

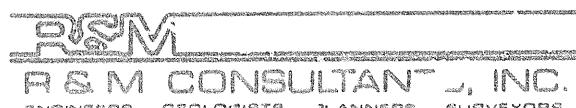
**SUSITNA  
HYDROELECTRIC PROJECT**

**FEDERAL ENERGY REGULATORY COMMISSION  
PROJECT No. 7114**

**PROCESSED CLIMATIC DATA  
OCTOBER 1983 - DECEMBER 1984**

**VOLUME 5  
DEVIL CANYON STATION  
(No. 0660 )**

PREPARED BY



UNDER CONTRACT TO

**HARZA-EBASCO  
SUSITNA JOINT VENTURE**

**FINAL REPORT**

**JUNE 1985  
DOCUMENT No. 2771**

**ALASKA POWER AUTHORITY**

**SUSITNA HYDROELECTRIC PROJECT**

**PROCESSED CLIMATIC DATA  
OCTOBER 1983 - DECEMBER 1984**

**VOLUME 5**

**DEVIL CANYON (No. 0660)**

Report by  
R&M CONSULTANTS, INC.

Under Contract to  
Harza-Ebasco Susitna Joint Venture

Prepared for  
Alaska Power Authority

Final Report  
June 1985

ALASKA POWER AUTHORITY  
SUSITNA HYDROELECTRIC PROJECT

TASK 4 - HYDROLOGY

PROCESSED CLIMATIC DATA  
OCTOBER 1983 - DECEMBER 1984

VOLUME INDEX

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ALASKA POWER AUTHORITY  
SUSITNA HYDROELECTRIC PROJECT

PROCESSED CLIMATIC DATA - DEVIL CANYON STATION  
OCTOBER 1983 - DECEMBER 1984

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## ACKNOWLEDGMENTS

These climatic data were collected under contract to Harza-Ebasco Susitna Joint Venture for the Alaska Power Authority on the Susitna Hydroelectric Project. Field maintenance and data collection were performed by the hydrology staff of R&M Consultants, Incorporated. Data reduction and processing were performed by Debbie Stephens, Len Story, Blair Parker, Jim Nelson and Jeff Coffin, using computer programs developed by Mark Holmstrand and revised by Bill Ashton.

## 1.0 BACKGROUND

### 1.1 Purpose

The Devil Canyon climate station was installed near the Devil Canyon damsite to obtain environmental data for reservoir, hydrology, and transmission line studies and design and planning of access roads and dam construction.

### 1.2 Station Description

The Devil Canyon station is located 1/8-mile south of the Susitna River at river mile 153. It is adjacent to the proposed Devil Canyon dam site at  $62^{\circ}48'50''$  N latitude and  $149^{\circ}18'50''$  W longitude. It lies at approximately 1500 feet above mean sea level (MSL) on a ridge within the plateau region, yet is close to the actual walls of the canyon (see Figures 1.1 and 1.2 for location).

The terrain rises gradually to the south, occasionally forming narrow benches or plateaus. Elevations increase to 2,000 feet about 1 mile south of the station and to 3,000 feet within 2 miles south of the site. These elevations or contours are maintained in an east-west direction. Shading of the station from direct solar radiation occurs throughout the day during December and January and during the remainder of the year when sun angles drop below  $9^{\circ}$  above the horizontal (see Table 1.1 for angular elevations of terrain obstructions). Some shading is also provided by the coniferous vegetation surrounding the station. The site is located on a narrow, barren ridgeline, well exposed to winds from the west, north and east. The site is well protected to the south.

### 1.3 Methods of Data Collection

The climatic data at Devil Canyon are collected using a Model 5100 Weather Wizard Digital Weather Station, manufactured by Metecrology Research,

Inc., now part of Belfort Instrument Company. The Weather Wizard measures, processes, and records several weather parameters, which are described below. A 12-volt power supply powers the station and is kept charged by a solar panel. Data are recorded on a low-temperature cassette tape at 30-minute intervals. Fifteen-minute recording intervals were used prior to October 6, 1983. The station is visited approximately once per month for maintenance and repairs, and to retrieve the data tapes.

Recorded data include instantaneous values of temperature, relative humidity, solar radiation intensity, and battery voltage; the cumulative amount of precipitation measured since the last reset; and several wind parameters. Wind direction is sampled every 15 seconds and averaged over the recording interval. Wind speed is measured by counting each revolution of the cup anemometer and averaging the speed over the recording interval (15 or 30 minutes). The fastest 15-second average speed for the interval is reported as the peak gust.

The anemometer and wind vane are part of a sensor array mounted atop a 3.5-meter tripod adjacent to the recorder shelter. The sensor array also contains a short boom with a radiation shield for the temperature and relative humidity sensors. A rain gage and solar radiation sensor are located on a separate platform 10 meters to the southeast from the main platform. The tipping-bucket rain gage is mounted on a 0.6-meter post and plumbed vertically. The solar sensor is installed facing vertically upward atop a 1.5-meter tripod.

Table 1.2 describes sensor types and performance characteristics for each parameter. The performance characteristics were provided by MRI. Conversion factors for the units are provided in the appendix.

#### 1.4 Station History

The Devil Canyon Station was installed on July 17, 1980. This report covers the period from October 1983 to December 1984 only. There are three previous data reports for this station:

Report	Period Covered
1. Processed Climatic Data Volume 6 Devil Canyon Station (No. 0660) March 1982 (R&M Consultants)	July 1981 - September 1981
2. Processed Climatic Data Volume 6 Devil Canyon Station (No. 0660) December 1982 (R&M Consultants)	October 1981 - September 1982
3. Processed Climatic Data Volume V Devil Canyon Station (No. 0660) June 1984 (R&M Consultants)	October 1982 - Sept 1983

Tables 1.3 through 1.6 list the inspection dates and maintenance performed for the station, significant data gaps, adjustments to raw data, and values that have been estimated where data are missing. Periods with more than one hour of missing data are shown on Table 1.4. Intermittent gaps in the wind data occur frequently in the winter and are not identified individually. The number of missing days for these cases is approximated by the total number of missing hours during the period. The beginning and ending dates for the data gaps and for the adjustments to raw data correlate with the inspection and maintenance dates. Relative humidity data for measurements with wind speeds less than 1.0 m/sec are not valid and thus not used in calculating the percentage of total observations for each month, which are tabulated in Table 2.2. However, these missing RH values do not constitute data gaps in Table 1.4.

TABLE 1.1. ANGULAR ELEVATIONS OF TERRAIN OBSTRUCTIONS  
AROUND DEVIL CANYON WEATHER STATION

Obstruction(1)	Azimuth(2) (True)	Angle(3)
Mountain	60°	5°
Mountain	112°	9°
Knob	166°	15°
Tree	166°	23°
Tree	202°	33°
Scattered Trees	166°-254°	18°-23°
Trees on Ridge	218°-270°	5°-10°
Mt. McKinley	290°	4°
Tree	294°	9°
Sensor Array	312°	6°
Mountain	366°	8°

NOTES:

- (1) Points used are selected mountain peaks and other features surrounding the weather station. All measurements are taken with respect to the solar sensor.
- (2) Measured azimuth angles are in degrees from magnetic north. The correction to obtain degrees from true north is 28°.
- (3) Vertical angles are measured above the horizontal with a hand level.

TABLE 1.2 DESCRIPTION OF METEOROLOGIC SENSORS

<u>Sensor</u>	<u>Model #</u>	<u>Manufacturer</u>	<u>Description</u>	<u>Operable Range</u>	<u>Accuracy</u>
Temperature	T5100	MRI	Linearized Thermistor	-30°C ~ +50°C	±1°C
Relative Humidity Electro-Humidity Sensor	PCRC-11	Phys-Chemical Research Corp.	Exposed circuit element Senses changes in RH by changes in impedance	10% to 95%	±6%
Solar Radiation	RS 1008 Photo Voltaic Pyranometer	RHO Sigma Corp.	Temperature-Compensated Silicon Photovoltaic Cell	0 to 140 Milliwatts/cm <sup>2</sup>	±5mw/cm <sup>2</sup>
Precipitation	P5100	MRI	Tipping Bucket Rain Gage	0 to 99.8 mm	±1% up to 76.2 mm/hr ±5% from 76.2 mm/hr to 254 mm/hr
Wind Speed	5100	MRI	Cup Anemometer (vertical axis)	0 to 50 m/sec	±0.5 m/sec
Wind Direction	5100	MRI	Sensitive Vane driving a 360° Plastic Film Potentiometer	0 to 359°	±3.6°

**TABLE 1.3. INSPECTION DATES AND MAINTENANCE  
DEVIL CANYON CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984**

Inspection Date	Maintenance
10/6/83	Changed to 30 minute recording intervals
11/17	None
12/4	None
1/6/84	Reset date to 006
1/27	Station pulled out for inspection and maintenance
2/22	Station re-installed RH sensor calibrated
4/10	None
5/30	Reconnected precipitation gage
7/13	None
8/21	Sensor array removed for annual maintenance RH sensor replaced
8/22	Sensor array replaced RH sensor calibrated Wind sensors removed
8/24	Sensor array reconnected RH sensor calibrated Replaced solar sensor desiccant Replaced wind sensors
10/16	Replaced RH oscillator Replaced sensor array
11/2	None
11/29	RH sensor calibrated

NOTE: Inspections noted where no maintenance was performed are dates when cassette tapes were replaced.

TABLE 1.4. EXPLANATION OF DATA GAPS AT  
DEVIL CANYON CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

<u>Period</u>	<u>Approximate Number of Missing Days by Parameter</u>							
	<u>Temp</u>	<u>RH</u>	<u>WS</u>	<u>WD</u>	<u>Precip</u>	<u>Solar</u>	<u>Gust</u>	<u>Explanation</u>
10/4 ~ 10/16/83			3	3			3	Frozen anemometer and wind vane (intermittent)
10/23 ~ 1/27/84	19.5	19	24	24		18	24	Garbled data. Weather Wizard malfunction
1/27 ~ 2/22/84	26	26	26	26		26	26	Weather Wizard removed for inspection and maintenance
4/1 ~ 5/30/84					59			Precipitation gage not connected properly
4/7 ~ 4/16/84				1				Frozen wind vane (intermittent)
5/5/84				0.3				Frozen wind vane
7/3 ~ 7/21/84		1.5						Bad RH oscillator (intermittent)
7/21 ~ 8/6/84		16.5						Bad RH oscillator
8/7 ~ 8/21/84		3						Bad RH oscillator (intermittent)
8/21 ~ 8/24/84	3.5	3.5	3.5	3.5			3.5	Sensor array disconnected for annual maintenance
8/22/84						0.2		Power off for 4 hours for annual maintenance
10/3 ~ 10/25/84			1.5	2			1.5	Frozen anemometer and wind vane (intermittent)
TOTAL	49.0	69.5	58.0	59.8	59.0	44.2	58.0	

NOTE: Precipitation data collected from April through September only. Collector is not designed for winter temperatures.  
See Section 4.2 of text.

TABLE 1.5. ADJUSTMENTS MADE TO RAW DATA  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

Period	Solar Radiation Adjustment	RH Adjustment
10/1 - 10/6/83	-1 mW/cm <sup>2</sup>	-28 RH Points
10/6 - 11/17/83	-1	-20
11/17 - 12/4/83	-1	-15
12/4 - 1/1/84	-1	-11
1/1 - 1/27/84	-1	-16
2/22 - 5/30/84	-1	
5/30 - 7/13/84	-1	-10
7/13 - 7/21/84	-1	-20
7/21 - 8/7/84	-1	
8/7 - 8/11/84	-1	-15
8/11 - 8/18/84	-1	+8
8/18 - 8/24/84	-1	
8/24 - 10/16/84	-1	-6
10/16/84	-2	-12
10/17 - 10/18/84	-4	-12
10/19 - 10/20/84	-2	-12
10/21 - 10/24/84	-1	-12
10/25 - 11/2/84	-2	-12
11/2/84	-3	
11/3/84	-2	
11/4 - 11/12/84	-1	
11/13 - 11/14/84	-2	
11/15 - 12/31/84	-1	

TABLE 1.6. ESTIMATES FOR MISSING DATA  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time</u> <u>(AST)</u>	<u>Temp</u> <u>(°C)</u>	<u>Wind</u> <u>Speed</u> <u>(m/s)</u>	<u>Wind</u> <u>Dir</u> <u>(Deg)</u>	<u>Gust</u> <u>(m/s)</u>	<u>RH</u> <u>(%)</u>	<u>Precip</u> <u>(mm)</u>	<u>Solar</u> <u>Radiation</u> <u>(mw/cm²)</u>
10/23/83	2100					62		0
	2130	-4.4				65		0
	2200					67		
	2230				2.5			
	2300				2.5			
	2330	-5.4	1.6		2.5	74		0
10/24/83	0100							0
	0130	-07.5						0
	0200							0
	0230	-8.3						0
	0300							0
	0400-0500							0
	0730				2.5			1
	0800	-10.0	0.8					
	0900	-8.8						
	0930	-8.5						
	2000				2.5			
	2030				2.5	65		0
	2230	-10.4	0.8					
10/25/83	0630				2.5			
	0700	-10.5	1.3		2.5	60		0
	0800	-9.0	1.4		2.5	53		2
10/26/83	0130					50		0
	0800					58		2
	0900					56		4
	1330							5
	1400				04.4	50		4
	2330	-9.1						
10/27/83	0030	-9.0						
	1030	-1.3				55		1.1
	1930					50		0
	2100					49		0
	2300					53		0

NOTES: 1. These data have been estimated where gaps exist in the record. Estimates were made by interpolating between valid data points preceding and following the missing data.

2. Precipitation values are the amounts estimated to have fallen in the preceding half-hour.

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
10/28/83	0530		1.6		3.2	52		0
	1200					56		9
	1630		0.3		1.3	91		0
11/04/83	1830	-1.2			3.2			
	1900	-1.2						
	0000							
11/05/83	0030				3.2			
	0100				3.2			
	1230				2.5			
	1300				2.5			
	2030	-6.0	1.0			52		9
	2200	-8.4						
	2300	-9.2						
11/07/83	22 0	-3.4						
	2 0	-3.3						
11/08/83	1800-0000							0
11/09/83	0430					25		0
	0800					25		0
11/10/83	1700	-2.0						
11/11/83	0430				2.5			
	0930	-5.4						
	1000					41		
	1030					41		
	1100	-6.5				42		2
	1130	-6.3				42		3
	1200	-6.2				43		3
	1230	-6.1				43		4
	1300	-6.0				44		4
	1330	-5.7				44		5
	1430	-4.5						6
	1530	-1.0				42		3
	1200					44		0
	2100	-3.2						
	2200	-4.0						
	2230	-4.5						

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time</u>	<u>Temp</u> (°C)	<u>Wind</u> <u>Speed</u> (m/s)	<u>Wind</u> <u>Dir</u> (Deg)	<u>Gust</u> (m/s)	<u>RH</u> (%)	<u>Precip</u> (mm)	<u>Solar</u> <u>Radiation</u> (mw/cm²)
11/12/83	2100					59		0
	2300							0
11/13/83	0630	-11.2						
11/14/83	0330					74		
	0400	-10.1				74		0
	0430	-10.2				73		
	0500					72		0
	0530	-10.4				72		0
	0600	-10.3				71		0
	0630	-10.3				71		0
	0700	-10.3				70		0
	0800					69		
	0830					69		
	0930					69		1
	1000	-10.7				69		2
	1230					63		4
	1300	-8.9				61		5
11/15/83	2200					7		0
	0000					7		0
11/17/83	0500	-13.8				71		0
	0530	-13.9				71		0
	0600	-14.0				71		0
	0630	-14.0				71		0
	0700	-13.9				71		0
	0730	-14.0				71		0
	0800	-14.0				71		0
	0830	-14.1				71		
	0900					71		
	0930	-14.0				71		0
	1000	-13.9				71		1
	1030							1
	1100					68		2
	1130					67		3
	1200					66		4
	1300					65		5

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg.)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
11/18/83	2200					73		
	2230	-15.0				73		
	2300					74		
	2330	-15.5				74		
11/19/83	0030	-16.2				74		0
	0100	-16.5				74		
	0130	-16.6				74		
	0200	-16.7				74		
	0330					74		
	0400	-16.7						
	0530	-16.5						
	0630	-16.3						
	0730	-16.0				75		
	0830	-15.6						
	0900	-15.4						
	0130	-15.6	1.9			74		
11/20/83	0200				3.2	74		
	0430	-16.1				73		0
	0500	-16.2				73		0
	0530	-16.1				73		0
	0600					73		
	0630					73		
11/25/83	1630	-9.9				64		
	1700	-10.0				64		
	1730	-10.1				64		
	1800	-10.0				64		
	1830	-10.0						
	1900					65		
	2130					64		
11/28/83	2130	+0.1				61		0
	2200	-0.1				62		0
11/30/83	0800					43		
12/01/83	1630					40		
	1730					39		
	1800	1.6						
	1830	1.8				42		

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time</u> <u>(AST)</u>	<u>Temp</u> <u>(°C)</u>	<u>Wind</u> <u>Speed</u> <u>(m/s)</u>	<u>Wind</u> <u>Dir</u> <u>(Deg)</u>	<u>Gust</u> <u>(m/s)</u>	<u>RH</u> <u>(%)</u>	<u>Precip</u> <u>(mm)</u>	<u>Solar</u> <u>Radiation</u> <u>(mw/cm²)</u>
12/02/83	2230	-4.7						
	2300	-5.0						
12/04/83	1330					77		
	1400					78		
12/07/83	2200					85		
	2230					83		
	2300	-7.2				83		0
	2330					82		
	0000					81		
12/08/83	0030					80		
	0130	-7.0						
	0200	-7.2						
	0700					75		
12/09/83	0530					40		
	1330					40		
	1400					41		
	2100					41		
	2130					41		
	2200	-16.0				41		
	2230	-16.2				42		
	2300	-16.2				42		
	2330	-16.1				41		
	0000	-16.3				42		
2/10/83	0500					42		
	0700					40		
12/11/83	1200					59		2
	1230	-8.2				60		2
	1300					59		2
	1330					63		2
	1600							

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
12/12/83	1530							0
	1600					68		0
	1630					69		0
	1700	-12.0				70		0
	1800	-12.2						
	1900					64		0
12/14/83	0600					76		
	0630	-15.4				77		
	0700	-15.6				78		
	0730	-15.8				78		
	0830					77		
	0900					77		
	0930	-16.5				76		
	1000					76		
	1030	-16.4				75		
	1130	-16.6				75		
	1200					76		
	1530					74		
	1600					73		
	1800	-17.8						
	1830	-17.9						
	1900	-17.8						
	2030					74		
	2100	-18.0				77		
	2230	-19.0						
	2330	-19.5				76		
	0000					78		
12/19/83	0030	-10.2				88		
	0100	-10.0				87		
	0400					61		
	0500					64		
	0830	-9.0						
	2330	-8.3				55		
	0000	-8.2	3.2		5.1	55		0
12/20/83	0130	-7.8				55		0
	0930	-6.0				53		0
	1100					55		
	1130					54		
	1200	-5.3				54		
	2200	-4.0	2.4		4.4	61		0

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
12/21/83	0130					82		
	0400					82		0
	0430	-3.6				83		0
	2200	-5.7				74		0
	2330							0
	0000					75		
12/22/83	0030					77		0
	0100					78		0
	0200					78		
	0230					79		
	0300					80		0
	0330					81		
	0400					82		0
	0500					82		
	0530					82		
	0600							0
	0630-0900					83		0
	0930					83		0
	1000					83		
	1130							0
	1200							1
	1230							1
	1300							3
	1330							2
	1400							2
	1430							2
	1500							1
	1530-1930							0
12/23/83	0030	-14.0				82		0
	0100	-13.9				82		0
	0400					81		
	0430	-13.6				81		0
	0500	-13.2				80		0
	0530	-12.6				80		0
	0600	-12.4				80		0
	0630	-12.2				79		0

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time</u> <u>(AST)</u>	<u>Temp</u> <u>(°C)</u>	<u>Wind</u> <u>Speed</u> <u>(m/s)</u>	<u>Wind</u> <u>Dir</u> <u>(Deg)</u>	<u>Gust</u> <u>(m/s)</u>	<u>RH</u> <u>(%)</u>	<u>Precip</u> <u>(mm)</u>	<u>Solar</u> <u>Radiation</u> <u>(mw/cm²)</u>
12/24/83	0030	-13.0				77		
	0500					76		
	0930	-13.8				75		0
	1000	-13.6						
	1030	-13.4						
	1130					74		
	1200					74		
	1230					73		3
	2000	-12.8						
	2030					81		0
	2100	-12.7				82		0
12/26/83	1430	-10.6				60		1
	1500					60		
	1600	-10.1						
	1630	-10.0						
	2000					61		
	2030					60		
	2200					60		
	2300					60		
12/27/83	0400	-10.0				56		
	0430	-9.4						0
	0600					53		0
	1300					52		2
	1330	-10.2				51		2
	1430	-10.5				51		
	1530					51		
	1900	-12.5				55		
	2300	-16.0						
	2330					70		
	0000	-16.3				75		0
01/02/84	2100	-5.0				86		0
	2130	-5.7				90		0
	2200	-6.4				93		0
	2230	-7.0				96		
	2300					98		0
	0000					86		0
01/03/84	0130					90		
	0200					89		0
	0230	-6.6						
	0300	-6.5				89		0
	1100					91		
	1300					90		
	1330					89		
	2230					93		
	2300					91		
	2330					92		0

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
01/04/84	1100	-10.3				79		0
	1130							0
	1200					70		1
	1230							
	1400	-12.4				68		
	1530					79		0
	1600	-12.7				78		0
	1700					80		
01/06/84	2330	-13.0				76		0
	0000	-12.8				77		0
01/07/84	1100	-13.2						2
	1200					76		2
	1230	-12.8				76		3
	1300	-12.7				76		3
	1330							
	1700	-13.5				76		
	1730							
	1800	-14.3				76		0
	1830	-14.6				77		0
	1900	-14.9				77		0
	1930	-15.0				76		0
01/08/84	0030-1030							0
	1100-1200							1
	1230	-12.5				73		2
	1300	-12.4				73		2
	1330					73		
01/09/84	0100					53		0
	0900	-12.0						
	1200	-8.4				62		2
	1230	-8.0				63		2
	1300	-7.5				63		3
	1330	-7.2				62		2
01/13/84	2200	-2.2				94		0
01/14/84	0500					91		

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

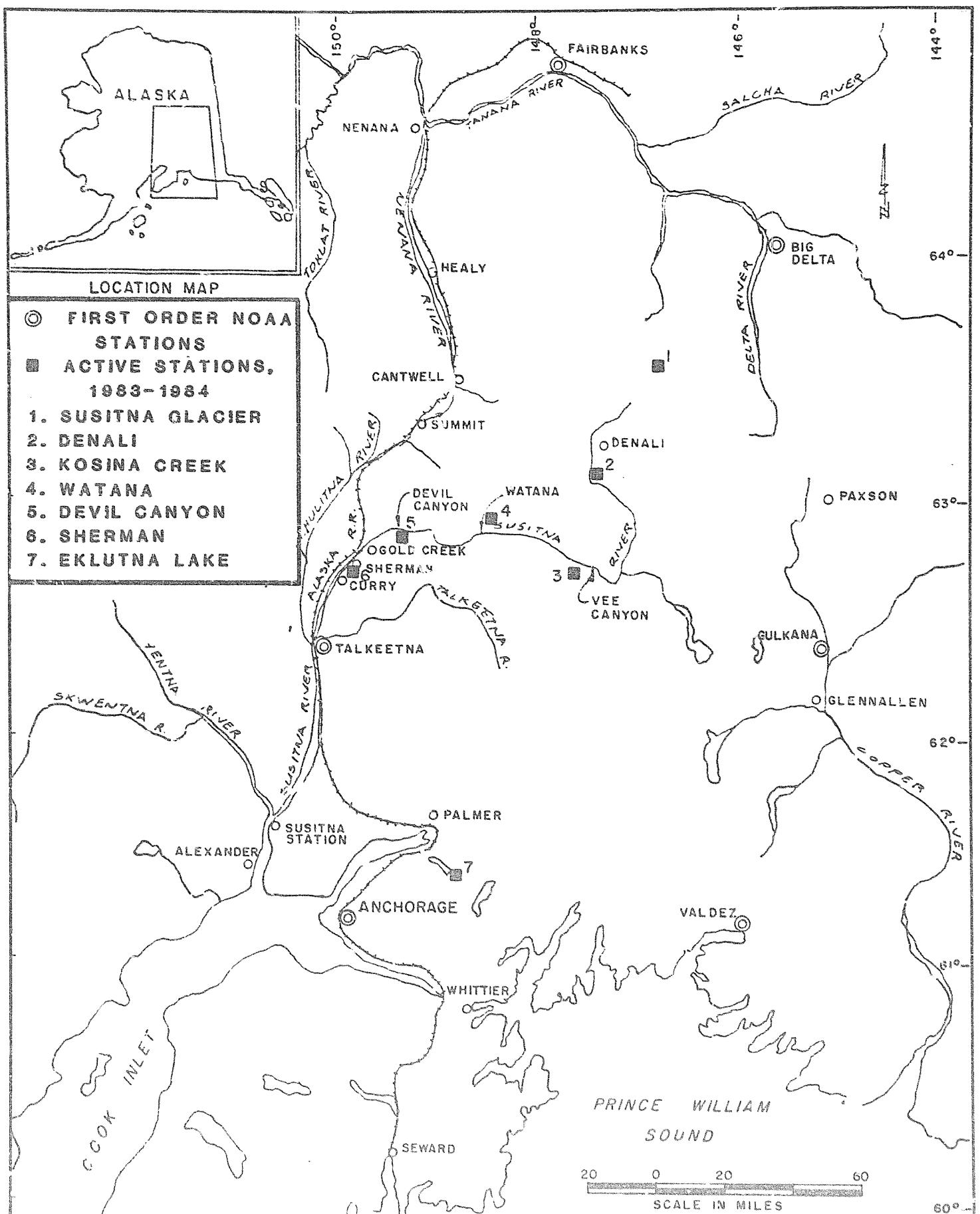
<u>Date</u>	<u>Time</u> <u>(AST)</u>	<u>Temp</u> <u>(°C)</u>	<u>Wind</u> <u>Speed</u> <u>(m/s)</u>	<u>Wind</u> <u>Dir</u> <u>(Deg)</u>	<u>Gust</u> <u>(m/s)</u>	<u>RH</u> <u>(%)</u>	<u>Precip</u> <u>(mm)</u>	<u>Solar</u> <u>Radiation</u> <u>(mw/cm²)</u>
01/15/84	1300					90		1
	1330							1
	1400							0
	1430					91		0
	1530	-6.0				91		0
	1600	-6.2						0
	1630					92		0
	1700~1730							0
	1800	-8.0						0
	1830	-8.1						0
	1900							0
	1930	-8.3						0
	2000	-8.5				88		0
	2030~2200							0
	2200					87		0
	2300					87		0
	2330					86		0
	0000					85		0
1-18	01/16/84	0030				86		0
	0100					87		0
	0130					87		0
	0200					87		0
	0230	-9.4				87		0
	0600	-9.4				90		0
	0900					90		
	0930					90		
	1000					89		
	01/17/84	0100						0
	0130	-6.8						0
	0400					80		0
	1500	-6.2						0
	2030					75		0
	2100	-6.5						0
	2130	-6.8						0

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time</u> <u>(AST)</u>	<u>Temp</u> <u>(°C)</u>	<u>Wind</u> <u>Speed</u> <u>(m/s)</u>	<u>Wind</u> <u>Dir</u> <u>(Deg)</u>	<u>Gust</u> <u>(m/s)</u>	<u>RH</u> <u>(%)</u>	<u>Precip</u> <u>(mm)</u>	<u>Solar</u> <u>Radiation</u> <u>(mw/cm²)</u>
01/18/84	0530					80		0
	0630	-8.2				80		0
	0830	-8.6				80		
	1700					82		
	1800					83		
	0000					82		
01/19/84	0030	-12.5				81		
	0130							
	0300	-13.5						
	0330	-13.6						
	0530	-13.6				78		0
	0600					78		
	0630	-13.6				77		0
	0700	-13.3				77		0
	0730					78		
	0800					78		
	1000	-12.1						
	1130					76		
	2300					65		0
	2330	-10.2				64		0
01/20/84	0030	-10.0						
	0300	-12.5				73		0
	0330	-12.6				72		0
	0430	-11.5				73		0
	0500	-12.0				74		0
	0600					69		0
	0630							
	0700					64		0
	0800					66		0
	1330	-12.4				69		2
	1930					68		
	2100-0000							0
08/22/84	1000					0.0		
	1030					0.0		
	1100					0.0		
	1130					0.0		
	1200					0.2		
	1230					0.2		

TABLE 1.6. ESTIMATES FOR MISSING DATA (CONTINUED)  
 DEVIL CANYON CLIMATE STATION  
 OCTOBER 1983 TO DECEMBER 1984

<u>Date</u>	<u>Time (AST)</u>	<u>Temp (°C)</u>	<u>Wind Speed (m/s)</u>	<u>Wind Dir (Deg)</u>	<u>Gust (m/s)</u>	<u>RH (%)</u>	<u>Precip (mm)</u>	<u>Solar Radiation (mw/cm²)</u>
08/24/84	1300 1330	8.4					0.4 1.0	10
09/15/84	1130 1830					50 46		
09/20/84	2000 2130					62 74		
09/21/84	1300 1330					45 41		
10/16/84	0830 0900	-3.3 -3.3				75 70		1 1



**LOCATION MAP: SUSITNA PROJECT METEOROLOGIC STATIONS**

PREPARED BY:

**RSM**  
RSM CONSULTANTS, INC.  
E. JONES & GEOLOGISTS HYDROLOGISTS SURVEYORS

FIGURE 1-1

PREPARED FOR:

**HARZA-EBASCO**  
SUSITNA JOINT VENTURE



USGS TALKEETNA MOUNTAINS (1954) SCALE 1:250,000

Figure 1.2

**PREPARED BY**

**RE/M CONSULTANTS, INC.**

# DEVIL CANYON CLIMATE STATION

PREPARED FOR:

**HARZA-EBASCO**  
SUSTAINABLE ENERGY

## 2.0 ANNUAL DATA SUMMARY

Table 2.1 presents a summary of the monthly averages or totals for each parameter for the full period covered by this report, October 1983 to December 1984. The symbols used in the table are explained in Section 3, Report Preparation. Conversion factors are provided in the appendix. The data reported herein are also summarized in Figure 2.1, a sequential plot of all the measured parameters. Annual summaries for prior years are provided in the previous data report (R&M Consultants, 1984).

With this report, a shift has been made from presenting the climatic data on a water year basis to presenting it for the calendar year. The calendar year format matches that used by the National Oceanic and Atmospheric Administration (NOAA) in reporting climatic data, and simplifies comparisons. Future reports will also be for calendar years.

A summary of the percentage of usable data recovered for each climatic parameter by month during this reporting period is presented in Table 2.2. The cumulative percentage in this case applies for the whole 15-month period.

TABLE 2.1. SUMMARY OF CLIMATE DATA RECORDED AT  
DEVIL CANYON STATION (No. 0660)  
OCTOBER 1983 TO DECEMBER 1984

Month	Temperature			Wind						Mean RH (%)	Mean DP (°C)	Precip (mm)	Total Solar Energy (WH/m²)
	Max (°C)	Min (°C)	Mean (°C)	Res Dir (°True)	Res Speed (m/sec)	Ave Speed (m/sec)	Max Gust Dir (°True)	Max Gust Speed (m/sec)	P' Val Dir (True)				
October 1983	7.7M	-13.2M	-2.2M	111M	0.8M	1.2M	012M	8.3M	ESE(M)	61M	M	M	22,706
November	02.M	-10.7M	-5.3M	130M	0.8M	0.9M	152M	3.8M	ESE(M)	59M	M	M	5,643M
December	2.1M	-19.7M	-83M	M	M	M	M	M	M	69M	M	M	1,623M
January 1984	M	M	M	M	M	M	M	M	M	M	M	M	M
February	M	M	M	M	M	M	M	M	M	M	M	M	M
March	8.7	-13.2	-0.9	119	1.3	1.6M	123	7.0	ESE	68	M	M	62,400
April	10.2	-11.9	-0.3	112M	0.5M	1.5M	317M	8.9M	ESE(M)	64	M	M	112,250M
May	19.3	-3.8	5.6	015M	0.2M	1.6M	327M	8.3	SSE(M)	58	M	M	171,215
June	22.2	0.8	10.8	319	0.7	0.8	022	8.9	NW	51	M	38.0	148,780
July	22.3	3.7	11.8	308	0.7	1.3	313	8.3	NW	M	M	68.2	95,280
August	21.4M	-4.1M	10.2M	000M	0.3M	1.4M	037M	11.4M	WNW(M)	M	M	141.8	90,499M
September	17.6	-2.4	7.4	113	0.7	1.3	106	8.3	ESE	62	M	32.6	68,330
October	12.3	-13.9	-0.3	118M	1.1M	1.5M	106M	10.2M	ESE(M)	56	M	M	23,654
November	2.8	-22.3	-9.5	099	1.4	1.6	097	9.5	ESE	71	M	M	4,440
December	2.6	-24.5	-11.1	102	1.3	1.5	106	7.0	ESE	78	M	M	975
Annual I-WY (10/83-9/84)	M	M	M	M	M	M	M	M	M	M	M	M	M
Annual I-CY (1/84-12/84)	M	M	M	M	M	M	M	M	M	M	M	M	M

NOTE: See section on interpretation of data for explanation of symbols used. Annual values are for water year (WY) and calendar year (CY).

TABLE 2.2. PERCENT OF TOTAL POSSIBLE OBSERVATIONS RECORDED AT  
DEVIL CANYON CLIMATE STATION  
OCTOBER 1983 TO DECEMBER 1984

<u>Month</u>	<u>Temp</u>	<u>Wind Speed</u>	<u>Wind Direction</u>	<u>Peak Gust</u>	<u>RH</u>	<u>Precip</u>	<u>Solar Radiation</u>	<u>Dew Point</u>
October 1983	99	88	88	88	65	0	100	64
November	98	93	91	92	86	0	99	86
December	72	66	65	66	67	0	74	65
January 1984	54	48	48	46	41	0	57	40
February	25	25	25	25	21	0	25	21
March	100	100	100	100	86	0	100	86
April	100	100	97	100	81	0	100	81
May	100	100	99	100	80	5	100	80
June	100	100	100	100	72	100	100	72
July	100	100	100	100	42	100	100	42
August	90	90	90	90	44	100	100	44
September	100	100	100	100	70	100	100	70
October	100	94	93	94	76	0	100	76
November	100	100	100	100	74	0	100	74
December	100	100	100	100	75	0	100	75
Total	89	87	86	87	65	27	90	65

## NOTES:

1. RH and dewpoint data are not valid and have been discarded for samples when the wind speed is less than 1.0 m/s.
2. Precipitation data are recorded from April through September only. Collector is not designed for winter temperatures.
3. The percentage reported as TOTAL is for the full 15-month period (10/83 - 12/84).

### 3.0 REPORT PREPARATION

#### 3.1 Description of Symbols Used in Annual and Monthly Summaries

##### 3.1.1 Annual Summary

Blank entries for monthly values indicate the station had not yet been installed at the site or that it had been removed prior to that month. Installation and removal dates are noted on the table as well.

M Insufficient or partial data. M follows average and/or total values if 1-9 daily values were missing data for all or part of the day. M appears alone for the month if 10 or more daily values were missing or contained missing data. Parentheses surround the M where other letters may cause confusion (i.e. in prevailing direction). M follows average and/or total values for the year if any month was missing data. M appears alone for the year if any month was missing enough data to require it to have an M alone or if three or more months were missing any data.

##### 3.1.2 Monthly Summaries

\*\*\*\* Erroneous or missing data (may be from 2 to 6 asterisks, depending on number of digits possible in the value). Asterisks appear in place of the value if all readings required for determination of the table value were missing.

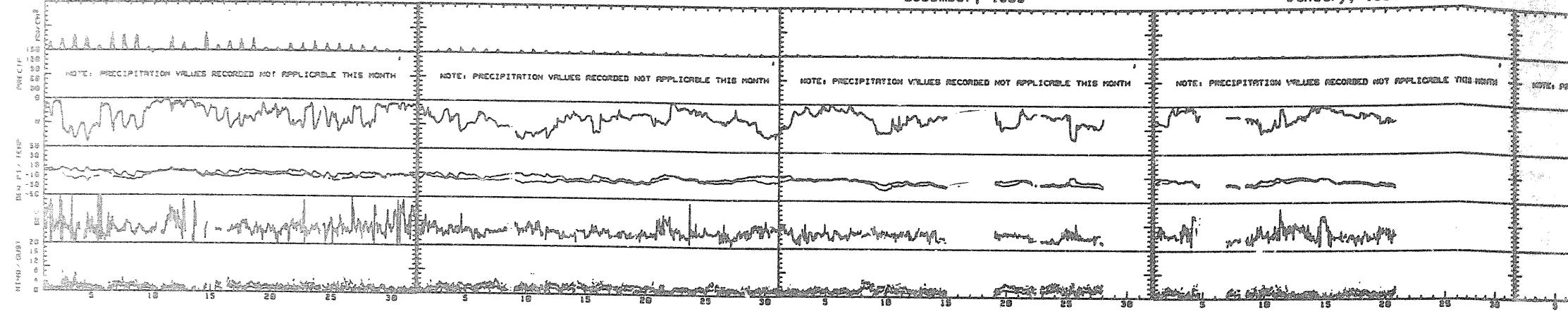
- A dash in the hourly precipitation table indicates the volume for that hour is not known, but the cumulative total of precipitation over the interval of consecutive dashed hours is included in the next hour where a value is

October, 1983

November, 1983

December, 1983

January, 1984

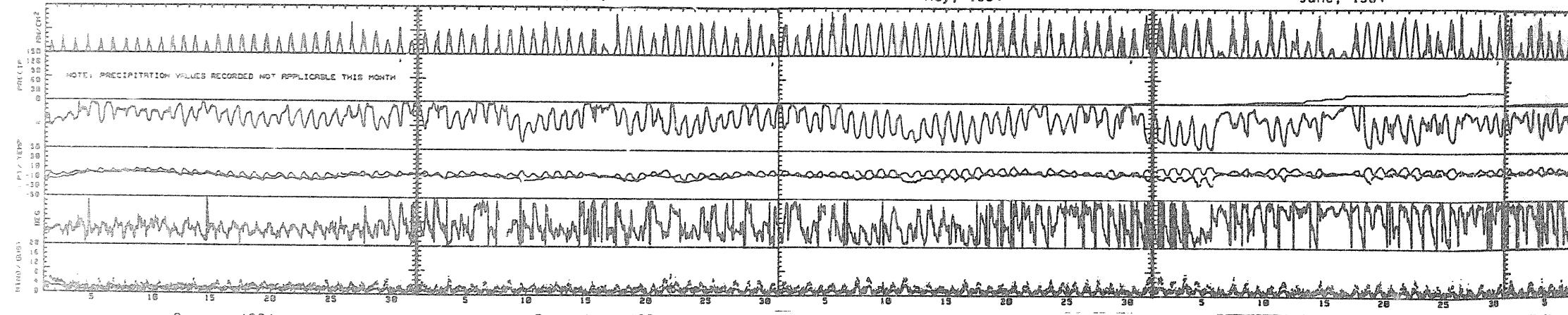


March, 1984

April, 1984

May, 1984

June, 1984

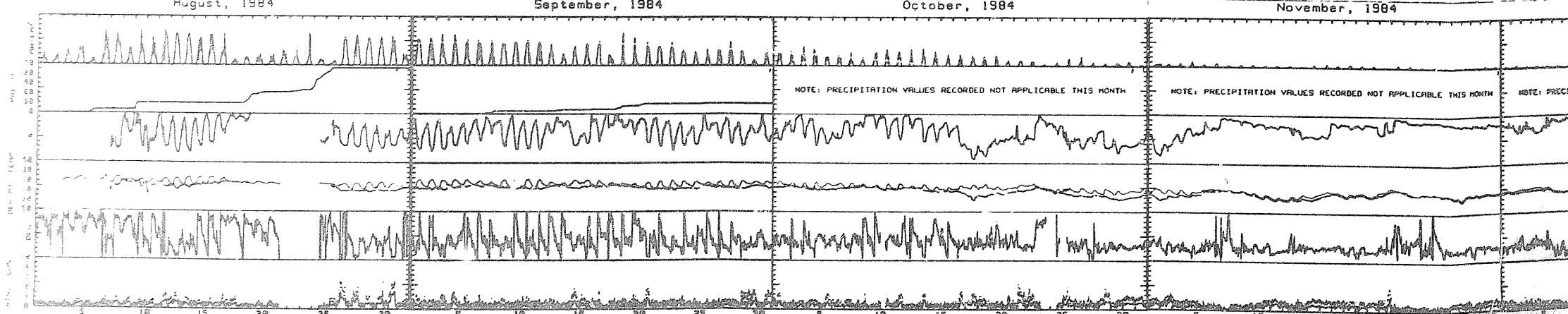


August, 1984

September, 1984

October, 1984

November, 1984

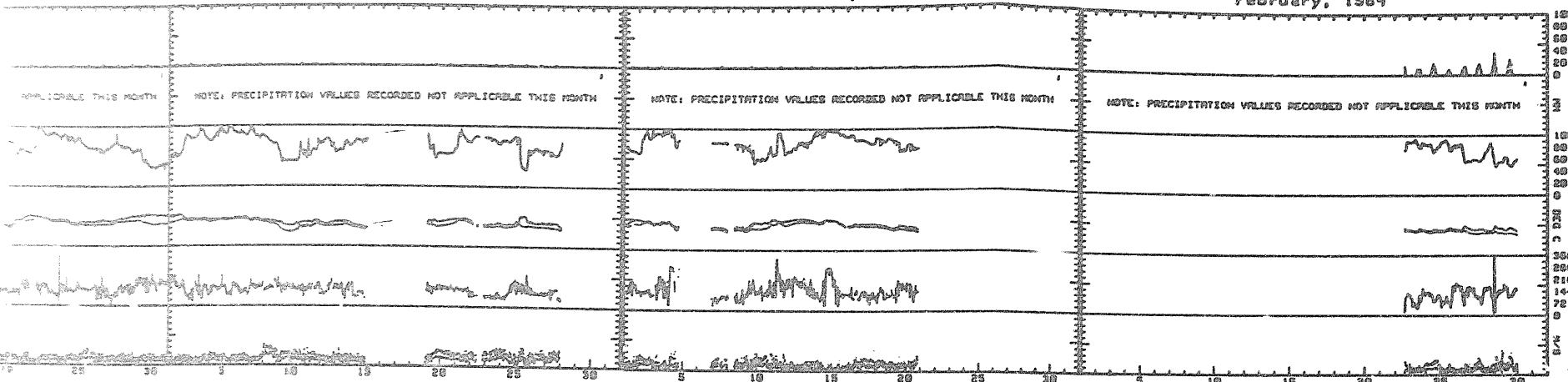


Continued

December, 1983

January, 1984

February, 1984

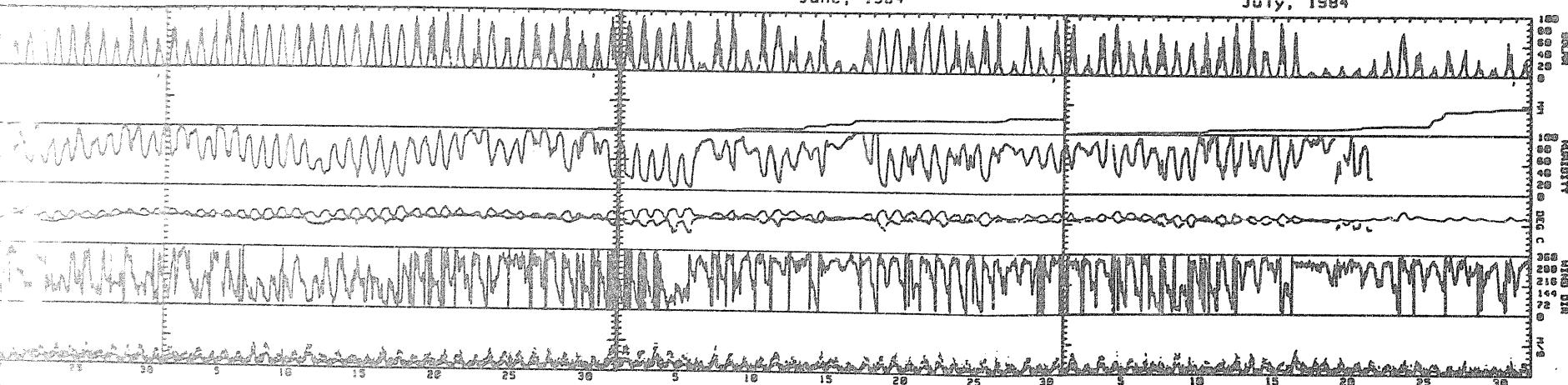


NOTE: A larger copy of each plot is presented in Section 5, Climatic Data Summaries.

May, 1984

June, 1984

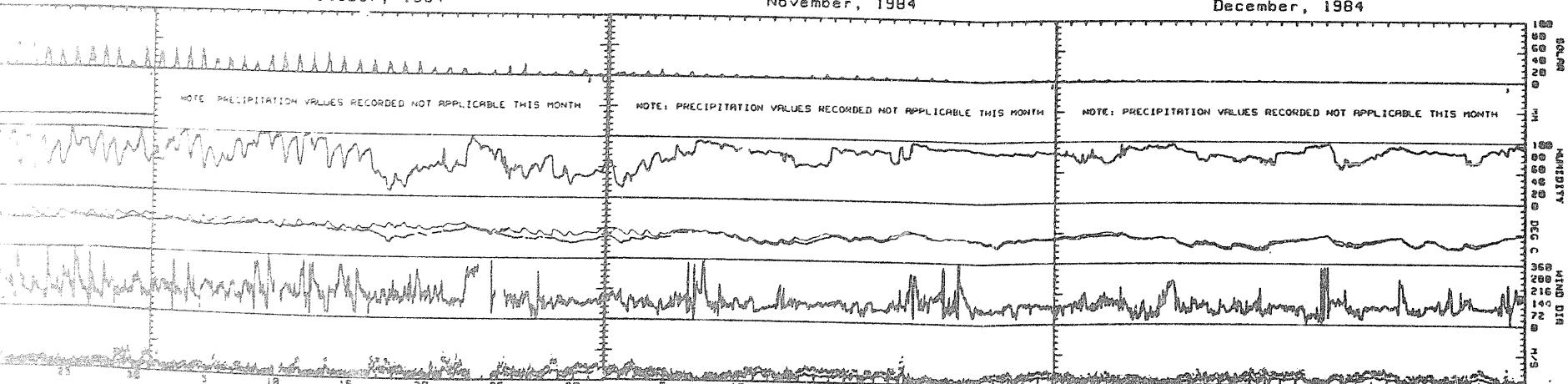
July, 1984



October, 1984

November, 1984

December, 1984



**FIGURE 2.1**  
**SEQUENTIAL PLOT**  
**OF CLIMATIC DATA,**  
**DEVIL CANYON**  
**STATION,**  
**OCTOBER 1983-**  
**DECEMBER 1984**

### 3.0 REPORT PREPARATION

#### 3.1 Description of Symbols Used in Annual and Monthly Summaries

##### 3.1.1 Annual Summary

Blank entries for monthly values indicate the station had not yet been installed at the site or that it had been removed prior to that month. Installation and removal dates are noted on the table as well.

M Insufficient or partial data. M follows average and/or total values if 1-9 daily values were missing data for all or part of the day. M appears alone for the month if 10 or more daily values were missing or contained missing data. Parentheses surround the M where other letters may cause confusion (i.e. in prevailing direction). M follows average and/or total values for the year if any month was missing data. M appears alone for the year if any month was missing enough data to require it to have an M alone or if three or more months were missing any data.

##### 3.1.2 Monthly Summaries

\*\*\*\* Erroneous or missing data (may be from 2 to 6 asterisks, depending on number of digits possible in the value). Asterisks appear in place of the value if all readings required for determination of the table value were missing.

- A dash in the hourly precipitation table indicates the volume for that hour is not known, but the cumulative total of precipitation over the interval of consecutive dashed hours is included in the next hour where a value is

reported. Similarly, a dash for precipitation in the monthly summary table indicates the volume for that day is not known, but the cumulative total over the interval of consecutive dashed days is included in the next day where a value is reported.

### 3.2 Data Computation Standards (Climate)

Conversion factors for units are presented in the appendix. Specific segments of the monthly reports are described below.

#### 3.2.1 Graphical Data Plot

The data plot is a graphical representation of valid recorded and/or computed data.

#### 3.2.2 Hourly Precipitation Summary Table

Hourly precipitation values are calculated as the difference between valid (current and preceding) consecutive hourly readings. When either of these hourly precipitation readings are invalid, no value is reported for the current hour. No table is published for the winter months (October through March) unless a heater is part of the tipping bucket installation.

#### 3.2.3 Monthly Summary Table

1. Maximum daily and monthly temperatures are determined from all valid recorded temperatures.
2. Minimum daily and monthly temperatures are determined from all valid recorded temperatures.

3. Mean daily and monthly temperatures are determined from all valid recorded temperatures. The mean daily temperature is determined from the mean of the maximum and minimum temperatures. The mean monthly temperature is determined from the mean of all reported daily mean temperatures.
4. Resultant daily and monthly wind directions and speeds are summed vectorially from all valid readings.
5. Average daily and monthly wind speeds are determined from all valid readings (arithmetic mean).
6. Maximum daily and monthly gust speeds are determined from all valid readings. Associated directions are the resultant directions from the recording interval in which the peak interval gust was observed.
7. Prevailing daily and monthly directions are determined from all valid readings. The reported value is the most frequent direction observed.
8. Mean daily and monthly relative humidities are determined from all valid readings (arithmetic mean). When the wind speed is less than 1 m/sec, the RH value is omitted from the averaging (but is displayed in the graphical data plot and in the three-hour table).
9. Mean daily and monthly dewpoint temperatures are determined from all valid readings (arithmetic mean). Dewpoints are omitted when the wind speed is less than 1 m/s, when the dewpoint calculates to a value greater than the recorded temperature, or when the dewpoint calculates

to less than minus 47 degrees or more than 27 degrees Centigrade.

10. Daily and monthly precipitation values are determined from all valid readings.
11. Daily and monthly solar energy values are determined from all valid readings. Daily solar energy (in watt-hours per square meter) is determined by averaging the recorded solar intensity (which is in milliwatts per square centimeter) and converting the units. The monthly value is the sum of the daily values.

#### 3.2.4 Three-Hour Summary Tables

1. The temperature reported is the temperature recorded at the specified time.
2. The dewpoint temperature reported is the dewpoint calculated at the specified time. Dewpoints are omitted when the wind speed is less than 1 m/s, when the dewpoint is calculated to a value greater than the recorded temperature, or when the dewpoint calculates to less than minus 47 degrees or more than 27 degrees centigrade, or when either the temperature or R.H. reading is invalid.
3. The relative humidity reported is the humidity recorded at the specified time.
4. The wind direction reported is the three-hour vectorial resultant sum of data recorded up to the specified time.
5. The wind speed reported is the three-hour vectorial resultant of data recorded up to the specified time.

6. The gust direction reported is the direction of the maximum gust recorded during the preceding three-hour period.
7. The gust reported is the maximum recorded during the three-hour period.
8. The radiation reported is the solar radiation intensity recorded at the specified time.

### 3.2.5 Wind Frequency Summary Table

Reported data are determined from all valid pairs of readings. Valid pairs of wind data are composed of valid wind speed and wind direction data for the same interval.

### 3.2.6 Hourly Solar Radiation Table

An addition to this year's report series, hourly solar radiation values are averages of all valid readings recorded during the preceding hour. If any data are missing or invalid, the remaining values are arithmetically averaged for the hour. The daily average values are determined by summing the hourly averages for the day and dividing by 24. If all data are missing for the hour, no value is printed; asterisks (\*\*\*\*) appear instead, and no value is used for the hour in computing the daily average.

### 3.2.7 Wind Rose Graphical Plot

The plot is a graphical representation of the wind frequency summary table.

### 3.2.8 Observation Summary Table

Another addition to this year's report series is an observation summary. The number of usable observations for each parameter is determined by counting the number of valid readings for the entire month. The percentage of total observations is determined by dividing the number of usable observations by the number possible for the month. Data adjustments and additional comments applicable to the month are manually entered below the summary table.

### 3.2.9 General Notes

1. The following are the data ranges assumed valid, based on reasonable expectations for the parameters in south-central Alaska; data outside these ranges are not used:

Time: 0000 through 2400 hours - at specified time intervals.

Temperature: -50 through +35 °C

Wind Speed: 0 through 99.9 meters per second and less than or equal to GUST

Direction: 0 through 360 degrees

Relative Humidity: 0 through 99 percent

Precipitation: 0 through 99.8 mm. Precipitation during recording interval (15 or 30 minutes) should not exceed 30 mm.

Solar: 0 through 150 milliwatt/cm<sup>2</sup>

Gust: 0 through 99.9 m/sec

Battery: 9 through 14.5 volts

2. Accuracy of the MRI (Meteorology Research, Inc.) sensors and processor are as follows:

Temperature:  $\pm 1^{\circ}\text{C}$

Wind Speed:  $\pm 0.5$  meters per second

Wind Direction:  $\pm 1\%$  of full scale (i.e.,  $\pm 3.6$  degrees)

Relative Humidity:  $\pm 6\%$

Precipitation:  $\pm 1\%$  up to 76.2 mm/hr,  $\pm 5\%$  from 76.2 mm/hr to 254 mm/hr

Solar Radiation:  $\pm 5\text{mw cm}^{-2}$

Tape Recorder Error Rate: 1 bit in  $10^7$

3. The following are the direction ranges used in the prevailing direction, wind frequency and wind rose summaries:

DIRECTION	COMPASS HEADING
North	350 through 11
North-Northeast	12 through 34
Northeast	35 through 56
East-Northeast	57 through 79
East	80 through 101
East-Southeast	102 through 124
Southeast	125 through 146
South-Southeast	147 through 169
South	170 through 191
South-Southwest	192 through 214
Southwest	215 through 236
West-Southwest	237 through 259
West	260 through 281
West-Northwest	282 through 304
Northwest	305 through 326
North-Northwest	327 through 349

## 4.0 INTERPRETATION OF DATA, 1983-84

### 4.1 General Comments

- 4.1.1 Many of the sensors or the methods of measuring various parameters have peculiarities that affect how the data should be interpreted. The user is encouraged to become familiar with the methods of summation for each parameter and each table. These are described in Section 3.2 "Data Computation Standards."
- 4.1.2 As described in Section 2.0, a shift is being made from presenting the climatic data on a water year basis to presenting it for the calendar year. Thus, this report includes fifteen months of data. All future reports will be for the calendar year.
- 4.1.3 Changes made to the format of this year's report series include addition of an hourly solar radiation table and tabulation of the actual number of usable observations on a monthly basis for each parameter. Also, the data-processing program was modified slightly to permit output of daily prevailing direction when the wind speed sensor was not operational, and output of speed-only parameters (peak gust and daily average speed) when the wind direction sensor was not operational.
- 4.1.4 The U.S. Department of Transportation ordered a shift in the time zones of central and Southeast Alaska in October 1983. The official time in central Alaska was advanced one hour, and the offical Southeast Alaska time was retarded one hour, making the two areas on the same time. This transition occurred when daylight savings time ended, on Sunday, October 30, 1983. The effect on the reporting of

the data is that one hour was "lost" between midnight and 0100 on October 30. There are thus no data at all for 0030 and 0100 on that date.

4.1.5 Missing data values have been estimated where possible. Estimation, which was accomplished by manually editing the raw computer data files, was generally limited to data gaps of an hour or less, where interpolation between the preceding and following valid data points could be used to estimate the missing points. Interpolation was performed in this manner for temperature, relative humidity, and solar radiation data.

Solar data have been estimated only for clear or uniformly cloudy days and then only if not near the peak value of the day. Solar data are also estimated at night where zero minimum values should occur. Precipitation is estimated only if none at all occurred during the interval or if the tips of the tipping bucket were manually counted during a rainfall event. Wind speed and direction data have been estimated by interpolation only if the preceding and following winds were very uniform.

4.1.6 Intermittent garbled data due to a Weather Wizard malfunction at the Devil Canyon station caused many data gaps from mid-October 1983 to the end of January 1984. It was possible to estimate temperature, relative humidity, and solar radiation data where the gaps were not more than two or three hours long. However, approximately 20 to 25 total days were lost from the record for all parameters during this period, as shown in Table 1.4. Estimated values are not considered as missing. Also, an additional 26 days were lost when the Weather Wizard was removed for inspection and maintenance from 1/27/84 to 2/22/84.

4.1.7 The recording interval was changed prior to the winter of 1983-84 to permit recording of data for longer periods of time in the event monthly maintenance trips to the station were delayed. The interval was changed from 15 minutes to 30 minutes, which increased the maximum record length per data tape from approximately six weeks to approximately three months. The switch was made in November 1983 at all Susitna Basin stations and in December 1983 at the Eklutna Lake Station.

## 4.2 Comments on Specific Parameters

### 4.2.1 Precipitation

Precipitation data are generally reported for April through September only. The stations do not have heaters in their precipitation sensors (tipping buckets), so they are unable to record precipitation when the temperature is below freezing. The sensors are calibrated to tip for 0.2 mm of rainfall and not for snowfall. The sub-freezing temperatures may cause a loss or a delay of the recorded precipitation. Winds frequently blow snow away from or out of (or occasionally into) the collector, and snow collected in the bucket may not be melted and recorded until the next occurrence of warm weather, possibly days or weeks later. The months of October through March very often have sub-freezing temperatures on nearly every day of the month, so their precipitation records have been omitted. It should be noted that even in the months where precipitation data are reported (i.e. April through September), the occurrence of sub-freezing temperatures could affect the timing and the recorded amount of precipitation. The user should exercise caution and make note of the concurrent temperatures in interpreting the precipitation records.

The tipping bucket precipitation collector was not connected properly at the Devil Canyon station in April and May 1984. As a result, precipitation was not recorded for these months until 5/30/84 when the gage was reconnected.

#### 4.2.2 Relative Humidity and Dewpoint

The relative humidity (R.H.) sensors used are printed circuit elements which sense changes in R.H. by changes in impedance. The sensors, manufactured by Phys-Chem Research Corporation, have chemically-treated surfaces which degrade with time, and are thus very difficult to keep in calibration. Many of the months throughout the year (and at all stations) therefore display significant variations in R.H. patterns. Theoretically, the maximum value an RH reading can attain is 99%. However, when the sensor is not calibrated correctly, readings may exceed 100% or they may be noticeably too low. Adjustments are therefore made accordingly, as noted in Table 1.5.

An additional consideration with respect to dewpoint is the fact that it is not computed when the reported wind speed falls below 1 m/sec, due to inadequate aspiration of the R.H. sensor. This typically causes elimination of at least one dewpoint value on nearly every day of data-collection.

The oscillator for the Devil Canyon relative humidity sensor was bad in July and August, 1984, which caused erratic reporting of the data in places. Unusable data were deleted from July 21 to August 7. The quality of the remaining data is suspect, but the record has been published since it generally follows the diurnal cycle typical of the summer RH. September data are good for the most part but are still erratic in places. Bad data points are

estimated where possible. The oscillator was replaced on October 16, 1984, after which the data are reliable.

#### 4.2.3 Solar Radiation

Daily and monthly solar radiation values are the cumulative total energy, computed from all valid readings for the period. Either the daily or monthly value can be significantly above or below the true energy value if there are large segments of missing readings (i.e. from the period of very low intensity at night or the period of very high intensity at mid-day). A check should be made, therefore, of the hourly solar radiation summary table to get a feel for the frequency and timing of lost solar radiation data. Caution should be used when a significant amount of data is missing.

Another frequent concern in the processing of solar data is the presence of non-zero minimum values. Since the sensors have a stated accuracy of  $\pm 5 \text{ mW/cm}^2$ , they often record a reading of 0 (during night) as 1 or even  $2 \text{ mW/cm}^2$ . This also can bias the daily or monthly totals, making the computed energy much higher than the true solar energy. An error of  $+1 \text{ mW/cm}^2$  on every reading will cause the computed daily total energy to be high by 240 watt-hr/cm<sup>2</sup>. Readings during periods when this sensor offset was demonstrated have been adjusted downward, as noted in Table 1.5.

#### 4.2.4 Wind Speed and Direction

Several measurements of wind speed, wind direction, and peak wind gusts were lost between October 1983 and April 1984 and again in October 1984 due to intermittent freezing

of the wind vane or anemometer. One or both of the sensors typically freezes and seizes up when the temperature drops after a rainstorm or freezing rain event and then stays stuck until the temperature rises above 0°C or until a wind event occurs that is sufficiently strong to free it.

5.0 MONTHLY CLIMATIC DATA SUMMARIES  
DEVIL CANYON STATION  
OCTOBER 1983 - DECEMBER 1984

Note:

Each month's climatic data summary report consists of the following 11 pages:

- (1) Hourly Precipitation Summary Table (or note page)
- (2) Three-Hour Summary Table (Days 1-9)
- (3) Three-Hour Summary Table (Days 10-18)
- (4) Three-Hour Summary Table (Days 19-27)
- (5) Three-Hour Summary Table (Days 28-31)
- (6) Monthly Summary Table
- (7) Monthly Graphical Plot
- (8) Wind Frequency Summary Table
- (9) Wind Rose Plot
- (10) Hourly Solar Radiation Summary Table
- (11) Observation Summary and Note Page

No precipitation data for October

(See INTERPRETATION OF DATA).

