13/07/2016 20:00	1351	13.98	13.83	1.976	1.976	38.95	31.37	4.077	171.5344	0.6175237	1024.107	15.77	55.91	1025.875	0.076	1035.809	1017.105	1024.71	0.1	0.071	0.046	2900.689	2879.041	2892.6	0.046	
13/07/2016 21:00	1352	13.85	13.68	3.846	3.846	139.8	15.67	7.468	48.59519	0.1749427	1024.29	14.19	59.93	1026.009	0.614	1034.565	1017.938	1025.524	0.56	0.843	0.325	2899.301	2879.908	2893.497	0.033	
13/07/2016 22:00	1353	13.7	13.53	3.494	3.494	106.3	71.27	8.8	11.38721	0.04099395	1024.79	13.17	62.19	1026.145	0.102	1034.669	1018.39	1025.375	0.122	0.11	0.067	2899.091	2880.35	2893.62	0.02	
13/07/2016 23:00	1354	13.55	13.42	2.325	2.325	271.9	22.21	5.684	0	0	1025.315	11.99	76.36	1026.168	0.043	1034.595	1018.485	1025.424	0.054	0.054	0.023	2899.325	2880.574	2893.523	-0.003	
14/07/2016 0:00	1355	13.44	13.34	2.213	2.213	261.8	16.01	4.43	0	0	1025.496	10.85	81.1	1026.32	0.055	1034.664	1018.779	1025.518	0.061	0.066	0.033	2899.366	2880.846	2893.67	-0.007	
14/07/2016 1:00	1356	13.35	13.26	6.224	6.224	232	5.375	0	0	0	1025.66	9.69	88.2	1026.331	0.677	1034.989	1018.32	1025.685	0.705	0.805	0.48	2899.594	2879.918	2893.633	0.002	
14/07/2016 2:00	1357	13.28	13.2	5.335	5.335	227.6	7.421	7.487	0	0	1025.677	9.49	88.9	1027.622	0.311	1036.13	1019.831	1026.905	0.324	0.39	0.181	2901.837	2882.029	2894.876	-0.001	
14/07/2016 3:00	1358	13.22	13.14	3.009	3.009	196.4	44.22	5.743	0.1817611	0.00065434	1025.58	9.55	87.6	1030.039	0.103	1038.407	1022.276	1029.434	0.093	0.139	0.061	2904.007	2884.977	2898.213	-0.007	
14/07/2016 4:00	1359	13.16	13.09	3.742	3.742	128.5	12.62	5.704	1.057734	0.00380784	1025.349	9.35	90.5	1030.776	0.472	1039.123	1023.031	1030.173	0.496	0.179	0.0625	2904.915	2885.977	2899.068	-0.006	
14/07/2016 5:00	1360	13.11	13.08	3.534	3.534	144.6	12.78	6.096	13.36303	0.04810689	1025.171	10.1	84.4	1030.743	0.673	1039.1	1023.004	1030.126	0.619	0.952	0.266	2904.32	2885.289	2898.79	-0.017	
14/07/2016 6:00	1361	13.26	13.08	2.5	2.5	201.2	71.47	6.115	46.51052	0.1674379	1025.498	10.49	82.1	1030.795	0.008	1039.195	1023.014	1030.176	0.011	0.005	0.006	2904.67	2885.871	2899.106	-0.006	
14/07/2016 7:00	1362	13.63	13.25	0.389	0.389	240.5	35.84	1.098	81.0164	0.291659	1025.496	11	80.8	1030.828	0.01	1039.202	1023.026	1030.255	0.013	0.006	0.006	2904.675	2885.915	2899.187	-0.004	
14/07/2016 8:00	1363	14.23	13.63	0.651	0.651	92.2	25.34	2.156	166.473	0.5993026	1025.573	11.64	81.8	1030.823	0.03	1039.201	1022.976	1030.291	0.036	0.027	0.026	2904.624	2885.837	2899.269	0.05	
14/07/2016 9:00	1364	14.52	14.19	0.774	0.774	99.2	23.97	2.313	215.3646	0.7753125	1025.6	12.37	76.88	1030.717	0.029	1039.24	1022.762	1030.148	0.025	0.023	0.023	2904.746	2885.62	2899.063	0.082	
14/07/2016 10:00	1365	14.28	14.1	1.162	1.162	95.6	44.92	3.998	178.6275	0.6430591	1025.518	12.19	81.3	1030.744	0.059	1039.379	1022.924	1029.928	0.045	0.081	0.041	2904.714	2886.16	2899.008	0.061	
14/07/2016 11:00	1366	14.16	13.97	2.423	2.423	135.4	22.06	4.822	151.7272	0.546218	1025.45	11.67	88.3	1035.184	0.319	1043.959	1027.151	1034.442	0.233	0.481	0.138	2910.359	2890.722	2903.993	0.046	
14/07/2016 12:00	1367	14.18	13.85	2.07	2.07	131.2	72.33	4.194	47.791	0.1720476	1025.651	10.71	93.4	1042.354	0.											

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	Meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
16/07/2016 12:00	1415	13.69	13.54	1.558	1.558	10	42.04	4.371	578.2502	2.081701	1021.901	18.11	50.73	1042.589	0.042	1050.921	1033.949	1042.898	0.04	0.051	0.034	2918.231	2898.809	2913.896	0.353	
16/07/2016 13:00	1416	13.73	13.54	1.907	1.907	16.71	51.25	4.645	735.9914	2.649569	1021.724	18.96	47.09	1042.516	0.393	1050.554	1033.505	1043.49	0.521	0.25	0.361	2918.912	2898.366	2914.165	0.469	
16/07/2016 14:00	1417	14.42	13.56	4.986	4.986	199.4	66.42	10.7	309.3237	1.113565	1021.775	17.05	54.3	1032.394	0.57	1051.178	1032.576	1043.429	0.488	0.765	0.391	2918.189	2897.218	2914.013	0.218	
16/07/2016 15:00	1418	14.36	14.02	1.831	1.831	151.3	73.3	5.096	307.8085	1.108111	1021.587	16.51	57.14	1042.587	0.13	1051.671	1032.832	1043.258	0.107	0.183	0.075	2918.991	2897.503	2914.134	0.171	
16/07/2016 16:00	1419	14.29	13.71	2.975	2.975	274.2	34.84	6.84	687.4622	2.474864	1021.244	18.62	47.79	1031.647	0.283	1052.073	1031.647	1043.182	0.392	0.196	0.196	2920.219	2896.07	2913.833	0.441	
16/07/2016 17:00	1420	13.72	13.58	2.097	2.097	212.4	53.05	4.861	606.8917	2.18481	1021.225	19.67	39.78	1042.736	0.164	1050.253	1034.28	1043.674	0.161	0.154	0.175	2917.502	2899.259	2914.453	0.397	
16/07/2016 18:00	1421	13.73	13.63	2.023	2.023	174.4	43.67	5.566	410.223	1.476803	1021.225	19.89	39.41	1042.383	0.087	1053.048	1032.28	1041.821	0.109	0.07	0.077	2920.871	2896.602	2912.474	0.267	
16/07/2016 19:00	1422	13.74	13.56	4.236	4.236	287.4	25.24	10.58	55.52165	0.1998779	1021.126	17.11	55.01	1042.803	0.62	1050.783	1034.618	1043.007	0.551	0.83	0.399	2917.721	2898.373	2914.635	0.066	
16/07/2016 20:00	1423	13.61	13.56	3.135	3.135	315.1	44.25	6.782	41.61747	0.1498229	1021.344	13.57	75.23	1042.86	0.033	1051.621	1034.316	1042.643	0.029	0.047	0.011	2919.066	2898.955	2913.577	0.006	
16/07/2016 21:00	1424	13.59	13.47	0.892	0.892	6.694	51.78	2.195	21.35023	0.07686084	1021.434	13.93	70.34	1042.925	0.017	1051.586	1034.507	1042.681	0.012	0.009	0.009	2919.08	2899.325	2913.619	-0.011	
16/07/2016 22:00	1425	13.5	13.34	5.11	5.11	165.1	36.71	10.23	1.237287	0.004454233	1021.063	12.91	74.68	1043.519	1.665	1052.081	1035.222	1043.254	1.562	2.193	1.031	2916.988	2901.532	2913.249	0.015	
16/07/2016 23:00	1426	13.35	13.25	8.41	8.41	159.7	9.14	11.54	0.000763646	2.75E-06	1021.052	12.63	73.73	1043.532	1.11	1052.134	1035.03	1043.433	1.124	1.442	0.595	2920.316	2899.725	2913.02	0.025	
17/07/2016 0:00	1427	13.27	13.18	4.693	4.693	205.7	10.99	6.978	0.009672627	3.48E-05	1021.201	12.92	68.1	1043.632	0.227	1052.394	1035.161	1043.341	0.238	0.268	0.163	2920.136	2900.399	2914.462	0.02	
17/07/2016 1:00	1428	13.2	13.13	4	4	219.2	9.8	5.625	0	0	1021.4	12.18	70.06	1043.634	0.315	1052.402	1035.161	1043.341	0.288	0.438	0.15	2919.893	2899.751	2914.617	0.013	
17/07/2016 2:00	1429	13.14	13.08	1.97	1.97	221.1	14.78	4.292	0	0	1021.24	12.33	65.07	1043.67	0.057	1052.377	1035.269	1043.362	0.059	0.072	0.035	2920.024	2900.217	2914.44	0	
17/07/2016 3:00	1430	13.09	13.03	1.675	1.675	250.3	27.81	3.587	0	0	1021.076	12.72	65.46	1043.74	0.018	1052.43	1035.339	1043.452	0.025	0.016	0.01	2920.025	2900.275	2914.519	-0.004	
17/07/2016 4:00	1431	13.04	12.98	2.019	2.019	266.3	9	3.861	1.839504	0.006622214	1020.912	12.59	69.7	1043.726	0.072	1052.396	1035.372	1043.409	0.077	0.087	0.045	2920.108	2900.324	2914.452	-0.001	
17/07/2016 5:00	1432	13.08	12.99	3.463	3.463	229.7	11.98	4.822	20.61207	0.07420344	1020.912	12.03	75.97	1043.717	0.11	1052.295	1035.414	1043.443	0.119	0.072	0.072	2920.104	2900.287	2914.5	-0.004	
17/07/2016 6:00	1433	13.26	13.05	3.895	3.895	245.6	14.67	5.998	46.87975	0.1687671	1020.984	12.32	77.73	1043.691	0.261	1052.322	1035.344	1043.407	0.242	0.343	0.166	2920.022	2900.286	2914.382	0.012	
17/07/2016 7:00	1434	13.82	13.26	3.884	3.884	266	12.23	7.134	120.7785	0.4348025	1021.022	12.66	79.21	1043.762	0.383	1051.84	1035.903	1043.541	0.428	0.467	0.199	2919.055	2901.204	2914.807	0.048	
17/07/2016 8:00	1435	14.56	13.82	3.892	3.892	264.4	9.72	5.9	251.2149	0.9043738	1020.689	13.06	79.38	1037.34	0.515	1049.949	1037.34	1044.375	0.555	0.634	0.291	2917.949	2903.753	2915.977	0.116	
17/07/2016 9:00	1436	14.53	14.21	4.182	4.182	258.1	17.16	6.331	427.9018	1.540446	1020.689	14.09	74.72	1043.768	0.437	1050.734	1036.467	1044.102	0.517	0.485	0.263	2917.584	2901.555	2915.668	0.221	
17/07/2016 10:00	1437	14.49	13.86	3.693	3.693	288	26.62	6.076	419.823	1.511363	1020.362	14.95	68.77	1036.747	0.53	1049.013	1036.747	1045.567	0.622	0.624	0.256	2914.243	2901.3	2916.914	0.23	
17/07/2016 11:00	1438	13.87	13.76	4.51	4.51	308.2	17.53	7.252	722.3374	2.600415	1020.063	15.95	63.46	1043.538	0.603	1049.342	1035.621	1045.652	0.593	0.82	0.256	2916.536	2900.279	2917.197	0.413	
17/07/2016 12:00	1439	13.85	13.73	4.407	4.407	285.5	20.48	7.722	637.8185	2.296147	1019.653	16.19	60.42	1043.508	0.436	1050.413	1035.062	1045.049	0.429	0.577	0.231	2917.796	2900.14	2916.321	0.374	
17/07/2016 13:00	1440	13.85	13.71	3.229	3.229	282.9	23.02	6.664	551.3405	1.984826	1019.321	16.81	57.93	1043.414	0.307	1051.577	1034.754	1043.911	0.311	0.371	0.218	2919.763	2899.987	2915.05	0.332	
17/07/2016 14:00	1441	14.45	13.27	5.966	5.966	259.3	17.43	13.31	423.228	1.523621	1019.359	16.26	63.16	1043.007	1.651	1051.818	1033.479	1043.725	1.541	1.937	1.431	2917.867	2897.85	2914.741	0.261	
17/07/2016 15:00	1442	14.47	14.24	7.619	7.619	276.1	10.43	12.58	641.2988	2.308676	1019.01	15.12	71.94	1034.166	0.539	1052.316	1034.166	1043.265	0.511	0.728	0.286	2920.028	2899.238	2914.255	0.335	
17/07/2016 16:00	1443	14.46	13.76	4.621	4.621	260.2	17.53	7.389	661.3521	2.380867	1018.666	16.6	56.18	1042.946	0.542	1053.634	1031.933	1043.271	0.519	0.632	0.462	2921.034	2896.345	2913.957	0.4	
17/07/2016 17:00	1444	13.84	13.77	5.724	5.724	271.8	24.34	8.96	558.4374	2.010375	1018.33	17.41	52.36	1043.077	0.966	1053.216	1033.355	1042.66	0.955	1.222	0.63	2922.457	2897.548	2914.54	0.364	
17/07/2016 18:00	1445	14.25	13.77	6.516	6.516	289.5	9.99	10	231.1869	0.8322729	1018.377	16.28	57.14	1043.294	0.852	1052.552	1034.652	1042.679	0.85	1.114	0.463	2918.384	2898.131	2913.262	0.181	
17/07/2016 19:00	1446	13.92	13.77	5.524	5.524	281.6	8.42	7.997	217.0791	0.7814849	1018.07	15.7	59.62	1043.031	0.876	1054.559	1032.976	1041.558	1.008	0.953	0.616	2923.26	2898.382	2912.303	0.155	
17/07/2016 20:00	1447	13.86	13.72	6.7	6.7	277.2	7.098	9.56	185.606	0.6681816	1017.988	15.46	61.99	1043.263	0.703	1052.758	1034.373	1042.657	0.628	0.909	0.513	2920.386	2899.793	2914.02	0.144	
17/07/2016 21:00	1448	13.74	13.54	4.541	4.541	265.5	8.41	7.056	30.82682	0.1109765	1018.07	13.91	66.32	1043.432	0.211	1052.57	1034.878	1042.849	0.236	0.258	0.109	2920.07	2899.654	2913.755	0.027	
17/07/2016 22:00	1449	13.55	13.41	4.282	4.282	259.3	10.05	6.88	9.059714	0.03261497	1018.105	12.76	70.42	1043.414	0.45	1052.586	1034.765	1042.891	0.387	0.247	0.629	2920.491	2900.365	2913.925	0.016	
17/07/2016 23:00	1450	13.43	13.32	4.416	4.416	243	10.26	6.938	0	0	1018.123	12.79	68.78	1043.461	0.395	1052.538	1034.961	1042.911	0.362	0.536	0.225	2919.951	2899.319	2914.269	0.017	
18/07/2016 0:00	1451	13.34	13.25	4.865	4.865	243.2	8.26	6.821	0	0	1017.96	12.46	69.6	1043.494	0.389	1052.575	1034.94	1042.967	0.332	0.501	0.306	2920.415	2900.301	2913.417	0.018	
18/07/2016 1:00	1452	13.26	13.18	5.299	5.299	251.9	7.78	8.23	0	0	1017.965	11.68	71.93	1043.48	0.813	1052.605	1035.017	1042.818	0.718	1.056	0.595	2921.322	2900.887	2914.727	0.017	
18/07/2016 2:00	1453	13.2	13.12	4.389	4.389	254.4	7.693	7.095	0	0	1018.129	10.87	75.12	1043.325	0.341	1052.741	1035.044	1042.819	0.309	0.457	0.21	2920.485	2899.761	2913.064	0.01	
18/07/2016 3:00	1454	13.14	13.07	5.756	5.756	244.6	8.																			

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
20/07/2016 2:00	1501	13.34	13.26	6.272	6.272	256.1	5.516	8.29	0	0	1012.222	6.408	75.71	1045.584	0.648	1054.387	1037.453	1044.912	0.628	0.844	0.393	2923.059	2904.866	2916.41	0.012
20/07/2016 3:00	1502	13.28	13.2	5.737	5.737	256.1	5.574	8.09	0	0	1011.978	6.316	74.92	1045.685	0.508	1054.306	1037.765	1044.984	0.524	0.632	0.318	2923.148	2904.977	2916.819	0.011
20/07/2016 4:00	1503	13.22	13.13	5.736	5.736	252.8	5.592	7.37	0.7672722	0.00276218	1011.999	6.139	74.59	1045.75	0.574	1054.427	1037.815	1045.009	0.632	0.687	0.341	2922.444	2904.645	2916.511	0.011
20/07/2016 5:00	1504	13.21	13.13	5.799	5.799	249	5.107	7.115	21.32777	0.07677998	1011.809	6.723	71.97	1045.67	0.545	1054.304	1037.626	1045.08	0.586	0.676	0.303	2921.291	2902.234	2916.378	0.019
20/07/2016 6:00	1505	13.44	13.19	4.765	4.765	254.4	6.418	6.488	57.21633	0.2059788	1011.802	7.244	70.32	1045.834	0.277	1054.113	1038.038	1045.352	0.26	0.356	0.191	2922.132	2903.62	2916.847	0.028
20/07/2016 7:00	1506	13.81	13.42	4.922	4.922	250.7	6.794	6.566	97.69233	0.3516924	1011.966	7.397	73.25	1045.766	0.556	1054.046	1038.044	1045.209	0.519	0.752	0.303	2922.138	2903.502	2917.045	0.042
20/07/2016 8:00	1507	14.63	13.79	5.194	5.194	262.6	7.66	7.389	226.0134	0.8136482	1011.938	8.21	69.87	1045.729	0.751	1052.329	1038.864	1045.992	0.783	0.944	0.434	2920.284	2904.587	2916.998	0.103
20/07/2016 9:00	1508	14.63	14.16	5.97	5.97	283.9	17.72	18.9	189.7723	0.6831803	1011.992	8.49	68.68	1045.445	1.386	1054.137	1037.497	1044.702	1.525	1.707	0.723	2921.546	2901.27	2916.502	0.095
20/07/2016 10:00	1509	14.62	14.1	7.425	7.425	290.2	10.27	10	288.3811	1.038172	1012.086	8.49	68.79	1045.614	1.825	1054.582	1037.385	1044.873	1.887	2.311	1.043	2923.016	2903.706	2916.441	0.138
20/07/2016 11:00	1510	14.13	14.07	7.089	7.089	283.9	11.1	9.9	385.8756	1.389152	1012.236	8.98	66.99	1045.495	1.038	1053.611	1037.721	1045.154	0.998	1.326	0.692	2923.006	2902.737	2916.318	0.181
20/07/2016 12:00	1511	14.1	14.05	7.132	7.132	269.1	11.71	10.17	416.1132	1.498007	1012.236	9.61	62.23	1045.583	1.894	1053.96	1037.397	1045.39	1.841	2.568	0.884	2919.75	2901.543	2917.108	0.208
20/07/2016 13:00	1512	14.08	13.95	7.737	7.737	278.9	11.81	12.13	529.6426	1.906713	1011.881	10.32	55.1	1044.38	4.659	1051.915	1036.892	1044.333	6.803	2.963	3.172	2922.571	2903.756	2916.971	0.275
20/07/2016 14:00	1513	14.62	13.51	5.592	5.592	273.3	18.21	10.04	282.8506	1.018262	1011.91	8.79	68.93	1045.936	0.885	1054.694	1036.875	1046.241	0.925	1.1	0.533	2922.77	2902.798	2917.979	0.133
20/07/2016 15:00	1514	14.61	14.3	5.758	5.758	252.4	20.83	10.62	459.0891	1.652721	1011.581	9.77	65.63	1045.819	0.595	1054.779	1036.387	1046.289	0.599	0.772	0.33	2922.825	2901.336	2918.082	0.219
20/07/2016 16:00	1515	14.61	14.06	5.278	5.278	252.5	16.36	16.36	447.8383	1.612218	1011.038	11.19	57.37	1046.03	0.463	1054.486	1037.958	1045.645	0.417	0.65	0.218	2922.648	2903.881	2917.25	0.239
20/07/2016 17:00	1516	14.14	14.02	6.45	6.45	267.3	20.82	12.64	325.5465	1.171968	1010.925	10.72	61.34	1046.1	1.442	1057.086	1035.884	1045.33	1.326	1.921	0.888	2927.335	2903.343	2916.415	0.179
20/07/2016 18:00	1517	14.08	13.95	8.01	8.01	281.7	16.25	11.54	239.5305	0.8623101	1010.898	11.13	56.08	1046.255	1.425	1055.008	1038.343	1045.416	1.325	1.933	0.772	2922.619	2901.708	2915.388	0.167
20/07/2016 19:00	1518	13.96	13.73	8.77	8.77	302.7	19.49	18.93	18.1288	0.06526369	1012.451	6.725	85.7	1041.456	0.813	1046.106	1041.456	1049.07	0.77	1.07	0.493	2926.499	2908.113	2912.479	0.011
20/07/2016 20:00	1519	13.77	13.72	9.4	9.4	277.9	7.928	14.27	35.06753	0.1262431	1012.323	4.78	93.5	1050.769	2.831	1060.243	1041.779	1050.285	2.168	4.015	1.794	2927.71	2908.424	2923.744	-0.003
20/07/2016 21:00	1520	13.78	13.72	8.35	8.35	255.8	13.93	11.86	33.38869	0.1201993	1012.363	4.142	93.8	1051.46	1.124	1060.389	1043.329	1050.662	1.017	1.573	0.53	2928.217	2909.112	2924.043	0.001
20/07/2016 22:00	1521	13.75	13.61	8.93	8.93	271	7.125	13.33	5.281267	0.01901256	1012.275	4.781	88.9	1043.069	2.733	1060.248	1043.069	1051.368	2.588	3.444	1.963	2929.573	2907.101	2928.344	0.004
20/07/2016 23:00	1522	13.62	13.52	7.462	7.462	302.2	22.28	15.09	0.1836055	0.00066098	1013.387	3.408	91.6	1052.727	1.629	1061.306	1045.086	1051.789	1.37	2.308	0.869	2932.16	2916.09	2926.126	0
21/07/2016 0:00	1523	13.53	13.44	8.3	8.3	264.2	14.36	12.52	0	0	1013.556	2.577	95.2	1044.646	1.441	1061.639	1044.646	1052.748	1.407	1.814	0.98	2931.188	2911.736	2925.079	-0.003
21/07/2016 1:00	1524	13.45	13.37	6.176	6.176	252.6	6.1	9.55	0	0	1014.048	1.782	93.6	1053.346	0.433	1061.713	1045.31	1053.014	0.42	0.562	0.266	2930.969	2912.23	2925.765	-0.003
21/07/2016 2:00	1525	13.39	13.3	4.498	4.498	244.8	8.89	7.115	0	0	1014.211	1.522	92.9	1053.41	0.417	1061.782	1045.388	1053.059	0.413	0.51	0.3	2931.013	2912.398	2926.062	-0.005
21/07/2016 3:00	1526	13.32	13.24	6.117	6.117	237	7.099	8.39	0	0	1014.375	1.694	91.1	1053.356	0.788	1061.907	1045.104	1053.055	0.825	0.937	0.551	2930.186	2910.957	2925.314	-0.002
21/07/2016 4:00	1527	13.26	13.19	6.313	6.313	242.8	7.539	8.84	0.3816012	0.001373764	1014.539	1.957	88.1	1053.432	0.664	1061.844	1045.406	1053.045	0.675	0.844	0.393	2930.036	2912.291	2925.782	0.001
21/07/2016 5:00	1528	13.35	13.19	6.052	6.052	247.7	6.813	8.8	37.69395	0.1356982	1014.621	1.957	87.2	1053.553	0.632	1060.552	1047.151	1052.957	0.593	0.821	0.415	2929.971	2914.839	2925.529	0.004
21/07/2016 6:00	1529	13.63	13.34	5.576	5.576	253.1	5.929	7.958	121.2978	0.4366719	1014.703	2.429	84.5	1053.906	1.08	1060.05	1048.3	1053.369	1.103	1.374	0.63	2929.069	2916.41	2926.044	0.029
21/07/2016 7:00	1530	14.05	13.62	4.704	4.704	258.1	7.246	7.213	232.2029	0.8359302	1014.785	3.606	81.6	1053.903	0.415	1058.47	1048.833	1054.406	0.418	0.513	0.281	2926.917	2916.276	2927.069	0.072
21/07/2016 8:00	1531	14.63	14.05	3.604	3.604	265.2	13.04	5.527	356.3862	1.28299	1014.605	5.066	72.89	1053.885	0.304	1057.977	1048.493	1055.186	0.294	0.4	0.173	2927.093	2915.11	2927.668	0.135
21/07/2016 9:00	1532	14.62	14.57	2.863	2.863	286.1	22.66	5.37	498.8376	1.795815	1014.577	6.6	59.73	1053.642	0.276	1057.638	1047.743	1055.546	0.261	0.38	0.126	2926.769	2914.959	2928.548	0.218
21/07/2016 10:00	1533	14.61	14.08	3.058	3.058	241.6	22.52	6.154	397.3375	1.430415	1014.365	7.115	59.17	1053.451	0.181	1060.11	1046.228	1054.014	0.154	0.251	0.108	2928.87	2912.752	2926.955	0.177
21/07/2016 11:00	1534	14.1	14.01	2.889	2.889	235.1	23.51	6.096	460.0566	1.656204	1014.036	8.1	55.8	1053.341	0.515	1060.587	1045.742	1053.696	0.495	0.661	0.337	2930.427	2912.541	2926.24	0.215
21/07/2016 12:00	1535	14.1	13.96	3.075	3.075	226.2	29.19	6.272	480.7649	1.730754	1013.709	8.85	53.58	1053.374	0.438	1059.984	1045.659	1054.48	0.465	0.523	0.291	2930.807	2914.499	2927.572	0.233
21/07/2016 13:00	1536	14.05	13.94	2.373	2.373	232.6	43.28	5.802	475.0766	1.710276	1013.18	9.84	53.05	1053.377	0.493	1060.427	1045.377	1053.998	0.409	0.709	0.242	2929.319	2911.795	2928.844	0.235
21/07/2016 14:00	1537	14.23	13.87	4.721	4.721	215.6	17.72	8.78	279.0345	1.004524	1013.216	9.22	63.49	1053.43	0.53	1060.926	1046.035	1053.33	0.511	0.7	0.302	2929.802	2912.695	2925.644	0.139
21/07/2016 15:00	1538	14.21	14.09	4.51	4.51	206.9	16.17	6.742	146.3931	0.5270151	1012.781	7.713	78.71	1054.233	0.422	1062.004	1046.613	1054.081	0.383	0.574	0.242	2931.823	2914.313	2927.406	0.053
21/07/2016 16:00	1539	14.14	14.04	2.81	2.81	198.1	17.5	5.116	108.533	0.3907189	1011.966	7.405	82.6	1055.432	0.052	1063.208	1047.68	1055.407	0.054	0.064	0.034	2932.508	2914.684	2928.38	0.024
21/07/2016 17:00	1540	14.11	14.02	1.085	1.085	295.4	47.64	3.214	101.9672																

