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WBS: 1.2.8.4.2  
QA: N/A

Contract # DE-AC01-91RW00134  
LV.ESR.DSA.10/97-235

October 20, 1997

Ms. Wendy R. Dixon, Assistant Manager  
Environment, Safety, and Health  
U.S. Department of Energy  
Yucca Mountain Site Characterization  
Office, M/S 523  
P.O. Box 30307  
North Las Vegas, NV 89036-0307

Dear Ms. Dixon:

Subject: NRC Data Request

This letter is to notify you that we were asked by Mr. John Trapp (NRC), via Mr. Tim Hawé (DOE/YMSCO), to provide upper air wind information representative of the Yucca Mountain area. The enclosed information is a climatological summary of wind data taken from Desert Rock upper air soundings from 1978 through 1993. Desert Rock upper air data are representative of the higher altitude wind flow within the Yucca Mountain region. Enclosed are joint frequency distribution tables and associated wind roses for 850 millibars (5,000 feet above mean sea level [MSL]), 700 millibars (10,000 feet MSL) and 500 millibars (18,000 feet MSL).

This information was extracted from our draft report, *Regional and Local Wind Patterns near Yucca Mountain*, which was sent to you for your review on September 29, 1997. Once we have incorporated your comments, if any, we suggest the finalized report be released to Mr. Trapp with your permission. This may answer any further questions he may have. Please forward the enclosed information per his request.

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**DRAFT DISCLAIMER**

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**LIST OF DRAFT DOCUMENTS**

1. Letter to Wendy R. Dixon, DOE/YMSCO, from Michael W. Harris, CRWMS M&O, dtd October 20, 1997, with 2 enclosures

Desert Rock, NV Upper Air Joint Frequency Distributions  
Data from both 0000UTZ and 1200UTZ for 1978 through 1993

500mb level (~18K ft MSL)

Wind Direction	Wind Speed Categories					
	<=1.8 m/s	>1.8, <=3.3 m/s	>3.3, <=5.4 m/s	>5.4, <=8.5 m/s	>8.5, <=11 m/s	>11 m/s
N	8.019961E-04	3.653538E-03	4.366423E-03	6.950633E-03	7.485297E-03	2.691142E-02
NNE	9.802175E-04	2.316877E-03	3.297095E-03	6.326858E-03	4.811977E-03	1.514881E-02
NE	1.158439E-03	2.495099E-03	3.297095E-03	5.079309E-03	3.653538E-03	6.59419E-03
ENE	8.019961E-04	3.207984E-03	2.940652E-03	3.564427E-03	2.67332E-03	3.653538E-03
E	8.911067E-04	2.58421E-03	3.207984E-03	3.386206E-03	1.425771E-03	2.405988E-03
ESE	8.911067E-04	2.316877E-03	2.316877E-03	2.58421E-03	2.58421E-03	1.782213E-03
SE	5.34664E-04	2.138656E-03	2.762431E-03	4.633755E-03	2.851542E-03	2.58421E-03
SSE	8.911067E-04	3.564427E-03	4.544645E-03	5.168419E-03	3.92087E-03	4.990198E-03
S	1.33666E-03	3.92087E-03	7.039743E-03	8.821957E-03	8.109071E-03	1.488148E-02
SSW	9.802175E-04	3.297095E-03	7.128854E-03	1.497059E-02	1.407949E-02	3.778293E-02
SW	1.069328E-03	5.168419E-03	1.078239E-02	2.022812E-02	2.495099E-02	7.111032E-02
WSW	1.158439E-03	6.59419E-03	9.089289E-03	2.013901E-02	2.290144E-02	8.002139E-02
W	1.158439E-03	5.970415E-03	9.980395E-03	1.987168E-02	2.174301E-02	7.815006E-02
WNW	3.564427E-04	4.277312E-03	7.663518E-03	0.0133666	1.800036E-02	7.004099E-02
NW	7.128854E-04	3.386206E-03	6.148637E-03	1.220816E-02	1.541615E-02	5.916949E-02
NNW	8.019961E-04	4.00998E-03	5.703083E-03	7.93085E-03	1.024773E-02	4.027802E-02

Calm: 8 observations of 11222 total observations (7.129E-04)

700mb level (~10K ft MSL)