R & M CONSULTING INC.  
SATELLITE HYDRO CONSULTANT PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD			
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	% DEG.	M/S	MW

0300	3.7	****	83	214	1.0	251	3.2	0	0300	1.0	****	95	141	.5	125	1.3	0	0300	1.1	-15.1	29	110	2.2	129	6.3	0
0600	2.5	1.0	90	143	.8	144	3.8	0	0600	1.4	****	91	136	.5	146	1.9	0	0600	-1.0	****	38	111	1.0	118	3.8	0
0900	3.4	1.6	88	243	1.3	259	3.8	7	0900	2.8	****	96	168	.3	150	4.3	11	0900	1.2	-14.2	31	070	.6	018	3.2	18
1200	5.1	****	68	251	1.2	263	3.8	15	1200	6.2	****	70	331	.4	351	1.3	15	1200	3.8	-18.4	18	078	1.3	046	5.1	23
1500	5.6	****	63	020	.1	140	1.9	5	1500	6.9	-6.9	37	006	1.4	012	6.3	11	1500	4.4	-17.9	18	033	2.4	018	7.0	6
1800	2.1	****	89	238	.2	288	3.2	0	1800	4.4	-10.2	34	121	1.1	011	7.6	0	1800	1.7	-17.3	23	039	2.3	020	7.6	0
2100	.8	****	91	147	.7	171	1.3	0	2100	3.7	-13.3	28	148	1.6	128	6.3	0	2100	-1.7	-14.6	37	126	1.4	099	3.8	0
2400	.2	****	99	105	.4	120	1.3	0	2400	2.5	-14.7	27	120	1.9	117	5.7	0	2400	-3.0	-13.4	45	138	1.5	130	3.2	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD				
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW

0300	-2.5	-12.6	46	107	1.0	126	3.2	0	0300	-1.9	****	42	103	.6	122	1.9	0	0300	-1.6	-2.5	87	***	***	***	***	0
0600	-3.1	-13.2	46	***	***	***	3.8	0	0600	-1.4	****	47	088	.7	071	1.9	0	0600	-1.6	-4.9	78	***	***	***	***	0
0900	-1.6	-14.3	35	062	1.0	***	2.5	19	0900	0.0	-10.9	44	051	.9	062	2.5	8	0900	-1.8	****	73	121	.6	141	3.2	19
1200	4.9	-18.2	17	072	1.6	045	4.4	17	1200	2.2	****	38	026	.7	047	2.5	9	1200	1.5	****	42	106	1.1	101	3.8	20
1500	5.9	****	11	081	.8	033	5.2	6	1500	.1	****	84	007	.2	044	1.9	1	1500	1.4	-14.4	30	163	.6	200	3.8	6
1800	-1.2	-16.2	29	186	.9	227	2.5	0	1800	0.0	****	88	079	.4	064	1.9	0	1800	-5.3	-12.0	59	136	1.1	128	3.8	0
2100	-1.7	****	35	121	1.1	120	3.2	0	2100	-1.4	-2.9	83	097	.4	082	1.9	0	2100	-7.2	-13.8	59	118	2.2	124	3.8	0
2400	-1.3	****	43	158	.5	123	1.9	0	2400	-1.5	-2.4	87	***	***	***	***	0	2400	-8.3	-13.1	68	104	1.0	161	3.8	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD				
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW

0300	-10.1	-14.2	72	086	2.0	092	4.4	0	0300	-12.1	-17.5	64	127	1.9	121	3.8	0	0300	-4.8	****	73	099	1.1	126	2.5	0
0600	-10.6	-14.5	73	087	2.2	093	3.8	0	0600	-13.0	-19.4	64	081	2.2	095	3.8	0	0600	-4.9	-9.3	71	096	1.1	113	2.5	0
0900	-5.8	-15.4	47	094	1.8	089	3.8	28	0900	-10.2	-18.2	52	074	2.2	080	3.8	23	0900	-4.8	-7.6	81	075	1.2	079	3.8	4
1200	-3.0	-14.8	40	103	2.7	101	5.2	22	1200	-3.5	-15.9	38	075	1.7	087	4.4	17	1200	-4.0	-7.4	77	075	1.2	069	3.2	7
1500	-3.1	-15.5	38	124	.8	130	5.1	9	1500	-1.9	-15.5	35	097	2.2	101	4.4	9	1500	-3.9	-7.0	79	081	1.5	083	3.2	3
1800	-6.9	-16.9	45	160	1.1	173	3.2	0	1800	-2.9	****	39	115	1.5	113	3.8	0	1800	-3.6	-5.5	87	090	1.0	080	2.5	0
2100	-9.8	-17.8	52	160	1.7	164	3.2	0	2100	-3.3	****	41	139	1.0	140	1.9	0	2100	-3.2	****	91	097	.7	103	1.9	0
2400	-10.9	-16.2	65	147	1.4	148	3.2	0	2400	-3.3	-14.2	43	112	1.3	134	2.5	0	2400	-2.4	****	91	113	.7	116	1.9	0

\*\* SEE INTERPRETATION NOTES ON PAGE ONE OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SALT LAKE CITY HYDROGEOLOGIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WTND	WIND	WIND GUST MAX.	HOUR	DEW	WTND	WIND	WIND GUST MAX.	HOUR	DEW	WTND	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD.	DIF.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD										
DEG C	DEG C	%	DEG C	M/S	DEG C	DEG C	%	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW										
0300	-2.7	*****	94	102	.6	104	1.9	0	0300	.6	*****	96	141	.6	151	2.5	0	0300	2.0	.8	92	233	1.3	232	3.2	0
0600	-1.6	*****	96	122	.4	090	1.9	0	0600	.8	*****	97	168	.7	161	1.9	0	0600	1.3	****	94	173	.6	147	2.5	0
0900	-1.5	*****	93	***	***	***	1.3	1	0900	3.4	*****	89	193	.6	188	1.9	11	0900	1.8	****	88	139	.7	109	2.5	2
1200	.9	-1.7	89	***	***	***	1.3	1	1200	7.7	*****	71	215	.5	286	1.9	21	1200	3.0	****	80	090	.6	089	2.5	6
1500	.4	-1.9	91	***	***	***	***	2	1500	4.3	1.3	B1	254	1.6	254	6.3	2	1500	2.4	****	86	334	.3	094	2.5	7
1800	0.0	-1.6	96	075	.4	075	1.9	0	1800	2.7	.6	88	221	.8	260	4.4	0	1800	.8	****	93	230	.5	272	2.5	0
2100	.1	***	97	070	.2	061	1.9	0	2100	1.2	*****	93	220	.8	222	3.2	0	2100	.1	-1.6	95	086	.6	087	1.9	0
2400	.4	.1	98	081	1.0	076	3.2	0	2400	2.1	*****	91	127	1.1	124	3.2	0	2400	-.2	-.8	96	***	***	***	***	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WTND	WIND	WIND GUST MAX.	HOUR	DEW	WTND	WIND	WIND GUST MAX.	HOUR	DEW	WTND	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD									
DEG C	DEG C	%	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW									
0300	.1	-1.5	96	***	***	***	***	0	0300	-7.4	-9.7	84	***	***	***	***	0	0300	-6.7	-9.7	79	***	***	***	***	0
0600	-.3	-1.0	95	***	***	***	***	0	0600	-9.1	-11.3	84	***	***	***	***	0	0600	-6.0	-9.0	79	***	***	***	***	0
0900	-.2	-1.5	91	***	***	***	***	0	0900	-8.0	-11.6	75	***	***	***	***	27	0900	-3.9	-7.5	76	***	***	***	***	5
1200	-.3	***	85	015	.5	028	1.3	3	1200	-2.5	-7.8	67	057	.7	106	1.9	25	1200	.7	-7.6	54	101	1.2	095	4.4	11
1500	1.1	***	85	280	.2	302	1.9	3	1500	-1.2	-7.7	61	132	1.3	132	3.2	3	1500	.3	-8.2	53	103	1.9	105	4.4	5
1800	-1.2	-3.4	85	176	.4	134	1.9	0	1800	-4.8	-9.6	69	158	1.4	159	2.5	0	1800	-1.0	-8.9	55	110	1.7	108	3.8	0
2100	-5.0	-7.3	84	***	***	***	***	0	2100	-6.6	-9.5	80	***	***	***	***	0	2100	-2.5	-10.1	56	101	1.6	103	3.8	0
2400	-5.5	-7.2	68	***	***	***	***	0	2400	-6.7	-9.6	80	***	***	***	***	0	2400	-5.4	-11.3	63	106	.3	106	3.2	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WTND	WIND	WIND GUST MAX.	HOUR	DEW	WTND	WIND	WIND GUST MAX.	HOUR	DEW	WTND	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD									
DEG C	DEG C	%	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW	DEG C	DEG C	%	DEG C	M/S	MW									
0300	-7.9	-10.9	79	***	***	***	***	0	0300	-2.5	-9.9	57	123	2.0	112	3.8	0	0300	1.8	-4.9	61	133	1.3	139	3.2	0
0600	-7.8	-11.0	78	***	***	***	***	0	0600	-3.1	-9.8	60	125	1.6	128	3.2	0	0600	1.0	-5.2	63	109	1.8	105	3.2	0
0900	-3.7	-10.8	58	***	***	***	***	0	0900	.1	***	49	120	.9	126	3.2	15	0900	1.4	-5.5	60	105	1.9	104	3.8	7
1200	-.4	-11.3	44	087	2.3	088	7.0	17	1200	3.8	-7.7	43	111	1.7	139	3.8	14	1200	3.1	-5.6	53	068	2.0	074	4.4	22
1500	-.3	-12.5	38	092	2.5	093	5.7	5	1500	3.6	***	45	133	1.0	073	3.8	3	1500	2.6	-5.8	54	079	1.8	072	3.8	6
1800	-.8	-11.3	45	110	1.8	104	4.4	0	1800	-.4	-6.3	64	167	1.2	178	1.9	0	1800	.5	-4.9	67	105	1.4	072	3.2	0
2100	-1.2	-10.1	51	115	1.5	100	4.4	0	2100	2.0	***	61	166	.9	172	1.9	0	2100	0.0	-4.8	70	137	1.6	130	3.2	0
2400	-1.9	-9.0	55	114	2.4	113	4.4	0	2400	2.4	-4.6	58	144	.7	171	2.5	0	2400	-1.1	-5.8	70	100	1.1	109	3.8	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSEYNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG	DEG	DEG	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW	DEG C	DEG C	% DEG.	M/S	M/S	MW

0300	-1.6	-7.5	64	120	2.0	112	3.8	0	0300	-2.9	-6.4	77	106	1.1	102	2.5	0	0300	-1.0	****	79	128	1.0	135	2.5	0
0600	-2.7	****	85	114	1.1	132	3.2	0	0600	-3.0	-4.9	87	116	1.3	117	3.2	0	0600	-1.9	-4.8	75	128	1.0	122	2.5	0
0900	-1.9	-3.6	88	089	.7	059	2.5	3	0900	-2.4	****	86	098	1.0	079	2.5	3	0900	1.1	-4.1	68	131	1.2	110	2.5	3
1200	-1.8	-5.4	71	090	1.3	085	4.4	5	1200	-1.8	-6.7	64	067	1.1	058	5.1	5	1200	3.5	-6.0	50	086	1.2	098	6.3	13
1500	-1.7	-6.2	66	084	1.4	081	3.2	3	1500	-1.8	****	72	041	.9	001	3.8	1	1500	3.1	-6.9	48	118	1.0	080	2.5	5
1800	-2.7	-7.4	70	123	1.5	091	3.2	0	1800	-1.8	-5.6	70	082	1.0	085	2.5	0	1800	-1.4	-8.3	55	139	1.3	171	2.5	0
2100	-3.0	-7.9	69	135	1.3	144	2.5	0	2100	-1.0	-3.8	81	085	1.2	083	3.2	0	2100	2.7	-8.4	44	137	1.2	107	5.1	0
2400	-3.0	****	73	113	1.0	139	2.5	0	2400	-1.2	-4.7	77	112	1.4	111	3.2	0	2400	.7	-8.8	49	128	1.5	150	5.1	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG	DEG	DEG	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW	DEG C	DEG C	% DEG.	M/S	M/S	MW

0300	.9	-7.9	52	130	1.0	125	2.5	0	0300	-5.0	-7.3	84	091	1.4	097	3.8	0	0300	-8.5	****	**	099	2.1	074	3.2	0
0600	-.5	-8.7	54	146	1.1	147	1.9	0	0600	-7.4	-8.5	92	090	1.6	088	3.8	0	0600	****	****	84	119	1.4	140	3.2	0
0900	-.9	****	54	146	1.0	138	2.5	6	0900	-7.2	-8.5	62	116	1.2	109	3.8	4	0900	-8.8	****	78	144	.8	151	2.5	3
1200	3.4	-9.0	40	101	1.4	099	5.1	14	1200	-.6	-12.6	37	108	1.8	113	7.0	14	1200	-3.7	****	58	082	.4	149	1.9	14
1500	2.6	-6.6	51	100	.8	084	3.8	3	1500	-.4	-11.4	41	116	1.9	112	5.7	3	1500	-2.0	****	43	083	.6	043	1.9	5
1800	0.0	****	81	278	.5	244	3.2	0	1800	-3.5	-12.2	51	140	1.3	145	2.5	0	1800	-6.0	-14.5	51	112	1.3	123	3.8	1
2100	-1.8	-4.6	81	106	2.0	089	3.8	0	2100	-4.6	-10.8	62	133	1.0	117	2.5	0	2100	-9.4	****	67	140	1.0	129	3.2	1
2400	-3.3	-5.8	83	092	1.8	105	4.4	0	2400	-5.9	-9.6	75	085	1.4	112	2.5	0	2400	-11.1	****	73	178	.8	160	2.5	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG	DEG	DEG	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW	DEG C	DEG C	% DEG.	M/S	M/S	MW

0300	****	****	67	101	1.4	154	3.2	0	0300	-4.3	-13.2	50	118	2.1	114	3.3	0	0300	-8.4	****	81	114	.8	139	3.2	0
0600	-12.3	-16.5	71	107	1.4	112	4.4	0	0600	-5.9	-11.6	64	096	1.8	098	4.4	0	0600	-1.5	****	86	162	.4	158	1.9	0
0900	-9.2	-16.8	54	107	1.4	110	3.2	5	0900	-5.5	-12.9	56	119	1.2	114	4.4	4	0900	2.9	****	67	160	.7	180	2.5	6
1200	-3.6	-17.0	35	082	1.0	120	3.2	9	1200	-1.6	-10.2	50	1	1.4	098	3.8	12	120	-.8	-18.5	48	042	1.0	093	5.7	8
1500	-3.8	-16.2	38	135	1.7	143	4.4	4	1500	-2.2	-11.3	50	098	2.1	1	5.1	2	1700	-.7	-11.5	44	193	1.2	041	5.1	3
1800	-5.1	****	47	182	.4	150	1.3	0	1800	-6.7	-8.8	85	322	.2	099	3.8	0	1800	-2.3	-1.1	11	119	1.2	103	3.7	0
2100	-5.1	-13.5	52	130	1.2	135	3.8	0	2100	-8.4	-10.6	84	222	.5	279	3.2	0	2100	-2.8	-12.1	49	163	1.2	140	2.5	0
2400	-3.3	-12.5	49	133	1.2	158	3.8	0	2400	-9.3	-12.3	79	121	1.5	116	3.2	0	2400	-1.6	-10.2	52	11	.9	1	3.2	0

\*\*\* SEE THREE PAGES FOLLOWING THIS PAGE FOR MONTHLY REPORT \*\*\*

R A M CONSULTANTS, INC.  
SUSSETTNA HYDROLOGIC PROJECT

THREE HOUR SUMMARY FOR DEVTN CANYON WEATHER STATION  
DATA TAKEN DURING October, 1971

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S

0300	-5.5	-11.6	43	107	1.8	105	5.2	0 0300	-8.3	-10.1	87	103	1.7	147	3.2	0 0300	-5.1	****	93	130	.2	123	1.9	0
0600	-2.5	-10.1	56	134	1.7	154	3.8	0 0600	-9.1	-11.2	85	081	1.9	077	3.8	0 0600	-4.0	****	92	238	.8	243	2.5	0
0900	-2.1	****	57	150	1.1	133	3.2	3 0900	-9.5	-12.0	82	081	1.6	083	3.2	2 0900	-4.2	****	93	229	.4	242	1.9	0
1200	-7	-8.4	56	073	1.0	080	3.8	9 1200	-5.0	****	76	079	.9	082	3.2	5 1200	-2.5	****	85	006	.2	008	1.9	3
1500	-2.2	****	88	296	.9	001	3.5	1 1500	-2.2	****	88	203	.2	259	1.9	1 1500	2.0	****	86	072	.7	053	2.5	2
1800	-2.8	****	92	174	.4	166	1.9	0 1800	-4.3	****	92	162	.5	262	1.3	0 1800	-2.8	****	94	272	.6	274	1.9	0
2100	-3.5	****	89	106	.9	096	1.9	0 2100	-5.0	****	91	142	.7	139	2.5	0 2100	-3.3	****	94	265	.7	281	2.5	0
2400	-5.2	-7.0	87	143	1.0	146	3.5	0 2400	-5.1	****	73	111	.3	104	1.9	0 2400	-4.4	****	84	249	.5	234	2.5	0

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S

0300	-5.0	-7.0	86	121	.9	127	3.2	0																		
0600	-5.5	****	89	123	.6	131	1.9	0																		
0900	-5.0	****	89	113	.5	113	1.9	0																		
1200	-4.0	****	86	198	.2	201	1.3	1																		
1500	-3.7	****	87	236	.3	125	3.5	1																		
1800	-4.9	****	90	281	.9	280	2.5	0																		
2100	-5.4	-6.7	91	244	.4	250	3.2	0																		
2400	-8.2	-10.3	85	143	.6	105	2.5	0																		

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANT'S, INC.  
SUSSEX TUNA HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1983

DAY	RES.			RES.			AVG.	MAX.	MAX.	P'VAL MEAN			DAY'S	
	MAX. TEMP., DEG C	MIN. TEMP., DEG C	MEAN TEMP., DEG C	WIND DIR., DEG	WIND SPD., M/S	WIND SPD., M/S	GUST DIR., DEG	GUST SPD., M/S	DJR.	RH %	DP DEG C	PRECIP MM	SOLAR WH/SDM	
1	5.8	.2	3.0	209	.5	.9	144	3.8	WSW	84	-1.1	****	748	1
2	7.7	.2	4.0	118	.6	1.1	012	8.3	SE	32	-10.8	****	1300	2
3	4.4	-3.0	.7	083	1.3	1.8	020	7.6	ESE	29	-15.7	****	1648	3
4	6.6	-4.1	1.3	110	.7	1.2	045	4.4	E	33	-15.5	****	1850	4
5	2.2	-1.6	1.3	066	.5	.7	062	2.5	NE	63	-7.3	****	470	5
6	2.2	-8.3	-3.1	119	1.2	1.4	101	3.8	SE	75	-6.4	****	1253	6
7	-2.3	-10.9	-6.6	114	1.6	1.9	101	5.7	E	55	-15.5	****	1635	7
8	-1.8	-13.2	-7.0	098	1.6	1.8	087	4.4	SE	49	-16.5	****	1550	8
9	-2.4	-5.2	-3.8	089	1.0	1.1	079	3.8	E	76	-8.0	****	390	9
10	1.0	-2.8	-.9	094	.6	.5	076	3.2	E	93	-6.6	****	110	10
11	7.7	.1	3.9	201	.6	.9	254	6.3	S	87	-1.7	****	1100	11
12	3.8	-.2	1.8	182	.3	.8	232	3.2	E	91	-1.1	****	565	12
13	1.5	-5.6	-2.1	334	.1	.5	302	1.9	NNE	91	-3.0	****	190	13
14	-.5	-10.0	-5.3	131	1.0	1.3	132	3.2	SSE	77	-9.5	****	1230	14
15	.8	-7.0	-3.1	104	1.5	1.5	095	4.4	ESE	66	-9.0	****	590	15
16	.4	-8.9	-4.3	103	2.0	2.1	088	7.0	ESE	57	-11.0	****	935	16
17	5.1	-5.1	0.0	132	1.2	1.4	112	3.8	SE	54	-8.1	****	830	17
18	3.4	-1.1	1.2	102	1.5	1.6	074	4.4	ESE	61	-5.2	****	975	18
19	-.7	-3.5	-2.1	110	1.2	1.3	085	4.4	E	71	-6.3	****	315	19
20	-.5	-3.5	-2.0	091	1.0	1.1	058	5.1	E	75	-5.4	****	245	20
21	4.3	-2.0	1.2	128	1.1	1.3	098	6.3	SE	57	-6.6	****	665	21
22	3.7	-3.5	-.1	114	1.0	1.4	099	5.1	E	60	-7.1	****	555	22
23	.9	-8.7	-3.9	110	1.4	1.5	113	7.0	ESE	64	-9.9	****	585	23
24	-1.6	-11.1	-6.4	126	.7	.9	123	3.8	SSE	60	-14.0	****	710	24
25	-3.3	-12.5	-7.9	118	1.1	1.3	112	4.4	ESE	52	-15.7	****	545	25
26	-1.6	-9.3	-1.5	108	1.1	1.6	114	6.3	ESE	61	-11.7	****	505	26
27	-.2	-9.0	-4.6	123	.8	1.0	093	5.7	ESE	50	-11.0	****	720	27
28	.1	-5.2	-2.6	123	.8	1.2	105	5.7	SE	63	-8.7	****	98	28
29	-2.0	-10.0	-6.0	098	.9	1.0	072	3.8	E	85	-10.3	****	235	29
30	-1.4	-5.2	-3.3	253	.3	.6	243	2.5	WSW	90	-4.7	****	141	30
31	-3.5	-8.2	-5.9	168	.5	.7	122	3.2	WSW	87	-6.8	****	61	31
MONTH	7.7	-13.2	-2.2	111	.8	1.2	012	8.3	ESE	61	-8.3	****	22706	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 3.2

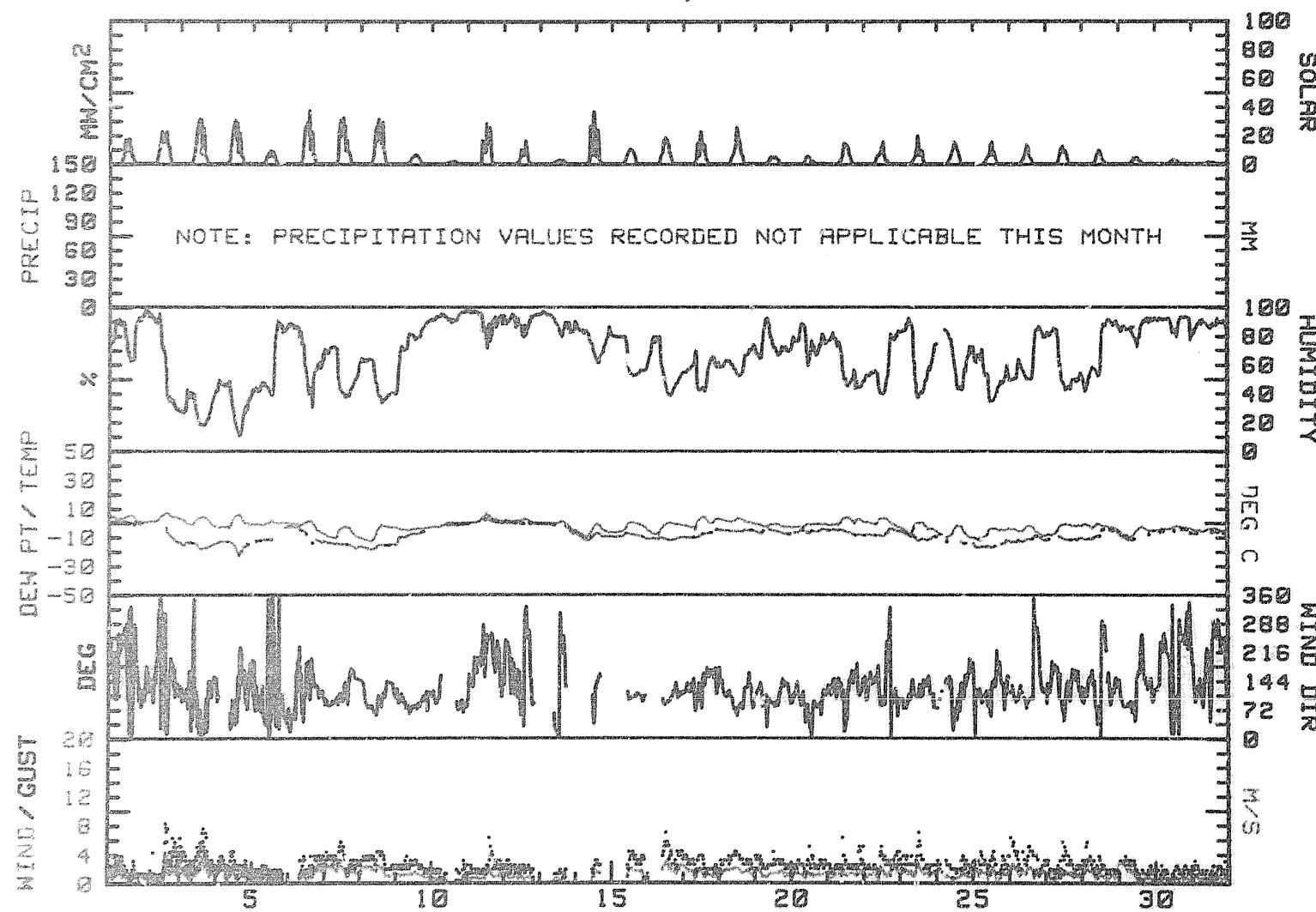
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.7

GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.6

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.  
\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
October, 1983



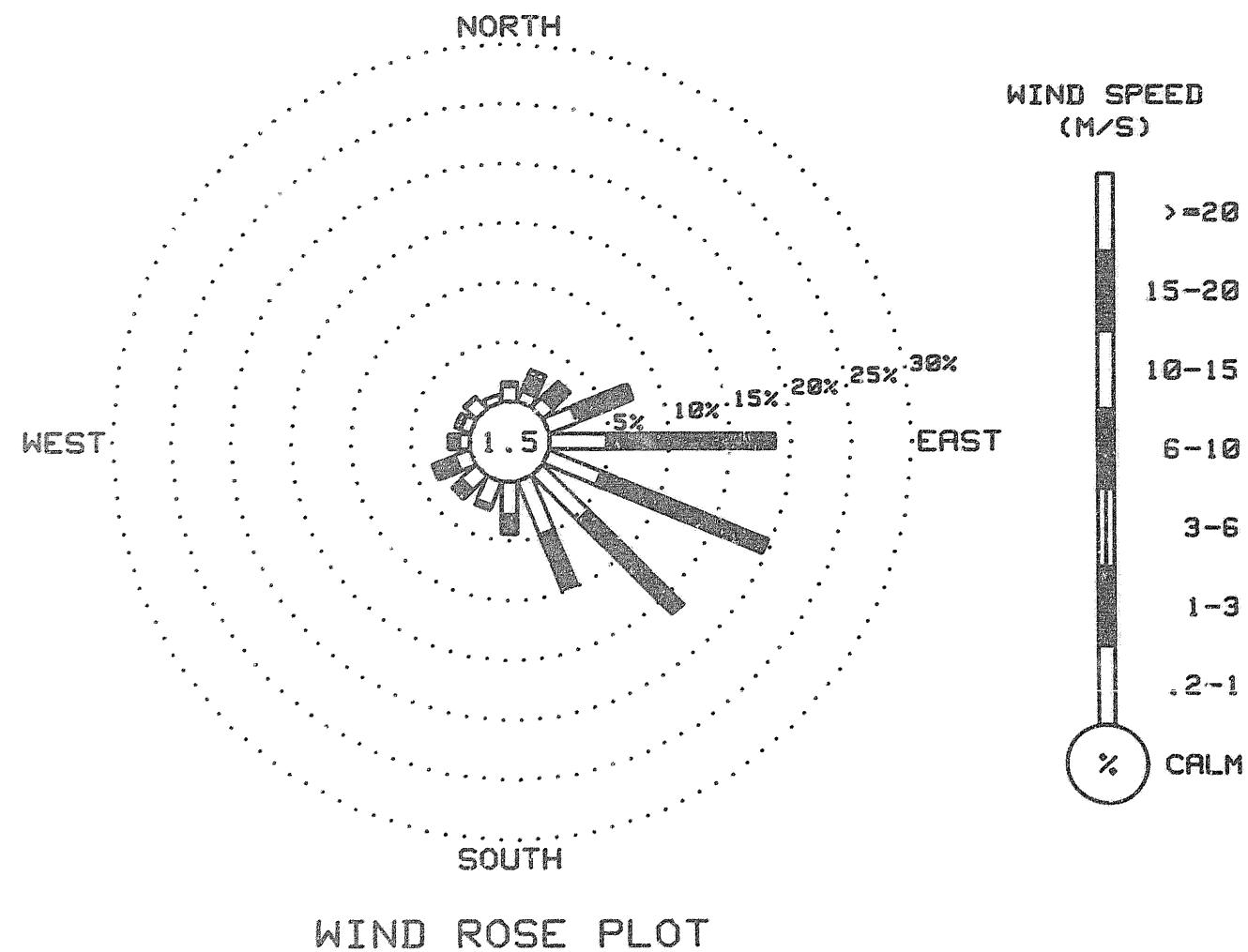
R & M CONSULTANTS, INC.  
SUSSEX TNA HYDRO ELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
	1.0	3.0	6.0	10.0	15.0	20.0		
N	1.28	.40	0.00	0.00	0.00	0.00	0.00	1.68
NNE	1.01	1.34	.60	0.00	0.00	0.00	0.00	2.95
NE	1.21	1.88	.07	0.00	0.00	0.00	0.00	3.15
ENE	2.55	4.97	0.00	0.00	0.00	0.00	0.00	7.52
E	4.83	13.76	.13	0.00	0.00	0.00	0.00	18.72
ESE	4.77	14.70	.13	0.00	0.00	0.00	0.00	19.60
SE	5.44	11.01	0.00	0.00	0.00	0.00	0.00	16.44
SSE	4.90	4.90	0.00	0.00	0.00	0.00	0.00	9.80
S	2.82	1.61	0.00	0.00	0.00	0.00	0.00	4.43
SSW	2.21	.47	0.00	0.00	0.00	0.00	0.00	2.68
SW	1.74	1.07	0.00	0.00	0.00	0.00	0.00	2.82
WSW	1.41	2.01	0.00	0.00	0.00	0.00	0.00	3.42
W	.94	.87	0.00	0.00	0.00	0.00	0.00	1.81
NNW	.87	.47	0.00	0.00	0.00	0.00	0.00	1.34
NW	1.28	.13	0.00	0.00	0.00	0.00	0.00	1.41
NNW	.67	0.00	0.00	0.00	0.00	0.00	0.00	.67
CALM	.....	.....	.....	.....	.....	.....	.....	1.54
TOTAL	32.92	59.60	.94	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT  
 1490 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
 2926 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.  
 \* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT FOR

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
October, 1983



## E &amp; M CONSULTANTS, INC.

## SUSSEKHTNIA HYDROCELL ELECTRIC PROJECT PROGRESS

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1983

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	1	5	11	13	12	12	11	6	3	1	0	0	0	0	0	0	0	0	3
2	0	0	0	0	0	0	1	5	10	15	19	17	20	19	13	9	3	0	0	0	0	0	0	0	5
3	0	0	0	0	0	0	2	6	13	19	29	30	24	19	18	5	2	0	0	0	0	0	0	0	7
4	0	0	0	0	0	0	1	5	16	24	29	27	23	16	16	6	3	0	0	0	0	0	0	0	7
5	0	0	0	0	0	0	1	4	7	6	8	7	7	6	2	1	0	0	0	0	0	0	0	2	
6	0	0	0	0	0	0	0	2	16	26	29	25	24	21	14	6	2	0	0	0	0	0	0	0	7
7	0	0	0	0	0	0	0	3	4	25	25	29	28	19	16	9	7	2	0	0	0	0	0	0	7
8	0	0	0	0	0	0	0	2	6	18	22	24	24	19	28	10	4	1	0	0	0	0	0	0	6
9	0	0	0	0	0	0	0	0	2	3	5	6	7	7	6	4	2	1	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	1	1	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	1	14	9	12	25	19	25	6	1	1	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	1	2	5	10	8	8	15	7	2	1	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	2	2	3	3	3	2	3	2	1	1	0	0	0	0	0	0	
14	0	0	0	0	0	0	1	2	15	16	22	31	15	16	11	1	1	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	2	4	8	10	11	10	9	6	2	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	1	4	8	13	16	18	15	11	7	3	1	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	1	3	10	6	15	19	13	12	5	3	0	0	0	0	0	0	0	3	
18	0	0	0	0	0	0	1	4	7	16	14	24	17	12	7	4	1	0	0	0	0	0	0	1	
19	0	0	0	0	0	0	0	0	1	3	4	6	5	5	5	3	1	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	1	4	7	16	14	24	17	12	7	4	1	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	2	3	6	5	5	2	2	1	2	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	3	6	7	9	13	11	5	3	1	2	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	2	4	6	9	17	7	7	5	2	2	2	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	2	5	8	11	15	13	10	6	5	2	2	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	2	4	6	7	12	11	8	5	3	2	2	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	2	4	6	10	13	9	5	3	1	1	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	1	4	9	12	11	10	8	5	2	1	1	0	0	0	0	0	
28	0	0	0	0	0	0	0	1	5	7	9	10	6	6	3	2	1	1	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	1	2	5	4	5	4	4	2	1	1	1	0	0	0	0	0	0	
30	***	0	0	0	0	0	0	0	0	0	0	1	2	3	3	1	1	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSEX TNA HYDROGELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
 DATA TAKEN DURING October, 1983

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1732	99
WIND SPEED	1535	88
WIND DIRECTION	1533	88
PEAK GUST	1533	88
RELATIVE HUMIDITY	1125	65
PRECIPITATION	0	0
SOLAR RADIATION	1738	100
DEW POINT	1122	64

THERE ARE 1942 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
 THE DATA RECORDING INTERVAL IS 15 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

- 1. RH            -28 RH Points        10/1 -10/6  
                   -20                          10/6 -10/31
- 2. Solar        -1 mW/CM<sup>2</sup>

Additional comments on this month's data:

- 1. Recording time interval was changed on 10/6 from 15 minutes to 30 minutes.
- 2. One hour of data "lost" between 0000 and 0100 on 10/30 due to change of official time zone. See note in section 4 of text.
- 3. Intermittent wind speed and direction data lost due to frozen anemometer and wind vane.
- 4. Malfunction in weather wizard (problem with recorder) caused data to be lost intermittently for all parameters.

No precipitation data for November

(See INTERPRETATION OF DATA).

FEBRUARY CONSULTANT'S INC.  
ESTABLISHED HYDROGEOLOGIC CONSULTANT'S INC.

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S					
0300	-10.5	****	82	112	1.5	115	3.2	0	0300	-2.7	-8.3	65	136	1.9	130	5.4	0	0300	-7.8	-11.0	78	091	1.8	127	3.8	0
0600	-10.3	****	82	102	.9	094	2.5	0	0600	-1.9	-8.4	61	147	1.3	150	2.5	0	0600	-9.5	-12.2	81	085	2.4	088	3.8	0
0900	-7.9	****	82	106	.4	088	1.9	0	0900	-1.6	-9.0	57	153	1.3	141	2.5	0	0900	-9.0	-11.8	80	100	1.9	104	4.4	1
1200	-3.5	****	66	117	.5	107	1.9	0	1200	1.5	-7.3	52	165	1.2	159	2.5	1	1200	-4.8	-9.4	70	094	1.6	097	3.8	6
1500	-1.8	****	69	174	.3	145	1.3	0	1500	1.6	-7.2	52	126	1.2	124	3.8	5	1500	.4	-8.1	53	124	1.2	140	3.8	6
1800	-2.5	****	85	155	.8	166	1.9	0	1800	-1.1	-9.2	54	115	2.1	112	3.8	0	1800	-4.2	-9.6	66	139	1.3	132	2.5	0
2100	.2	-5.6	65	145	1.2	152	3.8	0	2100	-2.0	-9.2	58	105	2.3	115	5.1	0	2100	-5.2	-10.7	65	132	1.7	112	3.8	0
2400	-.9	-6.2	67	144	1.1	134	3.2	0	2400	-4.6	-10.2	65	116	2.7	104	4.4	0	2400	-6.9	-12.2	66	098	1.8	099	4.4	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S					
0300	-8.5	-13.0	70	110	1.2	108	3.2	0	0300	-4.2	-12.6	52	124	2.0	131	3.8	0	0300	-11.3	-14.7	76	069	1.7	070	3.8	0
0600	-9.3	-14.1	68	104	1.0	093	3.2	0	0600	-3.9	-12.3	52	131	2.1	129	3.8	0	0600	-11.8	-15.5	74	071	1.9	070	4.4	0
0900	-1.2	-12.6	42	124	1.3	142	4.4	1	0900	-4.3	-12.2	54	117	2.0	124	3.8	1	0900	-11.9	-15.6	74	070	2.7	073	4.4	1
1200	.9	-12.4	35	121	1.7	094	5.7	0	1200	-4.2	-12.1	54	104	1.7	118	3.8	0	1200	-8.4	-14.4	62	066	2.5	062	4.4	6
1500	.3	****	59	151	.9	135	4.4	5	1500	-3.0	-11.3	53	050	1.3	067	2.5	6	1500	-6.7	-13.8	57	099	2.1	120	5.1	5
1800	-1.2	-13.2	40	104	1.7	110	4.4	0	1800	-4.7	-11.9	57	096	1.0	114	3.2	0	1800	-7.6	-13.4	63	118	2.4	122	4.4	0
2100	-2.2	-13.5	42	110	1.5	107	3.2	0	2100	-6.6	-12.5	63	099	.6	087	3.2	0	2100	-8.7	-14.1	65	115	2.7	114	5.7	0
2400	-3.9	-13.1	49	132	1.3	142	3.2	0	2400	-9.3	-12.9	75	089	1.4	126	3.8	0	2400	-9.2	-14.0	63	106	2.3	111	5.1	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD						
	DEG C	DEG C	% DEG.	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S	M/S						
0300	-6.9	-13.6	59	102	2.4	108	5.1	0	0300	-2.5	-12.3	47	111	1.5	102	4.4	0	0300	.8	-13.8	33	163	1.4	178	2.5	0	
0600	-6.7	-13.6	58	099	3.2	112	4.4	0	0600	-1.8	-11.4	48	126	1.4	132	3.2	0	0600	-.6	-16.2	30	150	1.4	163	3.2	0	
0900	-6.7	-14.0	56	108	2.5	115	5.1	1	0900	-2.3	-11.6	49	127	1.4	107	3.8	0	0900	-.5	-16.8	26	112	1.2	113	3.2	6	
1200	-5.6	-14.7	49	101	2.9	097	6.3	0	1200	-.2	-10.8	45	167	1.8	***	***	***	1200	1.0	-17.9	23	113	1.7	101	3.6	4	
1500	-4.3	-14.5	45	102	2.9	096	5.7	1	1500	***	***	***	***	***	***	***	***	1500	0.0	-19.8	21	124	2.2	122	5.1	3	
1800	-5.0	-14.6	47	111	2.3	103	5.1	0	1800	***	***	***	***	***	***	***	***	0	1800	-3.3	-20.6	25	112	1.5	114	4.4	3
2100	-4.9	-14.0	49	118	1.9	114	3.8	0	2100	***	***	***	***	***	***	***	***	0	2100	-4.9	-18.5	34	118	2.2	119	4.4	0
2400	-3.1	-12.9	47	105	2.3	105	4.4	0	2400	***	***	***	***	***	***	***	***	0	2400	-4.5	-18.1	34	123	1.8	112	3.8	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## F &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST														
DEG C	DEG C	%	DEG	DEG C	%	DEG	DEG C	DEG C	DEG C	%	DEG	DEG C														
DEG C	DEG C	%	M/S	DEG C	%	M/S	DEG C	DEG C	DEG C	%	M/S	MW														
0300	-5.0	-18.2	35	135	1.5	103	4.4	0	0300	-1.9	-15.8	34	157	1.0	177	2.5	0	0300	-6.7	-18.2	40	114	2.7	121	5.1	0
0600	-3.7	-17.1	35	166	1.3	147	3.2	0	0600	-4.6	-16.3	40	095	1.4	092	3.8	0	0600	-6.7	-17.9	41	116	2.6	115	4.4	0
0900	-1.8	-16.1	33	165	1.6	154	3.2	0	0900	-5.2	-17.1	39	086	2.1	075	3.8	0	0900	-6.5	-16.0	47	112	2.3	109	4.4	0
1200	-1.3	-16.7	28	127	1.3	121	8.4	5	1200	-6.2	-16.8	43	082	1.8	082	2.5	4	1200	-5.5	-15.6	45	112	2.5	118	4.4	2
1500	-1.8	-16.8	29	122	1.6	135	4.4	3	1500	-3.9	****	39	052	.8	056	3.2	5	1500	-5.2	-10.7	65	100	2.0	092	4.4	2
1800	-2.8	-16.3	35	122	1.9	103	8.4	0	1800	-2	-18.4	24	118	1.7	082	5.1	0	1800	-4.6	-11.6	58	104	1.7	120	3.8	0
2100	-1.8	-15.7	34	157	1.3	155	3.8	0	2100	-3.2	-18.8	29	113	2.0	114	5.7	0	2100	-4.9	-11.7	59	067	1.0	083	2.5	0
2400	-2.3	-16.5	33	150	1.5	117	5.7	0	2400	-4.8	-17.4	37	106	2.0	102	4.4	0	2400	-5.2	-12.4	57	065	1.0	068	2.5	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST														
DEG C	DEG C	%	DEG	DEG C	%	DEG	DEG C	DEG C	DEG C	%	DEG	DEG C														
DEG C	DEG C	%	M/S	DEG C	%	M/S	DEG C	DEG C	DEG C	%	M/S	MW														
0300	-8.0	-14.8	58	106	2.2	114	4.4	0	0300	-11.1	-14.8	74	089	1.6	085	3.8	0	0300	-13.2	-17.3	71	068	2.3	067	3.8	0
0600	-11.2	-15.7	69	078	2.1	106	3.8	0	0600	-10.3	-14.5	71	030	2.2	030	3.8	0	0600	-12.8	-17.1	70	077	1.4	073	3.2	0
0900	-13.0	-16.8	73	074	1.9	065	3.8	0	0900	-10.9	-15.4	69	113	2.9	111	5.7	0	0900	-11.2	-15.6	70	099	1.7	096	3.2	0
1200	-12.1	-16.8	68	070	2.4	068	4.4	4	1200	-9.5	-14.8	65	116	2.5	117	4.8	4	1200	-7.4	****	61	122	1.0	114	3.2	7
1500	-10.1	-15.6	64	066	1.7	062	3.2	2	1500	-8.9	-15.2	60	118	2.7	118	4.8	2	1500	-1.1	-15.1	34	116	2.5	102	6.3	3
1800	-10.5	-15.2	68	082	2.1	081	3.8	0	1800	-9.7	-15.6	62	112	2.4	114	4.4	0	1800	-2.9	****	39	128	1.3	125	4.4	0
2100	-12.6	-15.6	78	078	2.5	078	4.4	0	2100	-10.9	-15.5	63	120	2.3	127	4.4	0	2100	-2.7	-3.2	38	126	1.7	104	5.1	0
2400	-12.1	-15.5	76	076	2.3	082	5.1	0	2400	-12.5	-17.2	68	073	1.6	105	3.8	0	2400	-3.5	-16.2	37	121	1.5	133	3.8	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST														
DEG C	DEG C	%	DEG	DEG C	%	DEG	DEG C	DEG C	DEG C	%	DEG	DEG C														
DEG C	DEG C	%	M/S	DEG C	%	M/S	DEG C	DEG C	DEG C	%	M/S	MW														
0300	-4.2	-15.9	40	098	2.1	090	5.1	0	0300	-13.4	-17.7	70	069	2.1	071	4.4	0	0300	-8.9	-13.7	68	115	2.1	121	4.4	0
0600	-6.2	-11.3	67	098	2.1	102	5.7	0	0600	-14.0	-18.1	71	080	2.5	084	3.8	0	0600	-10.9	-15.6	68	109	2.1	104	5.1	0
0900	-7.1	-12.9	63	098	2.7	097	5.1	0	0900	-14.1	-18.2	71	077	2.1	***	3.2	0	0900	-11.8	-16.7	67	087	1.6	091	3.8	0
1200	-8.1	-13.9	63	133	2.3	134	5.7	3	1200	-12.3	-17.3	66	081	2.1	076	3.2	5	1200	-11.8	-16.8	66	073	2.2	089	4.4	5
1500	-7.5	-13.9	60	120	2.3	133	3.8	2	1500	-10.4	-14.1	74	083	1.8	093	3.8	3	1500	-9.9	-15.4	64	073	1.8	066	3.8	2
1800	-8.3	-14.7	60	112	2.3	098	3.8	0	1800	-9.3	-13.1	74	094	1.0	103	3.2	0	1800	-12.3	-17.0	66	085	1.9	079	3.8	6
2100	-9.2	-15.5	60	116	2.2	118	3.8	0	2100	-9.0	-12.9	73	100	1.2	110	3.2	0	2100	-14.6	-18.2	74	072	1.9	068	3.8	0
2400	-11.5	-17.1	63	089	2.0	115	4.4	0	2400	-8.8	-13.4	69	089	1.4	100	3.2	0	2400	-16.0	-19.5	74	078	2.6	072	3.8	0

\*\* GFE INTERPRETATION NITES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.

在本研究中，我們發現了多個與疾病相關的基因座，這些基因座可能參與了疾病的發病過程。

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

DAY 19												DAY 20												DAY 21																		
HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW
0300	-16.8	-20.3	74	***	***	***	3.2	0	0300	-16.2	-19.9	73	070	2.1	082	3.8	0	0300	-2.3	-9.2	59	154	.7	160	2.5	0																
0600	-16.4	-19.9	74	075	1.6	093	3.8	0	0600	-16.3	-20.0	73	076	2.6	073	3.8	0	0600	-1.2	-8.6	57	106	1.1	094	4.4	0																
0900	-15.4	-18.8	75	086	1.3	***	3.8	0	0900	-10.0	-11.9	67	091	1.3	082	3.2	0	0900	-5	-7.7	58	147	1.1	109	4.4	0																
1200	-13.8	-17.4	74	076	1.3	035	3.8	4	1200	-7.3	-14.1	58	089	1.4	082	3.8	3	1200	1.7	-6.8	54	129	.9	094	4.4	2																
1500	-13.0	****	75	108	1.1	106	3.2	2	1500	-6.6	-14.9	52	086	2.2	093	5.7	1	1500	.9	-6.4	58	199	.8	***	3.8	1																
1800	-14.6	-17.7	77	091	1.4	100	2.5	0	1800	-7.2	****	63	087	1.2	101	3.2	0	1800	.1	****	63	176	.9	179	1.9	0																
2100	-15.6	-18.9	76	100	1.3	086	3.2	0	2100	-5.9	-12.4	60	101	.7	150	2.5	0	2100	-.1	****	67	188	.8	175	1.9	0																
2400	-16.7	-20.1	75	090	1.2	094	3.9	0	2400	-4.6	****	62	157	.6	204	1.9	0	2400	-.6	****	97	191	.3	232	1.9	0																
DAY 22												DAY 23												DAY 24																		
HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW
0300	-.5	****	98	117	.7	119	1.9	0	0300	-7.6	-9.0	90	090	2.0	087	3.6	0	0300	-7.5	****	83	119	.8	186	3.2	0																
0600	-1.1	****	98	103	.7	069	2.5	0	0600	-7.4	-9.1	88	075	2.0	086	3.2	0	0600	-8.0	-11.5	76	088	1.3	092	3.2	0																
0900	-1.3	-2.6	91	117	1.1	128	3.2	0	0900	-7.4	-9.1	86	068	1.8	072	3.2	0	0900	-11.8	-14.1	83	101	1.9	094	3.2	3																
1200	-1.6	-3.5	87	129	2.0	129	3.2	3	1200	-6.4	-8.8	83	064	1.9	069	3.2	2	1200	-12.1	-15.1	78	089	2.0	085	3.8	2																
1500	-1.9	-4.3	84	120	1.8	120	3.2	1	1500	-5.6	-8.3	81	052	.9	054	2.5	1	1500	-11.0	-14.4	76	089	1.7	088	3.8	1																
1800	-3.4	-5.6	85	124	1.5	131	3.2	5	1800	-5.7	****	84	115	1.0	135	2.5	0	1800	-12.5	-15.2	80	088	1.6	079	3.2	0																
2100	-5.1	-6.7	89	082	1.7	083	3.2	0	2100	-6.4	****	88	106	.7	103	2.5	0	2100	-13.4	-16.3	79	125	1.3	111	3.2	0																
2400	-6.7	-8.1	90	085	1.6	089	3.2	0	2400	-6.1	****	84	114	.8	125	2.5	0	2400	-9.2	-13.1	73	122	.9	115	3.8	0																
DAY 25												DAY 26												DAY 27																		
HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW
0300	-9.9	-13.8	73	104	1.6	092	3.8	0	0300	-9.4	****	65	118	1.6	130	3.8	0	0300	-8.3	-13.1	68	051	1.4	063	3.2	0																
0600	-9.8	-14.6	68	101	2.2	106	4.4	0	0600	-8.5	****	63	064	1.0	056	2.5	0	0600	-8.2	-12.2	73	057	1.5	064	3.2	0																
0900	-10.0	-14.8	68	099	2.5	101	5.1	0	0900	-9.2	-15.1	62	099	1.8	116	3.8	0	0900	-6.4	-10.8	71	069	1.7	063	3.2	0																
1200	-9.2	-14.7	64	098	2.3	091	5.7	3	1200	-5.8	****	56	068	.9	065	3.5	4	1200	-6.3	-9.3	79	070	1.2	082	3.2	3																
1500	-9.2	-14.9	63	093	2.3	088	5.7	1	1500	-6.7	-14.0	56	108	1.8	094	3.8	1	1500	-3.8	-8.8	68	078	1.3	082	2.5	1																
1800	-10.0	-15.5	64	093	2.7	091	5.1	0	1800	-8.0	****	64	061	1.5	072	2.5	0	1800	-3.5	-8.9	66	111	1.8	111	3.2	0																
2100	-10.0	-15.5	64	098	2.1	106	4.4	0	2100	-7.8	****	63	091	1.3	112	3.2	0	2100	-4.8	****	70	125	1.6	134	3.8	0																
2400	-10.0	-15.5	64	117	2.6	115	4.8	0	2400	-8.4	-13.8	65	073	1.5	078	3.2	0	2400	-3.9	-9.7	64	094	1.6	100	3.8	0																

\*\* ENSURE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1963

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD													
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	DEG C													
0300	-2.6	-7.7	68	102	1.5	102	4.4	0	0300	.9	-6.9	56	161	1.1	165	2.5	0	0300	1.9	-14.8	28	154	1.5	133	4.4	0
0600	-2.1	-7.8	65	114	1.2	112	3.2	0	0600	2.1	-9.6	42	161	1.4	150	3.2	0	0600	1.1	-13.9	32	130	1.6	139	3.8	0
0900	-1.4	-7.3	64	108	1.0	132	3.2	0	0900	2.0	-10.3	40	142	1.7	137	3.2	0	0900	.1	-14.1	34	099	1.7	089	4.4	1
1200	-.2	-7.7	57	090	1.3	062	3.8	5	1200	2.3	-10.4	39	154	1.5	150	3.8	2	1200	2.0	-12.4	34	146	1.4	141	3.2	2
1500	.9	-6.9	56	091	1.2	114	4.4	2	1500	2.1	-11.2	37	134	1.2	163	3.8	1	1500	2.0	-11.7	36	145	1.4	120	2.5	1
1800	-.1	-6.9	60	100	1.2	074	4.4	0	1800	2.9	-11.9	33	135	1.3	113	3.8	0	1800	1.2	-12.0	37	145	1.4	159	3.8	0
2100	.5	-6.6	59	133	1.2	162	2.5	0	2100	2.6	-13.0	31	131	1.8	113	3.8	0	2100	.5	-12.7	37	140	1.4	147	3.2	0
2400	.2	-6.6	60	147	1.0	157	2.5	0	2400	.2	-14.7	32	148	1.6	123	3.8	0	2400	1.3	-12.3	36	137	1.3	140	3.8	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SOUTHERN HYDROGEOLOGIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

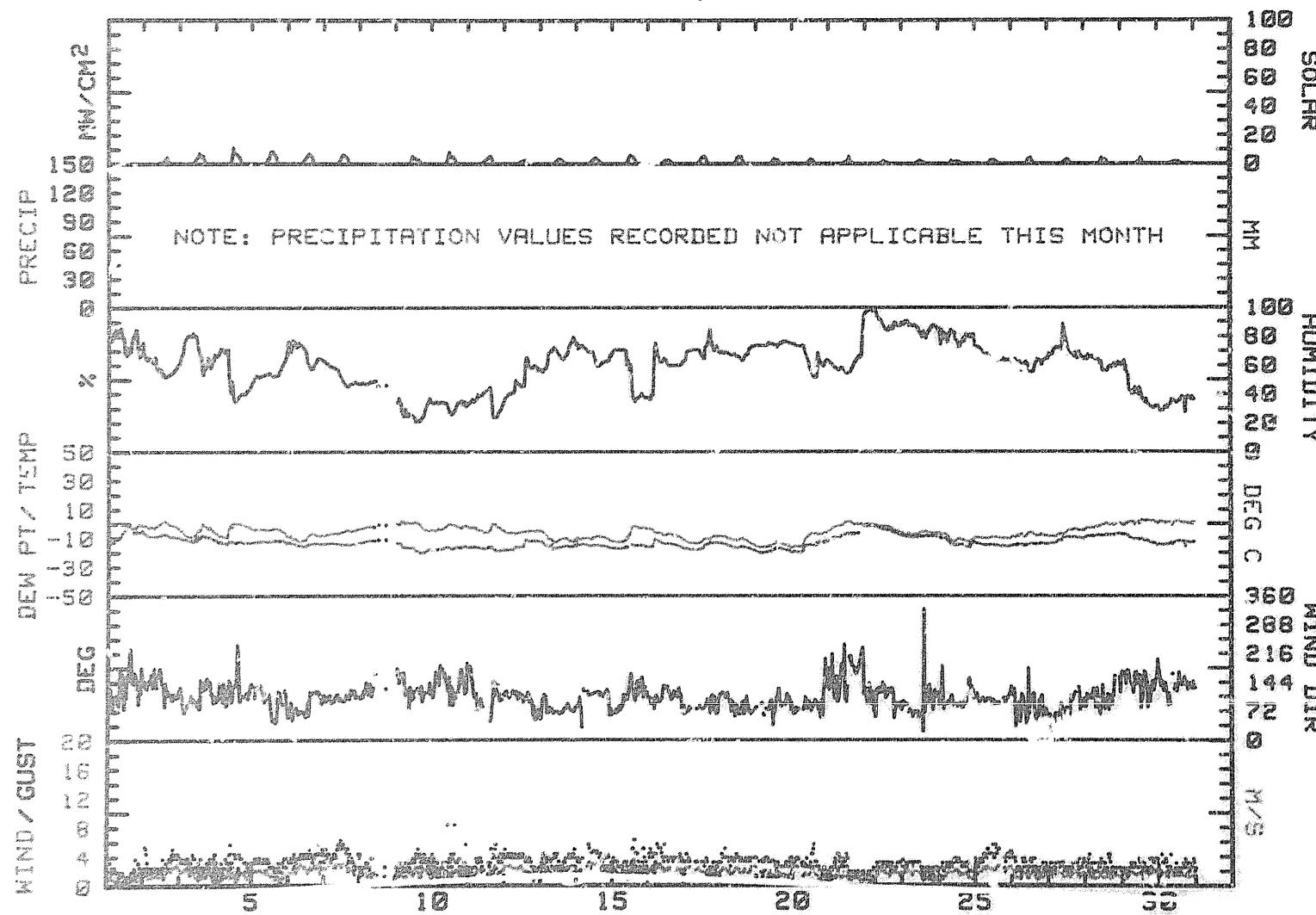
DAY	RES.			RES.			AVG.	MAX.	MAX.	DAY'S		
	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DEG C	SOLAR ENERGY WH/SQM
1	.2	-10.7	-5.3	130	.8	.9	152	3.8	ESE	75	-9.5	***
2	1.8	-4.6	-1.4	127	1.7	1.8	130	5.4	ESE	59	-8.4	130
3	.4	-10.3	-5.0	104	1.6	1.7	104	4.4	E	70	-10.5	340
4	.9	-9.8	-4.5	119	1.3	1.4	094	5.7	SE	49	-13.0	425
5	-3.0	-9.4	-6.2	106	1.4	1.6	131	3.8	ESE	56	-12.3	425
6	-6.7	-12.3	-9.5	090	2.1	2.3	114	5.7	ENE	67	-14.4	335
7	-3.1	-7.8	-5.5	106	2.4	2.5	097	6.3	ESE	52	-14.0	330
8	.1	-3.0	-1.5	124	1.4	1.5	102	4.4	ESE	47	-11.7	0
9	2.2	-5.3	-1.6	125	1.6	1.7	122	5.1	ESE	28	-17.6	240
10	.2	-5.4	-2.6	144	1.4	1.5	121	8.4	SSE	32	-16.8	305
11	.5	-6.7	-3.1	104	1.6	1.7	114	5.7	ESE	35	-17.3	250
12	-4.5	-7.2	-5.0	108	2.0	2.0	121	5.1	EPE	50	-14.8	125
13	-5.0	-14.6	-9.8	080	2.1	2.2	082	5.1	ENE	68	-15.6	180
14	-8.4	-12.6	-10.5	105	2.1	2.3	111	5.7	ESE	67	-15.3	205
15	-1.1	-13.3	-7.2	105	1.6	1.7	102	6.3	ESE	54	-16.0	260
16	-3.4	-11.5	-7.5	108	2.2	2.3	102	5.7	ESE	60	-14.2	150
17	-8.3	-14.1	-11.2	083	1.6	1.7	071	4.4	ENE	71	-15.9	230
18	-8.6	-16.0	-12.3	087	1.9	2.1	104	5.1	ENE	68	-16.2	225
19	-12.4	-17.3	-14.9	090	1.3	1.3	094	3.9	E	75	-18.7	165
20	-4.6	-16.6	-10.6	088	1.3	1.5	093	5.7	E	65	-16.3	130
21	1.9	-4.4	-1.3	154	.7	1.0	094	4.4	S	58	-7.5	135
22	-2	-6.7	-3.5	110	1.3	1.4	128	3.2	ESE	89	-4.4	75
23	-1.6	-7.9	-6.3	081	1.3	1.4	087	3.6	ENE	86	-8.0	85
24	-5.6	-13.5	-9.6	099	1.4	1.5	085	3.8	E	79	-13.5	105
25	-9.0	-10.2	-9.6	101	2.2	2.3	091	5.7	E	66	-14.8	140
26	-5.5	-9.4	-7.5	089	1.2	1.4	130	3.8	ENE	61	-14.1	150
27	-3.3	-9.2	-6.3	080	1.4	1.6	134	3.8	ENE	70	-10.5	125
28	.9	-4.5	-1.8	106	1.2	1.3	102	4.4	ESE	62	-7.5	153
29	3.5	-1.4	1.1	145	1.4	1.6	150	3.8	SSE	43	-10.7	115
30	2.8	-1.2	.8	138	1.4	1.5	133	4.4	SF	34	-13.1	110
MONTH	3.5	-17.3	-6.0	166	1.5	1.7	121	8.4	ESE	59	-13.1	5643

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	3.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	3.12
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	2.5
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	3.8

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
November, 1983



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

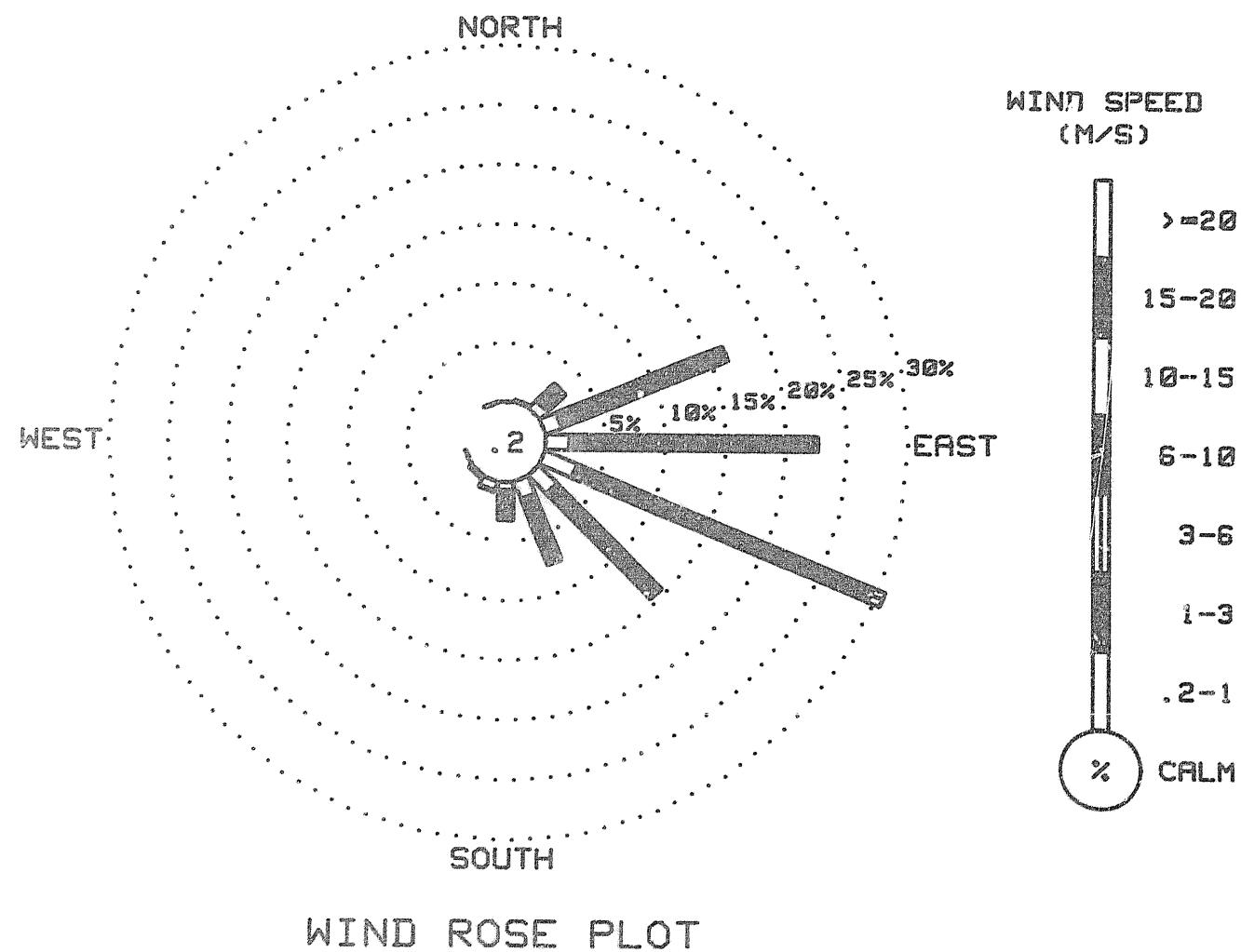
WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
N	0.00	.08	0.00	0.00	0.00	0.00	0.00		.08
NNE	.15	.15	0.00	0.00	0.00	0.00	0.00		.31
NE	.93	2.08	0.00	0.00	0.00	0.00	0.00		3.01
ENE	1.46	14.73	.15	0.00	0.00	0.00	0.00		16.35
E	2.00	20.12	.46	0.00	0.00	0.00	0.00		22.59
ESE	2.93	26.52	1.08	0.00	0.00	0.00	0.00		30.53
SE	2.16	12.34	0.00	0.00	0.00	0.00	0.00		14.50
SSE	1.62	5.94	0.00	0.00	0.00	0.00	0.00		7.56
S	.69	2.54	0.00	0.00	0.00	0.00	0.00		3.24
SSW	.85	.15	0.00	0.00	0.00	0.00	0.00		1.00
SW	.39	0.00	0.00	0.00	0.00	0.00	0.00		.39
WSW	.08	.08	0.00	0.00	0.00	0.00	0.00		.15
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
NNW	.08	0.00	0.00	0.00	0.00	0.00	0.00		.08
CALM									.23
TOTAL	15.34	84.73	1.70	0.00	0.00	0.00	0.00		100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1292 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
1440 WTND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.  
\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
November, 1983



## R &amp; M CONSULTANTS, INC.

## SUSIETNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***
2	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	0	0	0	0	0	0	0	0	0	1	3	5	6	7	5	5	6	6	6	6	6	6	6	6	1
4	0	0	0	0	0	0	0	0	0	1	3	10	8	7	7	7	7	7	7	7	7	7	7	7	1
5	0	0	0	0	0	0	0	0	0	1	3	5	9	9	8	8	8	8	8	8	8	8	8	8	1
6	0	0	0	0	0	0	0	0	0	1	3	4	6	7	7	7	7	7	7	7	7	7	7	7	1
7	0	0	0	0	0	0	0	0	0	1	3	5	7	7	7	7	7	7	7	7	7	7	7	7	1
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEUTI CANYON WEATHER STATION  
DATA TAKEN DURING November, 1983

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1414	98
WIND SPEED	1344	93
WIND DIRECTION	1310	91
PEAK GUST	1323	92
RELATIVE HUMIDITY	1238	86
PRECIPITATION	0	0
SOLAR RADIATION	1426	99
DEW POINT	1236	86

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -20 RH Points      11/1 - 11/17  
                              -15                          11/17 - 11/30
2. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Malfunction in weather wizard (problem with recorder) caused data to be lost intermittantly for all parameters.

No precipitation data for December  
(See INTERPRETATION OF DATA).