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP TS	RECORD RN	BattV_Max Volts Max	BattV_Min Volts Min	WS_ms_Avg meters/Second Avg	WS_ms_S_WVT meters/Second WVC	WindDir_D1_WVT Deg WVC	WindDir_SD1_WVT Deg WVC	WS_ms_Max meters/Second Max	SlrW_Avg W/m^2 Avg	SlrMJ_Tot MJ/m^2 Tot	BP_kPa kPa Smp	Air_Temp_Avg degC Avg	RH_Avg percent Avg	Geonor_Depth_Average mm mm	Geonor_Depth_StdDev mm Smp	T1_Depth_Average mm mm	T2_Depth_Average mm Smp	T3_Depth_Average mm Smp	T1_Depth_StdDev mm Smp	T2_Depth_StdDev mm Smp	T3_Depth_StdDev mm Smp	T1_Freq Hz Smp	T2_Freq Hz Smp	T3_Freq Hz Smp	ET_mm mm ETos
23/07/2016 16:00	1587	14.21	14.07	3.335	3.335	177.8	20.22	5.566	113.5481	0.4087732	1005.089	7.082	86.7	1075.51	0.515	1083.216	1067.618	1075.695	0.401	0.735	0.308	2955.783	2938.053	2951.552	0.024
23/07/2016 17:00	1588	14.13	13.94	5.413	5.413	195.7	14.33	10.64	48.17525	0.1734309	1004.598	6.345	84.3	1076.047	1.839	1084.121	1068.054	1075.965	1.417	2.636	1.092	2956.932	2937.086	2952.594	0.007
23/07/2016 18:00	1589	13.96	13.86	7.431	7.431	210.7	9.76	11.49	31.8106	0.1145182	1004.483	4.827	85.5	1077.8	1.6	1085.702	1069.652	1078.048	1.531	2.173	0.781	2962.621	2942.919	2952.89	0.006
23/07/2016 19:00	1590	13.88	13.85	7.611	7.611	199.7	7.022	10.92	30.24703	0.1088893	1003.844	4.7	87	1079.22	1.679	1087.029	1071.008	1079.621	1.644	2.31	0.647	2957.281	2938.227	2955.868	0.004
23/07/2016 20:00	1591	13.88	13.81	8.67	8.67	211.1	8.35	13.72	26.49776	0.09539192	1003.984	5.715	82.6	1079.157	1.18	1087.868	1070.495	1079.107	1.061	1.627	0.637	2957.906	2941.669	2955.54	0.015
23/07/2016 21:00	1592	13.84	13.74	6.099	6.099	214	11.06	9.55	17.15883	0.0617718	1003.869	6.379	81.3	1079.082	0.92	1087.529	1070.455	1079.262	0.846	1.182	0.654	2960.744	2941.677	2955.682	0.008
23/07/2016 22:00	1593	13.76	13.63	6.596	6.596	209.1	11.52	10.66	4.570783	0.01645482	1003.943	6.321	82.8	1079.031	1.477	1087.542	1070.355	1079.194	1.272	2.03	0.899	2964.307	2940.956	2955.369	0.007
23/07/2016 23:00	1594	13.64	13.54	6.95	6.95	228.3	11.98	11.98	0.002546539	9.17E-06	1004.111	6.291	80.1	1078.911	1.266	1087.575	1070.067	1079.092	1.237	1.639	0.77	2963.875	2943.759	2955.5	0.009
24/07/2016 0:00	1595	13.56	13.47	9.78	9.78	238.6	8.6	14.52	0	0	1004.434	6.359	77.63	1079.106	2.134	1087.568	1070.394	1079.357	2.054	2.725	1.422	2960.973	2941.564	2956.766	0.015
24/07/2016 1:00	1596	13.48	13.4	7.47	7.47	240.2	8.8	11.7	0	0	1004.605	6.014	80.1	1079.367	0.523	1087.225	1071.028	1079.849	0.547	0.681	0.239	2960.53	2941.181	2956.05	0.01
24/07/2016 2:00	1597	13.42	13.33	6.407	6.407	237.7	10.16	9.86	0	0	1004.927	5.96	81.3	1079.224	0.93	1087.415	1070.672	1079.583	0.886	1.251	0.494	2961.354	2941.033	2956.239	0.007
24/07/2016 3:00	1598	13.35	13.27	6.306	6.306	244.3	6.356	9.02	0	0	1005.287	5.195	87.6	1079.33	0.558	1087.354	1070.818	1079.817	0.502	0.685	0.462	2960.502	2940.913	2956.772	0.001
24/07/2016 4:00	1599	13.29	13.21	6.661	6.661	235.1	9.75	10.53	0.02750262	9.90E-05	1005.471	5.387	84.5	1079.109	1.677	1087.195	1070.401	1079.733	1.608	2.21	0.985	2955.698	2935.026	2953.328	0.005
24/07/2016 5:00	1600	13.25	13.21	8.18	8.18	235.6	6.641	11.94	12.19792	0.04391252	1005.775	5.611	80.7	1079.317	1.201	1087.45	1070.819	1079.681	1.019	1.685	0.672	2958.123	2939.782	2955.67	0.011
24/07/2016 6:00	1601	13.55	13.22	7.035	7.035	242.1	8.55	10.45	57.52351	0.2070847	1006.239	5.754	79.3	1079.286	1.703	1087.211	1070.912	1079.735	1.589	2.222	1.114	2966.381	2945.797	2955.654	0.025
24/07/2016 7:00	1602	14.12	13.54	6.985	6.985	242.1	8.72	11.27	114.8672	0.4135221	1006.893	5.894	79.39	1079.394	0.707	1086.774	1071.327	1080.079	0.758	0.889	0.366	2959.161	2941.808	2956.591	0.045
24/07/2016 8:00	1603	14.64	14.13	5.847	5.847	236.2	11.5	9.35	198.8934	0.7160161	1007.218	6.325	78.4	1079.558	0.833	1085.779	1072.32	1080.577	0.882	1.025	0.501	2957.917	2945.562	2957.551	0.074
24/07/2016 9:00	1604	14.66	14.42	6.649	6.649	232.5	10.81	10.47	293.8309	1.057791	1007.709	6.737	76.06	1079.463	0.76	1085.491	1072.04	1080.858	0.809	0.899	0.521	2959.055	2943.252	2957.757	0.116
24/07/2016 10:00	1605	14.63	14.14	5.26	5.26	230.8	12.94	8.62	292.4086	1.052671	1008.34	6.955	76.06	1079.331	0.701	1086.651	1071.119	1080.222	0.798	0.738	0.543	2957.798	2939.865	2957.339	0.115
24/07/2016 11:00	1606	14.2	14.14	6.074	6.074	245.3	11.43	9.04	294.1947	1.059101	1008.817	7.035	76.91	1079.244	1.561	1086.977	1070.785	1079.969	1.598	1.967	0.941	2962.531	2943.487	2958.401	0.116
24/07/2016 12:00	1607	14.18	14.13	5.973	5.973	239.5	11.52	8.37	362.9366	1.306571	1009.371	7.594	74.58	1079.194	0.939	1086.616	1070.951	1080.015	0.984	1.121	0.649	2959.769	2941.842	2956.554	0.149
24/07/2016 13:00	1608	14.2	14.09	5.704	5.704	237.9	11.74	8.55	340.7085	1.22655	1009.944	7.786	74.94	1079.33	0.383	1086.782	1070.97	1080.237	0.399	0.459	0.267	2958.969	2941.338	2956.817	0.141
24/07/2016 14:00	1609	14.14	13.96	5.364	5.364	220.4	12.97	8.37	479.082	1.724695	1010.026	8.36	73.27	1079.062	1.014	1086.494	1069.826	1080.867	0.897	1.411	0.537	2959.773	2941.084	2956.984	0.203
24/07/2016 15:00	1610	14.14	13.96	6.746	6.746	223.7	10.13	10.35	419.4236	1.509925	1010.431	8.45	72.4	1079.055	1.063	1086.781	1070.159	1080.224	1.013	1.399	0.639	2959.517	2941.127	2956.036	0.18
24/07/2016 16:00	1611	14.13	14.03	6.885	6.885	228.8	11.66	11.09	537.1158	1.933617	1010.265	9.34	69.82	1078.801	1.745	1088.133	1068.278	1079.992	1.681	2.374	0.818	2960.42	2940.133	2955.402	0.238
24/07/2016 17:00	1612	14.1	14.03	7.282	7.282	229.7	11.93	11.56	394.4462	1.420006	1010.59	9.64	67.71	1079.142	1.235	1087.22	1070.14	1080.066	1.159	1.673	0.657	2962.556	2944.458	2957.466	0.188
24/07/2016 18:00	1613	14.08	14.05	6.131	6.131	225.9	12.18	9.9	231.4087	0.8330714	1010.598	9.7	68.31	1079.056	1.506	1086.902	1070.418	1079.848	1.325	2.025	0.973	2959.734	2938.078	2955.359	0.119
24/07/2016 19:00	1614	14.1	14.06	6.647	6.647	220	10.34	11.54	161.8399	0.5826238	1010.762	9.65	68.05	1079.052	1.319	1087.123	1070.253	1079.779	1.325	1.673	0.816	2960.707	2938.206	2955.666	0.093
24/07/2016 20:00	1615	14.09	13.94	8.19	8.19	218.4	9.81	13.41	91.94949	0.3310181	1010.682	9.32	69.56	1078.987	2.503	1087.778	1069.945	1079.239	2.206	3.382	1.58	2963.435	2943.404	2955.964	0.071
24/07/2016 21:00	1616	13.96	13.79	7.66	7.66	218.7	11.38	13.01	29.94884	0.1078158	1011.101	8.93	71.84	1078.973	1.952	1087.489	1070.087	1079.343	1.982	2.512	1.092	2966.797	2946.071	2956.806	0.024
24/07/2016 22:00	1617	13.8	13.63	7.293	7.293	213.9	10.39	11.62	4.522904	0.01628246	1011.285	8.47	74.02	1078.657	1.678	1086.954	1069.753	1079.263	1.391	1.097	0.521	2958.579	2933.383	2954.006	0.018
24/07/2016 23:00	1618	13.65	13.53	8.34	8.34	214.2	9.98	11.94	0	0	1011.389	8.11	75.69	1078.895	2.397	1087.451	1070.065	1079.167	2.48	3.195	0.938	2958.745	2938.674	2954.443	0.017
25/07/2016 0:00	1619	13.55	13.45	9.37	9.37	225.5	9.06	15.11	0	0	1011.307	7.984	72.99	1078.79	2.587	1087.154	1069.552	1079.665	2.468	3.358	1.646	2956.432	2939.483	2957.544	0.021
25/07/2016 1:00	1620	13.47	13.38	10.11	10.11	223.5	9.28	15.48	0	0	1011.311	7.854	71.84	1079.355	3.315	1087.132	1070.263	1080.669	3.137	4.239	1.681	2961.484	2943.178	2960.774	0.024
25/07/2016 2:00	1621	13.39	13.31	9.57	9.57	225.1	9	14.45	0	0	1011.966	7.474	74.54	1079.075	2.525	1087.726	1070.033	1079.466	2.223	3.465	1.474	2962.604	2944.822	2956.259	0.019
25/07/2016 3:00	1622	13.33	13.25	7.873	7.873	228.1	8.91	11.72	0	0	1012.13	7.312	75.67	1079.199	1.619	1087.484	1070.297	1079.818	1.404	2.293	0.799	2960.309	2944.411	2956.866	0.016
25/07/2016 4:00	1623	13.27	13.19	9.22	9.22	225.8	8.41	13.43	0.5737352	0.002065447	1012.13	7.104	77.18	1078.893	2.382	1087.578	1069.773	1079.326	2.282	2.951	1.762	2959.85	2938.459	2954.654	0.016
25/07/2016 5:00	1624	13.23	13.19	7.335	7.335	215.6	10.19	11.88	15.81681	0.05694051	1012.457	7.071	77.4	1079.187	1.462	1087.263	1070.572	1079.727	1.393	1.926	0.873	2959.194	2942.487	2957.799	0.014
25/07/2016 6:00	1625	13.54	13.22	7.748	7.748	219.1	10.13	16.02	68.02341	0.2448843	1012.621	7.11	76.88	1079.054	1.492	1087.073	1070.431	1079.658	1.464	2.019	0.677	2958.311	2942.587	2957.128	0.039
25/07/2016 7:00	1626	14	13.54	7.192	7.192	222.5	8.61	10.37	87.26633	0.3141588	1012.948	7.147	77.08	1078.865	1.501										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
27/07/2016 6:00	1673	13.46	13.18	6.459	6.459	220.2	9.39	8.72	69.37825	0.2497617	1019.498	7.553	74.09	1079.079	1.503	1086.803	1070.836	1079.599	1.463	1.991	0.82	2958.594	2937.963	2955.753	0.039
27/07/2016 7:00	1674	14.07	13.46	8.22	8.22	216.8	10.32	12.8	174.4199	0.6279117	1019.487	8.05	73.24	1079.378	1.38	1085.409	1072.614	1080.111	1.235	1.875	0.821	2956.748	2942.753	2956.068	0.088
27/07/2016 8:00	1675	14.63	14.08	6.969	6.969	212.7	10.22	10.56	326.3219	1.1747559	1019.603	8.95	70.83	1078.978	1.207	1085.923	1071.367	1079.645	1.03	1.704	0.635	2960.598	2944.178	2957.02	0.151
27/07/2016 9:00	1676	14.63	14.32	5.861	5.861	203.8	13.38	9.49	243.9555	0.8782396	1019.93	8.85	71.74	1078.956	0.888	1086.222	1071.023	1079.621	0.979	1.084	0.481	2957.526	2941.105	2956.727	0.113
27/07/2016 10:00	1677	14.62	13.89	3.992	3.992	222.4	17.97	7.291	440.3869	1.585393	1019.914	10.34	66.96	1079.254	0.584	1083.171	1072.896	1081.694	0.559	0.765	0.352	2956.263	2944.76	2959.446	0.212
27/07/2016 11:00	1678	13.92	13.83	4.563	4.563	206	23.11	8.09	713.8405	2.569826	1019.707	11.74	63.47	1078.868	1.264	1083.547	1071.354	1081.704	1.074	1.771	0.711	2957.021	2943.084	2959.174	0.359
27/07/2016 12:00	1679	14.01	13.83	4.537	4.537	212.8	31.65	11.15	429.7477	1.547092	1020.198	11.16	65.84	1078.836	0.49	1086.281	1070.475	1079.752	0.481	0.608	0.344	2958.948	2941.028	2956.471	0.215
27/07/2016 13:00	1680	13.94	13.81	4.661	4.661	208.4	21.34	9.07	464.0706	1.670654	1020.034	12.54	61.25	1077.231	4.436	1084.247	1069.095	1078.35	3.074	3.755	2959.197	2940.604	2956.318	0.249	
27/07/2016 14:00	1681	13.93	13.33	5.858	5.858	214.6	19.48	10.53	640.2208	2.304795	1019.707	13.91	57.36	1077.956	1.843	1085.957	1067.953	1079.958	1.433	2.597	1.178	2959.86	2940.862	2956.649	0.357
27/07/2016 15:00	1682	13.89	13.77	5.464	5.464	207	20.14	10.31	645.5468	2.323968	1019.862	14.34	54.65	1078.508	1.499	1087.288	1068.37	1079.866	1.39	1.902	1.091	2961.01	2942.233	2957.45	0.37
27/07/2016 16:00	1683	14.02	13.81	6.844	6.844	203.3	11.49	10.86	190.2621	0.6849436	1019.87	12.61	60.5	1078.725	1.087	1086.78	1069.971	1079.424	1.036	1.44	0.63	2958.061	2938.668	2957.379	0.136
27/07/2016 17:00	1684	14.14	14.01	6.661	6.661	199.3	9.69	10.27	141.4298	0.5091473	1019.722	11.78	64.77	1078.732	1.128	1087.026	1070.034	1079.136	0.974	1.582	0.607	2960.847	2941.794	2955.464	0.1
27/07/2016 18:00	1685	14.16	14.05	7.134	7.134	198	8.37	11	140.6379	0.5062966	1019.424	11.52	67.13	1078.848	1.857	1087.252	1070.026	1079.265	1.626	2.655	0.809	2960.179	2940.002	2956.52	0.097
27/07/2016 19:00	1686	14.14	13.88	5.837	5.837	200	10.09	10.25	70.98734	0.2555544	1019.099	11.23	67.9	1078.854	1.36	1087.187	1070.227	1079.149	1.357	1.67	0.96	2957.796	2935.459	2954.464	0.054
27/07/2016 20:00	1687	13.9	13.82	5.867	5.867	202.6	10.47	10.15	50.00187	0.1800067	1019.107	10.85	69.16	1078.605	1.106	1086.726	1069.96	1079.129	0.923	1.545	0.655	2959.066	2941.682	2955.475	0.042
27/07/2016 21:00	1688	13.84	13.68	4.583	4.583	184.7	20.34	9.68	14.23871	0.05125937	1019.193	10.26	74.13	1078.855	0.157	1087	1070.336	1079.223	0.179	0.184	0.09	2960.844	2941.449	2955.337	0.013
27/07/2016 22:00	1689	13.69	13.54	6.693	6.693	202.4	12.03	10.07	0.9452087	0.003402751	1018.95	9.88	77.14	1078.956	1.143	1087.097	1070.385	1079.386	0.924	1.562	0.792	2959.889	2941.82	2956.231	0.014
27/07/2016 23:00	1690	13.56	13.45	3.226	3.226	175.3	18.91	8.49	0	0	1019.031	9.74	77.17	1078.889	0.392	1086.925	1070.422	1079.32	0.392	0.518	0.198	2959.432	2940.616	2955.984	0.002
28/07/2016 0:00	1691	13.46	13.37	4.99	4.99	184.2	14.49	8.58	0	0	1018.785	9.61	78.15	1078.797	0.767	1086.716	1070.311	1079.362	0.719	1.001	0.494	2959.671	2940.255	2956.024	0.008
28/07/2016 1:00	1692	13.39	13.3	4.594	4.594	191.1	22.21	8.41	0	0	1018.63	9.42	79.12	1078.822	0.415	1087.067	1070.213	1079.186	0.428	0.541	0.203	2959.228	2940.454	2955.653	0.006
28/07/2016 2:00	1693	13.32	13.24	3.365	3.365	190.5	29	8.66	0	0	1018.472	9.33	80.2	1078.826	0.552	1087.064	1070.209	1079.205	0.487	0.776	0.274	2960.164	2941.736	2955.936	0
28/07/2016 3:00	1694	13.26	13.19	3.383	3.383	195.8	20.32	7.056	0	0	1018.794	9.42	79.59	1078.908	0.197	1087.026	1070.424	1079.273	0.198	0.256	0.11	2959.531	2940.167	2955.721	0.001
28/07/2016 4:00	1695	13.2	13.13	4.274	4.274	193.2	18.14	7.448	0.004073082	1.47E-05	1018.638	9.14	82.2	1078.946	0.652	1087.322	1070.381	1079.135	0.697	0.827	0.325	2959.989	2941.509	2955.791	0.002
28/07/2016 5:00	1696	13.14	13.11	3.878	3.878	188.3	20.72	7.585	7.886786	0.02839243	1018.304	9.16	80.6	1078.841	0.605	1087.166	1070.23	1079.129	0.487	0.845	0.384	2960.485	2940.82	2954.974	0.003
28/07/2016 6:00	1697	13.32	13.11	5.402	5.402	206.7	21.65	10.35	38.02222	0.13688	1018.142	9.19	82.1	1078.952	1.416	1087.38	1070.245	1079.23	1.49	1.802	0.74	2961.667	2942.088	2955.163	0.009
28/07/2016 7:00	1698	13.47	13.29	3.062	3.062	169.6	54.53	8.96	40.41091	0.1454793	1018.302	9.23	81.3	1078.989	0.236	1087.099	1070.519	1079.278	0.231	0.321	0.104	2960.381	2940.896	2955.564	-0.004
28/07/2016 8:00	1699	14.01	13.44	7.118	7.118	209.4	12.71	13.43	87.01765	0.3132635	1017.478	9.54	77.43	1078.698	2.986	1087.044	1070.147	1078.903	2.24	4.396	1.549	2961.271	2940.117	2954.213	0.047
28/07/2016 9:00	1700	14.64	14.01	8.97	8.97	215.9	11.65	13.27	245.0437	0.8821574	1017.474	10.41	72.38	1078.295	2.015	1086.601	1069.32	1078.964	1.738	2.593	1.56	2961.834	2942.067	2955.417	0.129
28/07/2016 10:00	1701	14.62	14.45	9.35	9.35	216.5	9.43	12.94	347.9995	1.252798	1017.435	11.2	68.65	1078.429	1.881	1086.559	1069.695	1079.032	1.533	2.547	1.332	2959.089	2937.165	2955.85	0.183
28/07/2016 11:00	1702	14.56	13.95	5.763	5.763	217	13.52	11.58	314.0092	1.130433	1017.661	12.09	65.35	1078.635	0.695	1086.911	1070.043	1078.951	0.686	0.892	0.427	2959.539	2940.841	2955.599	0.172
28/07/2016 12:00	1703	13.98	13.89	4.89	4.89	205.4	20.97	9.21	351.2241	1.264407	1017.252	12.8	62.37	1078.61	0.984	1086.918	1070.132	1078.78	0.949	1.273	0.618	2958.771	2942.273	2954.945	0.195
28/07/2016 13:00	1704	14.04	13.89	6.173	6.173	195	24.29	10.66	278.4793	1.002525	1017.252	11.9	69.09	1078.41	1.386	1086.723	1069.384	1079.122	1.348	1.792	0.856	2960.033	2940.657	2956.982	0.149
28/07/2016 14:00	1705	14.15	13.92	6.391	6.391	233.6	18.86	10.04	211.3737	0.7609453	1017.389	9.82	84.5	1079.565	0.615	1087.94	1071.04	1079.714	0.471	0.855	0.425	2960.687	2941.797	2956.288	0.083
28/07/2016 15:00	1706	14.61	14.15	5.484	5.484	223.3	12.51	8.96	251.0163	0.9036585	1017.23	10.07	75.29	1079.937	1.018	1088.474	1071.229	1080.106	0.979	1.351	0.569	2962.446	2943.258	2957.224	0.114
28/07/2016 16:00	1707	14.61	14.01	5.126	5.126	216.7	15.89	10.7	427.4703	1.538893	1016.657	9.86	76.79	1080.508	0.983	1090.996	1069.181	1081.348	1.011	1.225	0.615	2963.792	2938.942	2958.532	0.188
28/07/2016 17:00	1708	14.52	14.01	5.707	5.707	210.3	14.82	12.45	386.3489	1.390856	1016.778	11.06	64.01	1078.891	2.044	1089.461	1072.325	1080.891	1.773	2.84	1.153	2965.288	2952.299	2958.203	0.2
28/07/2016 18:00	1709	14.35	13.95	7.603	7.603	220.9	13.02	14.95	160.6441	0.5783188	1016.341	8.29	75.91	1082.348	3.316	1090.349	1073.215	1083.479	3.041	4.4	2.091	2964.4	2951.186	2962.512	0.078
28/07/2016 19:00	1710	14.13	14.01	8.13	8.13	205.8	14.95	13.11	272.0519	0.9793869	1015.838	10.02	61.9	1081.553	1.181	1092.042	1070.938	1081.679	0.895	1.697	0.709	2965.308	2942.195	2959.048	0.159
28/07/2016 20:00	1711	14.03	13.92	4.727	4.727	210.5	15.88	9.19	159.3117	0.5735222	1015.837	10.17	64.65	1081.806	0.594	1090.319	1072.637	1082.462	0.661						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
30/07/2016 20:00	1759	13.94	13.83	2.476	2.476	281.4	8.98	3.822	64.83315	0.2333993	1015.71	12	73.05	1089.319	0.118	1097.087	1081.011	1089.858	0.11	0.162	0.056	2971.583	2953.206	2967.794	0.012	
30/07/2016 21:00	1760	13.84	13.65	2.782	2.782	274.7	6.019	4.057	16.51531	0.05945511	1015.826	11.42	72.62	1089.326	0.183	1097.15	1080.975	1089.852	0.174	0.241	0.112	2971.375	2953.051	2967.732	0.006	
30/07/2016 22:00	1761	13.66	13.52	2.048	2.048	268.6	13.14	3.45	2.128638	0.007663096	1016.001	11.24	69.19	1089.314	0.107	1097.194	1080.922	1089.827	0.103	0.147	0.048	2971.431	2953.103	2967.669	-0.001	
30/07/2016 23:00	1762	13.53	13.43	2.106	2.106	261.4	11.99	3.175	0	0	1016.091	10.52	69.84	1089.302	0.074	1097.263	1080.911	1089.732	0.071	0.1	0.036	2971.514	2952.922	2967.631	-0.002	
31/07/2016 0:00	1763	13.44	13.35	1.366	1.366	230.9	9.88	2.215	0	0	1015.87	10.53	67.74	1089.392	0.03	1097.212	1081.02	1089.945	0.031	0.038	0.015	2971.414	2952.955	2967.915	-0.009	
31/07/2016 1:00	1764	13.37	13.28	1.122	1.122	237.9	18.45	1.96	0	0	1015.851	10.73	65.77	1089.38	0.025	1097.141	1081.045	1089.955	0.026	0.031	0.013	2971.325	2953.005	2967.939	-0.012	
31/07/2016 2:00	1765	13.3	13.22	1.224	1.224	226.3	19.1	1.98	0	0	1015.762	10.78	67.11	1089.376	0.032	1097.163	1081.035	1089.929	0.03	0.043	0.02	2971.413	2952.993	2967.913	-0.011	
31/07/2016 3:00	1766	13.24	13.16	2.23	2.23	218.5	9.96	2.999	0	0	1015.678	9.89	72.42	1089.333	0.082	1097.197	1081.033	1089.768	0.08	0.105	0.053	2971.506	2953.128	2967.625	-0.002	
31/07/2016 4:00	1767	13.18	13.11	2.791	2.791	211.6	6.789	3.646	0	0	1015.564	9.24	72.49	1089.363	0.191	1097.229	1080.993	1089.867	0.196	0.257	0.071	2971.578	2953.065	2967.754	0.002	
31/07/2016 5:00	1768	13.12	13.07	1.862	1.862	199.6	9.75	3.254	4.330933	0.01559136	1015.721	10.13	66.82	1089.426	0.085	1097.12	1081.157	1090	0.083	0.115	0.038	2971.154	2952.907	2968	-0.002	
31/07/2016 6:00	1769	13.23	13.07	2.839	2.839	203.8	7.526	4.175	40.82832	0.146982	1015.52	10.31	69.21	1089.42	0.138	1097.13	1081.113	1090.016	0.149	0.172	0.075	2971.398	2953.178	2968.042	0.006	
31/07/2016 7:00	1770	13.74	13.22	3.011	3.011	235	20.83	4.606	98.02464	0.3528887	1015.511	10.57	72.09	1089.522	0.087	1096.399	1081.789	1090.378	0.079	0.123	0.034	2970.485	2953.867	2968.381	0.034	
31/07/2016 8:00	1771	14.56	13.74	1.895	1.895	239.3	18.97	3.998	273.1724	0.9834206	1015.301	12.57	66.69	1089.841	0.113	1093.335	1084.079	1092.109	0.114	0.144	0.068	2966.696	2956.208	2970.343	0.129	
31/07/2016 9:00	1772	14.53	14.42	2.979	2.979	256	11.39	4.684	411.7516	1.482306	1015.124	13.7	60.23	1089.691	0.308	1092.871	1083.651	1092.552	0.307	0.385	0.203	2967.08	2956.694	2970.867	0.225	
31/07/2016 10:00	1773	14.45	13.83	3.196	3.196	252.6	12.67	5.429	538.0739	1.937066	1015.112	14.46	54.89	1089.585	0.27	1092.879	1083.669	1092.807	0.282	0.272	0.256	2966.619	2954.613	2970.75	0.307	
31/07/2016 11:00	1774	13.86	13.71	2.877	2.877	242.2	27.34	5.468	546.4647	1.967273	1015.066	15.32	51.01	1089.315	0.251	1095.696	1081.101	1091.148	0.201	0.367	0.12	2969.706	2953.455	2969.411	0.322	
31/07/2016 12:00	1775	13.9	13.74	2.143	2.143	288.2	40.86	4.253	508.759	1.831532	1014.769	15.14	54.75	1089.214	0.162	1094.235	1080.6	1092.808	0.14	0.233	0.068	2968.317	2952.436	2971.295	0.29	
31/07/2016 13:00	1776	13.85	13.65	1.705	1.705	247.4	39.5	4.528	539.6765	1.942835	1014.743	16.1	50.56	1089.474	0.094	1094.894	1079.783	1092.54	0.068	0.119	0.089	2969.014	2951.825	2970.632	0.315	
31/07/2016 14:00	1777	13.88	13.4	2.309	2.309	253.5	32.54	4.802	505.3114	1.819121	1014.573	16.68	49.02	1089.183	0.202	1095.979	1080.824	1090.747	0.171	0.286	0.108	2969.817	2951.913	2968.684	0.305	
31/07/2016 15:00	1778	13.89	13.76	3.459	3.459	247.9	16.15	6.88	419.0638	1.50863	1014.254	16.06	53.48	1088.917	0.257	1096.691	1078.621	1091.439	0.186	0.385	0.121	2970.96	2949.81	2969.69	0.256	
31/07/2016 16:00	1779	13.88	13.74	2.912	2.912	234.4	18.41	6.037	261.42	0.941112	1014.086	16.63	49.64	1089.142	0.065	1096.443	1080.435	1090.547	0.065	0.085	0.033	2970.553	2952.243	2968.623	0.165	
31/07/2016 17:00	1780	13.85	13.76	4.523	4.523	247.4	23.48	8.08	500.9565	1.803443	1013.92	17.5	46.63	1088.49	0.913	1097.395	1080.09	1090.066	1.067	0.987	0.624	2973.674	2949.482	2967.946	0.335	
31/07/2016 18:00	1781	13.83	13.77	5.718	5.718	256	10.08	9.41	436.0304	1.56971	1013.672	17.66	43.64	1088.495	0.81	1098.825	1077.367	1089.294	0.782	0.997	0.604	2974.856	2948.869	2966.224	0.32	
31/07/2016 19:00	1782	13.84	13.79	5.832	5.832	253.2	8.32	7.762	293.757	1.057525	1013.512	17.11	45.73	1088.727	0.862	1098.874	1078.219	1089.089	0.873	1.101	0.504	2975.678	2951.773	2966.025	0.236	
31/07/2016 20:00	1783	13.8	13.72	5.001	5.001	251.3	6.622	7.213	157.273	0.5661827	1013.649	16.03	52.69	1088.947	0.527	1098.401	1079.175	1089.264	0.536	0.696	0.245	2972.933	2951.373	2967.298	0.132	
31/07/2016 21:00	1784	13.73	13.57	5.508	5.508	238.2	6.584	6.821	47.21769	0.1699837	1013.651	14.04	60.91	1089.05	0.575	1097.149	1080.019	1089.98	0.576	0.757	0.293	2971.485	2951.708	2967.99	0.041	
31/07/2016 22:00	1785	13.58	13.43	6.217	6.217	231.8	4.927	7.291	0.8461533	0.003046152	1013.827	13	60.12	1089.069	0.766	1097.009	1080.022	1090.177	0.721	1.005	0.478	2970.727	2951.75	2968.427	0.036	
31/07/2016 23:00	1786	13.44	13.33	7.207	7.207	232.5	3.682	8.51	0	0	1014.181	12.71	59.93	1089.066	0.759	1097.093	1080.019	1090.086	0.788	0.902	0.541	2971.334	2950.737	2967.058	0.039	
01/08/2016 0:00	1787	13.35	13.26	5.497	5.497	252.5	7.73	9.11	0	0	1014.852	11.35	65.28	1089.198	0.151	1097.037	1080.328	1090.23	0.154	0.188	0.095	2970.655	2951.609	2968.086	0.024	
01/08/2016 1:00	1788	13.28	13.19	5.3	5.3	245.5	9.24	8.04	0	0	1014.937	11.05	70.16	1089.001	0.731	1097.157	1080.037	1089.81	0.642	0.961	0.515	2970.243	2951.663	2968.608	0.018	
01/08/2016 2:00	1789	13.21	13.13	8.3	8.3	265.4	9.76	14.21	0	0	1015.51	11.29	68.91	1089.411	3.864	1097.511	1080.643	1090.08	4.713	4.081	2.435	2965.392	2954.689	2968.919	0.029	
01/08/2016 3:00	1790	13.15	13.08	8.4	8.4	283.5	9.66	15.6	0	0	1016.328	10.08	72.64	1088.897	0.792	1097.222	1079.92	1089.551	0.765	1.016	0.512	2971.197	2951.656	2967.894	0.023	
01/08/2016 4:00	1791	13.1	13.03	5.422	5.422	273.4	16.47	10	0	0	1016.175	9.26	73.08	1089.195	1.295	1097.198	1080.546	1089.84	1.443	1.558	0.722	2971.56	2952.965	2968.076	0.014	
01/08/2016 5:00	1792	13.05	13	6.873	6.873	259.1	6.561	10.62	4.927022	0.01773727	1016.71	8.29	75.09	1088.968	1.267	1097.565	1079.708	1089.632	1.095	1.741	0.763	2971.871	2952.24	2967.581	0.016	
01/08/2016 6:00	1793	13.21	13	7.942	7.942	274.1	7.091	10.64	61.34654	0.2208475	1016.714	8.01	72.42	1088.884	2.666	1095.998	1081.311	1089.343	2.146	3.61	1.92	2967.5	2949.276	2966.061	0.048	
01/08/2016 7:00	1794	13.66	13.21	7.958	7.958	266.9	10.64	10.64	188.2169	0.6775808	1017.164	8.58	73.29	1089.434	1.426	1095.027	1082.877	1090.398	1.887	1.887	0.836	2967.771	2954.452	2969.47	0.094	
01/08/2016 8:00	1795	14.62	13.66	6.862	6.862	281.5	12.67	10.58	322.3867	1.160592	1017.638	9.28	69.28	1089.39	1.408	1094.458	1082.635	1091.076	1.503	1.723	0.847	2966.987	2953.761	2969.418	0.154	
01/08/2016 9:00	1796	14.61	14.27	6.677	6.677	282.9	12.1	9.29	394.4716	1.420098	1017.634	9.87	67.05	1089.466	1.391	1095.85	1081.58	1090.97	1.506	1.773	0.624	2970.564	2952.987	2969.444	0.191	
01/08/2016 10:00	1797	14.61	14	6.361	6.361	289.3	11.48	9.06	379.654	1.366754	1017.948	10.3	64.45	1089.377	1.236	1095.639	1081.312	1091.18	1.128	1.677	0.706	2970.863	2952.278	2968.088	0.192	
01/08/2016 11:00																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
03/08/2016 10:00	1845	14.32	13.79	2.254	2.254	346.6	27.86	4.665	536.751	1.932304	1017.111	15.54	51.87	1088.963	0.493	1093.046	1081.17	1092.673	0.542	0.563	0.345	2967.459	2952.383	2970.387	0.312
03/08/2016 11:00	1846	13.89	13.71	3.294	3.294	0.352	19.53	6.782	447.9368	1.612572	1017.111	15.85	53.25	1088.938	0.199	1096.269	1080.05	1090.496	0.188	0.266	0.112	2970.6	2951.96	2968.442	0.27
03/08/2016 12:00	1847	13.88	13.76	3.189	3.189	50.16	97.1	9.33	107.2119	0.3859628	1017.251	14.3	55.12	1089.175	0.754	1096.643	1081.099	1090.982	0.676	1.049	0.387	2971.397	2954.186	2968.402	0.067
03/08/2016 13:00	1848	13.78	13.15	6.691	6.691	164.6	24.03	10.29	61.28535	0.2206273	1018.282	11.89	64.57	1087.617	5.719	1094.42	1079.833	1088.599	8.87	2.713	3.476	2970.248	2949.998	2968.17	0.067
03/08/2016 14:00	1849	13.74	13.11	3.986	3.986	127	37.72	10.04	62.79239	0.2260526	1018.458	10.8	70.27	1083.786	1.138	1100.357	1083.786	1093.519	1.019	1.581	0.589	2976.959	2957.237	2972.308	0.029
03/08/2016 15:00	1850	13.99	13.73	5.663	5.663	144.2	19.19	8.27	96.89242	0.3488127	1017.804	10.55	75.84	1094.309	1.138	1102.558	1085.259	1095.11	1.175	1.458	0.613	2976.5	2958.013	2974.014	0.048
03/08/2016 16:00	1851	14.32	13.98	3.653	3.653	149.8	18.47	6.801	200.4178	0.7215042	1017.455	12.9	60.09	1094.265	0.128	1102.057	1085.096	1095.644	0.111	0.182	0.06	2976.952	2957.689	2974.394	0.114
03/08/2016 17:00	1852	14.48	14.24	2.006	2.006	295.4	51.56	6.546	374.3418	1.34763	1017.661	14.29	64.92	1093.577	0.192	1104.206	1081.264	1095.261	0.173	0.26	0.116	2979.062	2953.191	2973.961	0.197
03/08/2016 18:00	1853	14.43	14.07	1.507	1.507	34.04	36.66	3.528	293.5433	1.056756	1017.825	14.33	60.8	1093.724	0.102	1104.271	1082.495	1094.407	0.131	0.113	0.036	2979.664	2954.534	2972.969	0.147
03/08/2016 19:00	1854	14.09	13.81	1.474	1.474	0.215	37.3	3.587	298.6136	1.075009	1017.895	14.94	58.89	1093.853	0.226	1102.017	1084.479	1095.062	0.18	0.324	0.127	2976.575	2956.726	2973.604	0.153
03/08/2016 20:00	1855	13.83	13.69	3.363	3.363	286.7	26.2	6.801	60.6933	0.2184959	1018.725	12.78	68.12	1094.108	0.808	1102.104	1085.055	1095.164	0.836	1.041	0.417	2977.183	2958.388	2973.738	0.027
03/08/2016 21:00	1856	13.71	13.55	4.782	4.782	265.7	20.53	8.94	10.48518	0.03774665	1019.111	10.54	80.3	1094.898	0.121	1102.964	1085.854	1095.874	0.122	0.154	0.071	2977.882	2958.337	2974.606	0.008
03/08/2016 22:00	1857	13.57	13.44	2.484	2.484	274.4	29.29	4.371	0.9067687	0.003264367	1019.291	10.43	74.93	1094.915	0.208	1102.952	1089.5	1095.892	0.169	0.285	0.142	2977.812	2958.438	2974.604	-0.001
03/08/2016 23:00	1858	13.45	13.35	2.408	2.408	241.4	21.79	5.88	0	0	1019.484	9.96	75.68	1094.991	0.069	1102.98	1085.97	1096.023	0.068	0.091	0.039	2978.093	2958.767	2974.857	-0.002
04/08/2016 0:00	1859	13.37	13.28	1.803	1.803	298.2	20.76	3.842	0	0	1019.907	9.37	78.89	1094.976	0.071	1103.071	1086.039	1095.819	0.07	0.095	0.035	2978.133	2958.74	2974.605	-0.009
04/08/2016 1:00	1860	13.3	13.22	2.576	2.576	265.9	24.98	3.763	0	0	1020.153	9.18	78.99	1094.989	0.216	1103.061	1085.966	1095.941	0.2	0.294	0.115	2977.905	2958.355	2974.922	-0.003
04/08/2016 2:00	1861	13.23	13.16	2.466	2.466	220.9	19.25	4.312	0.000254654	9.17E-07	1020.235	9.2	77.87	1095.047	0.017	1102.921	1086.087	1096.133	0.02	0.018	0.012	2977.892	2958.741	2974.95	-0.003
04/08/2016 3:00	1862	13.18	13.11	0.392	0.392	279	29.45	1.47	0	0	1020.469	10.21	71.84	1095.04	0.036	1102.953	1086.118	1096.048	0.039	0.045	0.02	2977.927	2958.795	2974.861	-0.025
04/08/2016 4:00	1863	13.12	13.05	1.318	1.318	266.8	11.24	2.234	0.02571979	9.26E-05	1020.792	9.47	77.04	1095.035	0.041	1103.003	1086.114	1095.987	0.043	0.051	0.026	2977.997	2958.839	2974.789	-0.013
04/08/2016 5:00	1864	13.07	13.01	1.508	1.508	242.6	19.56	2.842	4.288594	0.01543894	1020.777	9.32	79.24	1095.057	0.014	1102.922	1086.195	1096.054	0.011	0.021	0.007	2977.914	2958.859	2974.854	-0.011
04/08/2016 6:00	1865	13.17	13.01	1.208	1.208	266.3	20.71	2.156	33.90728	0.1220662	1021.095	9.52	77.59	1095.071	0.02	1102.748	1086.364	1096.102	0.024	0.022	0.012	2977.704	2959.096	2974.908	-0.023
04/08/2016 7:00	1866	13.84	13.17	1.814	1.814	269.3	24.33	2.881	186.7881	0.6724373	1021.158	10.38	75.54	1095.425	0.08	1099.791	1089.143	1097.34	0.093	0.09	0.049	2974.275	2962.331	2976.25	0.068
04/08/2016 8:00	1867	14.62	13.84	1.567	1.567	300.1	13.23	2.489	215.5954	0.7761436	1021.395	10.84	74.71	1095.187	0.327	1100.106	1088.028	1097.427	0.395	0.32	0.249	2974.212	2961.591	2976.809	0.084
04/08/2016 9:00	1868	14.62	14.4	2.924	2.924	311.4	12.86	4.606	364.8286	1.313383	1021.344	11.67	72.5	1095.043	0.462	1099.749	1087.615	1097.767	0.425	0.637	0.231	2974.937	2960.235	2976.58	0.174
04/08/2016 10:00	1869	14.49	13.84	2.265	2.265	300.2	25.14	4.351	465.7856	1.676828	1021.344	12.53	70.16	1095.007	0.145	1099.822	1087.163	1098.036	0.138	0.155	0.142	2974.466	2960.254	2977.083	0.236
04/08/2016 11:00	1870	13.92	13.76	2.276	2.276	318.1	30.43	4.586	524.0287	1.886503	1021.344	13.34	69.21	1094.785	0.201	1100.245	1086.144	1097.966	0.243	0.203	0.145	2975.264	2959.065	2976.773	0.275
04/08/2016 12:00	1871	13.91	13.72	1.234	1.234	323.4	61.43	3.822	414.5186	1.492267	1021.344	13.76	66.41	1094.759	0.247	1100.534	1085.519	1098.225	0.219	0.274	0.245	2975.699	2958.579	2977.23	0.214
04/08/2016 13:00	1872	13.94	13.72	1.734	1.734	292.1	32.39	3.959	265.8563	0.9570826	1021.344	14.19	60.46	1095.829	0.039	1102.148	1085.989	1096.35	0.022	0.043	0.047	2977.005	2958.609	2975.27	0.132
04/08/2016 14:00	1873	13.86	13.7	0.963	0.963	302.5	65.19	3.528	386.3763	1.390955	1021.18	15.11	56.41	1094.716	0.082	1102.408	1085.215	1096.525	0.048	0.098	0.092	2977.195	2958.008	2975.309	0.203
04/08/2016 15:00	1874	13.79	13.69	2.238	2.238	150.2	25.88	5.037	544.3687	1.959727	1020.967	15.8	56.44	1094.338	0.37	1103.315	1083.144	1096.557	0.318	0.528	0.173	2978.279	2955.259	2975.27	0.316
04/08/2016 16:00	1875	13.81	13.65	2.672	2.672	142.8	14.26	5.037	523.2036	1.883533	1020.869	16.05	54.58	1094.538	0.182	1103.074	1085.038	1095.584	0.165	0.245	0.11	2977.977	2957.726	2974.326	0.309
04/08/2016 17:00	1876	13.85	13.72	2.273	2.273	199.8	51.85	4.861	401.7496	1.446298	1020.548	16.39	52.51	1094.51	0.196	1102.666	1085.043	1095.822	0.193	0.247	0.131	2977.331	2957.925	2974.774	0.236
04/08/2016 18:00	1877	14.03	13.81	4.064	4.064	219.7	30.59	7.448	164.1795	0.5910462	1020.443	14.82	62.24	1094.668	0.497	1102.801	1085.29	1095.912	0.479	0.673	0.245	2977.138	2957.417	2974.66	0.103
04/08/2016 19:00	1878	13.99	13.87	2.606	2.606	228	12.06	4.194	144.0419	0.5185507	1020.198	15.17	58.11	1094.792	0.07	1103.636	1084.993	1095.747	0.076	0.078	0.054	2978.821	2957.269	2974.382	0.077
04/08/2016 20:00	1879	13.89	13.71	2.929	2.929	217.1	20.84	5.116	62.15395	0.2237542	1020.198	14.35	60.87	1094.72	0.311	1102.781	1085.516	1095.82	0.319	0.388	0.193	2977.6	2958.184	2974.804	0.032
04/08/2016 21:00	1880	13.72	13.55	5.152	5.152	192.9	3.385	6.272	16.44234	0.05919244	1020.287	13.07	65.49	1094.768	0.834	1102.789	1085.528	1095.987	0.757	1.154	0.426	2978.355	2957.906	2974.514	0.027
04/08/2016 22:00	1881	13.57	13.43	6.838	6.838	192	5.505	8.29	0.2298386	0.000827419	1020.493	12.71	68.83	1094.666	1.401	1102.757	1085.14	1096.1	1.163	1.964	0.823	2974.74	2952.999	2974.995	0.027
04/08/2016 23:00	1882	13.45	13.34	6.629	6.629	204.6	6.106	8.19	0	0	1020.37	13.34	62.49	1094.79	1.316	1102.83	1085.658	1095.882	1.125	1.853	0.702	2977.323	2958.374	2975.103	0.035
05/08/2016 0:00	1883	13.36	13.27	6.103	6.103	191	6.507	8.57	0	0	1020.408	12.77	66.36	1094.85	0.762</										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
07/08/2016 0:00	1931	13.4	13.31	4.219	4.219	186.6	6.316	5.116	0	0	1016.737	11.41	80.3	1095.256	0.309	1103.201	1086.24	1096.328	0.277	0.438	0.135	2978.362	2959.928	2975.144	0.004
07/08/2016 1:00	1932	13.33	13.24	4.336	4.336	190.3	6.75	5.488	0	0	1016.492	11.86	80.2	1095.238	0.3	1103.034	1086.248	1096.431	0.276	0.426	0.113	2977.761	2958.405	2975.193	0.005
07/08/2016 2:00	1933	13.26	13.18	3.627	3.627	189.9	7.055	5.037	0	0	1016.16	12.23	78.59	1095.185	0.057	1103.117	1086.23	1096.207	0.062	0.07	0.033	2978.136	2958.906	2974.989	0.004
07/08/2016 3:00	1934	13.2	13.13	2.508	2.508	214.3	56.19	5.429	0	0	1015.837	11.95	79.97	1095.216	0.042	1103.136	1086.265	1096.246	0.041	0.05	0.034	2978.15	2958.947	2975.04	-0.004
07/08/2016 4:00	1935	13.14	13.08	1.769	1.769	125.5	39.96	3.763	0	0	1015.51	11.67	80.6	1095.233	0.117	1103.055	1086.341	1096.306	0.057	0.166	0.057	2977.886	2958.777	2975.12	-0.01
07/08/2016 5:00	1936	13.09	13.02	2.182	2.182	140.7	15.35	4.155	2.270996	0.008175584	1015.338	12.34	76.47	1095.233	0.341	1102.964	1086.317	1096.418	0.337	0.463	0.146	2977.792	2958.547	2975.299	-0.004
07/08/2016 6:00	1937	13.12	13.02	1.763	1.763	150.8	13.07	3.508	23.98904	0.08636056	1015.163	12.32	76.32	1095.247	0.069	1103.06	1086.32	1096.361	0.064	0.095	0.036	2978.003	2958.973	2975.226	-0.021
07/08/2016 7:00	1938	13.51	13.1	1.851	1.851	142.6	14.3	3.646	78.61636	0.2830189	1015.142	12.55	78.98	1095.264	0.144	1102.93	1086.441	1096.422	0.117	0.202	0.088	2977.888	2959.141	2975.3	0.01
07/08/2016 8:00	1939	14.27	13.51	2.796	2.796	142.9	9.74	3.94	159.8078	0.5753081	1014.96	13.07	78.63	1095.266	0.341	1102.689	1086.559	1096.551	0.307	0.479	0.158	2977.057	2958.565	2975.312	0.063
07/08/2016 9:00	1940	14.5	14.27	2.876	2.876	135.5	8.36	4.155	253.4887	0.9125593	1014.797	13.75	77.94	1095.279	0.307	1101.879	1087.05	1096.908	0.367	0.356	0.148	2976.307	2959.395	2976.056	0.118
07/08/2016 10:00	1941	14.47	14.24	2.33	2.33	128.1	21.36	4.606	417.56	1.503216	1014.454	15.21	69.61	1095.169	0.117	1102.555	1086.45	1096.503	0.117	0.138	0.072	2977.644	2959.263	2975.305	0.226
07/08/2016 11:00	1942	14.29	13.8	0.778	0.778	113.2	87.1	2.881	199.7965	0.7192674	1014.209	15.37	67.19	1095.127	0.101	1102.664	1086.136	1096.582	0.105	0.121	0.07	2977.731	2958.74	2975.387	0.081
07/08/2016 12:00	1943	13.89	13.81	2.667	2.667	60.02	13.64	4.586	246.5745	0.8876681	1013.895	15.33	71.89	1095.06	0.201	1102.587	1085.844	1096.749	0.191	0.258	0.136	2977.449	2958.069	2975.557	0.126
07/08/2016 13:00	1944	13.91	13.85	3	3	48.23	13.31	4.528	182.593	0.657335	1013.487	15.31	74.05	1095.082	0.139	1102.702	1085.913	1096.63	0.129	0.184	0.087	2977.63	2958.671	2975.59	0.089
07/08/2016 14:00	1945	13.88	13.78	3.729	3.729	352.2	35.41	6.86	377.3867	1.358592	1013.307	15.88	69.9	1095.016	0.561	1102.535	1085.696	1096.818	0.526	0.694	0.43	2977.54	2958.02	2975.347	0.211
07/08/2016 15:00	1946	13.87	13.78	3.802	3.802	36.78	28.05	7.389	445.6058	1.604181	1012.775	16.18	70.88	1094.958	0.366	1102.783	1085.444	1096.647	0.368	0.443	0.264	2977.935	2958.495	2975.39	0.251
07/08/2016 16:00	1947	14.06	13.86	3.675	3.675	80.3	59.67	8.15	128.2356	0.4616482	1012.503	15.62	71.55	1095.199	1.051	1102.945	1086.157	1096.495	1.018	1.385	0.6	2980.017	2963.233	2976.205	0.068
07/08/2016 17:00	1948	14.44	14.05	2.581	2.581	159.5	87.6	6.37	428.4852	1.542547	1012.152	16.72	63.15	1094.631	0.558	1105.253	1082.771	1095.87	0.77	0.289	0.089	2980.351	2954.163	2975.961	0.249
07/08/2016 18:00	1949	14.31	13.93	3.961	3.961	153.3	15.6	6.272	394.4412	1.419988	1011.791	18.45	49.67	1094.589	0.527	1105.404	1083.138	1095.224	0.482	0.75	0.197	2980.628	2957.813	2974.504	0.27
07/08/2016 19:00	1950	13.95	13.8	4.67	4.67	160.7	7.549	6.938	223.0112	0.8028401	1011.478	17.61	54.38	1094.931	1.07	1105.256	1084.41	1095.126	0.989	1.461	0.565	2981.096	2957.548	2973.972	0.168
07/08/2016 20:00	1951	13.86	13.8	4.383	4.383	167.5	13.04	6.742	152.4137	0.5486891	1011.67	17.19	57.54	1094.816	0.572	1104.938	1084.474	1095.035	0.766	0.33	0.280	2977.657	2957.211	2973.512	0.065
07/08/2016 21:00	1952	13.82	13.6	5.02	5.02	195.7	8.05	7.84	29.35948	0.1056941	1011.523	15.62	60.77	1095.032	0.935	1103.017	1085.704	1096.375	0.945	1.222	0.488	2980.095	2958.481	2974.848	0.038
07/08/2016 22:00	1953	13.61	13.45	5.844	5.844	195.8	11.27	8.58	0.05776719	0.000207962	1011.523	14.38	56.23	1095.158	0.637	1102.931	1086.07	1096.474	0.618	0.847	0.346	2978.479	2959.939	2975.425	0.041
07/08/2016 23:00	1954	13.46	13.35	4.348	4.348	185.8	10.53	6.115	0	0	1011.238	12.86	59.86	1095.125	0.258	1103.071	1086.023	1096.281	0.25	0.324	0.178	2977.784	2958.917	2975.096	0.026
08/08/2016 0:00	1955	13.37	13.28	5.042	5.042	176.7	9.88	7.86	0	0	1010.921	12.71	61.33	1095.11	0.905	1102.831	1085.927	1096.571	0.803	1.25	0.502	2976.739	2958.325	2975.51	0.028
08/08/2016 1:00	1956	13.29	13.21	4.86	4.86	172	8.25	7.546	0	0	1010.926	12.44	62.79	1095.152	0.63	1102.945	1085.954	1096.558	0.659	0.312	0.312	2977.657	2957.369	2976.086	0.025
08/08/2016 2:00	1957	13.23	13.15	3.573	3.573	153.7	27.89	6.664	0	0	1011.089	12.5	57.89	1095.219	0.028	1103.088	1086.21	1096.359	0.025	0.031	0.027	2978.101	2958.845	2975.172	0.021
08/08/2016 3:00	1958	13.16	13.09	3.034	3.034	154.5	25.55	6.35	0	0	1011.089	11.97	57.51	1095.117	0.625	1102.856	1086.064	1096.43	0.675	0.779	0.333	2977.736	2958.652	2975.449	0.016
08/08/2016 4:00	1959	13.11	13.04	3.514	3.514	180.1	19.36	5.919	0	0	1011.253	11.27	58.26	1095.198	0.265	1103.102	1086.134	1096.359	0.259	0.364	0.102	2978.074	2958.66	2975.148	0.019
08/08/2016 5:00	1960	13.06	13.04	3.623	3.623	13.46	13.46	5.586	7.674697	0.02762891	1010.926	11.06	62.07	1095.435	0.313	1102.545	1087.432	1096.33	0.346	0.374	0.184	2977.11	2960.361	2974.836	0.018
08/08/2016 6:00	1961	13.06	13.04	2.896	2.896	151.6	23.48	4.978	11.67217	0.04201981	1010.844	11.14	62.79	1095.266	0.199	1103.048	1086.337	1096.414	0.188	0.095	0.272	2977.948	2958.806	2975.271	-0.002
08/08/2016 7:00	1962	13.3	13.04	5.043	5.043	173.7	9.12	8.09	44.14428	0.1589194	1010.599	11.06	63.73	1095.189	0.949	1102.693	1086.232	1096.643	0.856	1.254	0.63	2976.899	2962.618	2975.794	0.041
08/08/2016 8:00	1963	14.05	13.3	6.71	6.71	145.5	13.51	10.25	120.1795	0.4326461	1010.435	11.29	63.85	1095.204	1.2	1102.598	1086.478	1096.536	1.136	1.614	0.653	2975.852	2959.805	2973.752	0.091
08/08/2016 9:00	1964	14.29	14.03	7.046	7.046	170.8	19.34	10.76	151.4729	0.5453026	1010.407	11.76	61	1095.033	1.302	1102.451	1085.967	1096.681	1.301	1.612	0.891	2978.193	2961.429	2976.571	0.116
08/08/2016 10:00	1965	14.56	14.26	5.434	5.434	146.9	21.48	8.11	231.9854	0.8351473	1010.541	11.99	61.6	1095.208	0.613	1102.451	1086.351	1096.821	0.491	0.888	0.311	2978.056	2958.934	2975.552	0.138
08/08/2016 11:00	1966	14.55	14.27	4.2	4.2	194.7	21.95	8.15	572.3685	2.060526	1010.213	13.94	54.2	1095.343	0.62	1101.257	1086.838	1097.936	0.699	0.749	0.321	2976.225	2959.685	2976.725	0.326
08/08/2016 12:00	1967	14.49	13.91	4.079	4.079	223.6	17.53	8.92	281.6378	1.013896	1010.131	13.61	55.9	1095.214	1.533	1102.706	1086.014	1096.921	1.447	2.091	0.765	2978.83	2959.616	2974.019	0.169
08/08/2016 13:00	1968	13.92	13.89	6.561	6.561	195.1	12.9	9.68	319.3014	1.149485	1010.213	14.13	56.25	1095.065	1.03	1102.614	1085.818	1096.763	1.034	1.338	0.567	2977.229	2959.374	2974.85	0.212
08/08/2016 14:00	1969	13.93	13.68	5.8	5.8	169.7	14.23	8.9	301.6374	1.085894	1010.295	14.29	56.65	1096.162	0.802	1102.793	1086.156	1096.537	0.78	1.081	0.39	2980.266	2961.06	2975.443	0.197