Wind Direction	Wind Speed Categories					
	<=1.8 m/s	>1.8, <=3.3 m/s	>3.3, <=5.4 m/s	>5.4, <=8.5 m/s	>8.5, <=11 m/s	>11 m/s
N	3.023835E-03	7.559587E-03	9.160441E-03	1.600854E-02	1.289577E-02	1.547492E-02
NNE	2.223408E-03	7.559587E-03	8.182142E-03	1.236215E-02	8.448951E-03	0.0120064
NE	2.490217E-03	8.982568E-03	5.780861E-03	7.470651E-03	5.247243E-03	8.626823E-03
ENE	2.134472E-03	7.381715E-03	7.114906E-03	4.180007E-03	2.757026E-03	3.023835E-03
E	2.579153E-03	8.537887E-03	3.557453E-03	3.37958E-03	9.782995E-04	6.225543E-04
ESE	3.201707E-03	8.182142E-03	7.648523E-03	3.290644E-03	1.422981E-03	6.225543E-04
SE	2.934899E-03	8.982568E-03	9.249377E-03	5.514052E-03	1.68979E-03	5.336179E-04
SSE	3.468517E-03	1.040555E-02	1.351832E-02	1.707577E-02	5.336179E-03	2.223408E-03
S	3.37958E-03	1.307364E-02	2.516898E-02	3.210601E-02	0.0178762	1.529705E-02
SSW	3.023835E-03	1.405194E-02	1.849875E-02	3.895411E-02	3.246176E-02	4.180007E-02
SW	3.913198E-03	1.369619E-02	1.743152E-02	2.934899E-02	2.552472E-02	4.277837E-02
WSW	2.045535E-03	1.031661E-02	0.0129847	1.627535E-02	1.289577E-02	1.769833E-02
W	2.934899E-03	9.42725E-03	0.0120064	1.360726E-02	7.025969E-03	5.602988E-03
WNW	2.490217E-03	8.893632E-03	1.076129E-02	0.0129847	9.160441E-03	4.980434E-03
NW	2.934899E-03	9.605123E-03	1.182853E-02	1.903237E-02	1.031661E-02	1.307364E-02
NNW	2.223408E-03	7.826396E-03	0.0120064	0.0178762	1.431875E-02	1.120598E-02

Calm 25 observations of 11244 total observations (2.2234E-03)

850 level (~5K ft MSL)