## F R A M C O N S U L T A N T S , I N C .

## S S U S T E N A H Y D R O E L E C T R I C P R O J E C T

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW			
0300	-2	-11.4	43	122	1.2	141	2.5	0	0300	-2.4	-6.0	76	143	1.3	138	2.5	0	0300	-5.3	****	84	102	.9	097	3.2	0
0600	-1.8	-10.6	51	157	1.1	152	2.5	0	0600	-5.2	****	86	093	1.2	097	3.2	0	0600	-6.1	****	94	103	.4	101	1.9	0
0900	-1.7	-9.8	54	153	1.3	137	3.2	0	0900	-5.5	****	85	067	1.4	069	3.2	0	0900	-6.3	****	93	082	.7	060	2.5	0
1200	-2	****	53	165	.9	182	1.9	2	1200	-4.4	-7.2	81	052	1.1	048	3.2	3	1200	-4.5	-6.1	89	057	.9	060	3.2	3
1500	1.3	****	51	129	.7	142	2.5	1	1500	-4.1	-7.5	77	065	1.0	072	3.2	1	1500	-3.7	-6.5	81	117	1.6	120	3.2	1
1800	1.6	-7.0	53	139	1.4	143	2.5	0	1800	-4.2	-7.1	80	061	1.0	062	3.2	0	1800	-4.8	-7.7	80	118	1.9	121	3.8	0
2100	1.8	-6.3	55	111	1.5	100	3.8	1	2100	-4.4	****	80	074	.6	077	2.5	0	2100	-6.2	-9.7	76	086	1.2	125	3.2	0
2400	1.0	-5.7	61	122	1.4	135	4.9	0	2400	-5.1	****	85	145	.8	146	1.9	0	2400	-6.7	-10.4	75	072	1.7	075	3.2	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW			
0300	-5.6	-9.3	75	102	1.9	118	4.4	0	0300	-4.6	-6.6	86	116	2.2	117	3.8	0	0300	-2.5	-4.4	87	111	1.5	125	3.2	0
0600	-5.4	-8.1	81	110	1.6	120	3.8	0	0600	-5.0	-6.3	91	107	1.7	109	3.8	0	0600	-2.7	-4.1	90	095	1.2	083	3.2	0
0900	-5.8	-7.5	88	119	2.0	118	3.8	0	0900	-5.5	-5.9	97	068	1.2	065	2.5	0	0900	-2.6	-4.5	87	086	1.5	085	3.8	0
1200	-5.2	-7.6	83	113	2.0	116	3.8	2	1200	-5.0	****	96	072	1.1	070	1.9	1	1200	-2.5	-4.7	85	086	1.5	090	3.8	2
1500	-5.2	-5.8	96	100	1.7	110	3.8	0	1500	-3.4	-4.1	95	068	.9	075	1.9	0	1500	-2.1	-4.6	83	096	1.8	097	3.8	1
1800	-5.2	-5.9	95	105	1.5	106	3.2	0	1800	-3.0	-4.6	89	123	1.3	122	3.2	0	1800	-3.2	-5.1	87	093	1.6	102	3.8	0
2100	-4.9	-6.3	90	114	1.4	103	2.5	0	2100	-2.8	-4.5	88	131	1.6	123	3.2	0	2100	-7.0	-7.3	98	079	1.6	086	3.2	0
2400	-4.8	-6.2	90	129	1.4	121	3.2	0	2400	-2.8	-4.5	88	123	1.6	125	3.2	0	2400	-8.1	-8.6	96	099	1.4	077	2.5	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW			
0300	-4.7	-6.4	88	131	1.0	119	1.9	0	0300	-7.3	-10.2	80	096	3.7	088	7.0	0	0300	-10.9	-19.1	51	136	2.2	132	5.1	0
0600	-4.9	****	88	119	.9	118	2.5	0	0600	-7.6	-11.1	76	103	4.0	101	7.0	0	0600	-11.1	-21.9	41	125	1.1	118	2.6	0
0900	-4.2	-6.5	84	115	1.3	100	3.2	0	0900	-8.6	-12.4	74	104	3.7	106	6.3	0	0900	-13.3	-23.6	42	095	1.4	073	4.4	0
1200	-4.4	-7.2	81	110	1.3	103	2.5	2	1200	-8.8	-13.1	71	116	3.5	104	5.7	2	1200	-14.7	-25.1	41	112	2.3	099	4.4	2
1500	-4.7	-7.8	79	117	1.4	119	2.5	1	1500	-8.5	-13.0	70	114	4.1	122	6.3	1	1500	-15.4	-25.5	42	095	2.0	100	4.4	1
1800	-6.9	-9.2	84	119	1.4	109	2.5	0	1800	-9.6	-14.0	70	108	3.6	110	6.3	0	1800	-16.3	-26.3	42	129	2.4	119	4.4	0
2100	-7.4	-9.7	84	117	2.0	118	3.2	0	2100	-10.5	-15.1	69	151	2.7	149	5.1	0	2100	-16.1	-26.4	41	119	2.9	110	4.4	0
2400	-6.9	-9.6	81	130	2.2	145	4.4	0	2400	-10.5	-17.0	59	131	2.7	133	5.7	0	2400	-16.3	-26.3	42	084	1.3	103	4.8	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSES DITCH HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.												
NDNG TEMP.	POINT RH	SPD.	% DEG.	M/S	MW	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD											
DEG C	DEG C	X	DEG.	M/S	MW	DEG C	DEG C	X	DEG.	M/S	DEG C	DEG C	X	DEG.	M/S	MW										
0300	-14.3	-24.8	41	112	1.7	118	3.8	0	0300	-9.5	-16.9	55	101	1.8	099	5.1	0	0300	-12.7	-16.2	75	089	1.4	101	3.2	0
0600	-13.4	-23.4	43	104	2.2	100	5.1	0	0600	-10.5	-18.5	52	119	2.3	100	5.7	0	0600	-13.4	-16.6	77	074	1.5	073	2.5	0
0900	-13.6	-23.1	45	103	2.4	106	5.1	0	0900	-11.4	*****	62	111	1.3	120	3.8	0	0900	-14.3	-17.3	78	077	1.6	066	3.2	0
1200	-12.0	-15.8	73	105	1.9	099	4.4	1	1200	-8.6	-15.0	60	127	2.2	133	4.4	2	1200	-13.2	-16.7	75	090	1.0	081	2.5	2
1500	-11.2	-18.3	56	106	2.1	105	5.1	1	1500	-7.2	-13.8	59	101	1.9	108	4.4	0	1500	-10.3	-15.8	64	108	.9	094	3.2	1
1800	-10.5	-17.0	59	107	2.0	084	4.4	0	1800	-7.5	-11.3	74	106	1.8	100	4.4	0	1800	-12.2	*****	71	141	.7	139	2.5	0
2100	-9.8	-18.3	50	092	1.2	110	3.2	0	2100	-9.2	-13.8	69	130	1.8	138	3.2	0	2100	-8.9	-16.3	55	102	1.3	104	3.2	0
2400	-9.1	-17.7	50	102	1.9	087	5.1	0	2400	-11.1	-15.3	71	115	1.3	142	3.2	0	2400	-9.5	-16.7	56	118	1.8	132	4.4	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.												
NDNG TEMP.	POINT RH	SPD.	% DEG.	M/S	MW	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD											
DEG C	DEG C	X	DEG.	M/S	MW	DEG C	DEG C	X	DEG.	M/S	DEG C	DEG C	X	DEG.	M/S	MW										
0300	-9.3	-15.8	59	125	1.8	121	3.2	0	0300	-14.2	-18.3	71	132	1.9	131	3.8	0	0300	*****	*****	***	***	***	***	***	***
0600	-9.4	-15.7	60	111	1.3	123	5.1	0	0600	-15.2	-18.5	76	091	1.3	136	3.8	0	0600	*****	*****	***	***	***	***	***	***
0900	-9.3	-15.8	59	107	1.8	101	5.7	0	0900	-16.4	-19.5	77	056	1.7	063	3.2	0	0900	*****	*****	***	***	***	***	***	***
1200	-9.2	*****	72	120	1.3	120	3.2	0	1200	-16.7	-19.9	76	070	1.3	059	3.8	0	1200	*****	*****	**	***	***	***	***	***
1500	-9.0	*****	69	081	.9	084	3.2	0	1500	-16.8	*****	74	085	1.5	089	3.8	0	1500	*****	*****	**	***	***	***	***	***
1800	-10.0	-14.2	71	092	1.4	101	3.8	0	1800	-17.8	-21.0	76	*****	*****	*****	2.5	0	1800	*****	*****	***	***	***	***	***	***
2100	-10.5	-15.6	66	118	1.4	112	3.8	0	2100	-18.0	-21.0	77	069	1.4	069	3.2	0	2100	*****	*****	***	***	***	***	***	***
2400	-11.8	-16.7	67	120	1.4	126	3.2	0	2400	-19.7	-22.5	78	050	1.5	049	2.5	0	2400	*****	*****	***	***	***	***	***	***

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.		
NDNG TEMP.	POINT RH	SPD.	% DEG.	M/S	MW	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	
DEG C	DEG C	X	DEG.	M/S	MW	DEG C	DEG C	X	DEG.	M/S	DEG C	DEG C	X	DEG.	M/S	MW
0300	*****	*****	***	*****	*****	0300	*****	*****	***	*****	0300	*****	*****	***	*****	*****
0600	*****	*****	***	*****	*****	0600	*****	*****	***	*****	0600	*****	*****	***	*****	*****
0900	*****	*****	***	*****	*****	0900	*****	*****	***	*****	0900	*****	*****	***	*****	*****
1200	*****	*****	***	*****	*****	1200	*****	*****	***	*****	1200	*****	*****	***	*****	*****
1500	*****	*****	***	*****	*****	1500	*****	*****	***	*****	1500	*****	*****	***	*****	*****
1800	*****	*****	***	*****	*****	1800	*****	*****	***	*****	1800	*****	*****	***	*****	*****
2100	*****	*****	***	*****	*****	2100	*****	*****	***	*****	2100	*****	*****	***	*****	*****
2400	*****	*****	***	*****	*****	2400	*****	*****	***	*****	2400	*****	*****	***	*****	*****

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

R & M CONSULTANTS, INC.  
SUBSIDIARY HYDROCELL ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300 -10.0 **** 78	118	.8	145	3.2	0	0300	-7.5 -15.2 54	106	3.1	115	5.1	0	0300 -3.6 -5.6 86
0600 -7.3 -12.9 64	113	1.7	140	3.8	0	0600	-6.8 -14.6 54	116	2.8	115	5.1	0	0600 -4.1 -4.8 95
0900 -10.3 -14.7 70	110	2.0	115	3.8	0	0900	-6.2 -14.0 54	112	2.7	109	4.4	0	0900 -3.6 -5.9 84
1200 -5.4 -14.2 50	089	1.4	074	3.8	2	1200	-5.3 -13.2 54	111	2.7	112	5.1	2	1200 -3.2 -6.3 79
1500 -6.6 -15.9 48	113	2.5	116	4.4	0	1500	-5.0 -12.4 56	107	2.5	114	5.1	0	1500 -3.0 -6.6 76
1800 -8.5 -16.2 54	103	2.9	101	5.1	0	1800	-4.1 -11.8 55	119	2.4	108	5.1	0	1800 -4.7 -8.4 75
2100 -8.5 -15.9 55	120	3.2	129	5.7	0	2100	-3.9 -9.9 63	108	2.1	118	4.4	0	2100 -5.7 -9.7 73
2400 -8.2 -15.7 55	115	2.9	111	5.7	0	2400	-4.3 -9.3 68	098	2.5	094	4.4	0	2400 -6.6 -10.3 75

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.							
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW					
0300 ***** 80	062	2.7	062	5.1	0	0300	-14.3 -16.8 81	064	2.2	066	5.1	0	0300 -13.3 -16.6 76					
0600 ***** 83	076	2.5	092	4.8	0	0600	-12.4 -15.1 80	063	2.8	068	4.4	0	0600 -14.5 -17.8 76					
0900 ***** 83	*** ***	3.2	0	0900	-14.0 -16.8 79	061	2.4	050	5.1	0	0900 -14.1 -17.4 76	058	2.9	055	5.7	0		
1200 ***** ***	069	2.3	069	3.8	1	1200	-13.5 -16.5 71	058	2.5	068	5.4	1	1200 -12.6 -16.4 73	088	2.4	080	4.4	3
1500 ***** *****	*****	*****	*****	*****	1	1500	-12.3 -16.1 73	056	3.1	060	5.7	1	1500 -12.9 -16.1 77	100	1.8	090	3.8	1
1800 ***** *****	***	***	***	***	0	1800	-9.9 -14.1 71	068	2.3	053	5.7	0	1800 -13.3 -16.2 79	110	1.6	115	5.1	0
2100 -14.3 -16.8 81	068	3.0	068	3.8	0	2100	-10.9 -15.1 71	076	3.1	087	6.3	0	2100 -12.7 -15.1 82	135	1.4	138	4.4	0
2400 -14.4 -17.2 79	057	2.3	056	5.1	0	2400	-12.6 -16.1 75	058	2.8	056	5.7	0	2400 -6.8 -11.3 70	131	1.6	101	4.4	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300 -12.2 **** 83	101	1.3	095	4.4	0	0300	-8.4 -15.4 57	095	2.1	075	5.1	0	0300 -11.5 -17.9 59
0600 -3.3 -12.5 49	130	.9	116	3.8	0	0600	-10.8 -16.4 63	089	2.0	105	4.4	0	0600 -9.1 -17.0 53
0900 .9 -14.5 31	110	3.5	098	5.1	0	0900	-11.3 -16.9 63	084	1.5	075	3.2	0	0900 -10.9 -18.0 56
1200 .4 -15.3 30	113	2.5	135	6.3	2	1200	-10.9 -16.7 62	078	2.7	082	5.1	2	1200 -10.1 -18.1 52
1500 .9 -15.7 28	126	3.2	132	6.3	1	1500	-10.7 -16.9 60	080	2.9	083	4.4	1	1500 -10.7 -18.9 51
1800 -6.9 **** 57	107	1.0	092	3.2	0	1800	-8.2 -16.1 55	082	2.7	079	5.4	0	1800 -11.6 -19.5 53
2100 -8.9 -15.2 60	113	1.1	082	3.8	0	2100	-10.9 -16.5 59	081	2.7	069	5.8	0	2100 -14.7 -20.7 60
2400 -9.5 -16.0 59	092	1.6	076	4.4	0	2400	-10.6 -16.9 60	077	2.6	072	4.8	0	2400 -16.3 -19.7 75

\*\* SFF INTERPRETATION MILES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S
MW				MW				MW			

0300	*****	*****	*****	0300	*****	*****	*****	0300	*****	*****	*****
0600	*****	*****	*****	0600	*****	*****	*****	0600	*****	*****	*****
0900	*****	*****	*****	0900	*****	*****	*****	0900	*****	*****	*****
1200	*****	*****	*****	1200	*****	*****	*****	1200	*****	*****	*****
1500	*****	*****	*****	1500	*****	*****	*****	1500	*****	*****	*****
1800	*****	*****	*****	1800	*****	*****	*****	1800	*****	*****	*****
2100	*****	*****	*****	2100	*****	*****	*****	2100	*****	*****	*****
2400	*****	*****	*****	2400	*****	*****	*****	2400	*****	*****	*****

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	DEG C	DEG C	% DEG. M/S
MW			

0300	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
0600	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
0900	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1200	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1500	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
1800	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2100	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
2400	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

## R &amp; M CONSULTANTS, INC.

## SULPHUR SPRINGS HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

DAY	MAX.			RES.			AVG.			MAX.			DAY'S		
	TEMP., DEG C	MIN., DEG C	MEAN, DEG C	TEMP., DIR.	WIND SPD., M/S	WIND SPD., M/S	GUST DIR., DEG	GUST SPD., M/S	P'VAL %	DIR., RH	MEAN DEG C	SOLAR PRECIP MM	ENERGY WH/SDM		
1	2.1	-2.6	-1.3	135	1.1	1.2	135	4.9	SE	51	-8.7	***	95	1	
2	.7	-5.5	-2.4	081	.9	1.1	097	3.2	ENE	80	-6.9	***	110	2	
3	-3.1	-6.7	-4.9	095	1.1	1.2	121	3.8	ENE	82	-7.7	***	95	3	
4	-4.7	-6.7	-5.7	111	1.7	1.7	118	4.4	ESE	87	-7.3	***	45	4	
5	-2.5	-5.5	-4.0	106	1.3	1.5	117	3.8	ENE	91	-5.4	***	40	5	
6	-2.1	-8.4	-5.3	093	1.5	1.6	085	3.8	E	89	-5.2	***	80	6	
7	-3.8	-7.5	-5.7	119	1.4	1.5	145	4.4	ESE	84	-8.0	***	95	7	
8	-6.9	-10.5	-8.7	113	3.4	3.5	088	7.0	ESE	72	-12.8	***	80	8	
9	-10.0	-16.8	-13.4	116	1.9	2.1	132	5.1	ESE	44	-23.9	***	80	9	
10	-8.8	-16.3	-12.6	104	1.9	2.0	100	5.1	ESE	50	-20.5	***	80	10	
11	-7.1	-11.8	-9.5	115	1.8	1.8	100	5.7	ESE	64	-14.9	***	60	11	
12	-8.9	-14.3	-11.6	095	1.3	1.3	132	4.4	E	70	-16.4	***	70	12	
13	-8.5	-11.8	-10.2	111	1.4	1.5	101	5.7	ESE	64	-15.3	***	40	13	
14	-12.4	-19.7	-16.1	094	1.4	1.6	131	3.8	E	74	-19.8	***	40	14	
15	***	***	***	***	***	***	***	***	***	***	***	***	***	15	
16	***	***	***	***	***	***	***	***	***	***	***	***	***	16	
17	***	***	***	***	***	***	***	***	***	***	***	***	***	17	
18	***	***	***	***	***	***	***	***	***	***	***	***	***	18	
19	-5.3	-10.6	-8.0	110	2.2	2.3	129	5.7	ESE	59	-14.6	***	65	19	
20	-3.8	-8.0	-5.9	110	2.6	2.6	115	5.1	ESE	57	-12.9	***	55	20	
21	-2.9	-6.6	-4.8	102	2.1	2.1	095	5.1	E	80	-7.2	***	60	21	
22	-9.0	-14.4	-11.7	067	2.5	2.4	062	5.1	FNF	81	-16.1	***	65	22	
23	-9.6	-14.3	-12.0	063	2.7	2.7	087	6.3	ENE	76	-15.8	***	60	23	
24	-6.8	-14.8	-10.8	079	2.0	2.3	***	6.3	NE	77	-16.2	***	103	24	
25	1.3	-12.2	-5.5	113	1.7	1.9	135	6.3	E	43	-14.6	***	80	25	
26	-9.2	-11.7	-10.0	083	2.3	2.4	069	5.8	E	60	-16.5	***	65	26	
27	-8.9	-16.3	-12.6	082	2.3	2.5	053	5.7	E	56	-18.6	***	60	27	
28	***	***	***	***	***	***	***	***	***	***	***	***	***	28	
29	***	***	***	***	***	***	***	***	***	***	***	***	***	29	
30	***	***	***	***	***	***	***	***	***	***	***	***	***	30	
31	***	***	***	***	***	***	***	***	***	***	***	***	***	31	
MONTH	2.1	-19.7	-8.3	101	1.7	1.9	088	7.0	ESE	69	-13.3	***	1623		

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 4.4

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.7

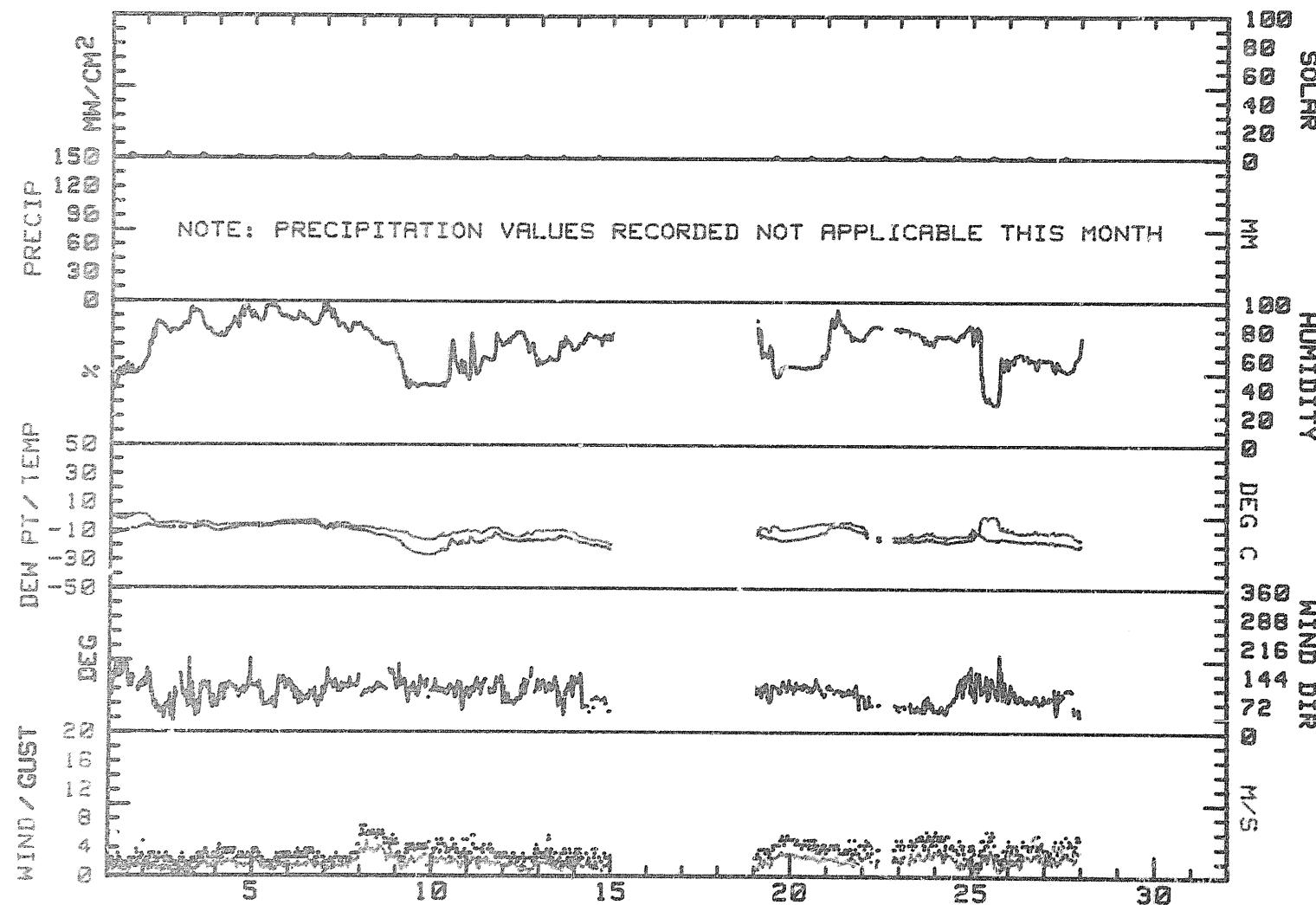
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 6.3

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 6.3

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
December, 1983



R & M CONSULTANTS, INC.  
SUSITNA HYDRO ELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0 OR GREATER	20.0 OR GREATER		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NNE	.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.21
NE	.42	3.29	1.59	0.00	0.00	0.00	0.00	0.00	5.31
ENE	1.91	12.53	2.12	0.00	0.00	0.00	0.00	0.00	16.56
E	2.12	19.96	1.91	0.00	0.00	0.00	0.00	0.00	23.99
ESE	1.80	31.10	4.25	0.00	0.00	0.00	0.00	0.00	37.16
SE	1.91	10.08	1.27	0.00	0.00	0.00	0.00	0.00	13.27
SSE	.85	1.59	.21	0.00	0.00	0.00	0.00	0.00	2.65
S	.11	.53	0.00	0.00	0.00	0.00	0.00	0.00	.64
SSW	.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.11
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CALM	-----	-----	-----	-----	-----	-----	-----	-----	.11
TOTAL	9.45	29.0%	11.3%	0.00	0.00	0.00	0.00	0.00	100.00

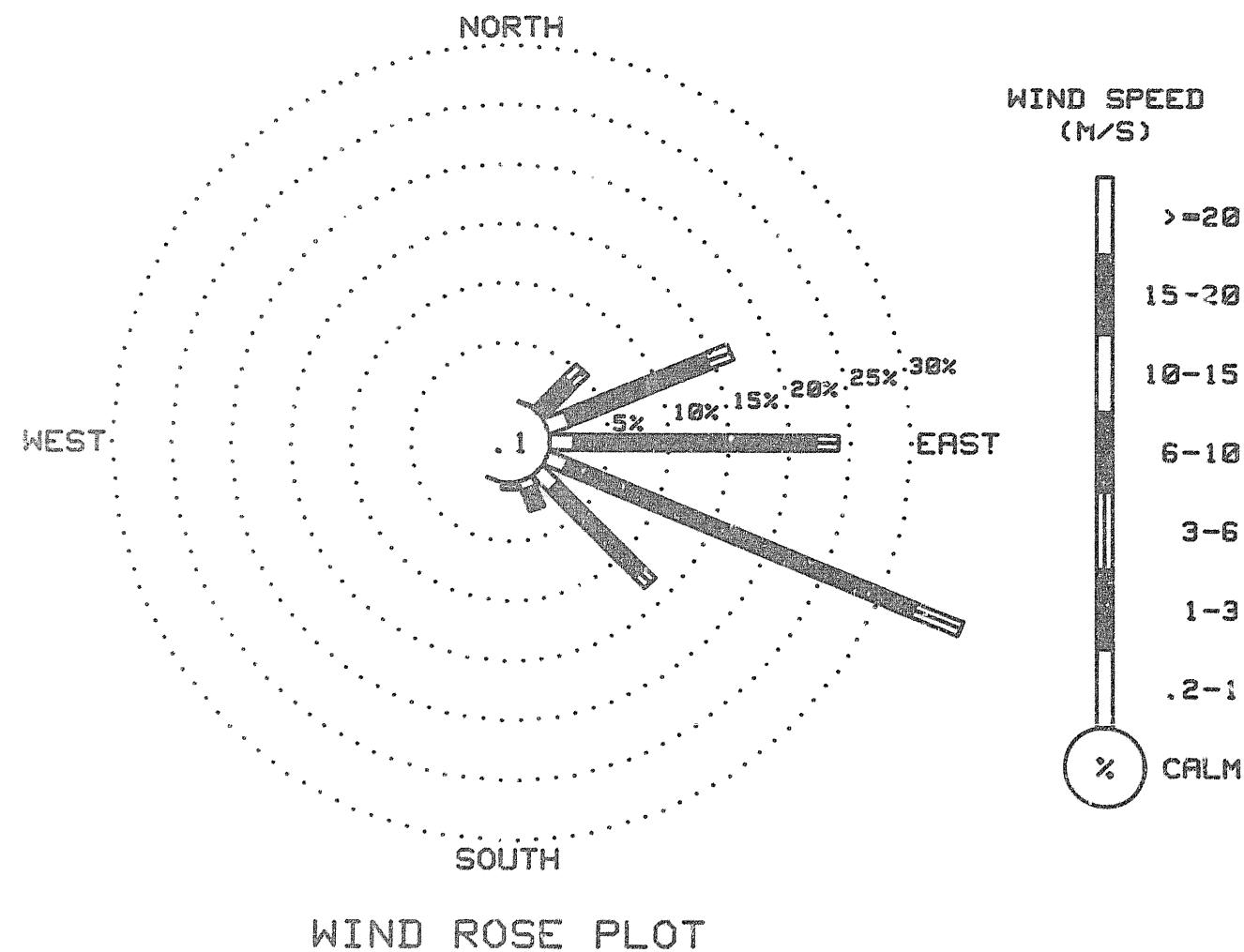
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

942 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
December, 1983



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1983

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	0	0	2	2	3	2	2	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1	3	4	3	1	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	2	3	3	2	1	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	1	2	1	1	1	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	1	2	2	3	1	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	1	2	3	3	2	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	1	1	3	2	2	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0	
15	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
16	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
19	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	1	3	2	2	1	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	1	3	2	2	2	0	0	0	0	0	0	0	0	1	
25	0	0	1	0	0	0	0	0	0	0	1	2	2	2	1	1	1	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
31	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
 DATA TAKEN DURING December, 1983

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1072	72
WIND SPEED	988	66
WIND DIRECTION	962	65
PEAK GUST	982	66
RELATIVE HUMIDITY	990	67
PRECIPITATION	0	0
SOLAR RADIATION	1105	74
DEW POINT	974	65

THERE ARE 1468 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
 THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

- |          |                      |              |
|----------|----------------------|--------------|
| 1. RH    | -15 RH Points        | 12/1 - 12/4  |
|          | -11                  | 12/4 - 12/31 |
| 2. Solar | -1mW/cm <sup>2</sup> |              |

Additional comments on this month's data:

1. Malfunction in weather wizard (problem with recorder) caused data to be lost intermittently for all parameters. Completely unusable data from 12/15 - 12/19 and 12/28 - 12/31.

No precipitation data for January

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD										
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW										
0300	*****	*****	**	***	****	0 0300	-1.5	-8.5	59	110	2.0	112	4.4	0 0300	-6.5	-8.0	89	***	****	***	3.2	0		
0600	-6.5	-12.0	65	096	.6	094	2.5	0 0600	-3.1	-5.6	83	095	2.2	102	5.1	0 0600	-7.2	****	92	117	.6	088	4.3	0
0900	-5.3	-10.6	66	121	.9	105	2.5	0 0900	-3.4	-5.1	88	106	2.1	108	4.4	0 0900	-6.9	****	92	153	.4	155	4.9	0
1200	-2.2	****	62	143	1.1	158	3.2	0 1200	-3.4	-4.7	91	106	1.9	104	3.8	0 1200	-5.7	****	91	140	.5	122	2.5	3
1500	-1.6	****	63	124	.6	115	1.9	0 1500	-2.8	-4.1	91	108	1.7	100	3.2	0 1500	-4.0	-5.3	91	161	.5	163	1.9	0
1800	-1.8	-7.4	61	141	1.2	137	4.4	0 1800	-2.8	-5.5	82	117	1.8	106	3.8	0 1800	-4.1	****	95	125	.5	111	2.5	0
2100	-1.9	-7.9	59	135	1.4	145	3.2	0 2100	-5.0	-7.0	86	096	2.5	090	4.4	0 2100	-5.7	-6.4	95	104	.9	090	3.2	0
2400	-1.3	-8.3	59	106	1.9	102	4.4	0 2400	-7.7	-9.7	86	089	2.5	089	3.2	0 2400	-3.2	****	92	137	.6	127	1.9	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD									
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW									
0300	-3.6	****	99	108	.2	092	1.3	0 0300	****	****	*	***	****	***	0300	****	****	*	***	****	*	***	0
0600	-7.5	-8.6	92	251	1.8	243	4.4	0 0600	****	****	*	***	****	***	0600	****	****	*	***	****	*	***	0
0900	-10.0	-11.1	92	246	2.2	253	5.7	0 0900	****	****	*	***	****	***	0900	****	****	*	***	****	*	***	0
1200	-11.0	-16.1	70	193	1.1	111	5.4	1 1200	****	****	*	***	****	***	1200	****	****	*	***	****	*	***	0
1500	-12.6	****	76	086	0.6	6.3	1	1500	****	****	*	***	****	***	1500	****	****	*	***	****	*	***	0
1800	****	****	81	227	1.0	245	2.5	0 1800	****	****	*	***	****	***	1800	****	****	*	***	****	*	***	0
2100	****	****	81	086	0.6	6.3	1	2100	****	****	*	***	****	***	2100	****	****	*	***	****	*	***	0
2400	****	****	81	086	0.6	6.3	1	2400	****	****	*	***	****	***	2400	-12.8	-16.0	77	075	1.5	****	0	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD										
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW										
0300	-11.0	-15.3	75	059	1.3	063	3.2	0 0300	****	****	*	***	****	096	1.9	0 0300	-13.4	-17.5	71	095	1.4	128	4.4	0
0600	-11.9	-15.3	76	075	1.6	071	3.8	0 0600	****	****	*	***	****	0 0600	-13.9	-18.3	69	084	2.0	082	4.4	0		
0900	-12.6	-15.8	77	057	1.6	068	3.8	0 0900	****	****	*	***	****	0 0900	-12.0	-17.0	66	096	1.9	103	5.1	0		
1200	-13.0	-16.3	76	060	2.3	057	4.4	1 1200	-12.6	-16.4	73	082	1.6	088	****	1 1200	-8.4	-14.4	62	132	1.0	101	3.2	2
1500	-12.8	-16.1	76	085	1.6	083	2.5	1 1500	-11.8	-15.5	74	065	1.0	046	3.2	1 1500	-5.6	****	54	124	1.4	103	3.8	1
1800	-14.3	-17.6	76	084	1.3	087	3.2	0 1800	-12.2	-15.9	74	077	1.3	108	3.8	0 1800	-3.5	-14.1	44	152	1.6	151	3.8	0
2100	-14.9	-18.2	76	075	2.0	082	3.8	0 2100	-12.4	-16.4	72	052	1.3	054	3.8	0 2100	-5.0	-15.2	45	123	2.0	107	5.7	0
2400	-16.4	****	76	070	1.4	062	3.8	0 2400	-11.7	****	70	071	1.2	069	2.9	0 2400	-5.2	-14.0	50	108	2.1	106	5.1	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SOUTHERN HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD										
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW										
0300	-5.3	-14.7	48	110	2.3	111	5.7	0 0300	.1	-7.2	56	117	1.7	115	5.7	0 0300	-.8	****	63	157	.8	144	2.5	0
0600	-5.0	-14.9	46	115	1.8	102	4.4	0 0600	-.3	-7.1	60	126	1.5	135	4.4	0 0600	.5	-5.9	62	150	1.0	134	2.5	0
0900	-5.9	-14.2	52	116	1.7	060	4.4	0 0900	-2.2	****	93	264	1.4	273	5.1	0 0900	.2	-5.2	67	158	1.1	136	3.2	0
1200	-3.6	-13.1	48	093	1.7	091	3.8	2 1200	-2.6	-4.0	90	208	1.2	221	2.5	2 1200	1.2	-4.2	67	187	1.2	177	3.2	1
1500	-4.2	-12.9	51	100	2.4	092	5.1	1 1500	-2.6	-5.4	81	141	1.3	118	3.2	1 1500	1.0	****	71	189	.6	199	.9	1
1800	-5.2	-11.5	61	109	1.9	099	5.1	0 1800	-2.2	-7.9	65	156	1.1	126	2.5	0 1800	.9	-3.0	75	170	.9	188	1.9	0
2100	-4.2	-8.5	72	138	1.1	129	3.8	0 2100	-2.2	-8.7	61	121	1.4	112	5.7	0 2100	1.4	-2.5	75	160	.8	155	2.5	0
2400	.5	-6.8	58	138	1.5	104	5.7	0 2400	-1.3	-7.8	61	153	1.1	130	3.8	0 2400	1.3	****	79	155	.9	135	1.9	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD										
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW										
0300	1.6	****	73	162	.9	147	2.5	0 0300	-4.9	-5.2	98	080	1.5	081	3.8	0 0300	-1.1	****	95	186	.3	198	1.3	0
0600	.7	-3.6	73	158	1.0	164	3.2	0 0600	-4.1	-5.2	92	069	1.2	080	2.5	0 0600	-1.2	****	96	176	.1	187	1.3	0
0900	-.6	-4.0	78	125	1.1	115	3.2	0 0900	-3.5	-4.9	90	098	1.1	074	3.2	0 0900	-3.4	****	94	132	.4	108	1.3	0
1200	.5	****	79	121	.7	088	3.2	3 1200	-1.4	****	94	138	.3	134	1.9	1 1200	-5.1	****	89	097	.6	101	2.5	1
1500	-.9	-3.6	82	148	.8	098	3.2	2 1500	.1	****	97	098	.9	131	1.3	0 1500	-5.8	-7.1	91	123	1.6	123	3.8	0
1800	-2.1	-3.4	91	091	1.1	083	3.2	0 1800	.1	****	98	243	.1	234	.6	0 1800	-8.0	-9.8	87	093	1.2	091	1.9	0
2100	-3.2	-3.3	99	093	1.0	076	3.2	0 2100	-.4	****	97	244	.7	250	2.5	0 2100	-9.9	-11.8	86	098	1.5	***	****	0
2400	-3.7	****	95	108	1.2	105	3.2	0 2400	-.8	****	96	243	.7	244	1.9	0 2400	****	****	85	097	2.1	***	****	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD										
DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	MW										
0300	-9.8	-11.6	87	098	1.6	097	3.5	0 0300	-7.3	-10.0	81	103	2.1	104	3.8	0 0300	-7.9	-10.1	84	088	1.4	089	3.2	0
0600	-9.4	-10.8	90	094	1.0	082	3.2	0 0600	-7.1	-10.0	80	108	2.3	114	4.4	0 0600	-8.1	-10.8	81	109	1.8	090	3.8	0
0900	-8.5	****	90	098	.4	145	3.5	0 0900	-6.9	-10.1	78	104	2.1	100	4.4	0 0900	-8.7	-11.2	82	131	2.4	119	3.8	0
1200	-6.2	-8.6	83	068	.9	067	2.5	1 1200	-6.7	-10.2	76	082	1.5	089	3.8	1 1200	-8.6	-11.7	78	115	2.1	111	3.8	2
1500	-6.5	-9.2	81	108	2.1	111	3.8	1 1500	-6.2	-10.1	74	082	1.4	092	3.8	1 1500	****	****	78	076	1.6	070	3.2	1
1800	-6.7	-9.4	81	116	2.2	124	4.8	0 1800	-6.5	-10.4	74	098	1.8	095	4.4	0 1800	-10.6	-12.9	83	082	1.3	073	3.2	0
2100	-7.5	-10.4	80	073	1.7	076	3.2	0 2100	-6.5	-10.0	76	099	1.6	097	6.8	0 2100	-12.3	-14.5	84	091	1.4	091	2.5	0
2400	-6.5	-9.2	81	097	1.7	108	4.4	0 2400	-7.5	-9.6	85	077	1.1	084	3.2	0 2400	-12.1	-14.6	82	089	1.8	093	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSIQUITO HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG	DEG C	%	DEG C	DEG C	%	DEG	DEG C	%	
DEG	M/S	MW	DEG	M/S	MW	DEG	M/S	MW	DEG	M/S	MW	
0300	-13.5	-16.4	79	112	1.6	120	3.2	0	0300	-12.5	-16.3	73
0600	-13.8	-16.8	78	093	1.6	101	3.2	0	0600	-12.7	-17.2	69
0900	-12.7	*****	77	094	.6	***	2.5	0	0900	-13.0	*****	74
1200	-11.4	*****	76	121	.7	142	2.5	2	1200	-12.7	-17.4	68
1500	-8.5	-14.3	63	147	.8	161	4.9	1	1500	-11.8	-17.2	64
1800	-8.5	-14.5	62	143	1.3	153	2.5	0	1800	-14.1	-19.0	66
2100	-9.9	-15.2	65	155	1.6	148	3.2	0	2100	*****	*****	**
2400	-10.2	-15.5	65	138	1.7	130	3.6	0	2400	*****	*****	**

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG	DEG C	%	DEG C	DEG C	%	DEG	DEG C	%	
DEG	M/S	MW	DEG	M/S	MW	DEG	M/S	MW	DEG	M/S	MW	
0300	*****	*****	*****	*****	*****	*****	*****	*****	0300	*****	*****	*****
0600	*****	*****	*****	*****	*****	*****	*****	*****	0600	*****	*****	*****
0900	*****	*****	*****	*****	*****	*****	*****	*****	0900	*****	*****	*****
1200	*****	*****	*****	*****	*****	*****	*****	*****	1200	*****	*****	*****
1500	*****	*****	*****	*****	*****	*****	*****	*****	1500	*****	*****	*****
1800	*****	*****	*****	*****	*****	*****	*****	*****	1800	*****	*****	*****
2100	*****	*****	*****	*****	*****	*****	*****	*****	2100	*****	*****	*****
2400	*****	*****	*****	*****	*****	*****	*****	*****	2400	*****	*****	*****

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG	DEG C	%	DEG C	DEG C	%	DEG	DEG C	%	
DEG	M/S	MW	DEG	M/S	MW	DEG	M/S	MW	DEG	M/S	MW	
0300	*****	*****	*****	*****	*****	*****	*****	*****	0300	*****	*****	*****
0600	*****	*****	*****	*****	*****	*****	*****	*****	0600	*****	*****	*****
0900	*****	*****	*****	*****	*****	*****	*****	*****	0900	*****	*****	*****
1200	*****	*****	*****	*****	*****	*****	*****	*****	1200	*****	*****	*****
1500	*****	*****	*****	*****	*****	*****	*****	*****	1500	*****	*****	*****
1800	*****	*****	*****	*****	*****	*****	*****	*****	1800	*****	*****	*****
2100	*****	*****	*****	*****	*****	*****	*****	*****	2100	*****	*****	*****
2400	*****	*****	*****	*****	*****	*****	*****	*****	2400	*****	*****	*****

\*\*\* REFLECTIVE AND FROZEN RIVER RATES AT END OF MONTHLY REPORT PERIOD \*\*\*

R & M CONSULTANTS, INC.  
SUSSEX HYDROCELL PROJECT  
ROUTE

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING JUNE 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S
0300	*****	*****	*	0300	*****	*****	*	0300	*****	*****	*
0600	*****	*****	*	0600	*****	*****	*	0600	*****	*****	*
0900	*****	*****	*	0900	*****	*****	*	0900	*****	*****	*
1200	*****	*****	*	1200	*****	*****	*	1200	*****	*****	*
1500	*****	*****	*	1500	*****	*****	*	1500	*****	*****	*
1800	*****	*****	*	1800	*****	*****	*	1800	*****	*****	*
2100	*****	*****	*	2100	*****	*****	*	2100	*****	*****	*
2400	*****	*****	*	2400	*****	*****	*	2400	*****	*****	*

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S
0300	*****	*****	*
0600	*****	*****	*
0900	*****	*****	*
1200	*****	*****	*
1500	*****	*****	*
1800	*****	*****	*
2100	*****	*****	*
2400	*****	*****	*

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSEKHTINAS HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVEL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

DAY				RES.	RES.	Avg.	MAX.	MAX.	P'VAL			MEAN		DAY'S	
	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P'VAL DIR.	RH %	MEAN DEG C	DW MM	SOLAR ENERGY WH/SDH		
1	-8	-9.0	-8.9	125	1.1	1.2	137	4.4	ESE	62	-8.9	****	60	1	
2	-11.3	-7.9	-9.6	104	2.0	2.0	102	5.1	ESE	82	-6.2	****	35	2	
3	-2.5	-8.1	-7.3	127	.6	.7	155	4.9	SE	91	-7.5	****	60	3	
4	-2.7	-12.9	-7.8	241	1.2	1.4	***	6.3	WSW	82	-12.3	****	47	4	
5	****	****	****	***	****	****	***	****	***	**	****	****	****	5	
6	-12.8	-13.5	-13.2	075	1.5	1.5	***	****	ENE	76	-16.4	****	0	6	
7	-11.5	-16.6	-14.1	070	1.5	1.6	057	4.4	ENE	76	-16.6	****	105	7	
8	-9.6	-13.0	-11.3	068	1.2	1.3	108	3.8	FNE	73	-16.0	****	65	8	
9	-3.3	-14.6	-9.0	113	1.6	1.8	107	5.7	E	59	-15.9	****	90	9	
10	.5	-7.1	-3.3	117	1.7	1.9	111	5.7	ESE	54	-12.3	****	75	10	
11	1.1	-4.0	-1.5	150	.9	1.5	115	5.7	SE	76	-6.3	****	95	11	
12	2.1	-1.3	.4	165	.9	1.0	136	3.2	SSE	69	-4.6	****	50	12	
13	1.9	-3.7	-.9	125	.9	1.0	164	3.2	E	82	-3.4	****	105	13	
14	.6	-5.6	-2.5	097	.3	.7	081	3.8	WSW	93	-4.5	****	35	14	
15	-.8	-9.9	-5.4	114	.5	.7	123	3.8	E	89	-8.2	****	40	15	
16	-5.5	-10.4	-8.0	096	1.4	1.5	124	4.8	E	83	-9.8	****	50	16	
17	-6.1	-7.5	-6.8	096	1.7	1.8	***	6.8	E	78	-10.0	****	55	17	
18	-7.0	-13.3	-10.2	099	1.6	1.7	090	3.8	E	81	-12.1	****	55	18	
19	-7.4	-13.8	-10.6	131	1.2	1.3	161	4.9	SSE	71	-15.3	****	75	19	
20	-9.2	-15.1	-12.2	122	1.6	1.8	106	5.1	ESE	68	-17.1	****	97	20	
21	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	21	
22	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	22	
23	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	23	
24	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	24	
25	****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	25	
26	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	26	
27	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	27	
28	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	28	
29	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	29	
30	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	30	
31	*****	*****	*****	***	*****	*****	*****	*****	*****	*****	*****	*****	*****	31	
MONTH	2.1	-16.6	-6.9	113	1.1	1.4	***	6.8	E	74	-10.7	****	1194		

GUST (MPH) AT MAX. GUST MINUS 2 INTERVALS 3.8

GUST (MPH) AT MAX. GUST MINUS 1 INTERVAL 3.8

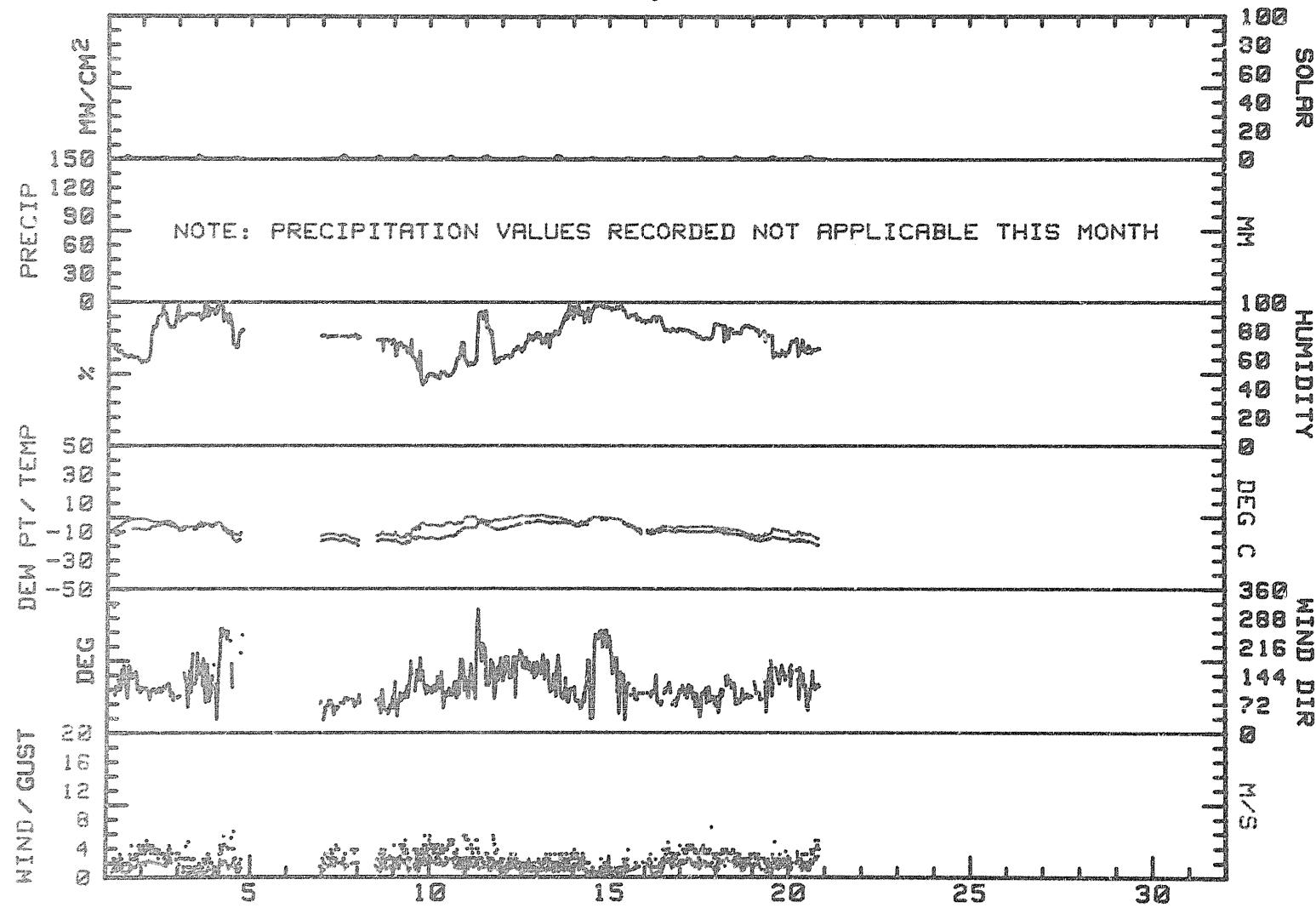
GUST (MPH) AT MAX. GUST PLUS 1 INTERVAL 1.9

GUST (MPH) AT MAX. GUST PLUS 2 INTERVALS 3.2

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN. SEE RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
**SUSITNA HYDROELECTRIC PROJECT**  
**DEVIL CANYON WEATHER STATION**  
January, 1984



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NNE	.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.59
NE	.88	1.62	0.00	0.00	0.00	0.00	0.00	0.00	2.51
ENE	1.92	8.85	0.00	0.00	0.00	0.00	0.00	0.00	10.77
E	2.95	16.88	0.00	0.00	0.00	0.00	0.00	0.00	21.83
EEF	3.54	19.32	0.00	0.00	0.00	0.00	0.00	0.00	22.86
EF	4.87	9.00	0.00	0.00	0.00	0.00	0.00	0.00	13.86
SSE	5.31	5.46	.15	0.00	0.00	0.00	0.00	0.00	10.91
S	3.54	3.83	0.00	0.00	0.00	0.00	0.00	0.00	7.37
SSW	1.77	.59	0.00	0.00	0.00	0.00	0.00	0.00	2.36
SW	.44	.74	0.00	0.00	0.00	0.00	0.00	0.00	1.18
WSW	1.18	1.77	0.00	0.00	0.00	0.00	0.00	0.00	2.95
W	.15	.59	0.00	0.00	0.00	0.00	0.00	0.00	.24
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW	.15	.15	0.00	0.00	0.00	0.00	0.00	0.00	.29
NNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CALM	-----	-----	-----	-----	-----	-----	-----	-----	1.77
TOTAL	27.29	20.80	.15	0.00	0.00	0.00	0.00	0.00	100.00

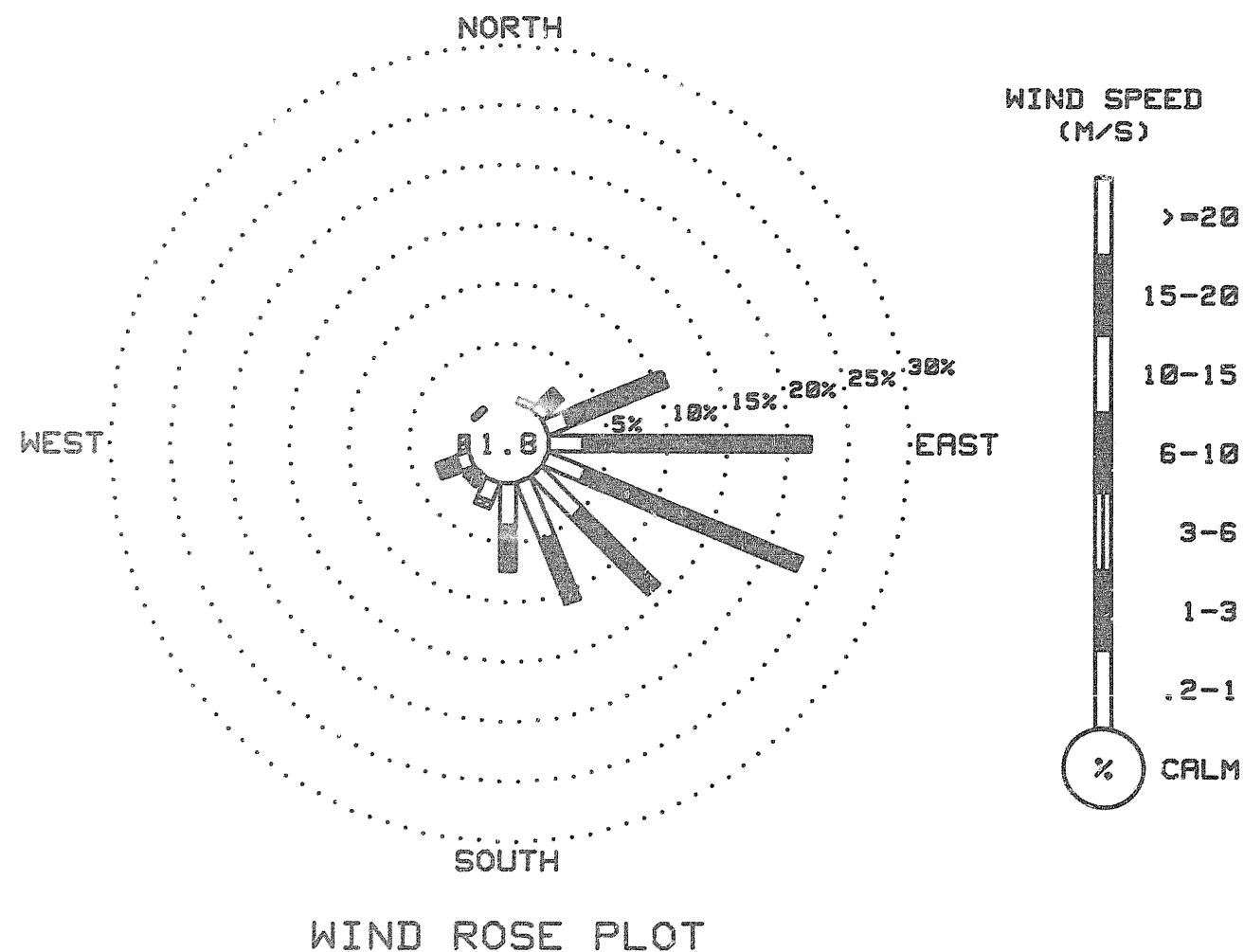
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

628 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
January, 1984



R & M CONSULTANTS, INC.  
SUSIUTNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	***	***	***	***	***	***	***	
5	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
6	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
7	0	0	0	0	0	0	0	0	0	0	1	2	3	3	2	1	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	1	2	3	2	2	1	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	2	2	2	3	1	1	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	3	2	1	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	1	0	0	0	0	0	0	0	0	
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
22	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
23	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
25	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
26	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
27	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	
31	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUBSTITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING January, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	803	54
WIND SPEED	716	48
WIND DIRECTION	715	48
PEAK GUST	684	46
RELATIVE HUMIDITY	613	41
PRECIPITATION	0	0
SOLAR RADIATION	853	57
DEW POINT	599	40

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -16 RH Points
2. Solar -1 mW/CM<sup>2</sup>

Additional comments on this month's data:

1. Weather wizard removed from site for inspection and maintenance on 1/27.  
No data following this date.
2. Data lost intermittantly prior to 1/27 for all parameters due to malfunction in weather wizard (problem with recorder). No usable data from 1/20 - 1/27.

No precipitation data for February

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

## SUSSEKHTINA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	*****	*****	*****	0300	*****	*****	*****	0300	*****	*****	*****
0600	*****	*****	*****	0600	*****	*****	*****	0600	*****	*****	*****
0900	*****	*****	*****	0900	*****	*****	*****	0900	*****	*****	*****
1200	*****	*****	*****	1200	*****	*****	*****	1200	*****	*****	*****
1500	*****	*****	*****	1500	*****	*****	*****	1500	*****	*****	*****
1800	*****	*****	*****	1800	*****	*****	*****	1800	*****	*****	*****
2100	*****	*****	*****	2100	*****	*****	*****	2100	*****	*****	*****
2400	*****	*****	*****	2400	*****	*****	*****	2400	*****	*****	*****

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	*****	*****	*****	0300	*****	*****	*****	0300	*****	*****	*****
0600	*****	*****	*****	0600	*****	*****	*****	0600	*****	*****	*****
0900	*****	*****	*****	0900	*****	*****	*****	0900	*****	*****	*****
1200	*****	*****	*****	1200	*****	*****	*****	1200	*****	*****	*****
1500	*****	*****	*****	1500	*****	*****	*****	1500	*****	*****	*****
1800	*****	*****	*****	1800	*****	*****	*****	1800	*****	*****	*****
2100	*****	*****	*****	2100	*****	*****	*****	2100	*****	*****	*****
2400	*****	*****	*****	2400	*****	*****	*****	2400	*****	*****	*****

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	*****	*****	*****	0300	*****	*****	*****	0300	*****	*****	*****
0600	*****	*****	*****	0600	*****	*****	*****	0600	*****	*****	*****
0900	*****	*****	*****	0900	*****	*****	*****	0900	*****	*****	*****
1200	*****	*****	*****	1200	*****	*****	*****	1200	*****	*****	*****
1500	*****	*****	*****	1500	*****	*****	*****	1500	*****	*****	*****
1800	*****	*****	*****	1800	*****	*****	*****	1800	*****	*****	*****
2100	*****	*****	*****	2100	*****	*****	*****	2100	*****	*****	*****
2400	*****	*****	*****	2400	*****	*****	*****	2400	*****	*****	*****

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSIUTINA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	*****	*****	*****	*****	*****	0300	*****	*****	*****	*****	*****
0600	*****	*****	*****	*****	*****	0600	*****	*****	*****	*****	*****
0900	*****	*****	*****	*****	*****	0900	*****	*****	*****	*****	*****
1200	*****	*****	*****	*****	*****	1200	*****	*****	*****	*****	*****
1500	*****	*****	*****	*****	*****	1500	*****	*****	*****	*****	*****
1800	*****	*****	*****	*****	*****	1800	*****	*****	*****	*****	*****
2100	*****	*****	*****	*****	*****	2100	*****	*****	*****	*****	*****
2400	*****	*****	*****	*****	*****	2400	*****	*****	*****	*****	*****

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	*****	*****	*****	*****	*****	0300	*****	*****	*****	*****	*****
0600	*****	*****	*****	*****	*****	0600	*****	*****	*****	*****	*****
0900	*****	*****	*****	*****	*****	0900	*****	*****	*****	*****	*****
1200	*****	*****	*****	*****	*****	1200	*****	*****	*****	*****	*****
1500	*****	*****	*****	*****	*****	1500	*****	*****	*****	*****	*****
1800	*****	*****	*****	*****	*****	1800	*****	*****	*****	*****	*****
2100	*****	*****	*****	*****	*****	2100	*****	*****	*****	*****	*****
2400	*****	*****	*****	*****	*****	2400	*****	*****	*****	*****	*****

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	*****	*****	*****	*****	*****	0300	*****	*****	*****	*****	*****
0600	*****	*****	*****	*****	*****	0600	*****	*****	*****	*****	*****
0900	*****	*****	*****	*****	*****	0900	*****	*****	*****	*****	*****
1200	*****	*****	*****	*****	*****	1200	*****	*****	*****	*****	*****
1500	*****	*****	*****	*****	*****	1500	*****	*****	*****	*****	*****
1800	*****	*****	*****	*****	*****	1800	*****	*****	*****	*****	*****
2100	*****	*****	*****	*****	*****	2100	*****	*****	*****	*****	*****
2400	*****	*****	*****	*****	*****	2400	*****	*****	*****	*****	*****

\* \* \* END OF INTERFERTION SITES AT END OF MONTHLY REPORT \* \* \*

## R &amp; M CONSULTANTS, INC.

## SUBSTITUTION HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.							
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
DEG C	DEG C	%	DEG.	M/S	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	M/S					
0300	*****	*****	*	***	0300	*****	*****	*	***	***	***	0300	*****	*****	*	***	***	***
0600	*****	*****	*	***	0600	*****	*****	*	***	***	***	0600	*****	*****	*	***	***	***
0900	*****	*****	*	***	0900	*****	*****	*	***	***	***	0900	*****	*****	*	***	***	***
1200	*****	*****	*	***	1200	*****	*****	*	***	***	***	1200	*****	*****	*	***	***	***
1500	*****	*****	*	***	1500	*****	*****	*	***	***	***	1500	*****	*****	*	***	***	***
1800	*****	*****	*	***	1800	*****	*****	*	***	***	***	1800	*****	*****	*	***	***	***
2100	*****	*****	*	***	2100	*****	*****	*	***	***	***	2100	*****	*****	*	***	***	***
2400	*****	*****	*	***	2400	*****	*****	*	***	***	***	2400	*****	*****	*	***	***	***

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD													
DEG C	DEG C	%	DEG.	M/S	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	M/S													
0300	*****	*****	*	***	0300	-8.2	-9.7	89	108	1.2	126	2.5	0	0300	-9.2	-11.4	84	135	2.2	134	4.4	0				
0600	*****	*****	*	***	0600	-8.8	*****	90	068	1.0	054	1.9	0	0600	-9.7	-12.1	83	134	2.2	127	3.8	0				
0900	*****	*****	*	***	0900	-10.0	-10.9	93	063	1.0	083	2.5	1	0900	-9.8	-11.9	85	126	2.2	117	3.8	2				
1200	*****	*****	*	***	1200	-8.1	-10.0	86	055	1.3	055	2.5	7	1200	-6.9	-10.6	75	116	2.1	130	4.4	15				
1500	*****	*****	*	***	1500	-5.1	-8.2	79	096	1.2	077	3.2	7	1500	-6.2	-9.7	76	083	2.4	080	5.1	11				
1800	-6.5	-9.4	80	103	1.5	025	4.4	0	1800	-6.4	-8.7	84	103	1.3	111	2.5	0	1800	-7.0	-10.3	77	094	2.3	080	5.1	0
2100	-7.2	-8.6	90	128	1.6	125	3.2	0	2100	-6.7	-8.8	85	146	1.6	117	2.5	0	2100	-7.8	-10.2	83	116	2.0	117	5.1	0
2400	-7.4	-9.1	88	117	1.6	119	3.8	0	2400	-7.9	-9.9	86	127	1.9	117	3.8	0	2400	-8.4	-10.2	87	120	1.6	125	3.8	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WTNO	GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.														
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD													
DEG C	DEG C	%	DEG.	M/S	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	M/S													
0300	-8.3	****	90	076	.6	103	2.5	0	0300	-6.7	-9.3	82	188	.9	199	1.9	0	0300	-7.2	-13.8	59	156	1.2	163	2.5	0
0600	-9.6	****	91	077	.9	080	2.5	0	0600	-6.3	****	81	179	1.0	175	1.9	0	0600	-7.5	-14.1	59	147	1.7	164	3.8	0
0900	-7.4	****	92	090	.6	117	1.9	1	0900	-8.8	****	86	164	1.0	162	2.5	2	0900	-7.6	-14.0	60	117	1.7	120	3.8	3
1200	-5.0	-6.9	87	096	1.0	089	3.2	6	1200	-4.0	****	70	145	.4	164	2.5	10	1200	-6.7	-13.8	57	109	2.5	099	5.7	14
1500	-3.3	-7.1	75	080	1.5	081	3.8	7	1500	-1	-7.9	55	116	1.2	137	3.8	11	1500	-5.8	-13.0	57	107	2.5	106	5.7	11
1800	-4.6	-8.0	77	081	1.0	061	2.5	0	1800	-3.3	-10.6	57	152	1.7	134	3.8	0	1800	-5.9	-12.2	61	089	1.3	080	3.8	0
2100	-6.4	-9.0	82	161	1.2	149	2.5	9	2100	-4.4	-11.9	56	140	1.0	111	3.2	0	2100	-7.7	-12.6	68	140	1.3	133	3.2	0
2400	-6.2	****	82	174	.8	144	1.9	0	2400	-5.8	-13.0	57	169	1.3	174	3.8	0	2400	-8.1	-12.2	72	158	1.2	168	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MINUTELY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY 28

DAY 29

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.					
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	
0300	-8.0	-11.0	79	165	1.6	174	2.5	0	0300	-6.0	-13.1	57
0600	-10.7	****	88	161	1.2	159	3.2	0	0600	-7.9	-13.7	63
0900	-9.4	-12.2	80	135	1.3	169	3.2	3	0900	-7.6	-13.6	62
1200	-6.2	****	64	197	1.2	098	3.8	16	1200	-4.2	-12.9	51
1500	-1.2	-9.9	48	090	.7	118	6.3	6	1500	-3.3	-12.8	48
1800	-3.5	-12.0	52	126	2.5	135	6.3	1	1800	-5.4	-13.7	52
2100	-4.3	-12.0	55	146	1.8	158	4.4	0	2100	-7.1	-14.2	57
2400	-4.3	-12.0	55	144	2.2	146	5.1	0	2400	-9.8	-15.9	61

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITTNA HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

DAY				RES.	RES.	Avg.	MAX.	MAX.				DAY'S	
	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P'VAL RH %	MEAN DEG C	MEAN MM	SOLAR ENERGY WH/SDH	
1	10	-10	0	N	0	0	N	0	0	0	0	1	
2	10	-10	0	N	0	0	N	0	0	0	0	2	
3	10	-10	0	N	0	0	N	0	0	0	0	3	
4	10	-10	0	N	0	0	N	0	0	0	0	4	
5	10	-10	0	N	0	0	N	0	0	0	0	5	
6	10	-10	0	N	0	0	N	0	0	0	0	6	
7	10	-10	0	N	0	0	N	0	0	0	0	7	
8	10	-10	0	N	0	0	N	0	0	0	0	8	
9	10	-10	0	N	0	0	N	0	0	0	0	9	
10	10	-10	0	N	0	0	N	0	0	0	0	10	
11	10	-10	0	N	0	0	N	0	0	0	0	11	
12	10	-10	0	N	0	0	N	0	0	0	0	12	
13	10	-10	0	N	0	0	N	0	0	0	0	13	
14	10	-10	0	N	0	0	N	0	0	0	0	14	
15	10	-10	0	N	0	0	N	0	0	0	0	15	
16	10	-10	0	N	0	0	N	0	0	0	0	16	
17	10	-10	0	N	0	0	N	0	0	0	0	17	
18	10	-10	0	N	0	0	N	0	0	0	0	18	
19	10	-10	0	N	0	0	N	0	0	0	0	19	
20	10	-10	0	N	0	0	N	0	0	0	0	20	
21	10	-10	0	N	0	0	N	0	0	0	0	21	
22	-5.0	-7.4	-6.2	116	1.6	1.6	025	4.4	ESE	85	-8.9	***	480
23	-5.0	-10.1	-7.6	101	1.1	1.4	117	3.8	ESE	87	-9.3	***	585
24	-6.2	-10.1	-8.2	115	2.0	2.1	080	5.1	ESE	81	-10.8	***	940
25	-3.3	-9.1	-6.2	102	.8	1.0	081	3.8	E	81	-7.9	***	460
26	.1	-8.8	-4.4	157	1.0	1.1	137	3.8	S	67	-10.1	***	810
27	-5.7	-8.2	-7.2	124	1.6	1.7	099	5.2	ESE	61	-13.3	***	1020
28	.1	-12.0	-6.1	137	1.5	1.7	118	6.3	SSE	64	-11.8	***	1205
29	-3.0	-9.8	-6.4	141	2.2	2.4	141	8.3	SSE	56	-13.5	***	995
MONTH	.1	-12.0	-6.5	126	1.4	1.6	141	8.3	ESE	71	-10.7	***	6495

GUST VELOCITY AT MAX., GUST MINUS 2 INTERVALS 5.1

GUST VELOCITY AT MAX., GUST MINUS 1 INTERVAL 5.2

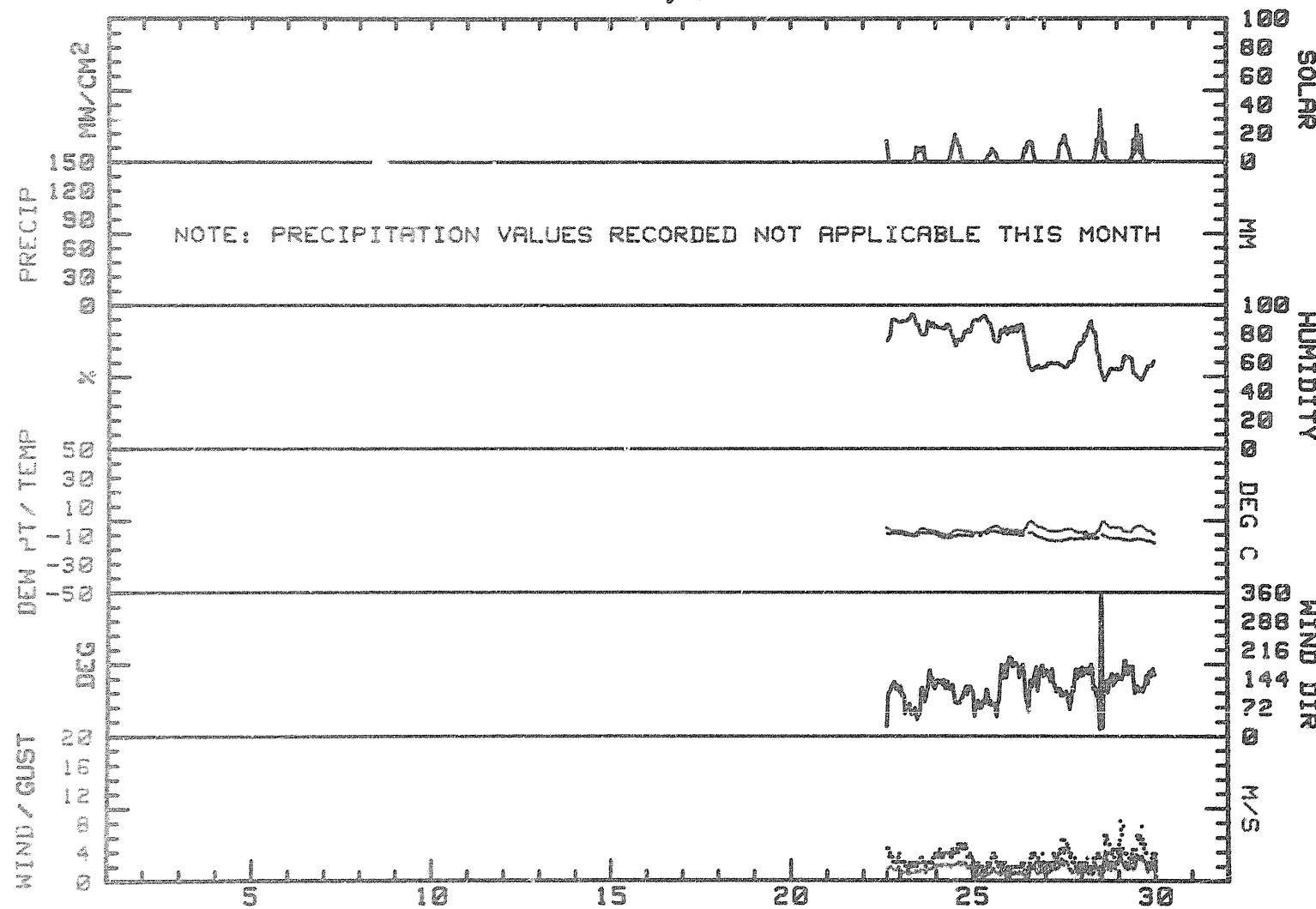
GUST VELOCITY AT MAX., GUST PLUS 1 INTERVAL 7.0

GUST VELOCITY AT MAX., GUST PLUS 2 INTERVALS 6.3

NOTE: REFLUXED HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY AND MONTHLY MEAN FOR REFLUXED HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
February, 1984



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

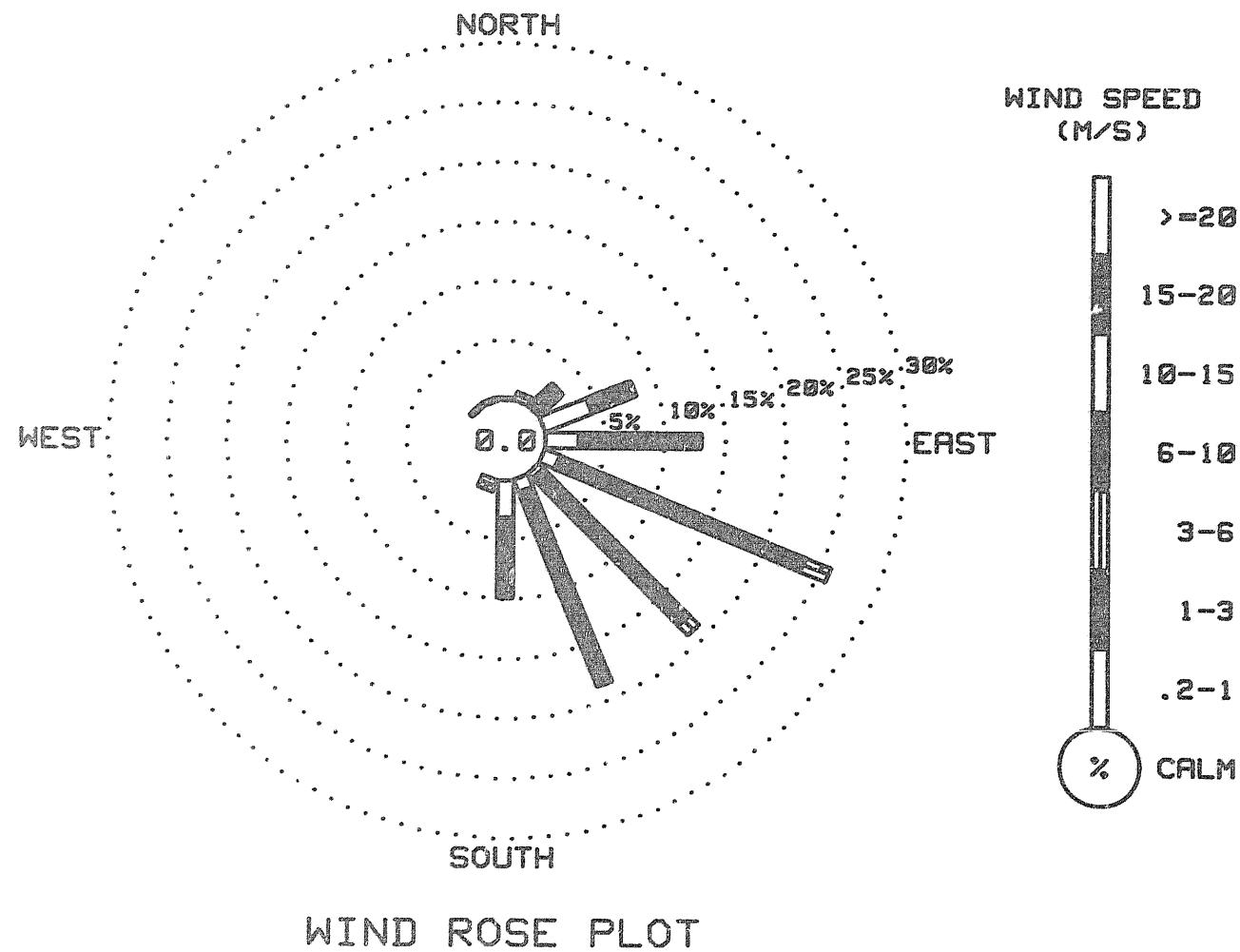
DIRECTION	VELOCITY (M/S)								TOTAL
	0.0 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.28
NNE	.56	.28	0.00	0.00	0.00	0.00	0.00	0.00	.85
NE	.28	2.54	0.00	0.00	0.00	0.00	0.00	0.00	2.82
ENE	4.24	3.95	0.00	0.00	0.00	0.00	0.00	0.00	8.19
E	2.82	10.17	0.00	0.00	0.00	0.00	0.00	0.00	12.99
ESE	1.41	22.03	2.26	0.00	0.00	0.00	0.00	0.00	25.71
SE	.56	17.23	1.13	0.00	0.00	0.00	0.00	0.00	18.93
SSE	1.13	17.23	.28	0.00	0.00	0.00	0.00	0.00	18.64
S	3.11	6.78	0.00	0.00	0.00	0.00	0.00	0.00	9.89
SSW	.56	.56	0.00	0.00	0.00	0.00	0.00	0.00	1.13
SW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WSW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
W	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW	.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.28
NNW	.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.28
CALM	-----	-----	-----	-----	-----	-----	-----	-----	0.00
TOTAL	15.54	80.79	3.67	0.00	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

354 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
1392 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
February, 1984



R & M CONSULTANTS, INC.

1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
2	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
3	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
4	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
5	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
6	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
7	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
8	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
9	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
10	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
11	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
12	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
13	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
14	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
15	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
16	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
17	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
18	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
19	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
20	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
21	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
22	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	长	
23	0	0	0	0	0	0	0	0	1	2	9	7	9	9	9	10	4	1	0	0	0	0	0	1	
24	0	0	0	0	0	0	0	0	1	6	11	15	18	16	12	10	5	1	0	0	0	0	0	4	
25	0	0	0	0	0	0	0	0	1	3	5	6	9	9	7	6	3	1	0	0	0	0	0	2	
26	0	0	0	0	0	0	0	0	1	4	9	9	14	15	13	12	5	1	0	0	0	0	0	3	
27	0	0	0	0	0	0	0	0	2	10	13	14	19	18	11	10	6	1	0	0	0	0	0	4	
28	0	0	0	0	0	0	0	0	2	8	14	15	35	22	7	14	4	2	0	0	0	0	0	5	
29	0	0	0	0	0	0	0	0	2	4	13	8	26	19	8	16	5	2	0	0	0	0	0	4	

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING February, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	354	25
WIND SPEED	354	25
WIND DIRECTION	354	25
PEAK GUST	354	25
RELATIVE HUMIDITY	299	21
PRECIPITATION	0	0
SOLAR RADIATION	354	25
DEW POINT	299	21

THERE ARE 1392 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Weather wizard reinstalled on 2/22. No data prior to this date.

No precipitation data for March

(See INTERPRETATION OF DATA).

