

PART III CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 1 CONCLUSIONS

The conclusions of the study are as follows:

(Hydrological Investigation)

- Rivers in the Ghuzayn District belong to the drainage system of Wadi al Hawasinah River.
- Sampling points of water for the hydrological investigation consist of 5 points, 3 points of surface water survey (GS-1, GS-4 and GS-3) and 2 points of well survey (GW-1 and GW-2).
- Discharge of GS-1 (Falaj) is 2.70 m³/min, GS-4 (upper stream) is 0.30 m³/min, and GS-3 (lower stream) is 0.084 m³/min.
- Water wells (GW-1 and GW-2) in the district are shallow well for irrigation. Depth of groundwater table is about -7.50, -6.70 m below GL, respectively.
- Approximately same volume of ground water as surface current water is assumed to exist near the Ghuzayn District by the water balance.
- Surface water of 2.70 m³/min is taken from the mother well near Ghuzayn Village and supplied through Falaj system for irrigation.
- The surface water and well water range in pH from 8.00 to 8.60 (weak alkalinity).
- All concentration of Cu, Zn, Pb, Ni, Cr, Mn are <0.01 mg/l. All concentration of Hg are less than detection limit.
- The average concentration of Fe is 0.03 mg/l, Maximum is 0.07 mg/l in GW-1, Minimum is <0.01 mg/l in GS-3. Those of GW-1 (Ghuzayn village) and GS-3 (river water) are relatively higher.
- The average concentration of SO₄ is 131 mg/l, Maximum is 145 mg/l, and Minimum is 114 mg/l.
- The technical transfers for the establishment of organization for the periodical hydrological investigation was carried out.

(Water Investigation of Bore Wells)

- Five bore wells (one in the upstream and four in the down stream) are drilled by the method of preventing from the drilling mud affect, and casing and screen pipes are placed to protect the bore well wall for preparing the ground water observation.
- The recovery test, water sampling, water quality measurement and water quality analysis are conducted on each bore well.

- The permeability coefficient of bore well ranges with 10^{-5} cm/s.
- MJOB-EW-3 has the little water flow of 1 l/s.
- Average gradient of groundwater table is 1/100 ($=0.6^\circ$).
- The groundwater ranges in pH from 8.00 to 8.60 (weak alkalinity).
- The electric conductivity is around $100 \mu\text{S/cm}$. Water temperature ranges in centigrade from 31.5 to 34.8.
- The maximum concentration of Fe, Cr, Ni and Mn are recorded in MJOB-EW-2. The maximum concentration of Cu, Zn and Pb are recorded in MJOB-EW-1. And, the relatively high concentration of Fe and Zn are recorded in MJOB-EW-4. These things suggest that each bore well would be under the some influence of mineralization.
- Although the concentration of SO_4 ranges wider than that of the surface water and well water, the average is almost same. The minimum of SO_4 of 80 mg/l is recorded in MJOB-EW-2 where Fe is maximum value.
- It is desirable to continue the monitoring work of water quality after the study.

(Weather observation)

- The weather observation devices are installed in Ghuzayn Village and data collection was started to prepare the continual weather data. The observation items consist of temperature, humidity, wind velocity and direction and rainfall.
- The technical transfers for the establishment of organization for the periodical weather observation was conducted.

CHAPTER 2 RECOMMENDATIONS

The recommendation of the study is as follows:

- Five bore wells with no affect of the drilling mud are constructed in the upper and down stream area of ore bodies. It is necessary to collect the data on the ground water quality together with the weather and the ground water level.
- It is necessary to carry out the more detailed environmental study in the Ghuzayn District for the conceptual design of the mine development.
- The items of environmental investigation consist of air quality, water quality, groundwater, soil, noise and vibration, and social environment.
- It is desirable to continue the monitoring work of water after the study.