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	mm	mm	mm	Hz	Hz	Hz	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
10/08/2016 14:00	2017	14.1	13.45	4.968	4.968	255.4	19.64	9.21	248.3	0.8938801	1012.368	10.77	57.66	1094.861	1.817	1103.254	1084.583	1096.745	1.395	2.545	1.217	2977.438	2954.371	2975.538	0.143
10/08/2016 15:00	2018	14.17	13.96	5.131	5.131	306.5	42.07	11.13	356.7315	1.284233	1012.928	10.31	65.75	1096.082	0.485	1103.341	1087.19	1097.714	0.426	0.677	0.256	2979.463	2961.262	2976.733	0.179
10/08/2016 16:00	2019	14.6	14.12	1.59	1.59	286.1	42.18	3.9	221.8851	0.7987865	1013.136	9.24	79.96	1096.076	0.08	1104.019	1086.83	1097.378	0.035	0.124	0.035	2979.135	2959.603	2976.325	0.081
10/08/2016 17:00	2020	14.61	14.18	1.649	1.649	332.2	62.8	3.881	354.8091	1.277313	1013.016	10.64	66.31	1095.895	0.124	1104.383	1086.071	1097.232	0.122	0.162	0.069	2979.439	2958.856	2976.158	0.164
10/08/2016 18:00	2021	14.62	14.05	2.529	2.529	222.3	38.86	7.644	262.4928	0.9449741	1013.214	10.55	64.32	1086.567	0.227	1104.475	1086.567	1096.865	0.226	0.31	0.089	2980.052	2959.95	2975.901	0.121
10/08/2016 19:00	2022	14.06	13.95	4.255	4.255	233.2	10.67	6.644	86.90474	0.312857	1013.39	9.29	71.89	1096.215	0.125	1103.788	1087.549	1097.308	0.144	0.148	0.063	2979.208	2960.33	2976.308	0.038
10/08/2016 20:00	2023	13.96	13.79	2.875	2.875	216.4	28.8	6.605	40.87479	0.1471492	1013.677	8.71	76.58	1096.264	0.339	1104.242	1087.352	1097.199	0.377	0.424	0.153	2979.463	2960.661	2976.135	0.007
10/08/2016 21:00	2024	13.8	13.62	2.033	2.033	291.5	39.38	4.704	6.293159	0.02265537	1014.095	7.356	86.3	1096.484	0.03	1104.481	1087.577	1097.393	0.031	0.036	0.021	2979.619	2960.416	2976.363	-0.009
10/08/2016 22:00	2025	13.63	13.51	3.579	3.579	259.4	44.47	9.43	0.005602385	2.02E-05	1013.931	7.008	88.4	1097.834	1.267	1106.04	1088.7	1098.762	1.344	1.548	0.781	2982.55	2963.607	2977.983	-0.005
10/08/2016 23:00	2026	13.52	13.42	6.14	6.14	223.4	9.07	7.683	0.9936555	0.00357716	1014.258	7.062	84.1	1098.31	0.619	1106.411	1089.258	1099.26	0.629	0.735	0.462	2981.716	2963.339	2977.978	0.005
11/08/2016 0:00	2027	13.44	13.36	5.511	5.511	235.5	5.402	7.703	0.8925567	0.003213204	1014.422	7.228	82.8	1098.209	0.536	1106.334	1089.137	1099.155	0.537	0.664	0.362	2982.562	2962.498	2978.494	0.005
11/08/2016 1:00	2028	13.37	13.29	6.168	6.168	230.2	7.328	8.49	0.2561796	0.000922247	1014.586	7.59	80.6	1098.302	0.828	1106.454	1089.252	1099.201	0.852	1.052	0.472	2980.32	2960.792	2978.406	0.008
11/08/2016 2:00	2029	13.31	13.23	6.442	6.442	233	6.168	8.82	0.1059351	0.000381366	1014.75	7.25	79.74	1098.232	0.646	1106.387	1089.142	1099.169	0.652	0.799	0.434	2982.085	2961.562	2979.209	0.009
11/08/2016 3:00	2030	13.24	13.17	6.238	6.238	231.4	7.572	8.47	0.03310501	0.000119178	1014.913	7.087	80.2	1098.275	1.108	1106.576	1089.145	1099.105	1.2	1.343	0.663	2980.521	2961.961	2978.133	0.008
11/08/2016 4:00	2031	13.18	13.11	6.234	6.234	232.4	6.297	8.11	0.002037202	7.33E-06	1015.241	7.043	79.38	1098.28	0.621	1106.404	1089.29	1099.146	0.672	0.742	0.392	2983.809	2964.751	2976.93	0.009
11/08/2016 5:00	2032	13.13	13.06	5.467	5.467	234.2	6.878	7.526	1.338716	0.004819376	1015.568	7.014	80.6	1098.326	0.631	1106.575	1089.288	1099.115	0.622	0.809	0.39	2981.717	2961.369	2978.701	0.006
11/08/2016 6:00	2033	13.11	13.06	3.334	3.334	227.8	15.81	5.429	17.63937	0.06350172	1015.732	6.583	83.6	1098.32	0.277	1106.305	1089.443	1099.213	0.255	0.371	0.168	2982.212	2962.604	2978.595	-0.015
11/08/2016 7:00	2034	13.23	13.09	3.343	3.343	203.3	20.03	5.939	31.00793	0.1116286	1016.141	7.171	81.2	1098.38	0.503	1106.321	1089.518	1099.302	0.501	0.649	0.297	2981.733	2962.72	2978.101	-0.007
11/08/2016 8:00	2035	13.64	13.22	3.888	3.888	236.1	8.95	5.488	74.17151	0.2670175	1016.551	7.526	82.1	1098.391	0.148	1106.309	1089.467	1099.396	0.154	0.193	0.071	2981.712	2962.556	2978.819	0.014
11/08/2016 9:00	2036	14.63	13.64	3.51	3.51	250.6	8.89	5.155	179.769	0.6471685	1017.017	8.51	80.3	1098.256	0.436	1105.795	1089.421	1099.552	0.463	0.567	0.186	2981.698	2962.347	2978.961	0.064
11/08/2016 10:00	2037	14.63	14.57	4.676	4.676	249.6	9.95	6.213	292.5815	1.053293	1017.229	9.22	79.2	1098.242	0.59	1105.227	1089.604	1099.866	0.535	0.767	0.41	2982.063	2964.177	2979.191	0.121
11/08/2016 11:00	2038	14.61	14.03	4.54	4.54	255.9	13.81	7.546	549.9356	1.979768	1017.336	10.9	68.21	1098.234	1.125	1102.807	1089.9	1101.994	1.19	1.381	0.689	2977.762	2962.182	2981.142	0.266
11/08/2016 12:00	2039	14.05	13.96	5.157	5.157	251.7	15.51	7.801	534.482	1.924135	1017.415	11.66	62.63	1098.089	0.756	1104.989	1089.213	1100.066	0.73	0.977	0.478	2979.488	2960.254	2977.871	0.274
11/08/2016 13:00	2040	14.6	13.96	3.971	3.971	286	29.87	8.82	292.513	1.053047	1018.119	9.43	77.8	1098.67	0.247	1106.177	1089.642	1100.191	0.192	0.333	0.186	2981.291	2962.244	2980.058	0.126
11/08/2016 14:00	2041	14.61	14.41	2.96	2.96	311.9	23.41	7.017	560.3399	2.017224	1018.11	9.61	77.59	1098.708	0.074	1106.064	1089.757	1100.302	0.079	0.089	0.048	2981.569	2962.857	2979.623	0.255
11/08/2016 15:00	2042	14.6	14.13	1.835	1.835	332.5	29.87	4.508	513.0525	1.846989	1018.071	10.89	70.36	1098.261	0.121	1106.891	1086.573	1101.318	0.102	0.103	0.033	2982.525	2959.096	2980.881	0.251
11/08/2016 16:00	2043	14.14	13.84	2.356	2.356	325	44.14	7.134	449.552	1.618387	1018.07	12.06	64.64	1098.341	0.3	1107.035	1087.529	1100.459	0.248	0.453	0.062	2983.066	2959.624	2979.924	0.228
11/08/2016 17:00	2044	13.95	13.84	0.621	0.621	265.4	34.85	2.666	297.0402	1.069345	1018.07	12.83	60.13	1098.462	0.418	1107.216	1088.315	1099.854	0.406	0.597	0.054	2983.312	2960.428	2979.265	0.133
11/08/2016 18:00	2045	14.01	13.91	1.944	1.944	176.5	45.35	4.136	141.5321	0.5095153	1018.316	12.61	61.37	1098.609	0.033	1106.647	1089.518	1099.663	0.03	0.044	0.019	2982.112	2962.662	2979.008	0.057
11/08/2016 19:00	2046	14.01	13.94	1.606	1.606	16.03	48.16	3.763	121.7891	0.4384408	1018.263	11.69	68.91	1098.569	0.231	1108.651	1088.207	1098.85	0.297	0.222	0.15	2984.888	2960.865	2977.823	0.036
11/08/2016 20:00	2047	13.96	13.76	3.796	3.796	196.6	34.78	6.507	79.57712	0.2864776	1018.441	11.87	62.76	1098.596	0.504	1107.3	1089.138	1099.352	0.501	0.66	0.272	2983.157	2961.986	2978.489	0.032
11/08/2016 21:00	2048	13.77	13.6	5.627	5.627	227.9	7.247	7.997	11.77421	0.04238715	1018.62	10.46	66.06	1098.718	0.519	1106.724	1089.515	1099.915	0.499	0.694	0.277	2982.381	2962.433	2978.572	0.024
11/08/2016 22:00	2049	13.61	13.48	5.692	5.692	222.3	9.06	8.66	0	0	1018.627	10.33	65.97	1098.614	1.099	1106.746	1089.314	1099.783	1.094	1.428	0.625	2981.401	2963.157	2980.477	0.023
11/08/2016 23:00	2050	13.5	13.39	7.097	7.097	224.4	6.589	9.41	0	0	1018.621	9.97	69.39	1098.307	1.141	1106.521	1088.721	1099.68	1.022	1.461	0.851	2982.948	2961.066	2981.029	0.023
12/08/2016 0:00	2051	13.41	13.32	7.913	7.913	226	5.988	10.23	0	0	1018.796	9.98	71.17	1098.633	1.304	1106.787	1089.225	1099.888	1.267	1.674	0.835	2981.758	2961.442	2979.377	0.024
12/08/2016 1:00	2052	13.34	13.25	7.472	7.472	214.3	9.86	11.05	0	0	1018.799	9.43	72.31	1098.661	2.324	1106.859	1089.173	1099.951	2.315	3.065	1.203	2982.453	2963.399	2980.084	0.021
12/08/2016 2:00	2053	13.27	13.19	8.45	8.45	214.4	7.4	11.47	0	0	1018.802	9.07	72.54	1098.718	1.914	1106.92	1089.383	1099.851	1.68	2.647	1.075	2981.406	2957.881	2979.751	0.022
12/08/2016 3:00	2054	13.21	13.13	9.66	9.66	205.4	8.68	13.56	0	0	1018.668	8.64	75.06	1098.27	2.195	1106.964	1088.609	1099.236	1.784	3.079	1.338	2979.444	2957.453	2976.462	0.02
12/08/2016 4:00	2055	13.15	13.08	8.8	8.8	224.7	7.113	12.76	0	0	1018.724	9.18	70.84	1098.7	1.919	1107.302	1089.418	1099.381	1.839						

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP TS	RECORD RN	BattV_Max Volts Max	BattV_Min Volts Min	WS_ms_Avg meters/Second Avg	WS_ms_S_WVT meters/Second WVC	WindDir_D1_WVT Deg WVC	WindDir_SD1_WVT Deg WVC	WS_ms_Max meters/Second Max	SlrW_Avg W/m ² Avg	SlrMJ_Tot MJ/m ² Tot	BP_kPa kPa Smp	Air_Temp_Avg degC Avg	RH_Avg percent Avg	Geonor_Depth_Average mm Smp	Geonor_Depth_StdDev mm Smp	T1_Depth_Average mm Smp	T2_Depth_Average mm Smp	T3_Depth_Average mm Smp	T1_Depth_StdDev mm Smp	T2_Depth_StdDev mm Smp	T3_Depth_StdDev mm Smp	T1_Freq Hz Smp	T2_Freq Hz Smp	T3_Freq Hz Smp	ET_mm mm ETos
14/08/2016 4:00	2103	13.15	13.08	7.813	7.813	198	8.05	12.72	0	0	1011.966	8.79	74.86	1098.183	1.478	1106.896	1088.853	1098.801	1.416	2.006	0.722	2980.666	2959.494	2977.956	0.018
14/08/2016 5:00	2104	13.09	13.02	6.889	6.889	184.9	8.94	10.51	0.2579641	0.000928671	1012.129	8.61	73.45	1098.223	1.746	1106.953	1088.819	1098.898	1.61	2.436	0.787	2982.925	2962.074	2978.388	0.017
14/08/2016 6:00	2105	13.07	13.02	7.414	7.414	199.1	9.07	11.72	15.05444	0.054195599	1011.789	8.76	72.58	1098.128	2.067	1106.82	1088.76	1098.806	1.895	2.706	1.378	2983.643	2964.238	2977.797	0.029
14/08/2016 7:00	2106	13.47	13.03	8.25	8.25	196.4	8.85	11.9	80.81706	0.2909414	1011.454	9.07	72.94	1098.355	2.957	1106.052	1089.725	1099.287	2.202	4.286	1.734	2980.253	2961.053	2977.968	0.059
14/08/2016 8:00	2107	14.63	13.47	10.6	10.6	205.8	9.42	16.03	159.7274	0.5750188	1011.095	9.59	71.72	1099.375	4.609	1105.879	1091.216	1101.07	2.671	5.97	2.671	2978.679	2962.702	2984.748	0.101
14/08/2016 9:00	2108	14.65	14.35	11.8	11.8	213.5	7.43	15.74	323.585	1.164906	1011.008	10.31	67.59	1098.071	4.088	1103.305	1089.836	1101.071	3.692	5.683	2.052	2967.98	2956.031	2979.698	0.175
14/08/2016 10:00	2109	14.55	13.97	10.06	10.06	217.1	8.77	14.5	510.4994	1.837798	1011.606	11.14	63.34	1098.03	1.695	1104.771	1089.179	1100.14	1.585	2.153	1.213	2981.796	2965.466	2980.543	0.258
14/08/2016 11:00	2110	13.98	13.83	5.483	5.483	209.4	20.1	10.51	492.4728	1.772902	1011.768	12.11	59.59	1098.22	1.496	1105.442	1089.2	1100.016	1.304	2.128	0.694	2984.513	2965.319	2979.327	0.264
14/08/2016 12:00	2111	13.93	13.86	6.873	6.873	209.5	16.17	13.05	509.2059	1.833141	1011.523	12.3	56.84	1098.06	1.84	1105.611	1088.698	1099.871	1.696	2.533	0.928	2979.925	2961.18	2978.696	0.282
14/08/2016 13:00	2112	14.01	13.91	7.432	7.432	188.1	15.66	13.84	329.3626	1.185705	1011.359	12.03	56.09	1097.989	2.582	1106.218	1088.475	1099.274	2.558	3.243	1.715	2981.421	2961.108	2978.311	0.206
14/08/2016 14:00	2113	14.02	13.92	8.44	8.44	183.6	21	14.62	237.4447	0.8548009	1011.854	11.79	57.65	1098.318	0.755	1106.586	1089.046	1099.32	0.69	1	0.483	2983.572	2963.024	2978.38	0.169
14/08/2016 15:00	2114	14.05	13.96	6.097	6.097	174.4	24.94	13.33	257.1452	0.9257227	1011.539	11.82	59.7	1097.968	3.264	1105.926	1088.052	1099.927	3.017	4.415	1.833	2980.734	2959.126	2976.226	0.158
14/08/2016 16:00	2115	14.02	13.96	7.154	7.154	193.7	15.46	12.41	307.5232	1.107083	1011.769	12.35	54.75	1098.22	1.21	1106.297	1088.968	1099.649	1.125	1.669	0.582	2982.086	2963.319	2978.749	0.201
14/08/2016 17:00	2116	14.02	13.97	6.998	6.998	187.2	15.78	12.45	213.8988	0.7700359	1011.688	12.29	55.96	1098.077	1.977	1106.224	1088.41	1099.596	2.028	2.564	1.021	2981.373	2960.882	2978.302	0.156
14/08/2016 18:00	2117	14.06	14.01	7.818	7.818	188.8	11.44	13.97	157.8815	0.5683735	1011.553	11.51	58.89	1098.534	2.638	1106.86	1089.171	1099.571	2.519	3.576	1.319	2977.901	2960.869	2979.403	0.128
14/08/2016 19:00	2118	14.1	13.92	7.3	7.3	197.9	12.51	10.94	86.00774	0.3096279	1011.817	10.93	59.94	1098.289	1.214	1106.315	1088.829	1099.723	1.089	1.614	0.795	2982.76	2960.32	2979.7	0.089
14/08/2016 20:00	2119	13.96	13.84	4.58	4.58	199.7	13.69	8.57	51.95256	0.1870292	1011.908	10.4	62.08	1098.386	0.823	1106.451	1088.948	1099.759	0.811	1.103	0.397	2981.757	2962.186	2979.57	0.029
14/08/2016 21:00	2120	13.86	13.68	5.128	5.128	202.8	12.85	10.74	13.23292	0.04763852	1012.082	9.44	64.43	1098.482	1.04	1106.409	1089.173	1099.863	0.981	1.411	0.539	2981.862	2961.898	2979.398	0.023
14/08/2016 22:00	2121	13.7	13.56	5.13	5.13	187	17.51	9.86	0	0	1012.126	8.76	66.13	1098.612	0.484	1106.551	1089.342	1099.942	0.475	0.641	0.258	2981.653	2962.358	2978.978	0.019
14/08/2016 23:00	2122	13.58	13.47	4.198	4.198	166.6	25.91	9.35	0	0	1011.966	8.64	67.86	1098.574	1.107	1106.569	1089.244	1099.908	1.066	1.477	0.598	2985.873	2963.536	2980.107	0.013
15/08/2016 0:00	2123	13.49	13.39	10.08	10.08	202.2	10.12	17.29	10.08	0	1011.469	8.78	67.77	1099.141	0.677	1107.042	1089.667	1100.712	3.312	4.574	2.419	2981.676	2967.14	2982.394	0.029
15/08/2016 1:00	2124	13.41	13.33	10.01	10.01	208.6	11.21	15.27	0	0	1011.142	8.66	68.32	1098.177	3.413	1106.165	1087.977	1100.389	3.33	4.566	1.758	2979.96	2959.579	2985.454	0.029
15/08/2016 2:00	2125	13.34	13.27	8.81	8.81	203.9	17.12	15.33	0	0	1011.953	8.76	68.32	1098.417	2.432	1106.34	1089.138	1099.773	2.263	3.285	1.356	2979.659	2961.559	2978.643	0.027
15/08/2016 3:00	2126	13.28	13.2	8.28	8.28	204.2	10.17	13.13	0	0	1011.943	8.54	70.37	1098.895	2.332	1106.808	1089.846	1100.031	2.07	3.331	0.966	2981.125	2961.643	2979.189	0.023
15/08/2016 4:00	2127	13.22	13.14	5.459	5.459	191.6	13.09	9.33	0	0	1012.293	8.34	69.81	1098.801	1.238	1106.436	1089.595	1100.372	1.026	1.785	0.6	2981.702	2962.881	2979.758	0.016
15/08/2016 5:00	2128	13.17	13.08	7.466	7.466	203	11.69	12.78	0.2006629	0.000722386	1011.796	8.31	70.17	1098.732	2.424	1106.804	1089.314	1100.079	2.695	2.899	1.4	2978.804	2957.534	2979.027	0.021
15/08/2016 6:00	2129	13.29	13.08	9.28	9.28	210.4	10.91	15.88	33.54107	0.1207478	1011.636	8.35	69.72	1098.822	5.66	1105.116	1089.242	1102.107	4.967	7.368	4.143	2979.038	2951.646	2979.216	0.053
15/08/2016 7:00	2130	14.28	13.29	11.08	11.08	206.2	11.44	15.95	184.7984	0.6652742	1011.597	8.84	66.97	1098.93	4.201	1104.662	1090.445	1101.682	3.034	5.924	2.939	2979.229	2965.245	2976.292	0.12
15/08/2016 8:00	2131	14.64	14.28	8.76	8.76	205.4	12.26	15.39	199.7203	0.7189929	1012.565	8.75	66.88	1098.559	1.194	1105.319	1089.837	1100.52	1.019	1.575	0.871	2978.554	2958.85	2978.607	0.116
15/08/2016 9:00	2132	14.63	14.45	6.902	6.902	216.7	13.57	11.05	227.8164	0.8201389	1012.728	8.68	65.89	1098.503	1.859	1105.901	1089.196	1100.412	1.644	2.564	1.042	2982.078	2966.671	2982.203	0.121
15/08/2016 10:00	2133	14.62	14.03	5.103	5.103	211.4	17.06	9.27	272.7557	0.9819205	1012.892	9.12	62.5	1098.778	1.168	1105.918	1089.867	1100.55	0.978	1.554	0.849	2979.911	2961.028	2979.928	0.138
15/08/2016 11:00	2134	14.1	14.05	6.718	6.718	202.4	11.47	11.07	260.2984	0.9370744	1013.218	9.36	59.88	1098.627	0.752	1106.254	1089.43	1100.198	0.667	1.034	0.425	2980.655	2960.136	2979.716	0.148
15/08/2016 12:00	2135	14.08	13.96	5.237	5.237	208.4	15.32	11.02	316.7017	1.140126	1013.054	10.1	57.51	1098.368	1.277	1104.806	1088.884	1101.415	1.199	1.694	0.765	2979.334	2964.371	2982.12	0.172
15/08/2016 13:00	2136	13.99	13.84	6.402	6.402	201.5	14.98	11.23	591.3467	2.128848	1013.16	11.86	47.61	1098.542	0.975	1105.599	1089.005	1101.022	0.828	1.371	0.533	2980.928	2961.409	2980	0.331
15/08/2016 14:00	2137	13.99	13.85	6.097	6.097	213.2	17.22	10.7	502.7484	1.809894	1013.323	11.98	47.26	1098.313	1.278	1105.799	1087.818	1101.321	1.232	1.726	0.637	2979.695	2960.262	2980.101	0.293
15/08/2016 15:00	2138	14.03	13.89	5.884	5.884	221.4	22.31	10.76	380.6072	1.370186	1013.16	12.02	43.83	1098.6072	1.109	1106.601	1089.049	1100.246	0.949	1.566	0.58	2981.46	2963.331	2979.769	0.243
15/08/2016 16:00	2139	14.01	13.93	5.65	5.65	204.2	18.49	10.86	351.7397	1.266263	1013.078	12.03	45.6	1098.435	0.953	1106.585	1088.516	1100.204	1.023	1.201	0.487	2982.668	2962.268	2979.788	0.225
15/08/2016 17:00	2140	14.01	13.89	5.482	5.482	200	15.99	9.15	424.2528	1.527331	1012.832	12.45	44.63	1098.396	0.776	1106.969	1088.331	1099.887	0.617	1.06	0.549	2982.661	2961.833	2979.894	0.262
15/08/2016 18:00	2141	14.08	13.93	7.45	7.45	195.5	12.86	13.05	279.6136	1.006609	1013.323	11.16	52.08	1098.723	1.902	1107.196	1087.723	1099.631	1.798	2.527	1.11	2981.073	2959.926	2979.531	0.189
15/08/2016 19:00	2142	14.12	14.02	3.827	3.827	203	26.75	7.644	156.1592	0.5621731	1013.054	10.22</													

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVC	WVC	WVC	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
17/08/2016 18:00	2189	14.45	14.07	3.84	3.84	252.4	11.03	5.782	343.2594	1.235734	1025.145	11.1	55.84	1099.215	0.352	1109.462	1087.787	1100.397	0.391	0.412	0.223	2985.602	2961.468	2979.631	0.184	
17/08/2016 19:00	2190	14.08	13.9	3.553	3.553	251.8	8.21	4.998	230.0772	0.8282779	1025.202	11.44	54.19	1099.459	0.359	1108.582	1089.386	1100.411	0.403	0.389	0.272	2985.105	2963.348	2979.745	0.128	
17/08/2016 20:00	2191	13.91	13.77	3.915	3.915	247	7.158	5.508	99.99317	0.3599754	1025.329	10.52	61.3	1099.46	0.302	1108.652	1089.612	1100.116	0.291	0.399	0.17	2984.322	2962.676	2979.344	0.035	
17/08/2016 21:00	2192	13.79	13.61	4.837	4.837	239.2	4.768	5.468	11.67788	0.04204036	1025.684	8.79	64.52	1099.693	0.226	1107.402	1090.602	1101.076	0.22	0.298	0.126	2983.306	2964.302	2980.711	0.021	
17/08/2016 22:00	2193	13.62	13.5	3.693	3.693	237.8	4.411	4.606	0	0	1026.048	8.46	63.86	1099.747	0.092	1107.385	1090.661	1101.195	0.076	0.119	0.072	2983.06	2963.94	2980.607	0.013	
17/08/2016 23:00	2194	13.51	13.41	3.381	3.381	226.2	6.587	4.077	0	0	1026.134	7.89	65.31	1099.776	0.144	1107.394	1090.715	1101.217	0.148	0.177	0.093	2983.328	2964.191	2980.648	0.01	
18/08/2016 0:00	2195	13.43	13.34	3.966	3.966	211.1	5.099	4.88	0	0	1026.069	7.347	68.89	1099.762	0.438	1107.386	1090.682	1101.217	0.428	0.6	0.183	2982.598	2963.99	2980.673	0.01	
18/08/2016 1:00	2196	13.36	13.27	4.008	4.008	211.9	5.152	4.939	0	0	1026.238	7.513	68.15	1099.758	0.261	1107.351	1090.703	1101.221	0.239	0.361	0.133	2982.769	2963.672	2980.602	0.011	
18/08/2016 2:00	2197	13.29	13.21	4.408	4.408	211.3	5.205	5.39	0	0	1026.215	7.842	65.69	1099.8	0.309	1107.459	1090.737	1101.205	0.337	0.346	0.231	2983.41	2964.475	2980.653	0.015	
18/08/2016 3:00	2198	13.23	13.15	4.067	4.067	210.6	5.386	5.096	0	0	1026.048	8.06	64.05	1099.799	0.307	1107.336	1090.801	1101.26	0.282	0.411	0.183	2983.05	2964.336	2981.01	0.015	
18/08/2016 4:00	2199	13.17	13.1	2.948	2.948	210.2	9.86	4.763	0	0	1025.884	7.891	63.72	1099.799	0.053	1107.238	1090.888	1101.273	0.052	0.072	0.021	2982.82	2964.351	2980.792	0.008	
18/08/2016 5:00	2200	13.12	13.06	2.214	2.214	204.7	9.8	3.136	2.083578	0.007500881	1025.566	7.975	62.09	1099.852	0.088	1107.282	1090.899	1101.374	0.099	0.104	0.052	2982.666	2964.118	2980.843	0.004	
18/08/2016 6:00	2201	13.24	13.06	2.094	2.094	187.2	20.37	3.156	32.82361	0.118165	1025.557	9.14	57.61	1099.899	0.133	1106.964	1091.417	1101.314	0.139	0.165	0.082	2983.065	2965.464	2980.844	-0.001	
18/08/2016 7:00	2202	13.77	13.23	2.883	2.883	194.4	10.2	4.332	85.39394	0.3074182	1025.311	9.19	59.07	1100.08	0.244	1105.582	1092.771	1101.886	0.22	0.334	0.137	2981.067	2966.709	2981.521	0.037	
18/08/2016 8:00	2203	14.62	13.77	2.244	2.244	179.5	26.39	4.116	227.6047	0.8193768	1025.251	11.19	55.09	1100.133	0.36	1104.355	1093.409	1102.635	0.318	0.498	0.199	2979.659	2967.417	2982.477	0.109	
18/08/2016 9:00	2204	14.55	14.48	3.52	3.52	141.7	12.21	4.939	296.1006	1.065962	1024.655	11.17	58.92	1099.855	0.58	1104.815	1092.269	1102.487	0.455	0.84	0.312	2980.149	2964.979	2981.985	0.154	
18/08/2016 10:00	2205	14.55	13.95	4.013	4.013	134.6	13.23	5.978	366.2086	1.318351	1024.291	11.29	56.68	1099.715	0.589	1105.71	1091.391	1102.044	0.539	0.831	0.242	2980.661	2965.038	2981.867	0.196	
18/08/2016 11:00	2206	13.98	13.89	4.65	4.65	150.5	17.36	7.918	408.7652	1.471555	1023.881	12.08	50.36	1099.733	1.221	1105.277	1091.358	1102.565	1.194	1.658	0.545	2978.07	2961.777	2979.894	0.236	
18/08/2016 12:00	2207	14	13.89	6.24	6.24	150.1	12.92	10.6	347.3643	1.250511	1023.144	12	48.13	1099.439	1.296	1106.349	1090.532	1101.436	1.293	1.716	0.652	2981.069	2960.675	2980.485	0.223	
18/08/2016 13:00	2208	14.01	13.97	5.866	5.866	157.7	11.82	8.74	312.0306	1.12331	1022.653	11.98	48.18	1099.406	1.188	1106.539	1090.581	1101.097	1.053	1.611	0.726	2982.515	2962.789	2979.421	0.203	
18/08/2016 14:00	2209	14.09	13.96	5.072	5.072	160.6	12.94	8.09	134.5511	0.4843839	1022.498	11.34	51.77	1099.604	0.899	1106.803	1090.81	1101.198	0.811	1.273	0.386	2981.732	2963.803	2981.002	0.104	
18/08/2016 15:00	2210	14.08	13.96	5.953	5.953	169.5	14.72	8.47	76.10323	0.2739716	1022.058	9.11	69.94	1100.084	0.59	1107.658	1091.251	1101.344	0.533	0.83	0.27	2982.909	2964.215	2981.238	0.051	
18/08/2016 16:00	2211	14.25	13.96	3.713	3.713	136.2	10.86	6.194	127.8024	0.4600888	1021.12	7.377	89.8	1100.42	0.686	1108.104	1091.481	1101.676	0.753	0.855	0.34	2983.495	2964.599	2981.094	0.028	
18/08/2016 17:00	2212	14.22	14.07	3.795	3.795	143.2	19.73	8.02	108.812	0.3917231	1020.145	7.662	85.1	1100.554	0.829	1108.169	1091.647	1101.846	0.759	1.153	0.396	2983.711	2964.216	2980.737	0.026	
18/08/2016 18:00	2213	14.29	14.09	5.579	5.579	163.4	11.09	8.96	123.8543	0.4458754	1019.495	7.917	85.2	1100.527	1.22	1108.066	1091.529	1101.987	1.053	1.687	0.712	2984.149	2967.32	2982.576	0.038	
18/08/2016 19:00	2214	14.18	14.03	6.559	6.559	193.7	17.05	12.11	108.0036	0.3888128	1018.646	8.48	81.2	1101.285	2.77	1108.85	1092.982	1102.022	2.619	3.695	1.581	2982.209	2968.362	2978.553	0.043	
18/08/2016 20:00	2215	14.04	13.79	9.16	9.16	215.1	6.711	13.6	15.73391	0.05664206	1018.662	8.18	82.1	1100.624	1.448	1108.643	1091.457	1101.772	1.557	1.799	0.794	2984.055	2965.963	2980.757	0.013	
18/08/2016 21:00	2216	13.8	13.64	6.627	6.627	227.5	9.97	10.21	1.582244	0.00569608	1018.352	8.17	83.3	1100.705	1.677	1108.922	1091.333	1101.861	1.306	2.415	0.947	2985.658	2962.928	2980.996	0.007	
18/08/2016 22:00	2217	13.66	13.54	7.613	7.613	233.4	8.08	11.25	0	0	1018.352	8.39	82.5	1100.729	1.382	1108.908	1091.494	1101.786	1.294	1.855	0.782	2984.277	2965.894	2979.527	0.009	
18/08/2016 23:00	2218	13.56	13.46	6.683	6.683	240.9	10.98	10.86	0	0	1018.087	8.49	83.1	1100.826	1.105	1108.74	1091.885	1101.853	1.082	1.444	0.639	2984.034	2964.573	2981.687	0.007	
19/08/2016 0:00	2219	13.48	13.39	6.261	6.261	241.2	10.94	10.31	0	0	1018.021	8.13	87.2	1100.879	0.948	1108.834	1091.713	1102.09	0.979	1.152	0.64	2985.657	2964.035	2981.631	0.002	
19/08/2016 1:00	2220	13.41	13.32	5.292	5.292	238.8	6.805	7.624	0	0	1018.024	7.421	95	1101.637	0.508	1109.602	1092.417	1102.892	0.477	0.647	0.357	2985.49	2966.156	2982.385	-0.006	
19/08/2016 2:00	2221	13.34	13.26	4.314	4.314	247.7	11.82	6.096	0	0	1018.024	7.305	96.7	1102.325	0.222	1110.315	1093.2	1103.461	0.245	0.27	0.122	2986.31	2966.927	2983.125	-0.009	
19/08/2016 3:00	2222	13.28	13.2	2.945	2.945	279	18.1	4.567	0	0	1017.861	7.247	98	1104.5	0.371	1104.5	1095.321	1105.558	0.373	0.486	0.194	2988.706	2969.445	2986.095	-0.013	
19/08/2016 4:00	2223	13.22	13.14	5.794	5.794	295.7	13.11	10.66	0.003310501	1.19E-05	1018.188	6.06	98.1	1109.35	0.404	1117.239	1100.065	1110.012	0.397	0.54	0.201	2994.287	2974.918	2990.865	-0.008	
19/08/2016 5:00	2224	13.16	13.09	3.112	3.112	272.4	17.39	5.86	0.1535563	0.00052803	1018.027	5.352	98.2	1109.351	0.128	1117.387	1100.365	1110.301	0.137	0.15	0.088	2994.372	2975.067	2990.841	-0.012	
19/08/2016 6:00	2225	13.11	13.08	4.428	4.428	245.3	8.6	8.15	8.739977	0.03146391	1017.883	5.273	98.2	1109.326	0.335	1117.43	1100.25	1110.3	0.318	0.454	0.17	2994.803	2975.819	2991.135	-0.03	
19/08/2016 7:00	2226	13.32	13.08	2.298	2.298	283.3	26.1	4.449	40.03006	0.1441082	1018.05	5.131	98.1	1109.412	0.074	1117.341	1100.418	1110.478	0.074	0.096	0.04	2994.148	2975.044	2991.251	-0.022	
19/08/2016 8:00	2227	13.62	13.3	4.353	4.353	249.7	6.774	7.448	60.96516	0.2194746	1018.195	5.177	96.7	1109.334	0.521	1117.405	1100.134	1110.464	0.449	0.706	0.338	2994.578	2974.549	2991.234	-0.008	
19/08/2016 9:0																										