## 12 A.M. CONSULTANT'S INC.

## SOUTHERN HYDRO CONSULTANT'S INC. PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.			
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
0300	-10.5	-15.6	66	098	1.8	093	3.8	0	0300	-7.1	-13.1	62	138	2.7	142	5.1	0	0300	-6.0	-9.7	75	138	.9	125	2.5	0	
0600	-10.6	-15.5	67	110	2.1	120	3.8	0	0600	-6.3	-12.6	61	135	2.8	142	5.1	0	0600	-2.5	-7.8	67	156	1.3	154	3.8	0	
0900	-11.9	-16.4	69	108	2.0	115	3.8	3	0900	-6.5	-12.8	61	135	2.7	133	5.7	2	0900	-4.1	-9.3	67	144	1.9	142	3.8	3	
1200	-3.4	-13.2	47	107	1.7	110	6.3	18	1200	-2.8	-11.1	53	102	2.4	093	5.1	36	1200	-4	-7.6	58	105	1.6	102	4.4	23	
1500	-2.7	-12.8	46	108	3.1	102	6.3	11	1500	-2.0	-9.8	57	087	2.2	097	5.1	12	1500	1.3	-6.0	58	107	2.0	120	5.1	17	
1800	-5.3	-13.6	52	108	2.6	108	6.3	1	1800	-3.2	-10.1	59	093	1.8	084	4.4	1	1800	.3	****	64	128	1.3	126	3.8	1	
2100	-7.2	-14.1	58	118	2.6	110	5.1	0	2100	-5.8	-11.3	65	128	1.9	117	3.0	0	2100	-1.3	-2.3	93	129	1.4	123	7.0	0	
2400	-7.7	-13.9	61	124	2.6	128	5.1	0	2400	-6.8	****	71	116	1.1	143	3.2	0	2400	.3	-3.6	75	144	2.1	130	7.0	0	

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.			
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
0300	-2.6	-4.8	85	182	1.5	184	2.5	0	0300	.4	****	91	092	.8	087	2.5	0	0300	1.0	-.0	93	123	.8	133	1.9	0	
0600	-.1	-3.6	77	160	1.2	129	2.5	0	0600	-1.3	-2.0	95	118	1.3	152	3.2	0	0600	.1	****	94	108	1.0	092	3.2	0	
0900	-1.2	-3.9	82	141	1.5	132	3.8	3	0900	-.3	****	88	135	.8	137	2.5	7	0900	-.4	-1.3	94	093	1.5	086	4.4	4	
1200	2.4	****	72	094	.6	138	2.5	17	1200	4.3	****	63	120	1.0	128	5.1	9	1200	2.2	-.6	82	118	1.8	119	5.1	31	
1500	4.7	-.9	67	073	1.7	067	5.1	11	1500	7.3	-2.5	50	105	2.3	112	5.7	20	1500	6.3	-.6	61	071	1.4	075	3.2	17	
1800	2.4	****	86	356	.5	337	3.2	1	1800	5.7	-2.6	55	109	1.3	096	4.4	1	1800	5.0	-.6	67	121	2.1	121	5.7	2	
2100	1.1	****	94	176	.6	233	1.3	0	2100	4.0	-.2	74	152	1.3	165	2.5	0	2100	1.8	-1.4	79	156	1.6	123	5.7	0	
2400	.8	****	76	094	.6	189	1.9	0	2400	2.0	-.2	88	143	1.1	148	2.5	0	2400	2.0	-1.4	78	183	1.4	198	2.5	0	

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG. M/S	DEG C	DEW	WIND	WIND GUST MAX.			
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
0300	2.7	****	78	141	1.0	144	2.5	0	0300	1.6	-.4	87	109	.8	102	2.5	0	0300	5.3	1.3	75	152	1.3	154	3.8	0	
0600	2.9	-.5	78	138	1.5	133	3.2	0	0600	2.7	-.3	84	129	1.3	128	3.2	0	0600	2.7	-.6	79	143	1.1	151	3.2	0	
0900	3.9	****	78	154	1.2	162	3.2	3	0900	1.5	****	86	106	.8	140	3.2	4	0900	5.5	1.5	70	148	1.2	132	3.2	7	
1200	4.4	****	80	099	.3	135	1.9	13	1200	6.8	1.6	69	083	1.1	132	5.1	24	1200	8.1	-.1	56	104	1.9	116	6.3	20	
1500	5.9	1.8	75	055	1.2	079	4.4	13	1500	8.1	1.7	64	119	2.2	130	4.4	18	1500	7.6	-.6	56	122	2.3	121	6.3	13	
1800	5.1	-.9	74	111	1.8	108	5.1	2	1800	6.8	1.6	69	134	1.2	125	3.2	2	1800	4.4	****	66	132	1.3	126	3.2	2	
2100	3.4	-.3	80	139	1.5	114	2.5	0	2100	4.4	-.9	78	183	1.3	126	2.5	0	2100	2.7	-.9	77	175	1.4	160	3.2	0	
2400	2.5	****	84	153	1.3	132	2.5	0	2400	5.1	****	77	169	1.1	146	3.8	0	2400	2.7	-1.1	76	155	1.1	121	3.2	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
 SOUTHERN HYDROGEOTECHNICS PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
 DATA TAKEN DURING March, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW					
0300	2.2	*****	77	134	1.0	109	3.8	0	0300	4.1	-1.5	72	165	1.1	156	2.5	0	0300	-3.2	-4.8	89	096	1.2	105	3.2	0
0600	2.7	-1.1	76	188	1.2	159	3.2	0	0600	.9	-2.3	79	131	1.5	138	3.2	0	0600	-5.3	-6.7	90	082	1.8	087	4.4	0
0900	4.6	.0	72	157	1.2	153	3.2	7	0900	1.5	*****	77	109	1.0	096	3.2	8	0900	-5.2	-7.0	87	073	2.0	071	3.9	13
1200	7.1	.4	62	130	1.1	114	3.8	19	1200	5.8	-1.9	62	071	1.1	084	3.8	15	1200	1.7	-3.9	66	073	2.0	074	3.8	34
1500	8.0	.0	57	107	2.1	111	5.1	17	1500	6.9	-1.3	60	103	1.6	119	3.8	18	1500	7.7	-2.7	48	106	1.4	145	3.8	19
1800	6.2	-1.3	63	131	1.7	120	3.8	2	1800	6.0	-1.5	63	103	1.2	117	3.2	3	1800	6.0	-3.7	50	144	1.3	154	3.2	3
2100	3.9	-1.3	74	176	1.4	160	1.9	0	2100	.8	-2.8	77	137	1.4	163	3.2	0	2100	2.8	-3.7	62	168	1.8	179	3.2	0
2400	3.4	-1.4	76	166	1.3	157	2.5	0	2400	-1.7	-3.9	85	118	1.8	134	3.2	0	2400	.3	-4.7	69	172	2.3	174	3.8	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW					
0300	-1.4	-4.9	77	138	1.3	157	3.2	0	0300	-3.0	-4.7	88	106	1.3	128	2.5	0	0300	-3.2	-5.2	86	146	1.5	142	3.8	0
0600	-3.0	-6.0	80	112	1.4	111	3.8	0	0600	-3.8	-4.2	97	073	1.0	087	2.5	0	0600	-3.8	-6.0	85	142	1.7	156	3.2	0
0900	-4.1	-7.5	77	127	1.3	115	3.2	11	0900	-2.8	-3.8	93	066	1.1	074	2.5	4	0900	-4.9	-7.5	82	142	2.4	137	3.8	9
1200	3.4	-2.7	64	117	2.1	114	5.2	33	1200	.9	-2.2	80	046	1.3	067	3.2	25	1200	.1	-5.9	64	065	1.5	110	4.4	39
1500	4.8	-2.7	58	113	2.8	126	6.3	21	1500	3.1	*****	74	038	1.1	042	2.5	16	1500	2.6	-5.8	54	113	2.3	107	5.7	26
1800	2.5	-3.6	64	097	1.6	069	4.4	3	1800	2.0	*****	73	059	.3	107	3.2	3	1800	.9	-6.4	58	119	1.9	117	5.1	3
2100	-1.1	-4.4	78	163	1.5	145	3.2	0	2100	-.2	-2.9	82	134	.7	088	2.5	0	2100	-2.6	-7.3	70	155	1.5	120	3.8	0
2400	-2.4	-5.4	80	147	1.6	148	2.5	0	2400	-1.6	-3.4	88	136	1.3	133	2.5	0	2400	-2.6	-6.9	72	159	1.0	170	3.5	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW					
0300	-4.9	-8.5	76	102	1.1	094	2.5	0	0300	-8.7	*****	86	140	1.1	125	2.5	0	0300	-9.2	-13.1	73	151	2.2	160	4.4	0
0600	-6.5	-9.5	79	091	1.2	099	2.5	0	0600	-9.2	*****	88	139	.7	119	2.5	0	0600	-11.1	-14.3	77	099	1.4	133	3.8	0
0900	-5.8	-10.4	70	076	1.4	082	3.2	13	0900	-7.5	*****	71	126	.9	118	2.5	19	0900	-9.8	-14.6	68	082	1.9	092	3.8	14
1200	-.1	-8.1	55	063	1.5	075	3.8	35	1200	-.7	-9.1	53	091	1.1	115	5.1	35	1200	-2.0	-10.8	51	083	1.8	072	3.8	37
1500	2.1	-7.6	49	112	2.3	124	5.1	30	1500	1.3	-8.3	49	122	2.7	117	5.7	33	1500	1.8	-9.6	43	091	2.0	082	4.4	34
1800	.8	-8.2	51	112	2.1	120	5.1	3	1800	-.2	-9.6	48	130	1.7	144	5.1	6	1800	.7	-10.6	43	102	1.9	107	4.4	9
2100	-3.4	-8.4	68	143	1.3	121	3.2	0	2100	-5.0	-10.5	65	152	1.6	134	2.5	0	2100	-5.2	-11.7	60	151	1.8	123	3.8	0
2400	-5.7	-9.2	76	173	1.3	189	2.5	0	2400	-7.5	-11.5	73	157	1.8	168	3.2	0	2400	-8.0	-12.7	69	138	1.3	150	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW
0300	-9.9	-14.3	70	110	1.3	117	3.2	0	0300	-7.0	-11.7	69	093	1.5	095	3.8	0	0300	-8.4	-11.4	79	141	1.7	127	3.8	0		
0600	-11.8	-15.5	74	084	2.1	081	3.2	0	0600	-7.1	-11.8	69	084	1.6	089	3.8	0	0600	-11.2	-12.7	89	116	1.2	137	3.2	0		
0900	-10.9	-15.6	68	088	2.7	083	4.4	14	0900	-6.8	-11.9	67	080	1.8	083	3.2	7	0900	-9.8	-12.9	78	087	2.0	087	3.8	21		
1200	-3.0	-11.5	52	079	1.8	107	5.1	37	1200	-1.8	-9.7	55	063	1.6	082	3.8	26	1200	-1.6	-9.5	55	079	1.7	080	3.8	38		
1500	-1.2	-10.5	46	108	2.4	117	5.1	34	1500	.3	-9.0	50	087	1.9	105	3.8	21	1500	.9	-8.9	48	121	2.4	127	5.1	35		
1800	-1.9	-11.1	46	121	1.7	103	3.8	9	1800	-.8	-5.9	68	085	1.7	103	3.8	5	1800	-.2	-9.4	50	128	1.7	124	4.4	11		
2100	-5.8	-11.7	63	147	2.0	152	3.2	0	2100	-2.5	-6.3	75	122	1.3	120	2.5	0	2100	-5.1	-10.6	65	149	1.9	156	3.8	0		
2400	-7.7	-12.4	69	161	2.1	162	3.8	0	2400	-4.9	-8.5	76	143	1.1	149	2.5	0	2400	-7.5	-11.7	72	140	1.9	143	3.2	0		

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW
0300	-9.8	-12.8	79	127	2.0	125	3.2	0	0300	-9.9	-13.3	76	097	1.5	099	3.2	0	0300	-10.0	-13.9	73	148	2.1	150	3.8	0		
0600	-11.3	-14.2	79	113	2.0	128	3.8	0	0600	-11.5	-14.4	79	091	2.0	089	3.8	0	0600	-10.4	-14.0	75	102	1.5	119	2.5	0		
0900	-10.3	-14.4	72	079	2.0	075	4.4	16	0900	-10.3	-15.2	67	084	2.0	089	4.4	18	0900	-7.9	-12.7	68	088	1.6	093	3.2	15		
1200	-2.2	-10.3	54	062	1.8	078	3.0	39	1200	-2.1	-12.0	47	067	1.7	070	3.8	41	1200	-.9	-10.3	49	085	1.6	117	5.7	42		
1500	1.5	-9.5	44	131	1.8	103	3.8	37	1500	.5	-11.4	41	139	1.7	083	4.4	38	1500	1.8	-9.0	45	129	2.5	117	5.7	47		
1800	1.2	-9.8	44	139	1.8	140	4.4	11	1800	0.0	-11.5	42	154	1.3	184	4.4	11	1800	-.4	-9.3	51	118	2.4	113	5.7	5		
2100	-4.2	-11.9	55	147	1.4	127	3.2	0	2100	-5.8	-12.1	61	151	1.7	147	3.2	0	2100	-2.7	-9.4	60	125	1.1	095	3.2	0		
2400	-6.8	-12.6	63	110	1.5	112	2.5	0	2400	-8.4	-13.0	69	134	1.7	128	3.2	0	2400	-4.0	-8.8	69	154	1.1	170	1.9	0		

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH DIR.	SPD.	DIR.	GUST RAD		
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW
0300	-5.2	-9.3	73	142	1.2	111	3.2	0	0300	-1.6	-6.3	70	135	1.0	138	2.5	0	0300	-.4	-3.3	81	139	1.4	138	3.2	0		
0600	-7.4	-10.3	80	121	1.4	131	2.5	0	0600	-2.6	-4.5	87	141	1.2	154	2.5	0	0600	-2.4	****	86	142	1.1	150	2.5	0		
0900	-5.9	-10.3	71	104	.8	108	3.3	18	0900	-2.2	****	90	113	.9	132	2.5	7	0900	-.9	-4.9	74	103	1.2	104	3.8	17		
1200	.7	-7.1	56	056	1.6	075	3.2	29	1200	1.4	-3.6	69	062	1.2	104	3.8	29	1200	3.9	-4.6	54	086	1.7	101	5.1	48		
1500	3.5	-6.0	50	110	2.0	119	5.1	28	1500	2.9	-2.6	67	059	2.1	086	5.1	21	1500	4.3	-5.8	48	107	2.0	084	5.1	15		
1800	3.7	-6.9	46	187	1.2	141	3.8	11	1800	1.9	-3.9	65	102	2.0	111	5.1	6	1800	1.1	-1.2	85	059	.4	097	4.4	6		
2100	-1.7	-8.0	62	139	1.5	149	4.4	0	2100	1.1	-4.1	68	118	1.0	149	3.8	0	2100	-1.4	-2.1	95	236	.8	297	2.5	0		
2400	-2.8	-7.3	71	136	1.4	149	3.2	0	2400	.9	-4.1	69	141	1.5	161	3.2	0	2400	-1.6	-3.4	88	155	.8	177	1.9	0		

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SOUTHERN HYDROGEOLogIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD. IIR.	GUST RAD												
DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C												
0300	-3.9	-5.8	87	114	1.2	698	3.2	0	0300	-1.9	-7.4	66	179	1.1	189	1.9	0	0300	-3.3	-4.9	89	162	.8	141	2.5	0
0600	-7.5	-9.0	89	098	1.3	076	3.2	0	0600	-2.5	-8.6	63	182	1.0	187	1.9	0	0600	-4.3	-6.0	88	130	1.0	120	2.5	0
0900	-5.8	-10.0	72	073	1.7	079	3.8	21	0900	1.1	-6.9	55	143	1.0	116	3.8	12	0900	-2.3	-5.4	79	072	.9	112	1.9	12
1200	1.5	-7.8	50	077	1.8	102	3.8	46	1200	3.6	-6.4	48	094	2.0	125	5.7	25	1200	3.6	-3.0	62	056	1.5	061	3.2	39
1500	4.5	-7.4	42	148	2.2	141	5.1	40	1500	4.3	-7.0	44	090	2.3	093	6.3	19	1500	5.0	-4.6	50	132	.6	082	3.8	24
1800	3.8	-8.4	41	115	1.8	120	5.1	14	1800	2.3	*****	69	094	2.0	097	6.3	12	1800	1.7	-1.7	78	306	1.6	324	5.7	7
2100	-2.6	-8.9	62	144	1.6	109	5.7	0	2100	.4	-2.6	80	257	.8	250	3.2	0	2100	-4.4	*****	96	298	1.0	312	3.8	0
2400	-3.3	-8.5	67	188	1.4	192	2.5	0	2400	-1.2	-3.0	68	206	.9	240	1.9	0	2400	-1.3	*****	96	176	.7	162	1.9	0

DAY 31

HOUR	WIND WIND GUST MAX.							
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	GUST RAD				
DEG C	DEG C	%	DEG C	DEG C				
0300	-9	****	96	185	.6	161	1.9	0
0600	-2.3	****	97	138	.5	142	1.9	0
0900	.1	-2.1	85	126	1.5	131	3.2	15
1200	1.9	-2.0	75	078	1.6	072	3.8	19
1500	3.0	-1.5	72	339	.7	286	4.4	16
1800	.1	-5	96	076	1.3	045	3.8	5
2100	-1.4	-1.8	97	127	.5	125	2.5	0
2400	-2.5	-3.4	94	138	1.1	126	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSEX CANYON HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

DAY	MAX. TEMP., DEG C			RES. TEMP., DEG C			RES. WIND, DIR. DEG			AVG. WIND, M/S			MAX. GUST, DIR. DEG			MAX. GUST P/VAL SPD., DIR., RH %			MEAN MEAN DEG C			DAY'S PRECIP MM			DAY'S SOLAR ENERGY WH/SQM	
	MAX.	MIN.	MEAN	WIND	WIND	WIND	DIR.	SPD.	SPD.	DIR.	SPD.	DIR.	RH	DP	MEAN	DEG C	MM									
1	-2.5	-12.7	-7.6	111	2.3	2.3	110	6.3	ESE	58	-14.5	****	1115	1												
2	-2.1	-7.7	-4.9	119	2.1	2.2	173	5.7	SE	60	-11.6	****	1130	2												
3	1.3	-6.7	-2.7	130	1.5	1.7	123	7.0	ESE	68	-6.6	****	1115	3												
4	5.5	-2.8	1.4	129	.7	1.2	067	5.1	S	77	-2.8	****	1210	4												
5	7.3	-1.3	3.0	121	1.2	1.3	112	5.7	ESE	71	-1.7	****	1210	5												
6	7.3	-1.6	3.4	122	1.2	1.6	121	5.7	ESE	80	-1.8	****	1450	6												
7	7.7	1.0	4.4	127	1.0	1.2	108	5.1	SE	77	-1.4	****	1180	7												
8	8.5	1.4	5.0	130	1.0	1.3	132	5.1	ESE	75	-1.9	****	1490	8												
9	8.3	1.7	5.0	138	1.4	1.6	116	6.3	SE	69	-1.2	****	1405	9												
10	8.7	1.4	5.1	145	1.2	1.4	111	5.1	SSW	68	-1.2	****	1600	10												
11	7.0	-1.2	2.7	117	1.2	1.4	084	3.8	ESE	72	-1.6	****	1565	11												
12	8.5	-6.1	1.2	113	1.3	1.8	087	4.4	ENE	70	-4.7	****	2170	12												
13	5.3	-5.0	1.2	125	1.6	1.8	126	6.3	ESE	72	-4.3	****	2100	13												
14	3.1	-3.8	-1.4	083	.8	1.2	067	3.2	ENE	85	-3.4	****	1210	14												
15	3.2	-5.4	-1.1	130	1.6	1.8	107	5.7	SE	72	-6.2	****	2255	15												
16	3.1	-7.4	-2.2	108	1.3	1.6	124	5.1	E	65	-8.6	****	2330	16												
17	1.8	-10.3	-4.3	133	1.4	1.5	17	5.7	SE	63	-9.9	****	2535	17												
18	2.1	-11.4	-4.7	112	1.6	1.8	160	4.4	E	60	-12.1	****	2465	18												
19	.5	-13.1	-6.3	111	1.8	2.1	107	5.1	E	61	-12.9	****	2520	19												
20	.4	-8.0	-3.8	091	1.5	1.6	095	3.8	E	66	-7.6	****	1870	20												
21	1.4	-11.8	-5.2	121	1.7	1.9	127	5.1	SE	67	-10.8	****	2790	21												
22	2.1	-13.2	-5.6	113	1.6	1.8	075	4.4	FSE	63	-12.0	****	2855	22												
23	.9	-12.8	-6.0	112	1.5	1.8	089	4.4	E	61	-12.9	****	2995	23												
24	1.8	-10.4	-4.3	119	1.6	1.8	117	5.7	ESE	62	-11.3	****	2725	24												
25	4.1	-8.4	-2.2	123	1.1	1.5	119	5.1	SE	63	-8.0	****	2540	25												
26	3.1	-3.0	-1.1	107	1.2	1.4	086	5.1	SE	73	-4.2	****	2100	26												
27	5.4	-2.7	1.4	119	.9	1.5	101	5.1	SE	73	-3.8	****	2750	27												
28	5.3	-7.9	-1.3	119	1.3	1.8	109	5.7	ESE	64	-8.0	****	3360	28												
29	4.3	-3.4	-1.5	127	.9	1.5	093	6.3	E	60	-6.5	****	2005	29												
30	5.7	-5.1	-1.3	091	.2	1.2	324	5.7	ENE	73	-4.2	****	2545	30												
31	3.1	-2.5	-1.3	108	.7	1.2	286	4.4	E	83	-2.0	****	1810	31												
MONTH	8.7	-13.2	-1.9	119	1.3	1.6	123	7.0	FSE	68	-6.3	****	62400													

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 3.2

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 4.4

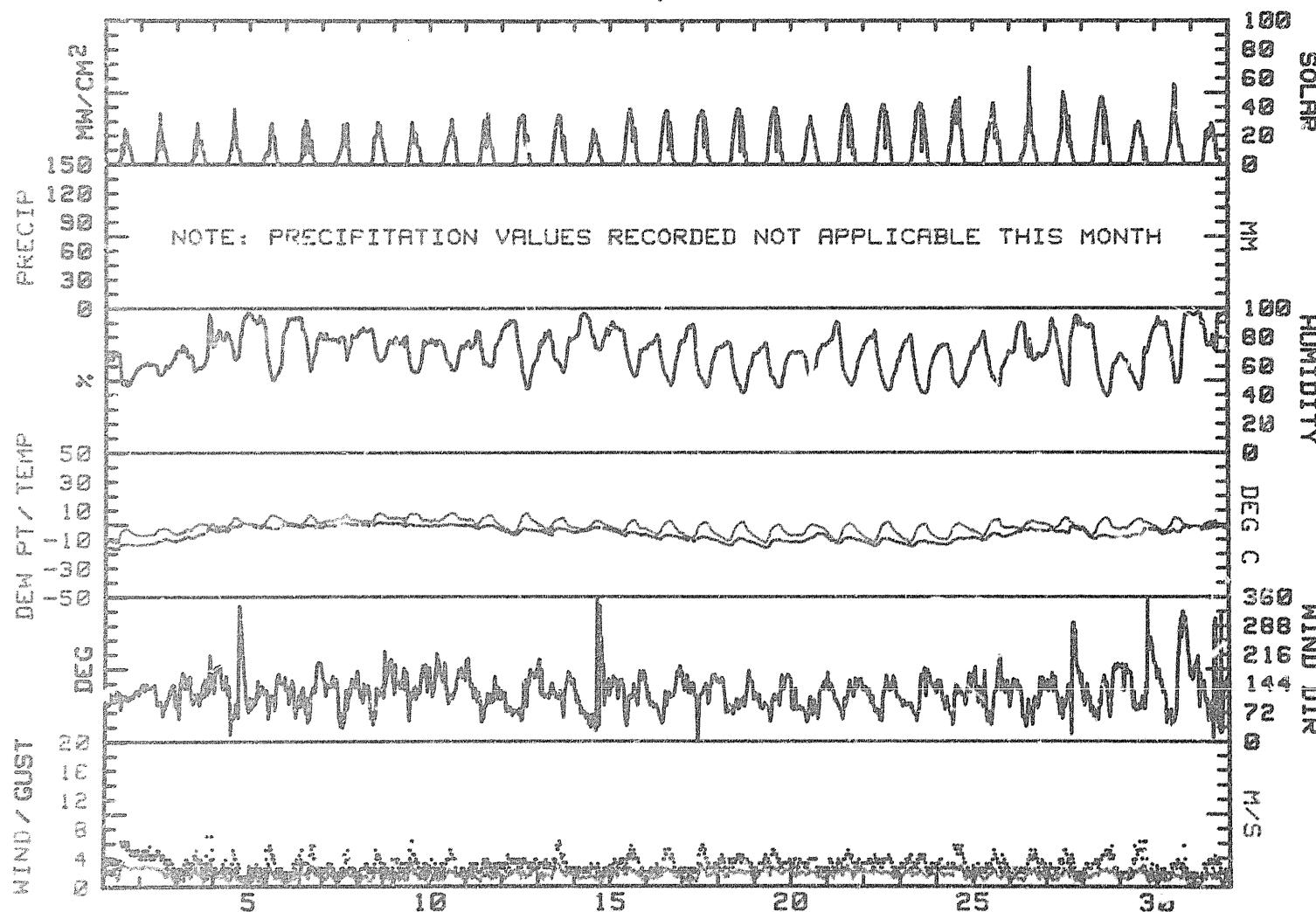
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 3.2

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 2.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND, SINCE READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEASUREMENTS FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT.

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
March, 1984



R & M CONSULTANTS, INC.  
SUSSEX TNA HYDROELECTRIC PROJECT

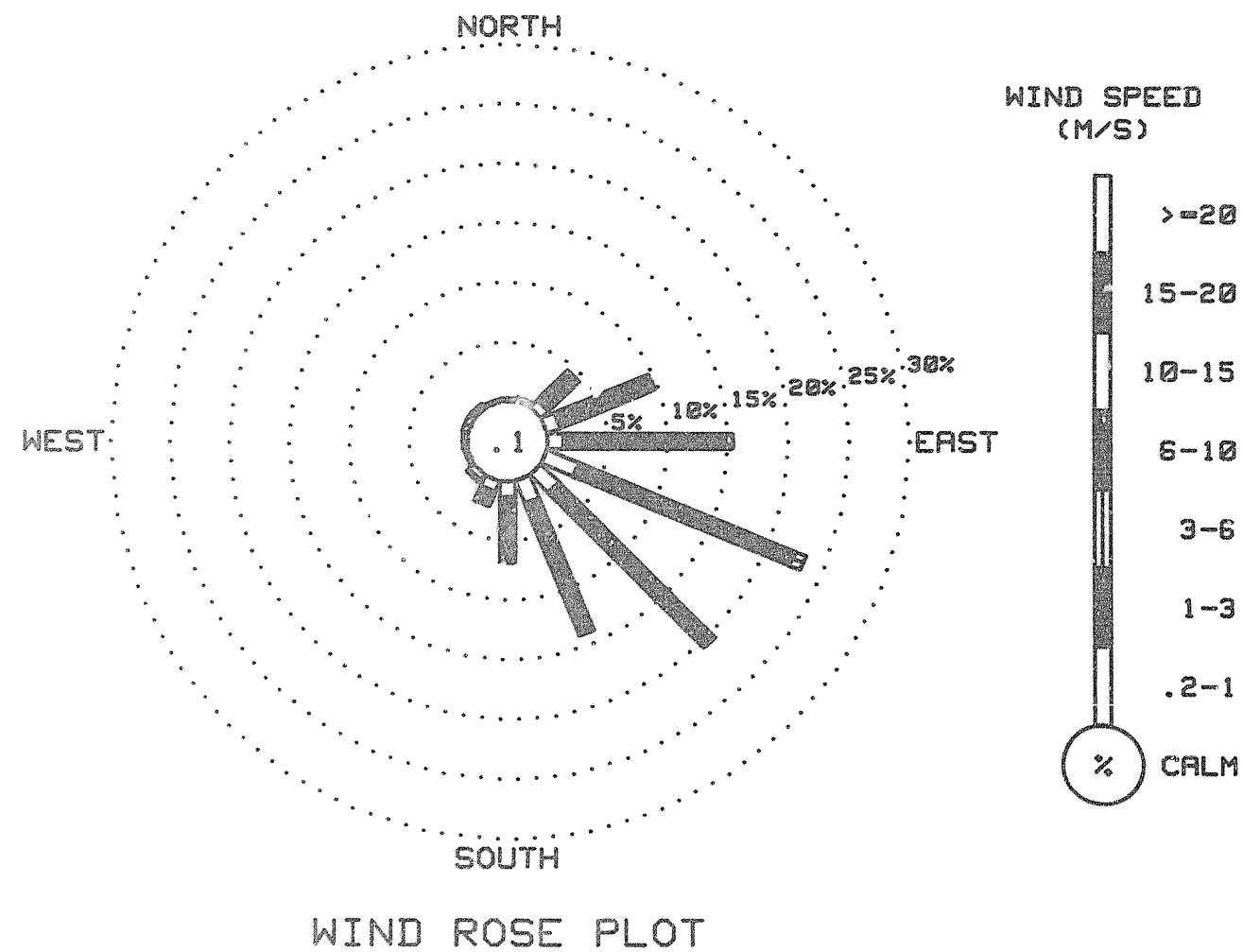
WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0-2	1-0	3-0	6-0	10-0	15-0	20-0	OR GREATER	
	TO	TO	TO	TO	TO	TO	TO		
1-0	3-0	6-0	10-0	15-0	20-0	20-0	20-0	GREATER	
N	.20	.07	0.00	0.00	0.00	0.00	0.00	0.00	.27
NNE	.13	.34	0.00	0.00	0.00	0.00	0.00	0.00	.47
NE	.87	3.56	0.00	0.00	6.00	0.00	0.00	0.00	4.44
ENE	1.21	8.40	.07	0.00	0.00	0.00	0.00	0.00	9.68
E	1.34	13.91	.13	0.00	0.00	0.00	0.00	0.00	15.37
ESE	2.89	19.35	.94	0.00	0.00	0.00	0.00	0.00	23.19
SE	2.15	17.94	.34	0.00	0.00	0.00	0.00	0.00	20.43
SSE	2.08	11.90	0.03	0.00	0.00	0.00	0.00	0.00	13.98
S	1.34	5.51	0.00	0.00	0.00	0.00	0.00	0.00	6.85
SSW	1.01	1.34	0.00	0.00	0.00	0.00	0.00	0.00	2.35
SW	.50	.22	0.00	0.00	0.00	0.00	0.00	0.00	.87
WSW	.13	.20	0.00	0.00	0.00	0.00	0.00	0.00	.34
W	.27	.20	0.00	0.00	0.00	0.00	0.00	0.00	.47
WNW	0.00	.54	0.00	0.00	0.00	0.00	0.00	0.00	.54
NW	.07	.34	.07	0.00	0.00	0.00	0.00	0.00	.47
NNW	.07	.13	0.00	0.10	0.00	0.00	0.00	0.00	.20
CALM	.....	.....	.....	.....	.....	.....	.....	.....	.07
TOTAL	14.38	82.01	11.57	0.00	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

110 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.  
\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
March, 1984



R & M CONSULTANTS, INC.  
SUSKUTNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	2	4	13	13	23	22	13	13	8	2	0	0	0	0	0	0	0	5
2	0	0	0	0	0	0	0	2	8	20	23	20	16	11	9	4	2	0	0	0	0	0	0	0	5
3	0	0	0	0	0	0	0	3	5	14	15	24	15	17	12	7	2	0	0	0	0	0	0	0	5
4	0	0	0	0	0	0	0	1	3	6	10	17	30	24	13	11	7	2	0	0	0	0	0	0	5
5	0	0	0	0	0	0	0	0	5	7	9	8	22	27	20	18	7	2	0	0	0	0	0	0	5
6	0	0	0	0	0	0	0	1	3	9	25	19	31	23	13	14	7	3	0	0	0	0	0	0	6
7	0	0	0	0	0	0	0	1	3	5	7	12	14	26	17	21	12	3	0	0	0	0	0	0	5
8	0	0	0	0	0	0	0	1	3	5	14	18	22	25	25	19	14	8	3	0	0	0	0	0	6
9	0	0	0	0	0	0	0	1	3	5	14	21	25	19	20	14	12	9	2	1	0	0	0	0	6
10	0	0	0	0	0	0	0	1	6	12	15	19	22	31	21	19	13	3	1	0	0	0	0	0	7
11	0	0	0	0	0	0	0	1	6	14	23	23	12	29	19	14	12	5	1	0	0	0	0	0	7
12	0	0	0	0	0	0	0	2	8	24	32	32	35	35	16	16	17	4	1	0	0	0	0	0	9
13	0	0	0	0	0	0	0	2	7	17	25	31	35	35	23	15	18	4	1	0	0	0	0	0	9
14	0	0	0	0	0	0	0	1	3	7	12	21	19	21	16	12	6	4	1	0	0	0	0	0	5
15	0	0	0	0	0	0	0	2	7	18	27	36	39	32	21	26	15	4	1	0	0	0	0	0	9
16	0	0	0	0	0	0	0	2	9	19	27	34	38	38	20	27	16	4	2	0	0	0	0	0	10
17	0	0	0	0	0	0	0	2	12	27	34	35	38	38	23	27	14	6	2	0	0	0	0	0	11
18	0	0	0	0	0	0	0	2	9	21	29	36	39	39	22	28	14	8	2	0	0	0	0	0	10
19	0	0	0	0	0	0	0	2	9	21	30	36	40	40	22	29	16	8	2	0	0	0	0	0	11
20	0	0	0	0	0	0	0	2	6	13	22	26	31	27	23	19	12	7	2	0	0	0	0	0	8
21	0	0	0	0	0	0	1	3	16	26	34	36	41	41	24	29	16	10	2	0	0	0	0	0	12
22	0	0	0	0	0	0	1	3	14	23	32	36	42	42	24	31	23	13	2	0	0	0	0	0	12
23	0	0	0	0	0	0	1	4	7	23	36	40	43	43	24	32	23	14	3	0	0	0	0	0	12
24	0	0	0	0	0	0	1	4	14	20	37	41	37	31	38	25	21	6	2	0	0	0	0	0	11
25	0	0	0	0	0	0	1	5	17	21	25	29	40	41	23	22	15	14	3	0	0	0	0	0	11
26	0	0	0	0	0	0	1	5	6	10	20	26	45	38	23	20	10	8	2	0	0	0	0	0	9
27	0	0	0	0	0	0	1	7	14	19	3	50	44	35	20	29	14	8	4	0	0	0	0	0	11
28	0	0	0	0	0	0	1	7	19	22	37	43	46	47	27	35	26	16	6	1	0	0	0	0	14
29	0	0	0	0	0	0	1	5	11	17	24	26	29	29	21	18	7	11	4	1	0	0	0	0	6
30	0	0	0	0	0	0	1	4	11	15	25	37	53	42	26	17	13	10	3	1	0	0	0	0	11
31	0	0	0	0	0	0	1	4	13	21	21	22	24	26	20	18	4	5	3	0	0	0	0	0	8

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING March, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1488	100
WIND SPEED	1488	100
WIND DIRECTION	1488	100
PEAK GUST	1488	100
RELATIVE HUMIDITY	1273	86
PRECIPITATION	0	0
SOLAR RADIATION	1488	100
DEW POINT	1273	86

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. Solar -1 nW/cm<sup>2</sup>

R & M CONSULTANTS, INC.

THE YOUNG READER'S BIBLE CLASSIC TESTAMENT

- 1 -

HOURLY PRECIPITATION SUMMARY FOR DEUTL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE 0100 0200 0300 0400 0500 0600 0700 0800 0900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 DATE

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG C		DEG C		M/S	DEG C	DEG C		DEG C		DEG C	DEG C	DEG C		DEG C		DEG C	M/S

0300	-2.1	-3.1	93	168	1.0	136	2.5	0	0300	-4.3	-6.3	86	120	1.1	114	3.2	0	0300	-7.8	-9.3	89	136
0600	-7	-3.9	79	176	1.6	175	3.2	0	0600	-3.6	****	95	098	.6	102	1.9	0	0600	-8.8	-10.0	91	122
0900	1.2	-4.6	65	120	1.4	110	5.1	8	0900	-1.1	****	88	356	.0	026	1.9	18	0900	-5.8	-9.2	77	084
1200	4.3	-5.5	49	093	1.8	090	5.1	38	1200	.8	-2.1	81	311	1.2	296	3.2	25	1200	3.1	-7.8	45	034
1500	4.4	-7.2	43	156	1.3	123	3.8	28	1500	.2	-1.0	92	319	1.8	349	4.4	9	1500	3.5	-7.4	45	026
1800	3.6	-4.1	57	307	1.6	279	4.4	14	1800	.9	****	83	244	.6	229	3.2	6	1800	2.9	-7.4	47	031
2100	-2.1	-4.5	84	229	.7	285	3.8	0	2100	-2.7	-4.3	89	186	.8	173	1.9	0	2100	1.3	-5.6	60	059
2400	-4.1	****	85	155	.9	164	2.5	0	2400	-5.0	-7.1	85	139	1.6	128	3.2	0	2400	-5.5	****	72	164

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG C		DEG C		M/S	DEG C	DEG C		DEG C		DEG C	DEG C		DEG C		DEG C		M/S

0300	-2.3	****	77	166	1.0	163	2.5	0	0300	-.9	****	77	130	.8	142	1.9	0	0300	-2.3	****	98	298
0600	-4.7	-7.9	78	140	1.3	134	3.2	0	0600	-2.1	****	83	113	.7	117	1.9	0	0600	-2.8	****	96	295
0900	-2.0	-6.5	71	109	1.4	141	3.2	24	0900	-.6	-4.1	77	066	1.1	090	2.5	17	0900	-1.6	****	89	303
1200	3.5	-4.7	55	093	1.5	131	5.1	49	1200	3.5	-3.1	62	074	1.7	062	4.4	40	1200	.3	-4.7	69	304
1500	5.4	-6.3	43	205	1.1	117	3.8	46	1500	3.9	-3.8	57	084	1.5	060	4.4	20	1500	.1	-5.5	66	274
1800	5.3	-6.4	43	200	1.5	211	3.2	19	1800	3.0	-1.5	72	264	1.1	294	3.8	9	1800	-1.2	-3.9	82	292
2100	1.3	-4.9	63	137	1.2	173	3.2	0	2100	-1.0	-1.6	96	297	1.5	296	3.2	0	2100	-3.1	****	96	311
2400	.4	-5.0	71	151	1.7	139	3.2	0	2400	-1.7	-2.1	97	314	1.7	318	3.8	0	2400	-3.5	****	95	123

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG C		DEG C		M/S	DEG C	DEG C		DEG C		DEG C	DEG C		DEG C		DEG C		M/S

0300	-4.6	****	95	137	1.0	123	2.5	0	0300	-5.3	-8.4	79	***	***	***	4.4	0	0300	-3.3	-7.4	73	188
0600	-5.0	****	97	118	.6	113	1.9	0	0600	-6.9	-8.3	90	***	***	***	4.4	0	0600	-3.9	-8.4	71	188
0900	-3.9	-6.4	83	075	.8	095	3.2	8	0900	-4.1	-9.5	66	075	1.5	***	3.2	21	0900	-.2	****	58	117
1200	-1.4	-4.9	77	090	1.5	123	3.2	11	1200	..	-9.9	47	109	2.4	103	5.7	51	1200	5.1	-12.0	28	027
1500	1.0	-7.3	54	306	1.0	298	4.4	51	1500	1.0	-9.9	42	121	2.9	120	7.0	52	1500	6.3	-17.7	16	023
1800	-1.3	-7.2	64	240	1.4	255	3.8	7	1800	1.6	-9.4	44	116	2.6	116	6.3	12	1800	5.1	-15.5	21	036
2100	-3.0	****	86	***	***	***	3.2	0	2100	-1.6	-7.9	62	148	1.3	125	4.4	0	2100	-1.6	-13.3	41	246
2400	-4.2	-6.2	86	***	***	***	3.2	0	2400	-2.5	-7.4	69	183	1.3	197	2.5	0	2400	-3.7	-12.7	50	161

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSETINA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	%	DEG	M/S	MW				DEG C	DEG C	%	DEG	M/S	MW		DEG C	DEG C	%	DEG	M/S	MW				
0300	-5.8	-13.0	57	153	1.4	169	2.5	0	0300	-6.2	-10.4	72	136	1.5	151	3.2	0	0300	-4.7	*****	85	143	1.1	131	4.4	0
0600	-5.8	-13.0	57	147	1.5	149	2.5	1	0600	-6.2	-10.6	71	133	1.3	124	2.5	1	0600	-6.5	-8.6	85	106	1.8	103	4.4	1
0900	-3.2	-12.2	50	127	1.6	136	3.2	19	0900	-1.9	-10.0	54	091	1.1	101	3.2	31	0900	-1.3	-7.4	63	079	1.7	023	3.2	29
1200	.2	-12.3	39	067	1.6	054	3.8	51	1200	3.9	-7.3	44	074	1.5	072	3.8	70	1200	6.0	-5.1	45	111	1.9	119	4.4	58
1500	1.5	-12.5	35	044	.3	307	4.4	37	1500	5.2	-6.5	43	116	1.5	126	4.4	42	1500	6.8	-5.0	43	123	2.6	114	5.7	40
1800	-.2	-11.4	43	310	2.3	325	5.1	19	1800	4.7	-6.6	44	306	1.6	283	4.4	17	1800	5.6	-5.8	44	089	1.7	082	4.4	16
2100	-3.4	****	59	287	1.5	301	3.8	0	2100	-1.8	-6.2	72	248	1.2	284	3.2	0	2100	.1	-5.9	64	133	1.2	092	3.2	0
2400	-5.8	-9.8	73	178	1.0	161	2.5	0	2400	-3.0	-6.6	76	142	1.1	136	3.2	0	2400	-2.9	-6.9	74	143	1.2	149	2.5	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	%	DEG	M/S	MW				DEG C	DEG C	%	DEG	M/S	MW		DEG C	DEG C	%	DEG	M/S	MW				
0300	-4.2	-8.1	74	129	2.1	120	3.8	0	0300	-1.7	-5.2	77	124	1.6	132	3.2	0	0300	-.9	****	96	129	.6	095	1.9	0
0600	-5.8	-8.7	80	097	1.8	095	3.2	1	0600	-5.0	-7.3	84	113	1.1	121	3.2	1	0600	-.9	****	97	194	.3	185	1.3	0
0900	-1.4	****	61	092	1.7	090	3.8	26	0900	-3.0	-6.8	75	063	1.2	078	3.2	20	0900	.1	-1.5	89	053	.6	048	2.5	7
1200	6.4	-4.7	45	107	1.1	114	4.4	40	1200	3.1	-6.1	51	032	1.3	045	3.2	43	1200	.9	-1.0	87	330	1.1	291	3.8	27
1500	6.3	-4.8	45	086	2.3	052	6.3	38	1500	4.9	-5.8	46	303	1.5	310	3.8	34	1500	-.5	-1.8	91	317	2.0	337	5.7	7
1800	5.2	-5.0	48	085	1.8	081	4.4	12	1800	1.2	-1.1	85	286	1.1	326	3.8	7	1800	1.1	-3.7	70	352	.8	350	3.8	12
2100	.4	-4.0	72	132	1.2	090	4.4	0	2100	.1	****	95	324	.2	299	1.9	0	2100	-1.9	****	93	336	.5	040	3.8	0
2400	-2.2	-5.0	81	179	1.2	169	1.9	0	2400	-.3	-1.0	95	105	1.0	106	1.9	0	2400	-3.5	****	89	***	***	***	2.5	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	%	DEG	M/S	MW				DEG C	DEG C	%	DEG	M/S	MW		DEG C	DEG C	%	DEG	M/S	MW				
0300	-4.9	-6.2	91	108	1.1	193	3.2	0	0300	-4.6	****	96	120	.7	147	1.9	0	0300	-10.0	-11.8	87	150	1.0	139	2.5	0
0600	-3.3	-5.2	87	***	***	***	3.2	1	0600	-4.9	****	95	134	.9	131	2.5	1	0600	-11.7	-14.3	81	147	1.0	154	2.5	2
0900	-2.7	-4.9	85	028	.8	107	3.8	9	0900	-3.2	-5.7	83	079	.6	065	1.9	12	0900	-4.4	-9.2	69	067	.9	140	2.5	35
1200	-3.2	-5.1	87	313	1.6	320	3.8	16	1200	-.9	-5.8	69	022	1.2	051	3.2	18	1200	-.4	-11.0	45	070	1.3	062	3.8	58
1500	-3.3	-5.0	88	320	1.4	310	3.8	13	1500	.5	-7.3	56	321	1.7	311	4.4	50	1500	2.3	-11.4	36	085	1.1	136	4.4	53
1800	-2.5	****	84	316	1.6	327	4.4	6	1800	.5	-7.3	56	258	1.6	293	4.4	25	1800	2.6	-11.1	36	127	1.3	101	3.8	23
2100	-3.9	****	89	075	.7	052	1.9	0	2100	-3.8	****	70	244	1.0	244	3.8	0	2100	-3.7	****	56	232	.9	276	3.2	0
2400	-4.4	-5.0	94	121	1.0	129	2.5	0	2400	-7.2	****	85	193	.9	187	1.9	0	2400	-6.9	-12.0	67	129	1.3	133	3.2	0

\*\* GFF INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSETTA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.															
NDNG	TEMP.	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD										
	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	DEG C	DEG C	DEG C	DEG.	M/S	M/S	MW	DEG.	DEG C	DEG C	%	DEG.	DEG. M/S	M/S	MW			
0300	-9.6	-13.0	76	118	1.3	114	3.2	0	0300	-1.8	*****	97	281	.5	297	1.9	0	0300	3.0	-1.9	70	180	1.2	184	1.9	0
0600	-11.4	-14.0	81	085	1.4	089	3.2	2	0600	-1.4	*****	97	265	.1	290	.6	0	0600	2.1	-3.0	69	169	1.5	152	3.8	2
0900	-5.2	-11.7	60	068	1.7	078	3.2	33	0900	-.9	*****	89	016	.2	042	1.3	11	0900	7.4	-3.8	45	127	.9	102	4.4	37
1200	1.8	-9.6	43	085	1.7	065	3.8	53	1200	5.2	-2.6	57	310	1.2	288	3.2	37	1200	8.2	-4.7	40	101	2.3	111	6.3	35
1500	3.2	-8.9	41	138	2.2	129	5.1	56	1500	5.7	-1.4	60	308	1.8	298	5.1	34	1500	9.5	-4.6	37	106	3.4	113	7.0	54
1800	2.9	-8.0	45	101	1.3	128	4.4	15	1800	6.0	-.9	61	305	2.2	306	4.4	18	1800	8.9	-5.5	36	102	2.9	108	6.3	28
2100	-.6	*****	59	109	.7	050	2.5	0	2100	1.6	-1.5	80	244	.9	280	3.2	0	2100	5.5	-5.0	47	111	1.8	106	6.3	0
2400	-1.4	*****	95	167	.6	177	3.2	0	2400	-.2	-2.7	83	182	1.2	182	3.2	0	2400	-2.2	-2.8	96	214	1.1	220	7.0	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.															
NDNG	TEMP.	POINT	RH	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD										
	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	DEG C	DEG C	DEG C	DEG.	M/S	M/S	MW	DEG.	DEG C	DEG C	%	DEG.	DEG. M/S	M/S	MW			
0300	-4.2	-4.8	96	317	3.9	317	8.9	0	0300	-10.1	-14.9	68	108	1.3	104	3.2	0	0300	-6.2	-11.5	66	141	1.9	145	3.8	0
0600	-4.5	-7.1	82	286	1.5	293	3.8	2	0600	-11.6	*****	73	118	1.2	107	3.2	4	0600	-8.1	-11.9	74	095	1.6	090	3.8	2
0900	-3.3	-10.2	59	262	1.4	250	4.4	35	0900	-4.9	-13.3	52	070	1.5	068	3.2	35	0900	-1.6	-10.2	52	067	1.6	085	3.2	33
1200	-1.5	-12.3	44	259	2.3	262	7.6	62	1200	1.4	-15.3	28	095	1.8	088	4.4	62	1200	3.1	-10.3	37	106	1.6	083	5.1	66
1500	-.2	-14.3	34	249	2.3	250	5.1	55	1500	2.7	-13.3	30	072	2.8	076	5.7	56	1500	3.6	-8.2	42	264	1.9	293	5.7	56
1800	-.7	-13.5	34	232	1.8	231	5.1	25	1800	2.2	-12.2	34	105	2.5	102	6.3	17	1800	2.1	-5.8	53	278	2.1	263	5.1	18
2100	-4.9	*****	52	292	.3	288	3.2	0	2100	-2.5	-11.3	51	109	1.0	109	3.2	0	2100	-.8	*****	89	272	.7	293	3.8	0
2400	-8.6	-14.6	62	155	1.5	172	3.2	0	2400	-4.7	-10.6	63	151	1.9	143	3.2	0	2400	-2.8	-3.8	93	129	1.6	125	3.8	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.	POINT	DEW	WIND	WIND GUST MAX.																
NDNG	TEMP.	POINT	RH	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD											
	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	DEG C	DEG C	DEG C	DEG.	M/S	M/S	MW	DEG.	DEG C	DEG C	%	DEG.	DEG. M/S	M/S	MW				
0300	-2.2	*****	83	142	1.0	129	3.2	0	0300	-4.4	-8.5	73	100	1.5	110	3.2	0	0300	-2.9	-5.2	84	134	1.6	132	3.2	0	
0600	-3.3	-7.4	73	131	.8	112	2.5	3	0600	-5.6	-9.0	77	086	1.3	099	3.2	3	0600	-3.6	-5.9	84	134	1.5	123	3.2	4	
0900	-.4	-8.1	53	061	1.5	041	3.8	25	0900	-.4	-8.1	56	063	1.3	091	3.2	25	0900	3.1	-3.9	60	066	.9	094	4.4	23	
1200	2.9	-8.6	43	240	1.0	143	3.8	62	1200	3.1	-6.9	48	087	1.7	117	3.8	44	1200	6.4	-3.3	50	107	2.8	115	5.7	37	
1500	3.1	-9.0	41	268	1.9	296	7.0	71	1500	4.9	-5.2	48	053	1.7	054	5.1	56	1500	6.9	-2.8	50	125	2.8	115	6.3	32	
1800	3.0	-8.5	43	289	2.5	293	6.3	21	1800	3.7	-4.3	56	247	1.1	277	4.4	19	1800	6.9	-2.3	52	119	2.5	122	5.1	18	
2100	-1.8	*****	68	300	1.0	324	3.8	0	2100	-.9	**	**	70	303	.8	31	3.2	0	2100	5.1	-2.0	60	114	1.9	112	5.1	0
2400	-2.5	-8.0	66	127	1.2	109	3.8	0	2400	-1.8	-4.8	80	152	1.2	143	2.5	0	2400	2.7	*****	86	122	.9	113	2.5	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SOUTHERN HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
	DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW							
0300	1.4	*****	96	140	.9	147	1.9	0	0300	.3	-1.9	92	122	1.4	088	3.2	0	0300	.9	*****	84
0600	.3	*****	97	160	.4	185	1.9	2	0600	-.3	-1.8	90	097	1.5	096	3.2	8	0600	1.8	-.3	86
0900	2.2	*****	90	027	.7	036	1.9	17	0900	5.5	-.7	64	081	1.3	100	3.8	38	0900	4.8	*****	72
1200	4.0	2.0	87	294	1.5	317	3.8	25	1200	7.7	-2.1	50	113	2.7	121	6.3	62	1200	8.3	.1	56
1500	7.3	.1	60	303	2.2	302	5.7	65	1500	8.9	-2.8	44	120	2.9	120	6.3	43	1500	9.2	-.2	52
1800	5.5	1.6	76	275	2.4	273	6.3	14	1800	7.7	-2.7	48	093	1.9	121	5.7	14	1800	9.0	-.9	50
2100	4.3	*****	77	267	.5	290	2.5	0	2100	4.9	-2.2	60	078	.6	046	4.4	1	2100	4.0	1.9	86
2400	1.3	-.0	91	165	1.2	153	2.5	0	2400	2.7	*****	75	190	1.1	184	1.9	0	2400	.9	.2	95

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUEZ ITINAS HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

DAY	RES.			RES.			AVG.	MAX.			MAX.			DAY'S		
	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	WIND DIR.	WIND SPD. M/S	WIND SPD. M/S	GUST DIR.	GUST SPD. M/S	P'VAL %	DIR. RH	MEAN DEG C	PRECIP MM	SOLAR ENERGY WH/SQM			
1	5.9	-4.1	.9	153	.7	1.5	110	5.1	5	68	-4.5	****	3615	1		
2	3.5	-5.0	-.8	193	.1	1.1	349	4.4	NW	84	-4.2	****	2275	2		
3	3.9	-9.4	-2.8	059	1.2	1.8	031	7.6	NNE	65	-7.8	****	3280	3		
4	5.6	-4.8	.4	148	1.1	1.5	131	5.1	SSE	62	-5.9	****	3935	4		
5	4.8	-2.4	1.2	042	.3	1.4	062	4.4	NNW	77	-2.8	****	2880	5		
6	2.0	-3.5	-.8	290	.8	1.2	284	5.7	NNW	78	-4.3	****	3075	6		
7	1.5	-5.2	-1.9	119	.3	1.1	298	4.4	SE	74	-6.2	****	1915	7		
8	2.3	-6.9	-2.3	126	1.9	2.0	120	7.0	ESE	63	-8.8	****	3755	8		
9	6.0	-4.8	1.3	087	.8	1.5	044	5.1	NNE	44	-11.8	****	3885	9		
10	1.8	-6.0	-2.1	143	.3	1.6	325	5.1	SE	50	-12.0	****	3675	10		
11	5.8	-6.5	-.4	122	.6	1.5	126	4.4	ESE	59	-8.3	****	4080	11		
12	6.8	-6.9	-.1	113	1.5	1.8	114	5.7	E	61	-6.7	****	3985	12		
13	5.3	-6.1	.5	108	1.5	1.8	052	6.3	E	63	-6.2	****	3405	13		
14	5.2	-5.3	-.1	062	.4	1.2	310	3.8	ESE	70	-5.1	****	3980	14		
15	3.3	-3.5	-.1	338	.5	1.1	337	5.7	NW	83	-2.1	****	2760	15		
16	-1.5	-5.3	-3.4	348	.5	1.3	327	4.4	NW	88	-5.1	****	1545	16		
17	2.0	-7.2	-2.6	265	.2	1.2	311	4.4	SE	69	-6.9	****	3590	17		
18	3.4	-11.1	-4.2	117	.8	1.3	136	4.4	SE	56	-11.6	****	5130	18		
19	3.6	-11.4	-3.9	104	1.2	1.5	129	5.1	ENE	60	-10.4	****	4345	19		
20	6.8	-1.9	2.5	288	.7	1.1	298	5.1	NNW	68	-1.5	****	3095	20		
21	10.2	-2.2	4.0	123	1.5	2.1	113	7.0	ESE	52	-3.9	****	4850	21		
22	1.3	-8.6	-3.7	267	1.4	2.0	317	8.9	WSW	60	-10.6	****	5375	22		
23	2.9	-11.9	-4.5	101	1.6	1.8	102	6.3	ESE	48	-13.6	****	5450	23		
24	4.3	-8.4	-2.1	135	.4	1.8	293	5.7	E	60	-8.7	****	5080	24		
25	3.5	-3.3	.1	258	.3	1.6	296	7.0	NW	57	-7.8	****	4985	25		
26	4.9	-5.8	-.5	086	.7	1.5	054	5.1	ENE	62	-6.9	****	4285	26		
27	7.6	-3.7	3.0	118	1.8	1.9	115	6.3	ESE	63	-3.6	****	3440	27		
28	8.4	.3	4.4	275	.6	1.3	273	6.3	NNW	78	.9	****	4360	28		
29	9.0	-1.5	3.8	111	1.5	1.8	121	6.3	ESE	67	-1.7	****	4980	29		
30	10.2	.6	5.4	049	.3	1.3	041	5.1	S	65	.2	****	3240	30		
MONTH	10.2	-11.9	-.3	112	.5	1.5	317	8.9	ESE	64	-6.3	****	112250			

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.6

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.0

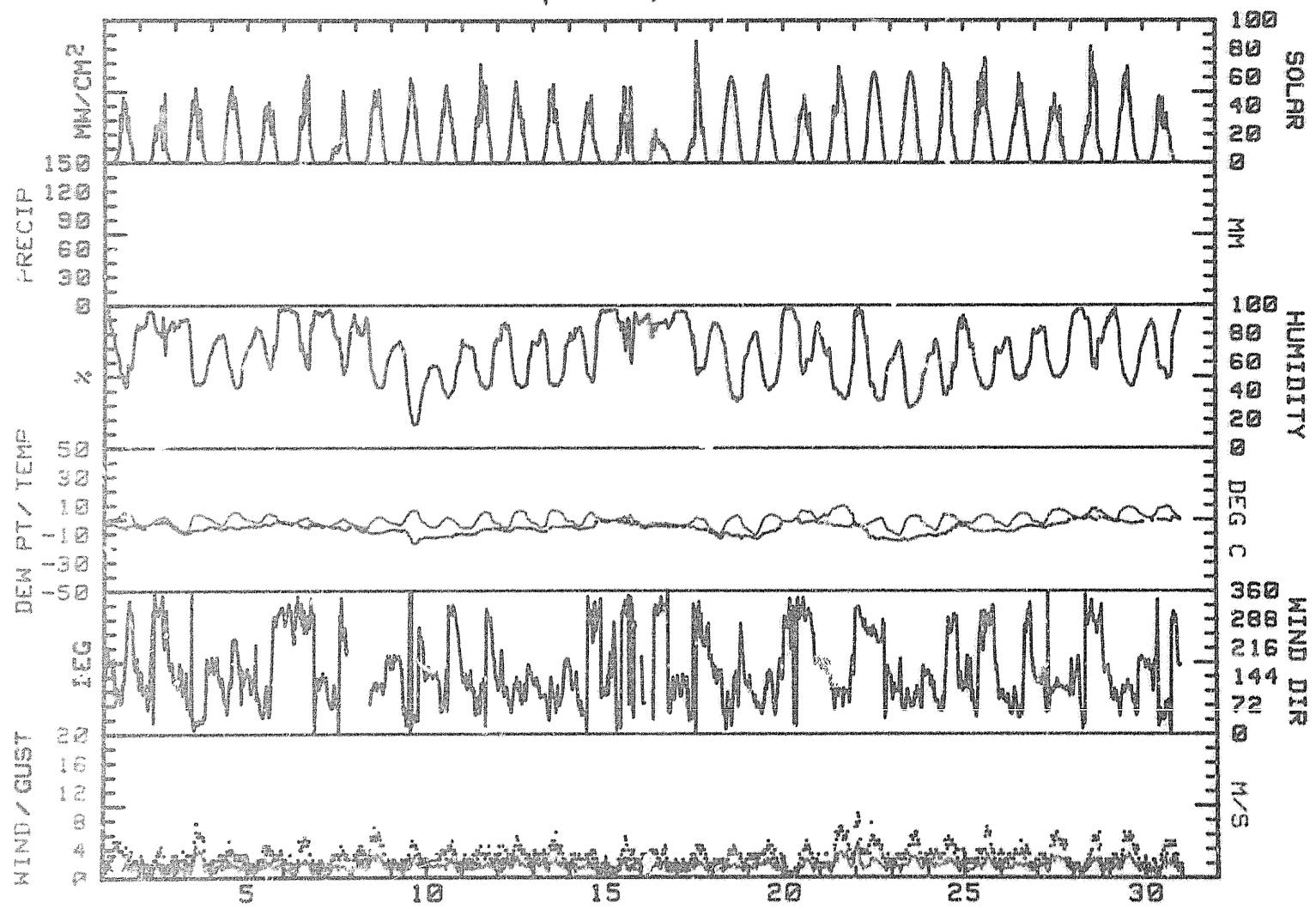
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.3

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
April, 1984



R & M CONSULTANTS, INC.  
SUBJECT NO. HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
N	.50	.86	0.00	0.00	0.00	0.00	0.00	0.00	1.36
NNW	.43	1.22	.79	0.05	0.00	0.00	0.00	0.00	2.44
NE	1.08	4.88	.07	0.00	0.00	0.00	0.00	0.00	6.03
ENE	.93	7.39	.07	0.00	0.00	0.00	0.00	0.00	8.39
E	1.51	8.11	.07	0.00	0.00	0.00	0.00	0.00	9.68
ESE	1.65	11.76	1.43	0.00	0.00	0.00	0.00	0.00	14.85
SE	1.94	9.04	.14	0.00	0.00	0.00	0.00	0.00	11.12
SSE	2.15	7.23	0.00	0.00	0.00	0.00	0.00	0.00	9.40
S	2.44	4.88	0.00	0.00	0.00	0.00	0.00	0.00	7.32
SSW	1.00	2.15	0.00	0.00	0.00	0.00	0.00	0.00	3.16
SW	.79	1.94	.07	0.00	0.00	0.00	0.00	0.00	2.6
WSW	.57	2.51	0.00	0.00	0.00	0.00	0.00	0.00	3.08
W	.65	3.44	0.00	0.00	0.00	0.00	0.00	0.00	4.09
NNE	1.00	6.46	.14	0.00	0.00	0.00	0.00	0.00	7.60
EW	.50	2.16	.43	0.00	0.00	0.00	0.00	0.00	6.10
NNW	.79	1.29	0.00	0.00	0.00	0.00	0.00	0.00	2.08
DOWN									.50
TOTAL	12.93	28.34	3.73	0.00	0.00	0.00	0.00	0.00	100.00

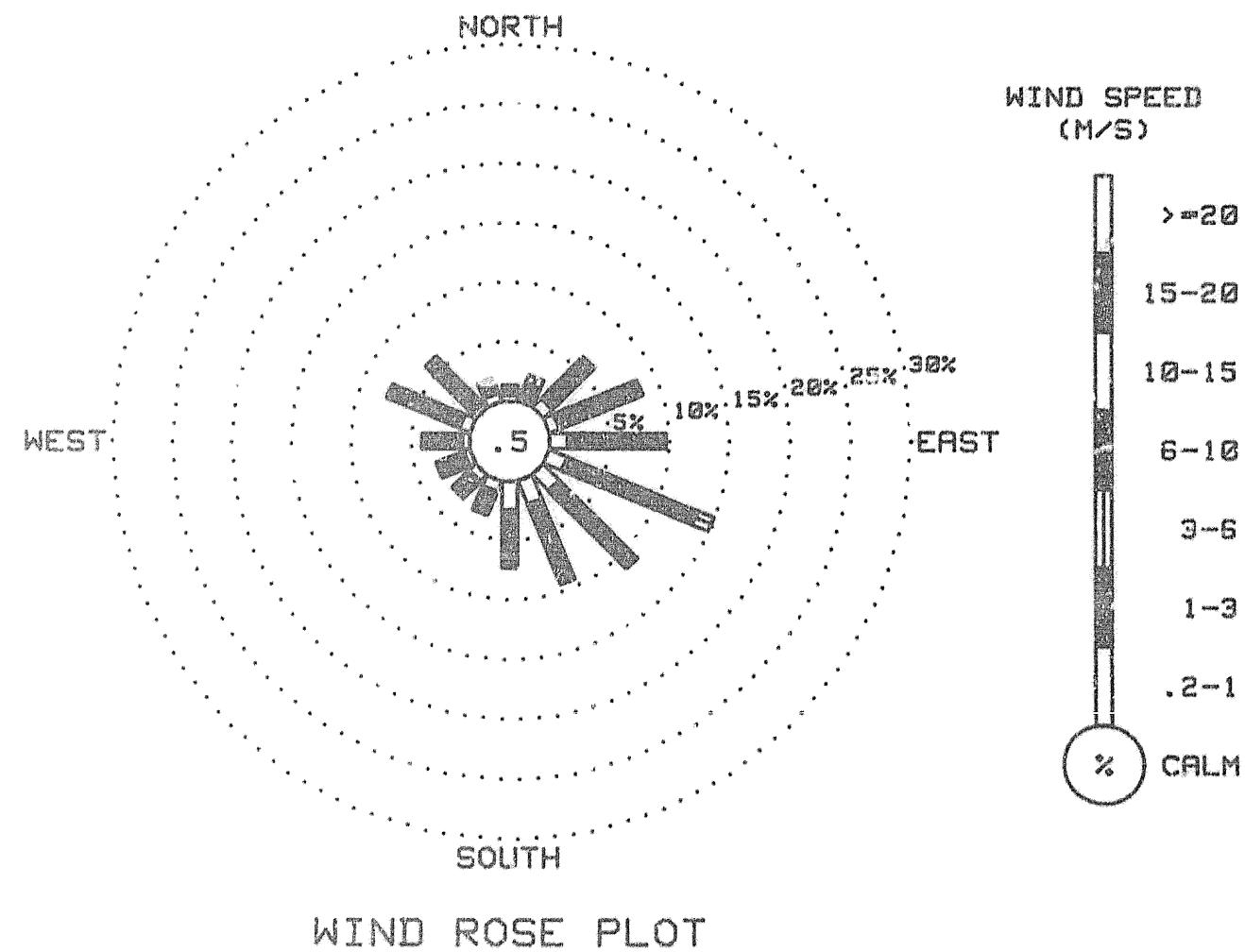
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1394 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1440 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
April 1, 1984



R & M CONSULTANTES, INC.  
SUBSTITUTION HYDROCELL PROJECT INC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	1	3	7	10	30	30	41	40	35	28	19	14	6	1	0	0	0	0	11
2	0	0	0	0	0	0	2	6	17	21	20	26	26	34	15	20	30	8	5	1	0	0	0	0	9
3	0	0	0	0	0	0	2	7	19	28	43	36	50	41	26	38	24	12	4	1	0	0	0	0	14
4	0	0	0	0	0	0	2	10	21	32	41	48	53	42	47	40	30	21	10	1	0	0	0	0	16
5	0	0	0	0	0	0	2	7	15	22	38	39	34	41	23	31	22	12	6	1	0	0	0	0	12
6	0	0	0	0	0	0	2	2	5	15	32	27	41	43	47	60	22	10	4	1	0	0	0	0	13
7	0	0	0	0	0	0	0	4	9	8	11	9	12	14	44	43	23	12	5	1	0	0	0	0	8
8	0	0	0	0	0	0	2	9	19	34	39	47	41	46	46	43	28	16	7	2	0	0	0	0	16
9	0	0	0	0	0	0	1	4	10	18	24	36	45	58	53	49	36	31	17	8	2	1	0	0	16
10	0	0	0	0	0	0	1	3	10	18	32	36	45	54	45	41	31	28	17	9	2	0	0	0	15
11	0	0	0	0	0	0	1	4	13	27	32	34	54	44	42	42	52	32	21	13	2	0	0	0	17
12	0	0	0	0	0	0	1	6	14	26	37	46	55	52	40	36	32	26	18	11	3	0	0	0	17
13	0	0	0	0	0	0	1	5	10	22	27	56	43	51	38	35	28	18	15	8	2	0	0	0	14
14	0	0	0	0	0	0	1	4	11	18	27	36	43	36	33	41	19	15	9	6	2	0	0	0	12
15	0	0	0	0	0	0	0	1	4	10	9	28	26	48	41	11	19	46	30	5	1	0	0	0	12
16	0	0	0	0	0	0	1	5	16	9	20	17	16	14	14	12	12	9	8	4	2	0	0	0	6
17	0	0	0	0	0	0	1	2	5	10	12	17	15	45	76	68	48	26	25	15	6	1	0	0	15
18	0	0	0	0	0	0	2	10	20	32	42	50	57	61	59	55	47	37	26	14	5	1	0	0	21
19	0	0	0	0	0	0	2	8	17	30	41	56	55	61	55	42	29	21	16	8	2	0	0	0	18
20	0	0	0	0	0	0	0	2	5	10	19	32	34	38	44	39	27	21	27	11	3	0	0	0	13
21	0	0	0	0	0	0	2	7	14	29	37	33	37	64	58	58	51	44	33	15	6	1	0	0	20
22	0	0	0	0	0	0	2	8	15	32	44	54	61	64	62	57	50	39	28	17	1	0	0	0	22
23	0	0	0	0	1	3	12	21	33	45	54	61	64	63	58	50	40	26	11	5	1	0	0	0	23
24	0	0	0	0	0	2	7	12	27	37	63	66	66	65	59	54	22	19	10	3	1	0	0	0	21
25	0	0	0	0	0	2	8	18	31	43	44	52	52	63	73	37	34	23	16	6	1	0	0	0	21
26	0	0	0	0	0	3	7	16	22	27	33	40	56	51	48	44	35	23	17	9	1	0	0	0	18
27	0	0	0	0	0	1	3	12	16	21	29	34	36	42	36	34	29	28	15	9	3	1	0	0	14
28	0	0	0	0	0	0	2	4	13	14	22	21	29	56	72	60	61	54	16	9	3	1	0	0	18
29	0	0	0	0	0	1	3	14	21	34	37	50	62	58	67	48	39	30	18	10	2	0	0	0	21
30	0	0	0	0	0	0	2	6	11	19	37	47	32	36	24	28	29	23	19	9	6	1	0	0	14

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING April, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1440	100
WIND SPEED	1340	100
WIND DIRECTION	1394	97
PEAK GUST	1440	100
RELATIVE HUMIDITY	1166	81
PRECIPITATION	0	0
SOLAR RADIATION	1440	100
DEW POINT	1166	81

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Precipitation gage not connected properly. No precipitation data.
2. Intermittent wind direction data lost due to frozen wind vane.