References

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APPENDICES

1. Measurement Card for Discharge
2. Investigation Card of Bore Wells
3. Weather Observation Data

1. Measurement Card for Discharge

Measurement of Discharge (GS-1)

(16,02,2000)

1. Location : Falaj system, Ghuzayn
2. Number of measurement point : GS-1
3. Measurement of stream bed

width	<u>63</u>	(cm)
Depth	<u>10</u>	(cm)
NOR ¹		
(60%)	<u>5.33</u>	(r/s)

4. Calculation

$$V = 0.132 \times N + 0.004 \quad (\text{m/s})$$

V : Flow speed (m/s)

N : Number of rotation

FS ²	<u>0.71</u>	(m/s)
Area	0.063	(m ²)

$$V_o = (0.71 \times 0.063)$$

$$= \underline{0.045} \quad (\text{m}^3/\text{s})$$

$$= \underline{2.70} \quad (\text{m}^3/\text{min})$$

¹ NOR : Number of rotation

² FS : Flow speed (m/s)

Measurement of Discharge (GS-3)

(16,02, 2000)

1. Location : Lower stream of Wadi Hawasina, Ghuzayn
(Near to Ghuzayn Elementary School.)
2. Number of measurement point : GS-3
3. Measurement of stream bed

width	<u>16</u>	(cm)
Depth	<u>8</u>	(cm)
NOR ³		
(60%)	<u>0.83</u>	(r/s)

4. Calculation

$$V = 0.132 \times N + 0.004 \quad (\text{m/s})$$

V : Flow speed (m/s)

N : Number of rotation

FS ⁴	<u>0.11</u>	(m/s)
Area	<u>0.0128</u>	(m ²)

$$\begin{aligned} V_o &= (0.11 \times 0.0128) \\ &= \underline{0.0014} \quad (\text{m}^3/\text{s}) \\ &= \underline{0.084} \quad (\text{m}^3/\text{min}) \end{aligned}$$

³ NOR : Number of rotation

⁴ FS : Flow speed (m/s)

Measurement of Discharge (GS-4)

(19,02, 2000)

1. Location : Upper stream of Wadi Hawasina, Ghuzayn

2. Number of measurement point : GS-4

3. Measurement of stream bed

width	<u>28</u>	(cm)
Depth	<u>13.5</u>	(cm)
NOR ⁵ (60%)	<u>1.0</u>	(r/s)

4. Calculation

$$V = 0.132 \times N + 0.004 \quad (\text{m/s})$$

V : Flow speed (m/s)

N : Number of rotation

FS ⁶	<u>0.136</u>	(m/s)
Area	<u>0.0378</u>	(m ²)

$$V_o = (0.136 \times 0.0378)$$

$$= \frac{0.005}{\quad} \quad (\text{m}^3/\text{s})$$

$$= \frac{0.3}{\quad} \quad (\text{m}^3/\text{min})$$

⁵ NOR : Number of rotation

⁶ FS : Flow speed (m/s)