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm
TS	RN	Volts Max	Volts Min	meters/Second Avg	meters/Second WVC	Deg WVC	Deg WVC	meters/Second Max	W/m^2 Avg	MJ/m^2 Tot	kPa Smp	degC Avg	percent Avg	mm Smp	mm Smp	mm Smp	mm Smp	mm Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm ETos
21/08/2016 8:00	2275	14.62	13.6	2.3	2.3	280.4	16.62	3.254	217.3723	0.7825403	1012.949	7.478	78.8	1131.394	0.194	1134.873	1124.73	1134.58	0.163	0.276	0.098	3013.656	3002.042	3018.309	0.076
21/08/2016 9:00	2276	14.65	14.52	2.104	2.104	319.5	18.1	3.45	341.0388	1.227739	1012.891	8.42	75.06	1131.264	0.193	1134.166	1124.305	1135.32	0.167	0.272	0.097	3013.191	3002.09	3019.221	0.143
21/08/2016 10:00	2277	14.56	13.88	1.733	1.733	332	30.21	3.9	472.8108	1.702119	1013.088	9.4	71.14	1131.026	0.144	1133.974	1123.06	1136.045	0.134	0.203	0.056	3012.987	3000.888	3019.787	0.219
21/08/2016 11:00	2278	13.91	13.71	1.675	1.675	21.83	44.61	5.37	682.0614	2.455421	1012.996	11.02	64.73	1130.837	0.471	1134.618	1121.715	1136.179	0.592	0.398	0.397	3014.816	2998.807	3019.104	0.349
21/08/2016 12:00	2279	14.01	13.73	1.14	1.14	50.42	37.69	3.489	216.0374	0.7777348	1012.914	10.51	66.14	1130.931	0.031	1138.739	1121.32	1132.67	0.019	0.04	0.031	3018.23	2998.667	3016.052	0.083
21/08/2016 13:00	2280	14.01	13.83	2.216	2.216	102.1	31.98	4.959	508.2103	1.829557	1012.751	11.28	61.14	1130.703	0.27	1137.939	1120.231	1133.938	0.215	0.365	0.198	3017.254	2996.715	3017.619	0.257
21/08/2016 14:00	2281	13.95	13.79	2.488	2.488	93.9	45.61	5.116	519.4741	1.870107	1012.505	12.2	58.9	1130.802	0.378	1138.663	1120.646	1133.096	0.379	0.48	0.232	3018.69	2998.748	3016.338	0.272
21/08/2016 15:00	2282	13.92	13.76	2.892	2.892	161.5	42.44	5.9	529.9128	1.907686	1012.178	13.03	49.06	1130.376	0.471	1139.033	1118.309	1133.784	0.426	0.659	0.222	3018.077	2994.972	3017.42	0.295
21/08/2016 16:00	2283	13.79	13.76	3.466	3.466	150.4	23.4	6.076	609.9838	2.195942	1011.985	13.99	46.36	1130.223	0.47	1140.952	1117.15	1132.567	0.462	0.633	0.223	3019.962	2992.624	3015.591	0.354
21/08/2016 17:00	2284	13.97	13.79	3.954	3.954	164.1	18.8	6.213	259.057	0.9326053	1012.014	12.95	51.91	1130.684	0.57	1139.546	1120.334	1132.172	0.578	0.752	0.275	3018.246	2997.169	3015.447	0.158
21/08/2016 18:00	2285	13.97	13.9	4.534	4.534	175.8	18.61	7.056	325.4184	1.171506	1011.85	13.39	49.49	1130.391	0.949	1141.71	1118.098	1131.365	0.88	1.29	0.513	3019.865	2992.427	3015.096	0.204
21/08/2016 19:00	2286	13.96	13.85	4.968	4.968	164.6	8.74	6.821	185.4105	0.6674776	1012.014	12.53	52.96	1130.524	0.81	1140.554	1119.521	1131.499	0.702	1.106	0.502	3020.813	2996.901	3014.513	0.13
21/08/2016 20:00	2287	13.87	13.74	5.471	5.471	162.7	4.793	6.899	82.95619	0.2986423	1012.216	11.42	56.66	1130.7	0.98	1140.316	1120.192	1131.593	0.921	1.322	0.536	3020.911	2998.465	3015.543	0.045
21/08/2016 21:00	2288	13.75	13.56	7.46	7.46	164.8	4.207	10.49	4.401547	0.01584557	1012.405	10.21	61.86	1131.049	2.419	1138.76	1121.372	1133.014	2.241	3.338	1.182	3020.795	3003.089	3017.209	0.034
21/08/2016 22:00	2289	13.58	13.46	8.91	8.91	170.8	6.406	12.09	0	0	1012.243	9.56	65.58	1130.333	3.053	1138.134	1120.482	1132.384	2.55	4.283	1.767	3018.296	2997.06	3014.934	0.031
21/08/2016 23:00	2290	13.48	13.38	10.41	10.41	169.7	5.405	13.23	0	0	1012.093	9.41	65.63	1130.443	4.14	1137.901	1120.452	1132.974	5.566	2.592	3.703	3016.503	2993.137	3012.792	0.034
22/08/2016 0:00	2291	13.4	13.31	11.37	11.37	173.8	6.578	14.11	0	0	1012.119	8.82	69.54	1130.484	3.909	1137.771	1120.52	1133.163	3.82	5.092	2.304	3022.236	3000.568	3015.469	0.029
22/08/2016 1:00	2292	13.33	13.24	9.83	9.83	175.7	5.419	13.52	0	0	1012.617	8.6	70.76	1130.696	1.628	1138.852	1120.931	1133.852	1.68	2.083	0.889	3019.733	3004.063	3015.465	0.025
22/08/2016 2:00	2293	13.26	13.18	6.638	6.638	154.3	11.11	9.82	0	0	1012.539	8.02	74.35	1130.714	1.467	1138.769	1121.011	1132.362	1.434	1.941	0.796	3019.395	2996.016	3013.573	0.015
22/08/2016 3:00	2294	13.2	13.12	5.001	5.001	142.3	15.6	8.31	0	0	1012.621	7.466	76.71	1130.841	0.371	1139.047	1121.269	1132.208	0.362	0.508	0.151	3018.763	2999.448	3015.601	0.008
22/08/2016 4:00	2295	13.14	13.07	4.136	4.136	131.6	13.44	6.409	0	0	1012.647	6.474	82.3	1130.812	0.547	1139.131	1121.142	1132.164	0.451	0.795	0.25	3017.824	2998.09	3015.968	0.001
22/08/2016 5:00	2296	13.09	13.01	4.066	4.066	129.5	15.85	5.958	0	0	1012.511	6.305	84.6	1130.672	0.432	1139.255	1121.185	1131.576	0.466	0.561	0.168	3018.783	2998.818	3015	-0.001
22/08/2016 6:00	2297	13.1	13.01	4.501	4.501	134.1	14.22	6.35	16.3582	0.05888953	1012.343	6.118	86.3	1130.851	0.838	1137.768	1123.041	1131.744	0.716	1.204	0.378	3016.717	3000.548	3014.903	-0.012
22/08/2016 7:00	2298	13.67	13.09	5.822	5.822	138.6	6.208	7.389	117.0331	0.4213191	1012.303	6.494	87	1131.096	0.86	1136.515	1124.135	1132.639	0.735	1.232	0.398	3016.705	3003.767	3016.572	0.031
22/08/2016 8:00	2299	14.62	13.67	6.451	6.451	151	15.83	11.82	250.3209	0.9011551	1012.415	9.52	70.25	1130.936	0.997	1136.356	1123.33	1133.123	0.802	1.447	0.495	3015.822	3001.412	3016.725	0.124
22/08/2016 9:00	2300	14.65	14.26	2.667	2.667	197.8	44.82	8.35	253.2846	0.9118246	1012.481	9.87	62.84	1131.052	0.455	1134.939	1123.912	1134.305	0.464	0.589	0.241	3014.007	3001.271	3017.605	0.116
22/08/2016 10:00	2301	14.52	13.96	2.767	2.767	164.2	88.9	10.43	345.4746	1.243708	1012.685	10.93	58.34	1130.698	0.785	1138.048	1121.333	1132.714	0.639	1.156	0.325	3016.574	2997.073	3016.771	0.173
22/08/2016 11:00	2302	14.05	13.84	4.997	4.997	151.5	23.77	12.25	496.3609	1.786899	1012.832	11.82	55.24	1130.69	1.079	1136.431	1121.663	1133.976	1.062	1.412	0.61	3015.788	2998.754	3017.315	0.269
22/08/2016 12:00	2303	13.92	13.81	5.161	5.161	184.7	23.24	9.07	533.9615	1.922262	1013.078	12.49	49.23	1130.317	1.512	1136.057	1120.039	1134.854	1.146	2.212	0.805	3014.076	2998.461	3018.781	0.304
22/08/2016 13:00	2304	13.86	13.76	6.718	6.718	197.8	11.34	10.66	682.5864	2.457311	1013.323	13.09	44.85	1130.436	1.43	1137.371	1119.625	1134.312	1.232	1.922	0.961	3016.577	2997.398	3016.61	0.394
22/08/2016 14:00	2305	13.86	13.73	5.61	5.61	194.6	16.61	9.66	534.0568	1.922605	1013.651	13.13	45.9	1130.291	1.937	1138.485	1119.459	1132.929	1.601	2.744	1.077	3017.955	2996.887	3017.342	0.319
22/08/2016 15:00	2306	13.93	13.85	5.212	5.212	197.1	19.27	8.58	354.7898	1.277243	1013.814	12.92	41.95	1130.556	1.141	1138.922	1120.255	1132.49	1.003	1.557	0.687	3018.374	2996.469	3015.419	0.235
22/08/2016 16:00	2307	13.92	13.84	5.52	5.52	207.3	15.51	11.41	472.3764	1.700555	1013.814	13.53	40.18	1129.939	1.817	1139.482	1118.197	1132.139	1.464	2.481	1.269	3020.529	2998.204	3014.469	0.304
22/08/2016 17:00	2308	13.98	13.89	6.719	6.719	204.1	12.6	10.68	396.2461	1.426486	1014.142	12.85	42.49	1130.149	2.004	1140.809	1117.597	1132.039	1.59	2.883	1.097	3020.915	2995.414	3015.419	0.268
22/08/2016 18:00	2309	14.02	13.94	6.595	6.595	202.6	10.58	10.62	329.299	1.185476	1014.633	12.47	44.95	1129.771	1.4	1140.982	1117.158	1131.174	1.211	1.938	0.81	3021.771	2993.74	3014.735	0.228
22/08/2016 19:00	2310	14.02	13.87	4.973	4.973	187.9	9.41	204.3324	0.7355967	1014.797	11.74	50.82	1130.452	1.327	1140.609	1119.29	1131.458	1.187	1.736	0.928	3020.044	2996.112	3015.193	0.138	
22/08/2016 20:00	2311	13.89	13.72	6.343	6.343	228.2	9.96	9.98	66.06326	0.2378277	1015.508	10.53	55.23	1130.417	1.242	1139.39	1120.094	1131.768	1.08	1.656	0.846	3020.218	2997.819	3014.26	0.045
22/08/2016 21:00	2312	13.73	13.56	5.551	5.551	220.4	9.26	8.57	2.014381	0.007251771	1015.852	9.3	59.44	1130.665	0.626	1139.105	1120.611	1132.28	0.573	0.827	0.406	3018.646	2997.719	3015.443	0.028
22/08/2016 22:00	2313	13.58	13.46	5.539	5.539	217.7	7.636	7.938	0	0	1016.221	8.7	63.3	1130.692	0.919	1139.126	1120.748	1132.203	0.932	1.224	0.41	3018.392	2997.65	3015.962	0.023
22/08/2016 23:00	2314	13.48	13.38	5.926	5.926	218.9	7.074	8.39	0	0	1016.551	8.44	64.72												

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	mm
		Max	Min	Avg	WVc	WVc	WVc	Max	Avg	Tot	Smp	Avg	Avg	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
24/08/2016 22:00	2361	13.47	13.36	6.642	6.642	224.6	4.287	8.15	0	0	1028.115	10.86	63.36	1132.595	0.915	1140.612	1122.508	1134.665	0.838	1.241	0.521	3021.496	3000.76	3019.626	0.03	
24/08/2016 23:00	2362	13.38	13.28	5.99	5.99	219.4	6.978	7.742	0	0	1027.972	10.09	67.4	1132.593	0.657	1140.619	1122.645	1134.515	0.713	0.843	0.274	3021.154	3001.917	3017.83	0.022	
25/08/2016 0:00	2363	13.3	13.22	3.968	3.968	222.9	11.77	6.115	0	0	1027.999	9.9	67.55	1132.724	0.238	1140.746	1122.724	1134.604	0.234	0.311	0.137	3020.636	3000.012	3018.251	0.013	
25/08/2016 1:00	2364	13.23	13.16	2.089	2.089	238.9	11.51	4.155	0	0	1028.094	10.02	67.11	1132.738	0.017	1140.732	1122.92	1134.563	0.02	0.013	0.017	3020.423	3000.46	3018.224	0	
25/08/2016 2:00	2365	13.18	13.1	2.727	2.727	229.5	58.48	7.056	0	0	1027.685	9.82	68.2	1132.736	0.909	1140.898	1122.748	1134.563	0.843	1.228	0.508	3019.704	2999.069	3017.587	0.005	
25/08/2016 3:00	2366	13.12	13.04	6.604	6.604	221.2	4.336	7.781	0	0	1027.674	9.81	70.1	1132.749	0.858	1140.915	1122.789	1134.541	0.792	1.139	0.534	3019.929	3000.862	3018.805	0.021	
25/08/2016 4:00	2367	13.07	13	5.434	5.434	217.9	4.615	6.899	0	0	1027.425	9.4	75.29	1132.801	0.647	1140.886	1122.85	1134.666	0.679	0.828	0.331	3020.001	2999.09	3018.23	0.012	
25/08/2016 5:00	2368	13.02	12.95	5.289	5.289	216.5	4.096	6.252	0	0	1027.159	9.89	74.43	1132.705	0.423	1140.638	1122.85	1134.627	0.385	0.565	0.264	3020.286	2999.962	3017.395	0.013	
25/08/2016 6:00	2369	12.98	12.94	5.292	5.292	214.4	5.287	6.703	7.022295	0.02528026	1026.98	10.15	73.43	1132.901	0.477	1140.294	1123.652	1134.758	0.455	0.634	0.272	3021.466	3002.069	3018.257	0.01	
25/08/2016 7:00	2370	13.1	12.94	4.278	4.278	217.6	6.053	5.233	35.37956	0.1273664	1026.806	10.88	71.57	1132.731	0.314	1140.546	1122.937	1134.711	0.355	0.369	0.181	3020.197	3000.199	3018.476	0.017	
25/08/2016 8:00	2371	14.56	13.1	2.928	2.928	230.1	11.34	4.567	123.785	0.4456261	1026.478	11.59	69.95	1132.986	0.249	1138.486	1124.661	1135.81	0.294	0.285	0.133	3019.027	3002.165	3019.541	0.051	
25/08/2016 9:00	2372	14.56	14.02	1.76	1.76	269.2	34.08	3.881	157.7942	0.5680592	1026.263	11.84	72.13	1132.806	0.154	1139.443	1123.536	1135.439	0.209	0.128	0.105	3018.443	3001.397	3019.46	0.057	
25/08/2016 10:00	2373	14.56	14.11	1.172	1.172	240.9	40.73	3.234	398.6161	1.435018	1025.354	13.7	61.47	1132.833	0.242	1135.78	1124.887	1134.804	0.299	0.257	0.142	3014.628	3002.427	3012.904	0.204	
25/08/2016 11:00	2374	14.12	13.69	1.957	1.957	249.7	38.95	4.371	562.1988	2.023916	1024.893	14.77	54.21	1132.621	0.453	1136.007	1123.693	1138.163	0.378	0.603	0.331	3015.406	3001.64	3022.13	0.318	
25/08/2016 12:00	2375	13.86	13.65	2.182	2.182	248.1	26.98	4.43	488.2256	1.757612	1024.066	15.45	50.94	1132.583	0.282	1138.537	1123.094	1136.118	0.327	0.301	0.202	3018.385	3000.714	3019.668	0.283	
25/08/2016 13:00	2376	13.91	13.84	3.542	3.542	255.5	18.64	6.37	327.6551	1.179558	1023.446	15.2	54.52	1132.513	0.859	1139.607	1122.746	1135.187	0.759	1.23	0.356	3019.632	3002.171	3019.085	0.199	
25/08/2016 14:00	2377	13.91	13.33	5.012	5.012	199.1	9.4	6.586	227.6687	0.8196072	1022.979	14.85	56.04	1132.583	0.928	1140.226	1122.766	1134.757	0.919	1.206	0.535	3018.207	2998.72	3017.772	0.157	
25/08/2016 15:00	2378	13.96	13.91	5.18	5.18	197.7	10.09	7.683	153.2691	0.5517687	1021.998	13.75	59.45	1132.699	0.986	1140.337	1123.216	1134.545	1.021	1.218	0.627	3020.885	3000.094	3018.872	0.11	
25/08/2016 16:00	2379	14.02	13.94	4.776	4.776	199.3	8.75	8.17	160.5382	0.5779374	1021.347	12.71	72.58	1132.87	0.999	1140.585	1123.705	1134.32	1.015	1.254	0.624	3020.671	3001.512	3017.718	0.084	
25/08/2016 17:00	2380	14.02	14	5.844	5.844	207.6	8.81	9.37	155.5154	0.5598556	1020.324	12.05	78.05	1132.839	1.141	1140.428	1123.5	1134.589	1.102	1.515	0.631	3020.956	3005.161	3017.766	0.075	
25/08/2016 18:00	2381	14.04	13.9	6.433	6.433	209	10.97	9.7	90.61659	0.3262197	1019.602	11.12	82.7	1132.299	0.963	1141.276	1123.605	1135.016	0.952	1.259	0.541	3020.82	3000.668	3018.784	0.038	
25/08/2016 19:00	2382	13.91	13.8	4.535	4.535	236.4	16.67	7.899	44.36779	0.159724	1018.784	10.52	87.4	1133.743	0.203	1141.551	1123.988	1135.69	0.197	0.269	0.109	3020.879	3001.392	3019.444	-0.001	
25/08/2016 20:00	2383	13.81	13.62	4.059	4.059	238.7	9.64	7.232	9.336514	0.03361145	1018.129	10.32	89.8	1133.924	0.569	1141.91	1124.148	1135.714	0.587	0.726	0.318	3023.998	3000.9	3019.283	-0.003	
25/08/2016 21:00	2384	13.63	13.5	6.228	6.228	234.4	8.02	9.66	0	0	1016.984	10.57	87	1133.719	0.948	1141.677	1123.861	1135.619	0.865	1.247	0.629	3021.528	3001.692	3019.184	0.003	
25/08/2016 22:00	2385	13.52	13.41	7.174	7.174	239.8	5.277	9.76	0	0	1016.165	10.23	89.5	1133.972	1.014	1142.201	1124.095	1135.619	1.029	1.265	0.652	3021.668	3001.934	3019.84	0.002	
25/08/2016 23:00	2386	13.43	13.34	6.276	6.276	240.4	5.922	9.09	0	0	1015.51	10.56	87.2	1133.897	0.605	1141.943	1124.097	1135.65	0.792	0.544	0.417	3021.914	3001.931	3019.119	0.003	
26/08/2016 0:00	2387	13.36	13.28	4.976	4.976	243.2	5.107	6.429	0	0	1014.691	9.95	93.3	1134.187	0.311	1142.211	1124.412	1135.936	0.373	0.339	0.189	3022.638	3002.267	3019.775	-0.006	
26/08/2016 1:00	2388	13.29	13.21	4.989	4.989	236.1	9.41	6.664	0	0	1013.873	9.71	94.9	1134.756	0.507	1143.008	1124.884	1136.375	0.499	0.637	0.34	3023.67	3002.985	3020.804	-0.007	
26/08/2016 2:00	2389	13.23	13.15	4.978	4.978	247.5	6.91	6.527	0	0	1013.057	9.34	97.4	1135.92	0.499	1144.203	1125.951	1137.606	0.509	0.609	0.343	3023.362	3003.062	3021.72	-0.009	
26/08/2016 3:00	2390	13.17	13.1	2.991	2.991	244.3	18.43	6.213	0	0	1012.241	9.05	97.1	1136.974	0.081	1145.018	1127.158	1138.746	0.085	0.099	0.05	3025.283	3005.339	3022.91	-0.013	
26/08/2016 4:00	2391	13.11	13.04	3.707	3.707	279	25.1	6.997	0.004073078	1.47E-05	1011.845	8.58	97.1	1140.23	0.72	1148.775	1130.164	1141.752	0.628	1.007	0.384	3028.732	3008.938	3025.934	-0.011	
26/08/2016 5:00	2392	13.06	12.99	4.57	4.57	278.7	7.841	6.448	0.02240541	8.07E-05	1011.137	7.975	98.4	1141.156	0.554	1149.6	1131.225	1142.644	0.572	0.708	0.302	3029.982	3009.529	3027.139	-0.01	
26/08/2016 6:00	2393	13.01	12.95	4.014	4.014	291.5	10.19	6.292	1.134121	0.004082837	1010.562	7.872	98.6	1143.067	0.762	1151.525	1133.098	1144.578	0.621	1.076	0.444	3032.3	3011.825	3030.053	-0.037	
26/08/2016 7:00	2394	12.97	12.93	4.977	4.977	280.4	7.689	7.938	7.687404	0.02767466	1010.001	7.24	98.6	1148.087	0.918	1156.663	1137.917	1149.682	0.899	1.201	0.525	3038.73	3017.499	3035.512	-0.031	
26/08/2016 8:00	2395	13.03	12.93	5.398	5.398	304.1	25.32	9.02	22.80145	0.08208523	1009.674	7.225	98.6	1151.342	1.249	1159.852	1141.392	1152.781	1.226	1.671	0.623	3040.198	3019.741	3038.527	-0.025	
26/08/2016 9:00	2396	13.17	13.01	7.241	7.241	324.2	10.23	11.96	33.89749	0.122031	1009.674	7.167	98.7	1155.542	2.375	1164.141	1145.805	1156.68	1.437	2.314	0.833	3045.99	3026.442	3043.12	-0.018	
26/08/2016 10:00	2397	13.36	13.15	7.946	7.946	307.1	8.16	11.35	43.02148	0.1548773	1009.182	6.768	98.7	1159.047	1.471	1167.754	1149.029	1160.358	1.545	1.851	0.825	3050.209	3028.631	3047.275	-0.014	
26/08/2016 11:00	2398	13.52	13.34	7.824	7.824	320.3	10.5	12.25	42.06373	0.1514294	1009.182	7.093	98.7	1162.973	2.553	1171.745	1152.981	1164.192	2.07	3.559	1.615	3055.399	3034.569	3051.366	-0.014	
26/08/2016 12:00	2399	13.74	13.5	8.39	8.39	344	15.28	13.74	55.12493	0.1984497	1009.837	7.001	98.8	1167.503	2.66	1176.373	1158.436	1167.7	2.764	3.376	1.48	3060.39	3039.536	3055.592	-0.009	
26/08/2016 13:00	2400	13.8	13.72																							

APPENDIX B
KZK Hourly Meteorological Data 2015-2016

TIMESTAMP	RECORD	BattV_Max	BattV_Min	WS_ms_Avg	WS_ms_S_WVT	WindDir_D1_WVT	WindDir_SD1_WVT	WS_ms_Max	SlrW_Avg	SlrMJ_Tot	BP_kPa	Air_Temp_Avg	RH_Avg	Geonor_Depth_Average	Geonor_Depth_StdDev	T1_Depth_Average	T2_Depth_Average	T3_Depth_Average	T1_Depth_StdDev	T2_Depth_StdDev	T3_Depth_StdDev	T1_Freq	T2_Freq	T3_Freq	ET_mm	
TS	RN	Volts	Volts	meters/Second	meters/Second	Deg	Deg	meters/Second	W/m^2	MJ/m^2	kPa	degC	percent	mm	mm	mm	mm	mm	Smp	Smp	Smp	Smp	Smp	Smp	Smp	ETos
28/08/2016 12:00	2447	14.41	14.17	2.143	2.143	239.2	22.62	3.92	94.97035	0.3418933	1018.089	2.881	88.7	1183.973	0.185	1192.357	1174.142	1185.419	0.214	0.189	0.144	3077.948	3057.766	3074.699	0.007	
28/08/2016 13:00	2448	14.63	14.17	1.572	1.572	280.9	29.73	2.803	172.0921	0.6195315	1017.979	2.662	89.4	1186.344	0.089	1193.395	1175.905	1189.733	0.09	0.116	0.047	3078.651	3059.393	3079.244	0.038	
28/08/2016 14:00	2449	14.54	14.34	1.4	1.4	18.44	28.25	2.999	238.8792	0.859965	1017.779	4.094	88.1	1186.285	0.033	1193.695	1175.599	1189.56	0.034	0.042	0.017	3078.969	3058.97	3078.977	0.071	
28/08/2016 15:00	2450	14.37	14.24	1.731	1.731	352.4	80.2	4.802	166.967	0.6010813	1017.533	4.448	86.5	1186.354	0.439	1194.511	1175.806	1188.745	0.46	0.555	0.241	3080.21	3059.704	3078.025	0.04	
28/08/2016 16:00	2451	14.62	14.24	3.598	3.598	115.2	14.4	5.39	181.0909	0.6519273	1017.534	3.984	87	1186.565	0.513	1194.827	1175.558	1189.31	0.499	0.709	0.195	3080.227	3059.079	3078.786	0.047	
28/08/2016 17:00	2452	14.3	13.97	2.891	2.891	118.4	19.43	5.743	58.85701	0.2118852	1017.647	3.234	89.3	1187.986	0.494	1196.197	1177.3	1190.46	0.434	0.698	0.235	3081.934	3060.892	3080.166	-0.005	
28/08/2016 18:00	2453	13.98	13.9	2.722	2.722	110.6	11.68	4.41	30.82884	0.1109838	1017.487	1.76	94.3	1190.289	0.328	1198.212	1179.585	1193.071	0.273	0.476	0.145	3084.025	3063.545	3082.761	-0.02	
28/08/2016 19:00	2454	13.93	13.85	2.021	2.021	104.5	28.12	4.038	26.54337	0.09555613	1017.646	2.018	93.4	1191.078	0.043	1199.052	1180.356	1193.827	0.048	0.046	0.033	3084.969	3064.283	3083.743	-0.024	
28/08/2016 20:00	2455	13.87	13.73	1.979	1.979	93.8	28.73	3.41	8.365528	0.0301159	1017.405	1.572	96.3	1192.371	0.079	1200.41	1181.663	1195.039	0.074	0.103	0.05	3086.266	3065.567	3084.94	-0.011	
28/08/2016 21:00	2456	13.75	13.63	2.016	2.016	115.7	10.45	2.822	0.1212368	0.000436453	1017.487	1.523	94.1	1192.459	0.088	1200.328	1181.806	1195.243	0.08	0.121	0.044	3086.269	3065.701	3085.255	-0.012	
28/08/2016 22:00	2457	13.64	13.54	2.647	2.647	127.7	11.12	5.076	0	0	1017.405	1.881	92.9	1192.484	0.428	1200.382	1181.78	1195.29	0.378	0.598	0.224	3086.628	3063.238	3086.056	-0.009	
28/08/2016 23:00	2458	13.56	13.47	4.427	4.427	138.6	9.03	6.468	0	0	1017.651	1.947	92.4	1192.425	0.919	1200.124	1181.822	1195.328	0.672	1.374	0.44	3086.225	3066.38	3085.562	-0.005	
29/08/2016 0:00	2459	13.49	13.4	6.008	6.008	124.5	8.32	8.53	0	0	1017.651	2.193	89.8	1192.386	1.722	1199.622	1181.787	1195.747	1.487	2.427	0.891	3089.366	3068.701	3087.314	-0.001	
29/08/2016 1:00	2460	13.42	13.34	6.871	6.871	117.1	7.448	9.86	0	0	1017.979	2.217	87.3	1192.79	1.642	1200.137	1182.531	1195.703	1.335	2.359	0.859	3085.409	3067.834	3086.401	0.002	
29/08/2016 2:00	2461	13.36	13.28	6.316	6.316	120.6	9.85	9.62	0	0	1018.142	1.695	89.9	1192.491	1.633	1200.079	1181.868	1195.527	1.598	2.143	0.924	3084.663	3065.086	3086.259	-0.001	
29/08/2016 3:00	2462	13.29	13.22	5.853	5.853	126	8.21	9.6	0	0	1018.469	1.639	88.5	1192.54	0.662	1200.074	1181.854	1195.693	0.584	0.917	0.365	3086.314	3066.832	3085.56	0	
29/08/2016 4:00	2463	13.24	13.15	5.661	5.661	112.4	7.427	9.27	0	0	1018.306	1.12	89.3	1192.809	1.613	1199.998	1182.622	1195.808	1.567	2.188	0.751	3086.142	3066.969	3085.342	-0.001	
29/08/2016 5:00	2464	13.18	13.1	7.014	7.014	116	7.204	10.54	0.02088872	7.52E-05	1018.552	0.992	83.7	1192.714	1.439	1200.114	1182.262	1195.768	1.249	2.054	0.657	3086.295	3068.806	3085.119	0.004	
29/08/2016 6:00	2465	13.12	13.05	6.352	6.352	120.6	7.873	9.43	5.329171	0.01918501	1018.716	0.995	82.5	1192.538	1.32	1199.798	1182.007	1195.81	1.139	1.83	0.761	3085.466	3062.616	3086.009	-0.002	
29/08/2016 7:00	2466	13.37	13.05	8.39	8.39	124	7.924	12.8	53.4876	0.1925554	1018.961	0.813	83.6	1192.392	2.773	1199.303	1182.312	1195.56	2.479	1.233	3.924	3081.27	3062.15	3083.696	0.016	
29/08/2016 8:00	2467	14.27	13.37	9.23	9.23	114.4	7.289	12.58	103.4595	0.3724544	1019.289	1.245	80.1	1191.926	2.339	1199.934	1182.159	1193.684	1.938	3.299	1.33	3085.329	3063.849	3083.551	0.036	
29/08/2016 9:00	2468	14.64	14.1	7.404	7.404	107.2	6.446	10.84	127.4642	0.4588712	1019.289	1.278	81.6	1191.689	2.649	1199.704	1181.594	1193.77	2.115	3.805	1.451	3086.695	3065.43	3083.5	0.037	
29/08/2016 10:00	2469	14.64	14.42	9.37	9.37	137.17	6.278	13.17	197.4447	0.7108009	1019.617	1.831	78.84	1206.535	4.044	1180.455	1228.533	1210.619	3.979	2.915	4.973	3066.49	3113.786	3104.962	0.064	
29/08/2016 11:00	2470	14.64	14.31	8.26	8.26	100.9	7.882	11.64	242.4914	0.8729689	1019.944	1.642	84.3	1206.314	3.511	1177.11	1230.052	1211.778	2.745	4.581	2.907	3060.653	3120.218	3102.119	0.065	
29/08/2016 12:00	2471	14.35	14.28	8.84	8.84	110.8	11.45	12.84	359.3458	1.293645	1020.229	2.555	79.15	1205.996	4.315	1177.678	1229.12	1211.189	2.881	5.382	2.881	3058.737	3117.766	3100.895	0.109	
29/08/2016 13:00	2472	14.66	14.31	9.08	9.08	105.3	9.06	14.07	330.6411	1.190308	1020.254	2.132	84.1	1202.775	10.58	1178.418	1222.074	1210.832	4.115	11.63	8.33	3070.076	3123.018	3102.84	0.091	
29/08/2016 14:00	2473	14.65	14.37	7.001	7.001	111.6	8.57	12.05	430.1004	1.548361	1020.551	2.622	82.5	1205.227	2.77	1174.266	1230.836	1210.578	2.77	2.823	2.715	3063.025	3123.389	3100.053	0.128	
29/08/2016 15:00	2474	14.64	14.23	6.431	6.431	102.4	14.56	13.07	241.5488	0.8695759	1020.528	3.256	75.62	1205.704	3.19	1174.919	1231.827	1210.367	3.073	3.567	2.89	3052.582	3120.486	3102.965	0.084	
29/08/2016 16:00	2475	14.37	14.23	6.191	6.191	93.2	9.72	8.72	156.3775	0.562959	1020.52	4.12	63.51	1205.261	3.102	1173.867	1231.315	1210.6	2.873	3.741	2.572	3059.809	3123.45	3098.572	0.076	
29/08/2016 17:00	2476	14.63	14.26	6.987	6.987	89.2	10.27	9.56	175.9854	0.6335472	1020.652	4.376	61.8	1205.469	4.072	1232.403	1212.999	1211.299	3.844	4.696	3.593	3054.5	3120.26	3104.175	0.09	
29/08/2016 18:00	2477	14.63	14.17	7.501	7.501	89.2	9.18	10.45	136.9003	0.492841	1020.854	4.238	62.43	1205.506	3.175	1174.131	1231.548	1210.839	3.032	3.639	2.793	3060.7	3129.893	3094.896	0.079	
29/08/2016 19:00	2478	14.19	14.09	6.36	6.36	100.8	13.01	8.86	76.79028	0.276445	1020.986	3.559	68.74	1205.722	2.458	1175.45	1231.831	1209.885	2.208	2.784	2.344	3059.676	3116.227	3101.893	0.042	
29/08/2016 20:00	2479	14.11	13.86	5.289	5.289	110	7.945	7.193	14.95766	0.05384757	1021.091	2.578	77.52	1205.3	1.805	1229.72	1175.84	1229.72	1.548	1.921	1.92	3059.788	3121.082	3100.453	0.008	
29/08/2016 21:00	2480	13.87	13.73	5.268	5.268	105.5	6.339	7.526	0.00280168	1.01E-05	1021.255	1.991	81.8	1205.143	1.203	1176.844	1229.342	1209.244	0.586	1.49	1.334	3060.108	3116.13	3102.552	0.003	
29/08/2016 22:00	2481	13.74	13.63	4.841	4.841	103	4.626	7.389	0	0	1021.582	1.336	89.1	1205.083	2.031	1177.214	1228.595	1209.44	1.425	2.298	2.249	3062.126	3114.801	3102.359	-0.002	
29/08/2016 23:00	2482	13.64	13.55	6.124	6.124	107.9	6.208	8.27	0	0	1021.582	1.02	92.9	1205.348	2.243	1177.765	1228.569	1209.711	1.844	2.476	2.476	3063.027	3118.668	3104.568	-0.003	
30/08/2016 0:00	2483	13.57	13.47	6.029	6.029	102.2	7.044	7.742	0	0	1021.582	0.863	94.7	1205.062	2.486	1178.226	1227.822	1209.137	2.24	2.98	2.156	3060.062	3116.832	3100.917	-0.004	
30/08/2016 1:00	2484	13.49	13.4	4.732	4.732	85.6	7.85	7.546	0	0	1021.746	0.772	94.6	1205.092	1.885	1178.436	1227.579	1209.26	1.108	1.912	1.912	3063.742	3112.244	3099.525	-0.005	
30/08/2016 2:00	2485	13.42	13.34	5.643	5.643	80.3	5.41	7.781	0	0	1021.746	0.718	94.5	1205.081	2.502	1178.766	1227.697	1208.78	2.645	2.521	2.329	3061.833	3114.659	3102.034	-0.004	
30/08/2016 3:00	2486	13.36	13.28	6.225	6.225	85.5	7.288	8.15	0	0	1021.746	0.791	92.9	1205.464	2.112	1179.344	1228.727	1208.323	1.636	2.433						

Appendix B
2016 Evaporation Pan Data

Evaporation Pan Field Data		<u>Quadrant (mm)</u>				Comments
Date	Time	A	B	C	D	Water Added or Removed? Debris present/removed, sediment, algae, ice, leaks/damage, oil film, animals, high winds, hail, etc.
21-May-2016	11:00	200	200	200	200.00	Pan filled
22-May-2016	10:00	195	195	195	195.00	
23-May-2016	11:00	200	200	200	200.00	
24-May-2016						Could not sample because pan was frozen and then shifted
25-May-2016						
26-May-2016						
27-May-2016						
28-May-2016						
29-May-2016						
30-May-2016						
31-May-2016						
1-Jun-2016						
2-Jun-2016	15:00	205	200	200	200	Pan emptied, moved, levelled and filled
3-Jun-2016	11:00	205	195	200	200	
4-Jun-2016	9:45	200	190	195	195	Unknown volume of water added to pan
5-Jun-2016	15:15	192	187	166	189	Windy, difficult to obtain accurate readings
6-Jun-2016	15:50	195	185	185	190	Windy, difficult to obtain accurate readings
7-Jun-2016	13:25	189	183	183	186	Light rain and wind
8-Jun-2016	missed	191	183	185	186	
9-Jun-2016	8:53	187	180	183	184	Some sediment in pan and bugs
10-Jun-2016	11:18	179	174	173	176	windy, some sediment, bugs, and pollen in pan
11-Jun-2016	9:00	169	163	164	167	Removed bugs and added 22.5L of water. Took second measurements
11-Jun-2016	9:30	190	182	183	184	
12-Jun-2016	13:20	183	176	177	180	
13-Jun-2016						No readings today, scattered showers in evening and overnight
14-Jun-2016	missed	177	169	170	174	
15-Jun-2016	20:33	176	168	169	172	Added 36 litres of water, took second set of readings
15-Jun-2016	20:45	210	201	202	206	
16-Jun-2016	14:54	204	198	201	202	windy
17-Jun-2016	Missed					
18-Jun-2016	Too windy to get a reading					

Appendix B
2016 Evaporation Pan Data

Evaporation Pan Field Data		Quadrant (mm)				Comments
Date	Time	A	B	C	D	Water Added or Removed? Debris present/removed, sediment, algae, ice, leaks/damage, oil film, animals, high winds, hail, etc.
19-Jun-2016	16:04	189	177	177	180	
20-Jun-2016	15:00	175	167	167	171	Added 28L to bring A = 198, B = 190, C = 190, D = 193
21-Jun-2016	16:00	194	186	186	189	
22-Jun-2016	16:30	191	183	183	186	
23-Jun-2016	Raining					Was raining heavily all afternoon, no reading
24-Jun-2016	Raining					
25-Jun-2016	14:00	184	176	176	179	windy
26-Jun-2016	windy					
27-Jun-2016	missed	180	164	164	168	
28-Jun-2016	missed	173	157	157	161	Added 40L to bring A=197, B=191, C=191, D=193
29-Jun-2016	16:45	193	184	185	189	light rain, removed bugs, algae and sediment present
30-Jun-2016	11:14	193	184	184	188	Light rain and wind
1-Jul-2016	missed	187	182	182	184	removed bugs, windy, sediment on bottom
2-Jul-2016	11:24	187	178		181	sediment on bottom of pan
3-Jul-2016	10:12	182	173	175	178	Added 24L at 10:29hr: A = 202, B = 196, C = 197, D = 198 . Breezy, sediment on bottom, some algae present
4-Jul-2016	11:45	198	190	192	194	windy
5-Jul-2016	15:00	208	198	199	203	Some sediment in pan and bugs. Rained in the last 24 hrs.
6-Jul-2016						no reading today, heavy rain in the morning
7-Jul-2016	11:45	207	197	198	203	sediment on bottom of pan
8-Jul-2016	18:30	204	193	194	197	removed bugs, water levels are the same, breezy
9-Jul-2016	9:20	202	193	195	196	breezy, sediment on bottom, algae growing
10-Jul-2016	13:45	211	201	202	206	Removed 2 L of water: A=208, B=201, C=198, D=204
11-Jul-2016	9:00	207	198	200	202	
12-Jul-2016	9:30	206	198	198	201	12 degrees and cloudy
13-Jul-2016	11:30	205	197	198	201	14 degrees and sunny with patchy clouds
14-Jul-2016	20:37	210	200	200	204	minus 16 litres of water
15-Jul-2016	21:24	207	198	198	203	11 degrees at sunset.
16-Jul-2016	21.35	202	193	193	198	3, 4
17-Jul-2016	17.41	204	195	195	200	1, 3
18-Jul-2016	19:45	195	193	190	190	2, 1

Appendix B
2016 Evaporation Pan Data

Evaporation Pan Field Data		Quadrant (mm)				Comments
Date	Time	A	B	C	D	Water Added or Removed? Debris present/removed, sediment, algae, ice, leaks/damage, oil film, animals, high winds, hail, etc.
19-Jul-2016						No reading
20-Jul-2016	21:10	195	190	190	190	1
21-Jul-2016	21:00	200	195	193	195	6
22-Jul-2016	10:21pm	200	195	193	195	6 /took water out bring it back 200
23-Jul-2016	10:39	200	200	195	200	
24-Jul-2016						No reading
25-Jul-2016	21:30	204	195	194	198	installed snow fence around evap pan
26-Jul-2016						No reading
27-Jul-2016						No reading
28-Jul-2016						No reading
29-Jul-2016						No reading
30-Jul-2016						No reading
31-Jul-2016	14:00	198	191	191	194	
1-Aug-2016	15:00	195	186	186	190	
2-Aug-2016	16:00	191	182	182	186	
3-Aug-2016						Not done - heavy thunder storms all afternoon
4-Aug-2016	11:00	191	182	182	186	
5-Aug-2016	14:00	191	182	182	186	
6-Aug-2016	16:40	186	176	177	182	Removed bugs - measurements the same. Light wind
7-Aug-2016	14:40	186	174	175	179	Added 16 L of water at 14:45 A=199, B=188, C=187, & D=192
8-Aug-2016	9:18	195	187	186	189	Windy, difficult to obtain accurate readings
9-Aug-2016	14:00	196	185	185	190	windy
10-Aug-2016	10:30	190	181	181	185	
11-Aug-2016	14:00	192	183	183	187	
12-Aug-2016	20:19	190	178	178	185	WINDY
13-Aug-2016	15:11	195	185	185	190	3w, ADDED 12l
14-Aug-2016	11:22	192	184	184	188	2w
15-Aug-2016	10:06	191	183	183	187	2w
16-Aug-2016	16:50	184	176	175	178	4w, Added 19L at 17:07 A=200, B=192, C=191, D=195
17-Aug-2016	19:54	200	191	190	194	light breeze, clear skies
18-Aug-2016	13:00	198	188	187	192	overcast, windy

Appendix B
2016 Evaporation Pan Data

Evaporation Pan Field Data		Quadrant (mm)				Comments
Date	Time	A	B	C	D	Water Added or Removed? Debris present/removed, sediment, algae, ice, leaks/damage, oil film, animals, high winds, hail, etc.
19-Aug-2016	16:25	206	197	197	200	Rained at night. Removed 8L @16:30. A=200, B, 190, C=189, D=195
20-Aug-2016	17:48	223	210	210	214	2. Removed 24L A=200, B=190, C=189, D=194
21-Aug-2016	14:00	200	190	191	195	light rain, breezy
22-Aug-2016	9:31	198	187	188	191	2w, algae and sediment on bottom of the pan
23-Aug-2016	8:45	193	183	185	187	1, 2w
24-Aug-2016	11:45	194	183	183	194	1
25-Aug-2016						No reading
26-Aug-2016						heavy rain no readings
27-Aug-2016						No reading
28-Aug-2016						No reading
29-Aug-2016						No reading
30-Aug-2016	9:25	238	231	232	234	Removed 48L @ 09:45: A=200, B=191, C=190, D=194
31-Aug-2016	10:52	200	190	189	192	
1-Sep-2016	9:55	204	194	193	197	Removed 8L @ 10:00: A=200, B=190, C=189, D=192
2-Sep-2016	10:10	197	187	188	191	light rain
3-Sep-2016	9:10	200	192	192	196	cloudy
4-Sep-2016	9:50	203	194	195	197	Removed 4L @ 10:10: A=200, B=191, C=190, D=194
5-Sep-2016	9:00					Pan was removed
6-Sep-2016						
7-Sep-2016						
8-Sep-2016						
9-Sep-2016						
10-Sep-2016						
11-Sep-2016						
12-Sep-2016						
13-Sep-2016						
14-Sep-2016						
15-Sep-2016						
16-Sep-2016						
17-Sep-2016						
18-Sep-2016						

Appendix B
2016 Evaporation Pan Data

Evaporation Pan Field Data

Quadrant (mm)