R & M CONSULTANTES, INC.  
SOUTHERN HYDROGEOLOGIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR DEUTL CANYON WEATHER STATION  
DATA TAKEN DURING MAY, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

1	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	1	
2	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	2	
3	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	3	
4	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	4	
5	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	5	
6	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	6	
7	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	7	
8	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	8	
9	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	9	
10	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	10	
11	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	11	
12	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	12	
13	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	13	
14	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	14	
15	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	15	
16	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	16	
17	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	17	
18	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	18	
19	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	19	
20	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	20	
21	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	21	
22	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	22	
23	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	23	
24	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	24	
25	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	25	
26	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	26	
27	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	27	
28	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	28	
29	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	29	
30	***	***	***	***	***	***	***	***	***	***	***	***	***	***	0.0	0.0	1.2	1.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0	30
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING MAY, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD									
DEG C	DEG C	% DEG.	M/S	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	M/S	MW	DEG C	DEG C	% DEG.	M/S	M/S	MW					
0300	-1	-5	97	120	1.1	131	3.2	0	0300	0.0	-1.3	98	291	1.1	251	4.4	0	0300	-1.5	-3.1	89	118	1.3	116	3.2	0
0600	-4	****	95	099	1.3	099	2.5	5	0600	-1.1	****	96	298	1.0	304	3.2	2	0600	-1.6	-3.2	89	114	1.3	128	3.8	9
0900	6.5	2	64	056	1.1	055	4.4	34	0900	.7	-1.5	92	323	1.2	336	3.2	19	0900	2.8	-2.1	70	059	1.7	030	3.8	42
1200	7.7	-2.4	49	119	1.8	086	5.7	43	1200	2.5	-1.1	83	325	1.5	345	3.2	33	1200	5.8	-3.3	52	130	1.8	145	5.1	37
1500	7.3	-1.1	55	234	2.0	222	5.7	42	1500	5.0	-2.3	59	310	1.6	317	4.4	31	1500	6.8	-6.0	40	078	1.9	129	5.1	49
1800	7.1	-1.8	57	320	2.2	323	5.7	14	1800	3.6	-1.9	67	232	1.5	266	3.8	14	1800	7.2	-5.3	41	037	2.8	036	5.7	28
2100	3.5	1.5	87	022	.5	106	4.4	0	2100	.7	****	87	283	.6	238	4.4	1	2100	4.4	-3.6	56	095	2.1	075	5.1	1
2400	2.6	****	90	136	1.2	119	3.8	0	2400	-1.1	-3.2	86	145	1.1	124	3.2	0	2400	.9	-2.7	77	173	1.3	159	3.2	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD									
DEG C	DEG C	% DEG.	M/S	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	M/S	MW	DEG C	DEG C	% DEG.	M/S	M/S	MW					
0300	-1.5	****	82	188	1.1	165	2.5	0	0300	-.8	-1.7	94	***	***	***	2.5	0	0300	-1.3	****	89	131	.9	125	2.5	0
0600	.1	-3.6	76	149	1.0	152	3.2	7	0600	-.9	-2.1	92	***	***	***	3.8	5	0600	-1.4	****	96	080	.9	074	2.5	5
0900	3.5	-2.8	63	062	.6	046	2.5	28	0900	2.8	-1.6	78	100	1.6	081	4.4	53	0900	3.4	-1.1	72	053	1.3	051	3.2	43
1200	6.2	-4.3	47	273	.8	272	3.2	44	1200	5.9	-3.5	51	085	1.0	052	4.4	70	1200	5.2	-4.7	49	124	1.3	181	4.4	80
1500	6.7	-4.2	46	237	1.3	233	4.4	79	1500	6.3	-2.6	53	271	1.7	266	5.1	65	1500	7.7	-5.5	39	000	1.5	045	5.1	74
1800	.3	-1.3	96	300	2.0	281	5.7	1	1800	5.1	-4.0	52	260	1.7	243	5.1	39	1800	6.0	-6.0	42	034	2.0	033	4.4	12
2100	.8	1.4	97	283	.8	269	2.5	0	2100	2.5	-1.3	76	189	.0	331	3.2	1	2100	3.5	****	51	022	.9	357	3.8	2
2400	.2	-1.4	96	276	.6	268	1.9	0	2400	-.7	****	91	186	.9	203	1.9	0	2400	-1.5	-5.2	76	178	1.1	181	2.5	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD									
DEG C	DEG C	% DEG.	M/S	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	M/S	MW	DEG C	DEG C	% DEG.	M/S	M/S	MW					
0300	-2.9	****	79	133	.8	161	1.9	0	0300	-2.4	-5.5	79	141	1.3	119	3.2	0	0300	-1.4	****	83	137	.9	136	2.5	0
0600	-2.7	-5.7	80	103	1.0	115	2.5	10	0600	-2.0	-5.5	77	127	1.4	126	3.8	10	0600	-1.1	-3.8	82	137	.8	171	3.2	8
0900	3.5	-4.0	58	055	1.3	040	3.2	42	0900	7.0	-4.8	43	095	1.1	050	3.8	42	0900	7.0	-2.5	51	052	1.1	094	2.5	46
1200	8.7	-6.4	34	077	1.3	089	4.4	67	1200	8.6	-7.7	31	062	2.5	051	7.0	68	1200	11.5	-3.6	35	045	1.3	037	3.8	67
1500	8.4	-9.6	27	044	3.3	032	7.6	62	1500	9.9	-7.9	28	036	3.8	041	7.6	61	1500	12.3	-4.1	32	177	.9	107	3.8	63
1800	8.4	-8.7	29	029	4.5	028	7.6	31	1800	10.0	-7.4	29	026	3.9	024	7.0	30	1800	11.7	-5.4	30	242	1.4	308	5.1	33
2100	5.7	****	40	632	2.8	026	6.3	2	2100	8.0	****	37	041	1.9	022	5.7	2	2100	7.7	****	45	021	1.9	024	5.7	2
2400	1.1	-5.1	63	161	1.0	162	2.5	0	2400	1.4	-3.6	69	166	1.1	186	2.5	0	2400	.7	****	77	170	1.1	152	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSIETNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	
0300	-1.2	*****	87	135	.7	126	3.2	0	0300	.4	-3.7	74	153	1.7	147	3.2	0	0300	-2.8	-13.7	43	158
0600	.4	*****	78	698	.8	117	3.2	11	0600	1.2	-3.4	71	142	1.2	147	2.5	6	0600	-2.1	*****	44	148
0900	7.0	-1.7	54	048	1.5	051	2.5	42	0900	3.7	-7.2	45	117	1.7	116	4.4	30	0900	3.4	-13.1	29	065
1200	10.2	-3.6	38	166	1.1	179	4.4	68	1200	5.1	-10.8	31	040	3.0	041	6.3	67	1200	7.1	-14.4	20	123
1500	11.0	-4.8	33	256	1.9	272	5.7	65	1500	5.5	-11.7	28	030	4.1	028	7.6	63	1500	9.1	-10.5	24	123
1800	10.4	-4.2	36	290	2.1	265	5.1	40	1800	5.0	-13.0	26	033	3.9	034	7.6	33	1800	8.7	-10.3	25	257
2100	7.4	****	43	276	1.5	292	3.8	2	2100	2.8	-13.6	29	046	2.7	029	7.0	3	2100	6.7	-10.7	28	278
2400	2.5	-3.4	65	178	1.2	146	3.2	0	2400	-1.3	-13.0	41	157	1.5	146	3.8	0	2400	.8	-6.5	58	164

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	
0300	-1.3	*****	69	103	.9	145	3.2	0	0300	-.1	-3.8	76	122	.6	111	2.5	0	0300	-.4	-3.1	82	145
0600	-.3	-5.7	67	052	1.0	050	3.8	8	0600	-.4	-4.1	76	094	1.2	095	3.2	10	0600	.7	*****	82	140
0900	6.7	-5.1	43	045	1.4	042	2.5	44	0900	6.8	-2.7	51	052	1.4	056	3.2	43	0900	6.2	-5.6	62	039
1200	8.4	-5.6	37	132	.9	094	5.7	67	1200	10.4	-3.8	37	126	1.4	145	3.8	58	1200	10.9	-3.4	37	091
1500	9.8	-5.9	33	272	1.8	276	5.1	63	1500	12.2	-5.0	30	162	1.2	117	4.4	63	1500	12.7	-5.5	26	236
1800	11.1	-5.5	31	252	1.6	285	5.7	32	1800	12.9	-12.4	16	189	1.3	156	3.8	34	1800	13.2	*****	22	194
2100	7.9	-6.8	35	282	1.3	327	3.8	3	2100	9.4	-5.4	35	277	1.5	288	3.8	4	2100	9.0	*****	33	095
2400	.6	*****	69	175	1.0	154	2.5	0	2400	2.5	-3.2	66	169	1.1	175	2.5	0	2400	2.4	-4.1	62	167

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	MW	
0300	-.3	*****	78	156	.9	149	3.2	0	0300	-.6	*****	74	115	1.0	112	3.2	0	0300	3.7	.4	79	206
0600	-.7	-3.4	82	129	.7	105	2.5	9	0600	1.2	-4.4	66	101	1.1	119	3.2	11	0600	4.0	*****	79	155
0900	8.1	-2.3	48	057	1.5	061	3.2	43	0900	9.4	-1.1	48	042	1.4	043	2.5	46	0900	6.0	*****	79	322
1200	12.2	-4.6	31	105	2.0	116	5.1	70	1200	15.5	-4.5	25	038	1.2	023	3.2	70	1200	8.6	-2.9	67	047
1500	13.1	-13.0	15	029	3.7	023	7.0	66	1500	16.8	-5.7	21	023	2.4	030	5.7	57	1500	12.5	1.5	47	022
1800	13.5	-8.5	21	029	3.1	034	5.7	40	1800	16.9	-6.9	19	033	3.3	033	5.7	38	1800	13.2	-.9	38	241
2100	10.1	****	33	030	1.3	022	5.1	4	2100	12.1	-.5	42	044	.5	032	5.1	1	2100	11.9	-.4	43	302
2400	3.5	-4.4	56	164	1.1	153	2.5	0	2400	6.9	-.6	64	247	1.3	266	4.4	0	2400	4.4	-.4	71	184

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUBSTITUTION HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.												
NDNG TEMP.	POINT RH	SPD.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW			
0300	3.4 ****	78	164	.8	151	2.5	0	0300	1.4 ****	93	143	1.2	136	3.2	0	0300	4.1 ****	88	145	.7	144	1.9	0			
0600	3.4 ****	83	161	.4	162	2.5	11	0600	2.7	.6	86	.94	.7	105	2.5	14	0600	4.4 ****	89	187	.4	185	1.9	6		
0900	9.2	3.9	69	328	1.5	318	4.4	47	0900	11.2	4.2	62	041	1.4	054	2.5	47	0900	9.9	3.7	65	336	1.0	321	3.8	33
1200	11.9	2.4	52	299	1.4	331	4.4	23	1200	15.9	.7	36	026	1.3	062	4.4	26	1200	13.4	3.8	52	331	2.3	332	4.4	81
1500	14.7	.8	39	327	1.7	016	5.7	42	1500	19.3	1.2	30	008	1.8	044	5.7	79	1500	14.3	3.1	47	231	1.7	219	4.4	33
1800	13.6	-.2	39	016	1.1	014	5.1	17	1800	14.1	.6	40	272	1.7	239	6.3	33	1800	8.8	4.1	72	274	2.0	297	6.3	4
2100	12.2	.6	45	155	1.2	156	3.2	2	2100	10.2	4.2	66	315	1.6	314	4.4	6	2100	5.8	3.8	87	300	1.7	303	5.1	2
2400	5.5	.9	72	151	1.4	143	3.2	0	2400	5.8 ****	79	171	.9	233	1.9	0	2400	5.1	3.4	89	153	.4	291	3.2	0	

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.												
NDNG TEMP.	POINT RH	SPD.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW			
0300	3.9 ****	95	170	.6	141	1.9	0	0300	-.1	-.4	98	159	1.0	146	2.5	0	0300	5.8 ****	81	182	.9	191	1.9	0		
0600	3.6 ****	97	162	.5	139	1.9	2	0600	-.1 ****	97	121	.8	169	2.5	7	0600	6.8 ****	77	238	.6	183	1.9	4			
0900	4.3	2.8	55	.084	.9	095	2.5	33	0900	8.3	4.0	74	043	1.3	054	3.2	55	0900	7.7	2.6	70	295	1.3	296	3.8	16
1200	5.3	3.6	89	324	1.0	054	3.2	8	1200	13.1	3.5	52	332	1.4	291	3.8	71	1200	9.9	2.3	59	319	1.5	338	3.8	25
1500	7.9	4.7	80	291	.9	337	2.5	34	1500	15.5	1.1	38	287	1.9	278	5.7	42	1500	12.2	.2	44	290	2.2	300	5.7	41
1800	8.2	3.9	74	314	1.9	325	4.4	19	1800	13.1	2.0	47	139	1.4	167	7.0	41	1800	12.7	-.7	40	280	2.2	242	5.7	38
2100	8.2	4.1	75	308	2.3	312	5.7	7	2100	10.2	2.8	60	143	1.3	161	4.4	2	2100	9.9	-.1	50	312	1.1	276	5.1	6
2400	1.5 ****	95	199	.9	272	2.5	0	2400	7.1 ****	71	146	1.0	168	3.8	0	2400	7.7	.9	62	307	1.0	261	5.1	0		

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.												
NDNG TEMP.	POINT RH	SPD.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW			
0300	5.9	.9	70	284	1.6	283	5.7	0	0300	2.6 ****	97	210	.5	183	1.9	0	0300	1.8	1.2	96	154	.6	133	1.9	0	
0600	4.7 ****	79	274	1.0	289	3.8	4	0600	2.7 ****	96	221	.4	286	1.9	5	0600	2.2 ****	95	174	.3	142	1.9	14			
0900	5.7	1.5	74	316	1.2	330	3.2	19	0900	4.8	2.3	84	324	1.0	298	3.2	32	0900	4.5	1.9	83	345	.8	285	2.5	23
1200	8.5	.2	56	289	1.9	322	4.4	43	1200	6.1	1.7	73	309	1.6	273	5.7	17	1200	5.8	.2	67	319	1.9	313	6.3	56
1500	10.7	-.1	44	274	2.1	271	5.1	86	1500	6.2	2.3	76	302	2.1	313	7.0	29	1500	7.0	-.5	63	320	3.0	327	8.3	71
1800	7.8	-.4	56	277	2.1	292	6.5	19	1800	7.5	1.4	65	282	2.0	296	7.0	48	1800	6.1	-.7	68	316	2.7	310	7.0	26
2100	4.6	2.6	87	292	1.6	308	5.7	2	2100	5.1	1.8	79	274	1.5	251	5.1	1	2100	6.9	.8	65	321	1.4	304	3.2	9
2400	2.8 ****	96	267	.5	318	3.8	0	2400	2.2 ****	96	305	1.5	303	4.4	0	2400	2.3	.3	87	246	.5	157	2.5	0		

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.																
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD														
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	DEG C														
0300	-3 ****	94	138	1.5	150	3.2	0	0300	-3	-3.5	79	135	.8	105	3.2	0	0300	1.6 ****	96	130	.9	123	2.5	0			
0600	.8	-8.89	089	1.3	080	3.8	16	0600	2.6	-1.7	73	092	1.0	114	3.2	17	0600	2.0 ****	95	096	.8	105	2.5	7			
0900	6.0	1.8	74	058	1.9	073	3.8	48	0900	7.9	-1.1	53	003	.9	003	2.5	43	0900	6.0	3	3	83	000	.5	334	1.9	34
1200	10.0	-2.4	42	002	1.2	045	3.2	86	1200	5.8	2.6	80	321	2.0	315	5.7	4	1200	7.6	-1	58	343	1.5	352	4.4	18	
1500	10.7	-4.7	34	290	1.9	325	5.7	19	1500	8.9	2.3	63	231	1.2	180	4.4	39	1500	6.8	1.8	70	287	2.0	301	4.4	42	
1800	12.1	-5.5	29	269	1.8	305	5.7	33	1800	4.8	3.4	91	159	.7	224	5.1	15	1800	7.7	****	65	277	1.4	287	3.2	18	
2100	9.8	-5.1	35	271	1.5	268	5.1	5	2100	2.9	1.9	93	311	.6	015	4.4	4	2100	6.4	****	69	020	.5	348	2.5	4	
2400	1.3	-4.3	66	187	1.1	221	2.5	0	2400	2.3	1.7	96	127	1.1	142	2.5	0	2400	1.7	****	86	242	1.0	278	3.2	0	

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.					
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD		
DEG C	DEG C	%	DEG C	DEG C	%	DEG C		
0300	.3 ****	80	170	.8	159	1.9	0	
0600	1.7	-1.2	81	109	.7	110	3.2	7
0900	8.3	.8	59	057	1.5	053	3.8	49
1200	11.8	-3.3	35	322	1.4	298	5.1	67
1500	13.3	-8.0	22	006	1.9	026	7.0	70
1800	13.7	-8.3	21	016	3.1	013	7.6	26
2100	11.4	-5.3	31	022	3.1	028	7.6	6
2400	5.4	****	59	163	.8	071	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSETTNA HYDRO ELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING May, 1984

DAY	RES.			RES.			AVG.	MAX.	MAX.	DAY'S			
	MAX. TEMP., DEG C	MIN. TEMP., DEG C	MEAN TEMP., DEG C	WIND DIR.	WIND SPD. M/S	WIND SPD. M/S	GUST DIR.	GUST SPD. M/S	P'VAL %	MEAN RH	MEAN DP DEG C	PRECIP MM	SOLAR ENERGY WH/SQM
1	9.2	-5.5	4.4	109	.3	1.6	086	5.7	E	71	-4	****	5470 1
2	5.3	-11.1	2.1	292	.8	1.3	251	4.4	NW	83	-1.1	****	3100 2
3	7.5	-2.8	2.4	092	1.4	1.9	036	5.7	ESE	65	-3.7	****	5195 3
4	7.9	-1.0	3.5	255	.5	1.2	281	5.7	NNW	64	-3.1	****	4400 4
5	7.0	-1.2	2.9	213	.3	1.7	266	5.1	W	72	-2.2	****	6725 5
6	7.9	-1.8	3.1	064	.7	1.4	045	5.1	NE	62	-4.1	****	6425 6
7	9.2	-3.7	2.8	052	1.6	2.1	032	7.6	NNE	48	-6.7	****	6375 7
8	10.8	-2.8	4.0	059	1.5	2.2	041	7.6	NNE	49	-6.1	****	6415 8
9	12.9	-2.2	5.4	101	.3	1.4	024	5.7	NE	47	-3.8	****	6520 9
10	11.7	-1.3	5.2	242	.4	1.5	272	5.7	W	51	-3.3	****	6585 10
11	5.7	-1.3	2.2	062	1.7	2.6	028	7.6	NNE	45	-9.0	****	5775 11
12	9.4	-3.8	2.8	156	.6	1.5	087	4.4	S	34	-11.6	****	6610 12
13	11.1	-1.3	4.9	249	.2	1.5	094	5.7	W	44	-5.7	****	6475 13
14	13.3	-1.4	6.0	142	.6	1.4	117	4.4	S	46	-5.1	****	6475 14
15	13.2	-8.8	6.2	160	.6	1.2	228	4.4	SSE	46	-4.2	****	5960 15
16	14.0	-1.1	6.5	059	1.2	1.9	023	7.0	NNE	41	-5.5	****	6595 16
17	17.5	-6.6	8.5	042	1.0	1.7	030	5.7	NNE	41	-3.9	****	6680 17
18	14.0	3.0	8.5	262	.3	1.2	067	4.4	S	58	.9	****	5485 18
19	15.0	2.6	8.8	309	.2	1.4	016	5.7	SSE	51	1.2	****	5760 19
20	19.3	.8	10.1	009	.4	1.5	239	6.3	NE	58	1.6	****	6120 20
21	16.0	3.7	9.9	285	.7	1.5	297	6.3	NNW	67	3.6	****	4660 21
22	9.4	1.5	5.5	298	.5	1.3	312	5.7	NW	82	3.8	****	3120 22
23	16.3	-1.2	7.6	131	.3	1.6	167	7.0	SSE	67	1.9	****	6465 23
24	13.5	5.5	9.5	289	1.1	1.5	300	5.7	NNW	57	1.1	****	3955 24
25	11.6	2.8	7.2	284	1.5	1.7	292	6.3	W	66	.8	****	4800 25
26	7.9	2.2	5.1	292	1.2	1.5	313	7.0	NNW	77	1.9	****	4715 26
27	8.5	1.1	4.8	317	1.1	1.6	327	8.3	NW	72	.9	****	4915 27
28	13.6	-5.5	6.6	297	.2	1.7	325	5.7	W	57	-2.7	****	5725 28
29	8.9	-3.3	4.3	002	.0	1.3	315	5.7	ESE	79	.9	****	3545 29
30	8.5	1.4	5.0	307	.4	1.2	352	4.4	N	73	1.3	3.6	3740 30
31	14.5	.1	7.3	025	1.1	1.9	013	7.6	NNE	41	-4.5	0.0	6430 31
MONTH	19.3	-3.8	5.6	015	.2	1.6	327	8.3	SSE	58	-2.2	3.6	171215

GUST VEL. AT MAX. GUST MTNUS 2 INTERVALS 4.4

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.0

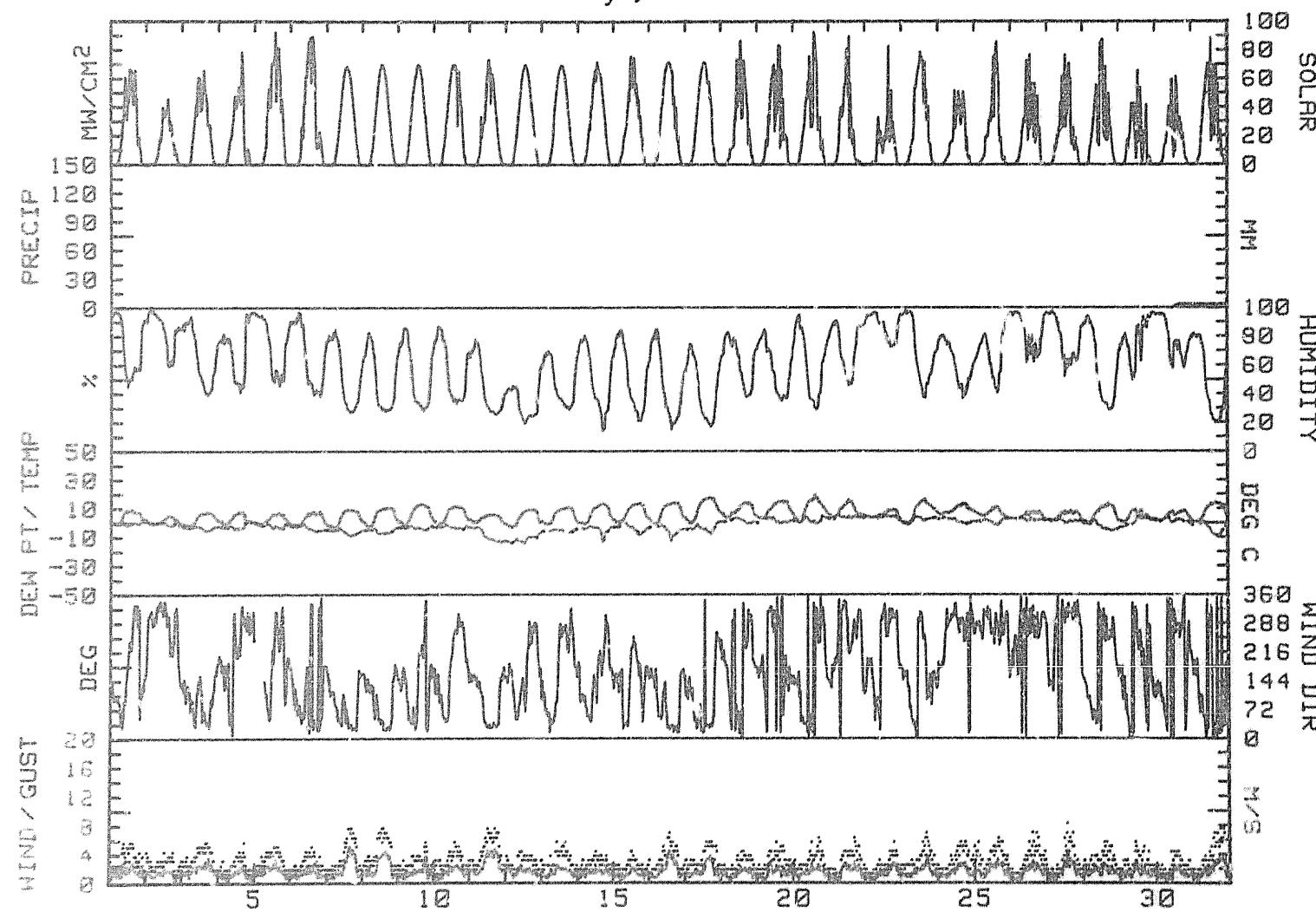
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 5.7

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 4.4

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
May, 1984



R & M CONSULTANTS, INC.  
SUBSTITUTION HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING May, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	.41	1.97	.14	0.00	0.00	0.00	0.00	2.51	
NNE	.88	3.19	4.27	0.00	0.00	0.00	0.00	8.34	
NE	.54	7.12	1.15	0.00	0.00	0.00	0.00	8.81	
ENE	1.29	3.80	.07	0.00	0.00	0.00	0.00	5.15	
E	1.76	3.46	.07	0.00	0.00	0.00	0.00	5.29	
ESE	1.36	5.49	.07	0.00	0.00	0.00	0.00	6.92	
SE	2.44	5.02	0.00	0.00	0.00	0.00	0.00	7.46	
SSE	2.98	6.64	0.00	0.00	0.00	0.00	0.00	9.63	
S	2.78	4.81	0.00	0.00	0.00	0.00	0.00	7.59	
SSW	1.42	2.37	0.00	0.00	0.00	0.00	0.00	3.80	
SW	.47	3.12	0.00	0.00	0.00	0.00	0.00	3.59	
WSW	.68	4.00	0.00	0.00	0.00	0.00	0.00	4.68	
W	1.02	5.69	0.00	0.00	0.00	0.00	0.00	6.71	
WNW	.75	6.31	.14	0.00	0.00	0.00	0.00	7.19	
NW	.81	7.66	.47	0.00	0.00	0.00	0.00	8.95	
NNW	.34	2.71	.14	0.00	0.00	0.00	0.00	3.19	
CALM	-----	-----	-----	-----	-----	-----	-----	.20	
TOTAL	19.93	73.36	6.51	0.00	0.00	0.00	0.00	100.00	

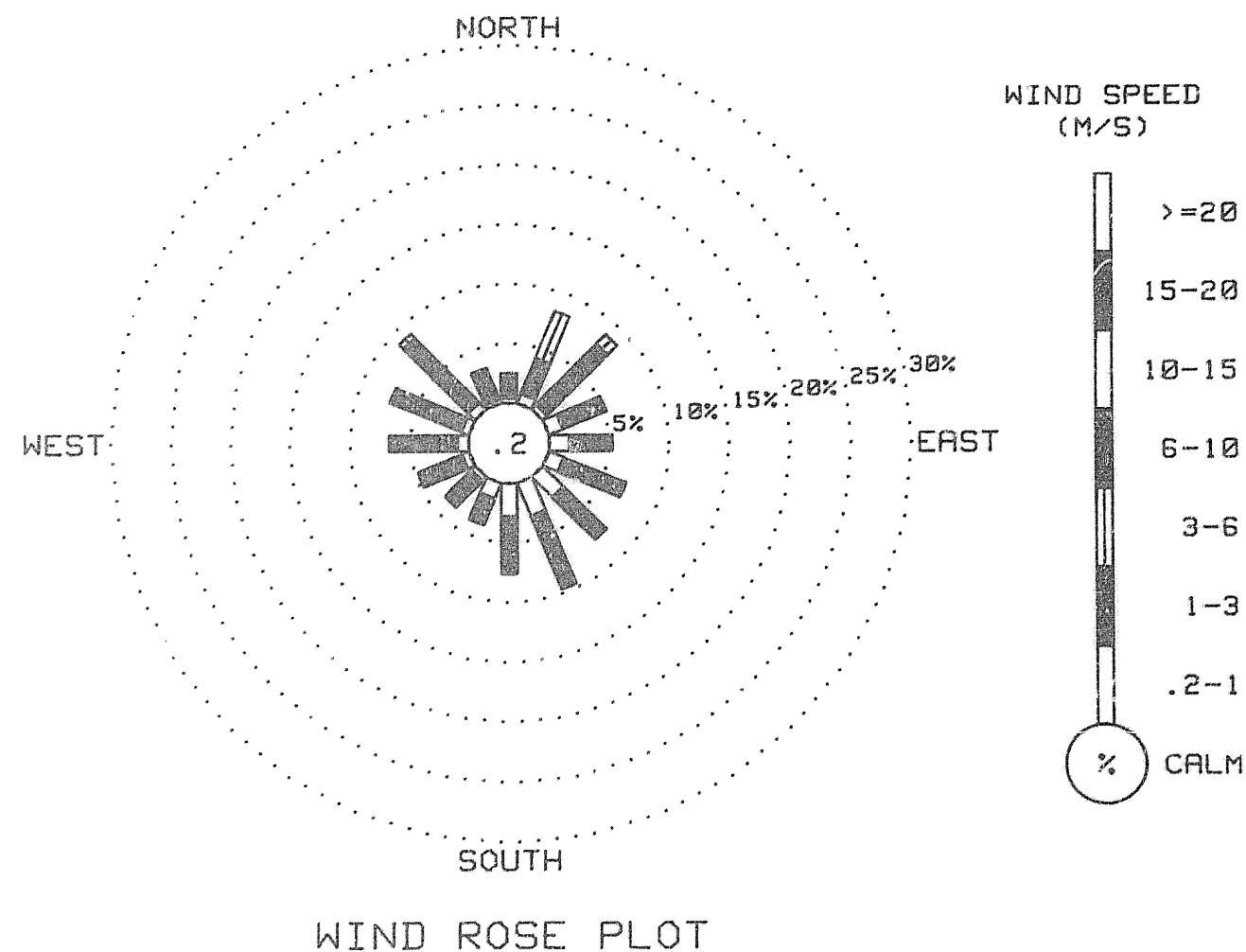
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1475 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
May, 1934



## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING May, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	1	4	13	22	32	56	42	44	59	62	51	53	55	30	16	11	1	0	0	0	23
2	0	0	0	0	0	2	4	8	17	18	33	34	35	37	39	27	25	15	9	8	2	0	0	0	13
3	0	0	0	0	1	7	18	27	39	44	61	49	45	58	52	44	28	27	16	7	2	0	0	0	22
4	0	0	0	0	1	5	12	18	25	36	47	42	50	54	61	62	13	2	9	6	1	0	0	0	18
5	0	0	0	0	1	4	10	24	45	52	55	71	74	69	74	50	43	25	10	2	0	0	0	0	28
6	0	0	0	0	1	4	19	19	42	61	72	83	73	77	80	48	13	15	21	13	4	0	0	0	27
7	0	0	0	0	2	8	16	26	39	50	59	66	69	68	64	56	45	34	22	12	4	1	0	0	27
8	0	0	0	0	2	8	16	27	39	51	60	67	70	66	63	56	45	33	22	12	4	1	0	0	27
9	0	0	0	0	2	7	17	28	42	52	60	64	70	70	65	57	46	35	23	13	4	1	0	0	27
10	0	0	0	0	2	9	17	27	38	51	60	67	70	70	66	47	54	42	26	11	5	1	1	0	27
11	0	0	0	0	1	5	12	27	27	30	44	64	67	56	64	57	47	36	24	13	5	1	1	1	24
12	0	0	1	1	2	9	17	28	40	52	61	67	70	69	65	57	46	36	24	14	6	1	1	0	28
13	0	0	0	0	2	7	13	26	41	52	60	66	70	69	65	57	47	35	23	13	5	1	0	0	27
14	0	0	0	0	3	8	17	25	38	46	61	62	71	67	64	59	48	37	25	14	6	1	0	0	27
15	0	0	0	0	4	7	15	21	27	39	48	71	61	74	58	54	44	33	23	15	6	1	0	0	25
16	0	0	0	1	3	6	18	30	41	53	63	69	72	71	67	52	44	33	20	15	5	1	0	0	27
17	0	0	0	1	4	9	19	31	43	55	63	69	72	71	62	58	50	41	15	8	2	1	0	0	28
18	0	0	0	0	2	5	11	12	13	31	59	47	66	53	53	64	52	40	20	17	7	2	0	0	23
19	0	0	0	0	3	9	17	24	38	56	65	47	49	41	63	47	42	32	21	19	7	1	0	0	24
20	0	0	0	1	5	11	21	28	44	53	61	49	29	62	85	71	30	30	11	18	6	1	0	0	26
21	0	0	0	0	2	5	12	35	37	40	55	70	64	54	45	17	22	5	2	3	2	1	0	0	19
22	0	0	0	0	1	2	2	6	26	20	19	11	17	19	30	51	21	36	27	17	9	2	0	0	13
23	0	0	0	1	2	7	13	18	42	55	64	70	78	74	56	62	42	37	16	11	3	1	0	0	27
24	0	0	0	0	2	4	6	9	16	16	25	39	36	44	45	36	42	41	19	13	6	1	0	0	16
25	0	0	0	0	2	4	6	14	20	24	32	37	65	54	83	67	42	18	8	4	1	0	0	0	20
26	0	0	0	1	3	4	10	18	29	30	63	26	60	41	43	27	36	33	26	21	3	2	0	0	20
27	0	0	0	1	3	10	16	20	25	35	50	41	52	41	67	60	17	21	11	17	11	2	0	0	20
28	0	0	0	1	6	14	22	33	45	55	18	50	84	73	21	43	19	42	26	16	7	2	0	0	24
29	0	0	0	1	3	13	15	21	40	32	38	12	45	19	47	6	15	20	26	2	5	1	0	0	15
30	0	0	0	1	2	5	13	18	29	37	31	39	9	36	49	22	26	24	20	11	5	2	0	0	16
31	0	0	0	1	3	6	21	33	46	57	68	64	64	43	46	44	61	42	18	18	6	4	1	0	27

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL RIVER WEATHER STATION  
DATA TAKEN DURING MAY, 1984

PARAMETER	NUMBER OF POSSIBLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1488	100
WIND SPEED	1488	100
WIND DIRECTION	1475	99
PEAK GUST	1488	100
RELATIVE HUMIDITY	1191	80
PRECIPITATION	77	5
SOLAR RADIATION	1488	100
DEW POINT	1191	80

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -10 RH Points 5/30 - 5/31
2. Solar -1 mW/CM<sup>2</sup>

Additional comments on this month's data:

1. Precipitation gage not connected properly. Reconnected on 5/30. No data prior to this date.
2. Wind direction data lost on 5/5 due to frozen wind vane.

R & M CONSULTANTS, INC.  
SUSSEX HYDROELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING JUNE, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

DATE	HOUR ENDING																								DATE		
	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400			
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
4	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	.6	.2	0.0	0.0	0.0	0.0	.2	0.0	.2	.2	.4	0.0		
7	.4	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.0	0.0	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.0	0.0	0.0	.8	0.0	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
13	0.0	0.0	0.0	.2	.8	0.0	.8	1.4	1.4	1.4	.4	1.6	.6	.4	0.0	.2	0.0	0.0	.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	.4	.2	0.0	1.8	.2	0.0	0.0	
15	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.0	0.0	0.0	.2	0.0	0.0	.2	.2	.2	.6	.8	1.0	1.6	.8	.6	3.0	.6	.2	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	
27	.8	.4	1.4	.6	.4	1.2	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSSEX TNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING June, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.													
DEG C	DEG C	%	DEG. M/S	DEG C	DEG C	%	DEG. M/S	DEG C	DEG C	%	DEG. M/S													
0300	2.6	-1.5	74	156	1.1	169	2.5	0 0300	1.8	-3.1	70	157	.8	167	2.5	0 0300	3.5	-3.3	61	133	1.3	122	3.8	0
0600	3.7	-1.2	70	104	1.1	091	3.2	15 0600	2.7	-3.0	66	080	1.2	049	3.2	15 0600	4.8	-2.1	61	084	1.2	087	3.8	16
0900	12.8	-5.9	27	059	1.4	072	3.8	52 0900	13.3	-3.6	31	045	1.5	060	3.2	49 0900	13.6	-2.9	32	048	1.7	044	3.2	58
1200	13.1	-6.6	25	010	3.0	357	7.6	62 1200	14.9	-8.6	19	339	2.2	325	6.3	90 1200	16.5	-7.3	19	018	1.7	035	7.0	70
1500	14.4	-7.7	21	012	3.1	033	8.3	51 1500	16.2	-9.7	16	026	1.7	349	5.7	29 1500	16.1	-10.6	15	012	3.9	022	8.9	65
1800	14.5	-7.6	21	353	3.0	335	7.6	38 1800	17.0	-11.7	13	013	2.4	026	6.3	40 1800	14.5	-7.6	21	012	3.7	020	8.9	14
2100	14.4	-9.0	19	355	2.2	354	7.0	10 2100	15.8	-10.8	15	008	2.5	002	6.3	8 2100	12.6	-5.1	29	336	1.1	008	5.1	2
2400	5.4	-2.9	55	213	.3	348	3.2	0 2400	6.6	-3.4	49	195	.8	305	2.5	0 2400	6.7	-2.5	52	143	1.3	123	4.4	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.													
DEG C	DEG C	%	DEG. M/S	DEG C	DEG C	%	DEG. M/S	DEG C	DEG C	%	DEG. M/S													
0300	2.6	-2.3	70	131	1.4	137	3.8	0 0300	4.0	-4.0	56	126	1.2	109	3.2	0 0300	8.2	-2.5	57	213	1.1	208	2.5	0
0600	4.0	-1.9	65	094	1.1	125	3.2	15 0600	5.1	-2.5	58	109	1.4	120	3.8	13 0600	8.3	****	66	188	.6	167	1.9	3
0900	14.1	-4.3	28	041	1.3	060	2.5	49 0900	14.5	-4.9	26	060	1.6	072	4.4	44 0900	7.7	3.4	74	291	1.6	291	3.8	10
1200	15.8	-11.7	14	044	2.7	044	6.3	80 1200	18.7	-12.5	11	109	1.9	105	5.1	84 1200	7.2	****	80	308	1.5	302	4.4	7
1500	17.6	-17.3	8	067	2.9	062	6.3	59 1500	19.2	-17.6	7	090	1.9	082	4.4	82 1500	7.2	4.3	82	305	.9	301	3.2	14
1800	17.9	-20.3	6	065	2.6	061	6.3	42 1800	18.3	-20.0	6	119	1.5	053	5.7	15 1800	6.6	3.7	82	292	1.4	290	3.2	2
2100	16.5	-16.7	9	061	1.9	055	5.7	10 2100	17.7	****	10	317	.9	331	3.2	7 2100	6.2	****	84	263	.7	282	2.5	2
2400	7.7	-5.9	38	143	1.1	129	2.5	0 2400	10.2	-1.0	46	233	1.2	243	3.8	0 2400	5.7	****	85	260	.6	255	1.3	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.	NDNG TEMP.	POINT RH	DIR.	SPD. DIR.													
DEG C	DEG C	%	DEG. M/S	DEG C	DEG C	%	DEG. M/S	DEG C	DEG C	%	DEG. M/S													
0300	5.0	****	84	187	.5	226	1.3	0 0300	4.5	****	83	189	.9	190	1.9	0 0300	4.0	1.9	86	168	1.1	159	2.5	0
0600	6.8	****	79	167	.6	137	2.5	27 0600	8.1	****	74	178	.5	178	1.9	19 0600	5.7	****	91	180	.3	187	1.9	6
0900	10.0	2.6	60	014	1.2	316	3.2	28 0900	9.4	4.7	72	324	1.0	321	2.5	25 0900	7.4	3.3	75	283	.5	227	1.9	20
1200	11.7	2.7	54	328	2.2	321	5.1	80 1200	13.7	1.6	44	322	2.0	317	5.1	43 1200	9.6	4.7	71	308	1.6	308	3.2	27
1500	11.9	2.1	51	323	3.3	322	7.6	37 1500	15.2	1.6	40	324	2.3	320	5.7	51 1500	10.4	3.7	63	322	2.3	328	5.1	24
1800	11.5	3.1	56	281	.3	310	8.3	38 1800	13.6	.2	40	312	2.6	277	5.7	5 1800	10.2	3.3	62	326	1.6	308	4.4	6
2100	11.1	2.4	55	296	1.2	355	5.1	8 2100	9.0	****	80	126	1.0	050	7.0	6 2100	9.2	****	65	305	.8	308	2.5	1
2400	7.7	****	73	216	.8	243	2.5	0 2400	6.7	5.8	82	181	.5	164	1.9	0 2400	7.1	****	68	201	.8	218	1.3	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING June, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW			
0300	5.9 ****	72	153	.7	138	1.9	0	0300	4.7 ****	75	170	.9	169	2.5	1	0300	10.1 ****	65	233	1.0	239	2.5	0			
0600	6.9 ****	71	151	.3	184	1.9	6	0600	6.3 ****	73	214	.3	180	1.3	12	0600	9.9 ****	70	246	.5	239	1.9	11			
0900	10.2	3.1	61	315	1.1	315	3.2	31	0900	12.0	3.0	54	336	1.1	313	3.8	47	0900	12.7	3.4	53	301	1.5	306	3.8	26
1200	13.4	-0	40	324	1.6	322	3.8	94	1200	16.1	-3	33	317	2.1	320	4.4	72	1200	15.5	2.2	41	342	1.3	337	3.2	19
1500	14.8	-2.3	31	315	1.6	342	3.8	29	1500	18.0	-6.0	19	309	2.5	309	6.3	42	1500	16.2	3.2	42	329	1.2	321	3.2	27
1800	16.1	-4.0	25	320	2.0	317	5.1	15	1800	19.0	-9.2	14	297	2.5	305	6.3	41	1800	17.6	2.2	36	314	1.9	313	5.1	40
2100	15.5	-3.1	28	299	1.8	311	4.4	7	2100	14.6	1.1	40	287	2.5	285	5.7	5	2100	15.0	3.7	47	292	1.8	305	5.1	5
2400	7.8	.8	61	189	.8	267	1.9	0	2400	11.1	3.7	60	250	1.1	267	3.8	0	2400	11.1	4.4	63	278	1.6	304	3.8	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW			
0300	9.5 ****	73	269	.8	261	3.2	0	0300	3.1	-1.2	73	154	.9	154	3.2	0	0300	6.5 ****	80	286	1.1	281	3.2	0		
0600	7.8	4.9	82	266	.9	303	3.2	1	0600	3.4	-9	73	101	1.0	129	2.5	9	0600	6.1	2.9	80	300	1.8	304	4.4	1
0900	7.7 ****	76	313	1.0	313	3.8	4	0900	12.2	2.4	51	039	1.3	040	3.2	50	0900	6.6	2.7	76	307	2.1	313	5.1	8	
1200	8.6	3.7	71	299	.8	268	2.5	23	1200	15.8	-1.0	32	335	1.5	305	3.8	63	1200	7.8	3.5	74	308	2.0	307	4.4	12
1500	9.5	3.5	66	310	1.2	329	3.2	23	1500	16.8	1.1	35	295	1.5	309	5.1	24	1500	8.5	4.2	74	320	2.1	327	5.1	15
1800	11.8 ****	55	330	1.2	312	3.2	23	1800	12.4	6.5	67	279	2.0	252	7.0	7	1800	9.5	3.8	72	315	2.3	318	5.1	5	
2100	11.6 ****	54	344	1.0	348	3.2	8	2100	9.5 ****	87	277	1.3	299	5.1	2	2100	8.0	4.1	76	291	1.2	316	3.8	1		
2400	5.1 ****	69	190	.8	189	1.9	0	2400	7.2	3.5	77	260	1.2	262	3.2	0	2400	7.3	4.3	81	283	.7	256	1.9	0	

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW			
0300	6.7 ****	85	261	.9	260	2.5	0	0300	6.4 ****	99	245	.4	222	1.9	0	0300	3.2 ****	92	163	1.0	160	1.9	0			
0600	6.3 ****	87	267	.5	281	1.9	1	0600	6.6 ****	99	208	.2	167	1.3	4	0600	4.4	4.2	99	091	1.0	129	3.2	17		
0900	6.8	5.7	93	297	1.0	309	3.2	4	0900	8.6	6.7	80	332	.8	019	1.9	25	0900	13.4	4.0	53	029	1.2	037	2.5	51
1200	7.1	5.9	92	316	1.4	326	3.8	7	1200	11.5	7.1	74	293	1.6	296	3.8	52	1200	17.4	-2.9	25	318	1.4	330	3.8	74
1500	7.5	6.7	95	328	1.1	321	3.2	10	1500	12.7	4.9	59	311	2.3	320	5.7	61	1500	20.3	-8.1	14	333	2.0	355	5.1	70
1800	7.3	6.0	97	311	1.1	305	2.5	11	1800	13.3	4.2	54	320	3.0	326	5.1	15	1800	20.1	-9.3	13	309	2.5	328	5.7	40
2100	6.9	6.7	99	299	1.2	299	2.5	2	2100	14.6	4.0	49	330	2.5	330	5.1	11	2100	19.5	-13.1	10	297	2.0	308	5.7	12
2400	6.5	6.3	99	277	.8	297	1.9	0	2400	6.4	6.2	99	206	.7	300	1.9	0	2400	9.1	-2.3	45	193	.8	278	1.9	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING June, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD											
DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM									
0300	5.1	.3	71	171	.9	182	2.5	0	0300	7.8	*****	75	182	.8	179	2.5	0	0300	7.0	3.8	80	174	.9	165	2.5	0
0600	8.5	*****	58	216	.3	167	1.9	15	0600	9.6	*****	65	141	.4	157	1.9	24	0609	9.4	*****	69	141	.4	178	1.3	16
0900	12.4	3.1	53	311	1.5	309	3.8	49	0900	15.1	2.9	44	349	1.3	332	4.4	34	0900	14.3	4.9	53	332	1.1	326	3.8	49
1200	18.2	-.2	29	332	2.3	329	5.7	72	1200	15.6	3.3	44	321	1.5	316	4.4	16	1200	18.7	4.7	40	332	2.0	344	4.4	72
1500	20.7	-.7	24	316	2.7	310	5.7	69	1500	18.9	4.9	40	302	1.9	288	5.7	71	1500	21.6	2.2	28	312	2.5	324	6.3	76
1800	21.5	-1.8	21	325	3.1	322	7.0	42	1800	16.0	8.8	62	296	1.6	320	5.7	9	1800	21.7	-.4	23	306	2.1	316	6.3	42
2100	18.2	-1.7	26	297	1.9	329	5.7	6	2100	16.1	7.6	57	116	1.3	144	3.2	3	2100	20.0	3.1	33	299	2.1	295	5.1	7
2400	11.7	3.5	57	196	1.0	186	2.5	0	2400	10.2	6.0	75	162	.9	159	2.5	0	2400	13.1	7.4	68	248	.9	293	2.5	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD											
DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM									
0300	8.2	*****	81	223	.9	249	3.2	0	0300	6.0	*****	72	140	1.1	128	3.2	0	0300	5.4	*****	79	134	1.0	148	2.5	0
0600	10.0	*****	71	152	.5	176	1.3	19	0600	7.4	*****	68	131	.5	161	2.5	7	0600	8.0	3.1	71	087	1.0	108	3.8	16
0900	14.2	4.5	52	352	1.2	343	4.4	48	0900	11.5	*****	62	310	.8	303	3.2	14	0900	14.8	4.5	50	039	1.6	049	3.2	48
1200	17.7	4.9	43	334	2.2	327	4.4	74	1200	13.5	4.9	56	317	1.3	310	3.8	29	1200	16.0	2.7	41	317	1.6	319	5.1	16
1500	20.1	-.6	25	324	3.3	325	7.6	68	1500	15.1	5.6	53	326	2.8	345	5.7	38	1500	14.9	8.5	65	301	1.6	309	5.1	38
1800	21.0	-5.8	16	299	2.9	326	7.0	43	1800	14.6	5.7	55	325	2.2	313	5.1	49	1800	16.1	4.8	47	325	1.5	317	3.8	19
2100	19.6	-4.0	20	296	2.0	293	5.1	11	2100	14.8	4.5	50	307	1.5	304	3.8	11	2100	15.9	*****	52	346	.6	314	1.9	6
2400	10.2	-1.0	46	209	.7	278	2.5	0	2400	7.3	3.0	74	205	.7	160	2.5	0	2400	11.4	7.0	74	284	.7	238	2.5	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD											
DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MM									
0300	8.4	*****	83	220	.7	260	2.5	0	0300	9.2	*****	73	213	.8	217	2.5	0	0300	8.4	*****	83	171	.7	172	1.9	0
0600	10.8	5.2	68	078	.8	106	2.5	20	0600	9.0	*****	66	184	.6	203	1.9	15	0600	7.7	4.7	81	257	.9	284	4.4	2
0900	14.8	1.6	41	062	1.2	070	2.5	49	0900	10.9	*****	66	357	.4	323	1.9	9	0900	7.5	4.1	79	271	1.4	279	6.3	4
1200	17.5	-.9	29	052	1.7	062	5.1	81	1200	11.6	5.1	64	318	1.9	327	6.3	31	1200	8.0	4.6	79	277	1.3	279	3.8	9
1500	19.5	-1.7	24	328	1.3	296	4.4	71	1500	14.2	8.5	68	328	2.3	338	8.3	22	1500	9.3	5.1	75	310	1.7	321	3.8	14
1800	20.4	-1.5	23	308	2.6	304	7.6	44	1800	11.4	7.0	74	271	1.4	294	4.4	9	1800	10.3	4.3	66	314	1.5	317	3.8	10
2100	18.5	*****	30	297	1.8	310	5.7	10	2100	9.9	*****	78	251	.8	285	3.2	1	2100	10.2	*****	68	307	.6	319	3.2	3
2400	12.5	4.3	57	247	.9	280	3.2	0	2400	8.9	*****	84	193	.5	194	1.9	0	2400	8.6	*****	74	253	.5	309	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING June, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	DEG C	% DEG.	M/S	MW	DEG C	DEG C	% DEG.	M/S	MW		
0300	8.1 **** 75	219	.7	236	1.9	0	0300	11.1 **** 79	163	.7	120	2.5	0	0300	8.8 **** 79	239	1.0	236	3.2	0															
0600	9.1 **** 75	219	.2	207	1.3	7	0600	11.1 **** 79	261	.8	242	2.5	3	0600	9.0 **** 79	226	.6	227	1.9	5															
0900	11.0	3.8 61	.7	249	1.9	28	0900	11.8 **** 69	310	.7	310	3.2	12	0900	11.4	5.3 66	330	1.8	328	2.5	30														
1200	14.8	4.8 51	326	1.8	341	4.4	81	1200	14.7	4.7 51	356	1.3	355	3.2	23	1200	15.7	5.3 50	319	1.7	322	4.4	64												
1500	16.9	6.4 50	316	2.2	335	4.4	51	1500	15.1	3.5 46	016	1.2	046	3.8	14	1500	17.7	3.5 39	317	2.3	314	4.4	36												
1800	14.9	6.8 58	315	3.0	329	5.7	20	1800	15.3	4.0 47	325	.7	326	3.2	11	1800	18.5	3.8 38	316	2.7	306	5.7	30												
2100	13.7	6.4 61	313	2.7	326	5.7	2	2100	14.2	4.8 53	333	.6	321	3.8	4	2100	15.8	7.6 58	333	2.2	325	5.7	7												
2400	11.1 **** 75	215	.5	313	3.2	0	2400	10.5	5.5 71	263	1.2	281	3.2	0	2400	12.7 **** 72	316	.1	030	3.2	0														

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUBSTITUTION HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING JUNE, 1984

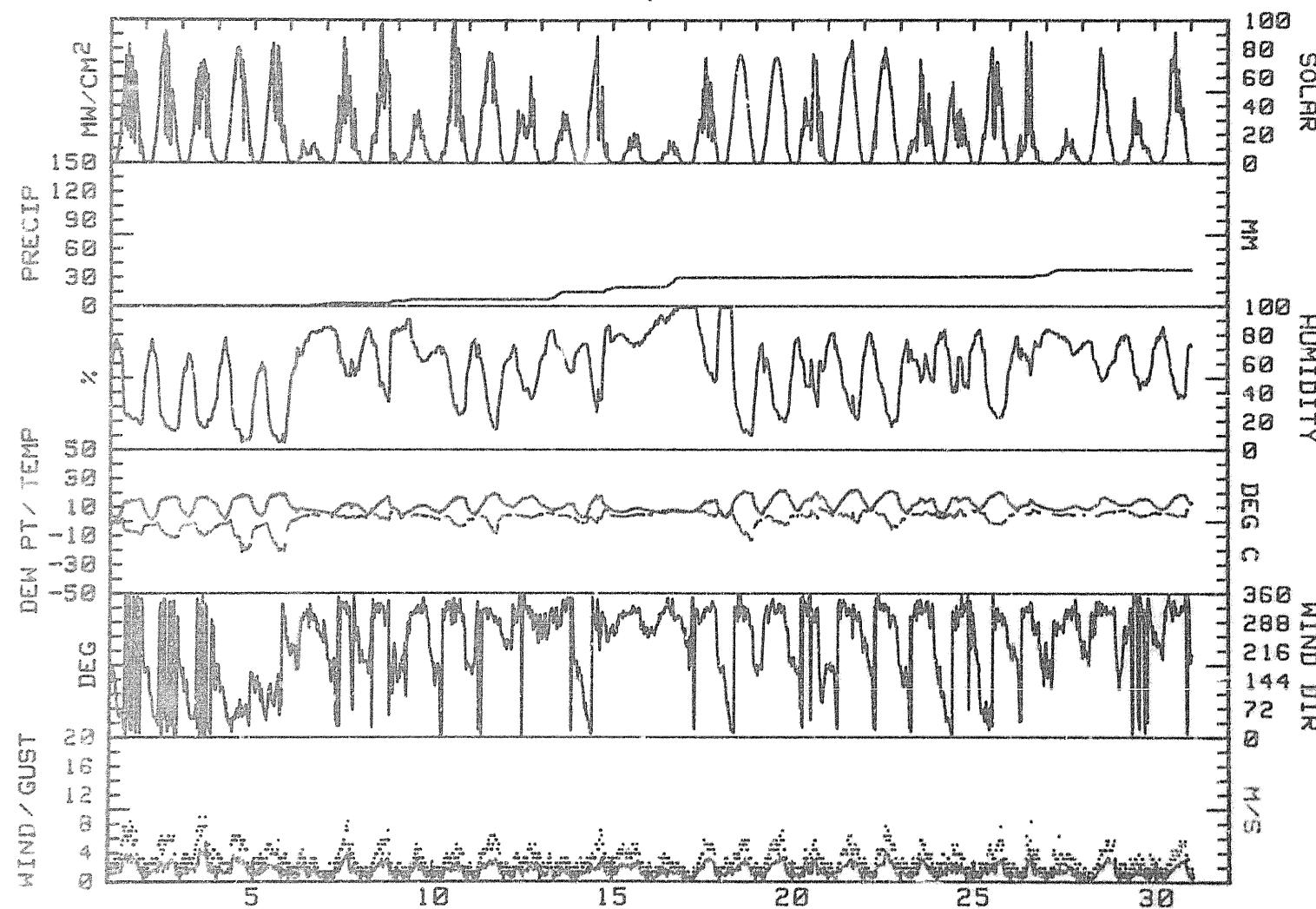
DAY	TEMP.			RES.	RES.	AVG.	MAX.	MAX.	P'VAL			MEAN		DAY'S	
	MAX. DEG C	MIN. DEG C	MEAN DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P'VAL %	MEAN RH	MEAN DEG C	PRECIP MM	SOLAR WH/SQM		
1	15.2	1.4	8.3	017	1.3	2.1	033	8.3	NNW	40	-5.1	0.0	6065	1	
2	17.0	.8	8.9	022	1.1	1.8	325	6.3	NE	34	-6.9	0.0	6530	2	
3	16.8	2.9	9.9	031	1.4	2.2	022	6.9	NE	35	-5.5	0.0	5645	3	
4	18.6	1.1	9.9	071	1.6	1.9	044	6.3	NE	32	-9.4	0.0	7450	4	
5	20.1	3.3	11.7	104	.9	1.6	053	5.7	E	27	-9.8	0.0	6310	5	
6	9.1	5.7	7.4	277	.8	1.1	302	4.4	NNW	72	2.8	2.2	1185	6	
7	12.4	4.7	8.6	314	.8	1.6	310	8.3	NW	60	2.6	.6	4955	7	
8	17.0	4.2	10.6	308	.7	1.5	050	7.0	NW	55	2.6	2.6	5715	8	
9	10.7	4.0	7.4	298	.7	1.2	328	5.1	NW	69	3.4	1.6	2615	9	
10	17.1	5.1	11.1	306	.8	1.3	317	5.1	NW	42	-9	0.0	6150	10	
11	19.5	4.0	11.8	295	1.3	1.7	309	6.3	NW	39	-9	0.0	7290	11	
12	17.7	9.2	13.5	299	1.2	1.4	313	5.1	NW	49	3.4	0.0	3940	12	
13	11.9	5.1	8.5	301	.8	1.0	313	3.8	NW	69	3.8	7.8	2635	13	
14	18.3	2.6	10.5	299	.6	1.5	252	7.0	W	58	1.9	4.6	5370	14	
15	8.8	6.1	7.5	303	1.6	1.7	313	5.1	NW	76	3.6	.2	1490	15	
16	7.8	6.3	7.1	299	.9	1.0	326	3.8	NW	93	6.1	10.2	1075	16	
17	14.6	6.3	10.5	310	1.2	1.5	320	5.7	NW	67	5.4	0.0	4640	17	
18	21.1	2.6	11.9	320	.8	1.6	328	5.7	NNW	43	-2.9	0.0	7820	18	
19	22.0	4.3	13.2	308	1.3	1.8	322	7.0	NW	37	.5	0.0	7615	19	
20	20.3	7.1	13.7	301	.4	1.4	288	5.7	S	52	5.3	.6	5345	20	
21	22.2	6.3	14.3	305	1.1	1.6	324	6.3	NW	43	3.4	0.0	7995	21	
22	21.3	7.4	14.4	308	1.3	1.8	325	7.6	NW	35	1.0	0.0	7595	22	
23	16.3	5.4	10.9	314	.8	1.5	345	5.7	NW	58	4.6	0.0	4120	23	
24	16.7	4.9	10.8	344	.6	1.3	319	5.1	NW	60	4.5	.4	4235	24	
25	20.4	8.4	14.4	329	.6	1.5	304	7.6	ENE	42	1.1	0.0	6400	25	
26	15.5	7.2	11.4	288	.7	1.2	338	8.3	SSW	66	6.0	2.0	2900	26	
27	10.3	7.5	8.9	284	.9	1.2	279	6.3	NW	77	4.6	5.2	1320	27	
28	16.9	8.1	12.5	307	1.3	1.6	329	5.7	NW	56	5.6	0.0	5465	28	
29	15.6	10.5	13.1	319	.5	1.1	046	3.8	N	59	5.1	0.0	2610	29	
30	19.0	8.1	13.6	313	1.3	1.6	306	5.7	NW	51	4.6	0.0	6280	30	
MONTH	22.2	.8	10.8	319	.7	.8	022	8.9	NW	51	1.4	38.0	148780		

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7  
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.6  
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.6  
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 6.3

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
June, 1984



R & M CONSULTANTS, INC.  
SUBSTITUTIVE HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING JUNE, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
N	.76	2.99	.56	0.00	0.00	0.00	0.00	0.00	4.31
NNE	.83	2.08	.63	0.00	0.00	0.00	0.00	0.00	3.54
NE	.21	3.82	.49	0.00	0.00	0.00	0.00	0.00	4.51
ENE	.42	2.57	.14	0.00	0.00	0.00	0.00	0.00	3.13
E	.63	1.67	.07	0.00	0.00	0.00	0.00	0.00	2.36
ESE	.28	2.15	0.00	0.00	0.00	0.00	0.00	0.00	2.43
SE	.97	2.22	0.00	0.00	0.00	0.00	0.00	0.00	3.19
SSE	2.64	2.36	0.00	0.00	0.00	0.00	0.00	0.00	5.00
S	4.51	2.50	0.00	0.00	0.00	0.00	0.00	0.00	7.01
SSW	2.71	1.32	0.00	0.00	0.00	0.00	0.00	0.00	4.03
SW	2.57	1.74	0.00	0.00	0.00	0.00	0.00	0.00	4.31
WSW	2.64	2.29	0.00	0.00	0.00	0.00	0.00	0.00	4.93
W	2.99	5.00	0.00	0.00	0.00	0.00	0.00	0.00	7.99
WNW	2.36	8.61	.21	0.00	0.00	0.00	0.00	0.00	11.18
NW	1.94	17.92	1.74	0.00	0.00	0.00	0.00	0.00	21.60
NNW	1.46	7.43	1.46	0.00	0.00	0.00	0.00	0.00	10.35
CALM									.14
TOTAL	27.92	66.67	5.28	0.00	0.00	0.00	0.00	0.00	100.00

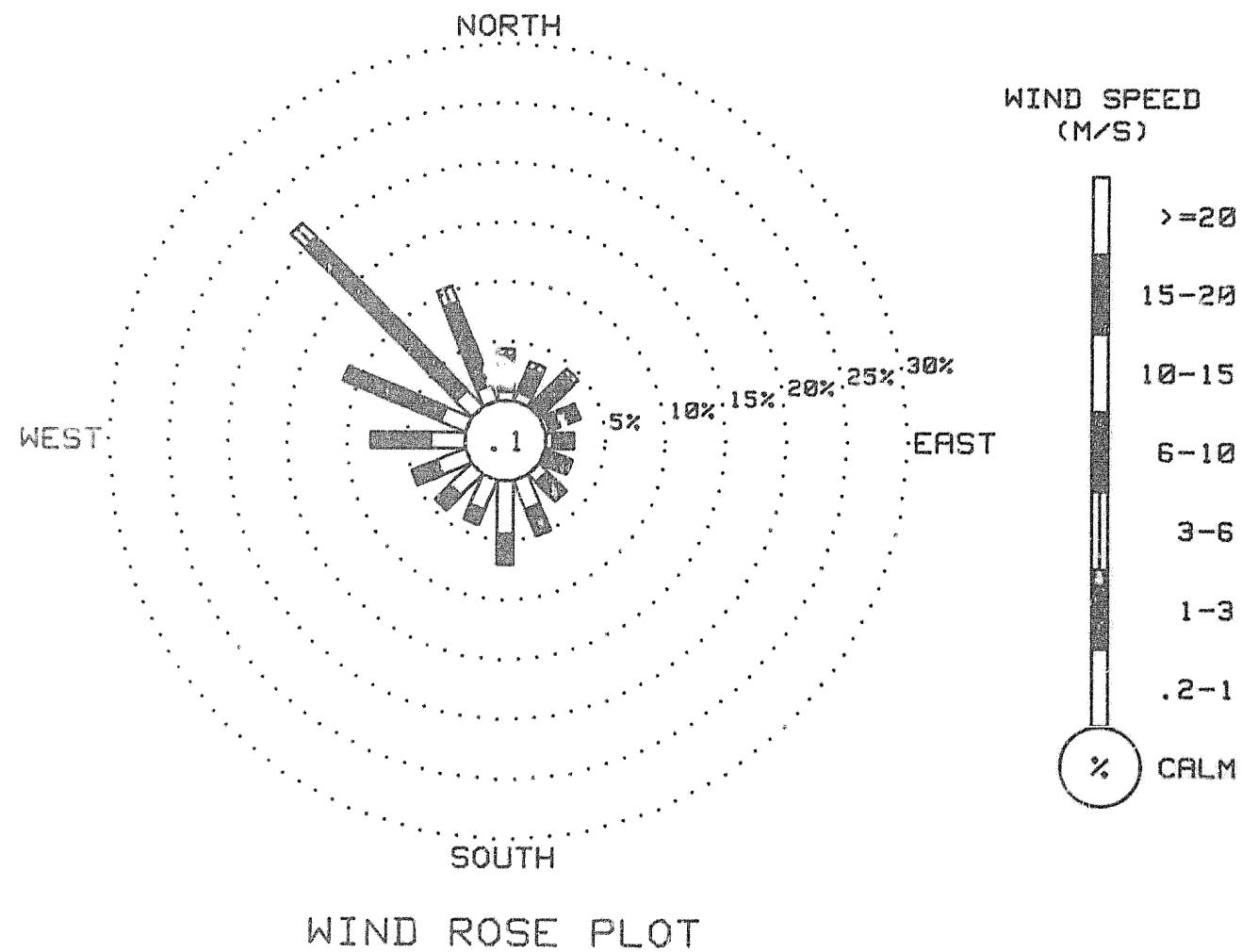
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1440 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1440 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
June, 1984



R & M CONSULTANTS, INC.  
SUBSTITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING JUNE, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	1	7	13	23	34	48	43	53	42	59	25	63	38	63	42	31	11	11	4	1	0	25
2	0	0	0	1	7	13	23	34	46	67	75	85	56	21	55	13	50	43	31	20	10	4	1	0	27
3	0	0	0	2	7	14	20	32	51	36	45	59	50	67	67	27	48	21	10	7	3	2	1	0	24
4	0	0	0	1	6	14	23	34	46	58	65	75	79	78	59	44	57	44	33	20	8	5	1	0	31
5	0	0	0	2	5	12	21	34	44	58	73	69	39	34	58	53	63	16	20	21	9	4	1	0	26
6	0	0	0	0	2	4	8	13	10	7	6	7	8	12	14	9	8	5	3	4	2	1	0	0	5
7	0	0	0	1	5	19	25	31	26	38	80	54	38	39	49	20	14	30	13	7	8	3	1	0	21
8	0	0	0	1	4	15	15	19	20	11	42	70	71	48	51	68	62	33	1	5	7	2	1	0	24
9	0	0	0	1	3	4	5	9	17	25	31	26	35	29	21	21	16	9	8	3	2	2	1	0	11
10	0	0	0	1	7	7	8	15	27	31	43	86	90	63	54	55	49	20	29	21	10	4	1	0	26
11	0	0	1	1	8	12	22	39	44	48	61	73	75	73	60	61	48	41	34	24	7	3	0	0	30
12	0	0	0	1	3	9	15	30	24	30	32	26	22	18	24	32	43	43	28	9	7	2	0	0	16
13	0	0	0	0	1	1	2	2	4	14	16	21	17	33	25	29	31	26	20	13	9	4	1	0	11
14	0	0	0	1	5	7	23	38	47	58	66	68	86	16	34	29	36	10	6	9	3	1	0	0	22
15	0	0	0	0	1	1	4	7	9	10	17	11	12	19	13	18	14	10	3	2	1	1	0	0	6
16	0	0	0	0	0	1	2	2	3	7	7	7	9	14	12	11	11	9	8	5	3	1	0	0	4
17	0	0	0	1	1	3	11	15	23	30	29	37	26	69	52	24	41	33	34	21	13	5	1	0	19
18	0	0	0	1	6	15	24	32	48	59	67	73	76	75	71	65	55	44	33	21	14	6	1	0	33
19	0	0	0	2	8	14	23	34	46	57	65	71	74	74	70	64	55	45	38	14	7	4	1	0	32
20	0	0	0	1	9	20	22	34	40	27	28	23	36	75	72	64	35	8	21	17	5	3	1	0	22
21	0	0	0	1	8	14	23	34	46	57	65	71	74	74	77	82	59	46	34	23	10	5	1	0	33
22	0	0	0	2	5	15	17	34	46	57	65	72	71	78	71	64	53	46	34	18	13	5	1	0	32
23	0	0	0	1	7	10	14	16	15	13	24	34	68	51	32	17	16	37	20	23	13	4	1	0	17
24	0	0	0	1	6	15	26	40	47	52	30	19	30	14	37	19	29	23	13	15	8	3	1	0	18
25	0	0	0	2	9	17	18	27	40	59	64	79	20	20	68	67	44	49	32	13	10	5	1	0	27
26	0	0	0	2	3	14	13	12	9	13	61	26	44	51	17	11	7	8	2	1	1	0	0	12	
27	0	0	0	0	2	3	3	4	6	10	10	19	14	15	14	12	9	7	4	4	2	0	0	5	
28	0	0	0	1	2	6	10	18	27	34	52	76	75	69	52	47	30	23	15	11	3	1	0	23	
29	0	0	0	1	2	3	6	12	13	33	40	22	27	22	21	13	12	12	9	10	5	2	1	0	11
30	0	0	0	1	3	5	8	17	29	39	72	65	71	64	46	61	43	33	34	25	11	5	1	0	26