2. Investigation Card of Bore Wells

3. Weather Observation Data

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/14 10:00	244.4	0.5	23.5	40.6	0.0
2000/02/14 11:00	359.2	0.4	24.8	35.6	0.0
2000/02/14 12:00	353.5	1.2	25.5	38.0	0.0
2000/02/14 13:00	58.3	1.0	26.5	34.4	0.0
2000/02/14 14:00	27.7	1.4	26.5	40.3	0.0
2000/02/14 15:00	39.5	1.2	26.2	42.5	0.0
2000/02/14 16:00	98.2	0.6	26.0	35.0	0.0
2000/02/14 17:00	30.9	1.3	25.0	41.6	0.0
2000/02/14 18:00	71.2	0.6	23.7	38.7	0.0
2000/02/14 19:00	51.1	0.4	22.4	52.6	0.0
2000/02/14 20:00	84.2	0.4	21.5	57.0	0.0
2000/02/14 21:00	216.3	0.1	20.9	60.3	0.0
2000/02/14 22:00	217.7	0.1	19.0	67.1	0.0
2000/02/14 23:00	243.3	0.0	18.1	70.1	0.0
2000/02/15 00:00	265.3	0.1	17.7	70.6	0.0
2000/02/15 01:00	135.7	0.0	17.1	76.0	0.0
2000/02/15 02:00	215.2	0.3	18.0	76.5	0.0
2000/02/15 03:00	196.2	0.0	18.3	74.3	0.0
2000/02/15 04:00	268.9	0.0	17.2	74.5	0.0
2000/02/15 05:00	84.6	0.1	18.0	65.3	0.0
2000/02/15 06:00	147.9	0.2	17.5	64.0	0.0
2000/02/15 07:00	214.5	0.2	15.7	70.5	0.0
2000/02/15 08:00	141.4	0.3	18.8	56.7	0.0
2000/02/15 09:00	284.7	0.2	21.5	60.1	0.0
2000/02/15 10:00	52.9	0.4	23.3	58.0	0.0
2000/02/15 11:00	345.2	1.2	24.3	50.3	0.0
2000/02/15 12:00	148.6	0.4	26.0	41.8	0.0
2000/02/15 13:00	132.4	0.7	27.1	36.5	0.0
2000/02/15 14:00	77.0	0.6	28.0	37.5	0.0
2000/02/15 15:00	36.7	0.8	27.8	40.2	0.0
2000/02/15 16:00	28.4	0.6	27.2	33.0	0.0
2000/02/15 17:00	87.4	0.7	25.8	37.7	0.0
2000/02/15 18:00	29.1	0.4	24.1	45.5	0.0
2000/02/15 19:00	47.5	0.4	23.3	46.2	0.0
2000/02/15 20:00	28.0	0.0	22.2	51.1	0.0
2000/02/15 21:00	192.6	0.0	20.5	58.5	0.0
2000/02/15 22:00	267.8	0.4	20.1	59.0	0.0
2000/02/15 23:00	176.0	0.1	19.1	66.8	0.0
2000/02/16 00:00	203.0	0.0	18.3	68.8	0.0
2000/02/16 01:00	121.3	0.0	17.8	73.5	0.0
2000/02/16 02:00	237.9	0.1	17.3	81.2	0.0
2000/02/16 03:00	148.6	0.2	18.2	82.0	0.0
2000/02/16 04:00	170.2	0.1	17.3	84.1	0.0
2000/02/16 05:00	161.2	0.2	17.4	81.0	0.0
2000/02/16 06:00	156.9	0.3	17.1	82.7	0.0

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/16 07:00	171.7	0.3	16.6	84.5	0.0
2000/02/16 08:00	137.1	0.3	19.5	71.0	0.0
2000/02/16 09:00	229.3	0.1	22.0	71.5	0.0
2000/02/16 10:00	29.5	0.4	24.5	49.3	0.0
2000/02/16 11:00	30.5	0.8	25.8	40.0	0.0
2000/02/16 12:00	342.0	1.6	27.3	34.5	0.0
2000/02/16 13:00	356.4	1.2	27.7	32.2	0.0
2000/02/16 14:00	16.9	1.8	26.5	46.6	0.0
2000/02/16 15:00	36.0	0.7	26.6	48.5	0.0
2000/02/16 16:00	28.4	1.4	25.6	54.5	0.0
2000/02/16 17:00	45.3	0.7	24.6	58.0	0.0
2000/02/16 18:00	74.5	0.8	22.9	68.3	0.0
2000/02/16 19:00	3.9	0.6	21.7	74.3	0.0
2000/02/16 20:00	65.8	0.1	21.1	79.1	0.0
2000/02/16 21:00	45.0	0.1	20.8	81.0	0.0
2000/02/16 22:00	166.3	0.1	20.1	83.1	0.0
2000/02/16 23:00	185.7	0.0	19.8	82.1	0.0
2000/02/17 00:00	161.2	0.1	20.0	79.3	0.0
2000/02/17 01:00	147.6	0.0	20.3	76.8	0.0
2000/02/17 02:00	282.5	0.0	19.2	79.8	0.0
2000/02/17 03:00	234.0	0.1	18.6	83.3	0.0
2000/02/17 04:00	153.3	0.2	17.5	89.0	0.0
2000/02/17 05:00	221.3	0.0	17.5	88.5	0.0
2000/02/17 06:00	108.0	0.1	17.4	87.3	0.0
2000/02/17 07:00	147.2	0.4	17.2	83.0	0.0
2000/02/17 08:00	180.7	0.1	20.9	61.5	0.0
2000/02/17 09:00	6.1	0.6	23.3	62.2	0.0
2000/02/17 10:00	342.3	0.3	25.1	52.3	0.0
2000/02/17 11:00	353.5	0.4	27.0	42.6	0.0
2000/02/17 12:00	311.7	0.5	28.6	29.2	0.0
2000/02/17 13:00	356.0	0.7	29.8	26.0	0.0
2000/02/17 14:00	20.5	0.5	30.2	24.5	0.0
2000/02/17 15:00	356.4	2.2	29.3	22.1	0.0
2000/02/17 16:00	49.3	1.5	28.6	18.5	0.0
2000/02/17 17:00	9.7	1.1	28.3	17.5	0.0
2000/02/17 18:00	5.0	0.6	27.2	19.3	0.0
2000/02/17 19:00	181.4	0.0	24.7	24.7	0.0
2000/02/17 20:00	155.1	0.5	23.7	26.5	0.0
2000/02/17 21:00	152.6	0.1	23.1	28.7	0.0
2000/02/17 22:00	179.2	0.1	22.0	30.6	0.0
2000/02/17 23:00	134.2	0.3	21.7	29.1	0.0
2000/02/18 00:00	160.5	0.3	22.2	27.2	0.0
2000/02/18 01:00	137.1	0.2	23.3	27.6	0.0
2000/02/18 02:00	219.6	0.1	22.7	31.2	0.0
2000/02/18 03:00	173.8	0.3	24.6	26.0	0.0