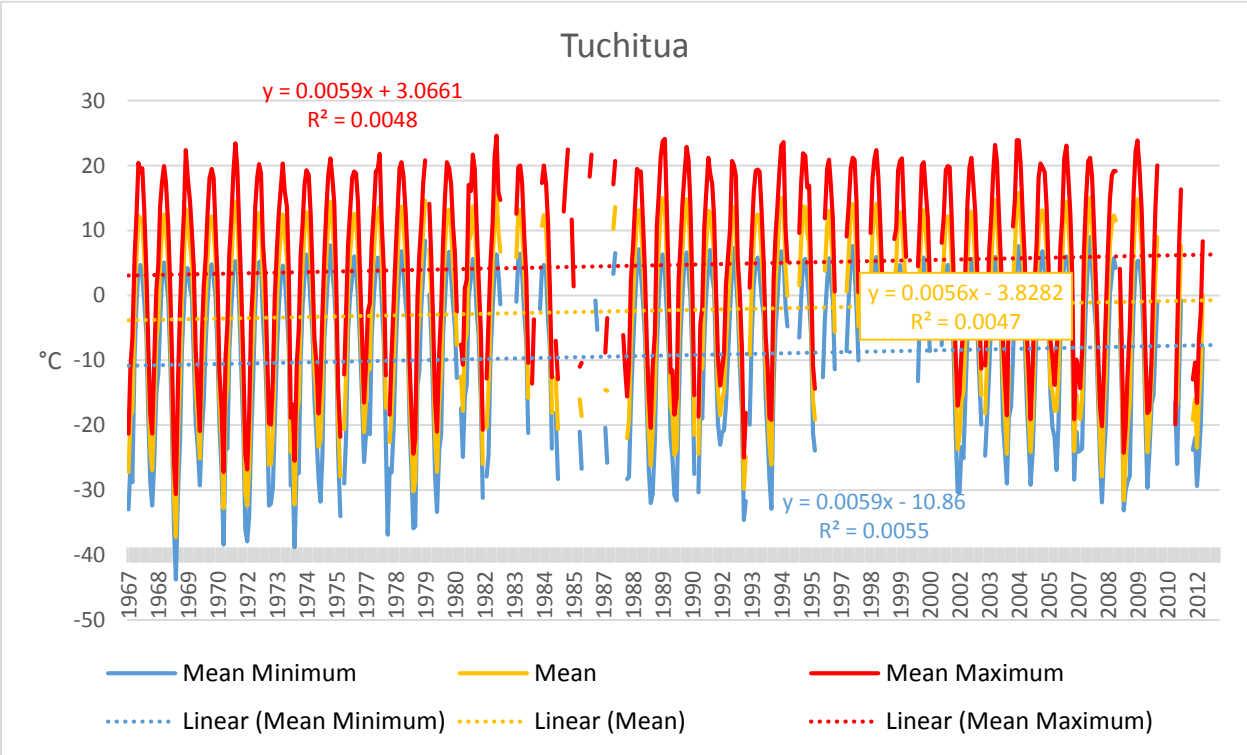
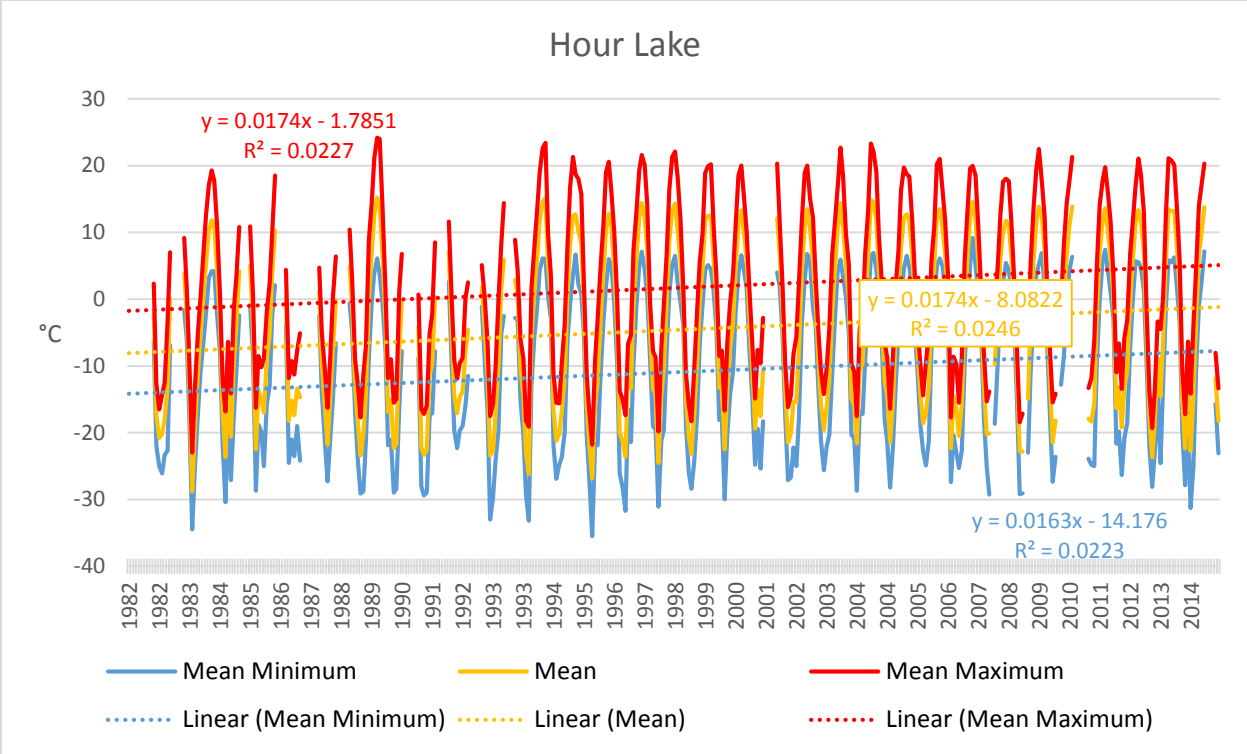
Comments

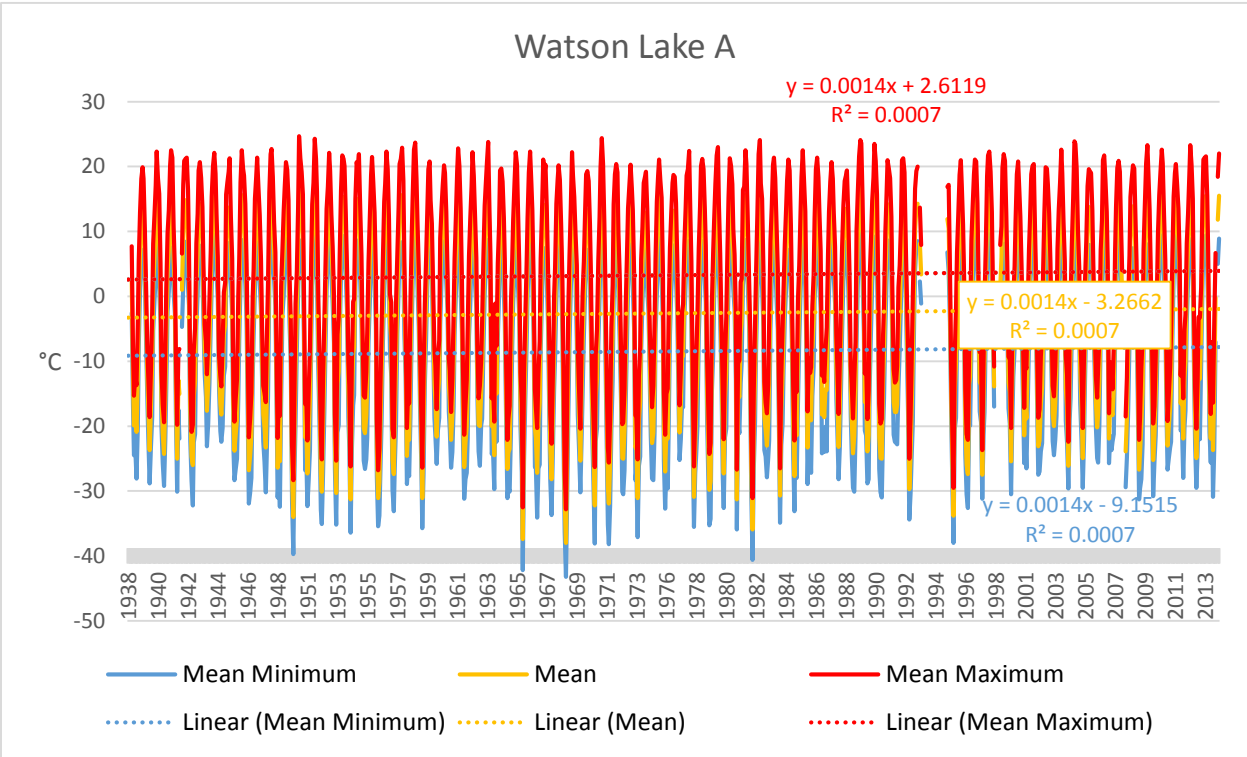
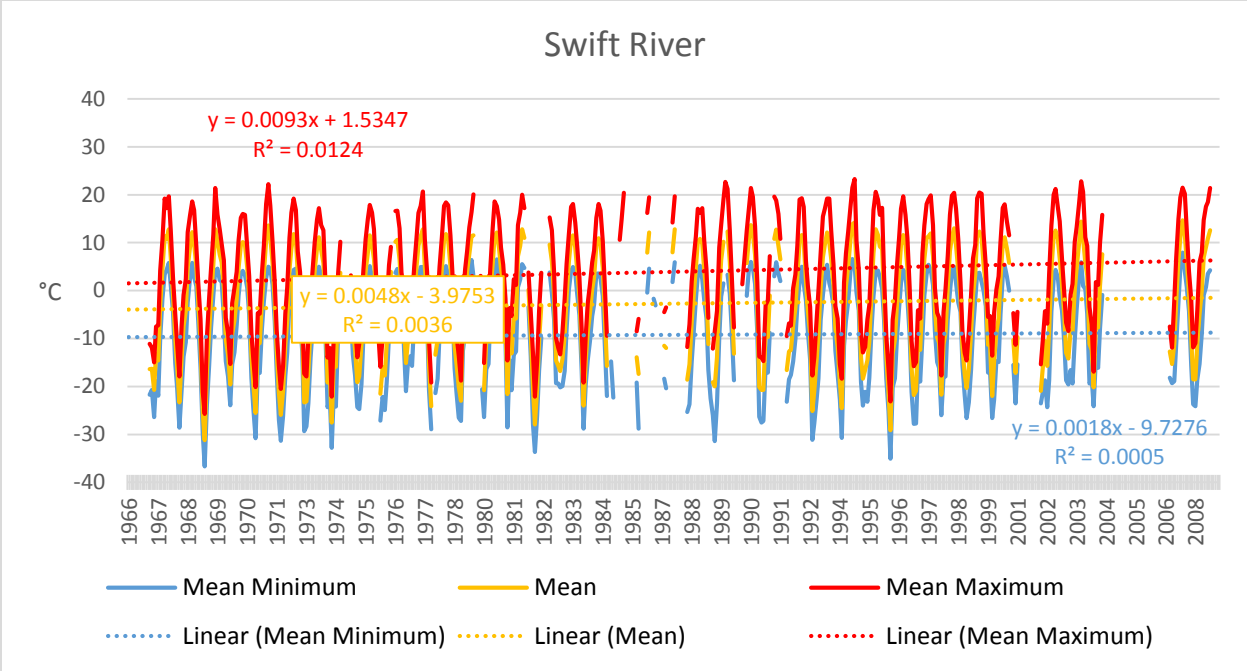
Water Added or Removed? Debris present/removed, sediment, algae, ice, leaks/damage, oil film, animals, high winds, hail, etc.

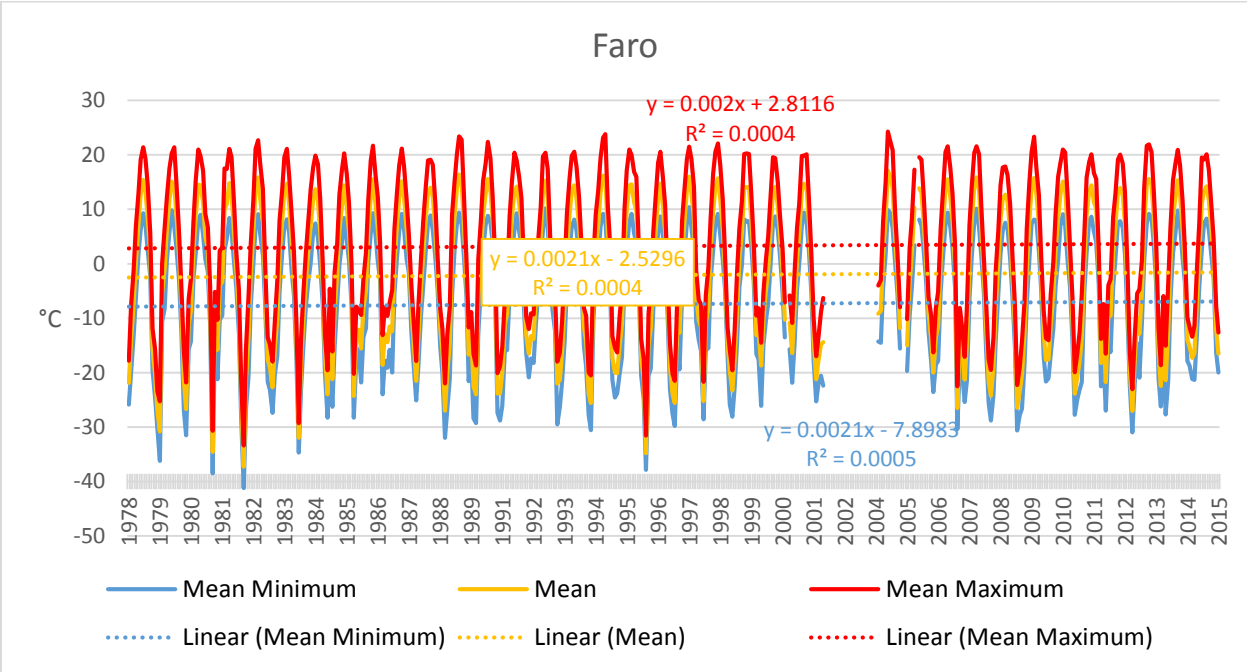
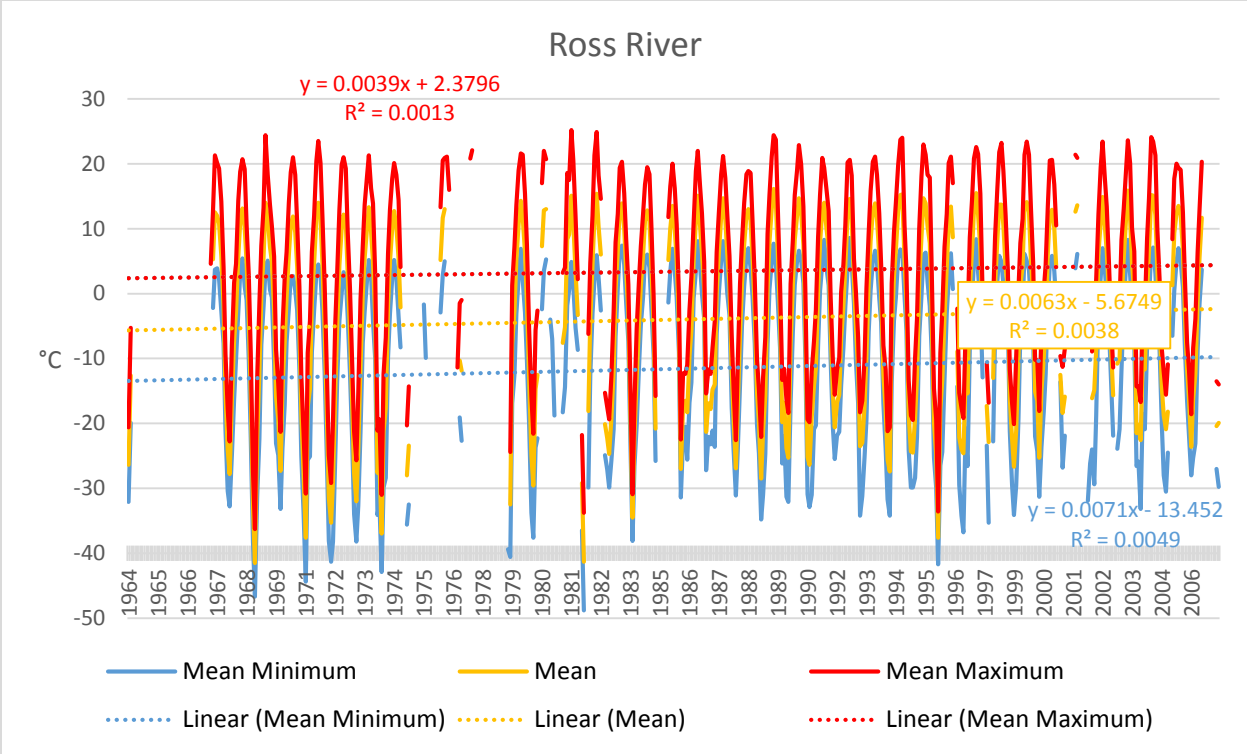
Date	Time	A	B	C	D	Comments
19-Sep-2016						
20-Sep-2016						
21-Sep-2016						
22-Sep-2016						
23-Sep-2016						
24-Sep-2016						
25-Sep-2016						
26-Sep-2016						
27-Sep-2016						
28-Sep-2016						
29-Sep-2016						
30-Sep-2016						

APPENDIX C

REGIONAL TEMPERATURE TRENDS

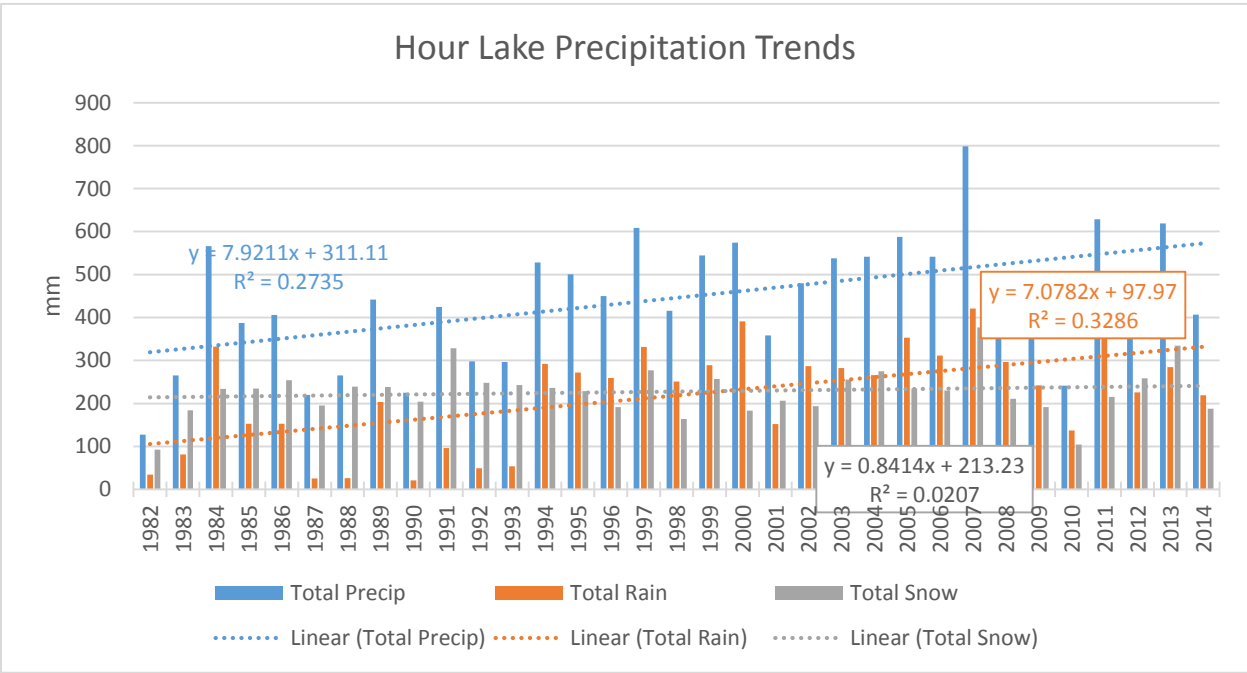
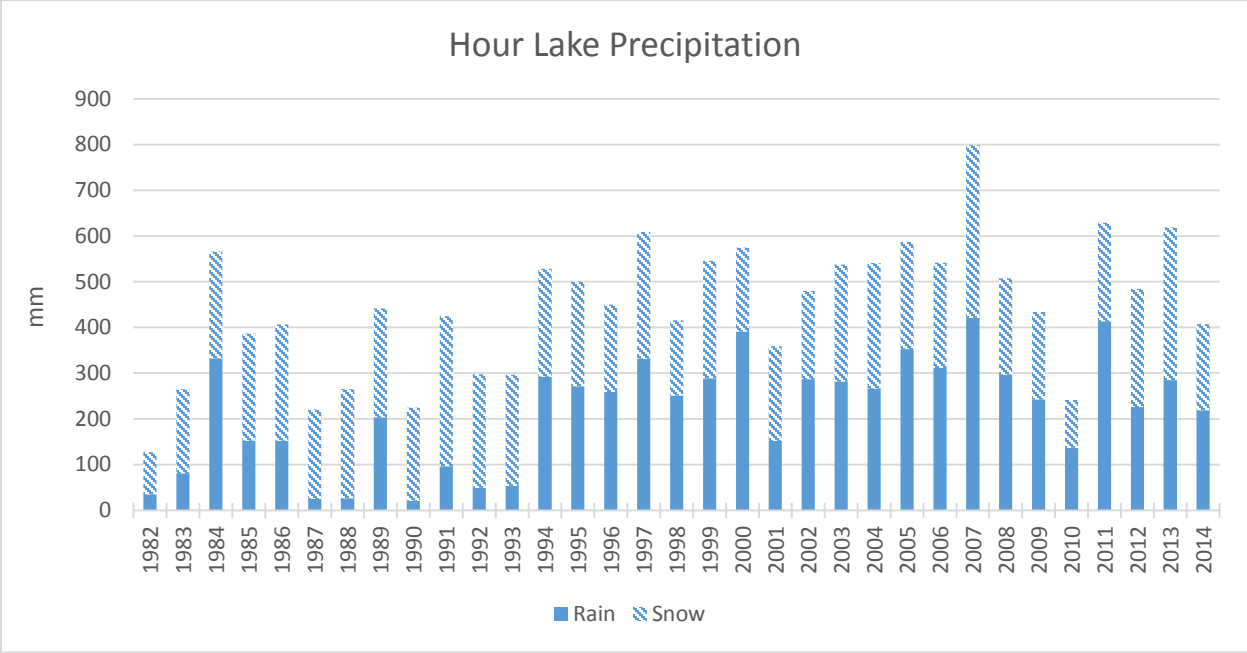


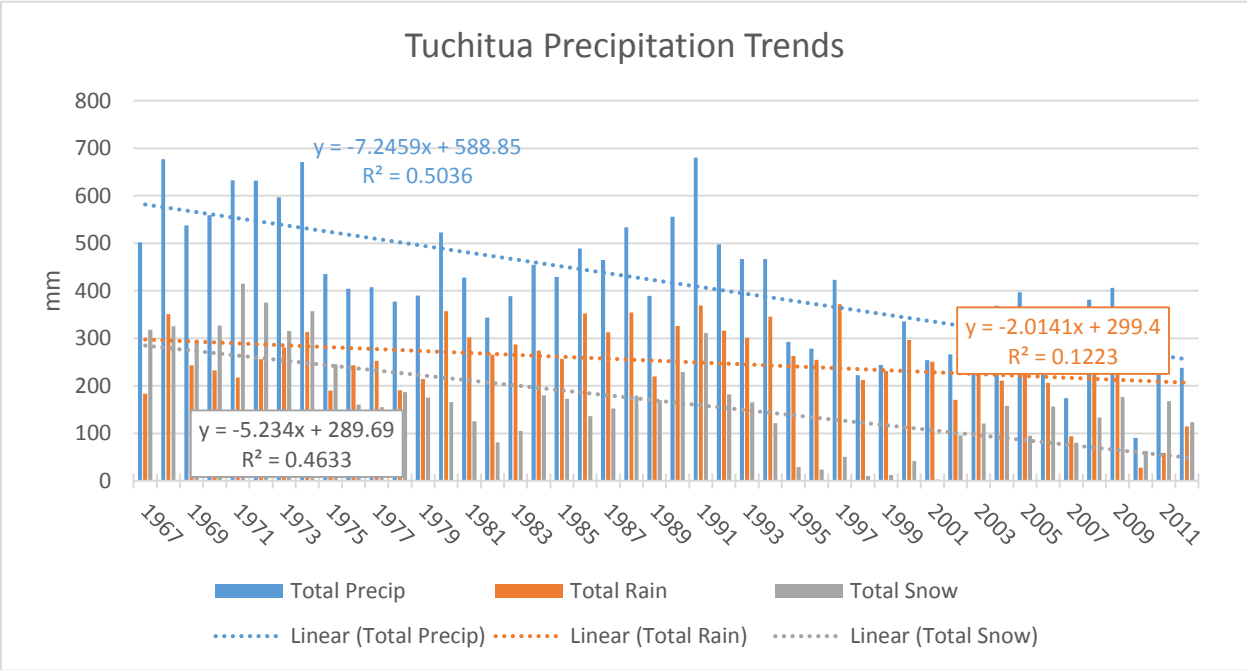
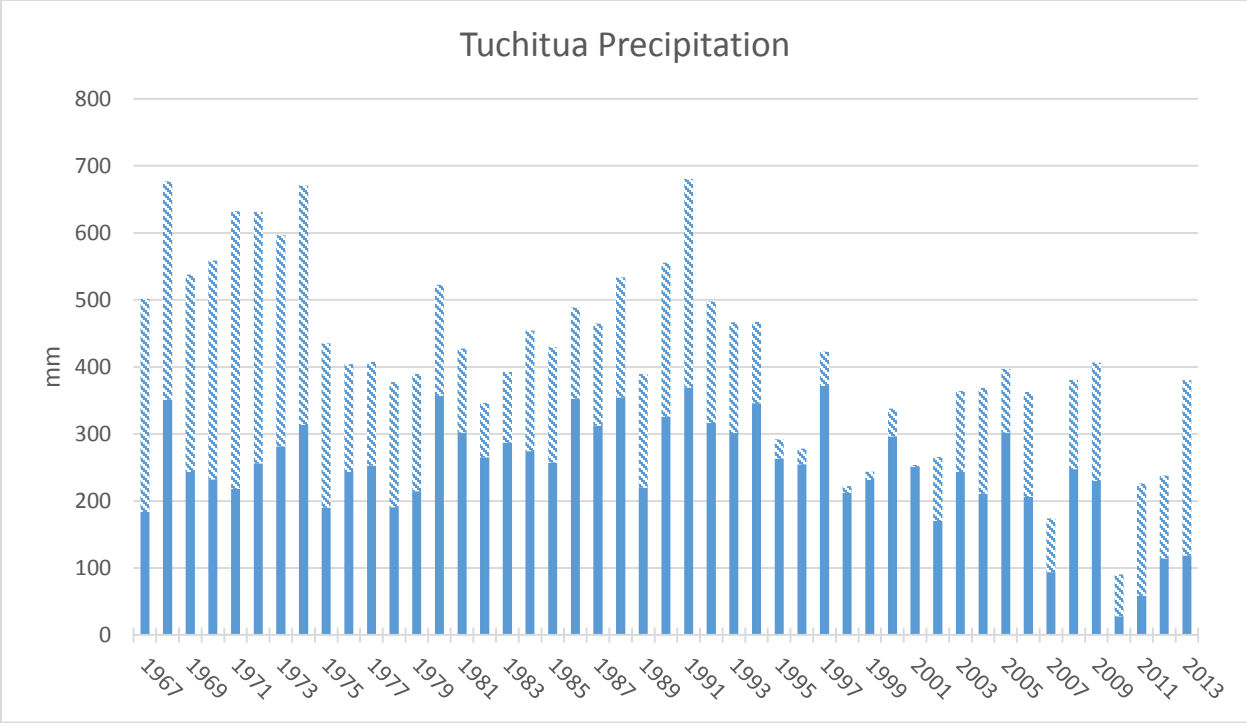


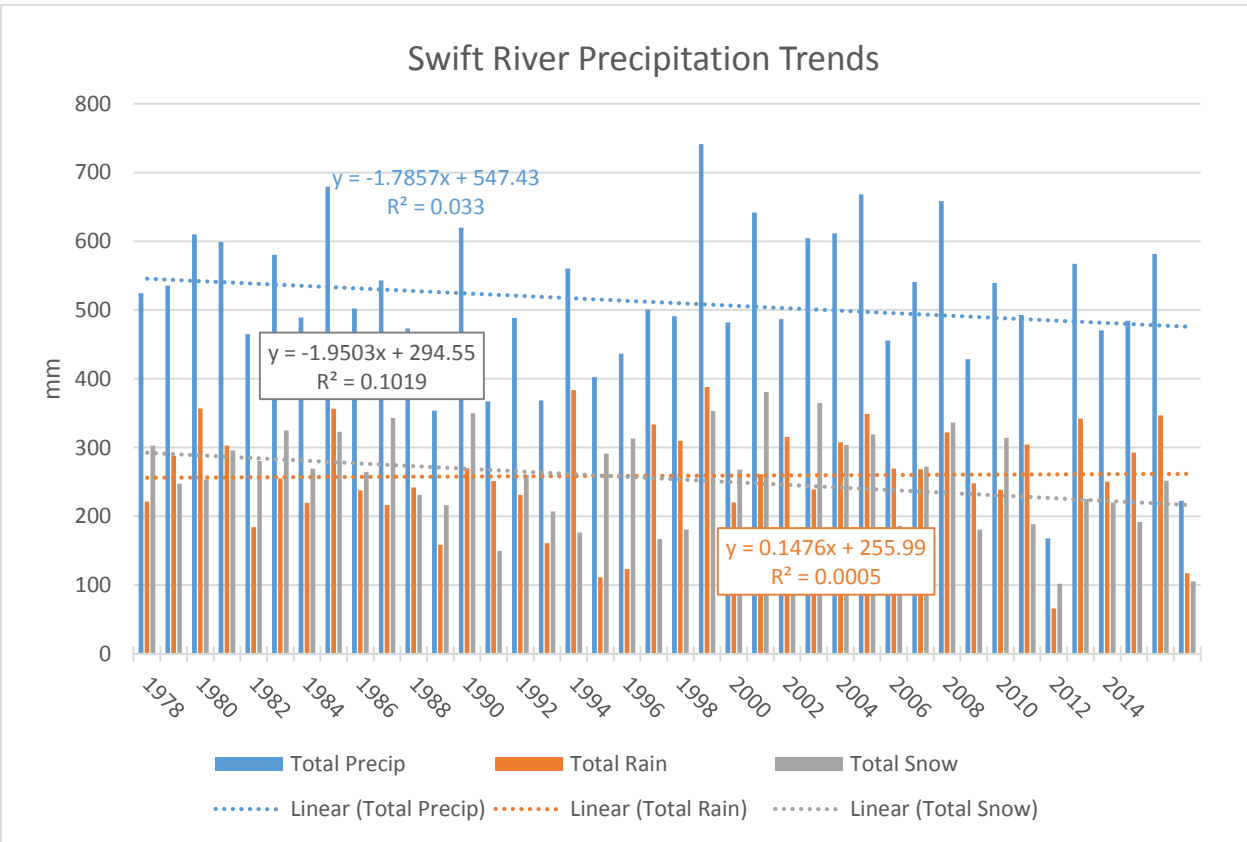
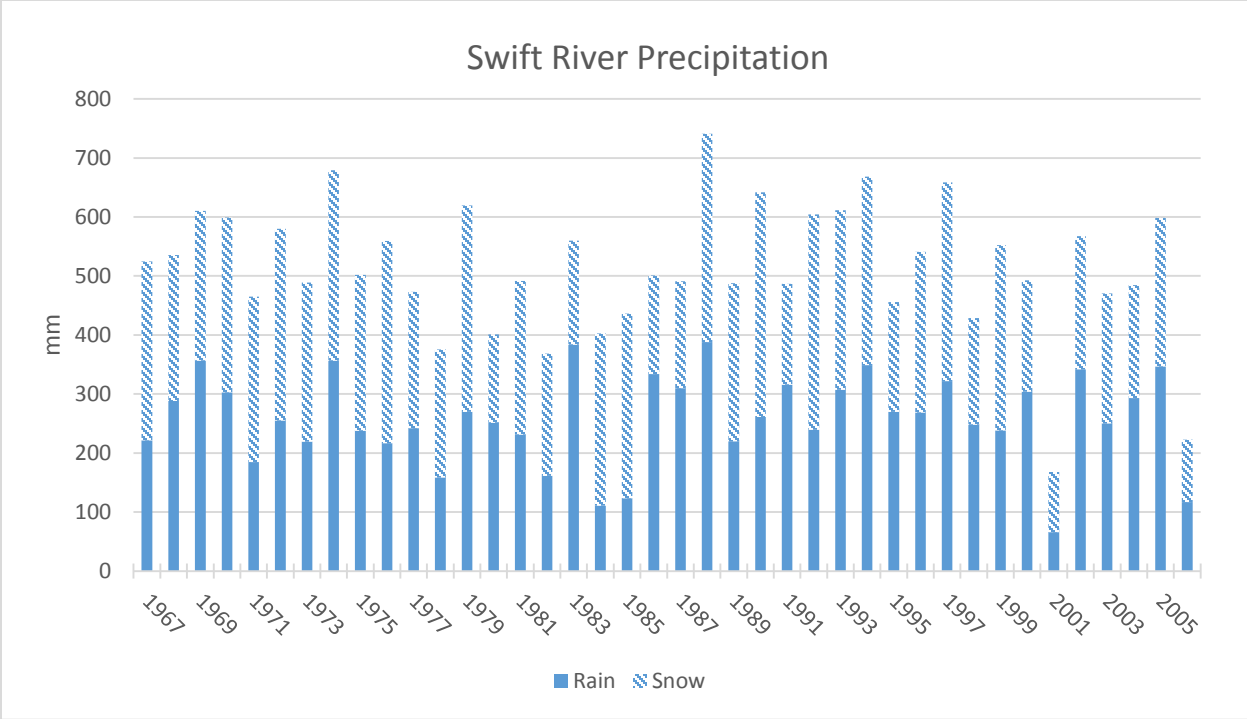


APPENDIX D

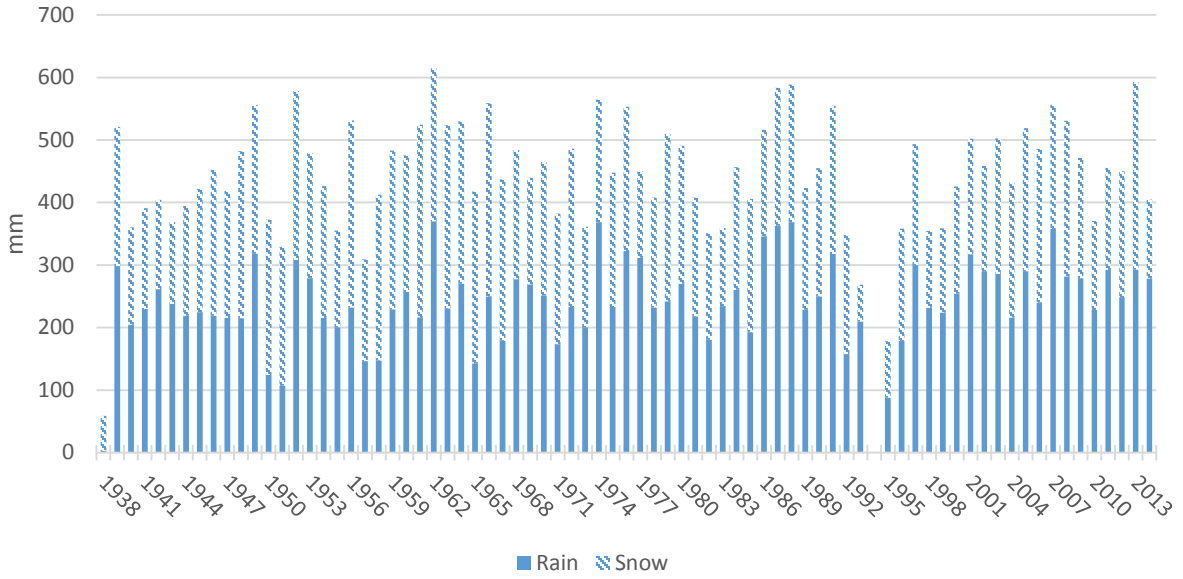
REGIONAL PRECIPITATION TRENDS



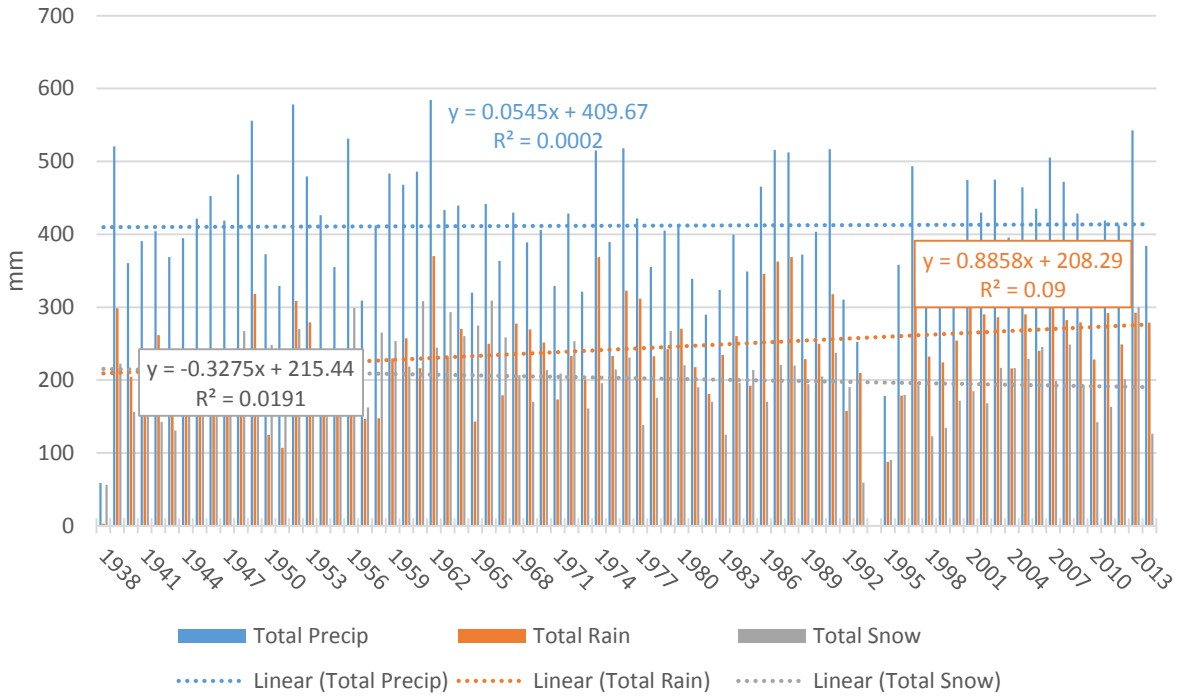


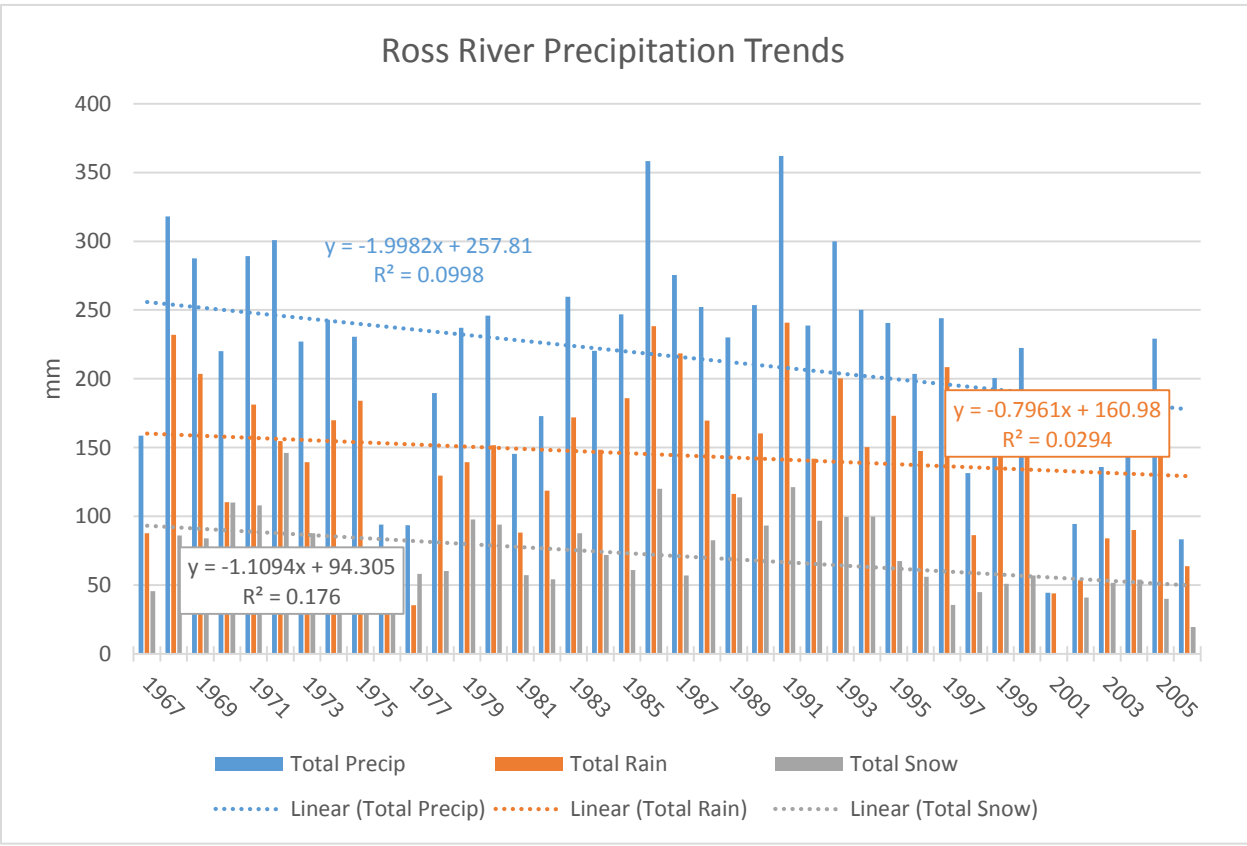
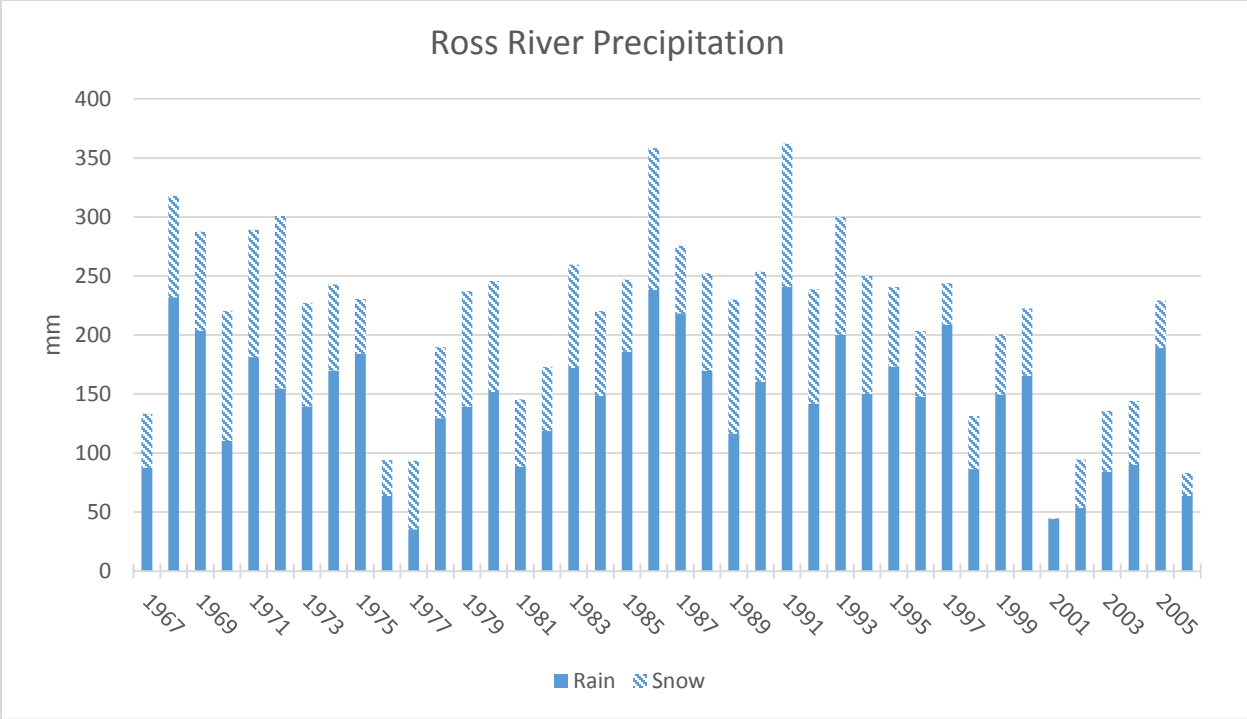