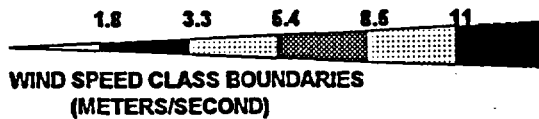
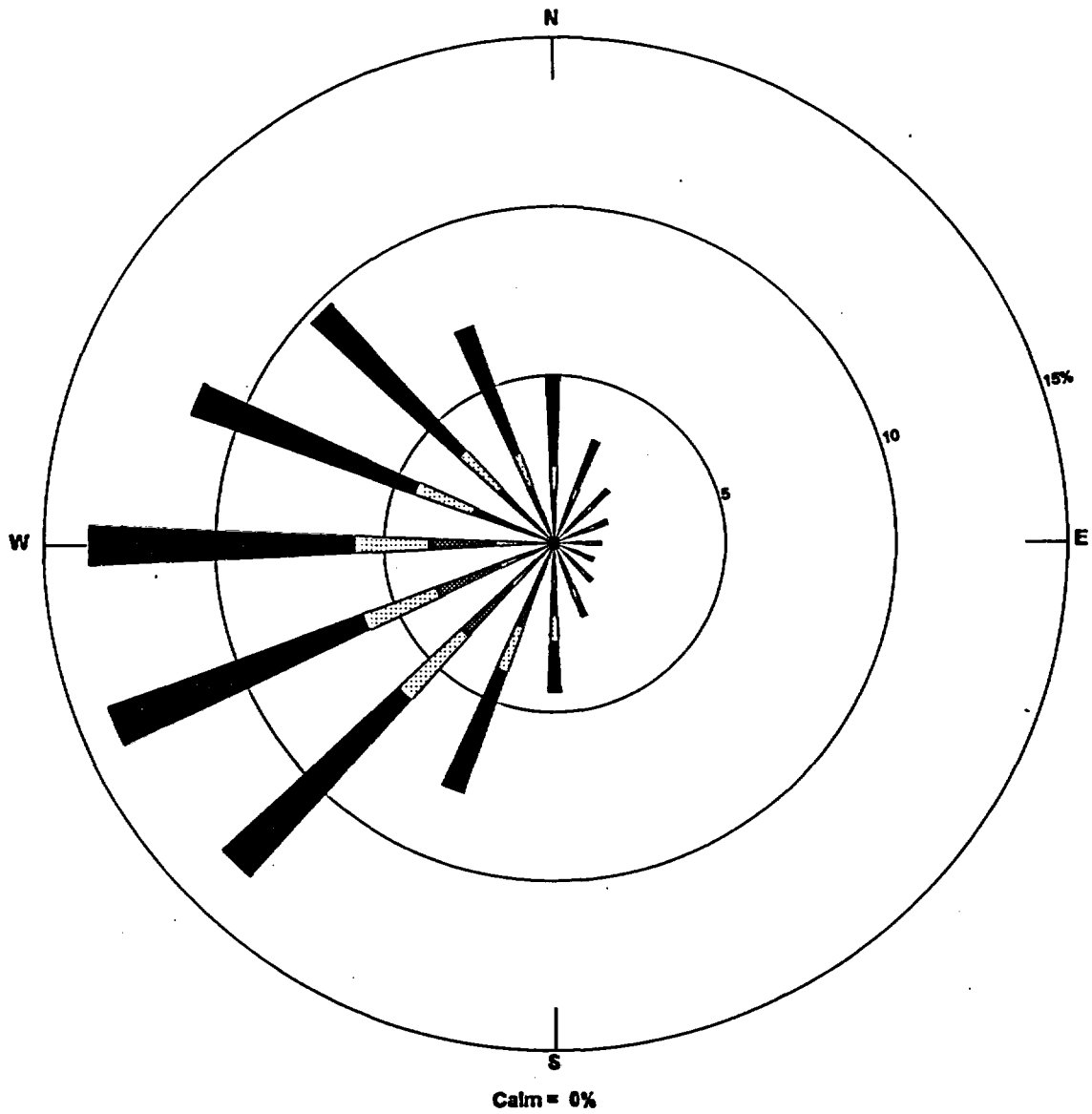
Wind Direction	Wind Speed Categories					
	<=1.8 m/s	>1.8, <=3.3 m/s	>3.3, <=5.4 m/s	>5.4, <=8.5 m/s	>8.5, <=11 m/s	>11 m/s
N	3.664641E-03	9.206292E-03	5.899178E-03	6.077941E-03	4.022167E-03	1.340722E-03
NNE	4.379692E-03	1.340722E-02	0.0110833	1.841258E-02	0.0134966	9.116911E-03
NE	5.541652E-03	1.707186E-02	1.859135E-02	1.984269E-02	8.223096E-03	2.681444E-03
ENE	5.273507E-03	2.163032E-02	2.243475E-02	1.492671E-02	2.860207E-03	6.256704E-04
E	8.580622E-03	1.921702E-02	2.100465E-02	1.027887E-02	9.831963E-04	3.575259E-04
ESE	7.061137E-03	1.850197E-02	1.215588E-02	4.558456E-03	1.161959E-03	4.469074E-04
SE	8.133715E-03	1.296031E-02	4.737218E-03	1.340722E-03	3.575259E-04	8.938148E-05
SSE	6.256704E-03	1.519485E-02	6.077941E-03	1.877011E-03	5.362889E-04	0
S	6.346085E-03	1.912764E-02	1.483733E-02	1.707186E-02	1.582052E-02	9.02753E-03
SSW	7.329281E-03	2.475867E-02	2.744011E-02	5.050053E-02	5.514837E-02	4.209868E-02
SW	7.686807E-03	2.457991E-02	3.825527E-02	4.603146E-02	2.449053E-02	8.759385E-03
WSW	4.737218E-03	2.046836E-02	2.475867E-02	1.725063E-02	1.519485E-03	5.362889E-04
W	5.362889E-03	1.313908E-02	8.40186E-03	4.111548E-03	4.469074E-04	8.938148E-05
WNW	3.485878E-03	7.508044E-03	3.664641E-03	3.307115E-03	5.362889E-04	3.575259E-04
NW	3.396496E-03	5.720415E-03	2.592063E-03	2.502681E-03	1.161959E-03	6.256704E-04
NNW	3.128352E-03	5.631033E-03	3.307115E-03	3.03897E-03	1.072578E-03	7.150518E-04

Calm 72 observations of 11188 total observations (6.4355E-03)

# WIND ROSE

500 Millibar Level (18,000 feet MSL)

Desert Rock Airport, Nevada (1978-1993)