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/18 04:00	177.4	0.3	24.8	25.0	0.0
2000/02/18 05:00	163.7	0.5	25.0	25.0	0.0
2000/02/18 06:00	191.5	0.1	24.4	26.5	0.0
2000/02/18 07:00	285.1	0.0	20.9	31.5	0.0
2000/02/18 08:00	162.7	0.0	22.8	37.2	0.0
2000/02/18 09:00	353.5	0.7	26.3	23.5	0.0
2000/02/18 10:00	337.3	1.1	30.1	15.6	0.0
2000/02/18 11:00	292.3	1.5	30.9	13.1	0.0
2000/02/18 12:00	232.2	1.1	32.1	12.0	0.0
2000/02/18 13:00	315.3	1.6	32.7	11.0	0.0
2000/02/18 14:00	352.7	2.2	33.9	9.5	0.0
2000/02/18 15:00	357.1	3.4	33.8	14.0	0.0
2000/02/18 16:00	343.7	2.3	31.9	11.7	0.0
2000/02/18 17:00	43.5	0.7	31.0	15.1	0.0
2000/02/18 18:00	120.2	0.5	28.0	25.5	0.0
2000/02/18 19:00	49.3	0.3	26.1	31.5	0.0
2000/02/18 20:00	146.8	0.1	24.6	34.4	0.0
2000/02/18 21:00	199.4	0.0	22.9	41.8	0.0
2000/02/18 22:00	39.2	0.0	22.1	39.7	0.0
2000/02/18 23:00	221.3	0.2	24.1	13.6	0.0
2000/02/19 00:00	158.7	0.4	25.9	10.0	0.0
2000/02/19 01:00	195.1	0.7	24.9	9.0	0.0
2000/02/19 02:00	152.6	0.2	24.7	8.3	0.0
2000/02/19 03:00	344.5	0.0	22.0	9.8	0.0
2000/02/19 04:00	219.2	0.1	20.3	36.5	0.0
2000/02/19 05:00	163.4	0.2	17.9	40.5	0.0
2000/02/19 06:00	153.3	0.3	17.6	47.8	0.0
2000/02/19 07:00	149.0	0.2	17.3	54.8	0.0
2000/02/19 08:00	132.4	0.4	19.8	53.2	0.0
2000/02/19 09:00	15.8	0.6	23.1	47.8	0.0
2000/02/19 10:00	6.1	0.3	24.7	40.0	0.0
2000/02/19 11:00	7.5	0.3	28.0	28.1	0.0
2000/02/19 12:00	298.7	1.0	29.7	13.5	0.0
2000/02/19 13:00	74.5	0.4	29.9	21.5	0.0
2000/02/19 14:00	34.5	1.8	28.7	28.3	0.0
2000/02/19 15:00	14.7	1.4	27.9	26.5	0.0
2000/02/19 16:00	31.3	2.4	26.4	30.0	0.0
2000/02/19 17:00	59.0	0.9	25.4	38.0	0.0
2000/02/19 18:00	33.8	0.6	23.8	42.6	0.0
2000/02/19 19:00	50.4	0.1	22.9	46.1	0.0
2000/02/19 20:00	52.9	0.2	21.7	54.8	0.0
2000/02/19 21:00	144.7	0.0	19.3	64.8	0.0
2000/02/19 22:00	182.5	0.1	18.9	66.0	0.0
2000/02/19 23:00	206.6	0.0	18.6	66.8	0.0
2000/02/20 00:00	158.0	0.1	18.7	64.5	0.0