Watson Lake A Precipitation

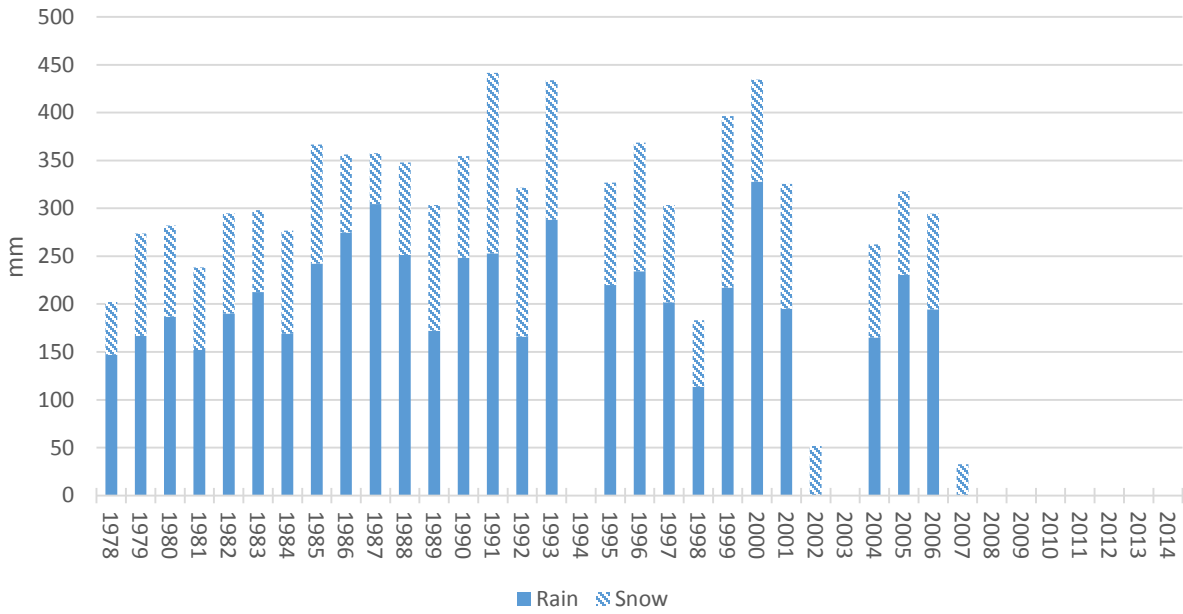


Watson Lake A Precipitation Trends

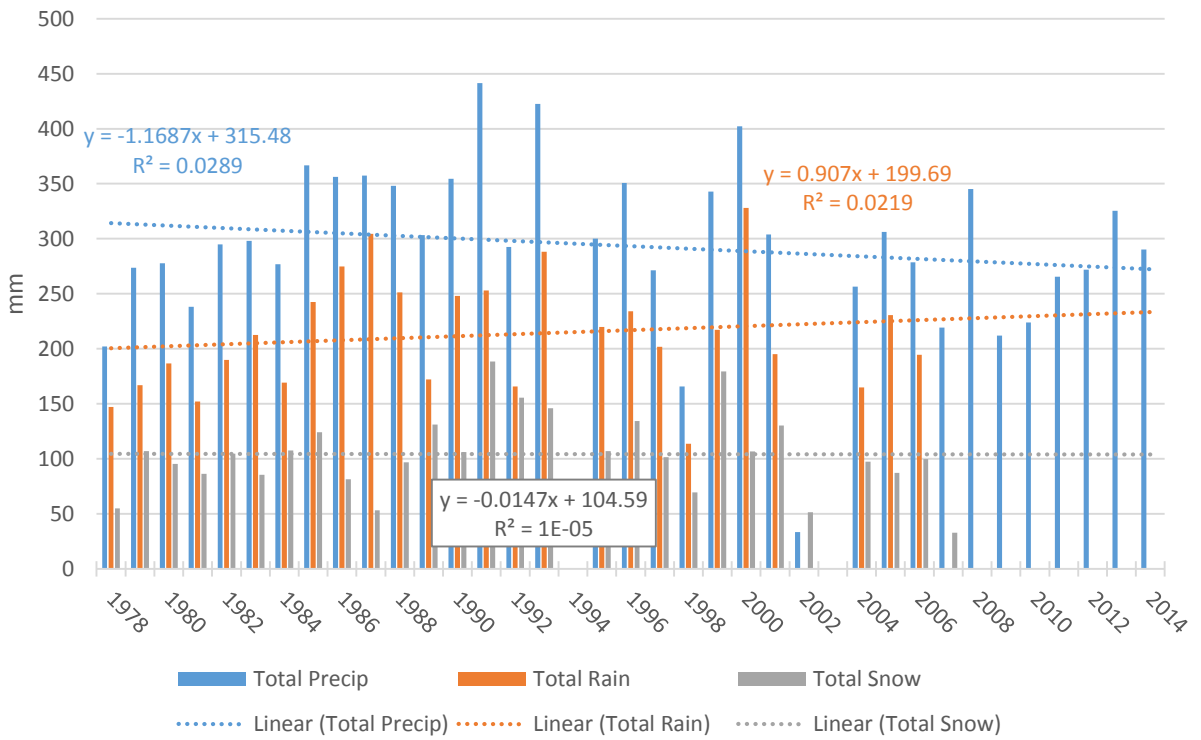




Faro A Precipitation



Faro A Precipitation Trends



APPENDIX E

APPENDIX 3.2, INITIAL ENVIRONMENTAL EVALUATION (COMINCO LTD., 1996)

APPENDIX 3.2a
RUNOFF CHARACTERIZATION



APPENDIX 3.2a

RUNOFF CHARACTERIZATION

1. Regional Analysis

The runoff in the project area was determined from a regional analysis which utilized hydrometric station records as shown on Figure 3.2.1. This analysis was based on Water Survey of Canada station records within a geographical block defined by: Latitudes 60° to 63°N and Longitudes 128° to 134°W (Kudz Ze Kayah is near 61°30'N, 130°35'W). The HYDAT software package was utilized for this analysis, with data from CD-ROM Version 4.93. A total of 16 WSC stations were included in the analysis. In addition, data collected by DIAND was also included, though this consisted of only two stations which had seasonal records only. The average monthly flow distribution from the WSC stations was used to extend the seasonal DIAND records in order to obtain annual runoff totals. In each case, the mean monthly flow for each station was translated into mean monthly runoff depth in mm. Results are listed in Table 3.2A.1.

The available hydrometric records were reviewed and a number of the smaller catchments were selected for defining the mean runoff in the project area. Also chosen were two of the larger catchments near the project site. While the Frances River catchment is much larger than any of the others, it was included as the project area is tributary to this watercourse. The mean annual total runoff at Kudz Ze Kayah was assumed to be equal to the average runoff derived from these stations, namely 414 mm, see Table 3.2A.2. An attempt was made to correlate the mean annual runoff from these stations with the median basin elevation, however, this failed to produce a meaningful correlation. The R^2 from a linear regression analysis was determined to be only 0.225 indicating an exceedingly weak relationship. It is likely that local conditions with respect to basin location and aspect play a far more important role than basin elevation in defining runoff. This would be especially true for the very small catchments which can have high or low runoff depending on which side of a mountain they are located on.

The monthly runoff distribution was derived by averaging the runoff distributions obtained from the three smallest catchments for which complete annual records were available. These included King Creek, Rose Creek and Sidney Creek. Elevation ranges and median elevation for each of these catchments are listed below:

Basin	Drainage area km ²	Annual runoff mm	Elevation range m	Median basin elevation m
King Creek	13.7	290	930 - 1860	1340
Rose Creek	208	358	1040 - 1980	1420
Sidney Creek	372	355	750 - 1890	1260

In comparison, the catchment above the tailings dam has an elevation range of 1370 to 2040 m with a median elevation of 1505 m. While the mean runoff distribution derived from the above catchments would be sufficient to represent the natural drainage below the tailings impoundment, it was concluded that some adjustment would be necessary to reflect the higher elevations above the impoundment. Rose Creek is the highest of the three natural catchments and examination of the mean monthly flows for this station (Table 3.2A.1) revealed considerably lower flow than the other stations during the winter months. It was concluded that the runoff for this upper catchment should be modified as follows:

- January to April: reduce flows by one-half
- May to September: increase flows by 8.4%
- October to December: reduce flows by one-third

The above adjustments retard winter flows and concentrate more of the runoff into the freshet. Results of this analysis, including the estimated runoff distribution at the Kudz Ze Kayah site, are given in Table 3.2A.3.

The mean annual precipitation at Kudz Ze Kayah is estimated to be 655 mm so 414 mm of runoff is 63.2% of total precipitation. This is in agreement with data obtained from the Hydrological Atlas of Canada.

2. Estimated Runoff From Mine Sub-catchment Areas

The mean monthly runoff for the project area was then used to obtain corresponding catchment runoff from each of the subcatchment areas surrounding the mine and tailings impoundment. This analysis was conducted using the Quattro Pro Ver 5.0 spreadsheet program. Results are given in a spreadsheet table (see Addendum following tables) which includes mean monthly flows in m³/s for the individual sub-catchments as well as for the cumulative catchment area at various monitoring points.

3. Annual Runoff - Frequency Analysis

The variation in annual runoff was estimated based on an analysis of the long-term streamflow records in the project area. The best long-term records consist of Ross River at Ross River (09BA001) and Liard River at Upper Crossing (10AA001), with 30 and 33 years

of annual means, respectively. Frequency analysis of the annual mean flows for these stations was conducted using Environment Canada's Consolidated Frequency Analysis (CFA) software, Version 3.1. The ratio of the frequency estimates to the mean annual flow was calculated, as listed in Table 3.2A.4. The average of the two ratios was adopted for use at the Kudz Ze Kayah site.

In terms of low flows, Table 3.2A.4 is inadequate as the tabulated values of return period are limited and do not correspond with required values. To overcome this problem, the frequency estimates corresponding to the average Kudz Ze Kayah runoff ratios were plotted on probability paper and the required return periods were read off the graph. Results are listed in Table 3.2A.5.

The flow ratios listed in Table 3.2A.5 were then used to obtain estimates of runoff from the project catchment areas by modifying the spreadsheet table (see Addendum). Results are included for 1 in 10-year high and low runoff years as well as 1 in 100-year high and low runoff years.

Drainage areas listed in the spreadsheet tables assume the diversion of some minor creeks in the mine site catchment (see Appendix 3.1, Figure 3.1.3). Fault Creek and the adjacent tributary to the north, are assumed to be diverted into South Creek and, thus, away from the mine pit. Likewise, an area on the uphill side of the northwest dump was assumed to be diverted and spilled at the tailings dam thereby reducing the area draining into the northwest dump which will require treatment. In addition, the area above the access road between the tailings dam and the mill site was also assumed to be diverted and spilled at the tailings dam, reducing the catchment into the tailings impoundment. The diversions toward the tailings dam were assumed to be only 50% effective as seepage would bypass the diversion channel.

4. Low Flow Analysis

4.1 Low Monthly Flow Analysis

A frequency analysis of low monthly flows was conducted in order to estimate the 25-year low monthly flow during the operational period of the tailings impoundment releases, which covers the May to October period. It was determined that the minimum monthly runoff would occur in October. An analysis was therefore conducted, using records from several stations in the area, to determine the relationship between the 25-year low flow for October and the mean flow. Results of this monthly frequency analysis are listed in Table 3.2A.6. It is evident from these tabulated results, that the ratio between the 25-year low monthly flow and the mean monthly flow, for October, is relatively constant, though a slight increase in the ratio with drainage area is likely. Adopted values used for the project area are as follows:

- Drainage Area = 16 km²
October 25-year low flow = 0.49 x October mean flow
- Drainage Area = 187 km²

October 25-year low flow = 0.51 x October mean flow

The 25-year low monthly flow, during the operational period of May to October, can be used as an approximation of the 10-year seven day low flow (Down Valley Tailings Impoundment Decommissioning Plan, Faro, Yukon, 1991, Curragh Resources).

4.2 Normal Variations in Monthly Flows

An analysis was carried out to determine the normal variations in monthly flows for the winter months of February, March and April. Flow data for King Creek (1976-1988), Rose Creek (1968-1969) and Sidney Creek (1982-1993) was analyzed to determine the average ratio between the lowest flow in a month and the mean flow in that month. Results are summarized below:

Stream	Average Ratio of Minimum Daily to Mean Monthly Flow		
	February	March	April
King Creek	0.876	0.845	0.836
Rose Creek*	0.979	0.993	0.844
Sidney Creek	0.904	0.915	0.817
Average (omit *)	0.890	0.880	0.827

The Rose Creek results were subsequently dropped from the analysis as being too short. Expressed as a percentage, the minimum daily flows for February, March and April are, on average, equal to 89%, 88% and 83% of the monthly flows, respectively.

4.3 Annual 10-Year 7-Day Low Flows

An analysis of annual 7-day low flows was conducted for four streams which had 10 or more years of data which is the accepted minimum requirement for frequency analysis. The Consolidated Frequency Analysis computer program (Version 3.1) was utilized in the analysis. The frequency estimates derived from this program were plotted on probability graph paper in order to interpolate the 10-year return period low flow estimates. Results are given below.

Stream	Drainage Area		Record m ³ /s	10-year 7-day Low Flow l/s/km ²
	km ²	years		
King Creek	13.7	13	0.008	0.58
Sidney Creek	372	12	0.43	1.16
Tom Creek	435	19	0.19	0.44
South MacMillan River	997	19	0.55	0.55

The 10-year 7-day low flows were relatively constant, on a unit runoff basis, except for the result for Sidney Creek which appeared to be excessively high and was therefore omitted. The average 10-year 7-day low flow for the other three streams is 0.52 l/s/km² on a unit runoff basis.

4.4 10-Year 7-Day Low Flows for May, June, July, August and September

The daily flow records for the four streams listed in Section 4.3 were exported from the HYDAT CD-ROM in Lotus format and imported into Quattro Pro for analysis. Monthly 7-day low flows were extracted from the data and subsequently entered into the CFA program for frequency analysis. These estimates were subsequently plotted on probability paper in order to interpolate the 10-year 7-day low flows. Results of this analysis are listed below.

Stream	Drainage Area km ²	Month	10-year 7-day Low Flow	
			m ³ /s	l/s/km ²
King Creek	13.7	May	0.015	1.10
		June	0.166	12.1
		July	0.093	6.79
		Aug	0.068	4.96
		Sep	0.054	3.94
Sidney Creek	372	May	0.600	1.61
		June	6.40	17.2
		July	2.38	6.40
		Aug	1.69	4.54
		Sep	2.08	5.59
Tom Creek	435	May	0.800	1.84
		June	2.30	5.29
		July	1.56	3.59
		Aug	1.12	2.57
		Sep	1.30	2.99
South MacMillan River 997		May	1.10	1.10
		June	44.0	44.1
		July	25.8	25.9
		Aug	13.8	13.8
		Sep	9.55	9.58

Monthly estimates of 10-year 7-day low flows were determined by averaging the above results as listed below:

- 10-year 7-day low flow for May = 1.41 l/s/km²
- 10-year 7-day low flow for June = 19.7 l/s/km²
- 10-year 7-day low flow for July = 10.7 l/s/km²
- 10-year 7-day low flow for Aug = 6.47 l/s/km²
- 10-year 7-day low flow for Sep = 5.53 l/s/km²

The above low flow unit runoff estimates may be factored by drainage area to obtain low flow estimates in the mine area.

5. Site Data - Hydrometric Station Installations

Evaluation of the runoff characteristics for Kudz Ze Kayah also included the collection and analysis of site specific hydrologic data. Installation of these hydrometric stations was conducted by Via-Sat Data Systems. The following equipment was installed:

- Two automated stage recorders: pressure transducers and data loggers were employed to collect a continuous record of stage. Stage was recorded every 15 minutes, and upon completion of a stage-discharge curve, a continuous record of discharge was produced. The locations of these stations were Geona Creek and Lower Finlayson Creek.
- Four staff gauge sites: staff gauges were installed at Fault Creek, South Creek, East Creek and Upper Finlayson Creek. Stage was read manually from the staff gauge on a regular basis, and upon completion of a stage-discharge curve, a discharge value was calculated for each stage reading collected.

The locations of these data collection sites are shown in Appendix 3.1 on Figure 3.1.3. Sites were chosen on the basis of preliminary information with respect to the location of potential tailings storage areas. Drainage areas are listed below for each hydrometric station shown on the above figure.

Catchment	Drainage Area km ²
South Creek	9.82
Fault Creek	1.94
Geona Creek	26.2
East Creek	73.4
Upper Finlayson Creek	153
Lower Finlayson Creek	191

6. Site Data - Hydrometric Station Operation

Installation of the hydrologic monitoring equipment was initiated in early April, however, some sites were still frozen. Some of the staff gauges were installed between April 10 and 12. Reliable data was collected a few weeks later when the water surface had thawed sufficiently. In early April, the only creek which had thawed enough to allow discharge measurements to be made was Geona Creek. All other discharge measurements for the hydrologic monitoring stations were collected between May 3 and 10, on June 28, between July 1 and 18, between August 4 and 7, on August 20, and between August 28 and September 3. Each station had between 5 and 7 simultaneous stage and discharge measurements. The stage-discharge relationship was re-evaluated to produce a revised rating curve for each station following each set of additional flow measurements. The best fit was obtained for the recording gauge on Geona Creek which had an R^2 of 0.987 corresponding to a coefficient of variation of 8.2%. The poorest fit was determined for the rating curve on South Creek which had an R^2 of 0.762 corresponding to a coefficient of variation of 30.4%.

The rating curve initially developed for Fault Creek was not considered reliable due to the bouldery channel bed, however, data collected subsequent to May 7 has resulted in an acceptable stage-discharge curve which provides a reasonable fit to the data. Stage-discharge rating curves for all six sites are listed in Table 3.2A.7 and plotted on Figures 3.2A.1 to 3.2A.3.

7. Site Data - Recording Gauges

For the two automated sites, data collection began in late April. On Geona Creek, ice breakup was observed to begin on approximately April 27. An initial maximum of $0.72 \text{ m}^3/\text{s}$ was recorded on April 28, after which flows fluctuated for a few weeks. A second, higher peak flow of $0.98 \text{ m}^3/\text{s}$ then occurred on May 14, Figure 3.2A.4. Maximum discharges in Geona Creek following the rainstorm of June 4-6 were just slightly less than those recorded during ice breakup and snowmelt: a discharge of $0.96 \text{ m}^3/\text{s}$ was recorded on June 6 at 01:30. Following recession of the stormflow, discharge remained below $0.6 \text{ m}^3/\text{s}$ until September 2. As a comparison, the minimum flow recorded on Geona Creek during the period of observation was $0.14 \text{ m}^3/\text{s}$.

The ice breakup on Lower Finlayson Creek began in early May. The associated peak discharges occurred between May 12 and 14: there was a small peak on May 12 of $3.69 \text{ m}^3/\text{s}$, and a slightly larger maximum of $3.89 \text{ m}^3/\text{s}$ on May 14. These snowmelt maxima were exceeded by the discharges produced by the rainstorm of June 4-6. The stage began to rise on June 5, and the peak discharge of $5.92 \text{ m}^3/\text{s}$ occurred at 18:00 on June 6. Following recession of the stormflow, discharge remained below $3.0 \text{ m}^3/\text{s}$ until September 2. As a comparison, the minimum flow recorded at this station during the period of observation was $0.22 \text{ m}^3/\text{s}$.

8. Site Data - Manual Gauges

For the manually read staff gauge stations, installations were completed in early May, and daily stage readings were initiated on May 3 for South and Fault Creeks, and May 6 for Upper Finlayson and East Creeks. On all four creeks, the peak flows associated with snowmelt and ice breakup occurred between May 11 and 13. Measurement of the discharge on East Creek is complicated by the presence of some large boulders. A discharge estimate for East Creek was obtained by subtracting the measured discharge on Finlayson Creek, upstream of the East Creek confluence, from the measured discharge on Finlayson Creek, downstream of the confluence. This discharge estimate was then compared to the East Creek staff gauge reading to obtain the rating curve.

Peak flow (freshet) measurements at the various gauge locations are as follows:

- Fault Creek = 0.09 m³/s on May 13
- South Creek = 0.29 m³/s on May 13
- East Creek = 1.65 m³/s on May 12
- Upper Finlayson Creek = 2.60 m³/s on May 11

The peak discharges associated with the storm event of June 4-6 exceeded the freshet discharges for both Upper Finlayson and East Creek and almost equalled the freshet discharge for South and Fault Creeks:

- Fault Creek = 0.08 m³/s
- South Creek = 0.27 m³/s
- East Creek = 2.37 m³/s
- Upper Finlayson Creek = 3.93 m³/s

The above peak discharges occurred on June 5 and 6. Following recession of the storm flows, discharges remained relatively low for the remainder of the summer. Maximum and minimum flows during this latter period were as follows:

- Fault Creek = 0.04 to 0.01 m³/s
- South Creek = 0.15 to 0.05 m³/s
- East Creek = 0.71 m³/s
- Upper Finlayson Creek = 1.33 to 0.29 m³/s

The lowest flows recorded on each creek during the data collection period occurred in late July. The minimum value determined for East Creek, determined by subtraction of flows, was not considered reliable and has therefore been omitted.

Discharge measurements for each of the gauges are listed in Table 3.2A.8. Daily flow records for the manual gauges are listed in Tables 3.2A.9 to 3.2A.12. Correlation with regional station records was not possible as neither WSC nor DIAND were able to supply 1995 data in time to be incorporated into this study. An examination of the snowpack at regional snow course stations, Appendix 3.1 - Section 5.5, revealed the April 1, 1995 snowpack to be significantly below normal (66 to 92 percent of normal). Streamflow in the Kudz Ze Kayah area would therefore be expected to be below average for the 1995 freshet.

Table 3.2A.1

Mean Monthly Runoff Depth (mm) from Streamflow Records

Sta. No.	Name	D.A. km ²	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual Total mm
DIAND															
29AE003	Partridge C.	63.7	-	-	-	-	108.5	181.1	82.3	47.1	53.7	-	-	-	E 573
29BA002	180 Mile C.	83.1	-	-	-	-	109.3	123.8	58.0	40.3	37.7	24.5	-	-	E 443
WSC															
10AB003	King C.	13.7	5.28	4.24	3.91	3.97	48.1	88.4	53.6	25.8	19.9	18.2	10.4	6.65	290
09BC003	Rose C.	208	3.67	2.45	2.65	3.03	42.4	89.5	43.4	38.8	34.9	15.7	9.47	6.89	358
09AD002	Sidney C.	372	7.70	5.66	5.49	6.87	65.9	115.0	53.3	26.7	26.0	23.3	12.3	9.94	355
10AA002	Tom C.	435	3.48	2.59	2.70	4.77	54.6	53.1	36.4	16.4	15.0	14.9	7.75	4.90	217
10AA005	Big C.	607	13.6	10.6	11.2	14.8	62.7	91.4	49.4	28.9	32.6	28.6	18.3	16.0	378
09BB001	S. MacMillan R.	997	5.99	3.69	3.52	4.13	77.6	210	138	78.7	56.7	34.9	15.1	9.00	639
10AD002	Hyland R.	2150	7.96	6.00	5.73	5.88	60.3	206	154	81.8	55.3	36.3	16.9	11.4	648
09BA002	Pelly R. below F.C.	5020	5.34	3.51	3.26	4.00	94.4	147	79.0	48.2	47.6	34.0	12.7	8.91	488
10AA004	Rancheria R.	5100	8.19	5.98	5.67	5.95	39.0	94.5	64.6	29.9	25.9	24.6	14.3	10.6	327
09BA001	Ross R. at R. R.	7250	3.36	2.38	2.36	2.86	61.7	91.2	46.2	29.8	25.5	18.7	7.08	5.02	294
09AD001	Nisutlin R.	8030	6.84	4.82	4.97	6.68	57.4	110.4	61.0	30.0	27.0	27.3	15.4	10.0	362
10AB001	Frances R.	12800	6.95	5.03	4.90	5.20	38.5	115	81.4	46.7	35.4	29.3	15.6	9.92	394
09BC002	Pelly R. at R. R.	18400	3.36	2.45	2.47	2.73	51.7	101	51.4	33.8	27.8	18.8	7.80	5.30	321
09BC004	Pelly R. below V.C.	22100	3.70	2.66	2.57	3.14	54.7	84.8	48.2	30.7	26.6	20.1	8.48	5.37	293
09AE001	Teslin R. at Teslin	30300	8.82	6.79	6.92	6.36	22.3	76.0	64.3	36.9	28.0	27.2	18.0	11.9	316
10AA001	Liard R. at U.C.	33400	7.75	5.68	5.57	6.43	44.4	105	66.8	37.0	30.8	26.3	13.7	10.3	360
Average	All Stations		6.37	4.66	4.62	5.43	60.8	115.7	68.4	39.3	33.7	24.9	12.7	8.88	385
Average	Stations <1000 km ²		6.62	4.87	4.91	6.26	71.1	119	64.3	37.8	34.6	22.9	12.2	8.90	393

E = Estimated

Table 3.2A.2
Annual Runoff Depth - mm

Stream	Drainage Area - km ²	Annual Runoff - mm
Partridge C.	63.7 km ²	573 E
180 Mile C.	83.1 km ²	443 E
King C.	13.7 km ²	290
Rose C.	208 km ²	358
Sidney C.	372 km ²	355
Pelly R. below F.C.	5020 km ²	488
Frances R.	12800 km ²	394
Average		414

Table 3.2A.3
Mean Monthly Runoff Depth - mm

Month	Average of 3 small catchments mm	Monthly Distribution %	KZK Monthly Unit Runoff mm	KZK Monthly Unit Runoff mm (above dam*)
January	5.55	1.77	7.3	3.7
February	4.12	1.32	5.5	2.7
March	4.02	1.28	5.3	2.7
April	4.62	1.48	6.1	3.1
May	52.1	16.6	68.9	74.7
June	97.6	31.2	129.0	140
July	50.1	16.0	66.2	71.8
August	30.4	9.71	40.2	43.6
September	26.9	8.59	35.6	38.6
October	19.1	6.10	25.3	16.9
November	10.7	3.42	14.1	9.4
December	7.83	2.50	10.4	6.9
Annual	313.16	100	414	414

* winter flows reduced upstream of tailings dam

Table 3.2A.4
Frequency Analysis of Annual Runoff

Return Period years	Exceedance Probability	Ratio to Mean Ross River	Ratio to Mean Liard River	KZK Average Runoff Ratio
1.003	0.997	0.550	0.607	0.579
1.05	0.952	0.723	0.751	0.737
1.25	0.800	0.862	0.870	0.866
2	0.500	1.004	0.996	1.000
5	0.200	1.140	1.127	1.134
10	0.100	1.208	1.198	1.203
20	0.050	1.262	1.258	1.260
50	0.020	1.319	1.327	1.323
100	0.010	1.355	1.374	1.365
200	0.005	1.386	1.419	1.403
500	0.002	1.421	1.471	1.446

Table 3.2A.5
Runoff Frequency Estimates - mm

Return Period	Exceedance Probability	Ratio to Mean	KZK Annual Runoff mm
1 in 500 year low flow	0.998	0.560	231
1 in 200 year low flow	0.995	0.602	249
1 in 100 year low flow	0.990	0.639	264
1 in 50 year low flow	0.980	0.679	281
1 in 20 year low flow	0.950	0.741	306
1 in 10 year low flow	0.900	0.799	330
1 in 5 year low flow	0.800	0.866	358
1 in 2 year flow (mean)	0.500	1.000	413.2
1 in 5 year high flow	0.200	1.134	469
1 in 10 year high flow	0.100	1.203	497
1 in 20 year high flow	0.050	1.260	521
1 in 50 year high flow	0.020	1.323	547
1 in 100 year high flow	0.010	1.365	564
1 in 200 year high flow	0.005	1.403	580
1 in 500 year high flow	0.002	1.446	597

Table 3.2A.6
25-Year Low Monthly Flow Analysis

Stream	Drainage Area km²	October 25-Yr Low Flow m³/s	October Mean Monthly Flow m³/s	Ratio 25-Yr low flow to Mean flow
Ross River	7250	26.6	50.6	0.526
South MacMillan River	997	6.6	13.0	0.508
Tom Creek	435	1.25	2.42	0.517
Sidney Creek	372	1.66	3.23	0.514
King Creek	13.7	0.041	0.093	0.441

Table 3.2A.7
Stage-Discharge Rating Curves

Site	Stage-discharge equation	Sample size	R Sqr.	Coefficient of Variation
Lower Finlayson Creek	$Q = 9.969 (S) - 3.752$	5	0.976	11.7%
Geona Creek	$Q = 1.307 (S) - 0.288$	7	0.987	8.2%
South Creek	$Q = 1.066 (S) - 0.180$	6	0.762	30.4%
East Creek	$Q = 10.384 (S) - 0.683$	5	0.956	21.6%
Upper Finlayson Creek	$Q = 8.074 (S) - 1.517$	6	0.987	8.3%
Fault Creek	$Q = 0.680 (S) - 0.014$	5	0.892	

Table 3.2A.8
Discharge Measurements

STATION	DATE	DISCHARGE m ³ /s	STAGE m
Fault Creek	May 7	0.005	0.065*
	May 10	0.027	0.102*
	June 28	0.021	0.056
	July 1	0.024	0.062
	July 11	0.015	0.044
	July 18	0.012	0.035
	Sep 3	0.039	0.072
South Creek	May 4	0.067	0.245
	May 8	0.188	0.311
	July 1	0.061	0.214
	July 11	0.054	0.208
	Aug 7	0.072	0.260
	Aug 28	0.109	0.294
Upper Finlayson Creek (below East Creek)	May 4	2.38	0.490
	May 9	2.27	0.455
	July 13	0.523	0.244
	Aug 4	0.650	0.286
	Aug 20	0.623	0.258
	Sep 2	1.29	0.352
East Creek	May 4	1.78	0.225
	May 9	1.47	0.210
	July 13	0.187	0.066
	Aug 4	0.222	0.095
	Sep 2	0.509	0.134

Geona Creek (datalogger)	Apr 10	0.038	0.240
	May 4	0.334	0.465
	May 10	0.477	0.585
	July 1	0.150	0.362
	July 15	0.138	0.324
	Aug 5	0.160	0.340
	Sep 2	0.253	0.412
Lower Finlayson Creek (datalogger)	May 3	2.86	0.645
	May 10	2.18	0.612
	July 13	0.645	0.430
	Aug 4	1.04	0.494
	Aug 20	0.765	0.452

TABLE 3.2A.9
 FAULT CREEK- ESTIMATED FLOWS 1995

Date	Time	Stage (m)	Discharge (m ³ /s)	Remarks				
3-May	1930	0.070	0.033	relocated to a better location				
4-May	1855	0.074	0.036					
5-May	1900	0.076	0.037					
6-May	1850	0.086	0.044					
7-May	1900	0.065	0.030					
8-May	1910	0.082	0.041					
9-May	1845	0.086	0.044					
10-May	1845	0.102	0.055					
11-May	1900	0.128	0.073					
12-May	1910	0.144	0.084	turbidity level has increased				
13-May	1850	0.165	0.098	high sediment load, warm weather				
14-May	1905	0.122	0.069	cooler temperatures, precipitation (some snow)				
15-May	1850	0.102	0.055	turbidity has decreased				
16-May	1845	0.086	0.044					
17-May	1905	0.072	0.035					
18-May	1925	0.065	0.030	cool temperatures (10cm snow)				
19-May	1900	0.060	0.026					
20-May	1915	0.059	0.026					
21-May	1900	0.065	0.030					
22-May	1905	0.078	0.039	precipitation				
23-May	1905	0.079	0.039					
24-May	1900	0.102	0.055	warm temperatures				
25-May	1920	0.140	0.081					
26-May	1910	0.130	0.074					
27-May	1829	0.125	0.071					
28-May	1940	0.106	0.058					
29-May	2000	0.090	0.047					
30-May	1915	0.081	0.041					
31-May	1905	0.080	0.040					
1-Jun	1900	0.078	0.039					
2-Jun	1905	0.081	0.041					
3-Jun	1910	0.075	0.037					
4-Jun	1900	0.085	0.043	precipitation				
5-Jun	1955	0.155	0.091	precipitation				
6-Jun	1600	0.132	0.075	precipitation ending in the morning				
6-Jun	1905	0.137	0.079					
7-Jun	1905	0.132	0.075					
8-Jun	1915	0.128	0.073					
9-Jun	1910	0.128	0.073					
10-Jun	1915	0.125	0.071					
11-Jun	1945	0.120	0.067					
12-Jun	1955	0.110	0.060					
13-Jun	1945	0.118	0.066					
14-Jun	1945	0.118	0.066					
15-Jun	1245	0.112	0.062					
16-Jun								
17-Jun								
18-Jun								
19-Jun	1922	0.090	0.047					

TABLE 3.2A.9
 FAULT CREEK- ESTIMATED FLOWS 1995

20-Jun	1915	0.085	0.043				
21-Jun	1900	0.082	0.041				
22-Jun	1910	0.084	0.043				
23-Jun	1910	0.075	0.037				
24-Jun	1920	0.066	0.030				
25-Jun	1905	0.064	0.029				
26-Jun	1855	0.058	0.025				
27-Jun	2000	0.054	0.022				
28-Jun	1930	0.054	0.022				
29-Jun	1840	0.050	0.020				
30-Jun	1910	0.048	0.018				
1-Jul	1830	0.062	0.028				
2-Jul	1900	0.048	0.018				
3-Jul	1930	0.058	0.025				
4-Jul	1930	0.062	0.028				
5-Jul	1920	0.058	0.025				
6-Jul	1905	0.056	0.024				
7-Jul	1915	0.056	0.024				
8-Jul	1915	0.062	0.028				
9-Jul	1845	0.050	0.020				
10-Jul	1945	0.046	0.017				
11-Jul	1920	0.045	0.016				
12-Jul							
13-Jul							
14-Jul							
15-Jul							
16-Jul							
17-Jul							
18-Jul							
19-Jul							
20-Jul							
21-Jul	1915	0.032	0.007				
22-Jul							
23-Jul							
24-Jul	1948	0.034	0.009				
25-Jul							
26-Jul				heavy precipitation			
27-Jul	1610	0.034	0.009	precipitation			
28-Jul							
29-Jul							
30-Jul	1800	0.056	0.024	precipitation			
31-Jul							
1-Aug							
2-Aug	1900	0.056	0.024				
3-Aug	1915	0.056	0.024				
4-Aug	1900	0.056	0.024				
5-Aug	1935	0.056	0.024				
6-Aug	1855	0.056	0.024				
7-Aug	1930	0.054	0.022				
8-Aug	1900	0.052	0.021				
9-Aug	1915	0.050	0.020				

TABLE 3.2A.9
 FAULT CREEK- ESTIMATED FLOWS 1995

10-Aug	1920	0.048	0.018					
11-Aug	1935	0.048	0.018					
12-Aug	1910	0.048	0.018					
13-Aug	1925	0.048	0.018					
14-Aug	185	0.046	0.017					
15-Aug	1950	0.046	0.017					
16-Aug	1950	0.045	0.016					
17-Aug	1900	0.042	0.014					
18-Aug	1905	0.042	0.014					
19-Aug	1855	0.042	0.014					
20-Aug	1845	0.042	0.014					
21-Aug	2010	0.055	0.023					
22-Aug	1850	0.048	0.018	heavy precipitation overnight				
23-Aug	1915	0.050	0.020					
24-Aug	1900	0.048	0.018					
25-Aug	1915	0.048	0.018					
26-Aug	1945	0.048	0.018					
27-Aug	1850	0.050	0.020					
28-Aug	1935	0.050	0.020					
29-Aug	1715	0.052	0.021					
30-Aug	1930	0.054	0.022					
31-Aug	1845	0.054	0.022					
1-Sep	1850	0.056	0.024	precipitation				
2-Sep	1945	0.076	0.037	precipitation				
3-Sep	1855	0.070	0.033					
4-Sep	1935	0.064	0.029					

TABLE 3.2A.10
SOUTH CREEK- ESTIMATED FLOWS 1995

Date	Time	Stage (m)	Discharge (m ³ /s)	Remarks
3-May	1730	0.312	0.152	staff gauge reinforced
6-May	1615	0.310	0.150	
7-May	1624	0.288	0.126	
8-May	1600	0.311	0.151	
9-May	1455	0.308	0.148	
10-May	1729	0.345	0.187	
11-May	1645	0.378	0.222	
12-May	1715	0.394	0.239	
13-May	1641	0.440	0.288	warm weather (up to 20 degrees celcius)
14-May	1700	0.340	0.182	cooler temperatures, precipitation (some snow)
15-May	1705	0.308	0.148	
16-May	1750	0.274	0.112	
17-May	1620	0.245	0.081	
18-May	1744	0.252	0.088	cool temperatures (10 cm snow)
19-May	1540	0.252	0.088	
20-May	1650	0.224	0.058	
21-May	1721	0.214	0.048	
22-May	1628	0.212	0.046	precipitation
23-May	1622	0.236	0.071	
24-May	1740	0.248	0.084	warm temperatures
25-May	1637	0.325	0.166	
26-May	1830	0.308	0.148	
27-May	1655	0.294	0.133	
28-May	1609	0.274	0.112	
29-May	1702	0.252	0.088	
30-May	1715	0.242	0.078	
31-May	1730	0.225	0.059	
1-Jun	1643	0.226	0.061	
2-Jun	1811	0.230	0.065	
3-Jun	1740	0.238	0.073	
4-Jun	1630	0.232	0.067	precipitation
5-Jun	1545	0.270	0.107	precipitation
6-Jun	1710	0.425	0.272	precipitation ending in the morning
7-Jun				
8-Jun	1623	0.328	0.169	
9-Jun				
10-Jun				
11-Jun				
12-Jun	1630	0.296	0.135	
13-Jun				
14-Jun				
15-Jun				
16-Jun				
17-Jun				
18-Jun				
19-Jun				
20-Jun	1629	0.274	0.112	
21-Jun				
22-Jun				

TABLE 3.2A.10
SOUTH CREEK- ESTIMATED FLOWS 1995

23-Jun	1600	0.245	0.081				
24-Jun							
25-Jun							
26-Jun	1655	0.226	0.061				
27-Jun							
28-Jun							
29-Jun	1628	0.210	0.044				
30-Jun							
1-Jul	930	0.214	0.048	stream gauging			
2-Jul	1723	0.232	0.067	precipitation			
3-Jul							
4-Jul							
5-Jul	1605	0.238	0.073				
6-Jul							
7-Jul							
8-Jul	1815	0.237	0.072				
9-Jul							
10-Jul							
11-Jul	850	0.208	0.041	stream gauging			
12-Jul							
13-Jul							
14-Jul							
15-Jul							
16-Jul							
17-Jul							
18-Jul							
19-Jul							
20-Jul							
21-Jul	1825	0.216	0.050				
22-Jul							
23-Jul							
24-Jul				helicopter unavailable			
25-Jul							
26-Jul				heavy precipitation			
27-Jul	1531	0.272	0.109	precipitation			
28-Jul							
29-Jul							
30-Jul	1720	0.252	0.088	precipitation			
31-Jul							
1-Aug							
2-Aug	1610	0.248	0.084				
3-Aug							
4-Aug							
5-Aug	1520	0.258	0.095				
6-Aug							
7-Aug							
8-Aug	1808	0.254	0.090				
9-Aug							
10-Aug							
11-Aug	1630	0.254	0.090				
12-Aug							