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDRO ELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING June, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1440	100
WIND SPEED	1440	100
WIND DIRECTION	1440	100
PEAK GUST	1440	100
RELATIVE HUMIDITY	1036	72
PRECIPITATION	1440	100
SOLAR RADIATION	1440	100
DEW POINT	1036	72

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -10 RH Points
2. Solar -1 mW/cm<sup>2</sup>

R & M CONSULTANTIES, INC.  
SUSSEX HYDRO ELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE		
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	.4	0.0	1		
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	1.2	0.0	.2	2		
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	3	
4	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	.8	.4	0.0	5	
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	
8	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	.2	.4	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	1.6	.2	0.0	0.0	0.0	.2	1.2	.6	1.6	.2	0.0	.6	0.0	.2	0.0	0.0	10	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.2	0.0	0.0	12	
13	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15	
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16	
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17	
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	.2	.2	0.0	0.0	18	
19	.2	.2	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	.2	0.0	0.0	0.0	19	
20	.2	.2	0.0	.2	0.0	.4	.4	0.0	0.0	0.0	0.0	0.0	.2	.2	0.0	.2	.2	0.0	.4	.4	.2	.8	.6	.2	0.0	20	
21	0.0	0.0	0.0	.2	.2	0.0	.2	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	21	
22	0.0	0.0	0.0	0.0	.2	.2	.4	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23	
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	
25	0.0	0.0	0.0	0.0	0.0	.2	.6	1.4	2.8	2.6	2.4	2.6	2.4	1.6	.6	.8	.2	.2	0.0	0.0	.2	.2	.2	1.2	0.0	25	
26	.2	.6	1.0	1.6	2.4	2.8	2.4	2.0	2.2	.8	.2	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27	
28	.2	0.0	.2	.6	0.0	1.8	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28	
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	.2	.4	.4	.6	.4	.4	.2	.2	0.0	.2	.2	0.0	0.0	29	
30	0.0	0.0	.2	0.0	.2	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30	
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SOUTHERN HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW			
0300	6.8 ****	82	204	.5	208	1.3	0	0300	7.8 ****	77	267	.6	324	1.9	0	0300	8.6 ****	84	184	.6	200	1.9	0			
0600	9.5 ****	73	218	.5	205	1.9	16	0600	8.1 ****	77	239	.5	249	1.9	4	0600	9.4 ****	86	148	.4	170	1.9	6			
0900	12.7	5.9	63	348	.8	353	2.5	23	0900	9.0 ****	76	029	.4	013	1.3	7	0900	11.3	7.1	75	293	.5	256	1.9	29	
1200	18.4	6.5	46	310	1.5	303	3.8	63	1200	10.3 ****	71	326	.6	318	1.9	16	1200	15.5	6.3	54	319	2.2	317	5.7	33	
1500	17.4	7.8	53	313	3.0	316	7.0	65	1500	11.9	6.2	68	322	1.4	323	3.2	34	1500	17.0	5.6	47	324	3.0	321	5.7	70
1800	10.2	6.0	75	301	2.8	309	7.0	5	1800	11.4	6.0	69	316	1.6	301	3.2	11	1800	16.4	6.3	51	310	3.3	317	6.3	20
2100	9.4	6.1	80	317	2.0	308	5.7	0	2100	11.2 ****	70	310	1.3	319	3.8	1	2100	14.9	8.5	65	306	2.1	305	5.7	1	
2400	8.3 ****	85	293	1.3	316	4.4	0	2400	9.0 ****	80	181	.6	221	1.9	0	2400	12.4 ****	**	245	1.3	255	2.5	8			

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW			
0300	11.3 ****	**	242	1.8	250	2.5	0	0300	11.2	7.0	75	148	1.0	134	2.5	0	0300	10.1 ****	89	134	1.0	168	3.2	0		
0600	10.4 ****	**	209	.3	251	1.9	2	0600	10.6 ****	83	095	.8	106	1.9	6	0600	9.2 ****	92	132	1.1	135	2.5	9			
0900	13.7	10.9	83	302	.3	281	2.5	27	0900	15.6	9.4	66	007	.6	350	1.9	38	0900	15.3	8.6	64	003	.9	321	2.5	31
1200	17.3	8.5	56	349	1.2	303	3.8	79	1200	18.2	8.8	54	312	1.8	337	3.8	37	1200	17.1	4.4	43	325	1.6	348	4.4	61
1500	21.2	4.6	34	317	1.5	308	4.4	60	1500	19.1	7.8	48	333	2.3	332	5.1	28	1500	16.5	5.7	49	320	1.9	329	7.0	14
1800	20.0	3.1	33	323	1.9	323	7.6	24	1800	17.9	8.2	53	328	2.6	333	5.1	12	1800	14.6 ****	63	314	1.7	307	6.3	10	
2100	20.0	4.4	36	350	.9	064	3.8	6	2100	14.5 ****	79	267	.9	280	2.5	2	2100	13.9 ****	74	063	.2	112	2.5	1		
2400	14.1	6.3	59	177	.8	151	3.8	0	2400	11.8	9.5	86	145	1.3	131	3.8	0	2400	12.8	7.9	72	169	.8	184	3.8	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW			
0300	9.3	4.2	70	122	1.8	114	4.4	0	0300	8.0 ****	76	159	.9	149	3.2	0	0300	6.9	1.5	68	146	1.2	143	3.2	0	
0600	8.7	4.0	72	108	1.4	128	3.2	11	0600	8.4 ****	76	124	.8	119	2.5	6	0600	7.7 ****	78	127	.6	121	2.5	5		
0900	12.6	5.3	60	053	1.5	048	3.2	11	0900	9.8 ****	75	043	.6	038	2.5	16	0900	10.1	5.7	74	057	.6	049	2.5	11	
1200	16.1	-1.3	33	053	1.1	045	3.2	71	1200	12.5	4.8	59	341	.8	350	3.8	38	1200	14.8	.1	37	008	1.1	009	3.8	42
1500	13.9	5.3	49	342	1.0	282	5.7	17	1500	14.3	-1.1	35	025	2.9	035	7.0	34	1500	16.1	-3.5	26	014	1.8	025	5.7	40
1800	17.6	-1.2	28	011	1.0	012	3.8	40	1800	15.4	-4.6	25	037	2.7	045	6.3	24	1800	16.5	-3.2	26	352	1.0	023	3.2	24
2100	17.8 ****	26	314	1.3	308	3.2	10	2100	13.5	-4.8	28	029	3.6	035	7.0	4	2100	13.2	6.4	63	297	1.4	303	4.4	7	
2400	8.5	2.1	64	179	.7	177	1.9	0	2400	7.3	.1	60	141	1.1	079	5.7	0	2400	9.9	6.8	81	287	1.2	312	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R. A. M. CONSULTANTS, INC.  
SUSIETNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVTL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	M/S
0300	7.9 **** 99	200	.7	243	1.9	0 0300	6.3 **** 98	133	1.1	131	2.5	0 0300	4.2 **** 84
0600	10.2 **** 86	171	.3	157	1.9	16 0600	6.0 **** 99	142	.6	132	1.9	7 0600	4.3 **** 98
0900	10.6 **** 84	308	.8	287	2.5	6 0900	12.9	3.0	51	040	1.1	048	2.5
1200	13.4 **** 70	065	1.0	161	3.2	37 1200	12.0	2.5	52	238	.7	292	3.2
1500	15.3	7.1	58	324	1.2	330	4.4	61	1500	15.3	.6	37	281
1800	10.3 **** 90	284	1.6	287	4.4	7 1800	13.9	.8	41	318	1.6	332	5.1
2100	9.4 **** 92	319	.5	9.4	3.8	5 2100	14.3	2.1	44	316	1.6	340	5.1
2400	5.6	5.1	97	164	.9	166	2.5	0	2400	7.1	3.2	76	196
													.8

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	M/S
0300	8.7 **** **	177	.4	165	1.3	0 0300	6.9 **** 82	167	.7	169	1.9	0 0300	9.7 **** 94
0600	9.4 **** **	251	.5	259	1.9	3 0600	8.1 **** P1	189	.4	181	1.9	9 0600	9.1 **** 99
0900	9.6 **** **	312	1.3	319	3.8	12 0900	12.1	2.8	53	324	1.1	343	3.2
1200	12.7	8.2	74	313	1.3	314	2.5	48	1200	13.7	1.3	43	333
1500	13.9	3.9	51	312	2.6	330	7.0	44	1500	14.4	1.2	41	339
1800	13.5	2.4	47	317	3.0	314	6.3	48	1800	14.3	2.8	46	314
2100	11.3	2.1	53	307	1.8	315	5.7	2	2100	11.2	4.5	63	304
2400	7.7 **** 74	193	.9	209	1.9	0 2400	10.2 **** 99	299	1.0	309	3.8	0 2400	13.0
													.8

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	M/S
0300	10.7	6.1	73	145	.9	151	3.2	0	0300	9.5	8.2	92	300
0600	10.7 **** 84	103	.9	113	3.2	4 0600	9.1	8.6	97	308	1.3	308	3.2
0900	12.7	7.8	72	337	.7	301	3.8	24	0900	9.4	7.8	90	305
1200	15.3	4.0	47	316	3.3	318	6.3	24	1200	10.0 **** 86	311	1.0	309
1500	14.4	4.1	50	315	4.3	313	8.3	26	1500	10.3	7.9	85	300
1800	12.5	4.5	58	300	2.3	305	5.7	3	1800	10.3	8.9	91	300
2100	11.1	6.3	72	302	1.8	294	4.4	0	2100	8.9	7.6	92	302
2400	10.3	8.4	88	309	1.5	308	3.8	0	2400	9.1	6.9	86	284
													.8

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSTAINA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S

0300	8.0	*****	**	247	.7	263	2.5	0 0300	8.1	*****	74	305	1.0	312	2.5	0 0300	8.6	*****	85	222	.5	255	2.5	0
0600	7.7	*****	35	252	.6	306	2.5	1 0600	8.1	*****	**	323	.8	325	2.5	1 0600	8.9	*****	78	249	.6	254	2.5	1
0900	8.6	,1	55	279	.7	262	2.5	2 0900	8.6	*****	87	310	.6	313	2.5	2 0900	9.3	-8.9	27	287	1.1	270	2.5	3
1200	10.1	*****	36	283	1.3	300	3.8	11 1200	8.7	-5.7	36	309	1.2	319	3.2	10 1200	9.8	-8.4	27	307	1.6	322	4.4	5
1500	10.2	*****	**	294	1.7	292	5.7	12 1500	9.3	-4.8	37	308	1.6	317	3.8	4 1500	11.0	*****	**	307	2.4	307	5.1	17
1800	9.5	3.9	68	289	1.6	283	4.4	4 1800	9.3	-4.4	38	306	1.6	297	3.8	3 1800	12.5	*****	**	297	1.8	292	4.4	15
2100	9.1	*****	59	302	1.2	313	3.2	1 2100	8.6	*****	66	301	1.6	306	4.4	1 2100	11.1	*****	**	271	.9	271	3.2	0
2400	8.7	*****	50	266	.8	266	1.9	0 2400	8.5	*****	86	258	.3	293	1.9	0 2400	10.0	*****	**	203	.6	244	1.9	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S

0300	9.9	*****	**	195	.7	172	3.2	0 0300	9.4	*****	**	153	.9	137	2.5	0 0300	12.6	*****	**	208	.7	233	1.9	0
0600	9.9	*****	**	196	.4	190	1.3	1 0600	10.1	*****	**	126	.4	124	2.5	7 0600	11.7	*****	**	284	1.0	312	3.8	3
0900	10.4	*****	**	297	.6	300	2.5	10 0900	14.8	*****	**	025	.6	056	1.9	44 0900	13.2	*****	**	354	.4	257	1.3	9
1200	11.7	*****	**	308	1.2	314	3.2	25 1200	19.2	*****	**	350	1.3	324	3.2	67 1200	15.8	*****	**	321	1.6	320	4.4	37
1500	13.8	*****	**	314	1.7	322	3.8	33 1500	20.8	*****	**	318	1.5	311	3.8	30 1500	13.8	*****	**	318	2.1	320	5.1	21
1800	14.2	*****	**	316	1.7	330	3.8	15 1800	21.8	*****	**	307	1.8	316	5.1	45 1800	15.4	*****	**	318	1.9	317	4.4	21
2100	14.0	*****	**	291	.9	289	3.2	5 2100	18.9	*****	**	303	1.9	316	5.1	3 2100	13.7	*****	**	300	1.3	317	3.8	1
2400	10.1	*****	**	183	.7	148	3.2	0 2400	13.7	*****	**	265	1.1	273	3.2	0 2400	13.1	*****	**	195	.5	147	1.9	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S

0300	11.7	*****	**	194	.5	193	1.9	0 0300	8.5	*****	**	232	.4	251	1.9	0 0300	9.8	*****	**	203	.4	190	1.3	0
0600	11.2	*****	**	259	.8	271	2.5	1 0600	8.5	*****	**	100	.2	182	1.3	1 0600	10.5	*****	**	251	.4	215	1.9	6
0900	10.4	*****	**	250	.7	249	1.9	4 0900	9.0	*****	**	222	.1	250	1.3	7 0900	11.1	*****	**	314	.9	327	3.2	12
1200	10.2	*****	**	304	1.3	306	3.2	6 1200	11.6	*****	**	341	.5	002	1.3	45 1200	13.2	*****	**	310	.9	303	1.9	29
1500	10.6	*****	**	315	1.6	317	3.8	19 1500	13.5	*****	**	309	1.2	25	3.2	36 1500	14.9	*****	**	316	1.4	322	3.8	25
1800	10.5	*****	**	313	1.4	318	3.2	7 1800	13.9	*****	**	311	.8	319	2.5	22 1800	14.3	*****	**	327	2.2	355	5.1	9
2100	9.4	*****	**	298	1.4	310	3.8	1 2100	12.4	*****	**	317	1.2	358	3.2	3 2100	13.8	*****	**	271	.6	294	3.2	2
2400	9.0	*****	**	255	1.0	267	2.5	0 2400	10.2	*****	**	233	.6	279	1.9	0 2400	11.8	*****	**	199	.6	205	1.3	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S					
0300	11.0	*****	**	275	1.0	306	3.2	0	0300	10.2	*****	**	232	.8	243	3.8	0	0300	8.1	*****	**	125	.8	134	1.9	0
0600	16.3	*****	**	250	.7	254	2.5	1	0600	9.3	*****	**	266	.8	270	1.9	3	0600	8.0	*****	**	093	.4	088	1.9	1
0900	9.7	*****	**	266	1.0	287	3.2	6	0900	9.5	*****	**	264	.7	270	1.9	5	0900	9.6	*****	**	037	.6	057	1.9	14
1200	11.1	*****	**	283	.8	266	2.5	13	1200	9.3	*****	**	283	1.0	290	2.5	5	1200	11.9	*****	**	303	1.4	293	3.8	26
1500	12.1	*****	**	326	.9	313	3.2	11	1500	9.4	*****	**	303	1.2	296	3.2	17	1500	14.0	*****	**	275	.9	291	3.8	23
1800	12.9	*****	**	344	.3	275	1.9	10	1800	8.7	*****	**	307	1.1	307	3.2	3	1800	14.5	*****	**	316	1.7	327	6.3	12
2100	12.0	*****	**	014	.1	036	1.9	3	2100	8.4	*****	**	276	.7	315	2.5	0	2100	12.5	*****	**	283	.8	302	3.2	2
2400	10.8	*****	**	187	.7	216	2.5	0	2400	8.2	*****	**	116	.5	120	1.9	0	2400	10.6	*****	**	167	.6	122	3.8	0

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	GUST RAD
	DEG C	DEG C	% DEG. M/S	DEG C	DEG C	% DEG. M/S	DEG C	MW
0300	9.8	*****	**	185	.6	194	1.9	0
0600	9.8	*****	**	262	.5	298	2.5	1
0900	10.5	*****	**	282	1.0	282	2.5	9
1200	11.2	*****	**	307	2.0	316	4.4	20
1500	12.2	*****	**	314	2.0	317	4.4	28
1800	11.8	*****	**	323	1.3	327	3.2	4
2100	11.0	*****	**	319	.7	315	2.5	0
2400	9.8	*****	**	212	.3	252	1.3	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUBSTITUTION HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING JULY, 1984

DAY	RES.			RES.			AVG.	MAX.	MAX.	P'VAL MEAN			MEAN		DAY'S	
	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P'VAL %	MEAN RH %	MEAN DEG C	MEAN DP MM	PRECIP MM	SOLAR ENERGY WH/SQM	DAY	
1	19.6	7.8	13.7	305	1.4	1.6	316	7.0	NW	65	6.4	2.0		4745	1	
2	12.1	7.8	10.0	307	.6	.9	319	3.8	NW	69	5.6	1.6		1730	2	
3	17.6	8.6	13.1	307	1.3	1.7	317	6.3	NW	59	6.6	.2		4735	3	
4	21.8	10.2	16.0	312	.6	1.2	323	7.6	NW	47	6.2	.2		5890	4	
5	19.5	10.2	14.9	327	.6	1.5	332	5.1	NNW	62	8.4	1.4		3680	5	
6	17.7	8.7	13.2	334	.4	1.3	329	7.0	SE	65	7.3	0.0		3225	6	
7	18.1	6.8	12.5	059	.6	1.4	282	5.7	NE	53	2.6	0.0		4290	7	
8	15.9	7.3	11.6	042	1.2	1.8	035	7.0	NNE	46	-3	1.0		3770	8	
9	17.5	6.3	11.9	355	.5	1.2	025	5.7	NNE	50	1.3	0.0		3975	9	
10	15.3	5.6	10.5	292	.3	1.0	330	4.4	S	78	7.2	6.6		3425	10	
11	17.1	5.5	11.3	294	.3	1.3	332	5.1	S	55	2.6	0.0		4765	11	
12	19.4	3.7	11.6	343	.7	1.6	009	7.0	NW	64	4.2	.8		5755	12	
13	15.0	7.7	11.4	304	1.2	1.5	330	7.0	NW	60	4.3	.8		4500	13	
14	15.0	6.7	10.9	319	1.2	1.5	317	5.7	NNW	49	2.5	0.0		3540	14	
15	19.0	8.9	14.0	302	.2	1.1	114	4.4	NNW	54	3.2	0.0		4620	15	
16	16.1	9.6	12.9	312	1.5	2.0	313	8.3	NW	64	5.7	0.0		3250	16	
17	10.5	8.9	9.7	300	1.3	1.4	303	5.7	NNW	90	8.0	0.0		635	17	
18	10.2	8.1	9.2	294	1.2	1.4	294	5.7	NW	84	6.5	.6		1030	18	
19	11.2	7.7	9.5	280	1.0	1.1	292	5.7	W	56	.4	1.0		1000	19	
20	9.5	8.1	8.8	306	1.1	1.1	306	4.4	NW	49	-2.0	4.8		810	20	
21	12.5	8.3	10.4	287	1.0	1.2	307	5.1	NNW	29	-7.8	1.2		1330	21	
22	14.5	9.8	12.2	292	.7	1.0	322	3.8	NW	**	*****	1.4		2415	22	
23	22.3	8.8	15.6	311	.7	1.3	316	5.1	NW	**	*****	0.0		6410	23	
24	15.8	11.3	13.6	304	1.0	1.3	320	5.1	NW	**	*****	0.0		2785	24	
25	12.5	9.0	10.8	288	.9	1.1	317	3.8	NW	**	*****	20.2		990	25	
26	13.9	8.4	11.2	297	.5	.7	299	3.2	NNW	**	*****	16.4		2760	26	
27	15.6	9.7	12.7	302	.7	1.0	355	5.1	NW	**	*****	1.0		2505	27	
28	13.2	9.7	11.5	277	.5	.8	306	3.2	W	**	*****	3.0		1470	28	
29	11.2	8.2	9.7	279	.6	.9	243	3.8	W	**	*****	3.4		960	29	
30	16.1	7.8	12.0	305	.4	1.0	327	6.3	NNW	**	*****	.6		2735	30	
31	12.6	9.5	11.1	301	.9	1.1	316	4.4	NW	**	*****	0.0		1550	31	
MONTH	22.3	3.7	11.8	308	.7	1.3	313	8.3	NW	61	3.8	68.2		95280		

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.6

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 6.3

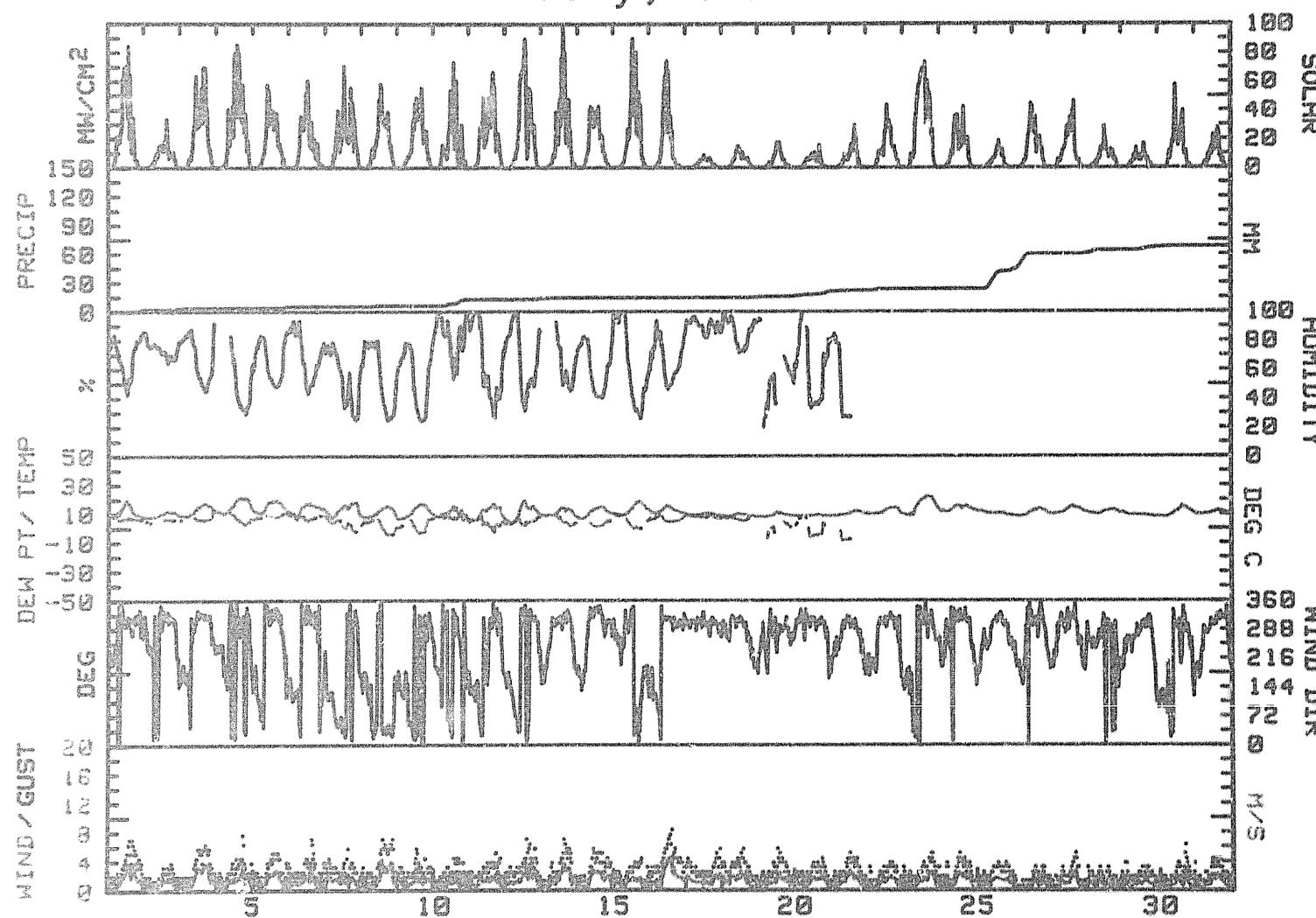
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 4.4

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 4.4

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
July, 1984



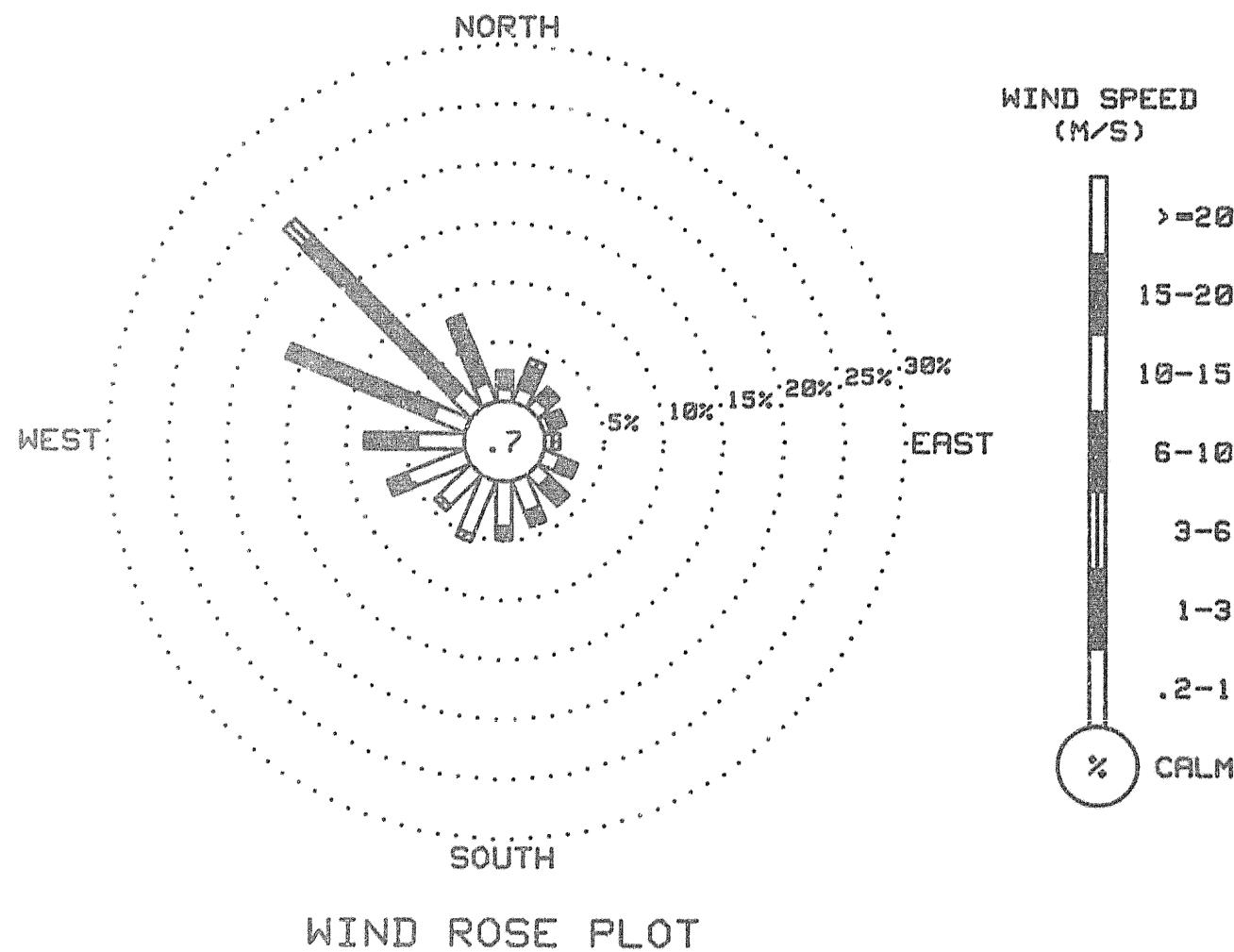
R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	1.08	1.41	.07	0.00	0.00	0.00	0.00	2.55	
NNE	1.28	1.95	.67	0.00	0.00	0.00	0.00	3.90	
NE	1.08	1.21	.13	0.00	0.00	0.00	0.00	2.42	
ENE	.60	1.34	0.00	0.00	0.00	0.00	0.00	1.95	
E	.67	.60	0.00	0.00	0.00	0.00	0.00	1.28	
ESE	1.48	1.55	0.00	0.00	0.00	0.00	0.00	3.02	
SE	1.41	2.22	0.00	0.00	0.00	0.00	0.00	3.63	
SSE	2.82	1.28	0.00	0.00	0.00	0.00	0.00	4.10	
S	3.83	1.08	0.00	0.00	0.00	0.00	0.00	4.91	
SSW	4.91	.60	0.00	0.00	0.00	0.00	0.00	5.51	
SW	3.70	.54	0.00	0.00	0.00	0.00	0.00	4.23	
WSW	5.31	1.68	0.00	0.00	0.00	0.00	0.00	6.99	
W	4.03	4.37	0.00	0.00	0.00	0.00	0.00	8.40	
WNW	3.02	13.24	0.00	0.00	0.00	0.00	0.00	16.26	
NW	2.28	17.81	2.22	0.00	0.00	0.00	0.00	22.31	
NNW	1.75	5.65	.40	0.00	0.00	0.00	0.00	7.80	
CALM									,74
TOTAL	39.25	56.52	3.49	0.00	0.00	0.00	0.00	100.00	

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT  
 1488 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
 1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.  
 \*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
July, 1984



R & M CONSULTANTS, INC.  
SUSITTNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg	
1	0	0	0	1	4	14	20	18	24	46	62	67	56	60	43	15	26	13	6	4	1	0	0	0	20	
2	0	0	0	1	1	3	3	8	9	12	13	16	13	15	28	15	8	10	10	8	4	1	0	0	0	7
3	0	0	0	0	2	6	6	11	27	41	51	30	36	48	51	50	60	30	14	11	3	1	0	0	0	20
4	0	0	0	1	1	3	11	29	21	32	32	78	58	83	71	36	45	28	35	16	12	2	0	0	0	25
5	0	0	0	1	2	5	9	15	30	44	47	34	39	32	30	34	16	15	12	5	4	0	0	0	0	15
6	0	0	0	1	2	7	18	36	29	29	43	47	27	15	23	12	14	8	11	3	2	1	0	0	0	13
7	0	0	0	1	6	9	22	35	17	16	29	57	31	21	21	28	38	43	23	20	12	4	1	0	0	18
8	0	0	0	0	2	4	11	8	14	18	24	43	58	37	32	30	32	32	16	13	6	2	0	0	0	16
9	0	0	0	1	3	5	8	9	11	23	30	44	46	34	44	53	26	21	26	11	6	3	1	0	0	17
10	0	0	0	0	4	13	11	11	10	18	31	46	37	44	51	18	4	5	29	10	4	3	0	0	0	14
11	0	0	0	1	3	5	21	23	30	32	19	23	45	39	41	67	53	24	18	21	10	4	1	0	0	20
12	0	0	0	1	3	6	8	13	28	62	65	70	85	52	10	56	49	26	29	13	3	1	0	0	0	24
13	0	0	0	0	1	3	4	10	10	30	18	44	53	68	67	50	21	34	21	13	3	1	0	0	0	19
14	0	0	0	1	3	7	11	32	43	36	34	30	36	38	26	23	16	11	6	4	2	0	0	0	0	15
15	0	0	0	0	1	3	4	9	15	23	21	45	90	45	76	25	47	33	20	7	2	1	0	0	0	19
16	0	0	0	0	1	3	4	10	22	53	63	50	48	33	23	7	6	3	2	2	1	0	0	0	0	14
17	0	0	0	0	0	1	2	3	4	5	5	7	8	6	5	7	5	3	3	2	1	0	0	0	0	3
18	0	0	0	0	1	1	2	5	6	11	14	14	10	9	8	7	7	6	3	2	1	0	0	0	4	
19	0	0	0	0	0	1	2	3	3	3	8	10	17	15	10	6	5	2	2	2	0	0	0	0	4	
20	0	0	0	0	0	1	2	4	6	6	6	9	7	10	5	6	10	7	4	1	1	0	0	0	3	
21	0	0	0	0	0	1	2	2	4	8	7	6	9	12	17	16	25	18	4	4	1	1	0	0	6	
22	0	0	0	0	0	1	4	7	11	11	12	17	27	39	31	28	16	15	13	8	5	2	0	0	10	
23	0	0	0	0	2	9	8	20	41	53	59	65	70	69	52	49	52	49	24	18	4	1	0	0	27	
24	0	0	0	0	2	3	5	9	11	26	33	31	19	22	18	39	20	19	18	6	2	1	0	0	12	
25	0	0	0	0	1	1	2	2	3	5	5	7	8	14	16	12	11	10	4	2	1	0	0	0	4	
26	0	0	0	0	0	1	2	3	5	6	16	24	40	39	28	34	15	19	21	14	11	1	0	0	12	
27	0	0	0	0	0	4	6	5	10	13	16	26	23	32	29	32	34	10	6	2	1	0	0	0	10	
28	0	0	0	0	1	1	3	2	6	8	13	13	23	19	12	9	9	12	9	6	4	0	0	0	6	
29	0	0	0	0	1	3	4	5	7	12	8	6	9	7	12	10	6	5	3	2	1	0	0	0	4	
30	0	0	0	0	0	1	6	9	13	18	34	42	23	17	26	37	26	11	10	3	2	1	0	0	11	
31	0	0	0	0	0	1	3	3	6	8	13	15	20	17	22	26	10	6	7	2	0	0	0	0	6	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING July, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1488	100
WIND SPEED	1488	100
WIND DIRECTION	1488	100
PEAK GUST	1488	100
RELATIVE HUMIDITY	630	42
PRECIPITATION	1488	100
SOLAR RADIATION	1488	100
DEW POINT	630	42

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -10 RH Points      7/1 - 7/13  
                              -20                    7/13 - 7/21
2. Solar -1 mW/CM<sup>2</sup>

Additional comments on this month's data:

1. Problems with RH oscillator. Data lost intermittently from 7/3 to 7/21. Erratic RH data unusable from 7/21 to 7/31.

R & M CONSULTANTS, INC.  
SUSSETNA HYDROCELL ELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE	
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3	
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4	
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	2.2	1.6	1.0	.4	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	5	
6	.2	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	0.0	0.0	0.0	8	
9	10.2	5.6	1.2	1.2	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9	
10	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12	
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15	
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16	
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17	
18	0.0	.2	0.0	.2	0.0	0.0	.2	1.0	1.0	1.0	1.2	1.0	1.0	1.8	1.6	.8	1.4	1.8	2.6	2.2	2.4	2.2	1.4	1.2	18	
19	1.0	.8	.4	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	1.0	1.4	.6	.2	.2	.6	.4	0.0	0.0	1.0	.2	.2	.2	.2	19
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	
21	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.6	0.0	0.0	21	
22	0.0	.2	.2	.2	.4	.2	.2	0.0	.2	.2	.2	0.0	.2	.2	.2	.2	.8	.2	.2	.2	.2	.2	.2	.4	.6	22
23	.8	.2	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	2.2	1.4	1.6	2.4	3.2	23
24	1.8	7.0	3.4	4.4	3.8	1.4	0.0	.2	.8	.8	.8	1.2	1.4	1.2	1.4	2.2	1.8	.6	.8	1.6	.4	.8	.2	.6	.2	24
25	2.4	2.2	.8	.2	.6	.2	.3	.4	1.0	2.8	4.0	2.4	.2	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26	
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27	
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28	
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29	
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30	
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSSEX TNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
	DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW	

0300	9.5	*****	**	210	.2	203	1.3	0	0300	10.3	*****	**	169	.2	168	1.3	0	0300	11.4	*****	**	203	.2	180	1.3	0
0600	9.6	*****	**	236	.1	238	1.3	2	0600	10.6	*****	**	184	.2	219	1.3	0	0600	11.1	*****	**	172	.2	158	1.3	2
0900	10.2	*****	**	300	.6	314	1.9	8	0900	11.3	*****	**	307	.4	286	1.9	5	0900	12.3	*****	**	008	.3	146	1.3	8
1200	11.0	*****	**	300	1.1	306	1.9	22	1200	12.3	*****	**	300	1.0	275	2.5	14	1200	14.1	*****	**	306	.8	297	2.5	24
1500	11.1	*****	**	303	1.1	307	2.5	10	1500	13.0	*****	**	307	1.0	302	2.5	20	1500	15.6	*****	**	301	1.4	300	3.2	20
1800	11.6	*****	**	301	9	333	2.5	6	1800	13.1	*****	**	297	1.2	293	3.2	7	1800	15.3	*****	**	305	1.0	312	3.2	7
2100	11.3	*****	**	245	.5	297	1.9	0	2100	12.8	*****	**	314	.5	311	2.5	1	2100	14.6	*****	**	269	.5	256	1.9	1
2400	10.7	*****	**	277	.6	275	2.5	0	2400	11.9	*****	**	195	.5	185	1.3	0	2400	13.1	*****	**	231	.6	238	1.9	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
	DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW	

0300	12.6	*****	**	223	.2	221	1.3	0	0300	13.9	*****	**	211	.4	185	1.9	0	0300	12.6	*****	**	289	.4	306	1.9	0
0600	12.9	*****	**	208	.2	217	.6	2	0600	13.9	*****	**	229	.4	264	1.9	1	0600	12.3	*****	**	295	1.0	329	3.2	4
0900	14.4	*****	**	317	.4	340	2.5	11	0900	13.0	*****	**	290	1.0	271	2.5	2	0900	13.5	*****	**	323	.5	297	1.9	15
1200	16.6	*****	**	322	1.2	312	3.2	30	1200	13.1	*****	**	317	.9	321	2.5	14	1200	16.4	*****	**	344	.9	004	3.2	62
1500	16.6	*****	**	307	1.4	315	3.2	33	1500	13.1	*****	**	305	.9	294	2.5	12	1500	19.8	*****	**	310	1.3	308	3.8	30
1800	20.9	*****	**	305	1.6	306	3.8	26	1800	13.1	*****	**	305	.9	297	2.5	2	1800	21.1	*****	**	344	.8	032	4.4	17
2100	17.8	*****	**	289	1.6	300	5.1	2	2100	12.8	*****	**	279	.6	264	1.3	0	2100	17.7	*****	**	048	1.5	024	5.1	2
2400	14.2	*****	**	204	.9	221	1.9	0	2400	12.7	*****	**	263	.1	271	1.3	0	2400	10.0	*****	**	167	1.0	142	2.5	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
	DEG C	DEG C	% DEG.	M/S	MW					DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	MW	

0300	8.0	-6.3	36	144	1.3	139	3.2	0	0300	12.8	*****	97	201	.4	207	1.3	0	0300	10.7	*****	98	232	.8	264	4.4	0
0600	8.3	*****	41	158	.7	142	2.5	3	0600	12.7	10.6	87	255	.6	245	2.5	2	0600	9.6	*****	94	147	.7	139	2.5	2
0900	14.4	*****	55	048	.6	052	1.9	34	0900	12.4	10.3	87	280	1.2	278	2.5	6	0900	11.9	*****	90	070	.1	014	3.2	25
1200	18.6	1.5	32	309	1.4	294	3.8	57	1200	14.9	7.8	62	302	1.3	310	3.2	25	1200	14.6	5.1	53	332	1.2	316	3.2	28
1500	20.3	.6	27	311	2.3	315	4.4	39	1500	14.9	7.5	61	310	2.1	315	4.4	17	1500	14.6	-8.35	303	1.7	303	3.8	25	
1800	21.0	2.7	30	311	2.6	315	5.1	30	1800	14.7	8.3	65	309	2.2	305	4.4	7	1800	13.7	3.0	48	309	.8	247	4.4	6
2100	16.9	7.6	54	292	1.6	307	4.4	1	2100	13.0	*****	88	293	1.0	318	3.8	0	2100	11.6	*****	92	141	.7	225	3.2	1
2400	13.4	10.4	82	200	1.1	196	1.9	0	2400	12.4	*****	98	179	.5	174	2.5	0	2400	9.6	4.4	70	158	1.1	155	3.2	0

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.					
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
0300	8.2	-14.8	18	134	1.1	121	3.2	0	0300	9.5	*****	99	198	.5	152	1.3	0	0300
0600	8.0	-3.3	45	127	1.2	121	2.5	2	0600	8.8	*****	99	202	.4	217	1.3	3	0600
0900	10.5	*****	**	058	1.1	046	2.5	22	0900	12.8	*****	59	041	.6	065	1.9	36	0900
1200	13.6	3.1	49	018	1.0	031	3.2	22	1200	16.3	3.3	42	007	1.0	047	5.1	69	1200
1500	14.9	2.0	42	322	1.8	317	4.4	33	1500	17.3	.7	33	048	2.2	049	5.7	59	1500
1800	13.8	3.0	48	315	1.6	309	3.8	14	1800	16.6	.1	33	030	3.2	034	6.3	28	1800
2100	11.2	*****	70	258	.6	299	3.8	1	2100	13.6	.2	40	030	3.2	035	6.3	1	2100
2400	9.0	*****	93	172	.6	197	1.3	0	2400	8.6	3.1	68	108	1.0	050	4.4	0	2400

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.					
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
0300	5.1	*****	79	138	.9	108	2.5	0	0300	6.3	*****	83	138	.9	114	3.2	0	0300
0600	5.1	3.7	91	145	.7	129	3.8	1	0600	4.9	2.9	87	116	1.1	109	3.2	4	0600
0900	9.7	4.7	71	078	1.2	085	2.5	23	0900	10.1	4.9	70	056	1.4	073	3.2	34	0900
1200	16.9	.4	33	098	2.0	095	5.1	61	1200	18.0	5.2	43	017	1.1	035	2.5	48	1200
1500	20.1	.9	28	130	2.0	137	5.1	58	1500	19.3	3.7	36	303	1.6	282	3.2	28	1500
1800	21.0	-1.6	22	109	1.6	120	4.4	29	1800	21.1	4.5	34	301	2.0	310	5.1	17	1800
2100	12.8	*****	54	117	.8	062	3.8	1	2100	14.4	7.5	63	273	1.2	318	5.1	1	2100
2400	8.1	3.8	74	126	1.4	151	3.2	0	2400	9.5	6.9	84	187	1.0	194	2.5	0	2400

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.					
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST RAD	DEG C	POINT RH	DIR.	SPD.	DIR.	GUST RAD	
0300	8.4	*****	94	134	.8	141	2.5	0	0300	12.5	11.0	91	319	2.0	333	5.1	0	0300
0600	7.8	7.0	95	126	.7	098	3.2	4	0600	11.4	*****	96	284	1.2	295	3.8	1	0600
0900	10.2	8.3	88	054	1.2	046	2.5	20	0900	10.8	10.5	98	307	1.3	316	3.8	6	0900
1200	15.8	10.4	70	001	.8	038	2.5	20	1200	11.1	9.8	92	300	1.6	312	3.8	6	1200
1500	17.5	11.2	66	309	1.5	307	5.1	26	1500	11.9	10.0	88	320	1.7	307	3.8	10	1500
1800	18.6	11.3	62	312	2.5	309	6.3	28	1800	11.4	10.0	91	311	2.2	316	5.1	6	1800
2100	15.5	10.9	74	285	1.4	276	5.7	0	2100	10.7	9.6	93	286	1.6	302	5.1	0	2100
2400	13.8	11.3	85	273	1.2	296	3.8	0	2400	10.0	*****	99	258	.8	256	2.5	0	2400

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## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.									
NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	M/S									
0300	7.5 ****	**	259	1.0	255	1.9	0	0300	6.1 ****	**	193	.3	206	1.3	0	0300	6.9 ****	**	186	.7	186	1.9	0
0600	7.0 ****	**	199	.7	198	1.9	1	0600	7.7 ****	**	184	.5	190	1.3	2	0600	6.3 ****	**	167	.6	155	1.9	1
0900	9.4 ****	**	213	.3	180	1.9	10	0900	8.7 ****	**	122	.2	174	1.3	6	0900	*****	***	089	.3	156	1.9	11
1200	11.3 ****	**	258	.4	295	1.3	6	1200	9.5 ****	**	288	1.1	315	3.8	8	1200	*****	***	***	***	***	***	30
1500	12.1 ****	**	275	1.2	301	2.5	23	1500	10.2 ****	**	312	1.5	320	3.2	8	1500	*****	***	***	***	***	***	17
1800	10.9 ****	**	268	1.6	258	4.4	11	1800	10.3 ****	**	288	1.3	280	3.2	10	1800	*****	***	***	***	***	***	8
2100	9.4 ****	**	258	1.4	264	3.2	0	2100	9.1 ****	**	276	1.0	297	3.2	0	2100	*****	***	***	***	***	***	0
2400	8.7 ****	**	193	.4	247	1.9	0	2400	8.3 ****	**	227	.5	279	1.9	0	2400	*****	***	***	***	***	***	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.									
NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	M/S									
0300	****	****	**	***	***	0	0300	****	***	.	***	***	***	***	0	0300	****	***	***	***	***	***	0
0600	****	****	**	***	***	1	0600	****	***	*	***	***	***	***	0	0600	****	***	***	***	***	***	0
0900	****	****	**	***	***	11	0900	****	***	*	***	***	***	***	3	0900	****	***	***	***	***	***	7
1200	****	****	**	***	***	1200	****	***	*	***	***	***	***	9	1200	****	***	***	***	***	***	13	
1500	****	****	**	***	***	16	1500	****	***	*	***	***	***	67	1500	8.4 ****	46	004	.4	008	3.2	8	
1800	****	****	**	***	***	4	1800	****	***	*	***	***	***	6	1800	8.9 ****	44	337	.4	322	1.3	6	
2100	****	****	**	***	***	0	2100	****	***	*	***	***	***	0	2100	7.9 ****	43	298	.2	316	1.9	0	
2400	****	****	**	***	***	0	2400	****	***	*	***	***	***	0	2400	7.7 ****	45	195	.2	143	1.3	0	

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.	HR	DEW	WIND	WIND GUST MAX.	DIR.												
NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	SPD.	DIR.	GUST RAD												
DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	DEG C	DEG C	%	DEG.	M/S												
0300	7.4 ****	51	337	.2	336	1.3	0	0300	2.7	-2.6	68	210	1.3	194	3.2	0	0300	-1.2	-6.5	67	171	1.3	175	3.2	0	
0600	7.2 ****	50	182	.2	146	1.9	0	0600	5.6	-6.1	43	163	1.4	192	7.6	1	0600	-2.8	-5.3	83	144	1.3	113	4.4	1	
0900	7.4 ****	**	291	.6	293	1.9	2	0900	5.1	-7.8	39	027	4.4	037	11.4	14	0900	4.7	-7.5	41	111	1.1	075	5.1	29	
1200	6.4	2.7	77	316	.9	287	5.7	2	1200	7.3	-7.3	35	017	4.9	020	10.8	56	1200	7.3	-7.3	35	024	3.9	023	7.6	57
1500	6.0	1.4	72	236	1.3	261	4.4	6	1500	7.8	-6.9	35	340	4.0	341	9.5	51	1500	8.5	-7.0	33	028	2.7	028	5.7	43
1800	6.0	2.1	76	186	.9	153	4.4	8	1800	6.8	-7.7	35	005	3.7	033	8.9	22	1800	8.1	-7.4	33	029	3.9	030	7.6	21
2100	4.6	.9	77	265	1.6	270	4.4	0	2100	1.3	-6.8	55	356	1.3	348	8.3	0	2100	3.2	-8.3	43	032	3.8	023	8.9	0
2400	3.6 ****	71	246	1.4	257	4.4	0	2400	-.5	-7.1	61	184	1.2	195	3.2	0	2400	-1.5	-7.0	66	153	1.1	150	2.5	0	

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R & M CONSULTANTS, INC.  
SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.															
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST														
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C														
0300	-2.8	*****	74	145	1.1	134	2.5	0	0300	.7	-6.2	60	172	1.2	178	2.5	0	0300	1.8	-6.8	53	136	1.7	119	5.1	0
0600	-3.7	-7.1	77	151	1.2	170	3.2	1	0600	-1.1	*****	70	154	.9	177	2.5	1	0600	-.8	*****	68	165	1.5	162	3.8	1
0900	2.6	*****	60	096	.8	115	2.5	35	0900	4.8	-5.9	46	093	.6	054	2.5	29	0900	4.9	-7.0	42	158	.6	099	5.7	23
1200	8.5	-7.8	31	082	2.1	078	5.7	53	1200	8.6	-5.8	36	118	2.2	099	4.4	49	1200	7.6	-6.7	36	080	3.2	073	7.0	59
1500	11.1	-6.8	24	087	2.1	084	5.1	47	1500	11.0	-6.0	30	128	2.1	138	5.1	43	1500	7.8	-6.9	35	028	5.3	020	10.2	42
1800	10.8	-9.6	23	107	2.4	121	5.7	16	1800	10.8	-6.7	29	115	2.2	127	5.1	19	1800	7.6	-7.0	35	025	6.1	023	10.2	19
2100	5.0	-7.6	40	145	1.7	129	5.1	0	2100	5.1	-7.8	39	041	3.5	061	11.4	0	2100	5.0	-7.3	41	028	6.3	025	11.4	0
2400	.4	-6.7	59	187	1.1	177	2.5	0	2400	2.7	-5.4	55	163	1.1	172	3.2	0	2400	3.1	-5.1	55	182	1.0	164	3.8	0

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.									
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD						
DEG C	DEG C	%	DEG C	DEG C	%	DEG C						
0300	2.3	-3.6	65	158	1.1	149	3.2	0				
0600	1.5	*****	68	136	1.1	135	3.2	0				
0900	4.7	-1.1	66	112	1.0	120	2.5	24				
1200	7.6	-1.9	51	354	.9	054	4.4	17				
1500	10.2	-1.3	45	010	1.4	028	6.3	17				
1800	10.3	-1.5	44	310	.7	330	4.4	7				
2100	7.2	-1.0	56	016	1.8	027	7.0	0				
2400	2.8	-1.2	75	183	.9	139	2.5	0				

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R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

DAY	RES.			RES.			AVG.	MAX.	MAX.	P'VAL MEAN			DAY'S	
	MAX. DEG C	MIN. DEG C	MEAN DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND DIR. DEG	GUST DIR. DEG	GUST SPD. M/S	P'VAL %	MEAN DEG C	MEAN MM	SOLAR WH/SDM	ENERGY DAY	
1	11.8	9.4	10.6	289	.6	.7	307	2.5	NNW	**	****	.6	1350	1
2	13.5	10.3	11.9	290	.5	.7	293	3.2	NNW	**	****	.2	1335	2
3	15.6	11.0	13.3	290	.5	.7	300	3.2	NNW	**	****	.2	2030	3
4	21.1	12.5	16.8	294	.8	1.0	300	5.1	SSW	**	****	0.0	3200	4
5	14.3	12.7	13.5	289	.6	.7	271	2.5	NNW	**	****	10.4	690	5
6	21.4	10.0	15.7	334	.5	1.2	024	5.1	NW	**	****	.4	4445	6
7	21.2	7.1	14.2	295	.7	1.5	315	5.1	NW	40	2.0	0.0	5190	7
8	15.4	12.1	13.8	293	1.0	1.2	315	4.4	NW	71	8.8	1.0	2230	8
9	15.9	9.5	12.7	264	.2	1.1	264	4.4	NNW	60	4.9	19.4	3300	9
10	14.9	7.8	11.4	008	.2	1.2	317	4.4	NW	43	-1.2	.2	3035	10
11	17.8	8.4	13.1	040	1.2	1.6	034	6.3	NNE	42	1.6	0.0	5265	11
12	18.4	2.7	10.6	067	1.7	2.1	024	6.3	NNE	52	-2.2	0.0	5805	12
13	21.2	4.4	12.8	115	1.2	1.4	095	5.1	ESE	48	1.6	0.0	5470	13
14	21.1	4.8	13.0	322	.3	1.4	310	5.1	WNW	60	4.7	0.0	4015	14
15	21.0	5.9	13.5	322	.3	1.3	318	5.7	NW	60	6.9	0.0	5360	15
16	19.2	6.9	13.1	316	.6	1.3	309	6.3	NNW	78	9.8	0.0	3020	16
17	13.7	10.0	11.9	303	1.5	1.6	333	5.1	NW	92	10.2	0.0	835	17
18	11.2	7.8	9.5	278	.4	.7	307	2.5	W	90	8.6	26.2	1260	18
19	12.1	6.8	9.5	253	.8	.9	258	4.4	WSW	**	****	8.4	1395	19
20	10.6	7.0	8.8	276	.6	.9	315	3.8	NNW	**	****	.2	1175	20
21	8.1	6.3	7.2	167	.5	.7	186	1.9	S	**	****	.6	2055	21
22	*****	*****	*****	***	****	***	***	***	***	**	*****	5.2	1229	22
23	*****	*****	*****	***	****	***	***	***	***	**	*****	12.2	1980	23
24	9.2	7.7	8.5	325	.2	.4	008	3.2	NW	**	*****	38.6	940	24
25	8.0	3.6	5.8	254	.7	1.1	287	5.7	W	74	1.3	17.8	595	25
26	8.4	-5	4.0	008	1.7	3.2	037	11.4	SSW	47	-6.1	.2	4325	26
27	9.2	-2.8	3.2	046	1.6	2.5	023	8.9	NNE	50	-6.9	0.0	4690	27
28	11.3	-4.1	3.6	117	1.3	1.6	078	5.7	E	45	-7.7	0.0	4650	28
29	11.1	-1.7	4.7	111	1.3	1.8	061	11.4	ESE	41	-6.4	0.0	4285	29
30	7.9	-8	3.6	047	2.2	3.3	025	11.4	NNE	43	-6.8	0.0	3780	30
31	10.7	1.5	6.1	054	.3	1.3	027	7.0	SE	57	-2.3	0.0	1665	31
MONTH	21.4	-4.1	10.2	000	.3	1.4	037	11.4	NNW	56	1.2	141.8	90499	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.9

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8

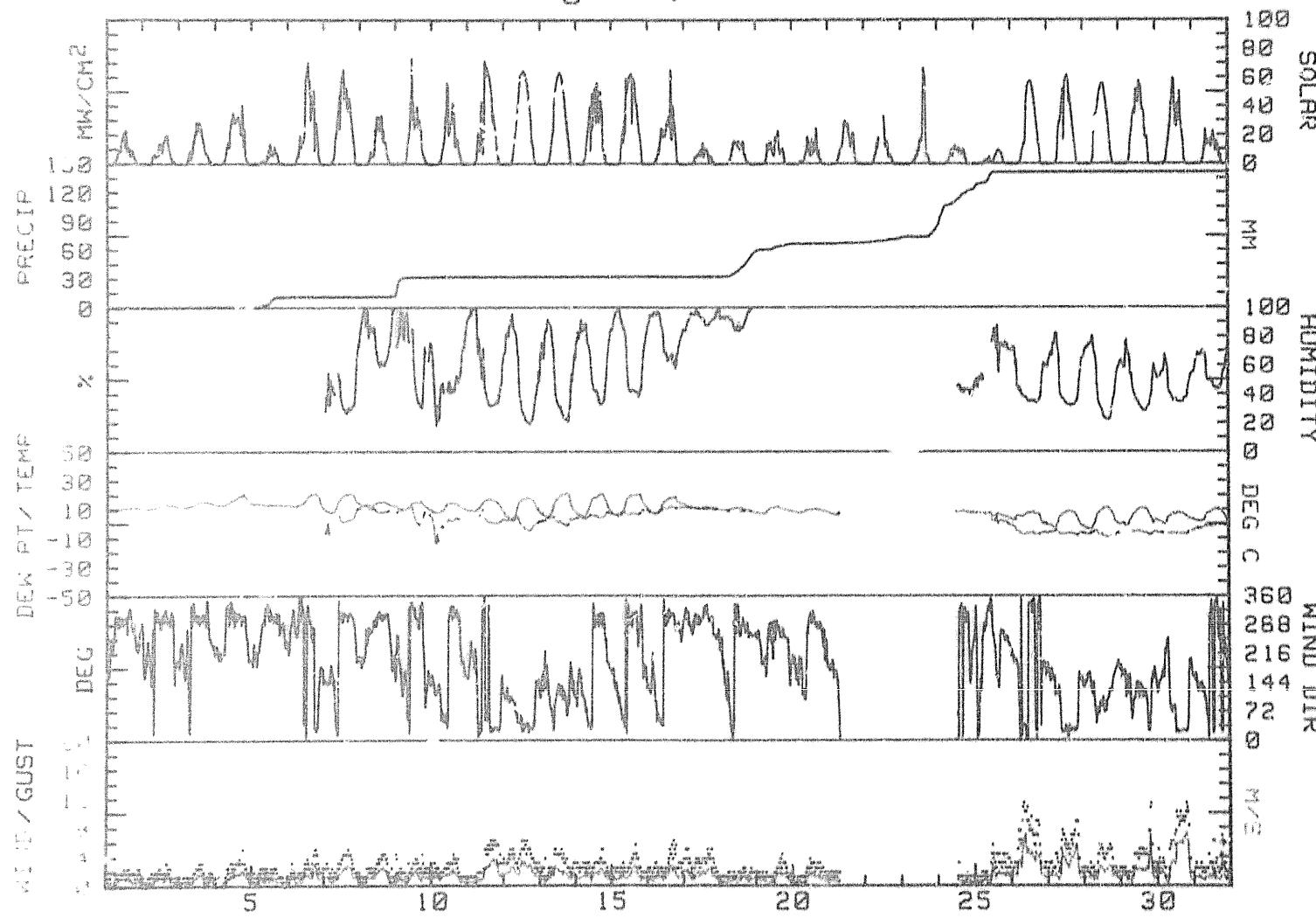
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.2

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.2

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
August, 1984



R & M CONSULTANTS, INC.

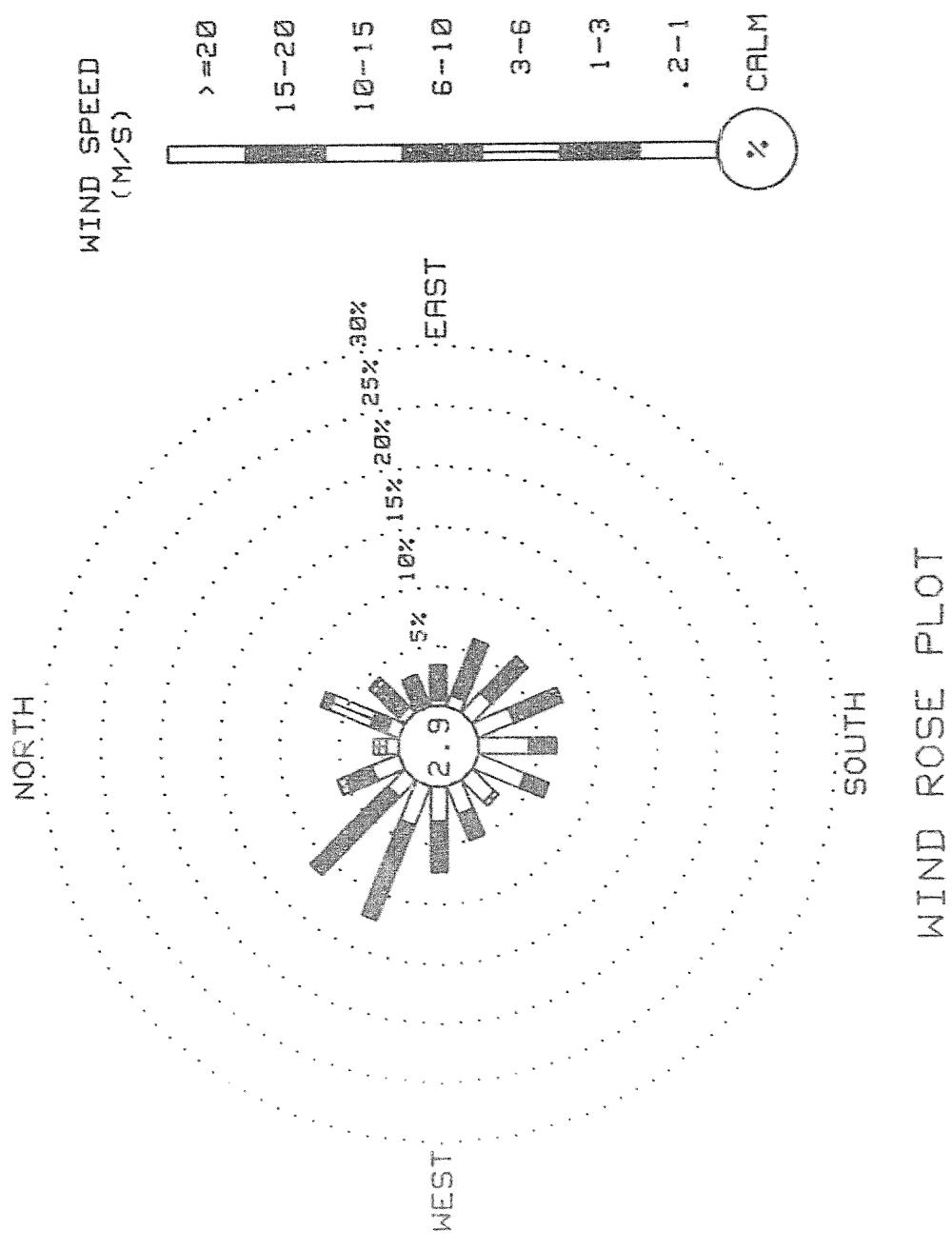
ESTUARINE HYDROCOLLECTING PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.05	.60	.45	0.00	0.00	0.00	0.00	2.10
NNE	1.20	1.35	3.75	.75	0.00	0.00	0.00	7.04
NE	.75	2.77	.45	.22	0.00	0.00	0.00	4.19
ENE	.37	2.25	.30	0.00	0.00	0.00	0.00	2.02
E	.52	2.76	.22	0.00	0.00	0.00	0.00	3.45
ESE	1.05	5.02	0.00	0.00	0.00	0.00	0.00	6.07
SE	2.32	4.19	.07	0.00	0.00	0.00	0.00	6.59
SSE	3.30	4.34	0.00	0.00	0.00	0.00	0.00	7.64
S	4.27	2.25	0.00	0.00	0.00	0.00	0.00	6.52
SSW	4.27	2.02	.07	0.00	0.00	0.00	0.00	6.37
SW	2.62	.45	0.00	0.00	0.00	0.00	0.00	3.07
W	3.00	4.27	0.00	0.00	0.00	0.00	0.00	4.94
WNW	3.60	8.54	0.00	0.00	0.00	0.00	0.00	12.13
NNW	2.02	9.14	.07	0.00	0.00	0.00	0.00	11.24
NNW	2.47	2.32	.75	0.00	0.00	0.00	0.00	5.54
CALM	—	—	—	—	—	—	—	—
TOTAL	35.43	54.53	6.14	.97	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT  
 1335 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
 1468 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.  
 \* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
August, 1984



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	2	3	7	9	12	17	22	18	10	11	6	8	8	3	2	1	0	0	0	6
2	0	0	0	0	0	0	5	6	5	7	10	12	9	15	18	20	12	8	4	2	2	0	0	0	6
3	0	0	0	0	0	2	8	6	8	16	21	27	25	28	23	16	10	7	6	3	2	0	0	0	8
4	0	0	0	0	1	2	6	12	13	24	30	33	30	31	32	29	21	34	18	6	3	1	0	0	13
5	0	0	0	0	0	1	2	2	2	3	5	12	8	6	10	9	7	3	2	1	0	0	0	0	3
6	0	0	0	0	0	3	6	17	13	16	22	60	67	59	42	45	46	13	25	11	3	0	0	0	19
7	0	0	0	0	1	3	11	20	34	35	52	59	56	49	46	41	44	33	23	14	2	0	0	0	22
8	0	0	0	0	0	2	7	5	6	17	27	28	28	28	26	20	16	9	4	2	1	0	0	0	9
9	0	0	0	0	0	2	5	15	23	43	53	36	28	36	29	29	21	9	5	3	1	0	0	0	14
10	0	0	0	0	1	2	6	11	19	32	55	21	27	36	38	16	14	16	8	4	1	0	0	0	13
11	0	0	0	0	0	3	12	22	23	36	11	71	65	65	61	54	39	32	24	10	3	1	0	0	22
12	0	0	0	0	0	4	13	22	32	44	57	63	64	64	61	54	44	34	16	10	2	0	0	0	24
13	0	0	0	0	0	1	5	12	22	47	54	60	64	64	60	53	43	32	21	11	2	0	0	0	23
14	0	0	0	0	0	3	11	20	32	25	36	37	45	34	43	33	45	27	9	5	2	0	0	0	17
15	0	0	0	0	0	2	13	21	22	41	51	59	62	46	60	52	42	32	22	14	2	0	0	0	22
16	0	0	0	0	0	3	5	9	17	22	22	20	26	29	30	42	29	30	19	3	1	0	0	0	13
17	0	0	0	0	0	1	2	4	6	7	7	8	11	6	11	10	4	5	5	2	1	0	0	0	3
18	0	0	0	0	0	1	2	5	10	15	14	14	16	11	12	16	7	4	2	1	0	0	0	0	5
19	0	0	0	0	0	1	2	10	10	14	12	8	12	19	20	11	8	10	7	1	0	0	0	0	6
20	0	0	0	0	0	2	2	5	8	15	12	9	12	10	12	19	9	3	2	0	0	0	0	0	5
21	0	0	0	0	0	1	2	7	11	13	23	30	26	26	18	14	20	13	4	2	0	0	0	0	9
22	0	0	0	0	0	1	4	7	13	***	***	26	20	14	11	6	5	3	1	0	0	0	0	0	4
23	0	0	0	0	0	0	1	1	2	4	6	9	16	16	45	61	19	7	4	0	0	0	0	0	8
24	0	0	0	0	0	0	1	2	6	8	7	13	11	10	8	8	9	8	4	1	0	0	0	0	4
25	0	0	0	0	0	0	1	2	3	3	4	2	2	3	6	9	10	9	6	2	0	0	0	0	2
26	0	0	0	0	0	1	2	8	13	16	48	55	58	57	53	45	35	25	15	6	0	0	0	0	18
27	0	0	0	0	0	1	3	22	29	37	49	37	59	61	50	45	35	24	14	5	1	0	0	0	20
28	0	0	0	0	0	1	3	25	35	37	46	52	56	56	50	42	34	20	8	3	0	0	0	0	19
29	0	0	0	0	0	1	3	17	26	36	36	51	47	57	49	38	31	19	17	4	0	0	0	0	18
30	0	0	0	0	0	1	3	11	20	30	46	60	36	27	42	41	32	22	10	2	0	0	0	0	16
31	0	0	0	0	0	0	2	5	17	17	17	16	14	18	20	11	15	10	7	1	0	0	0	0	7

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING August, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1335	90
WIND SPEED	1334	90
WIND DIRECTION	1334	90
PEAK GUST	1334	90
RELATIVE HUMIDITY	660	44
PRECIPITATION	1481	100
SOLAR RADIATION	1481	100
DEW POINT	660	44

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH      -15 RH Points      8/7 - 8/11  
              +8                    8/11 - 8/18  
              -6                    8/24 - 8/31
2. Solar      -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. RH data suspected to be poor all month due to bad oscillator, but have been published as indicative of true RH. Adjustments have been made where possible. Erratic data are not usable from 8/1 to 8/7 and 8/19 to 8/21.
2. No temperature, RH, or wind data 8/21 to 8/24 due to annual maintenance. Solar radiation data lost for 3 hours on 8/22 when power was turned off. Precipitation data were estimated during this period.

R & M CONSULTANTS, INC.  
SUSIETNA HYDROELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE		
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1		
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2		
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3		
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4		
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5		
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6		
7	.2	1.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	.2	0.0	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7	
8	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8	
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9	
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10	
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11	
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.4	.2	.8	12		
13	.2	0.0	.2	0.0	0.0	.2	0.0	.2	0.0	.6	.4	.2	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13	
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.6	.6	0.0	0.0	15		
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16	
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	.2	.8	17			
18	.4	1.6	.2	0.0	0.0	.6	.4	.6	2.0	1.2	.4	.4	.2	0.0	0.0	.2	.2	0.0	0.0	0.0	0.0	0.0	.2	.2	.2	18	
19	.4	.2	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	.2	0.0	0.0	0.0	1.0	.6	.6	.4	19	
20	.2	.6	.2	.2	.8	.6	.2	.2	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20	
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21	
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22	
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23	
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24	
25	0.0	0.0	0.0	.2	.2	.4	0.0	.2	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26	
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27	
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28	
29	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29	
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.