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/20 01:00	173.1	0.6	19.4	61.3	0.0
2000/02/20 02:00	347.7	0.3	18.5	52.5	0.0
2000/02/20 03:00	159.8	0.4	18.3	51.5	0.0
2000/02/20 04:00	145.7	0.7	17.8	54.5	0.0
2000/02/20 05:00	168.1	0.1	17.0	54.0	0.0
2000/02/20 06:00	156.6	0.2	15.9	53.3	0.0
2000/02/20 07:00	172.0	0.3	15.7	56.5	0.0
2000/02/20 08:00	148.6	0.0	19.3	47.2	0.0
2000/02/20 09:00	343.4	0.1	23.2	45.2	0.0
2000/02/20 10:00	163.4	0.0	24.7	35.4	0.0
2000/02/20 11:00	348.8	0.7	25.4	30.0	0.0
2000/02/20 12:00	239.0	0.6	26.4	23.5	0.0
2000/02/20 13:00	242.6	0.2	27.8	18.5	0.0
2000/02/20 14:00	345.9	1.0	28.4	17.2	0.0
2000/02/20 15:00	5.0	1.5	27.3	36.1	0.0
2000/02/20 16:00	30.2	1.5	26.1	35.0	0.0
2000/02/20 17:00	72.3	2.0	24.9	36.0	0.0
2000/02/20 18:00	103.3	0.6	23.0	50.7	0.0
2000/02/20 19:00	55.0	0.4	21.9	55.7	0.0
2000/02/20 20:00	37.0	0.3	21.3	58.6	0.0
2000/02/20 21:00	139.3	0.6	20.9	62.0	0.0
2000/02/20 22:00	146.5	0.1	19.9	60.2	0.0
2000/02/20 23:00	281.8	0.3	18.5	56.8	0.0
2000/02/21 00:00	232.5	0.2	17.5	62.1	0.0
2000/02/21 01:00	232.9	0.2	17.0	66.0	0.0
2000/02/21 02:00	289.7	0.3	17.5	65.8	0.0
2000/02/21 03:00	223.2	0.3	16.6	73.0	0.0
2000/02/21 04:00	183.2	0.0	16.8	77.7	0.0
2000/02/21 05:00	186.4	0.2	16.3	80.5	0.0
2000/02/21 06:00	138.9	0.3	15.9	82.2	0.0
2000/02/21 07:00	168.8	0.4	16.1	81.1	0.0
2000/02/21 08:00	141.4	0.3	19.7	68.8	0.0
2000/02/21 09:00	195.4	0.3	22.4	53.5	0.0
2000/02/21 10:00	324.7	1.1	24.4	21.3	0.0
2000/02/21 11:00	33.1	0.4	25.7	18.8	0.0
2000/02/21 12:00	8.6	0.7	26.4	15.6	0.0
2000/02/21 13:00	348.1	1.0	27.9	13.3	0.0
2000/02/21 14:00	21.5	0.9	28.4	18.7	0.0
2000/02/21 15:00	59.7	1.3	27.1	21.5	0.0
2000/02/21 16:00	60.4	1.2	26.4	21.1	0.0
2000/02/21 17:00	91.4	0.7	25.0	23.5	0.0
2000/02/21 18:00	43.9	0.8	22.9	35.5	0.0
2000/02/21 19:00	14.0	0.1	21.7	40.7	0.0
2000/02/21 20:00	117.7	0.3	21.0	50.1	0.0
2000/02/21 21:00	143.6	0.0	20.4	56.1	0.0