TABLE 3.2A.10
SOUTH CREEK- ESTIMATED FLOWS 1995

13-Aug								
14-Aug								
15-Aug	1405	0.254	0.090	helicopter unavailable				
16-Aug								
17-Aug								
18-Aug	1805	0.252	0.088					
19-Aug								
20-Aug								
21-Aug	1645	0.252	0.088					
22-Aug	1020	0.302	0.141	heavy precipitation				
23-Aug								
24-Aug	1825	0.278	0.116					
25-Aug								
26-Aug								
27-Aug	1650	0.278	0.116					
28-Aug								
29-Aug								
30-Aug								
31-Aug	1630	0.292	0.131					
1-Sep								
2-Sep	1615	0.310	0.150					
3-Sep								
4-Sep								
5-Sep	1350	0.298	0.137					

TABLE 3.2A.11
EAST CREEK- ESTIMATED FLOWS 1995

Date	Time	Stage (m)	Discharge (m ³ /s)	Remarks
6-May	1600	0.212	1.519	Staff gauge installed
7-May	1636	0.210	1.498	
8-May	1640	0.210	1.498	
9-May	1620	0.210	1.498	
10-May	1717	0.212	1.519	
11-May	1655	0.220	1.602	
12-May	1735	0.225	1.654	
13-May	1650	0.214	1.540	
14-May	1715	0.214	1.540	
15-May	1740	0.185	1.239	water turbidity has decreased
16-May	1705	0.164	1.020	creek was very turbid up to this point
17-May	1655	0.146	0.834	
18-May	1800	0.132	0.688	cool temperatures (10cm snow)
19-May	1626	0.128	0.647	
20-May	1715	0.120	0.564	
21-May	1627	0.112	0.481	
22-May	1615	0.112	0.481	precipitation
23-May	1645	0.118	0.543	
24-May	1651	0.114	0.501	warm temperatures
25-May	1700	0.110	0.460	
26-May	1847	0.105	0.408	
27-May	1716	0.102	0.377	
28-May	1624	0.096	0.314	
29-May	1718	0.092	0.273	
30-May	1656	0.085	0.200	
31-May	1754	0.079	0.138	
1-Jun	1613	0.074	0.086	
2-Jun	1824	0.076	0.107	
3-Jun	1755	0.079	0.138	
4-Jun	1642	0.074	0.086	precipitation
5-Jun	1602	0.092	0.273	precipitation
6-Jun	1155	0.245	1.862	precipitation ending in the morning
6-Jun	1722	0.294	2.370	
7-Jun				
8-Jun	1642	0.202	1.415	
9-Jun				
10-Jun				
11-Jun				
12-Jun	1640	0.122	0.584	
13-Jun				
14-Jun				
15-Jun				
16-Jun				
17-Jun				
18-Jun				
19-Jun				
20-Jun	1644	0.111	0.470	
21-Jun				
22-Jun				

TABLE 3.2A.11
EAST CREEK- ESTIMATED FLOWS 1995

23-Jun	1615	0.102	0.377				
24-Jun							
25-Jun							
26-Jun	1705	0.092	0.273				
27-Jun							
28-Jun							
29-Jun	1617	0.082	0.169				
30-Jun							
1-Jul				precipitation			
2-Jul	1715	0.094	0.294	precipitation			
3-Jul							
4-Jul							
5-Jul	1550	0.102	0.377				
6-Jul							
7-Jul							
8-Jul	1810	0.088	0.231				
9-Jul							
10-Jul							
11-Jul	1805	0.076	0.107				
12-Jul							
13-Jul							
14-Jul							
15-Jul							
16-Jul							
17-Jul							
18-Jul							
19-Jul							
20-Jul							
21-Jul	2045	0.052	-0.143				
22-Jul							
23-Jul							
24-Jul				helicopter unavailable			
25-Jul							
26-Jul				heavy precipitation			
27-Jul	1548	0.092	0.273	precipitation			
28-Jul							
29-Jul							
30-Jul	1735	0.102	0.377	precipitation			
31-Jul							
1-Aug							
2-Aug	1549	0.102	0.377				
3-Aug							
4-Aug							
5-Aug	1512	0.092	0.273				
6-Aug							
7-Aug							
8-Aug	1715	0.085	0.200				
9-Aug							
10-Aug							
11-Aug	1640	0.096	0.314				
12-Aug							

TABLE 3.2A.11
EAST CREEK- ESTIMATED FLOWS 1995

13-Aug							
14-Aug				helicopter unavailable			
15-Aug	1445	0.058	-0.080	East Lake continues to rise (beaver dam)			
16-Aug							
17-Aug							
18-Aug	1735	0.070	0.044				
19-Aug							
20-Aug							
21-Aug	1635	0.074	0.086				
22-Aug	1620	0.096	0.314	heavy precipitation overnight			
23-Aug							
24-Aug	1730	0.090	0.252				
25-Aug							
26-Aug							
27-Aug	1625	0.092	0.273				
28-Aug							
29-Aug							
30-Aug				helicopter unavailable			
31-Aug	1630	0.110	0.460				
1-Sep							
2-Sep	1500	0.134	0.709	precipitation			
3-Sep							
4-Sep							
5-Sep	1315	0.125	0.616	East Lake risen approx. 1 m due to beaver dam			

TABLE 3.2A.12
UPPER FINLAYSON CREEK- ESTIMATED FLOWS 1995

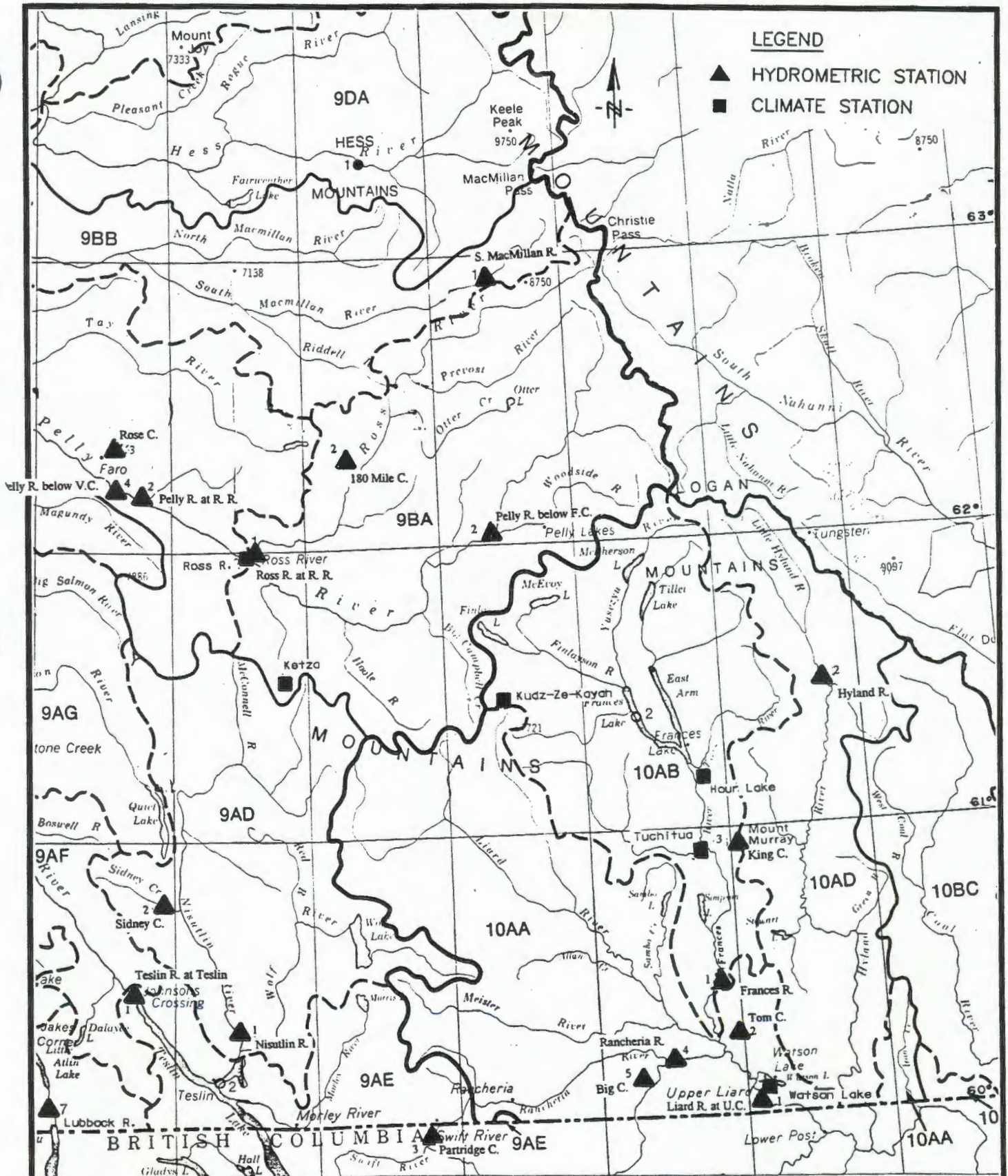
Date	Time	Stage (m)	Temp. Staff	Discharg (m3/s)	Remarks
6-May	1600	0.500	0.550	2.520	Temporary staff gauge installed
7-May	1635	0.486	0.536	2.407	
8-May	1645	0.465	0.515	2.237	installed new staff gauge and removed temp. gauge
9-May	1600	0.455		2.157	(difference of 0.050 m lower)
10-May	1715	0.475		2.318	
11-May	1651	0.510		2.601	
12-May	1730	0.508		2.585	
13-May	1655	0.504		2.552	warm weather, up to 22 degrees Celcius
14-May	1720	0.498		2.504	cooler temperatures, precipitation (some snow)
15-May	1740	0.442		2.052	
16-May	1710	0.390		1.632	
17-May	1645	0.345		1.269	
18-May	1800	0.324		1.099	cool temperatures (10 cm snow)
19-May	1630	0.308		0.970	
20-May	1730	0.302		0.921	
21-May	1624	0.292		0.841	
22-May	1650	0.301		0.913	precipitation
23-May	1653	0.312		1.002	
24-May	1656	0.316		1.034	warm temperatures
25-May	1705	0.365		1.430	
26-May	1850	0.368		1.454	
27-May	1713	0.358		1.373	
28-May	1630	0.338		1.212	
29-May	1720	0.302		0.921	
30-May	1654	0.285		0.784	
31-May	1755	0.275		0.703	
1-Jun	1615	0.262		0.598	
2-Jun	1824	0.266		0.631	
3-Jun	1748	0.261		0.590	
4-Jun	1642	0.262		0.598	precipitation
5-Jun	1600	0.308		0.970	precipitation
6-Jun	1145	0.665		3.852	precipitation ending in the morning
6-Jun	1718	0.675		3.933	
7-Jun					
8-Jun	1645	0.462		2.213	
9-Jun					
10-Jun					
11-Jun					
12-Jun	1645	0.354		1.341	
13-Jun					
14-Jun					
15-Jun					
16-Jun					
17-Jun					
18-Jun					
19-Jun					
20-Jun	1650	0.308		0.970	
21-Jun					
22-Jun					

TABLE 3.2A.12
UPPER FINLAYSON CREEK- ESTIMATED FLOWS 1995

23-Jun	1616	0.298	0.889	
24-Jun				
25-Jun				
26-Jun	1700	0.276	0.711	
27-Jun				
28-Jun				
29-Jun	1615	0.265	0.623	
30-Jun				
1-Jul				
2-Jul	1715	0.274	0.695	
3-Jul				
4-Jul				
5-Jul	1547	0.290	0.824	
6-Jul				
7-Jul				
8-Jul	1805	0.268	0.647	
9-Jul				
10-Jul				
11-Jul	1800	0.250	0.502	
12-Jul				
13-Jul				
14-Jul				
15-Jul				
16-Jul				
17-Jul				
18-Jul				
19-Jul				
20-Jul				
21-Jul	1845	0.224	0.292	
22-Jul				
23-Jul				
24-Jul				helicopter unavailable
25-Jul				
26-Jul				heavy precipitation
27-Jul	1545	0.291	0.833	precipitation
28-Jul				
29-Jul				
30-Jul	1738	0.303	0.929	precipitation
31-Jul				
1-Aug				
2-Aug	1546	0.292	0.841	
3-Aug				
4-Aug				
5-Aug	1510	0.285	0.784	
6-Aug				
7-Aug				
8-Aug	1710	0.275	0.703	
9-Aug				
10-Aug				
11-Aug	1637	0.280	0.744	
12-Aug				

TABLE 3.2A.12
UPPER FINLAYSON CREEK- ESTIMATED FLOWS 1995

13-Aug								
14-Aug					helicopter unavailable			
15-Aug	1425	0.250		0.502				
16-Aug								
17-Aug								
18-Aug	1740	0.258		0.566				
19-Aug								
20-Aug								
21-Aug	1645	0.258		0.566				
22-Aug	1615	0.296		0.873	heavy precipitation overnight			
23-Aug								
24-Aug	1730	0.282		0.760				
25-Aug								
26-Aug								
27-Aug	1620	0.284		0.776				
28-Aug								
29-Aug								
30-Aug					helicopter unavailable			
31-Aug	1745	0.312		1.002				
1-Sep								
2-Sep	1600	0.352		1.325	precipitation			
3-Sep								
4-Sep								
5-Sep	1320	0.332		1.164				



LEGEND

- ▲ HYDROMETRIC STATION
- CLIMATE STATION

HAY & COMPANY CONSULTANTS INC.

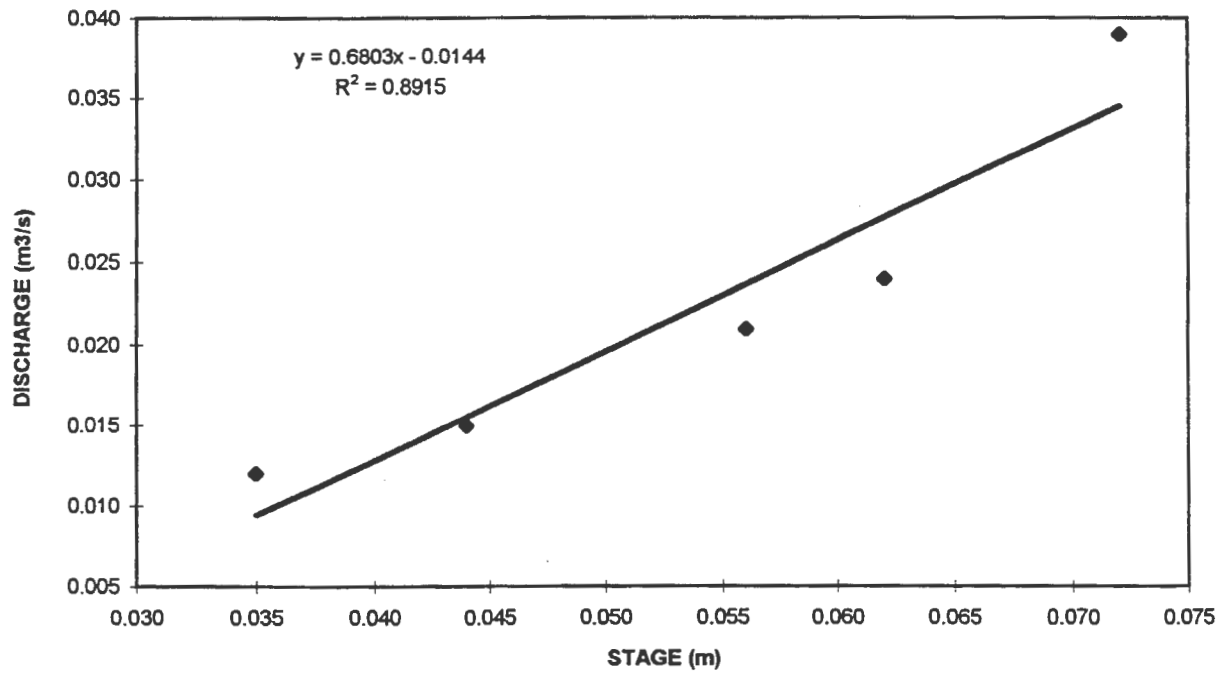
NORECOL, DAMES AND MOORE INC.

**KUDZ - ZE - KAYAH PROJECT
REGIONAL FLOOD ANALYSIS**

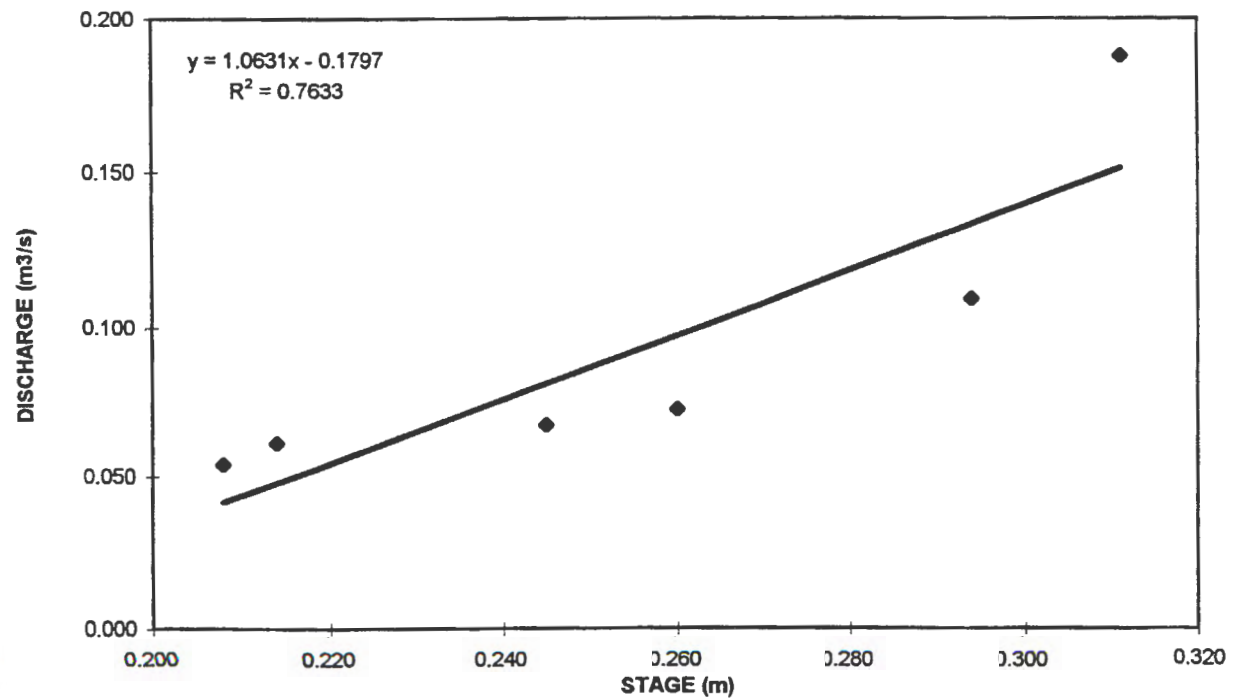
**HYDROMETRIC AND
CLIMATE STATIONS**

FIG.
3.2.1

FAULT CREEK



SOUTH CREEK



HAY AND COMPANY CONSULTANTS INC.

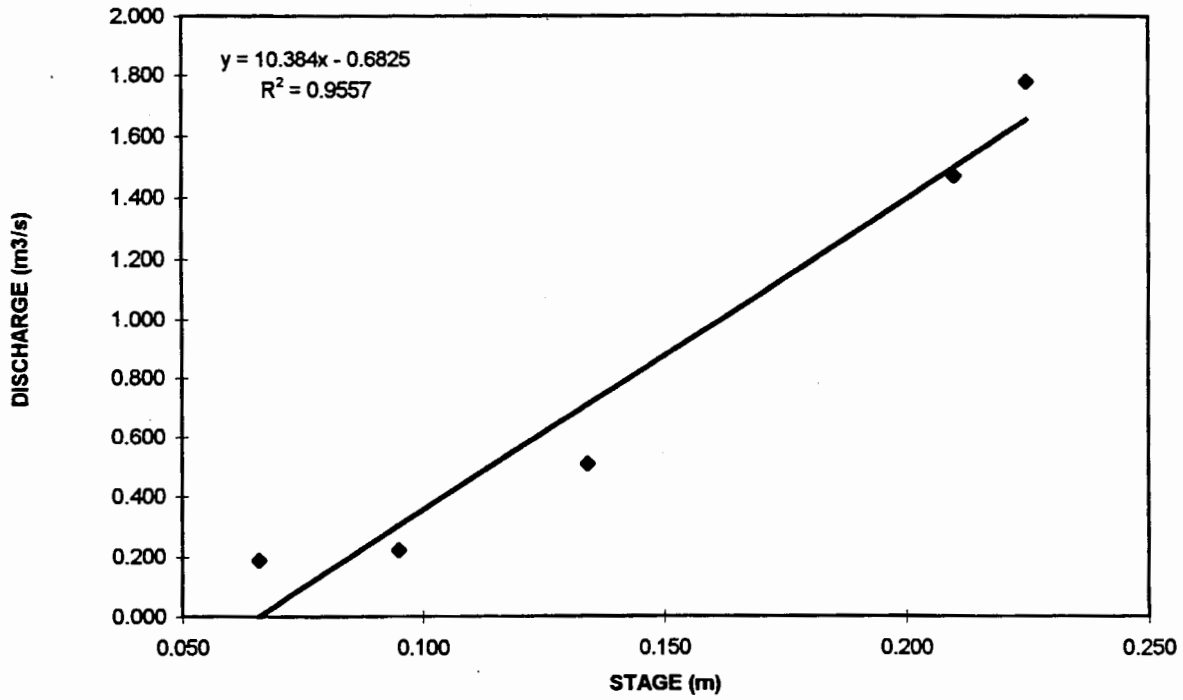
NORECOL, DAMES AND MOORE INC.

KUDZ-ZE-KAYAH PROJECT
HYDROLOGY: MANUAL GAUGES

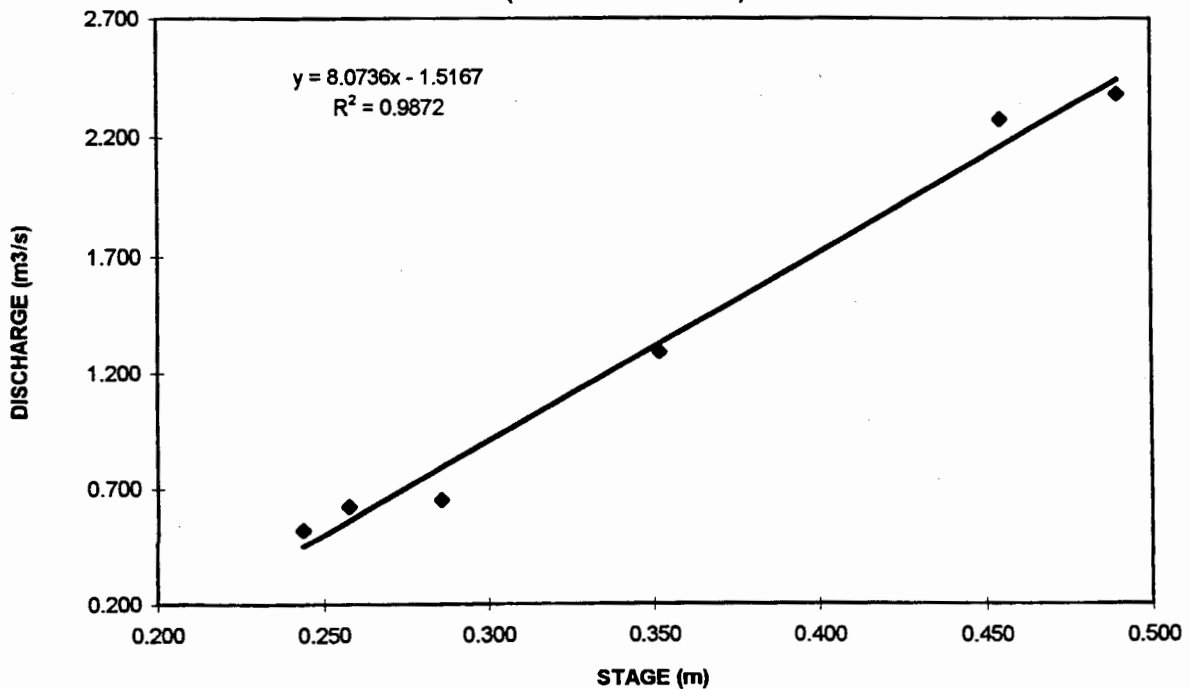
FAULT AND SOUTH CREEKS
STAGE-DISCHARGE CURVES

FIG.
3.2A.1

EAST CREEK



UPPER FINLAYSON CREEK (below East Creek)



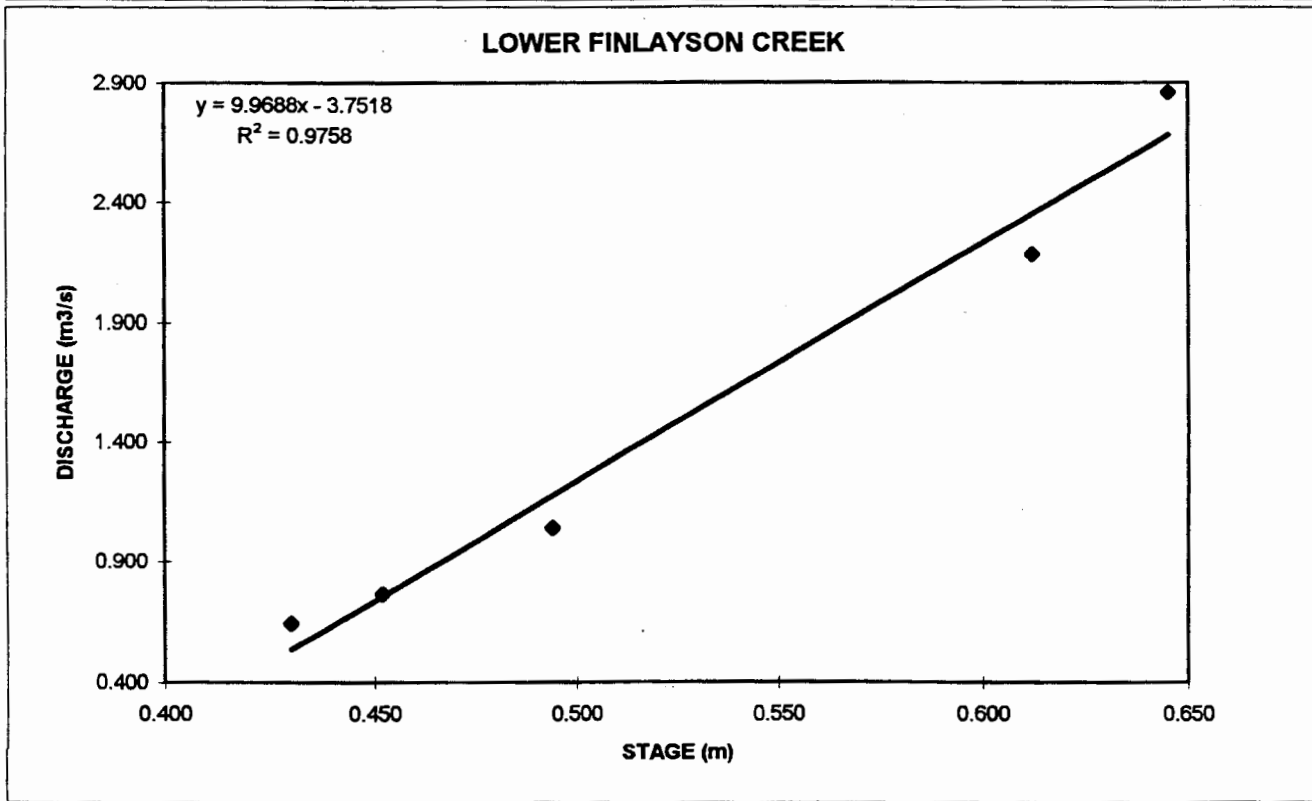
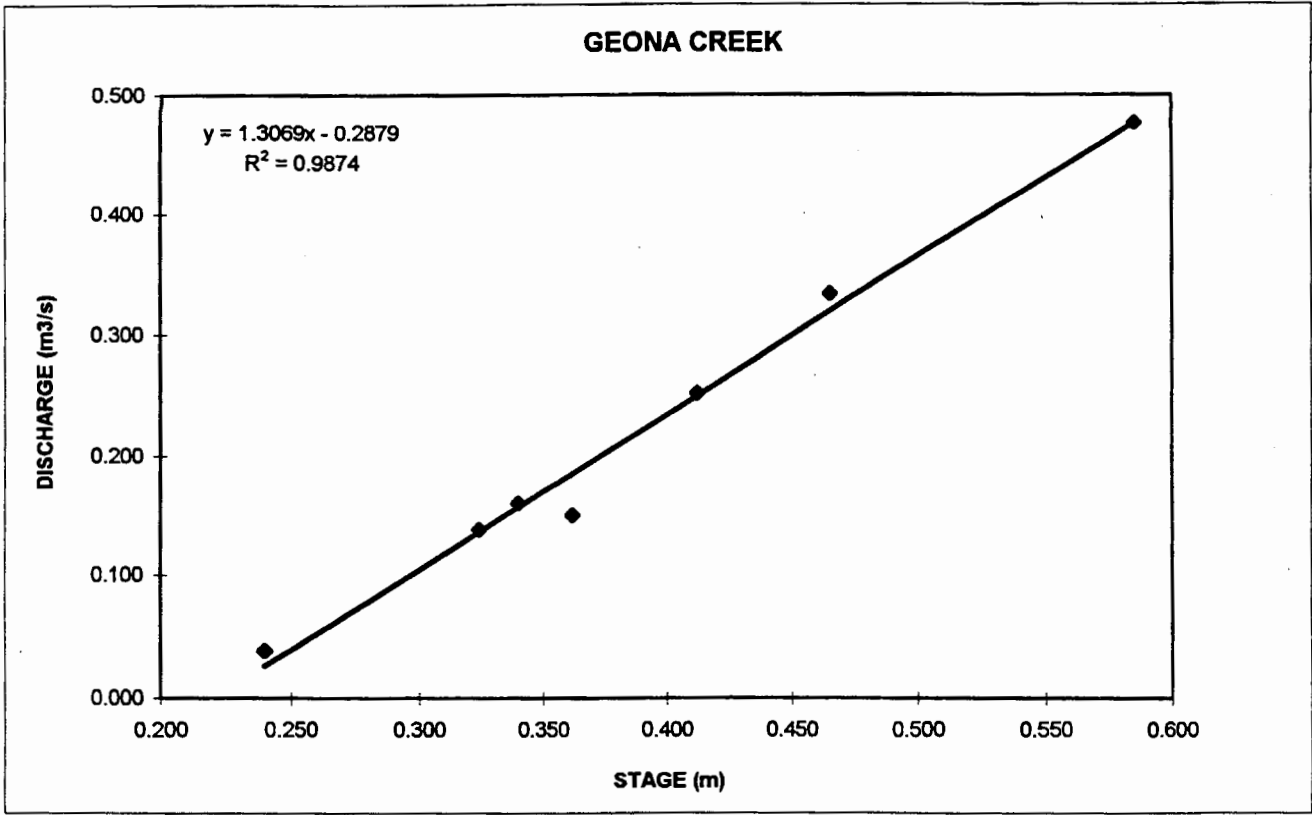
HAY AND COMPANY CONSULTANTS INC.

NORECOL, DAMES AND MOORE INC.

KUDZ-ZE-KAYAH PROJECT
HYDROLOGY: MANUAL GAUGES

EAST AND U.FINLAYSON CREEKS
STAGE-DISCHARGE CURVES

FIG.
3.2A.2



HAY AND COMPANY CONSULTANTS INC.

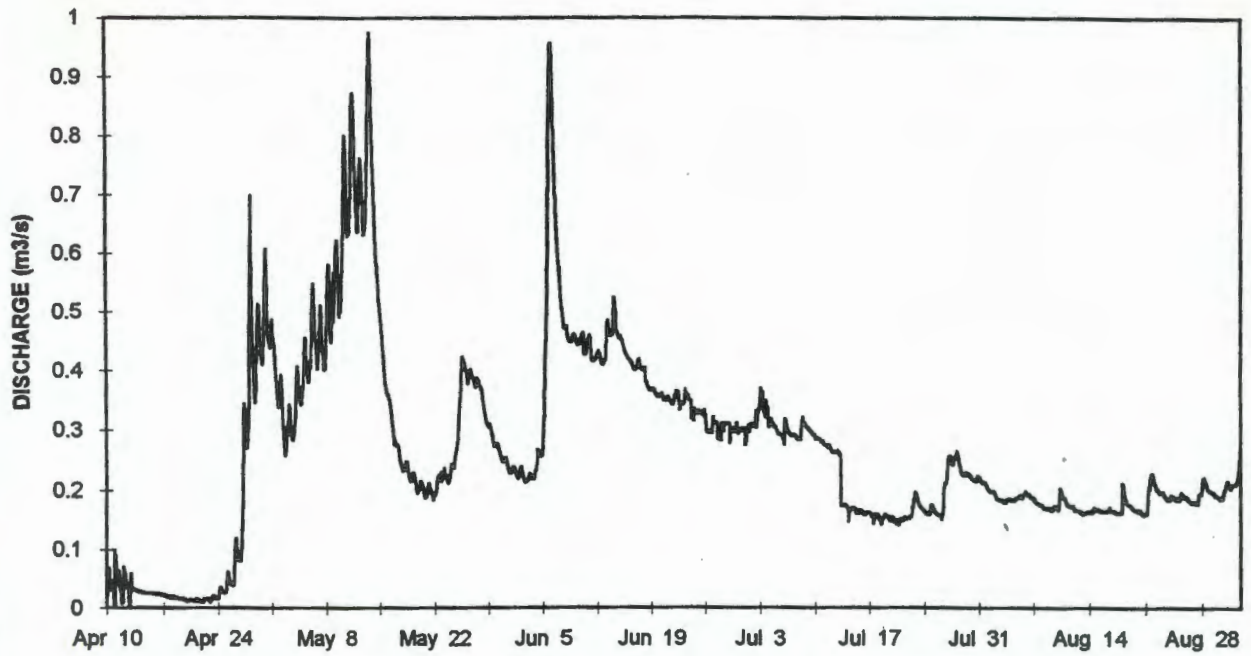
NORECOL, DAMES AND MOORE INC.

KUDZ-ZE-KAYAH PROJECT
HYDROLOGY: AUTOMATED GAUGES

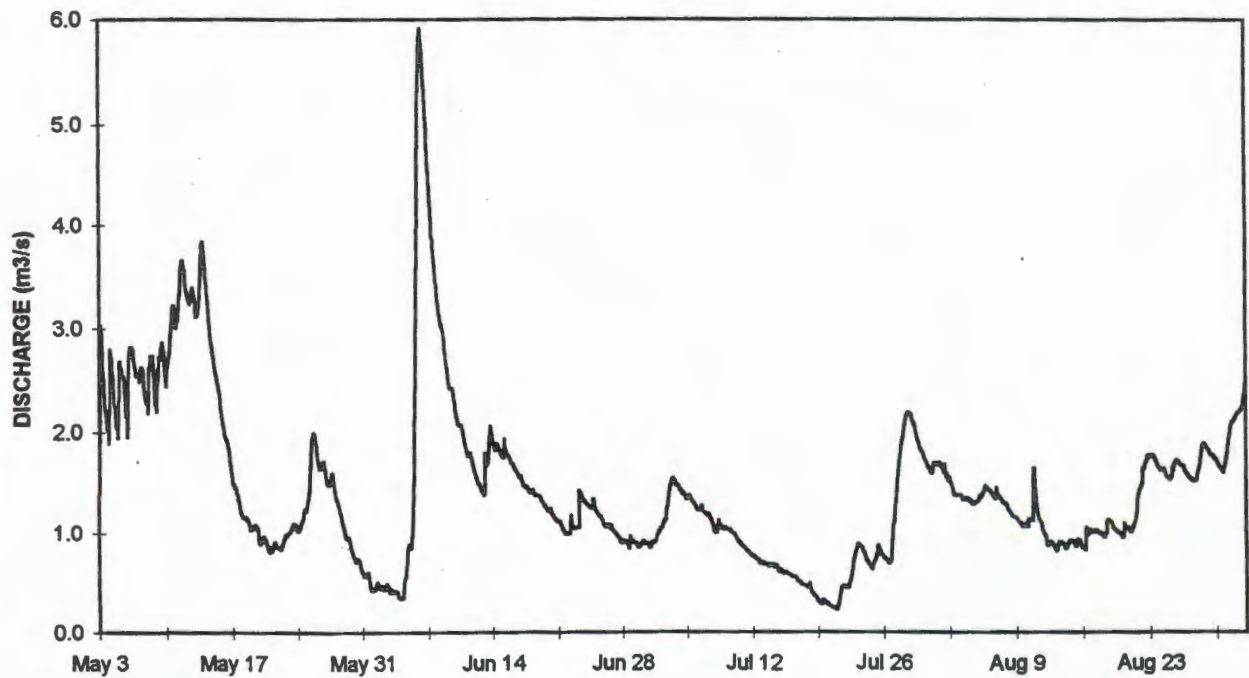
GEONA AND L. FINLAYSON CREEKS
STAGE-DISCHARGE CURVES

FIG.
3.2A.3

GEONA CREEK: APRIL 10 TO SEPT. 2, 1995



L.FINLAYSON CREEK: MAY 3 TO SEPT. 2, 1995



HAY AND COMPANY CONSULTANTS INC.

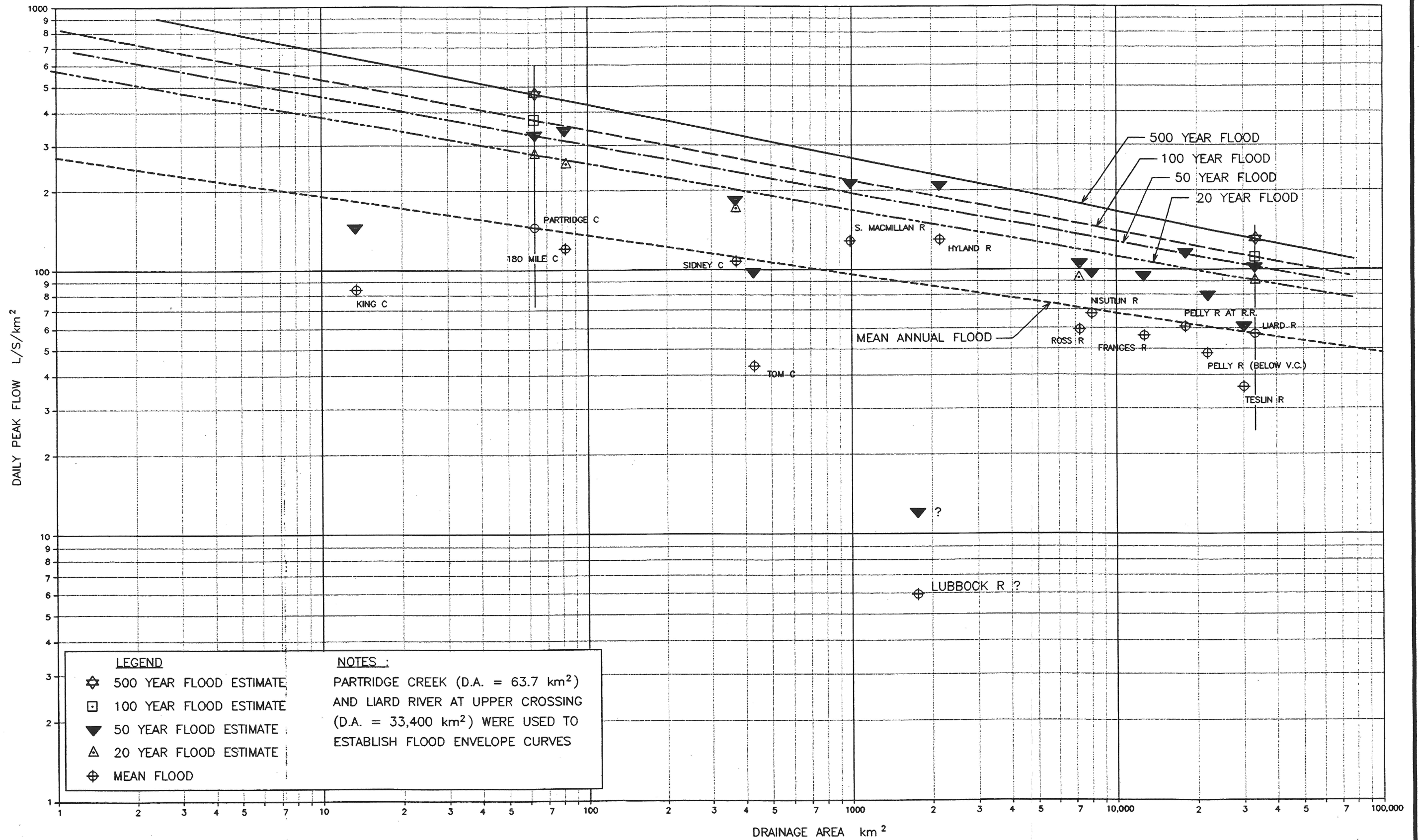
NORECOL, DAMES AND MOORE INC.