HYDROCELL ELECTRIC POWER SYSTEM

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY 01

PAGE 02

DAY 03

HOUR DEW WIND WIND GUST MAX. HOUR DEW WIND WIND GUST MAX. HOUR DEW WIND WIND GUST MAX.  
 NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD NDNG TEMP. PJNT RH DIR. SPD. DIR. GUST RAD  
 DEG C DEG C % DEG. M/S DEG. M/S MW DEG C DEG C % DEG. M/S DEG. M/S MW DEG C DEG C % DEG. M/S DEG. M/S MW

0300	1.2	-1.7	81	144	1.1	135	3.2	0	0300	1.6	-2.9	72	132	1.5	127	3.2	0	0300	.9	-1.8	82	125	1.3	114	3.2	0
0600	-.5	-2.9	84	137	.7	108	2.5	1	0600	0.0	-3.0	80	105	1.7	110	5.1	1	0600	-.6	-3.0	84	119	1.4	118	3.2	1
0900	3.7	-1.4	69	080	1.5	104	3.2	26	0900	4.5	-1.3	66	072	1.5	089	3.2	25	0900	3.0	-1.9	70	090	1.3	129	3.2	25
1200	12.5	-1.9	37	075	1.4	122	5.7	52	1200	13.0	****	36	042	1.1	061	2.5	51	1200	13.0	-2.2	35	043	1.3	053	3.2	64
1500	14.7	-2.8	30	137	1.8	126	5.1	49	1500	15.3	-3.2	28	287	1.4	290	3.8	48	1500	13.8	-4.1	29	103	2.2	099	5.7	27
1800	14.7	-2.8	30	001	.6	353	4.4	20	1800	15.6	-3.0	28	263	1.3	244	3.2	19	1800	13.6	-4.2	29	069	1.7	031	5.7	8
2100	7.1	-2.4	51	229	1.0	225	2.5	0	2100	10.0	-8.47	096	.3	138	3.8	0	2100	10.6	-4.0	36	040	1.9	030	5.1	0	
2400	4.8	-2.1	61	140	1.1	139	3.2	0	2400	3.7	-8.72	140	1.3	116	3.8	0	2400	5.1	****	61	132	.9	116	3.2	0	

DAY 14

DAY 05

PAY 06

HOUR DEW WIND WIND GUST MAX. HOUR DEW WIND WIND GUST MAX. HOUR DEW WIND WIND GUST MAX.  
 NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD  
 DEG C DEG C % DEG. M/S DEG. M/S MM DEG C DEG C % DEG. M/S DEG. M/S MM DEG C DEG C % DEG. M/S DEG. M/S MM

0300	5.3	*****	63	165	.7	154	1.9	0	0300	6.0	*****	76	158	1.1	146	3.2	0	0300	6.4	*****	86	124	.5	124	2.5	0
0600	3.4	*****	72	148	.4	144	1.9	0	0600	5.7	*****	80	179	.4	162	1.9	0	0600	5.8	*****	87	110	.6	092	2.5	0
0900	7.3	*****	61	155	.5	153	1.9	10	0900	8.7	*****	72	276	.3	229	1.9	14	0.	.8.3	4.2	75	060	.7	076	2.5	30
1200	13.9	-.3	38	122	2.0	121	5.7	50	1200	14.2	2.1	44	092	1.3	100	5.1	25	1200	10.9	*****	67	046	1.1	072	3.2	19
1500	15.0	.3	37	113	3.2	123	7.0	28	1500	15.6	1.6	39	076	1.4	055	4.4	23	1500	13.7	3.2	49	332	.9	351	3.2	47
1800	14.5	.2	38	102	2.3	092	5.1	7	1800	12.2	4.0	57	291	1.3	320	5.7	8	1800	13.4	2.3	47	315	2.2	338	5.7	14
2100	11.2	1.4	51	123	1.7	121	4.4	0	2100	10.2	3.5	63	212	1.0	205	3.2	0	2100	7.2	*****	67	196	.8	279	2.5	0
2400	5.8	*****	71	166	1.2	145	2.5	0	2400	7.7	*****	72	192	.7	190	1.9	0	2400	7.2	*****	75	148	1.2	124	3.2	0

PAGE 02

DAY 08

DAY 09

HOUR DEW WIND WIND GUST MAX. HOUR DEW WIND WIND GUST MAX. HOUR DEW WIND WIND GUST MAX.  
 NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD  
 DEG C DEG C % DEG. M/S DEG. M/S MW DEG C DEG C % DEG. M/S DEG. M/S MW DEG C DEG C % DEG. M/S DEG. M/S MW

0300	6.1	*****	93	140	.6	127	1.9	0	0300	3.4	*****	84	132	1.1	110	3.2	0	0300	.8	*****	90	118	.7	101	3.2	0
0600	6.0	4.6	91	116	1.0	109	2.5	0	0600	2.6	3.85	113	1.5	153	2.5	1	0600	-5	-9.97	109	.8	102	2.5	0		
0900	6.6	4.4	86	100	.7	147	2.5	0	0900	4.4	7.77	106	1.6	112	3.2	24	0900	2.7	-7.78	076	.9	167	2.5	21		
1200	9.3	5.3	76	033	.8	060	1.9	14	1200	12.3	1.6	48	095	1.3	112	3.8	43	1200	13.2	2.4	48	043	1.2	061	2.5	49
1500	11.6	3.9	59	265	.8	257	3.5	44	1500	14.4	-6.36	106	1.8	110	4.4	44	1500	16.1	-2.129	300	1.1	284	2.5	47		
1800	8.2	*****	76	204	.8	209	4.4	8	1800	14.6	-4.36	107	1.5	088	3.8	9	1800	17.5	-1.328	290	1.1	279	3.2	19		
2100	4.9	1.9	81	168	.9	153	1.9	0	2100	6.4	-3.62	156	1.2	146	2.5	0	2100	8.5	-8.52	180	.8	139	3.8	0		
2400	5.0	1.8	80	136	1.2	129	3.2	0	2400	2.8	-5.79	120	1.0	123	2.5	0	2400	4.7	*****	69	157	1.0	131	3.5	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSSETNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW
0300	3.9	.1	76	112	.8	105	3.2	0	0300	.8	*****	82	150	.7	114	2.5	0	0300	4.4	-.2	72	114	.9	088	3.2	0					
0600	.8	-1.3	86	120	1.0	123	3.2	0	0600	-.5	-2.3	88	118	1.2	131	3.2	0	0600	4.3	1.2	80	081	1.4	088	3.8	0					
0900	3.9	-1.0	70	081	1.7	106	5.1	22	0900	2.2	-2.1	73	086	1.2	104	3.2	21	0900	5.9	*****	75	078	1.1	098	3.2	17					
1200	13.3	1.2	44	053	1.6	050	2.5	46	1200	12.7	4.4	43	061	1.6	057	3.2	44	1200	8.8	3.7	70	359	.8	057	2.5	22					
1500	16.2	-1.5	30	353	1.4	351	4.4	49	1500	15.9	*****	27	042	1.0	068	3.2	43	1500	10.5	3.6	62	303	2.0	312	4.4	25					
1800	16.5	-1.7	29	112	1.1	030	5.1	14	1800	13.4	-3.1	32	261	1.2	279	3.8	8	1800	10.0	3.6	64	315	1.8	324	3.8	4					
2100	9.4	-1.7	46	120	1.0	084	4.4	0	2100	7.1	-2.4	51	183	1.0	210	1.9	0	2100	6.9	3.9	81	243	.9	243	2.5	0					
2400	3.8	-1.3	69	130	1.3	102	3.2	0	2400	6.0	-1.1	60	134	1.4	132	2.5	0	2400	5.8	*****	91	168	1.1	196	3.8	0					

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW
0300	5.3	*****	93	134	.6	163	1.9	0	0300	4.3	.1	74	181	1.2	160	3.2	0	0300	9.9	1.0	54	158	1.3	121	3.2	0					
0600	5.2	2.7	84	117	1.0	125	3.2	0	0600	6.2	-1.6	64	168	1.0	153	3.2	0	0600	9.3	1.7	59	128	1.9	135	5.7	0					
0900	5.6	*****	83	099	.7	125	2.5	4	0900	9.4	-2.5	51	156	1.1	116	5.1	13	0900	10.5	2.6	58	154	1.6	159	3.8	11					
1200	7.6	*****	79	045	.5	074	1.9	18	1200	13.1	-1.4	37	097	2.4	114	5.7	29	1200	13.4	2.9	49	098	1.7	094	4.4	22					
1500	8.9	*****	78	320	.8	329	1.9	16	1500	14.5	-5.3	36	096	2.8	106	8.3	19	1500	15.0	1.4	40	044	1.0	068	3.2	19					
1800	8.6	5.2	79	284	1.1	285	2.5	7	1800	3.7	-9.3	37	106	2.9	113	7.0	2	1800	14.1	*****	43	249	.2	050	3.2	6					
2100	4.4	2.1	85	189	.6	262	1.9	0	2100	11.1	-1.4	42	149	1.4	152	5.1	0	2100	8.6	5.9	83	323	.7	322	3.2	0					
2400	2.7	.3	84	178	.9	168	2.5	0	2400	7.4	-1.3	54	169	1.6	141	3.2	0	2400	6.5	4.3	86	135	.9	106	2.5	0					

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD	POINT	NDNG TEMP.	RH	DIR.	SPD.	DTR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW
0300	4.6	2.8	88	122	1.4	118	4.4	0	0300	4.3	*****	97	186	.4	180	1.3	0	0300	5.7	*****	99	134	1.0	149	2.5	0					
0600	3.2	1.2	87	102	1.6	105	3.2	0	0600	2.2	*****	98	171	.6	165	1.3	0	0600	5.5	*****	88	138	.8	130	3.2	0					
0900	3.4	.1	79	085	1.5	095	3.2	19	0900	4.2	*****	72	193	.3	150	1.9	22	0900	5.8	3.1	83	115	1.3	134	3.2	3					
1200	10.9	*****	65	047	1.1	064	3.2	42	1200	8.1	4.2	76	340	.4	297	3.2	19	1200	7.6	5.4	86	074	1.0	081	3.2	8					
1500	14.4	2.2	44	301	1.3	307	3.8	43	1500	8.9	5.5	79	306	1.3	351	3.2	10	1500	9.5	4.2	74	317	1.1	302	3.8	9					
1800	10.2	*****	60	286	1.3	307	7.9	3	1800	9.1	5.7	79	315	1.3	311	3.2	5	1800	6.5	*****	76	241	.8	247	4.4	2					
2100	7.1	*****	71	181	.9	183	2.5	0	2100	7.2	7.0	99	164	.6	132	3.2	0	2100	6.0	2.3	77	130	1.4	118	3.8	0					
2400	5.6	*****	87	187	.6	202	1.9	0	2400	6.5	5.0	90	140	1.2	147	1.4	0	2400	5.5	2.8	83	142	1.0	176	3.2	0					

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSSETNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD											
DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	MN											
0300	5.1	3.1	87	135	.9	142	2.5	0 0300	.9	*****	91	201	.4	203	1.9	0 0300	-1.4	-2.9	90	110	.9	085	3.8	0
0600	4.3	1.7	83	149	.9	165	3.2	0 0600	2.0	*****	88	168	.9	148	2.5	0 0600	-2.4	*****	92	153	.7	146	2.5	0
0900	5.4	1.4	75	137	.9	142	2.5	7 0900	3.4	.8	83	198	1.0	210	3.8	3 0900	.1	*****	75	119	.6	126	3.2	12
1200	6.7	1.3	68	301	1.0	287	5.1	57 1200	7.8	*****	56	201	.9	211	3.2	31 1200	7.6	-1.1	54	059	1.5	070	3.2	38
1500	6.9	*****	68	304	1.4	270	5.7	10 1500	9.7	-2.7	42	039	3.8	051	7.6	33 1500	11.9	-2.8	36	008	.7	053	1.9	33
1800	3.4	.1	79	280	1.4	292	5.1	5 1800	8.8	-3.2	43	030	4.0	024	8.3	9 1800	11.5	-2.8	37	274	1.2	280	2.5	9
2100	2.0	-.3	85	263	1.0	254	3.8	0 2100	1.6	-3.2	70	133	.6	022	5.7	0 2100	3.5	-2.2	66	186	1.2	219	2.5	0
2400	.5	*****	90	281	.8	309	3.2	0 2400	-.5	-3.2	82	145	1.2	128	3.2	0 2400	.5	-3.4	75	143	.8	108	3.2	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD											
DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	MN											
0300	-.3	-3.2	81	119	.9	111	3.2	0 0300	1.9	-2.2	74	103	1.4	111	3.2	0 0300	3.6	-2.3	65	113	1.3	103	2.5	0
0600	-.6	-3.3	82	098	1.1	110	2.5	0 0600	.7	-2.4	80	094	2.2	099	3.2	0 0600	1.5	*****	74	107	1.3	119	3.2	0
0900	.3	-3.6	75	094	2.0	098	3.2	15 0900	2.0	-1.9	75	093	1.9	095	3.8	12 0900	2.7	*****	73	122	.4	105	1.9	8
1200	7.8	-.4	56	081	1.6	088	3.2	31 1200	10.7	-2.5	40	073	1.2	093	4.4	26 1200	9.7	-2.7	42	098	.8	072	3.8	28
1500	13.6	-2.1	34	087	1.4	067	3.8	31 1500	12.5	-2.3	36	070	1.3	078	5.1	18 1500	11.1	-3.2	37	081	1.6	074	3.8	11
1800	11.8	-4.1	33	151	1.0	171	3.2	4 1800	10.2	-2.6	41	288	1.0	356	3.2	2 1800	10.1	-3.4	39	085	.5	044	2.5	2
2100	7.8	-3.5	45	132	1.9	138	3.8	0 2100	6.4	*****	57	181	.9	204	1.9	0 2100	7.5	*****	55	221	.8	251	1.9	0
2400	3.2	*****	66	123	1.0	147	3.2	0 2400	5.3	*****	62	119	.8	128	2.5	0 2400	6.3	*****	61	181	.7	180	1.3	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.													
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD											
DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	DEG C	% DEG.	M/S	DEG C	MN											
0300	6.0	*****	73	199	.7	197	1.9	0 0300	4.0	.7	79	111	.9	111	3.2	0 0300	1.3	-.8	86	093	1.4	105	3.2	0
0600	4.0	*****	99	149	.5	117	1.9	0 0600	2.5	-.4	81	103	1.4	096	3.2	0 0600	1.5	-.4	87	086	1.6	081	3.8	0
0900	5.0	*****	84	128	.7	135	1.9	4 0900	3.8	.2	77	094	1.3	097	2.5	10 0900	2.0	-.4	84	087	1.7	089	3.2	5
1200	7.4	*****	71	063	.8	084	1.9	33 1200	9.6	*****	58	063	1.0	074	2.5	13 1200	9.3	1.0	56	068	1.7	070	3.2	36
1500	9.0	3.0	66	321	.7	295	3.8	10 1500	9.9	1.8	57	034	.5	099	3.8	12 1500	12.7	-.7	40	070	1.2	074	3.8	24
1800	8.4	*****	68	283	1.2	281	2.5	2 1800	9.1	.5	55	137	.5	111	2.5	2 1800	10.7	-.5	46	263	1.4	281	3.2	2
2100	6.0	*****	79	209	.7	261	1.9	0 2100	4.8	*****	70	168	1.0	147	2.5	0 2100	4.3	-1.5	66	172	1.3	144	3.8	0
2400	3.9	*****	88	157	.8	154	1.9	0 2400	2.9	-.4	79	109	.9	096	3.2	0 2400	1.0	-2.7	72	156	1.3	161	3.2	0

\*\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*\*

R & M CONSULTANTS, INC.  
SUBSTITUTION HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

DAY 28										DAY 29										DAY 30									
HOUR	DEW	WIND	WIND GUST MAX.	POINT	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	DIR.	SPD.	DIR.	GUST	RAD				
	DEG C	DEG C	% DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG C	MW		DEG C	DEG C	% DEG.	M/S	DEG C	MW		DEG C	DEG C	% DEG.	M/S	DEG C	MW			
0300	1.5	-2.6	74	128	1.4	143	3.2	0	0300	7.0	.7	64	111	2.1	111	6.3	0	0300	6.0	4.3	89	200	1.2	197	2.5	0			
0600	.1	****	82	163	.9	160	2.5	0	0600	6.8	2.3	73	112	3.1	094	7.6	0	0600	6.8	****	83	185	1.0	203	1.9	0			
0900	5.1	****	58	173	.9	175	2.5	7	0900	7.9	3.2	72	122	1.7	119	5.7	7	0900	7.1	3.2	76	165	1.1	181	2.5	7			
1200	10.6	****	46	130	.3	160	1.9	31	1200	9.8	3.8	66	105	2.1	093	6.3	11	1200	11.5	2.8	55	107	1.2	118	3.8	32			
1500	12.4	-1.6	38	115	2.8	124	7.0	14	1500	11.3	4.1	61	109	3.2	116	7.6	7	1500	11.8	1.4	49	123	2.8	124	5.7	15			
1800	11.0	-2.5	39	102	1.6	106	5.7	1	1800	11.6	4.6	62	115	2.2	120	6.3	0	1800	10.8	-1.0	44	103	2.4	097	7.6	1			
2100	8.6	-7	52	109	2.1	139	6.3	0	2100	9.3	4.2	70	154	.9	098	3.8	0	2100	8.7	.2	55	089	2.6	075	7.0	0			
2400	7.2	.7	63	090	2.2	095	6.3	0	2400	8.4	4.1	74	181	1.1	163	2.5	0	2400	8.6	.6	57	104	2.4	111	6.3	0			

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSSETNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

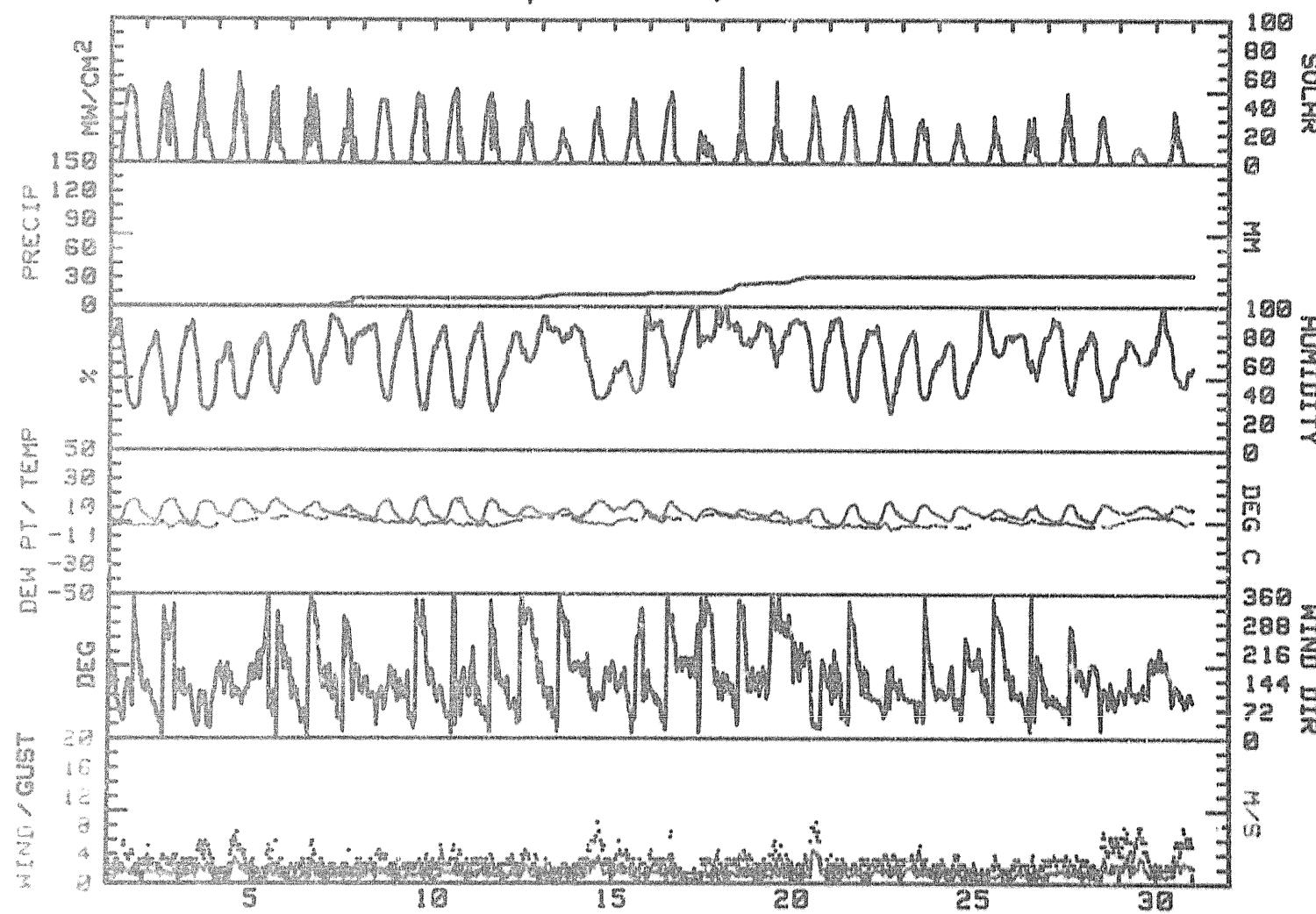
DAY	MAX.			RES.			AVG.			MAX.			MAX.			DAY'S		
	TEMP. DEG C	MIN. DEG C	MEAN DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P/VAL %	MEAN RH	MEAN DP DEG C	PRECIP MM	SOLAR ENERGY WH/SQM	DAY				
1	15.6	-8	7.4	120	.7	1.4	122	5.7	SE	53	-2.2	0.0	4440	1				
2	15.7	0.0	7.9	105	.4	1.5	110	5.1	ESE	55	-2.0	0.0	3875	2				
3	14.4	-1.5	6.5	087	1.3	1.6	099	5.7	ESE	54	-2.8	0.0	3120	3				
4	15.5	2.9	9.2	125	1.4	1.5	123	7.0	ESE	44	.5	0.0	3570	4				
5	15.9	5.2	10.6	155	.3	1.1	320	5.7	SSW	51	2.7	0.0	2330	5				
6	13.7	5.6	9.7	036	.2	1.1	338	5.7	SE	61	2.9	0.0	2360	6				
7	11.6	4.3	8.0	141	.5	1.0	209	4.4	SE	60	3.7	8.2	1855	7				
8	15.4	1.8	8.6	115	1.3	1.4	110	4.4	ESE	53	.4	.2	3525	8				
9	17.6	-6	8.5	104	.2	1.1	139	3.8	SE	55	-.5	0.0	3490	9				
10	16.5	.8	8.7	089	.9	1.4	106	5.1	ESE	55	-.9	0.0	3340	10				
11	15.9	-.8	7.6	111	.6	1.3	279	3.8	SE	56	-1.7	0.0	3130	11				
12	11.1	3.7	7.4	350	.2	1.3	312	4.4	E	72	2.5	2.0	2090	12				
13	9.1	2.7	5.9	147	.2	.9	125	3.2	S	82	3.3	2.2	1245	13				
14	14.7	2.7	8.7	127	1.5	1.9	186	8.3	S	49	-.7	0.0	1970	14				
15	15.0	6.5	10.8	124	.8	1.3	135	5.7	ESE	60	2.5	1.4	1980	15				
16	14.5	1.7	8.2	105	.3	1.3	307	7.0	E	74	2.2	0.0	2785	16				
17	9.8	1.1	5.5	236	.2	.9	147	4.4	SSE	84	5.5	1.4	1195	17				
18	8.9	5.2	7.1	127	.6	1.2	247	4.4	SE	83	3.6	8.8	1315	18				
19	8.2	.5	4.4	261	.4	1.1	270	5.7	W	77	1.1	3.8	1445	19				
20	9.7	-.5	4.6	069	.7	1.8	024	8.3	S	63	-1.9	3.2	2275	20				
21	12.7	-2.4	5.2	125	.3	1.0	085	3.8	SE	57	-2.3	0.0	2760	21				
22	14.5	-1.6	6.5	108	1.3	1.5	067	3.8	E	58	-2.9	0.0	2600	22				
23	12.5	.1	6.3	095	1.0	1.4	078	5.1	E	59	-2.2	0.0	1900	23				
24	11.4	1.1	6.3	114	.7	1.0	072	3.8	ESE	50	-2.7	0.0	1345	24				
25	9.5	3.9	6.7	193	.2	.8	295	3.8	SSW	73	2.7	1.2	1265	25				
26	12.1	2.3	7.2	104	.8	1.1	099	3.8	ESE	73	.3	0.0	1380	26				
27	12.7	.6	6.7	101	.9	1.5	081	3.8	E	68	-.6	0.0	2035	27				
28	12.7	0.0	6.4	117	1.4	1.6	124	7.0	ESE	53	-1.8	0.0	1620	28				
29	11.7	6.0	8.9	118	1.9	2.1	094	7.6	ESE	67	3.1	.2	640	29				
30	12.2	4.0	8.1	120	1.5	1.9	097	7.6	ESE	63	1.8	0.0	1450	30				
MONTH	17.6	-2.4	7.4	113	.7	1.3	106	8.3	ESE	62	.4	32.6	68330					

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS    6.3  
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL    6.3  
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL    8.3  
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS    7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
September, 1984



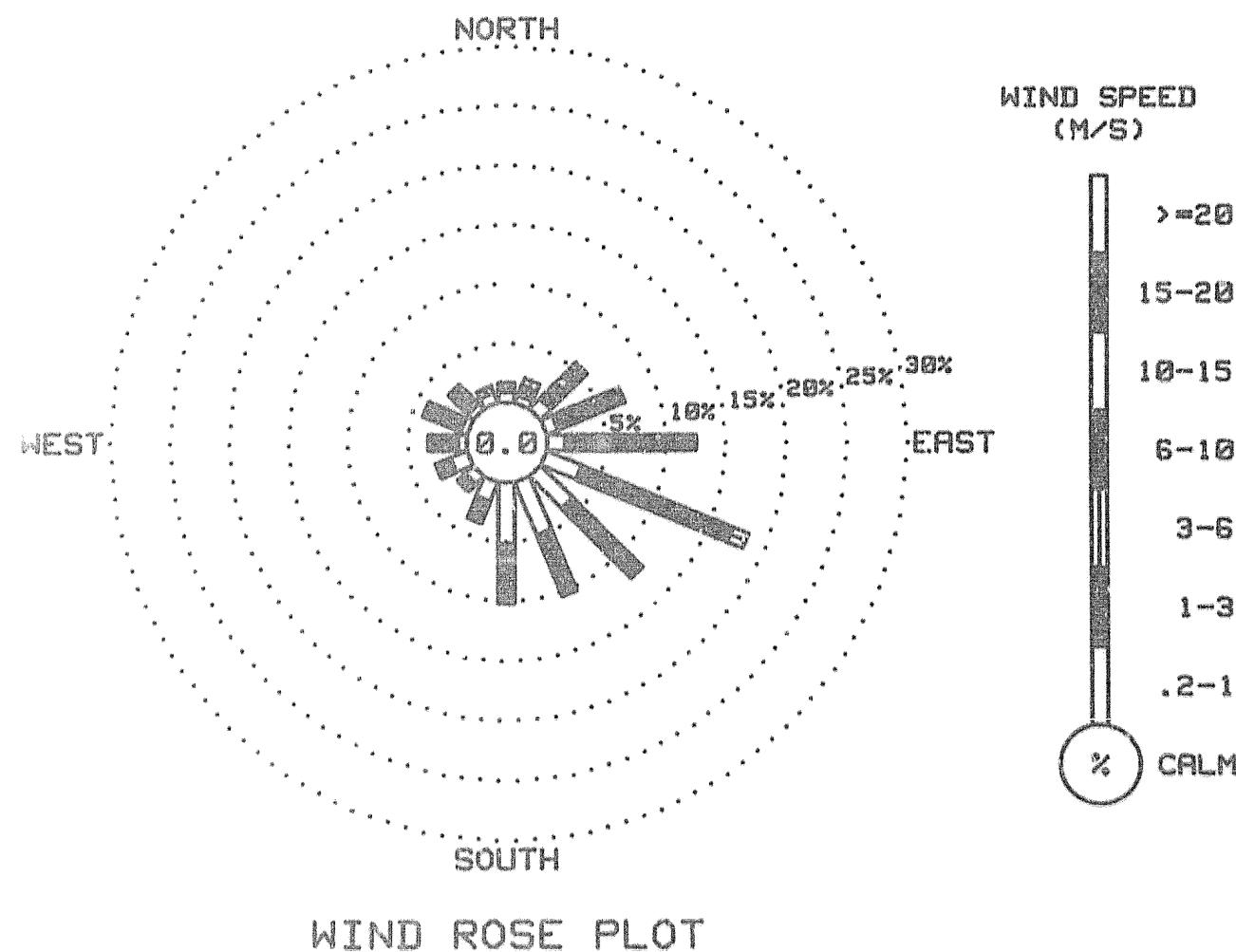
R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
	1.0	3.0	6.0	10.0	15.0	20.0			
N	.90	.76	0.00	0.00	0.00	0.00	0.00	0.00	1.67
NNE	.69	.90	.63	0.00	0.00	0.00	0.00	0.00	2.22
NE	1.25	4.03	.21	0.00	0.00	0.00	0.00	0.00	5.49
ENE	1.04	5.97	.07	0.00	0.00	0.00	0.00	0.00	7.08
E	1.53	10.69	.28	0.00	0.00	0.00	0.00	0.00	12.50
EEC	3.19	13.68	1.39	0.00	0.00	0.00	0.00	0.00	18.26
SE	3.82	8.06	.21	0.00	0.00	0.00	0.00	0.00	12.08
SSE	4.79	5.56	0.00	0.00	0.00	0.00	0.00	0.00	10.35
S	5.14	5.00	0.00	0.00	0.00	0.00	0.00	0.00	10.14
SSW	1.74	2.01	0.00	0.00	0.00	0.00	0.00	0.00	3.75
SW	.97	.83	0.00	0.00	0.00	0.00	0.00	0.00	1.81
WSW	1.53	1.39	0.00	0.00	0.00	0.00	0.00	0.00	2.92
W	.76	2.50	0.00	0.00	0.00	0.00	0.00	0.00	3.26
WNW	.63	3.40	0.00	0.00	0.00	0.00	0.00	0.00	4.03
NW	.63	2.29	0.00	0.00	0.00	0.00	0.00	0.00	2.92
NNW	.90	.56	.07	0.00	0.00	0.00	0.00	0.00	1.53
CALM									0.00
TOTAL	29.51	67.64	2.85	0.00	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT  
 1440 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
 1440 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.  
 \*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
September, 1984



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-----

1	0	0	0	0	0	1	2	13	24	34	43	50	53	53	50	47	39	23	12	3	0	0	0	0	19
2	0	0	0	0	0	1	3	11	23	34	42	50	54	54	50	40	31	21	14	3	0	0	0	0	16
3	0	0	0	0	0	1	2	13	24	33	42	56	56	56	52	46	32	22	16	11	6	2	0	0	13
4	0	0	0	0	0	0	3	9	6	30	42	48	60	51	40	28	27	11	3	1	0	0	0	0	15
5	0	0	0	0	0	0	2	6	13	18	40	37	37	34	19	12	9	8	2	0	0	0	0	0	10
6	0	0	0	0	0	0	1	3	18	13	37	15	15	30	32	29	30	11	4	1	0	0	0	0	10
7	0	0	0	0	0	0	1	5	8	13	19	15	23	36	37	6	9	13	3	1	0	0	0	0	9
8	0	0	0	0	0	0	1	3	7	21	31	40	44	44	43	43	33	27	13	7	1	0	0	0	15
9	0	0	0	0	0	0	0	2	12	21	27	37	48	44	42	43	39	8	24	6	1	0	0	0	15
10	0	0	0	0	0	0	2	8	20	29	38	45	45	51	51	51	10	16	16	6	1	0	0	0	14
11	0	0	0	0	0	0	2	9	19	29	32	43	47	29	33	29	29	20	12	7	1	0	0	0	13
12	0	0	0	0	0	0	1	4	11	18	23	24	33	31	22	22	13	7	2	0	0	0	0	0	9
13	0	0	0	0	0	0	1	2	4	7	8	17	22	15	17	12	12	7	3	0	0	0	0	0	5
14	0	0	0	0	0	0	1	4	9	22	29	29	39	21	22	14	6	3	2	0	0	0	0	0	8
15	0	0	0	0	0	0	1	4	11	1P	21	30	33	31	22	13	9	6	2	0	0	0	0	8	
16	0	0	0	0	0	0	1	2	17	26	35	41	44	47	44	10	5	4	2	0	0	0	0	12	
17	0	0	0	0	0	0	1	7	19	16	10	17	11	7	12	8	9	4	1	0	0	0	0	5	
18	0	0	0	0	0	0	2	2	3	16	18	58	20	12	5	3	2	1	1	0	0	0	0	5	
19	0	0	0	0	0	0	2	5	11	21	38	22	15	17	6	5	4	1	1	0	0	0	0	6	
20	0	0	0	0	0	0	1	2	11	17	27	44	39	35	28	13	11	2	0	0	0	0	0	9	
21	0	0	0	0	0	0	1	5	9	30	32	37	40	39	35	28	12	11	1	0	0	0	0	12	
22	0	0	0	0	0	0	1	3	13	18	29	36	45	38	33	29	12	6	1	0	0	0	0	11	
23	0	0	0	0	0	0	1	5	13	13	28	26	26	20	18	23	5	4	1	0	0	0	0	8	
24	0	0	0	0	0	0	6	2	13	15	24	25	18	14	11	5	4	1	0	0	0	0	6		
25	0	0	0	0	0	0	0	2	4	9	14	23	21	21	15	12	6	3	1	0	0	0	0	5	
26	0	0	0	0	0	0	0	6	8	12	26	11	17	18	22	7	12	4	1	0	0	0	0	6	
27	0	0	0	0	0	0	0	2	5	22	24	34	42	23	29	10	11	6	3	1	0	0	0	7	
28	0	0	0	0	0	0	0	0	2	5	12	25	31	32	24	15	11	6	3	1	0	0	0	6	
29	0	0	0	0	0	0	0	0	1	5	9	18	9	10	7	7	5	3	1	0	0	0	0	5	
30	0	0	0	0	0	0	0	0	2	5	7	15	34	26	20	16	12	7	2	0	0	0	0	5	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
GUSITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg		
1	0	0	0	0	0	1	2	13	24	34	43	50	53	53	50	47	39	23	12	3	0	0	0	0	19		
2	0	0	0	0	0	1	3	11	23	34	42	50	54	50	40	31	21	14	3	0	0	0	0	0	16		
3	0	0	0	0	0	1	2	13	24	33	42	56	36	26	26	22	16	11	6	2	0	0	0	0	0	13	
4	0	0	0	0	0	0	3	9	6	30	42	48	60	51	40	28	27	11	3	1	0	0	0	0	0	15	
5	0	0	0	0	0	0	2	6	13	18	40	37	37	34	19	12	9	8	2	0	0	0	0	0	0	10	
6	0	0	0	0	0	0	0	1	3	18	13	37	15	15	30	32	29	30	11	4	1	0	0	0	0	0	10
7	0	0	0	0	0	0	1	5	8	13	19	15	23	36	37	6	9	13	3	1	0	0	0	0	0	8	
8	0	0	0	0	0	1	3	7	21	31	40	44	44	43	43	33	27	13	7	1	0	0	0	0	0	15	
9	0	0	0	0	0	0	2	12	21	27	37	48	44	42	43	39	8	24	6	1	0	0	0	0	0	15	
10	0	0	0	0	0	0	2	8	20	29	38	45	45	51	51	10	16	16	6	1	0	0	0	0	0	14	
11	0	0	0	0	0	0	0	2	9	19	29	37	43	47	29	33	29	20	12	7	1	0	0	0	0	0	13
12	0	0	0	0	0	0	1	4	11	18	23	24	33	31	22	22	15	7	2	0	0	0	0	0	0	9	
13	0	0	0	0	0	0	1	2	4	7	8	17	22	15	17	12	12	7	3	0	0	0	0	0	0	5	
14	0	0	0	0	0	0	1	4	9	22	29	29	39	21	22	14	6	3	2	0	0	0	0	0	0	8	
15	0	0	0	0	0	0	1	4	11	18	21	30	33	31	22	13	9	6	2	0	0	0	0	0	8		
16	0	0	0	0	0	0	1	12	17	26	35	41	44	47	44	10	5	4	2	0	0	0	0	0	12		
17	0	0	0	0	0	0	1	7	19	16	10	17	11	7	12	8	9	4	1	0	0	0	0	0	5		
18	0	0	0	0	0	0	0	2	2	3	16	10	58	20	12	5	3	2	1	0	0	0	0	0	5		
19	0	0	0	0	0	0	0	2	5	11	21	38	22	15	17	6	5	4	1	0	0	0	0	0	6		
20	0	0	0	0	0	0	0	2	1	2	11	17	27	44	39	35	28	13	11	2	0	0	0	0	9		
21	0	0	0	0	0	0	1	5	9	30	32	37	40	39	35	28	12	11	1	0	0	0	0	0	12		
22	0	0	0	0	0	0	3	13	18	29	36	45	38	33	29	12	6	1	0	0	0	0	0	0	11		
23	0	0	0	0	0	0	1	5	13	13	28	26	26	20	18	23	5	4	1	0	0	0	0	0	8		
24	0	0	0	0	0	0	0	6	2	6	13	15	24	25	18	14	11	5	4	1	0	0	0	0	6		
25	0	0	0	0	0	0	0	2	4	9	14	23	21	21	15	12	6	3	1	0	0	0	0	0	5		
26	0	0	0	0	0	0	0	6	8	12	26	11	17	18	22	7	12	4	1	0	0	0	0	0	6		
27	0	0	0	0	0	0	0	2	5	22	24	34	42	23	29	10	11	3	1	0	0	0	0	0	8		
28	0	0	0	0	0	0	0	2	5	12	25	31	32	24	15	11	6	1	1	0	0	0	0	0	7		
29	0	0	0	0	0	0	0	0	1	5	9	10	9	10	7	7	5	3	1	0	0	0	0	0	6		
30	0	0	0	0	0	0	0	0	2	5	7	17	34	26	20	16	12	7	2	0	0	0	0	0	5		

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSSETNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING September, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1440	100
WIND SPEED	1440	100
WIND DIRECTION	1440	100
PEAK GUST	1440	100
RELATIVE HUMIDITY	1015	70
PRECIPITATION	1440	100
SOLAR RADIATION	1440	100
DEW POINT	1015	70

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH -6 RH Points
2. Solar -1 mW/cm<sup>2</sup>

Additional comments on this month's data:

1. Timing and quantity of precipitation are suspect on days where freezing temperatures occur. However, thawing temperatures on these days also occur, so daily totals should be accurate.

No precipitation data for October

(See INTERPRETATION OF DATA).

## R A M CONSULTANTS, INC.

## SUGARITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WTND	GUST	MAX.	HOUR	DEW	WIND	WTND	GUST	MAX.	HOUR	DEW	WIND	WTND	GUST	MAX.									
HDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	HDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG	C	DEG	%	DEG	M/S	MW		DEG	C	DEG	C	%	DEG	M/S	MW		DEG	C	%	DEG	M/S	MW				
0300	8.5	.5	57	127	1.9	108	7.1		0300	5.8	1.6	74	134	1.0	127	2.5	0	0300	.5	-2.2	95	114	.9	136	2.5	0
0600	5.0	****	66	140	1.4	134	4.4		0600	4.7	****	80	148	.6	141	1.9	0	0600	-1.5	-1.6	99	106	.9	091	2.5	0
0900	7.4	****	61	177	1.3	172	3.2	9	0900	4.2	1.9	85	122	1.0	134	2.5	5	0900	-.8	-2.9	99	***	***	***	3.2	4
1200	11.4	.4	47	126	2.2	131	5.7	31	1200	8.3	****	67	115	.4	147	1.9	34	1200	4.0	1.4	83	104	1.7	151	3.2	21
1500	12.0	.4	45	108	2.9	106	10.2	13	1500	8.7	2.8	66	322	1.0	001	3.2	7	1500	8.4	.6	58	040	.7	061	3.2	7
1800	8.8	.3	55	139	1.5	112	6.3	1	1800	8.3	1.9	64	104	.4	088	3.8	2	1800	5.3	-1.8	60	252	.8	263	2.5	1
2100	5.1	-.3	68	181	1.3	184	1.9	0	2100	3.6	1.6	87	129	1.4	092	3.2	0	2100	1.3	-2.6	75	161	.9	174	2.5	0
2400	6.3	.9	68	150	1.0	129	3.2	0	2400	1.8	****	94	127	1.0	139	2.5	0	2400	-.7	****	82	122	1.1	125	2.5	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WTND	GUST	MAX.	HOUR	DEW	WIND	WTND	GUST	MAX.	HOUR	DEW	WIND	WTND	GUST	MAX.									
HDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	HDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG	C	DEG	%	DEG	M/S	MW		DEG	C	DEG	C	%	DEG	M/S	MW		DEG	C	%	DEG	M/S	MW				
0300	-1.5	-3.4	87	158	.9	135	3.2	0	0300	-.1	****	72	178	.9	180	1.9	0	0300	4.1	-3.6	57	165	1.9	153	3.8	0
0600	-3.3	-4.7	90	092	1.5	094	3.8	0	0600	2.6	-3.9	62	169	.9	178	1.9	0	0600	4.7	-4.6	51	170	1.2	172	2.5	0
0900	-2.8	-5.1	84	088	2.1	087	3.8	2	0900	3.4	-4.5	56	159	1.3	160	3.2	2	0900	5.3	-3.8	52	157	1.2	133	3.2	2
1200	4.5	-2.1	62	083	1.9	082	3.8	30	1200	6.9	-5.2	42	113	1.1	088	4.4	12	1200	7.4	-2.7	49	099	1.3	123	3.8	21
1500	9.8	-4.3	37	122	1.1	132	3.8	19	1500	8.5	-5.1	38	112	2.3	111	7.0	17	1500	8.4	-1.2	51	110	1.6	100	3.8	9
1800	7.3	-4.9	42	149	1.6	137	3.2	1	1800	6.7	-4.2	46	121	2.4	123	6.3	0	1800	7.2	-1.5	54	119	1.1	120	3.2	1
2100	1.8	-4.5	63	176	1.6	165	3.2	0	2100	5.8	-3.9	50	121	1.4	101	7.0	0	2100	3.3	-2.0	68	173	1.2	178	1.9	0
2400	-.3	-4.9	71	189	1.2	193	2.5	0	2400	3.0	-3.1	64	159	1.4	153	3.2	0	2400	-.2	****	82	185	.9	186	1.9	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WTND	GUST	MAX.	HOUR	DEW	WIND	WTND	GUST	MAX.	HOUR	DEW	WIND	WTND	GUST	MAX.									
HDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	HDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG	C	DEG	%	DEG	M/S	MW		DEG	C	DEG	C	%	DEG	M/S	MW		DEG	C	%	DEG	M/S	MW				
0300	-.6	-2.8	85	126	.9	139	3.2	0	0300	3.5	.0	78	142	1.0	133	3.2	0	0300	.4	****	97	130	.3	125	1.3	0
0600	-.1	-2.2	86	101	1.4	103	3.8	0	0600	4.5	1.3	81	125	1.4	134	5.1	0	0600	.6	****	97	149	.3	178	1.9	0
0900	.9	-2.2	80	104	1.5	095	3.8	2	0900	3.2	****	83	161	.9	146	2.5	6	0900	.5	****	97	111	.6	121	1.9	5
1200	6.8	-.2	61	105	1.2	125	3.8	9	1200	7.1	****	74	107	.7	104	2.5	14	1200	2.8	****	91	065	.7	053	2.5	14
1500	8.6	-.8	58	095	1.4	091	3.8	9	1500	6.7	3.7	81	301	.4	255	2.5	3	1500	5.1	****	72	330	.5	311	1.9	23
1800	6.8	-.5	64	160	1.0	118	2.5	0	1800	.9	-.3	96	306	2.1	318	6.3	0	1800	4.0	****	83	275	.8	300	2.5	0
2100	2.6	****	79	185	1.1	179	1.9	0	2100	.7	****	97	296	1.2	303	3.8	0	2100	-.1	-1.1	93	179	1.2	177	3.2	0
2400	3.4	-.1	78	187	.8	153	1.9	0	2400	.5	****	96	157	.4	133	1.9	0	2400	-.1	-2.7	93	139	1.2	126	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW	HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW	HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW
0300	-3.2	-4.1	94	***	***	***	0	0300	-1.6	-3.5	87	147	.9	128	2.5	0	0300	-5	***	97	185	.2	278	1.3	0	
0600	-4.1	-4.9	94	***	***	***	0	0600	-3.0	-4.6	89	133	1.1	151	3.2	0	0600	-8	***	98	113	.4	132	1.9	0	
0900	-4.5	-5.8	91	***	***	***	3	0900	-3.1	***	92	121	1.2	131	3.8	5	0900	-8	***	95	123	.6	137	1.9	2	
1200	3.0	-1.9	70	105	1.2	143	2.5	33	1200	6.2	-1.2	59	133	1.0	118	3.8	27	1200	1.8	***	82	073	.3	011	1.9	9
1500	7.5	-2.6	49	137	1.4	148	4.4	19	1500	7.8	-2.9	47	114	2.4	112	5.7	18	1500	3.1	-1.8	70	246	.3	306	2.5	10
1800	4.5	-2.8	59	164	1.7	160	3.8	0	1800	5.2	-2.1	59	120	2.8	122	6.3	0	1800	1.0	-1.6	83	262	.8	284	1.9	0
2100	-3	***	79	182	1.1	188	2.5	0	2100	.1	-9	93	227	.8	133	5.7	0	2100	-7	-2.0	91	199	1.1	200	1.9	0
2400	-1.6	***	85	162	.9	176	2.5	0	2400	-2	***	96	251	.7	251	1.9	0	2400	-3	***	91	181	.7	184	1.3	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW	HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW	HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW
0300	-5	***	92	145	.4	151	1.9	0	0300	-4.9	-8.5	76	145	1.2	140	2.5	0	0300	-3.4	***	75	187	.3	159	1.3	0
0600	-2	-1.7	90	121	.9	124	2.5	0	0600	-5.8	-8.5	81	130	1.1	131	2.5	0	0600	-5.8	-8.4	82	140	.6	128	1.9	0
0900	-1.0	***	93	110	1.2	109	3.2	4	0900	-6.1	***	82	172	1.1	155	3.2	3	0900	-5.6	***	83	115	1.0	116	3.2	2
1200	3.4	***	72	104	.6	119	2.5	35	1200	-1.6	-7.7	63	289	.6	304	2.5	11	1200	-2.6	-6.4	75	049	1.0	044	2.5	13
1500	5.7	-5.7	44	028	2.8	032	5.7	14	1500	2.6	***	42	288	.8	281	1.9	12	1500	.7	-7.8	53	317	.6	029	2.5	10
1800	2.5	-6.6	51	035	2.7	033	6.3	0	1800	-1.1	-10.0	51	242	1.2	248	2.5	0	1800	-2.0	-8.3	62	238	1.1	270	2.5	0
2100	-6	-6.7	63	163	1.1	159	2.5	0	2100	-4.3	***	69	185	1.0	204	1.9	0	2100	-3.9	***	66	172	1.0	189	2.5	0
2400	-3.4	***	74	144	1.1	138	3.2	0	2400	-3.3	***	72	145	.4	149	1.3	0	2400	-4.1	-8.0	71	153	1.0	162	2.5	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW	HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW	HOUR	DEW	WIND	WIND GUST MAX.	DEG C	DEG C	% DEG.	M/S	MW
0300	-3.3	-7.6	72	138	.9	165	3.2	0	0300	0.0	-15.7	30	094	3.1	094	7.0	0	0300	-1.7	-16.4	32	109	1.3	102	3.8	0
0600	-3.5	-7.4	74	133	1.3	136	3.2	0	0600	-1.4	-17.3	29	100	2.+	084	6.3	0	0600	.6	-17.7	24	140	2.4	128	5.1	0
0900	-3.3	-8.0	70	109	.9	125	2.5	1	0900	-1.8	-17.6	29	158	1.8	135	3.8	0	0900	-1.1	-17.9	25	130	1.7	151	5.1	0
1200	1.9	-9.2	44	101	.7	087	4.4	4	1200	2.6	-22.3	14	147	1.6	148	3.8	7	1200	3.2	-18.3	19	110	1.5	097	4.4	1
1500	4.3	-8.9	38	097	2.2	097	6.3	4	1500	5.8	-24.8	9	094	2.9	090	6.3	9	1500	6.0	-18.7	13	110	1.7	098	4.4	5
1800	2.2	-11.8	35	108	3.2	105	7.0	1	1800	4.3	-26.0	9	099	2.5	071	6.3	4	1800	3.5	-19.3	17	112	1.5	101	3.8	3
2100	.2	-11.9	40	135	2.2	120	5.7	0	2100	2.4	-20.2	17	124	1.9	117	6.3	2	2100	-1.5	-16.2	32	172	1.3	127	3.2	0
2400	.1	-13.3	36	098	2.4	088	6.3	0	2400	-2.5	***	33	142	1.4	137	5.1	0	2400	-1.2	-15.6	33	117	1.2	111	3.8	0

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## R &amp; M CONSULTANTS, INC.

## SUSETTA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW			
0300	-1.2	****	36	122	.7	124	1.9	0	0300	-4.3	****	45	141	1.4	148	3.2	0	0300	.1	-8.9	51	124	1.0	101	2.5	0
0600	-3.1	-14.3	42	190	.7	267	2.5	0	0600	-4.0	****	45	120	.8	116	1.9	0	0600	-.8	****	79	161	.7	150	2.5	0
0900	-2.9	****	45	109	.9	131	2.5	0	0900	-3.6	****	50	157	.6	127	1.3	1	0900	3.1	-7.8	45	113	2.0	103	10.2	2
1200	-.8	****	41	142	.5	133	2.5	19	1200	-1.5	-10.9	49	118	.6	108	3.2	6	1200	5.1	-6.9	42	104	3.4	097	8.9	10
1500	2.1	-11.2	37	261	1.0	267	3.2	13	1500	-.8	-10.5	48	099	2.4	099	5.7	5	1500	5.7	-7.3	39	100	2.9	110	7.0	10
1800	-.1	****	42	239	1.2	255	3.2	0	1800	-1.2	****	51	123	1.5	115	4.4	0	1800	4.5	-8.4	39	089	2.3	091	5.7	1
2100	-2.5	-12.3	47	147	.9	123	2.5	0	2100	-1.7	-9.1	57	186	1.0	191	2.5	0	2100	3.8	-6.5	47	090	2.3	093	7.0	0
2400	-3.8	-14.1	45	141	1.7	144	3.2	0	2400	-.2	****	50	136	1.2	136	3.8	0	2400	4.1	-5.7	49	097	1.3	123	5.1	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW			
0300	3.4	-4.5	56	102	.9	096	3.8	0	0300	.1	-0	99	265	1.1	274	2.5	0	0300	-3.9	-6.7	81	***	***	***	***	0
0600	4.3	-5.0	51	105	2.5	104	8.3	0	0600	-.7	-1.4	95	278	1.0	278	3.2	0	0600	-5.9	-9.8	74	***	***	***	***	0
0900	4.6	-4.7	51	107	2.4	107	7.6	1	0900	-1.1	-2.6	90	***	***	***	***	1	0900	-8.4	-11.9	76	***	***	***	***	1
1200	6.4	-3.6	49	090	1.8	097	5.1	9	1200	-1.6	-3.5	87	***	***	***	***	3	1200	-6.4	-11.3	68	***	***	***	***	5
1500	7.7	-3.0	47	101	2.6	104	6.3	9	1500	-2.0	-4.4	84	***	***	***	***	1	1500	-2.3	****	58	109	.2	105	1.9	1
1800	4.5	.5	75	128	1.2	108	4.4	0	1800	-2.7	-5.5	81	***	***	***	***	0	1800	-6.0	-10.0	73	137	1.2	129	2.5	0
2100	3.2	.9	85	232	.9	228	3.2	0	2100	-3.3	-5.9	82	***	***	***	***	0	2100	-8.0	-11.3	77	***	***	***	2.5	0
2400	2.0	****	88	271	1.0	265	3.2	0	2400	-3.6	-6.2	82	***	***	***	***	0	2400	-8.2	****	77	***	***	***	2.5	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG	M/S	MW			
0300	-2.0	-10.6	52	***	***	***	5.7	0	0300	-8.0	-17.4	47	127	2.0	118	4.4	0	0300	-9.2	-18.5	47	075	1.5	053	3.8	0
0600	-2.5	-12.6	46	***	***	***	5.1	0	0600	-8.5	-17.6	48	111	1.2	118	3.2	0	0600	-10.4	-18.6	51	070	1.5	086	5.1	0
0900	-2.5	-14.1	41	***	***	***	5.7	0	0900	-0.4	-16.8	51	083	1.2	074	2.5	1	0900	-11.7	-19.2	54	066	1.8	057	3.8	0
1200	-2.9	-13.5	44	141	2.4	130	8.9	13	1200	-2.0	-15.9	34	096	1.1	065	3.8	9	1200	-8.2	-17.1	49	042	1.1	077	3.2	4
1500	-.7	-16.3	30	092	1.8	067	5.1	2	1500	-1.2	****	31	129	.7	125	3.2	2	1500	-4.9	****	43	028	.9	004	2.5	2
1800	-4.8	-14.5	47	123	4	142	3.8	0	1800	-2.8	-17.3	32	117	1.3	119	3.8	0	1800	-6.3	-15.8	47	121	.6	106	2.5	0
2100	-6.2	-16.8	43	129	1.6	122	3.8	0	2100	-6.0	-17.5	40	142	1.7	123	3.2	0	2100	-8.8	****	54	115	1.0	126	2.5	0
2400	-8.1	****	46	185	1.1	136	3.2	0	2400	-7.9	-17.9	45	140	.9	122	1.9	0	2400	-10.8	****	64	095	.7	056	3.2	0

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R & M CONSULTANTS, INC.  
SUSITNA HYDRO ELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S	NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S

0300	-11.8	-17.0	65	080	1.5	089	3.8	0 0300	-10.6	-23.6	34
0600	-12.9	-17.7	67	078	2.1	085	4.4	0 0600	-13.9	-21.9	51
0900	-13.0	-18.0	66	091	2.5	088	4.4	0 0900	-12.0	*****	38
1200	-3.9	-16.3	38	105	2.2	133	5.1	3 1200	-7.8	-22.5	30
1500	-2.9	-17.1	33	083	2.8	101	8.3	2 1500	-5.9	-24.8	21
1800	-5.0	-19.3	32	069	2.9	086	6.3	1 1800	-9.3	-25.4	26
2100	-6.5	-21.3	30	093	2.8	099	7.0	0 2100	-11.3	-24.5	33
2400	-8.4	-21.9	33	129	2.1	138	5.7	0 2400	-12.2	-24.3	36
								120	1.3	120	2.5
								102	1.3	117	3.2
								108	1.0	113	2.5
								091	1.0	108	3.2
								089	1.6	090	3.8
								106	1.9	107	3.8
								117	1.9	117	3.8
								117	2.4	127	3.8
								0 0300	-11.4	-23.6	36
								0 0600	-10.6	-22.6	37
								0 0900	-9.7	-22.4	35
								5 1500	-6.7	-20.4	33
								2 1800	-6.9	-20.3	34
								1 2100	-6.7	-19.8	35
								0 2400	-7.4	-20.0	36
								098	2.2	110	4.4
								101	2.3	104	5.1
								092	2.6	087	5.7
								083	2.4	087	5.1
								1200	2.4	080	5.1
								1500	2.4	092	5.1
								1800	2.5	096	5.1
								2100	2.2	109	4.4
								2400	2.2		

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.
NDNG TEMP, POINT RH DIR, SPD, DIR, GUST RAD	DEG C	DEG C	% DEG, M/S

0300	-7.7	-19.7	38
0600	-7.9	-18.4	43
0900	-8.5	-18.7	44
1200	-5.0	-16.0	42
1500	-2.9	-14.4	41
1800	-4.3	-14.5	45
2100	-5.8	-14.4	51
2400	-9.0	-15.3	60
	102	2.2	094
	105	4.4	0
	112	2.6	111
	108	5.1	2
	094	2.4	091
	114	1.4	113
	132	2.5	0
	127	1.2	142
	142	2.5	0

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R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

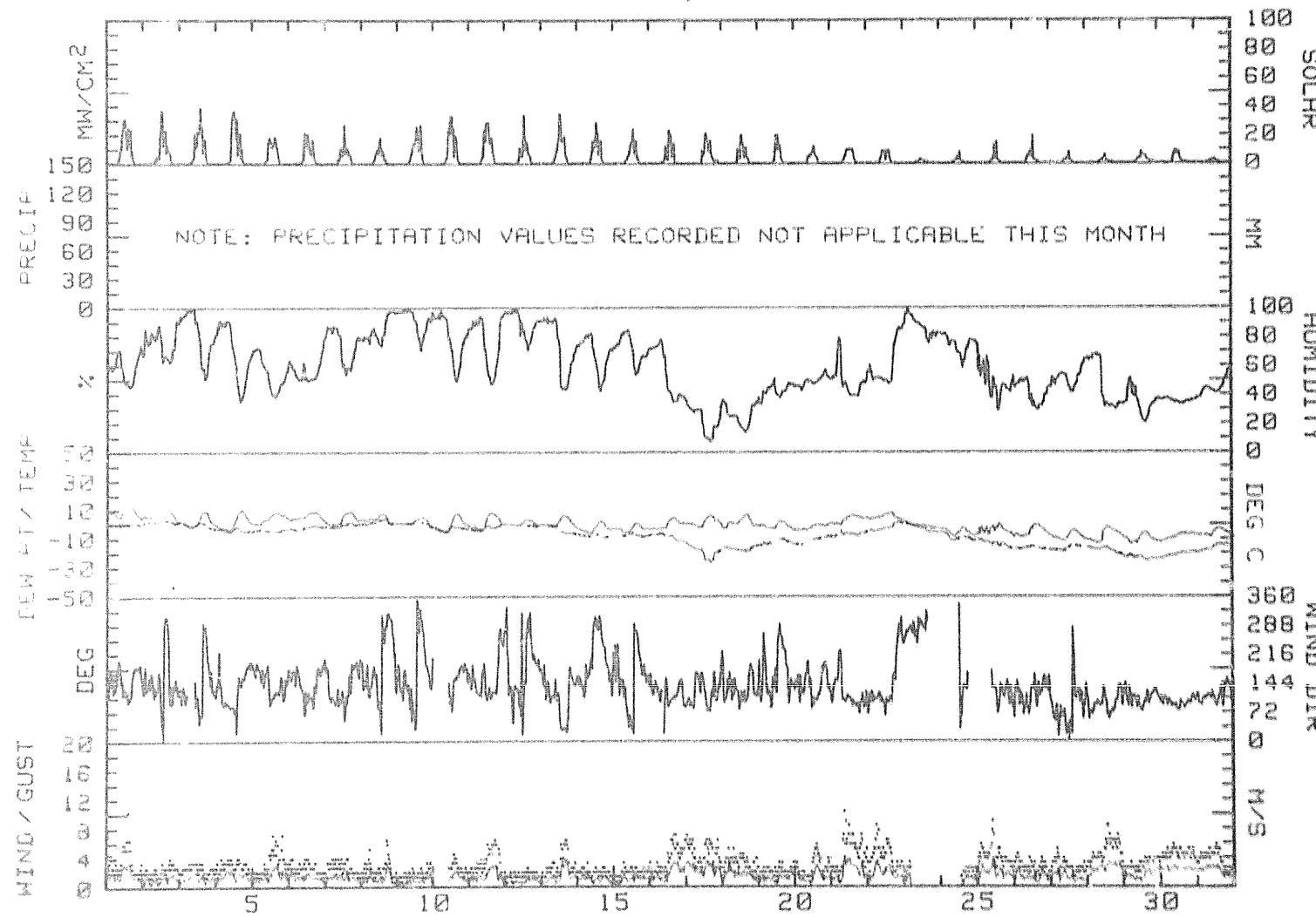
DAY	RES.			RES.	AVG.	MAX.	MAX.	P'VAL MEAN				MEAN		PRECIP	DAY'S
	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C					WIND DIR. DEG	WIND SPD. M/S	WIND DIR. DEG	GUST DIR. DEG	SPD. M/S	DIR. Z	RH	DP DEG C
1	12.3	3.8	8.1	137	1.5	1.8	106	10.2	9	57	.3	****		1545	1
2	9.6	1.8	5.7	125	.6	1.0	088	3.8	SE	74	1.8	****		1245	2
3	9.8	-1.5	4.2	118	.7	1.2	151	3.2	ESE	82	-1.0	****		1565	3
4	10.5	-4.1	3.2	123	1.2	1.6	094	3.8	E	68	-4.3	****		1740	4
5	8.6	-1.1	4.3	135	1.3	1.5	111	7.0	ESE	51	-4.4	****		1030	5
6	9.1	.2	4.7	144	1.1	1.3	153	3.8	S	55	-2.6	****		925	6
7	9.3	-.7	4.3	125	1.0	1.2	103	3.8	ESE	73	-1.0	****		755	7
8	7.3	.4	3.9	194	.1	1.1	318	6.3	SE	95	1.2	****		615	8
9	5.5	-2.5	1.5	145	.3	.8	177	3.2	SE	90	-.4	****		1165	9
10	7.6	-5.2	1.2	153	1.1	1.3	148	4.4	S	78	-3.7	****		1425	10
11	8.0	-4.6	1.7	133	1.1	1.5	122	6.3	ESE	68	-2.9	****		1365	11
12	5.1	-1.1	1.0	186	.3	.7	306	2.5	SE	81	-1.6	****		845	12
13	6.0	-3.4	1.3	079	.8	1.4	033	6.3	NNE	64	-4.9	****		1250	13
14	2.6	-6.3	-1.9	189	.5	1.0	155	3.2	SSE	67	-8.5	****		1010	14
15	.7	-6.2	-2.8	154	.4	.9	116	3.2	SSE	70	-8.0	****		785	15
16	4.3	-3.9	.2	113	1.7	1.8	105	7.0	ESE	51	-9.8	****		700	16
17	6.1	-2.8	1.7	113	2.0	2.3	094	7.0	E	21	-20.1	****		890	17
18	6.8	-3.2	1.8	125	1.5	1.6	128	5.1	ESE	24	-17.7	****		640	18
19	2.1	-4.3	-1.1	165	.6	1.1	267	3.2	ESE	42	-12.7	****		614	19
20	.3	-4.6	-2.2	129	1.1	1.2	099	5.7	ESE	49	-19.9	****		410	20
21	6.0	-.9	2.6	103	1.9	2.1	103	10.2	E	46	-7.3	****		575	21
22	7.7	2.0	4.9	110	1.2	1.7	104	8.3	ESE	59	-2.8	****		430	22
23	1.8	-3.6	-.9	268	1.1	1.1	278	3.2	W	86	-3.8	****		120	23
24	-2.3	-8.8	-5.6	133	.8	.9	129	2.5	SE	75	-9.7	****		170	24
25	.2	-8.5	-4.2	121	1.6	1.8	130	8.9	SE	48	-14.0	****		260	25
26	-.8	-9.5	-5.2	119	1.2	1.3	118	4.4	ESE	41	-17.3	****		385	26
27	-4.0	-11.7	-7.9	072	1.0	1.2	086	5.1	E	49	-17.7	****		175	27
28	-2.2	-13.9	-8.1	090	2.3	2.4	101	8.3	E	47	-18.3	****		170	28
29	-5.7	-13.9	-9.8	108	1.5	1.6	090	3.8	ESE	33	-23.8	****		365	29
30	-6.6	-12.7	-9.7	094	2.4	2.4	087	5.7	E	35	-21.5	****		375	30
31	-2.9	-9.0	-6.0	110	2.0	2.1	091	5.7	ESE	44	-16.7	****		110	31
MONTH	12.3	-13.9	-.3	118	1.1	1.5	106	10.2	ESE	56	-8.5	****		23654	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 6.3  
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.1  
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 6.3  
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 6.3

NOTE: RELATIVE HUMIDITY READINGS ARE UNREFINED - WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND, SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
October, 1984



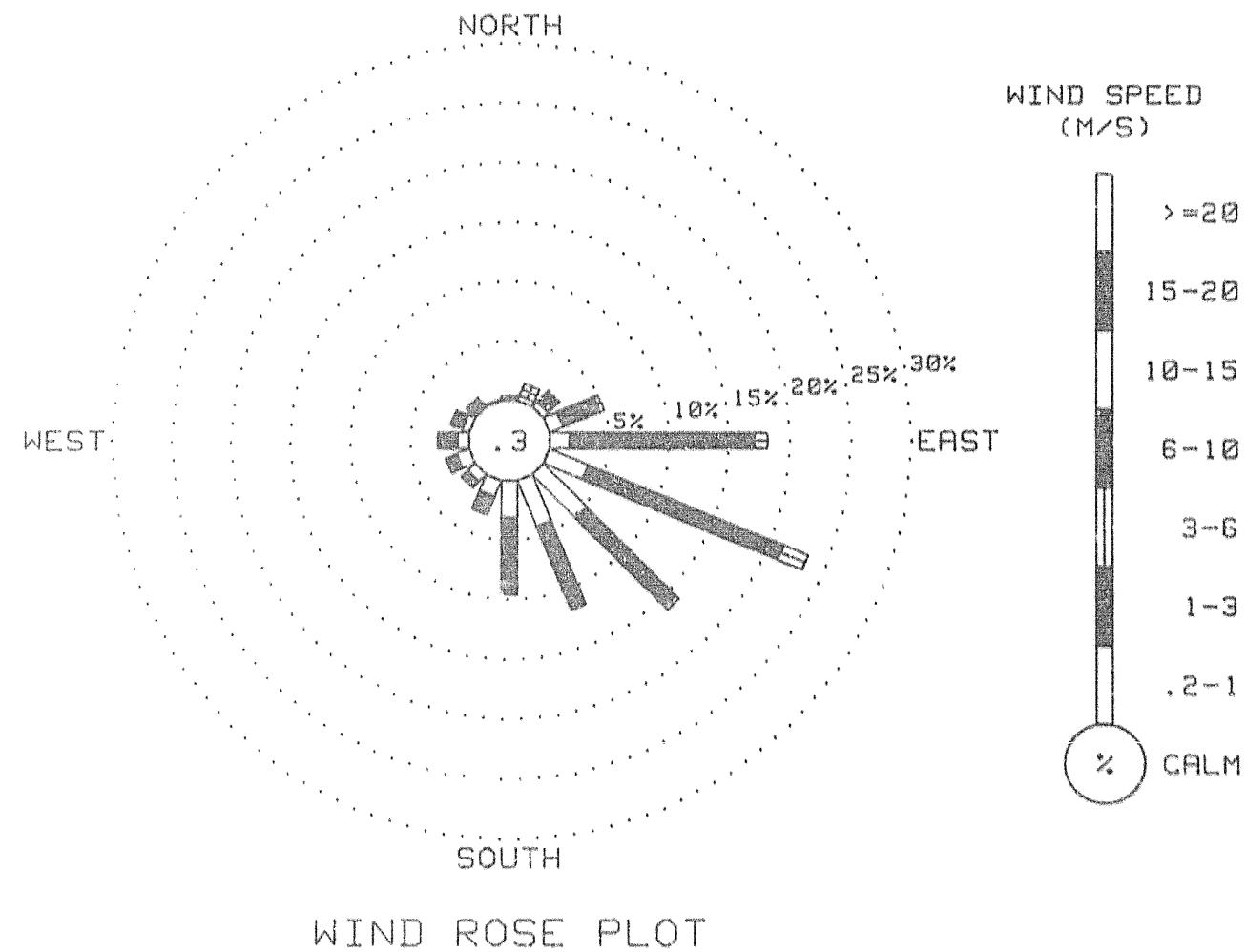
R & M CONSULTANTS, INC.  
SUBSTITUTION HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
N	.22	.15	0.00	0.00	0.00	0.00	0.00	0.00	.37
NNE	.44	.59	.51	0.00	0.00	0.00	0.00	0.00	1.54
NE	.59	1.17	.15	0.00	0.00	0.00	0.00	0.00	1.91
ENE	1.25	3.30	.37	0.00	0.00	0.00	0.00	0.00	4.92
E	1.69	15.33	1.10	0.00	0.00	0.00	0.00	0.00	18.12
ESE	3.60	17.46	2.20	0.00	0.00	0.00	0.00	0.00	23.26
SE	5.21	10.42	.37	0.00	0.00	0.00	0.00	0.00	15.99
SSE	4.18	7.56	0.00	0.00	0.00	0.00	0.00	0.00	11.74
S	3.08	6.38	.07	0.00	0.00	0.00	0.00	0.00	9.54
SSW	1.47	1.61	0.00	0.00	0.00	0.00	0.00	0.00	3.08
SW	.88	.73	0.00	0.00	0.00	0.00	0.00	0.00	1.61
WSW	1.17	.95	0.00	0.00	0.00	0.00	0.00	0.00	2.13
W	1.03	1.61	0.00	0.00	0.00	0.00	0.00	0.00	2.64
WNW	.66	1.03	0.00	0.00	0.00	0.00	0.00	0.00	1.69
NW	.29	.55	.07	0.00	0.00	0.00	0.00	0.00	1.03
NNW	.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.15
CALM									.29
TOTAL	25.90	68.97	4.84	0.00	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT  
 1363 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY  
 1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.  
 \*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
October, 1984



R & M CONSULTANTS, INC.  
SUBSTITNA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	2	7	15	25	31	19	18	18	15	6	2	0	0	0	0	0	0	6
2	0	0	0	0	0	0	0	2	3	4	10	28	25	15	15	12	9	5	0	0	0	0	0	0	5
3	0	0	0	0	0	0	0	2	4	16	15	22	22	34	18	14	11	2	0	0	0	0	0	0	2
4	0	0	0	0	0	0	0	1	2	22	1	34	24	19	20	13	7	2	0	0	0	0	0	0	7
5	0	0	0	0	0	0	0	1	2	9	17	13	13	13	18	12	6	1	0	0	0	0	0	0	4
6	0	0	0	0	0	0	0	1	2	10	17	17	15	8	8	13	3	1	0	0	0	0	0	0	4
7	0	0	0	0	0	0	0	1	3	10	8	8	20	7	10	6	5	1	0	0	0	0	0	0	3
8	0	0	0	0	0	0	0	1	4	8	9	12	13	8	5	3	1	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	1	4	8	13	14	21	17	16	19	4	1	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	1	3	14	22	31	27	15	17	13	3	1	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	1	2	11	19	28	29	16	17	10	4	1	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	2	9	6	7	26	12	13	7	5	1	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	1	3	7	12	26	29	16	15	13	4	1	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	1	2	11	12	14	25	14	12	10	2	1	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	1	2	4	7	12	14	17	9	10	4	1	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	1	2	8	5	12	18	12	6	8	1	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	5	6	14	19	13	11	12	5	2	2	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	1	6	4	11	15	10	8	4	1	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	1	3	12	15	15	11	6	2	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	1	5	5	6	8	10	5	5	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	2	4	2	10	9	10	10	6	2	1	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	1	3	8	8	4	4	8	6	3	1	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	1	1	2	2	2	3	2	2	2	1	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	1	1	2	2	4	2	2	5	1	1	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	2	2	2	8	8	5	2	2	2	1	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	1	4	6	8	8	5	11	5	2	1	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	2	2	3	3	3	2	2	1	1	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	1	2	2	4	4	7	6	3	1	1	1	1	1	0	
29	0	0	0	0	0	0	0	0	0	0	0	1	2	6	9	6	7	5	2	1	1	1	1	0	
30	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	3	1	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	3	1	0	0	0	0	0	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING October, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1490	100
WIND SPEED	1402	94
WIND DIRECTION	1387	93
PEAK GUST	1402	94
RELATIVE HUMIDITY	1128	76
PRECIPITATION	0	0
SOLAR RADIATION	1490	100
DEW POINT	1128	76

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH	-6 RH Points	10/1 - 10/16
	-12	10/16 - 10/31
2. Solar	-1 mW/cm <sup>2</sup>	10/1 - 10/16
	-2	10/16
	-4	10/17 - 10/18
	-2	10/19 - 10/20
	-1	10/21 - 10/24
	-2	10/25 - 10/31

Additional comments on this month's data:

1. Solar radiation erratic on several days. Adjustments made to obtain minimum values (at night) of zero.
2. Intermittent wind speed and direction data lost due to frozen anemometer and wind vane.