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/21 22:00	205.2	0.0	18.2	64.1	0.0
2000/02/21 23:00	178.2	0.0	18.0	67.5	0.0
2000/02/22 00:00	128.8	0.5	18.3	71.0	0.0
2000/02/22 01:00	185.7	0.1	17.2	69.5	0.0
2000/02/22 02:00	180.3	0.2	16.1	70.1	0.0
2000/02/22 03:00	155.1	0.1	15.7	70.1	0.0
2000/02/22 04:00	152.6	0.3	15.4	67.6	0.0
2000/02/22 05:00	148.3	0.2	15.5	60.6	0.0
2000/02/22 06:00	317.8	0.0	14.2	66.6	0.0
2000/02/22 07:00	168.4	0.0	14.4	65.5	0.0
2000/02/22 08:00	163.7	0.4	17.9	49.1	0.0
2000/02/22 09:00	320.4	0.0	21.3	63.1	0.0
2000/02/22 10:00	61.5	0.8	22.0	58.3	0.0
2000/02/22 11:00	139.6	1.1	24.0	48.2	0.0
2000/02/22 12:00	351.7	0.8	24.6	43.5	0.0
2000/02/22 13:00	17.6	0.3	25.4	43.8	0.0
2000/02/22 14:00	32.0	2.9	25.5	47.3	0.0
2000/02/22 15:00	29.5	1.2	23.8	54.5	0.0
2000/02/22 16:00	28.7	1.6	23.6	55.5	0.0
2000/02/22 17:00	12.2	2.0	23.0	60.7	0.0
2000/02/22 18:00	63.0	0.7	22.2	67.3	0.0
2000/02/22 19:00	38.8	1.0	21.4	72.1	0.0
2000/02/22 20:00	337.3	0.4	21.0	71.3	0.0
2000/02/22 21:00	100.0	0.4	20.7	69.5	0.0
2000/02/22 22:00	63.3	0.1	20.4	70.6	0.0
2000/02/22 23:00	58.6	0.1	20.2	71.8	0.0
2000/02/23 00:00	235.7	0.0	17.7	81.3	0.0
2000/02/23 01:00	236.1	0.3	17.5	81.0	0.0
2000/02/23 02:00	283.3	0.4	18.2	78.5	0.0
2000/02/23 03:00	218.5	0.0	17.6	81.6	0.0
2000/02/23 04:00	190.4	0.0	16.9	84.3	0.0
2000/02/23 05:00	212.0	0.1	17.5	85.0	0.0
2000/02/23 06:00	180.3	0.2	16.9	85.8	0.0
2000/02/23 07:00	224.6	0.1	16.7	89.3	0.0
2000/02/23 08:00	295.2	0.7	20.3	73.5	0.0
2000/02/23 09:00	320.7	1.2	22.2	66.5	0.0
2000/02/23 10:00	337.6	1.7	23.9	54.8	0.0
2000/02/23 11:00	326.5	1.3	24.7	44.5	0.0
2000/02/23 12:00	81.0	0.6	25.9	38.2	0.0
2000/02/23 13:00	11.8	2.4	27.0	42.6	0.0
2000/02/23 14:00	20.1	0.8	26.7	45.0	0.0
2000/02/23 15:00	32.4	0.8	26.5	41.2	0.0
2000/02/23 16:00	72.0	1.3	26.6	34.7	0.0
2000/02/23 17:00	42.1	0.8	25.0	38.5	0.0