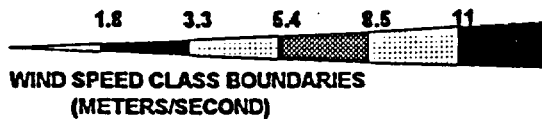
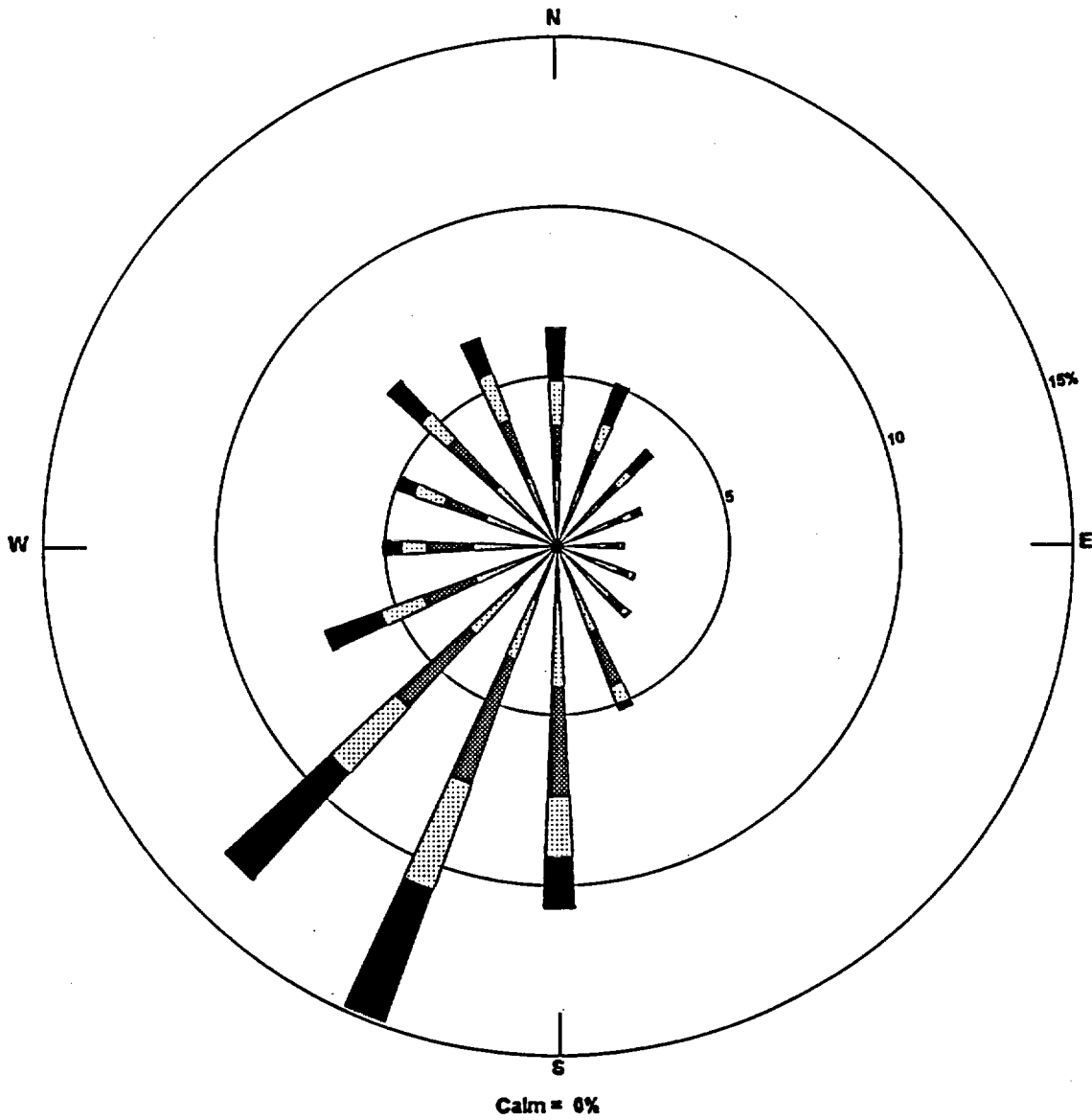


JFD Table: Up500\_all

# WIND ROSE

700 Millibar Level (10,000 feet MSL)

Desert Rock Airport, Nevada (1978-1993)