No precipitation data for November

(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTS, INC.

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD										
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	MW	DIR.	SPD.										
0300	-5.7 ****	59	131	1.0	139	2.5	0 0300	-8.4	-22.3	32	119	1.3	095	3.2	0 0300	-10.1	-18.4	51	081	2.3	088	5.1	0
0600	-7.8 -14.6	58	115	.5	111	3.2	0 0600	-11.0	-22.4	39	084	2.1	092	3.2	0 0600	-11.4	-18.4	56	089	1.8	075	3.8	0
0900	-5.4 -14.2	56	133	1.9	154	5.1	0 0900	-11.4	-22.4	40	078	2.3	083	3.8	0 0900	-12.6	-18.4	62	111	1.8	109	3.8	0
1200	-2.2 -16.8	52	148	2.0	145	4.4	2 1200	-7.0	-26.7	33	064	2.4	073	5.1	2 1200	-8.4	-16.1	54	113	1.6	102	3.8	2
1500	.1 -18.7	23	144	2.5	143	6.3	3 1500	-3.1	-16.2	36	115	2.2	133	5.7	2 1500	-3.3	-13.6	45	087	1.2	086	3.2	5
1800	-2.3 -21.7	21	121	2.8	108	5.1	3 1800	-2.9	-16.0	36	131	2.9	130	5.7	1 1800	-3.7	-14.0	45	090	1.3	080	3.2	0
2100	-2.8 -23.9	18	124	2.3	123	4.4	4 2100	-5.1	-17.0	39	120	4.0	122	7.0	0 2100	-6.9	-14.9	53	113	1.1	123	3.2	0
2400	-4.4 -25.2	18	150	1.9	144	3.8	5 2400	-8.0	-17.7	46	093	3.4	129	6.3	0 2400	-10.1	-16.0	62	099	1.3	126	3.8	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD										
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	MW	DIR.	SPD.										
0300	-12.3 -16.8	69	090	1.6	102	4.4	0 0300	-7.1	-13.3	61	070	1.4	084	3.8	0 0300	-1.2	-6.1	69	132	1.1	155	2.5	0
0600	-13.4 -17.4	72	082	1.4	081	4.4	0 0600	-7.5	-13.3	63	078	1.6	073	3.2	0 0600	-1.4 ****	74	118	1.1	135	2.5	0	
0900	-13.7 -17.5	73	080	1.5	082	3.2	1 0900	-4.2 ****	64	086	.9	068	2.5	0 0900	-2.1	-6.1	74	137	1.2	142	3.2	0	
1200	-10.6 -15.3	68	065	2.0	069	3.8	2 1200	-2.5 ****	62	112	.4	071	1.9	5 1200	-2.3 ****	75	099	.7	133	2.5	6		
1500	-6.5 -13.4	58	056	1.3	091	3.8	3 1500	-3.3 ****	86	095	1.0	093	3.8	2 1500	-1.2 ****	76	036	.5	042	1.9	4		
1800	-8.2 -14.6	60	114	2.1	112	3.8	0 1800	-3.3 ****	83	141	.7	084	1.9	0 1800	-1.6	-5.6	74	102	.7	069	1.9	0	
2100	-8.8 -14.4	64	080	1.4	088	3.8	0 2100	-1.7	-5.5	75	134	1.2	129	1.9	0 2100	-2.7 ****	86	088	1.0	092	2.5	0	
2400	-8.4 -14.0	64	063	1.6	082	3.8	0 2400	-1.6	-6.0	72	118	1.2	125	3.2	0 2400	-3.6 ****	93	023	.4	047	1.9	0	

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.												
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD										
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DIR.	SPD.	M/S	MW	DIR.	SPD.										
0300	-3.3 ****	94	171	.1	061	.6	0 0300	-5.9	-7.3	90	092	.9	093	2.5	0 0300	-9.5	-11.4	85	102	1.2	099	2.5	0
0600	-4.6 ****	94	138	.3	191	1.3	0 0600	-6.0 ****	90	078	.8	082	2.5	0 0600	-9.7 ****	86	087	.9	097	2.5	0		
0900	-4.3 ****	93	164	.3	170	1.3	0 0900	-6.2 ****	89	080	.9	084	2.5	0 0900	-10.8	-12.8	85	087	1.7	094	3.2	0	
1200	-3.0 ****	91	175	.1	162	.6	3 1200	-5.4 ****	88	095	.7	111	1.9	4 1200	-10.3	-12.6	83	093	1.9	093	3.2	2	
1500	-2.2 ****	92	326	.1	335	.6	2 1500	-4.7 ****	83	086	.7	093	2.5	2 1500	-7.6 ****	78	078	.8	096	3.2	2		
1800	-3.3 ****	93	192	.3	242	1.3	0 1800	-5.3 ****	89	172	.3	213	1.3	0 1800	-9.9	-12.5	81	125	1.0	130	2.5	0	
2100	-3.8 ****	92	138	.8	144	2.5	0 2100	-6.3 ****	89	108	.5	142	1.9	0 2100	-11.8	-14.4	81	124	1.5	130	3.2	0	
2400	-5.7 ****	90	091	1.0	085	2.5	0 2400	-7.7 ****	88	092	.5	077	2.5	0 2400	-14.9	-17.2	83	102	1.6	124	3.2	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND GUST MAX.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG. C	DEG C	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
0300	-16.3	-18.5	83	082	1.6	076	3.2	0	0300	-19.1	-22.1	77	059	2.2	063	4.4	0	0300	-21.6	-24.4	78	083	2.1	088	3.8	0		
0600	-17.4	-19.7	82	081	1.6	075	3.2	0	0600	-20.6	-23.6	77	063	2.5	050	5.1	0	0600	-21.7	-24.6	77	083	2.5	077	4.4	0		
0900	-16.2	-18.6	82	074	1.3	070	2.5	0	0900	-21.1	-24.1	77	061	2.9	060	5.1	0	0900	-22.3	-25.2	77	090	1.7	082	3.2	0		
1200	-12.8	-15.7	79	094	1.3	078	4.4	2	1200	-19.4	-22.7	75	069	3.1	068	5.1	2	1200	-20.5	****	76	090	1.0	086	3.2	2		
1500	-12.1	-15.8	74	110	2.4	114	4.4	1	1500	-17.1	-20.6	74	077	2.8	072	4.4	1	1500	-16.2	****	73	149	.6	091	2.5	1		
1800	-13.6	-16.8	77	127	2.2	114	4.4	0	1800	-18.3	-21.2	78	075	1.9	075	3.8	0	1800	-16.1	-20.8	67	150	1.0	142	3.2	0		
2100	-15.4	-18.5	77	129	2.8	125	4.4	0	2100	-19.4	-22.1	79	076	1.8	080	3.8	0	2100	-18.5	-22.9	68	119	.7	099	2.5	0		
2400	-18.1	-20.8	79	089	2.1	123	5.7	0	2400	-21.0	-23.7	79	082	2.2	074	4.4	0	2400	-18.5	****	73	094	.7	081	2.5	0		

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND GUST MAX.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG. C	DEG C	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
0300	-19.6	-23.3	72	087	1.8	089	3.8	0	0300	-15.4	-21.8	58	108	2.2	114	4.4	0	0300	-8.5	-15.1	59	100	2.2	100	5.1	0		
0600	-18.4	-22.7	69	108	2.2	109	5.1	0	0600	-15.9	-22.3	58	105	2.3	103	4.4	0	0600	-7.0	-13.4	60	112	2.2	111	3.8	0		
0900	-15.6	-20.5	66	124	1.3	129	3.8	0	0900	-16.3	-22.6	58	110	2.6	110	5.1	0	0900	-6.4	-13.3	58	103	2.1	104	4.4	0		
1200	-14.0	-20.3	59	105	1.3	096	3.8	1	1200	-14.4	-21.3	56	098	2.7	109	5.7	5	1200	-4.7	-11.9	57	100	1.8	087	4.4	6		
1500	-11.2	-18.7	54	112	1.5	086	3.8	0	1500	-12.4	-19.8	54	078	2.4	081	5.1	1	1500	-3.4	-10.9	56	097	2.0	093	5.1	3		
1800	-12.7	-19.4	57	116	1.3	116	2.5	0	1800	-11.8	-19.2	54	100	2.2	104	4.4	0	1800	-5.2	-11.1	63	107	2.2	099	3.8	0		
2100	-14.0	-20.7	57	091	1.4	088	3.2	0	2100	-10.5	-17.8	55	091	2.5	092	6.3	0	2100	-5.8	-10.9	67	097	2.2	105	4.4	0		
2400	-14.8	-21.4	57	111	1.7	103	3.8	0	2400	-9.6	-16.7	56	094	2.3	091	5.1	0	2400	-6.4	-8.2	67	103	2.1	102	3.8	0		

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND GUST MAX.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG. C	DEG C	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
0300	-6.5	-8.5	86	107	2.0	116	3.8	0	0300	-13.0	-15.4	82	073	2.1	103	4.4	0	0300	-8.7	****	79	062	.8	063	4.4	0		
0600	-7.0	-9.1	85	117	2.4	123	4.4	0	0600	-14.7	-17.2	81	074	2.6	074	3.8	0	0600	-9.0	-11.5	82	063	1.1	056	2.5	0		
0900	-6.2	-8.6	83	110	1.9	111	4.4	0	0900	-13.5	-15.9	82	070	1.9	066	4.4	0	0900	-7.5	-10.5	79	076	1.0	095	3.2	0		
1200	-6.5	-9.5	79	113	2.1	114	4.4	2	1200	-9.2	-12.3	78	082	1.8	071	3.2	5	1200	7.5	-10.8	77	100	1.7	102	4.4	3		
1500	-7.8	-10.8	79	120	2.7	123	5.1	1	1500	-8.3	-11.9	75	106	2.2	111	4.4	3	1500	-7.5	-11.0	76	119	2.2	119	4.4	2		
1800	-9.4	-11.9	82	120	2.3	133	4.4	0	1800	-10.1	-13.2	78	111	2.6	109	4.4	0	1800	-9.1	-12.1	79	117	2.0	124	4.4	0		
2100	-10.9	-13.1	84	094	2.0	117	3.8	0	2100	-11.1	-14.3	77	118	2.3	120	4.4	0	2100	-11.1	-13.4	83	085	1.5	123	3.8	0		
2400	-10.5	-13.0	82	101	2.5	118	5.1	0	2400	-11.6	-14.2	81	063	1.3	060	3.2	0	2400	-12.4	-14.8	82	075	1.9	074	3.2	0		

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	DEG C
0300	-13.1	-15.5	62	077	2.2	081	3.8	0 0300	-5.8	-11.7	63	109	2.5
0600	-14.3	-16.7	62	074	2.4	073	3.8	0 0600	-5.4	-11.5	62	115	1.8
0900	-14.0	-16.6	81	077	2.5	075	3.8	0 0900	-4.4	-10.2	64	108	1.9
1200	-13.6	-16.3	80	077	2.7	077	3.8	4 1200	-4.9	-7.2	84	102	1.9
1500	-11.6	-14.5	79	073	2.4	074	4.4	1 1500	-4.3	-6.0	88	097	.9
1800	-11.2	-14.0	80	070	2.0	066	3.8	0 1800	-5	-4.9	72	121	1.5
2100	-8.1	-11.7	75	070	1.3	070	3.8	0 2100	1.9	-3.3	68	098	3.4
2400	-5.6	-10.9	66	102	2.0	119	5.1	0 2400	2.3	-2.2	72	097	3.9
												097	9.5
												0 2400	-2.7
												-3.7	93
												115	.5
												117	2.5
												0	

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	DEG C
0300	-3.6	****	93	106	.7	110	1.9	0 0300	-12.4	****	86	146	.6
0600	-4.2	****	93	092	1.0	077	2.5	0 0600	-12.1	****	87	158	.4
0900	-6.6	-8.1	89	125	1.8	119	2.5	0 0900	-11.8	****	88	171	.3
1200	-7.9	-9.6	88	122	1.4	136	3.2	3 1200	-10.0	****	86	237	.1
1500	-8.2	****	88	091	.9	064	2.5	1 1500	-8.6	****	87	030	.4
1800	-9.6	****	86	153	.8	146	2.5	0 1800	-8.5	****	88	075	.5
2100	-11.0	****	86	140	.8	147	1.9	0 2100	-9.0	****	88	083	.9
2400	-11.7	****	85	148	.6	143	1.9	0 2400	-8.8	****	88	117	.3
												148	1.3
												168	0
												173	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.		
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG C	DEG C	%	DEG C	DEG C	DEG C	DEG C	DEG C	%	DEG C	DEG C
0300	-10.4	****	87	136	.5	144	1.3	0 0300	-13.5	****	84	079	.9
0600	-10.9	****	86	118	.6	124	1.9	0 0600	-15.2	-17.6	82	075	1.4
0900	-11.8	****	85	109	.9	113	2.5	0 0900	-16.4	-18.8	82	071	1.7
1200	-11.7	****	84	062	.7	084	1.9	1 1200	-16.7	-19.2	81	076	1.9
1500	-11.1	****	85	051	.7	051	1.9	0 1500	-15.9	-18.4	81	071	1.8
1800	-11.4	-13.4	85	100	.7	085	1.9	0 1800	-15.2	-17.9	80	080	1.8
2100	-11.6	-13.8	84	066	.6	072	1.9	0 2100	-17.8	-20.4	80	071	1.8
2400	-12.4	****	83	078	.8	079	1.9	0 2400	-19.6	-22.2	80	071	2.0
												069	3.2
												073	0
												103	0
												115	0
												117	0
												122	0
												107	4.4

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

DAY 28						DAY 29						DAY 30														
HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.		HOUR	DEW	WIND	WIND GUST MAX.													
NONG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NONG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NONG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD									
DEG C	DEG C	%	DEG. M/S	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MW	DEG C	DEG C	%	DEG. M/S	DEG. M/S	MW									
0300	-10.7	-13.8	78	115	1.9	107	3.8	0	0300	-10.3	-13.4	78	113	1.8	117	3.2	0	0300	-9.2	-11.7	82	110	2.6	108	4.4	0
0600	-12.5	****	79	099	1.0	120	3.2	0	0600	-10.0	-12.0	80	105	1.7	101	3.2	0	0600	-9.4	-11.9	82	095	2.2	089	3.8	0
0900	-12.8	****	82	059	.9	044	1.9	0	0900	-9.0	-12.3	77	109	1.9	109	3.2	0	0900	-9.5	-12.0	82	098	2.1	110	5.1	0
1200	-11.6	****	81	051	1.0	047	1.9	1	1200	-8.2	-11.2	79	108	1.7	114	4.4	3	1200	-8.8	-11.5	81	098	2.2	107	4.4	2
1500	-9.7	-12.5	80	072	.8	078	2.5	0	1500	-7.5	-10.7	78	105	2.0	105	3.8	1	1500	-8.9	-11.7	80	106	2.4	118	5.1	1
1800	-10.5	-13.3	80	107	1.6	096	3.2	0	1800	-8.1	-10.5	83	108	2.1	111	3.8	0	1800	-8.2	-10.7	82	102	1.7	115	4.4	0
2100	-11.7	-14.6	79	114	1.9	110	3.2	0	2100	-8.4	-10.5	85	115	2.3	120	3.8	0	2100	-8.2	-10.9	81	104	2.1	095	3.8	0
2400	-11.2	-14.1	79	116	1.9	120	3.8	0	2400	-8.9	-11.3	83	110	2.3	110	4.4	0	2400	-7.1	-10.0	80	075	1.4	063	3.2	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
ESKUSTNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

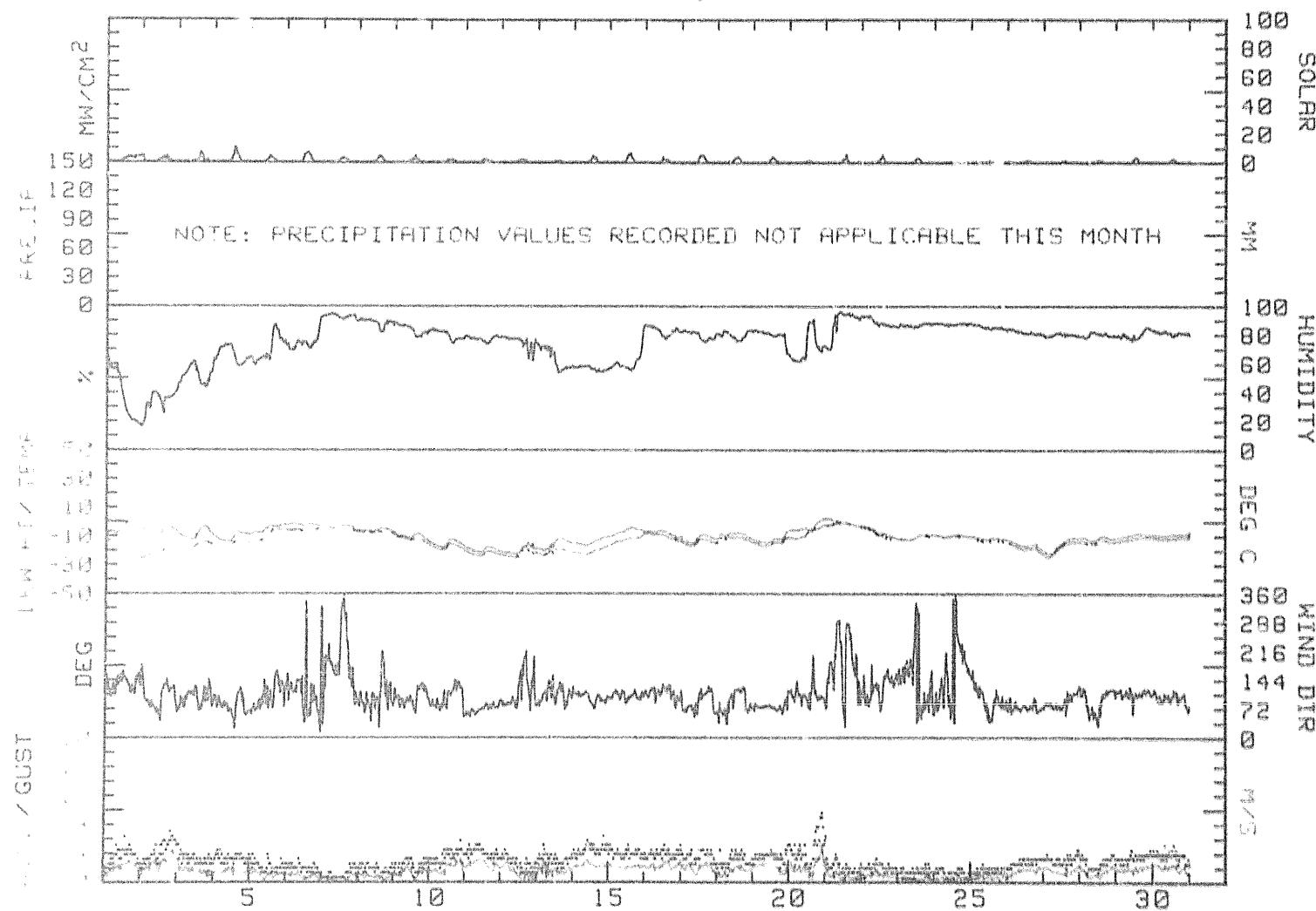
DAY	MAX. TEMP., DEG C			RES. TEMP., DEG C			RES. WIND DIR.			AVG. WIND SPD. M/S			MAX. WIND DIR.			GUST SPD. M/S			P'VAL %			MAX. RH %			MEAN DP DEG C			MEAN PRECIP MM			DAY'S SOLAR ENERGY WH/SQNM		
	MAX. TEMP., DEG C	MIN. TEMP., DEG C	MEAN TEMP., DEG C	WIND DIR.	SPD. M/S	WIND DIR.	SPD. M/S	WIND DIR.	SPD. M/S	GUST DIR.	SPD. M/S	P'VAL %	MEAN RH %	MEAN DP DEG C	MEAN PRECIP MM	SOLAR ENERGY WH/SQNM																	
1	-1.1	-8.0	-4.0	134	1.9	2.0	143	6.3	SE	35	-18.2	****	400	1																			
2	-2.2	-11.4	-6.8	102	2.4	2.7	122	7.0	E	35	-19.9	****	195	2																			
3	-2.6	-12.6	-7.6	097	1.5	1.6	068	5.1	ESE	53	-16.4	****	220	3																			
4	-6.5	-13.8	-10.2	080	1.5	1.6	102	4.4	ENE	66	-15.6	****	350	4																			
5	-1.4	-7.9	-4.7	100	1.0	1.1	084	3.8	ENE	69	-9.4	****	175	5																			
6	-1.9	-3.0	-2.4	106	.7	.9	142	3.2	ESE	73	-5.8	****	330	6																			
7	-2.1	-5.8	-4.0	137	.3	.4	144	2.5	S	91	-6.7	****	145	7																			
8	-4.2	-7.7	-6.0	092	.7	.8	093	2.5	E	89	-7.6	****	170	8																			
9	-7.5	-14.9	-11.2	100	1.3	1.3	094	3.2	E	84	-13.1	****	145	9																			
10	-11.9	-18.1	-15.0	103	1.8	2.0	123	5.7	ESE	79	-18.1	****	110	10																			
11	-17.1	-21.1	-19.1	070	2.4	2.4	050	5.1	ENE	77	-22.4	****	115	11																			
12	-14.3	-22.3	-18.3	097	1.2	1.4	077	4.4	E	75	-23.4	****	105	12																			
13	-10.7	-20.3	-15.5	106	1.5	1.6	109	5.1	ESE	62	-20.9	***	45	13																			
14	-9.6	-16.8	-13.2	098	2.1	2.4	092	6.3	ESE	56	-20.4	***	150	14																			
15	-3.4	-9.6	-6.5	103	2.1	2.1	100	5.1	ESE	62	-12.4	***	255	15																			
16	-5.8	-11.5	-8.7	111	2.2	2.3	123	5.1	ESE	82	-10.3	***	115	16																			
17	-8.3	-14.7	-11.5	090	1.9	2.0	103	4.4	ENE	80	-14.4	***	230	17																			
18	-6.9	-12.4	-9.7	093	1.4	1.6	063	4.4	ENE	80	-11.9	***	170	18																			
19	-5.4	-14.5	-10.0	078	2.2	2.2	119	5.1	ENE	79	-14.8	***	140	19																			
20	2.4	-5.9	-1.8	104	2.2	2.3	097	9.5	ESE	69	-7.8	***	35	20																			
21	2.8	-3.0	-1.1	190	.3	.9	070	6.3	S	84	-1.7	***	125	21																			
22	-2.8	-11.7	-7.3	121	.8	.9	136	3.2	SE	89	-7.8	***	150	22																			
23	-8.1	-12.4	-10.3	111	.3	.5	084	2.5	SE	88	-10.1	***	110	23																			
24	-8.3	-11.1	-9.7	158	.2	.5	112	1.9	S	88	-10.2	***	45	24																			
25	-10.1	-12.4	-11.3	091	.6	.7	113	2.5	E	85	-13.4	***	35	25																			
26	-12.6	-19.6	-16.1	074	1.6	1.6	070	3.2	ENE	82	-18.5	***	40	26																			
27	-10.7	-22.0	-16.4	090	1.6	1.7	107	4.4	ENE	80	-18.1	**	35	27																			
28	-9.7	-12.8	-11.3	100	1.3	1.4	107	3.8	ESE	80	-14.0	***	40	28																			
29	-7.5	-10.9	-9.2	109	2.0	2.0	114	4.4	ESE	80	-11.7	***	100	29																			
30	-7.1	-9.5	-8.3	103	2.1	2.1	110	5.1	E	81	-11.4	***	80	30																			
MONTH	2.8	-22.3	-9.5	099	1.4	1.6	097	9.5	ESE	71	-13.5	***	4440																				

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS      8, 9  
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL      8, 9  
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL      8, 9  
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS      7, 6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
November, 1984



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	-	
	1.0	3.0	6.0	10.0	15.0	20.0	-	-	
N	.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.14
NNE	.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.90
NE	1.88	1.46	0.00	0.00	0.00	0.00	0.00	0.00	3.33
ENE	4.31	16.74	1.04	0.00	0.00	0.00	0.00	0.00	22.08
E	3.68	20.28	.69	0.00	0.00	0.00	0.00	0.00	24.65
ESE	2.85	22.92	1.88	0.00	0.00	0.00	0.00	0.00	27.64
SE	2.78	5.63	.56	0.00	0.00	0.00	0.00	0.00	8.96
SSE	3.19	1.32	0.00	0.00	0.00	0.00	0.00	0.00	4.51
S	2.01	.35	0.00	0.00	0.00	0.00	0.00	0.00	2.36
SSW	1.32	.07	0.00	0.00	0.00	0.00	0.00	0.00	1.39
SW	.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.69
WSW	.42	.28	0.00	0.00	0.00	0.00	0.00	0.00	.69
W	.07	.21	0.00	0.00	0.00	0.00	0.00	0.00	.28
WNW	.14	.35	0.00	0.00	0.00	0.00	0.00	0.00	.49
NW	.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.35
NNW	.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.28
CALM	-----	-----	-----	-----	-----	-----	-----	-----	1.25
TOTAL	25.00	69.58	4.17	0.00	0.00	0.00	0.00	0.00	100.00

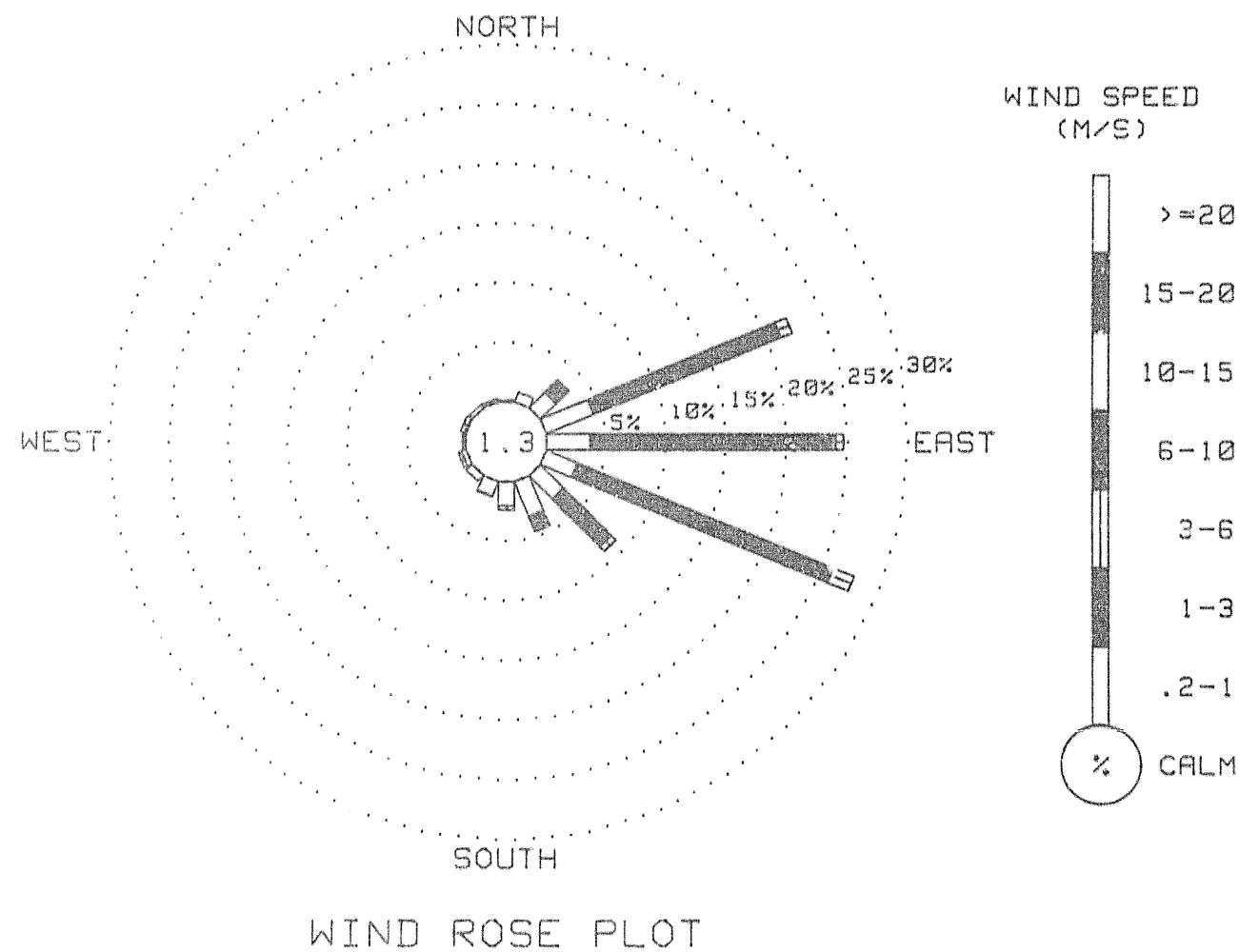
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1440 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1440 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\* \* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \* \*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
November, 1984



R & M CONSULTANTS, INC.  
SUBSTITUTION HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	0	1	2	2	3	4	4	4	3	3	3	3	4	4	4	5	5	2
2	0	0	0	0	0	0	0	0	1	2	2	3	3	2	4	2	1	1	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	1	1	2	3	7	6	2	1	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	1	2	3	6	11	7	4	2	1	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	2	3	4	4	3	2	1	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	2	3	4	4	3	2	1	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	2	5	6	7	7	5	2	1	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	1	2	3	3	3	2	1	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	1	2	2	5	2	2	1	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	1	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	2	1	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	2	2	2	2	2	2	1	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	1	2	5	5	3	2	1	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	6	0	1	3	5	6	6	2	1	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	3	2	1	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	1	3	5	5	4	4	2	1	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	1	3	3	3	4	4	3	1	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	1	2	4	4	4	3	2	1	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	1	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	2	1	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	3	2	1	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	1	0	0	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUBSTITUTION HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING November, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1440	100
WIND SPEED	1440	100
WIND DIRECTION	1440	100
PEAK GUST	1440	100
RELATIVE HUMIDITY	1062	74
PRECIPITATION	0	0
SOLAR RADIATION	1440	100
DEW POINT	1062	74

THERE ARE 1440 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. RH	-12 PH Points	11/1 - 11/2
2. Solar	-2 mW/CM <sup>2</sup>	11/1 - 11/2
	-3	11/2
	-2	11/3
	-1	11/4 - 11/12
	-2	11/13 - 11/14
	-1	11/15 - 11/30

Additional comments on this month's data:

1. Solar radiation erratic on several days. Adjustments made to obtain minimum values (at night) of zero. Data for the second half of day 1 not valid since non-zero readings occur at night after adjustments are made. Sensor probably not calibrated correctly.

No precipitation data for December  
(See INTERPRETATION OF DATA).

## R &amp; M CONSULTANTSS, INC.

## SUSSETTNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR REVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEC C	DEG C	% DEG.	M/S	MW						DEC C	DEG C	% DEG.	M/S	MW		DEC C	DEG C	% DEG.	M/S	MW					
0300	-6.7	-9.6	80	069	1.4	073	3.2	0	0300	-5.8	-9.3	76	119	2.0	126	3.8	0	0300	-1.4	-5.8	72	169	1.0	178	2.5	0
0600	-6.6	-9.3	81	085	1.1	116	3.8	0	0600	-5.3	-9.0	75	096	1.1	111	3.2	0	0600	-1.6	-5.6	74	099	1.0	087	5.1	0
0900	-5.4	-8.6	78	109	1.8	118	3.8	0	0900	-4.7	-9.5	69	126	1.4	124	3.2	0	0900	-1.7	-5.4	76	097	1.7	094	3.8	0
1200	-5.4	-8.5	79	108	1.8	114	3.8	2	1200	-4.3	****	68	127	1.9	114	2.5	2	1200	-2.5	****	88	106	1.5	106	3.2	2
1500	-4.2	****	79	073	.9	089	3.2	1	1500	-3.3	-9.1	64	102	.8	092	2.5	1	1500	-1.3	-5.5	73	108	1.1	113	2.5	1
1800	-4.2	-6.2	86	113	1.8	111	3.8	0	1800	-3.3	-8.5	67	120	1.1	124	2.5	0	1800	-1.1	-5.1	74	102	1.0	126	3.2	0
2100	-4.5	-7.7	78	108	1.8	111	3.8	0	2100	-1.9	****	74	122	1.9	106	3.2	0	2100	-.8	-5.0	73	110	1.6	089	4.4	0
2400	-5.3	-8.7	77	115	2.3	113	4.4	0	2400	-1.7	-6.8	68	133	1.0	130	2.5	0	2400	0.0	-4.4	72	136	1.4	107	2.5	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEC C	DEG C	% DEG.	M/S	MW						DEC C	DEG C	% DEG.	M/S	MW		DEC C	DEG C	% DEG.	M/S	MW					
0300	.2	-3.9	74	137	.9	121	1.7	0	0300	-.8	-4.3	77	138	1.7	141	3.2	0	0300	-5.9	****	90	078	1.4	076	3.8	0
0600	1.9	-3.9	65	144	1.5	129	3.8	0	0600	-2.0	-5.1	79	138	1.3	114	2.5	0	0600	-7.2	-8.6	90	058	1.1	060	3.2	0
0900	1.4	-4.2	66	154	1.4	141	3.2	0	0900	1.1	-3.0	74	113	1.0	130	3.2	0	0900	-7.5	-9.0	89	063	1.2	062	3.2	0
1200	2.3	-3.8	64	119	1.9	155	4.4	2	1200	.1	****	92	137	.8	091	3.2	2	1200	-7.8	-9.6	87	069	1.1	063	3.2	2
1500	1.8	-3.8	66	140	1.3	148	5.1	1	1500	1.3	****	78	106	1.0	106	3.2	0	1500	-7.5	-9.5	86	043	1.3	038	3.2	0
1800	1.8	****	68	126	1.2	109	3.8	0	1800	-1.3	-3.4	86	134	1.1	118	2.5	0	1800	-9.1	****	87	057	.8	039	2.5	0
2100	1.2	-3.8	69	140	1.4	133	3.2	0	2100	-3.8	-5.2	90	123	1.3	130	3.2	0	2100	-8.6	****	88	091	.7	083	2.5	0
2400	.1	-4.0	74	133	1.5	139	3.2	0	2400	-4.4	-5.8	90	093	1.3	093	3.2	0	2400	-8.9	-10.1	91	111	.8	100	1.9	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEC C	DEG C	% DEG.	M/S	MW						DEC C	DEG C	% DEG.	M/S	MW		DEC C	DEG C	% DEG.	M/S	MW					
0300	-8.2	-9.7	89	062	.9	077	2.5	0	0300	-5.7	****	90	135	.3	178	1.3	0	0300	-11.6	****	88	160	.4	220	1.9	0
0600	-7.6	****	94	055	.7	050	1.9	0	0600	-6.5	****	90	147	.5	115	1.9	0	0600	-13.6	****	88	139	.9	110	3.2	0
0900	-7.5	-8.5	93	055	.9	049	3.2	0	0900	-8.4	****	90	136	.8	132	1.9	0	0900	-15.8	****	88	111	.9	095	3.2	0
1200	-8.7	****	92	077	.6	069	2.5	1	1200	-7.8	****	94	183	.6	192	1.9	1	1200	-16.0	-17.8	86	082	1.1	091	3.2	1
1500	-7.5	****	92	058	.7	071	1.9	0	1500	-8.1	****	94	228	.8	232	2.5	0	1500	-17.2	-19.1	85	111	1.1	080	3.2	0
1800	-7.0	****	92	068	.7	066	1.9	0	1800	-7.6	****	94	233	.8	224	1.9	0	1800	-17.7	-19.8	84	096	1.5	110	3.2	0
2100	-5.8	-7.3	89	076	.6	112	2.5	0	2100	-7.5	****	96	253	.9	248	1.9	0	2100	-19.3	-21.3	84	083	1.4	065	3.8	0
2400	-5.8	****	90	110	.3	059	1.9	0	2400	-8.1	****	91	242	.7	243	1.9	0	2400	-20.1	-22.2	83	082	1.6	080	3.8	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSSETTA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

DAY 10								DAY 11								DAY 12										
HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW			
0300	-20.5	-22.8	82	083	1.8	.079	3.2	0	0300	-12.9	-17.2	70	118	2.2	119	4.4	0	0300	-21.4	-24.2	78	114	1.1	110	3.2	0
0600	-20.3	-22.4	83	145	.7	133	3.8	0	0600	-15.7	-19.0	76	113	1.5	122	3.2	0	0600	-22.3	-25.2	77	109	1.6	107	3.8	0
0900	-15.4	-17.6	83	137	1.0	136	3.2	0	0900	-16.7	-19.5	79	076	1.5	079	3.2	0	0900	-22.8	-25.8	76	099	1.7	116	3.2	0
1200	-13.0	-16.6	74	120	1.2	101	5.1	1	1200	-15.1	-18.2	77	085	1.9	082	3.2	1	1200	-23.0	-26.2	75	079	2.2	079	4.4	1
1500	-14.8	-18.9	71	099	1.8	.098	5.1	0	1500	-15.1	-18.2	77	068	1.4	058	3.2	0	1500	-32.4	-25.6	75	077	2.0	077	3.8	0
1800	-14.1	-18.2	71	114	1.9	116	3.8	0	1800	-17.4	-20.2	79	069	1.9	061	3.8	0	1800	-22.7	-25.9	75	087	1.3	082	2.5	0
2100	-15.1	-19.0	72	112	1.3	105	3.2	0	2100	-18.9	-21.6	79	067	2.3	064	3.8	0	2100	-17.1	-21.6	68	110	.9	109	2.5	0
2400	-12.4	-17.1	68	131	1.8	131	3.8	0	2400	-20.8	-23.6	78	081	1.2	064	3.8	0	2400	-16.0	-20.5	68	115	1.3	101	3.8	0
DAY 13								DAY 14								DAY 15										
HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW			
0300	-16.4	-20.7	69	106	1.6	.098	3.8	0	0300	-20.5	-23.9	74	098	2.3	095	5.7	0	0300	-20.2	-24.4	69	073	2.3	063	5.1	0
0600	-15.1	-19.8	67	129	1.1	.085	2.5	0	0600	-23.6	-26.9	74	105	2.1	103	5.1	0	0600	-16.3	*****	74	096	1.1	093	3.8	0
0900	-16.3	-20.5	70	120	1.4	138	3.2	0	0900	-24.3	-27.4	75	116	1.3	100	3.8	0	0900	-13.6	-18.0	69	086	1.1	090	4.4	0
1200	-17.7	-21.7	71	056	1.4	129	3.2	1	1200	-24.0	-27.2	75	096	1.1	136	3.8	1	1200	-12.2	-18.0	62	109	2.1	117	4.4	1
1500	-18.4	-22.0	73	075	2.0	.089	3.8	1	1500	-23.4	*****	74	105	1.3	085	4.4	1	1500	-12.3	-16.1	73	112	2.4	122	4.4	0
1800	-19.4	-22.7	75	065	2.1	062	4.4	0	1800	-23.6	-27.2	72	091	1.2	184	5.1	0	1800	-12.6	-15.0	82	101	2.2	099	4.4	0
2100	-20.2	-23.3	76	094	1.4	.074	4.4	0	2100	-23.2	-27.0	71	069	1.0	071	5.1	0	2100	-13.0	-15.4	82	104	2.2	108	3.8	0
2400	-18.8	-22.1	75	098	1.9	.097	5.1	0	2400	-20.0	-25.2	63	078	2.9	086	5.7	0	2400	-12.8	-15.1	83	116	2.2	119	3.8	0
DAY 16								DAY 17								DAY 18										
HOUR	DEW	WIND	WIND GUST MAX.	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD					
	DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	% DEG.	M/S	DEG.	M/S	MW			
0300	-12.4	-14.8	82	108	1.9	115	3.8	0	0300	-9.3	-12.0	81	084	2.1	098	5.7	0	0300	-7.3	*****	93	058	.7	039	1.9	0
0600	-11.7	-14.0	83	107	1.8	105	4.4	0	0600	-9.2	-11.4	84	095	2.0	051	4.4	0	0600	-6.7	*****	95	063	.9	070	2.5	0
0900	-11.1	-13.4	83	104	1.7	115	4.4	0	0900	-8.6	-11.0	83	105	2.5	101	5.1	0	0900	-6.3	*****	92	054	.7	046	2.5	0
1200	-10.5	-12.8	83	097	2.0	105	4.4	1	1200	-7.9	-10.3	83	099	2.4	106	7.0	1	1200	-5.3	*****	93	071	.5	109	1.9	0
1500	-10.1	-12.4	83	099	2.0	096	3.8	0	1500	-8.8	-9.9	92	085	1.6	078	5.1	0	1500	-4.7	*****	93	048	.7	028	3.5	0
1800	-9.6	-12.3	81	106	2.1	102	4.4	0	1800	-8.9	*****	92	035	1.0	053	2.5	0	1800	-4.6	*****	95	031	.4	065	1.9	0
2100	-10.0	-12.6	81	098	2.3	084	4.4	0	2100	-8.6	*****	92	046	.8	044	1.9	0	2100	-4.2	*****	96	023	.5	024	1.9	0
2400	-10.6	-13.1	82	073	2.0	117	4.4	0	2400	-7.8	*****	92	049	.6	036	2.5	0	2400	-3.3	*****	95	237	0	239	2.5	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND GUST MAX.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG. M/S	M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW
0300	-2.9	*****	97	265	.3	207	1.9	0	0300	-13.5	-19.4	61	128	1.8	133	3.8	0	0300	-17.9	-22.7	66	071	1.9	097	4.4	0				
0600	-5.9	-6.7	94	118	.8	122	2.5	0	0600	-17.0	*****	73	128	.8	121	3.2	0	0600	-17.0	-21.6	67	068	1.6	067	4.4	0				
0900	-8.7	-10.4	88	148	1.6	133	3.2	0	0900	-17.4	-21.4	71	108	.7	090	2.5	0	0900	-15.9	-20.4	68	04.	1.7	045	3.8	0				
1200	-10.9	-13.7	80	141	2.0	153	3.8	1	1200	-14.0	-19.7	62	090	1.5	098	3.8	1	1200	-12.9	-17.4	69	078	1.8	084	4.4	0				
1500	-11.0	-15.9	67	127	2.3	133	3.8	0	1500	-13.9	-19.6	62	105	1.8	115	3.8	0	1500	-13.1	-17.1	72	104	2.5	104	5.1	0				
1800	-12.7	-17.9	65	132	2.4	133	3.8	0	1800	-15.8	-20.8	65	085	1.5	073	3.2	0	1800	-12.8	-16.8	72	094	2.6	107	5.1	0				
2100	-11.7	-18.1	59	150	2.0	160	3.8	0	2100	-17.5	-22.0	68	082	1.7	092	3.8	0	2100	-13.0	-16.3	76	101	2.7	105	5.1	0				
2400	-12.5	-19.3	57	134	2.0	144	3.8	0	2400	-16.9	-21.9	65	065	1.9	073	4.4	0	2400	-12.6	-15.8	77	103	2.6	105	4.4	0				

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND GUST MAX.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG. M/S	M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW		DEG C	DEG C	% DEG. M/S	MW
0300	-11.8	-15.6	73	102	3.0	107	5.1	0	0300	-7.3	-8.5	91	102	2.0	102	3.8	0	0300	-11.1	-12.7	88	167	1.0	219	1.9	0				
0600	-11.6	-14.5	79	108	3.1	117	5.1	0	0600	-7.0	-8.2	91	095	2.0	092	4.4	0	0600	-13.8	*****	89	148	.9	159	3.2	0				
0900	-10.6	-13.2	81	102	2.6	105	5.1	0	0900	-7.2	-8.3	92	098	2.0	107	3.8	0	0900	-14.1	-15.7	88	093	1.5	072	3.2	0				
1200	-10.3	-13.1	80	102	2.6	099	5.1	0	1200	-6.7	-8.1	90	106	2.0	103	3.8	0	1200	-17.0	-18.8	86	078	1.2	057	3.2	1				
1500	-9.7	-12.8	78	092	2.1	087	5.1	0	1500	-6.2	-7.7	89	109	1.6	104	3.8	0	1500	-18.1	-20.0	85	079	1.0	076	2.5	0				
1800	-9.3	-11.7	83	107	2.5	109	5.7	0	1800	-6.3	*****	90	092	1.1	103	3.2	0	1800	-19.2	-21.2	84	092	1.3	116	3.8	0				
2100	-8.6	-10.5	86	114	2.6	120	5.1	0	2100	-5.9	*****	92	241	.6	258	3.2	0	2100	-20.4	-22.5	83	079	1.0	011	2.5	0				
2400	-7.5	-9.3	87	111	2.1	117	4.4	0	2400	-6.6	-7.7	92	231	.9	232	1.9	0	2400	-20.2	*****	83	074	1.0	0'0	3.2	0				

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND GUST MAX.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD		
	DEG C	DEG C	% DEG. M/S	M/S	MW		DEG C	DEG C	% DEG. M/S	M/S		DEG C	DEG C	% DEG. M/S	M/S		DEG C	DEG C	% DEG. M/S	M/S		DEG C	DEG C	% DEG. M/S	M/S		DEG C	DEG C	% DEG. M/S	M/S
0300	-19.4	-21.4	84	075	1.3	095	3.8	0	0300	-10.9	*****	86	104	1.0	115	3.2	0	0300	-23.3	*****	81	211	.3	191	1.9	0				
0600	-17.1	-18.9	86	064	2.1	062	3.8	0	0600	-14.1	*****	85	105	1.1	099	2.5	0	0600	-21.9	-24.0	83	108	.7	141	3.2	0				
0900	-16.3	-18.0	87	068	1.7	069	3.2	0	0900	-16.6	*****	84	130	.7	118	1.9	0	0900	-21.9	-24.1	82	072	1.4	041	3.8	0				
1200	-10.8	-12.6	87	093	1.4	085	3.2	1	1200	-17.9	*****	83	097	.6	078	2.5	0	1200	-21.5	-23.9	81	077	2.6	081	3.8	1				
1500	-10.1	-12.3	84	105	1.5	099	3.2	0	1500	-18.1	*****	84	081	1.0	081	2.5	0	1500	-22.3	-24.8	83	078	1.6	083	3.8	0				
1800	-10.1	-12.6	82	105	2.1	107	3.8	0	1800	-19.6	-21.8	84	084	1.5	084	3.2	0	1800	-22.6	*****	81	091	1.4	087	3.2	0				
2100	-10.7	-12.9	84	112	2.0	112	3.8	0	2100	-20.5	-22.8	82	106	1.3	089	3.2	0	2100	-21.5	-23.9	81	111	1.0	108	3.2	0				
2400	-10.7	-12.6	86	112	1.7	117	3.8	0	2400	-21.9	-24.1	82	129	1.2	113	3.2	0	2400	-15.7	-17.8	84	105	1.1	131	3.8	0				

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	HOUR	DEW	WIND	WIND GUST MAX.	
MDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST	RAD	MDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST
DEG C	DEG C	%	DEG. M/S	DEG. M/S	MW		DEG C	DEG C	%	DEG. M/S	DEG. M/S	MW

0300	-14.0	-17.1	77	151	.9	159	2.5	0	0300	-15.8	-19.5	73	095	2.4	095	5.7	0	0300	-16.6	-12.4	87	106	1.3	106	3.2	0
0600	-14.6	-18.8	70	141	1.4	130	3.8	0	0600	-15.4	-18.1	80	097	2.4	102	5.1	0	0600	-9.6	-12.0	83	103	1.4	103	3.2	0
0900	-16.7	****	71	138	.9	141	1.9	0	0900	-14.7	-17.2	81	098	2.3	098	4.4	0	0900	-8.7	****	88	098	.6	123	2.5	0
1200	-15.4	-20.5	65	139	1.5	130	3.8	1	1200	-14.2	-16.8	81	093	1.9	096	3.8	0	1200	-7.4	****	89	124	.3	063	1.3	0
1500	-15.8	-21.0	64	114	2.1	105	4.4	1	1500	-13.3	-15.3	85	096	1.8	096	3.8	0	1500	-5.7	****	88	187	.6	185	1.9	0
1800	-17.7	-22.5	66	103	2.0	098	4.4	0	1800	-12.2	-14.1	86	097	1.6	100	3.2	0	1800	-4.0	-6.3	84	116	1.6	111	5.7	0
2100	-18.0	-22.4	68	106	2.3	108	4.4	0	2100	-11.5	-13.3	87	094	1.5	100	3.2	0	2100	-3.9	-5.6	88	104	1.3	098	5.7	0
2400	-16.4	-20.6	70	099	2.7	093	5.7	0	2400	-11.3	-13.1	87	099	1.4	101	2.5	0	2400	-3.3	-4.2	94	126	.5	245	1.9	0

DAY 31

HOUR	DEW	WIND	WIND GUST MAX.	MDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG. M/S	DEG. M/S	MW				

0300	-3.4	-4.3	94	075	.7	046	2.5	0
0600	-3.3	-4.7	90	121	1.3	115	3.2	0
0900	-3.0	****	96	161	.6	143	1.9	0
1200	-1.8	****	96	190	.5	152	1.9	0
1500	-.9	****	94	155	.9	130	1.9	0
1800	-1.0	-1.7	95	165	1.0	174	1.9	0
2100	.1	-.8	94	169	1.0	156	1.9	0
2400	.8	-.5	91	161	1.1	160	1.9	0

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

## R &amp; M CONSULTANTS, INC.

## SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1981

DAY	RES.			RES.			AVG.			MAX.			MAX.			DAY'S	
	MAX. DEG C	MIN. DEG C	MEAN DEG C	WIND DIR. DEG	WIND SPD. M/S	WIND SPD. M/S	GUST DIR. DEG	GUST SPD. M/S	P/VAL DIR.	MEAN RH %	MEAN DEG C	DP MM	PRECIP MM	SOLAR WH/SDH	ENERGY DAY		
1	-3.8	-8.0	-5.9	101	1.6	1.7	113	4.4	ESE	80	-8.4	****	65	1			
2	-1.2	-8.0	-4.6	119	1.1	1.2	126	3.8	ESE	72	-8.6	****	95	2			
3	0.0	-2.5	-1.3	114	1.2	1.3	087	5.1	ESE	75	-5.2	****	65	3			
4	2.6	-.9	.9	136	1.4	1.4	148	5.1	SE	67	-3.8	****	70	4			
5	1.5	-5.4	-2.0	123	1.1	1.2	141	3.2	SE	83	-3.9	****	55	5			
6	-5.7	-9.4	-7.6	068	1.0	1.1	076	3.8	ENE	89	-8.8	****	75	6			
7	-5.8	-8.8	-7.3	066	.7	.7	049	3.2	ENE	90	-9.3	****	30	7			
8	-5.7	-8.7	-7.2	206	.5	.7	232	2.5	WSW	94	-7.8	****	15	8			
9	-8.3	-20.1	-14.2	100	1.0	1.2	065	3.8	E	85	-19.1	****	30	9			
10	-12.4	-21.8	-17.1	114	1.4	1.5	101	5.1	ESE	75	-19.1	****	30	10			
11	-12.3	-20.8	-16.6	085	1.6	1.8	119	4.4	ENE	76	-19.4	****	35	11			
12	-15.6	-23.2	-19.4	096	1.5	1.5	079	4.4	ESE	75	-24.5	****	40	12			
13	-15.1	-22.1	-18.6	893	1.5	1.7	097	5.1	ENE	72	-21.8	****	40	13			
14	-20.0	-24.5	-22.3	092	1.7	1.9	095	5.7	E	73	-26.5	****	55	14			
15	-12.0	-22.1	-17.1	101	1.9	2.0	063	5.1	ESE	73	-18.2	****	40	15			
16	-9.6	-12.8	-11.2	101	2.0	2.0	105	4.4	ESE	83	-13.2	****	20	16			
17	-7.8	-10.8	-9.3	083	1.5	1.7	106	7.0	NE	85	-11.0	****	10	17			
18	-3.3	-7.7	-5.5	052	.5	.6	070	2.5	ENE	94	-7.3	****	0	18			
19	-2.7	-12.7	-7.7	137	1.6	1.8	153	3.8	SE	74	-14.1	****	10	19			
20	-12.1	-17.7	-14.9	096	1.4	1.5	073	4.4	ENE	64	-20.5	****	35	20			
21	-12.6	-18.2	-15.4	087	2.1	2.2	106	5.1	E	70	-18.8	****	0	21			
22	-7.5	-12.5	-10.0	105	2.6	2.6	109	5.7	ESE	80	-12.9	****	0	22			
23	-5.8	-7.4	-6.6	107	1.2	1.6	092	4.4	ESE	91	-8.1	****	5	23			
24	-7.3	-20.5	-13.9	098	1.0	1.1	106	3.8	E	87	-17.5	****	20	24			
25	-10.0	-20.2	-15.1	092	1.6	1.7	095	3.8	ESE	85	-15.6	****	30	25			
26	-10.6	-22.3	-16.5	104	1.0	1.1	115	3.2	ESE	84	-19.1	****	25	26			
27	-15.7	-23.7	-19.7	090	1.1	1.3	068	3.8	ENE	81	-23.8	****	20	27			
28	-12.6	-18.1	-15.4	117	1.6	1.7	093	5.7	SE	67	-20.6	****	45	28			
29	-11.3	-16.1	-13.7	096	1.9	1.9	095	5.7	E	82	-16.3	****	0	29			
30	-3.1	-11.3	-7.2	113	.9	1.0	111	5.7	ESE	85	-9.1	****	0	30			
31	.8	-3.8	-1.5	151	.8	.9	115	3.2	S	93	-2.5	****	15	31			
MONTH	2.6	-24.5	-11.1	102	1.3	1.5	106	7.0	ESE	78	-14.0	****	975				

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.1

GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.1

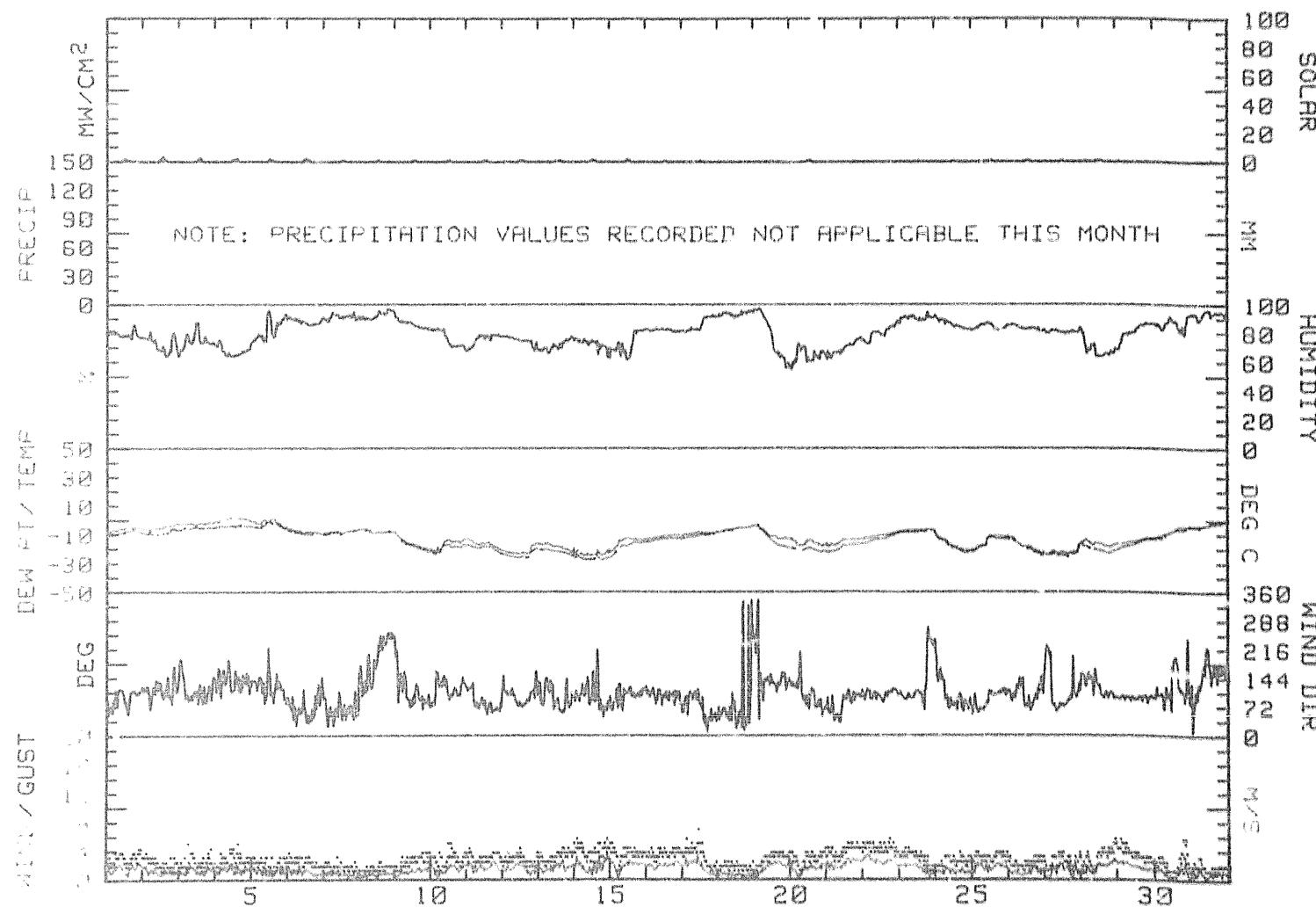
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 5.1

GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 3.8

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
December, 1984



R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

DIRECTION	VELOCITY (M/S)								TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER		
N	.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.20
NNE	.60	.47	0.00	0.00	0.00	0.00	0.00	0.00	1.08
NE	2.49	2.42	0.00	0.00	0.00	0.00	0.00	0.00	4.91
ENE	4.10	12.43	.13	0.00	0.00	0.00	0.00	0.00	16.67
E	3.56	20.30	.47	0.00	0.00	0.00	0.00	0.00	24.33
ESE	3.23	23.45	.67	0.00	0.00	0.00	0.00	0.00	27.35
SE	2.62	9.21	0.00	0.00	0.00	0.00	0.00	0.00	11.83
SSE	2.82	3.23	0.00	0.00	0.00	0.00	0.00	0.00	6.05
S	1.28	1.01	0.00	0.00	0.00	0.00	0.00	0.00	2.28
SSW	1.21	.27	0.00	0.00	0.00	0.00	0.00	0.00	1.48
SW	1.41	.20	0.00	0.00	0.00	0.00	0.00	0.00	1.61
WSW	1.28	.27	0.00	0.00	0.00	0.00	0.00	0.00	1.55
W	.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.27
WNW	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NW	.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.13
NNW	.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.27
CALM	-----	-----	-----	-----	-----	-----	-----	-----	0.00
TOTAL	25.47	73.25	1.28	0.00	0.00	0.00	0.00	0.00	100.00

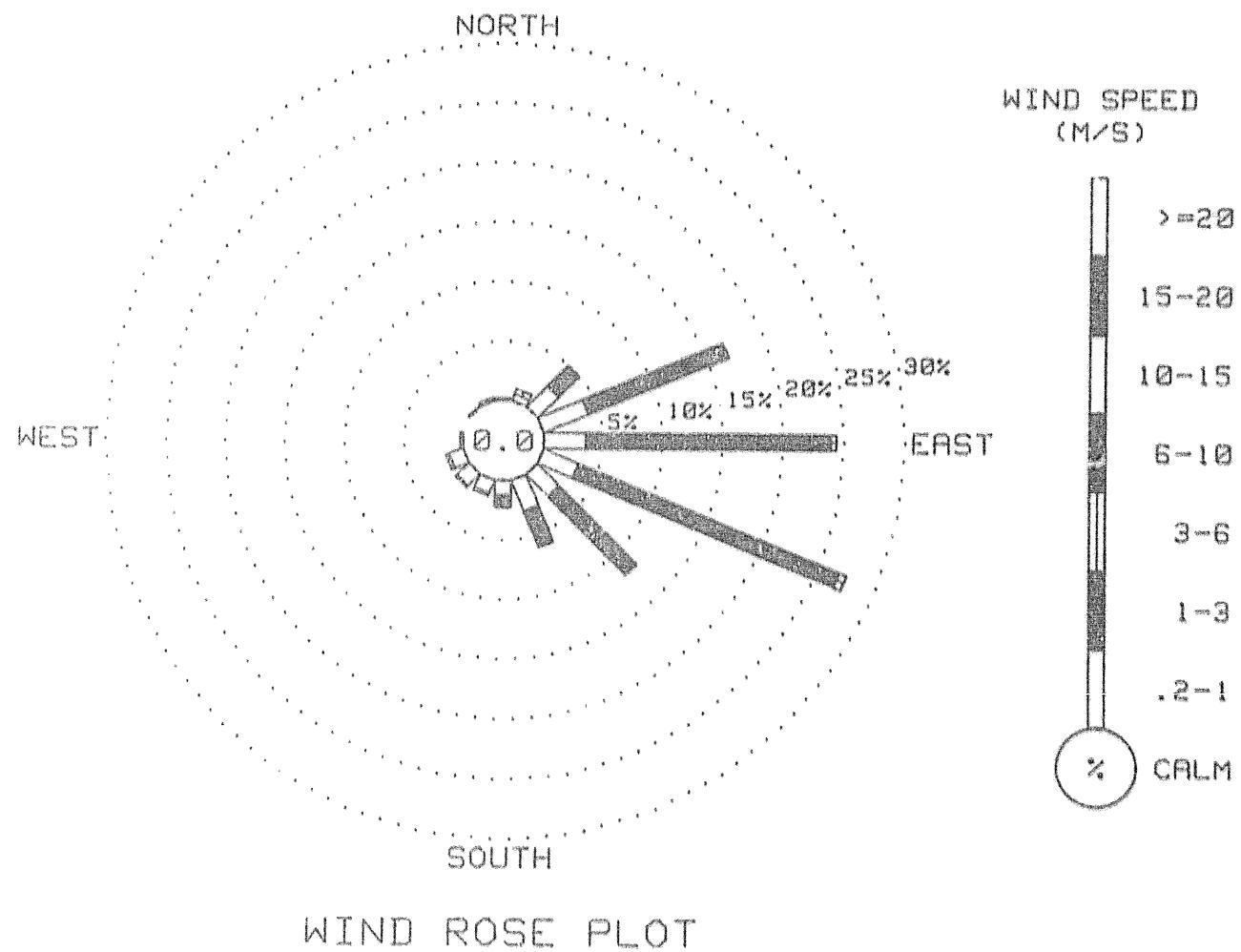
NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT

1488 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

1488 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 30 MINUTE DATA.

\*\* SEE "INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R&M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT  
DEVIL CANYON WEATHER STATION  
December, 1984



R & M CONSULTANTS, INC.  
SUSTAINA HYDROELECTRIC PROJECT

HOURLY SOLAR RADIATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

SOLAR RADIATION VALUES MEASURED IN MILLIWATTS PER SQUARE CENTIMETER

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Avg
1	0	0	0	0	0	0	0	0	1	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1	2	4	2	1	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	2	2	3	1	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	2	2	2	2	1	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	***	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

\*\* SEE INTERPRETATION NOTES AT END OF MONTHLY REPORT \*\*

R & M CONSULTANTS, INC.  
SUSITNA HYDROELECTRIC PROJECT

OBSERVATION SUMMARY FOR DEVIL CANYON WEATHER STATION  
DATA TAKEN DURING December, 1984

PARAMETER	NUMBER OF USABLE OBSERVATIONS	PERCENT OF TOTAL OBSERVATIONS
TEMPERATURE	1488	100
WIND SPEED	1488	100
WIND DIRECTION	1488	100
PEAK GUST	1488	100
RELATIVE HUMIDITY	1109	75
PRECIPITATION	0	0
SOLAR RADIATION	1488	100
DEW POINT	1109	75

THERE ARE 1488 POSSIBLE OBSERVATIONS THIS MONTH FOR EACH PARAMETER.  
THE DATA RECORDING INTERVAL IS 30 MINUTES.

THE FOLLOWING ADJUSTMENTS HAVE BEEN MADE TO THIS MONTH'S DATA:

1. Solar -1 mW/cm<sup>2</sup>

## 6.0 REFERENCES

Coffin, J. H. 1984. Solar and longwave radiation data for south-central Alaska. In: Proceedings, Alaska Section AWRA Annual Conference, Alyeska Resort, Alaska, November 1984. Published by Institute of Water Resources, University of Alaska, Fairbanks, Alaska, as Report IWR-106.

R&M Consultants, Inc. 1984. Processed climatic data, October 1982 - September 1983, Volume V, Devil Canyon Station (No. 0660). Prepared under contract to Harza-Ebasco Susitna Joint Venture for Alaska Power Authority. Document No. 1092. June.

## APPENDIX

TABLE A.1 CONVERSION FACTORS

Multiply	by	To Obtain
millimeter (mm)	0.03937	inch (in)
centimeter (cm)	0.3937	inch (in)
square centimeter ( $\text{cm}^2$ )	0.1550	square inch ( $\text{in}^2$ )
meter (m)	3.281	foot (ft)
square meter ( $\text{m}^2$ )	10.76	square foot ( $\text{ft}^2$ )
meter per second (m/s)	3.821	foot per second (ft/s)
meter per second (m/s)	2.237	mile per hour (mph)
meter per second (m/s)	1.944	knot (kt)
degree Celsius ( $^\circ\text{C}$ )	$^\circ\text{F} = 9/5(\text{C}) + 32$	degree Fahrenheit ( $^\circ\text{F}$ )
watt-hour (WH)	3.413	British Thermal Unit (BTU)
watt-hour (WH)	3600	joule (J)
milliwatt (mw)	0.003413	BTU per hour (BTU/hr)
milliwatt per square centimeter ( $\text{mw/cm}^2$ )	0.1040	BTU per hour per square foot (BTU/hr-ft $^2$ )
watt-hour per square meter (WH/m $^2$ )	0.3171	BTU per square foot (BTU/ft $^2$ )
watt-hour per square meter (WH/m $^2$ )	0.0860	langley (ly)