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/23 18:00	29.8	1.1	23.2	49.6	0.0
2000/02/23 19:00	32.7	0.9	22.1	60.1	0.0
2000/02/23 20:00	40.6	0.0	21.3	64.8	0.0
2000/02/23 21:00	68.7	0.0	20.0	70.8	0.0
2000/02/23 22:00	222.1	0.0	19.8	72.6	0.0
2000/02/23 23:00	16.5	0.0	18.9	77.0	0.0
2000/02/24 00:00	193.3	0.0	18.4	80.0	0.0
2000/02/24 01:00	140.7	0.1	18.1	79.6	0.0
2000/02/24 02:00	192.6	0.1	17.9	80.0	0.0
2000/02/24 03:00	141.4	0.0	18.3	75.6	0.0
2000/02/24 04:00	164.1	0.1	17.7	78.0	0.0
2000/02/24 05:00	148.6	0.3	17.3	78.1	0.0
2000/02/24 06:00	157.6	0.1	17.1	78.3	0.0
2000/02/24 07:00	154.7	0.0	16.8	79.5	0.0
2000/02/24 08:00	139.3	0.1	20.7	63.0	0.0
2000/02/24 09:00	31.6	0.0	23.1	49.6	0.0
2000/02/24 10:00	179.6	0.6	25.2	33.2	0.0
2000/02/24 11:00	132.8	0.1	26.2	32.9	0.0
2000/02/24 12:00	357.1	0.3	28.0	31.0	0.0
2000/02/24 13:00	26.6	0.7	27.0	43.7	0.0
2000/02/24 14:00	116.2	0.6	27.2	44.5	0.0
2000/02/24 15:00	66.9	0.7	27.0	39.6	0.0
2000/02/24 16:00	67.3	1.1	27.1	39.3	0.0
2000/02/24 17:00	8.2	0.7	26.2	39.5	0.0
2000/02/24 18:00	30.5	1.0	24.6	43.6	0.0
2000/02/24 19:00	43.5	0.3	22.8	59.1	0.0
2000/02/24 20:00	112.6	0.5	21.9	69.3	0.0
2000/02/24 21:00	104.7	0.0	21.3	74.5	0.0
2000/02/24 22:00	240.8	0.0	20.3	79.0	0.0
2000/02/24 23:00	193.3	0.0	19.3	84.3	0.0
2000/02/25 00:00	156.9	0.1	19.3	83.0	0.0
2000/02/25 01:00	163.7	0.0	18.9	83.1	0.0
2000/02/25 02:00	213.4	0.0	18.6	82.1	0.0
2000/02/25 03:00	140.7	0.2	18.7	80.5	0.0
2000/02/25 04:00	184.6	0.1	18.4	76.8	0.0
2000/02/25 05:00	141.4	0.3	18.2	74.3	0.0
2000/02/25 06:00	203.7	0.2	18.0	71.8	0.0
2000/02/25 07:00	131.3	0.0	17.6	74.0	0.0
2000/02/25 08:00	139.6	0.0	22.0	60.7	0.0
2000/02/25 09:00	50.7	0.1	23.2	57.5	0.0
2000/02/25 10:00	328.6	0.7	25.2	48.5	0.0
2000/02/25 11:00	156.6	0.3	27.6	36.5	0.0
2000/02/25 12:00	68.0	0.8	29.1	30.5	0.0
2000/02/25 13:00	44.2	0.7	30.8	25.5	0.0
2000/02/25 14:00	24.1	1.8	29.3	39.0	0.0

Date/Time	WndDirec	WndSpeed	AirTmep	Humidity	Rainfall
	deg	m/s	deg	%RH	mm
2000/02/25 15:00	21.2	2.2	29.1	31.0	0.0
2000/02/25 16:00	3.5	1.5	28.0	28.1	0.0
2000/02/25 17:00	265.3	0.3	27.0	30.5	0.0
2000/02/25 18:00	66.6	0.4	24.9	38.7	0.0
2000/02/25 19:00	191.5	0.3	24.0	46.0	0.0
2000/02/25 20:00	102.6	0.2	23.1	57.5	0.0
2000/02/25 21:00	180.7	0.0	22.4	61.7	0.0
2000/02/25 22:00	151.9	0.3	22.5	60.3	0.0
2000/02/25 23:00	270.0	0.0	21.4	61.0	0.0
2000/02/26 00:00	187.5	0.0	19.9	66.5	0.0
2000/02/26 01:00	291.2	0.3	19.3	74.0	0.0
2000/02/26 02:00	147.9	0.0	18.6	82.0	0.0
2000/02/26 03:00	167.3	0.1	18.5	71.3	0.0
2000/02/26 04:00	207.3	0.3	20.0	56.0	0.0
2000/02/26 05:00	174.9	0.3	19.5	54.7	0.0
2000/02/26 06:00	221.3	0.4	19.5	51.6	0.0
2000/02/26 07:00	9.3	0.3	20.9	33.7	0.0
2000/02/26 08:00	360.0	0.0	24.2	25.1	0.0
2000/02/26 09:00	27.7	0.0	27.8	20.0	0.0
2000/02/26 10:00	303.8	0.2	31.1	13.5	0.0
2000/02/26 11:00	20.8	0.3	32.3	12.6	0.0
2000/02/26 12:00	42.4	0.7	32.9	13.0	0.0