KUDZ-ZE-KAYAH PROJECT
HYDROLOGY: AUTOMATED SITES

GEONA & LOWER FINLAYSON
CREEK DISCHARGES

FIG.
3.2A.4





HAY & COMPANY CONSULTANTS INC.

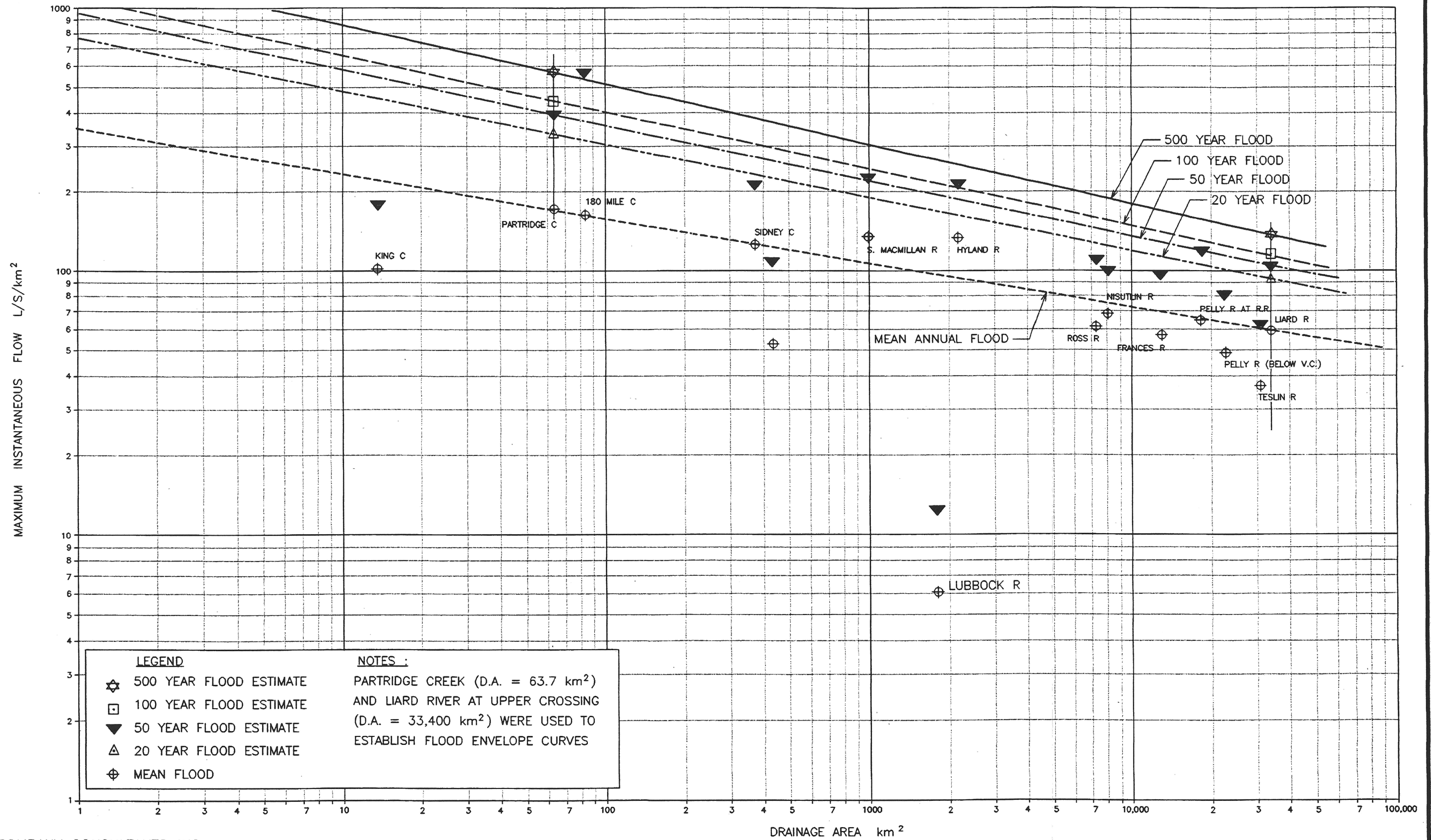
NORECOL, DAMES AND MOORE INC.

**KUDZ - ZE - KAYAH PROJECT
 REGIONAL FLOOD ANALYSIS**

MAXIMUM DAILY FLOODS

FIG.

3.2B.1



HAY & COMPANY CONSULTANTS INC.

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**KUDZ - ZE - KAYAH PROJECT
REGIONAL FLOOD ANALYSIS**

MAXIMUM INSTANTANEOUS FLOODS

FIG.
3.2B.2

APPENDIX 3.2b
REGIONAL FLOOD ANALYSIS



APPENDIX 3.2b

REGIONAL FLOOD ANALYSIS

Floods in the vicinity of Kudz Ze Kayah are primarily due to snowmelt though summer rain events can also produce annual flood peaks. Annual hydrographs for several streamflow stations in the region were examined including King Creek, Rose Creek, Sidney Creek, Tom Creek and Ross River at Ross River. Evidence of rain floods was found for each of these catchments with the majority of the events occurring in July. The Ross River catchment has a drainage area of 7250 km², yet it also includes annual rain floods such as occurred in July 1969. It should be noted that the regional flood analysis, described below, was based on annual maximum floods, irrespective of the flood generating mechanism. Therefore, the rainfall floods, when they occurred, were incorporated into the regional analysis.

The floods in the vicinity of the mine can be estimated by means of a regional analysis which utilizes streamflow records from the surrounding area. The region selected for study was identical to that used for the runoff analysis. Only stations with at least 10 years of annual flood records were included in the analysis. A total of 13 WSC stations and 2 DIAND stations were selected for analysis based on the available length of record and on the requirement that flood data include maximum instantaneous as well as maximum daily floods. The Consolidated Frequency Analysis program (CFA Ver 3.1) was used for the flood analysis and the most appropriate flood distribution was selected based on how well it fitted the data. Results of the daily flood analysis are included in Table 3.2B.1. In each case, the flood estimate has been divided by drainage area in order to obtain unit flood estimates in l/s/km². The mean annual unit flood estimates were then plotted on log-log graph paper to determine regional trends in the data, Figure 3.2B.1. The mean annual flood data for Partridge Creek, D.A. = 63.7 km², and the Liard River at Upper Crossing, D.A. = 33400 km², were used to define an upper envelope for the regional data. Data for South MacMillan River and Hyland River were ignored when selecting the regional envelope curve as these stations are located at higher elevations in the Selwyn and Logan Mountains. The mean and 50-year flood estimates for the Partridge Creek and Liard River stations were plotted on probability paper. A straight line extrapolation of these values was then used to obtain estimates for other return periods. Regional envelope curves for 20, 50, 100 and 500 year return periods were added to Figure 3.2B.1, based on these extrapolated values for the above two stations.

A similar analysis was conducted using the maximum instantaneous data and the resulting frequency estimates were examined to ensure that these estimates exceeded the daily estimates for identical return periods. In several cases, the maximum instantaneous flood estimates were less than the daily flood estimates which is impossible. These anomalies are primarily the result of differences in the length of record for the maximum instantaneous and maximum daily floods, the latter being more extensive in all cases where these anomalies were apparent. Differences in record length can introduce variations in the skew parameters incorporated into the frequency distributions and these can have dramatic effects on the estimates at high return

periods. In order to overcome these anomalies in the estimates, the daily flood estimates for these streams were multiplied by the ratio of instantaneous to daily floods, as determined by the highest three recorded floods. In this manner, all instantaneous flood estimates exceeded the maximum daily flood estimates by a realistic amount. Maximum instantaneous flood estimates from the regional analysis are listed in Table 3.2B.2. These flood estimates were again divided by drainage area to obtain unit flood estimates in $l/s/km^2$. Once again, the estimates for Partridge Creek and the Liard River were used to develop regional flood trend lines for return periods of 20, 50, 100 and 500 years. These estimates are shown on Figure 3.2B.2 together with estimates for the mean annual flood.

The regional flood graphs can be used to give preliminary estimates of floods in the vicinity of the Kudz Ze Kayah project. The reliability of the estimates naturally decreases as return period increases so caution should be exercised when extracting flood estimates from these graphs.

As an example of the use of the regional flood graphs, preliminary design estimates were developed for two creek diversions in the mine area. The first diversion on the west side of the tailings impoundment involved an area of $2.51 km^2$. The second diversion included Fault Creek and the tributary immediately to the north of this creek, with a combined drainage area of $2.65 km^2$. Estimates of the 100-year design flows for the diversion ditches were determined from Figure 3.2B.2. Unit flood flows of $900 l/s/km^2$ and $890 l/s/km^2$ were determined for the catchment areas of $2.51 km^2$ and $2.65 km^2$, respectively. Multiplying these unit flood flows by drainage area yields 100-year maximum instantaneous flood estimates of $2.26 m^3/s$ and $2.36 m^3/s$, respectively, for the $2.51 km^2$ and $2.65 km^2$ catchment areas. These estimates are believed to be conservative, given the relatively small recorded discharges in the mine area, Appendix 3.2a. Attempts were made to confirm these estimates using a runoff model approach, similar to that used to define the Probable Maximum Flood, Appendix 3.2c. The 100-year 24-hour rainfall was determined to be 56.4 mm from the Rainfall Frequency Atlas for Canada. It was found that similar estimates to those reported above would be obtained if a curve number of 77 were assumed, corresponding to a wooded area with slow to very slow infiltration rates (Group C and D soils). Such conditions are believed similar to rain on frozen ground which is a distinct possibility in the project area.

Table 3.2B.1
Maximum Daily Flood Estimates - m³/s

Sta. No.	Name	D.A. km ²	Mean	10 Year	20 Year	50 Year	100 Year	500 Year
10AB003	King Creek	13.7	1.16 84.7*	1.61 118*	1.78 130*	2.00 146*	2.14 156*	2.45 179*
29AE003	Partridge Creek (DIAND)	63.7	9.25 145*	14.6 229*	17.3 272*	20.9 328*	23.6 370*	29.7 466*
29BA002	180 Mile Creek (DIAND)	83.1	10.0 120*	16.4 197*	20.9 252*	28.6 344*	36.0 433*	61.1 735*
09AD002	Sidney Creek	372	40.0 108*	59.1 159*	63.9 172*	69.0 185*	72.2 194*	78.5 211*
10AA002	Tom Creek	435	18.8 43.2*	32.0 73.6*	36.7 84.4*	42.5 97.7*	46.6 107*	55.8 128*
09BB001	South MacMillan River	997	128 128*	166 167*	186 187*	214 215*	238 239*	298 299*
09AA007	Lubbock River	1770	10.5 5.93*	15.8 8.93*	18.2 10.3*	21.4 12.1*	23.8 13.4*	29.5 16.7*
10AD002	Hyland River	2150	279 130*	348 162*	390 181*	454 211*	511 238*	678 315*
09BA001	Ross River	7250	426 58.8*	603 83.2*	672 92.7*	761 105*	826 114*	973 134*
09AD001	Nisutlin River	8030	541 67.4*	712 88.7*	748 93.2*	780 97.1*	797 99.3*	823 103*
10AB001	Frances River	12800	716 55.9*	966 75.5*	1080 84.4*	1120 95.3*	1330 104*	1600 125*
09BC002	Pelly River at Ross River	18400	1123 61.0*	1620 88.0	1850 101*	2160 117*	2400 130*	2970 161*
09BC004	Pelly River below Vangorda Creek	22100	1062 48.1*	1420 64.3*	1580 71.5*	1780 80.5*	1930 87.3*	2280 103*
09AE001	Teslin River	30300	1094 36.1*	1480 48.8*	1650 54.5*	1870 61.7*	2030 67.0*	2410 79.5*
10AA001	Liard River at Upper Crossing	33400	1913 57.3*	2700 80.8*	3010 90.1*	3400 102*	3680 110*	4320 129*

* l/s/km²

Table 3.2B.2
Maximum Instantaneous Flood Estimates - m³/s

Sta. No.	Name	D.A. km ²	Mean	10 Year	20 Year	50 Year	100 Year	500 Year
10AB003	King Creek	13.7	1.38 101*	1.95 142*	2.17 158*	2.44 178*	2.63 192*	3.03 221*
29AE003	Partridge Creek (DIAND)	63.7	10.8 170*	17.8 279*	21.1 331*	25.1 394*	28.0 440*	34.0 534*
29BA002	180 Mile Creek (DIAND)	83.1	13.8 166*	26.0 313*	34.4 414*	47.6 573*	59.4 715*	94.5 1137*
09AD002	Sidney Creek	372	46.0 124*	67.5 182*	72.9 196*	78.7 212*	82.4 222*	89.6 241*
10AA002	Tom Creek	435	22.6 52.0*	35.2 80.9*	40.5 93.1*	47.3 109*	52.4 121*	64.5 148*
09BB001	South MacMillan River **	997	134 134*	175 176*	196 197*	226 227*	251 252*	315 316*
09AA007	Lubbock River	1770	10.7 6.02*	16.0 9.04*	18.5 10.5*	21.8 12.3*	24.4 13.8*	30.6 17.3*
10AD002	Hyland River	2150	289 134*	357 166*	399 186*	465 216*	525 244*	703 327*
09BA001	Ross River	7250	443 61.1*	612 84.4*	690 95.2*	795 110*	877 121*	1080 149*
09AD001	Nisutlin River	8030	546 68.0*	729 90.8*	767 95.5*	802 99.9*	821 102*	848 106*
10AB001	Frances River	12800	722 56.4*	975 76.2*	1090 85.2*	1230 96.1*	1350 106*	1610 126*
09BC002	Pelly River at Ross River **	18400	1180 64.1*	1646 89.5*	1880 102*	2195 119*	2438 133*	3018 164*
09BC004	Pelly River below Vangorda Creek **	22100	1074 48.6*	1436 65.0*	1597 72.3*	1800 81.4*	1951 88.3*	2305 104*
09AE001	Teslin River **	30300	1101 36.3*	1489 49.1*	1660 54.8*	1881 62.1*	2042 67.4*	2424 80.0*
10AA001	Liard River at Upper Crossing **	33400	1957 58.6*	2762 82.7*	3079 92.2*	3478 104*	3765 113*	4419 132*

* l/s/km²

** Flood estimate derived from maximum daily flood estimate times I/D ratio

APPENDIX 3.2c

PROBABLE MAXIMUM FLOOD ANALYSIS



APPENDIX 3.2c

PROBABLE MAXIMUM FLOOD ANALYSIS

1. Introduction

An estimate of the Probable Maximum Flood (PMF) for the drainage into the proposed tailings impoundment at Kudz Ze Kayah was prepared, representative of conditions at the mine closure stage. This flood estimate is required in order to size the spillway for the tailings dam. The drainage area into the tailings impoundment was determined to be 16.13 km², as measured from 1:10,000 mapping for the Kudz Ze Kayah area.

Development of the PMF estimate is based on hydrologic analysis in which the Probable Maximum Precipitation (PMP) is first estimated and then input into an appropriate flood runoff model in order to determine the corresponding inflow PMF to the impoundment.

2. Probable Maximum Precipitation

The 24-hour PMP was estimated for the project area using the Hershfield method. Hershfield developed an empirical relationship to estimate a frequency factor K_M which relates the number of standard deviations which must be added to the mean annual extreme rainfall in order to get the probable maximum rainfall at the location in question. Corresponding values for the frequency factor were developed for return periods of 1, 6, and 24 hours as follows:

$$\begin{aligned}K_{M1} &= 19(10)\exp(-.00492 \cdot 1) \text{ (mm)} \\K_{M6} &= 19(10)\exp(-.00213 \cdot 6) \text{ (mm)} \\K_{M24} &= 19(10)\exp(-.000965 \cdot 24) \text{ (mm)}\end{aligned}$$

These values were subsequently entered into the following equation which relates rainfall frequency estimates to the mean and standard deviation of the rainfall data:

$$X(T) = \bar{X} + K(T)S$$

The mean and standard deviation for the various required durations were determined for the study area from the Rainfall Frequency Atlas for Canada:

1-hour	= 8.3	s = 2.6	mm
6-hour	= 15	s = 5.5	mm
24-hour	= 25	s = 10	mm

The K values were determined to be 17.29, 17.65, and 17.97 for the 1, 6, and 24-hour durations respectively. Corresponding PMP estimates were determined as follows:

1-hour PMP = 53.3 mm
6-hour PMP = 112 mm
24-hour PMP = 205 mm

The 24-hour PMP estimate was found to be in good agreement with similar estimates derived by other consultants for similar studies in Yukon. These estimates are listed in Table 3.2C.1.

The information in Table 3.2C.1 was supplied by Mr. J.R. Janowicz, hydrologist, Water Resources - Northern Affairs Program, Whitehorse.

3. HEC-1 Analysis

The 24-hour PMP estimate of 205 mm was then input into a hydrologic model to determine the runoff hydrograph into the tailings impoundment. The Soil Conservation Service, SCS, Dimensionless Unit Hydrograph method was used in the analysis. This method requires an estimate of the lag time, TLAG, of the basin. This parameter is related to the time of concentration, T_C , of the basin. Several methods were used to estimate the time of concentration of the basin:

- Kirpich $T_C = 0.757$ hours
- Brandsby-Williams $T_C = 2.18$ hours
- Watt and Chow $T_p = 0.943$ hours

The average of the above methods, 1.3 hours, was adopted. The lag time was then determined as follows:

$$\text{TLAG} = 0.6 T_C = 0.78 \text{ hours}$$

The time step for the hydrograph was determined to be 0.167 hours (10 min) and the time to peak, T_{PEAK} , was determined to be 0.86 hours. There would be no loss from the surface of the tailings impoundment which, at El 1370 m, would cover 72 ha. This represents 4.5% of the drainage area and this was treated as impervious in the HEC-1 analysis. Estimation of the appropriate curve number, CN, for use in the model is crucial to the flood estimate. This parameter depends on soil group, land use, antecedent moisture condition and hydrologic condition. At Kudz Ze Kayah, at an elevation range of 1370 to 2042 m in Yukon, there is a strong possibility of frozen ground conditions at the time of the PMP event. Consequently, a high CN value of 90 was chosen, representing a high potential runoff coefficient for the mine catchment. While snowmelt has not been included, the use of a high runoff coefficient, would, in effect, provide some allowance for snowmelt.

The time distribution of the rainfall was determined from SCS reference literature. A Type I storm was assumed for the 24-hour rainfall distribution as recommended for the interior

regions of Alaska. A half hour increment was used in the distribution of rainfall to the model. This rainfall hyetograph had a maximum 1-hour rainfall of 53.5 mm, between hours 8 and 9, in excellent agreement with the estimated 1-hour PMP of 53.3 mm. The maximum 6-hour rainfall was 117.2 mm, between hours 7.5 and 13.5, in good agreement with the 6-hour PMP of 112 mm. When this storm rainfall was analyzed using the SCS dimensionless unit hydrograph, a peak runoff rate of 200 m³/s was obtained. A plot of the PMF hydrograph is shown in Figure 3.2C.1. The hydrograph is listed in Table 3.2C.2.

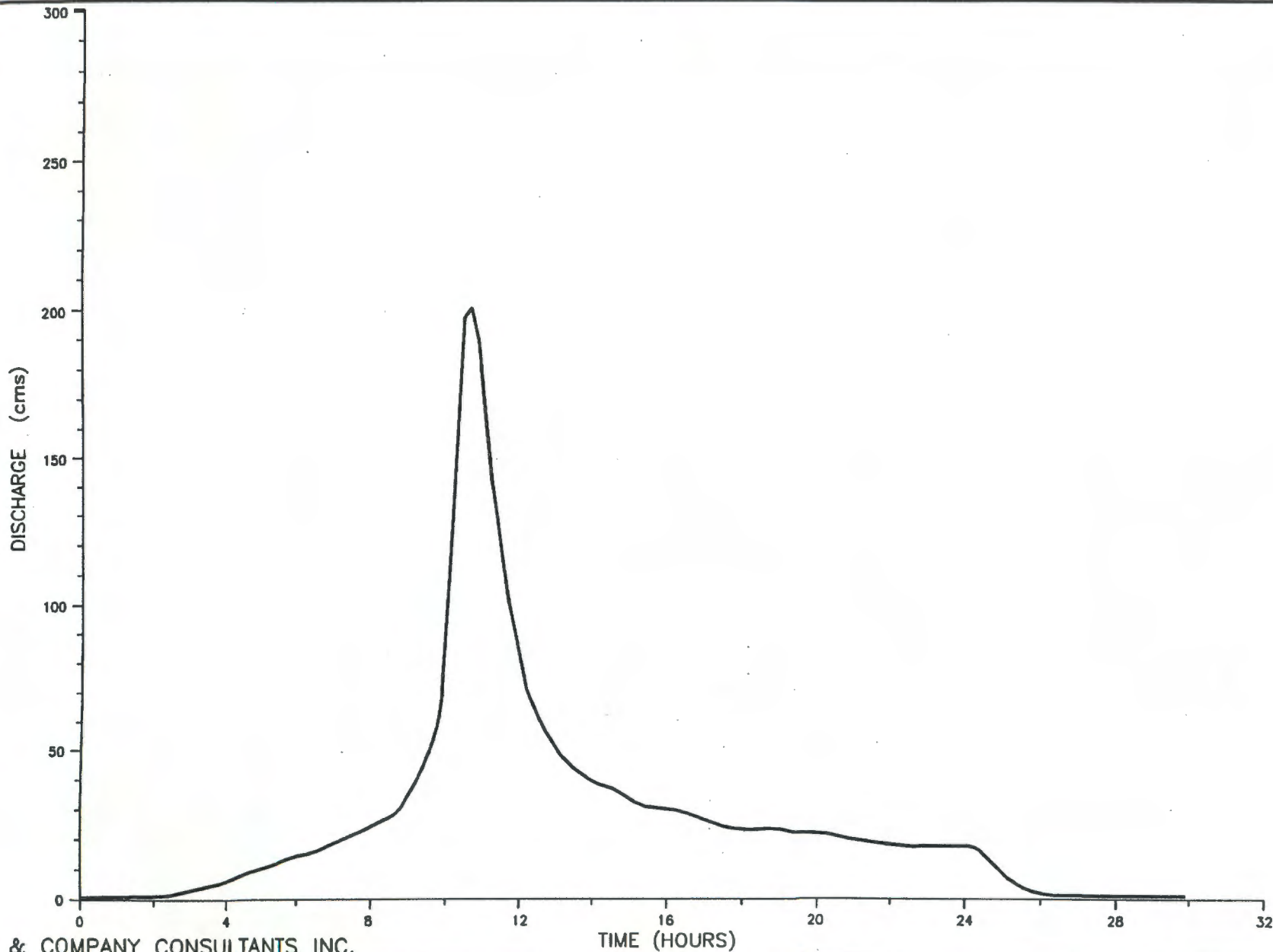
The peak of 200 m³/s occurred after 10.67 hours. A rational formula approach was used to provide an approximate check on the result obtained from the HEC-1 program. Given a time of concentration of 1.3 hours, the corresponding rainfall intensity was determined to be 61.8 mm/hr, interpolated from the peak 1-hour and 1.5-hour rainfall intensities. It was found that a runoff coefficient of 0.722 would provide the same peak runoff as obtained from the SCS unit hydrograph approach. This runoff coefficient is considered reasonable given the extreme nature of the event.

Table 3.2C.1
Probable Maximum Precipitation Estimates From Previous Studies

Study	Year	Consultant	24-Hour PMP Estimate - mm
Down Valley Tailings Study	1992	Steffen Robertson and Kirsten	184
for Faro	1981	Klohn Leonoff	340
for Anvil	1981	Klohn Leonoff	178
for Ross River	1985	Acres	119
Aishihik Hydro Project	1991	Monenco	225
Average			209

Table 3.2C.2
24-Hour Probable Maximum Flood Hydrograph

Time hours	Discharge m ³ /s	Time hours	Discharge m ³ /s	Time hours	Discharge m ³ /s	Time hours	Discharge m ³ /s
0	1	6.5	16	13.0	50	19.5	22
0.5	1	7.0	18	13.5	43	20.0	22
1.0	1	7.5	21	14.0	39	20.5	21
1.5	1	8.0	25	14.5	37	21.0	20
2.0	2	8.5	28	15.0	33	21.5	19
2.5	2	9.0	36	15.5	31	22.0	18
3.0	4	9.5	49	16.0	30	22.5	17
3.5	5	10.0	106	16.5	28	23.0	17
4.0	7	10.5	197	17.0	26	23.5	17
4.5	9	11.0	171	17.5	24	24.0	17
5.0	11	11.5	113	18.0	23	24.5	15
5.5	12	12.0	79	18.5	23	25.0	8
6.0	14	12.5	61	19.0	23	25.5	4



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KUDZ-ZE-KAYAH PROJECT

24 HOUR PROBABLE MAXIMUM
FLOOD HYDROGRAPH

FIG.
3.2C.1



APPENDIX F

2015-2016 BASELINE HYDROMETRIC DATA

Table E. 1 Discrete measurements, 2015-2016 Baseline monitoring program

Site	Area (km ²)	Date	Time	Stage (m)	Q (m ³ /s)	RPD (%)	Unit Q (L/s/km ²)	Method*
KZ-2	1.93	30/04/2015	17:00	n/a	0.005	12.5	2.5	SS
		12/05/2015	13:27	0.2905	0.016	3	8.5	SS
		22/06/2015	17:22	0.39	0.079	1	40.7	SS
		29/07/2015	12:45	0.355	0.040	2	20.6	SS
		23/08/2015	16:42	0.385	0.067	15.2	34.8	SS
		11/09/2015	15:40	0.38	0.069	9.1	35.8	SS
		15/10/2015	13:09	0.3525	0.028	2.4	14.4	SS
		20/11/2015	14:39	n/a	0.011	9.2	5.5	SS
		03/12/2015	10:11	n/a	0.008	11.9	4.2	SS
		20/01/2016	15:11	n/a	0.006	13.4	3.2	SS
		09/02/2016	15:52	n/a	0.005	9.1	2.4	SS
		20/03/2016	19:14	n/a	0.003	7.7	1.7	SS
KZ-7	10.3	30/04/2015	14:51	n/a	0.021	6.8	2.1	VA
		12/05/2015	9:40	n/a	0.294	1.4	28.5	VA
		22/06/2015	16:16	n/a	0.184	10.2	17.8	VA
		28/07/2015	12:19	n/a	0.114	15.2	11.1	VA
		23/08/2015	13:12	n/a	0.162	20	15.7	VA
		11/09/2015	9:05	n/a	0.197	6.5	19.1	VA
		14/10/2015	10:29	n/a	0.107	18.1	10.4	VA
		20/11/2015	12:44	n/a	0.054	10.1	5.2	SS
		02/12/2015	18:07	n/a	0.050	4.6	4.9	SS
		20/01/2016	12:46	n/a	0.033	6.2	3.2	SS
		09/02/2016	14:42	n/a	0.031	4.5	3.0	SS
		20/03/2016	17:47	n/a	0.016	5.3	1.6	SS
KZ-9	16.47	30/04/2015	13:00	n/a				SS
		11/05/2015	16:44	0.94	0.968	9.3	58.7	SS
		13/05/2015	15:14	0.891	0.576	0.6	35.0	SS
		24/06/2015	11:01	0.549	0.273	1.4	16.6	SS
		29/07/2015	10:58	0.495	0.202	7	12.2	SS
		23/08/2015	11:27	0.525	0.241	0.4	14.6	SS
		10/09/2015	17:23	0.577	0.313	2	19.0	SS
		15/10/2015	10:25	0.49	0.166	0.8	10.0	SS
		20/11/2015	10:25	n/a	0.079	1.2	4.8	SS
		02/12/2015	13:45	n/a	0.080	0.2	4.9	SS
		20/01/2016	11:42	n/a	0.045	6.7	2.7	SS
		09/02/2016	13:41	n/a	0.040	1.4	2.5	SS
20/03/2016	16:17	n/a	0.027	6.7	1.6	SS		
KZ-13	7.92	30/04/2015	11:14	n/a	0.010	1.1	1.2	SS
		13/05/2015	12:38	0.8	0.335	0.3	42.3	SS

Site	Area (km2)	Date	Time	Stage (m)	Q (m3/s)	RPD (%)	Unit Q (L/s/km2)	Method*
		24/06/2015	9:21	0.657	0.142	0.2	17.9	SS
		29/07/2015	14:59	0.605	0.094	0.04	11.9	SS
		23/08/2015	14:21	0.678	0.164	2.7	20.8	SS
		11/09/2015	11:51	0.71	0.196	2.1	24.7	SS
		14/10/2015	12:54	0.608	0.095	0.6	12.0	SS
		06/11/2015	16:22	0.542	0.059	0.8	7.4	SS
		02/12/2015	16:11	n/a	0.048	7.8	6.0	SS
		21/01/2016	10:48	n/a	0.013	1.3	1.7	SS
		08/02/2016	13:25	n/a	0.011	14.5	1.3	SS
		21/03/2016	8:37	n/a	0.007	0.5	0.9	SS
KZ-15	66.28	29/04/2015	17:16	n/a	0.084	6.5	1.3	VA
		11/05/2015	14:06	0.704	1.804	5.4	27.2	VA
		12/05/2015	15:23	0.755	2.305	1	34.8	VA
		13/05/2015	16:11	0.7925	2.563	2	38.7	VA
		22/06/2015	11:58	0.509	0.000	0	0.0	VA
		23/06/2015	14:04	0.503	0.790	0.2	11.9	VA
		28/07/2015	13:33	0.45	0.634	0.5	9.6	VA
		22/08/2015	15:29	0.532	0.974	0.3	14.7	VA
		09/09/2015	15:29	0.57	1.085	0	16.4	VA
		14/10/2015	14:31	0.485	0.700	4.7	10.6	VA
		19/11/2015	12:50	0.38	0.269	15	4.1	VA
		02/12/2015	10:39	n/a	0.341	16.5	5.1	SS
		20/01/2016	8:58	n/a	0.095	2.6	1.4	SS
		09/02/2016	10:17	n/a	0.093	25.2	1.4	SS
		20/03/2016	12:11	n/a	0.085	2.1	1.3	VA
KZ-16	40.56	30/04/2015	18:40	n/a	0.070	n/a	1.7	SS
		11/05/2015	15:20	0.279	0.947	6.6	23.4	VA
		12/05/2015	16:12	0.25	1.117	0.4	27.5	VA
		13/05/2015	16:52	0.265	1.471	8.9	36.3	VA
		22/06/2015	10:52	0.12	0.534	5.8	13.2	VA
		28/07/2015	14:29	0.075	0.406	1.5	10.0	VA
		22/08/2015	16:14	0.14	0.598	7.2	14.7	VA
		09/09/2015	16:40	0.165	0.638	0.9	15.7	VA
		14/10/2015	15:31	0.09	0.309	7.5	7.6	VA
		21/11/2015	10:44	n/a	0.153	3.2	3.8	SS
		02/12/2015	11:54	n/a	0.131	0.5	3.2	SS
		20/01/2016	9:41	n/a	0.045	0.4	1.1	SS
		09/02/2016	11:15	n/a	0.046	13.5	1.1	SS
		20/03/2016	13:50	n/a	0.080	6.1	2.0	SS
KZ-17	25.71	29/04/2015	18:20	n/a	0.045	3.2	1.7	SS

Site	Area (km2)	Date	Time	Stage (m)	Q (m3/s)	RPD (%)	Unit Q (L/s/km2)	Method*
		11/05/2015	14:43	n/a	0.857	n/a	33.3	D
		12/05/2015	15:39	n/a	1.188	n/a	46.2	D
		13/05/2015	16:30	n/a	1.092	n/a	42.5	D
		28/07/2015	14:01	n/a	0.228	n/a	8.9	D
		22/08/2015	15:51	n/a	0.376	n/a	14.6	D
		09/09/2015	16:04	n/a	0.447	n/a	17.4	D
		14/10/2015	15:00	n/a	0.392	n/a	15.2	D
		02/12/2015	11:18	n/a	0.210	n/a	8.2	D
		20/01/2015	9:19	n/a	0.049	n/a	1.9	D
		09/02/2016	10:48	n/a	0.047	n/a	1.8	D
KZ-21	83.84	29/04/2015	15:19	n/a	0.154	30.2	1.8	VA
		11/05/2015	12:28	n/a	1.916	n/a	22.9	VA
		23/06/2015	12:54	n/a	0.948	2.2	11.3	VA
		28/07/2015	17:29	n/a	0.810	5.5	9.7	VA
		23/08/2015	10:28	n/a	1.541	3.2	18.4	VA
		09/09/2015	13:05	n/a	1.150	8.4	13.7	VA
		15/10/2015	15:30	n/a	0.856	1	10.2	VA
		19/11/2015	11:10	n/a	0.378	n/a	4.5	SS
		01/12/2015	16:42	n/a	0.244	1.8	2.9	SS
		19/01/2016	15:32	n/a	0.171	n/a	2.0	SS
		09/02/2016	9:12	n/a	0.161	2.5	1.9	SS
		20/03/2016	10:57	n/a	0.116	9	1.4	SS
KZ-22	165.45	29/04/2015	14:03	n/a	0.337	2.6	2.0	VA
		11/05/2015	12:28	n/a	3.994	7.4	24.1	VA
		23/06/2015	11:08	n/a	1.768	4.1	10.7	VA
		28/07/2015	16:23	n/a	1.521	1.6	9.2	VA
		23/08/2015	9:34	n/a	2.703	1.3	16.3	VA
		09/09/2015	10:17	n/a	2.505	4.7	15.1	VA
		14/10/2015	17:00	n/a	1.402	1.3	8.5	VA
		18/11/2015	16:57	n/a	0.730	n/a	4.4	SS
		01/12/2015	15:47	n/a	0.596	20.7	3.6	SS
		19/01/2016	14:39	n/a	0.349	7.3	2.1	SS
		08/02/2016	16:29	n/a	0.772	6.8	4.7	SS
		20/03/2016	9:53	n/a	0.300	4	1.8	SS
KZ-26	214.88	29/04/2015	12:22	n/a	0.338	n/a	1.6	SS
		11/05/2015	10:30	n/a	11.389	4.4	53.0	VA
		14/05/2015	13:48	0.65	7.608	0.1	35.4	VA
		23/06/2015	9:13	0.406	2.299	3.6	10.7	VA
		29/07/2015	9:49	0.358	1.755	0.9	8.2	VA
		22/08/2015	10:04	0.56	4.763	1.1	22.2	VA

Site	Area (km ²)	Date	Time	Stage (m)	Q (m ³ /s)	RPD (%)	Unit Q (L/s/km ²)	Method*
		08/09/2015	15:00	0.4875	3.413	3.6	15.9	VA
		15/10/2015	16:58	0.3475	1.545	1.1	7.2	VA
		18/11/2015	14:57	n/a	0.604	n/a	2.8	SS
		01/12/2015	11:41	n/a	0.322	n/a	1.5	VA
		08/02/2016	15:22	n/a	0.443	n/a	2.1	SS
		19/03/2016	15:47	n/a	0.316	4.3	1.5	SS

Note: * SS= Salt Slug/Dilution, VA = Velocity-Area, D = Derived (Calculated)

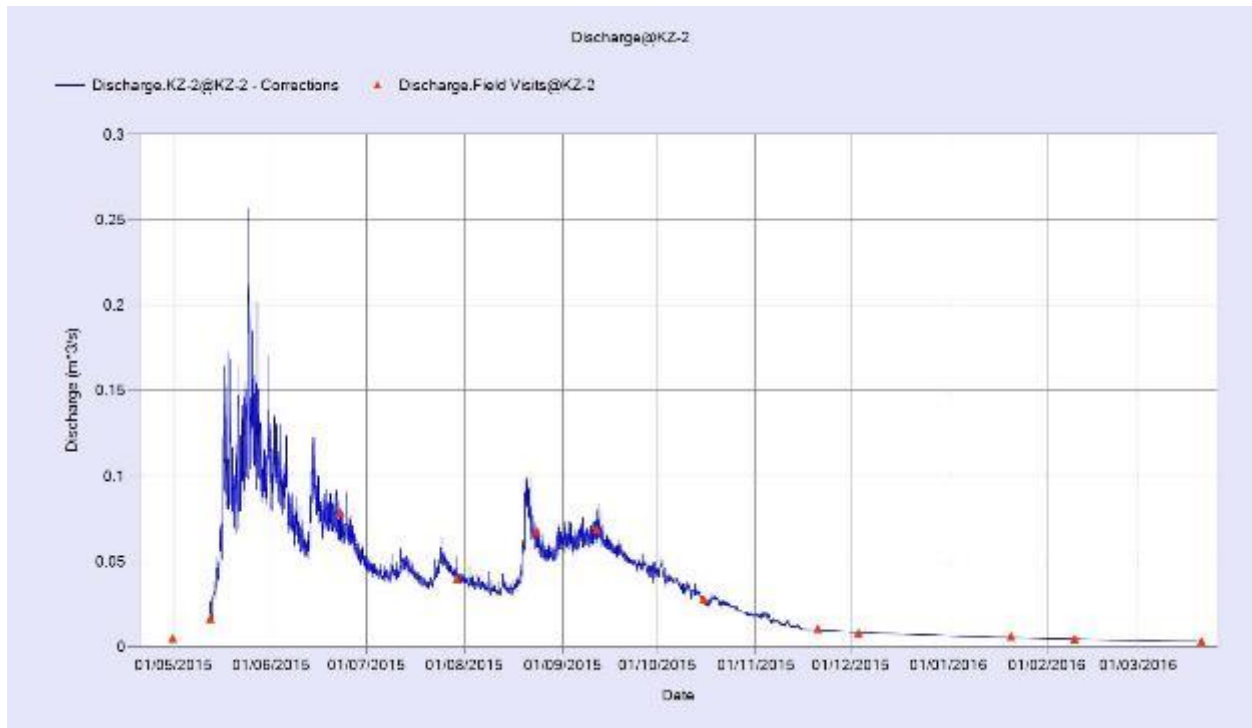


Figure E. 1 KZ-2 2015-2016 Hydrograph



Figure E. 2 KZ-9 2015-2016 Hydrograph



Figure E. 3 KZ-13 2015-2016 Hydrograph

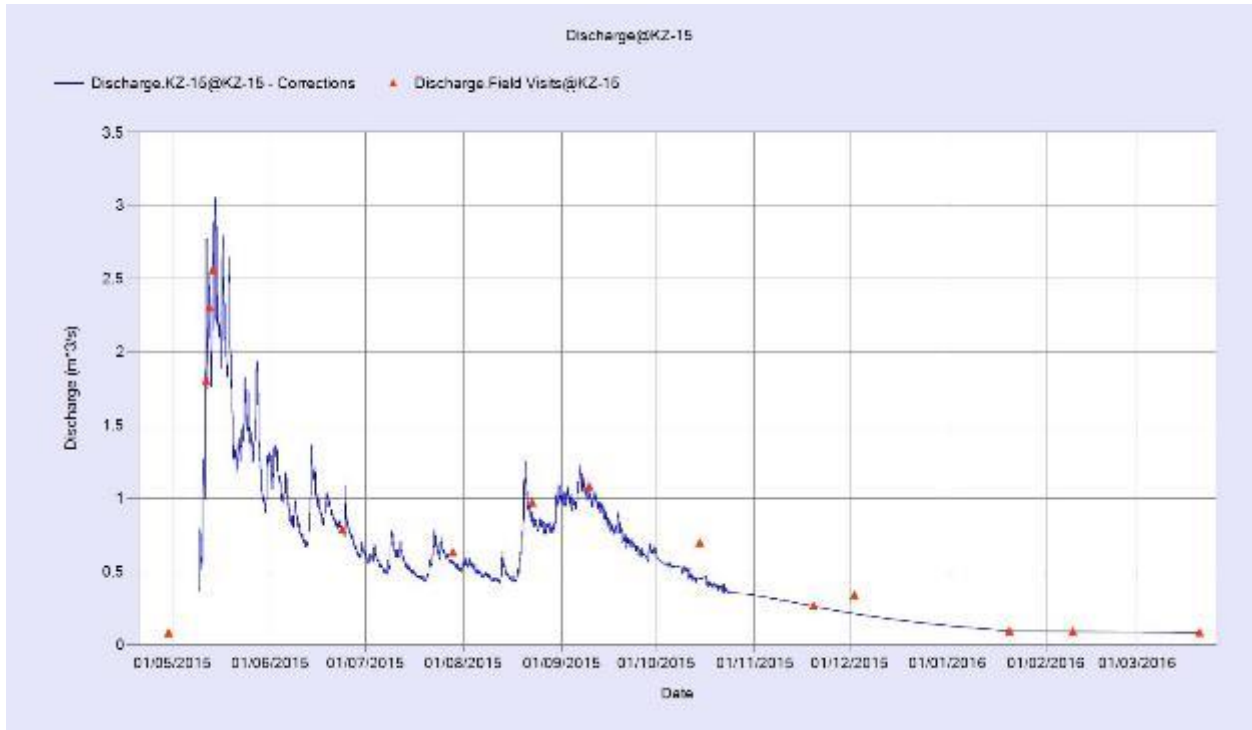


Figure E. 4 KZ-15 2015-2016 Hydrograph



Figure E. 5 KZ-16 2015-2016 Hydrograph



Figure E. 6 KZ-22 2015-2016 Hydrograph



Figure E. 7 KZ-22 2015-2016 Hydrograph