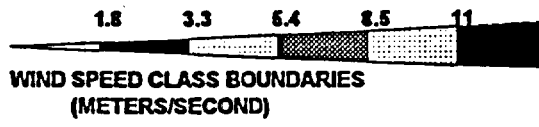
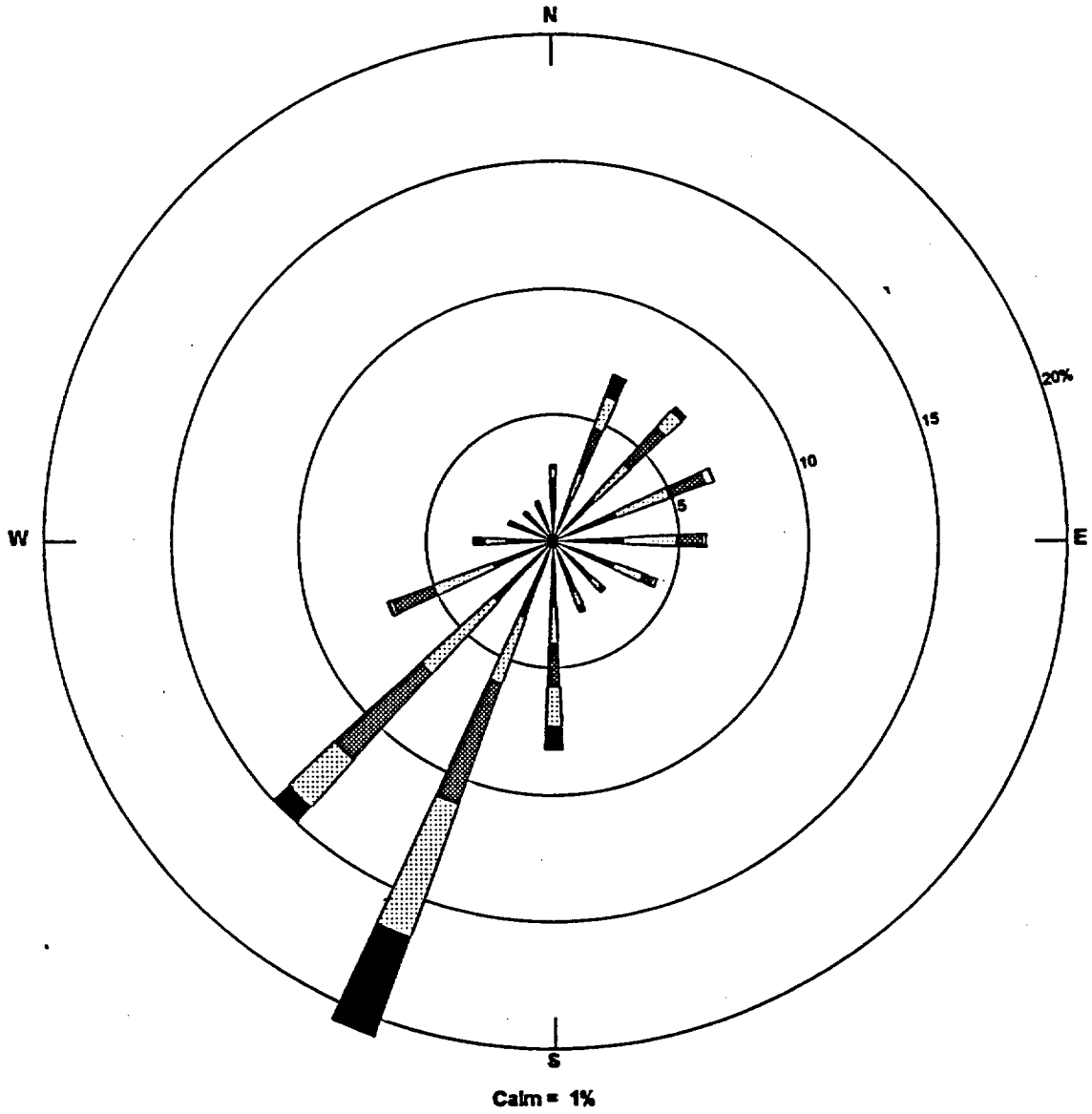


JFD Table: Up700\_all

# WIND ROSE

850 Millibar Level (5,000 feet MSL)

Desert Rock Airport, Nevada (1978-1993)



JFD Table: Up850\_all



LV.ESR.DSA.10/97-235

October 20, 1997

Page 2

If you have any questions, please contact Dale Ambos at 295-5088.

Sincerely,



Michael W. Harris, Manager  
Environment, Safety and Regional Programs  
Management and Operating Contractor

MWH:DSA:psg

Enclosures:

1. Joint Frequency Distribution Tables
2. Wind Roses

cc w/encl:

D. J. Brees, M&O, Las Vegas, NV DB  
P. S. Groendyke, M&O, Las Vegas, NV  
F. B. Parker, M&O, Las Vegas, NV  
RPC=7

cc w/o encl:

D. S. Ambos, M&O, Las Vegas, NV DSA  
L. D. Croft, M&O, Las Vegas, NV LOC#10/197  
J. R. Dyer, DOE/YMSCO, Las Vegas, NV  
L. D. Foust, M&O, Las Vegas, NV  
P. M. Fransioli, M&O, Las Vegas, NV  
B. H. Marler, M&O, Las Vegas, NV