

KLEINFELDER MEMORANDUM

TO: Gary Johnson

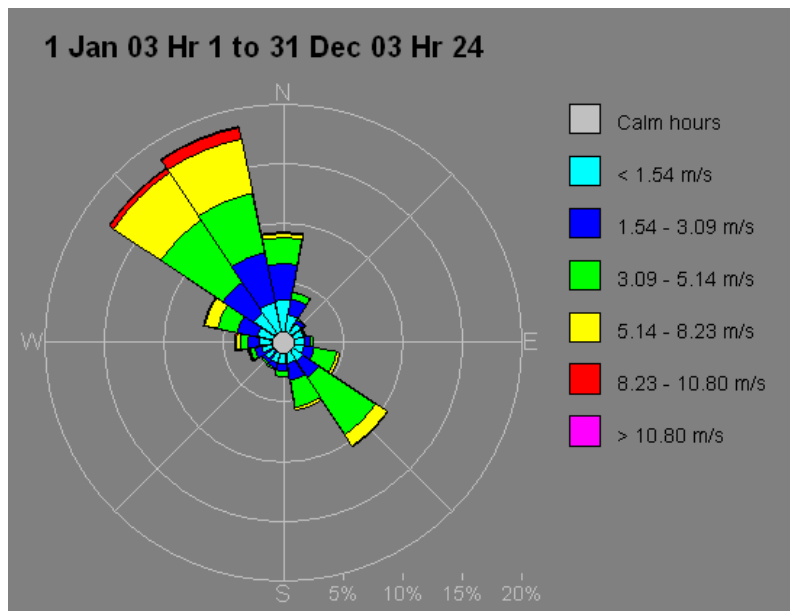
FROM: Kris Allen
Russ Erbes

DATE: August 6, 2007

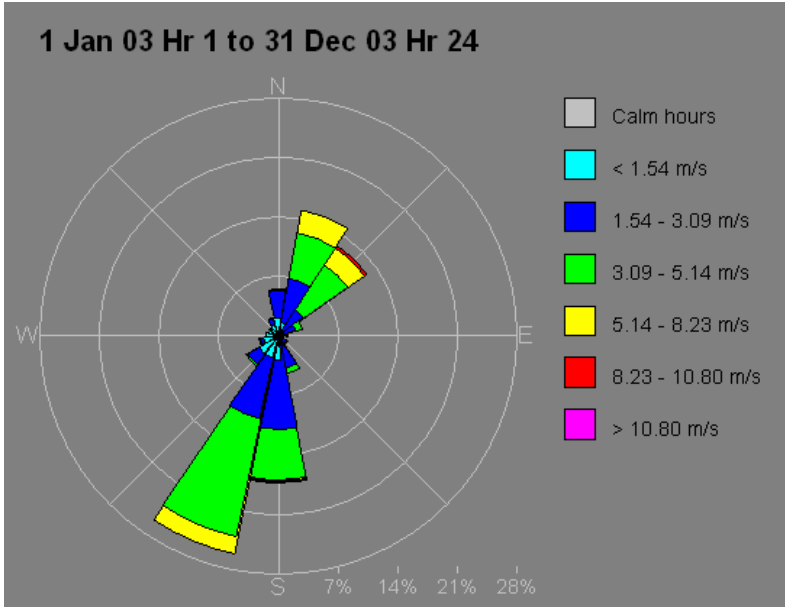
SUBJECT: Wind Speed Comparison between Indio and Liberty Quarry Sites

A comparison of wind speeds near the existing Indio Quarry and the proposed Liberty Quarry sites was conducted to assess the number of high wind conditions at the two sites. The meteorological data used for this comparison were the SMER North Tower (representative of the Liberty Quarry), and the Palm Springs Airport (located approximately 16 miles west northwest of the Indio Quarry). The Palm Springs Airport data are the nearest available data to the Indio site. The SMER North Tower data are the closest available data to the proposed Liberty Quarry (less than a mile from the Liberty Quarry). Three years of recent data were used for the comparison and include 2003 through 2005. The following wind rose plots were generated based on 2003 data from each station.

Wind rose Plot for Palm Springs Airport 2003



Wind rose Plot for SMER North Tower 2003



The relative amount of yellow, red and pink shading in the wind rose plots show that the Palm Springs Airport has a much higher frequency of higher wind speeds (i.e., wind speeds greater than 5.14 m/s or about 12 miles per hour) than the SMER North Tower.

Quantitatively, the wind speed frequencies are shown in the following tables. The tables show that wind speeds greater than 10.8 m/s (about 24 miles per hour) occur from about 10 to 30 times more frequently at Palm Springs (Indio site) than at the Liberty site.

2003

Station	Wind Speed Range (m/s)						
	Calm	≤1.54	1.55 to ≤3.09	3.10 to ≤5.14	5.15 to ≤8.23	8.24 to ≤10.80	>10.80
Palm Springs	28.1%	8.58%	18.7%	30.8%	10.6%	2.98%	0.26%
N SMER	2.98%	19.89%	35.39%	34.0%	7.54%	0.37%	0.06%

2004

Station	Wind Speed Range (m/s)						
	Calm	≤1.54	1.55 to ≤3.09	3.10 to ≤5.14	5.15 to ≤8.23	8.24 to ≤10.80	>10.80
Palm Springs	28.6%	8.52%	18.5%	30.3%	11.2%	2.67%	0.28%
N SMER	8.97%	21.2%	30.2%	30.4%	9.13%	0.11%	0.00%

2005

Station	Wind Speed Range (m/s)						
	Calm	≤1.54	1.55 to ≤3.09	3.10 to ≤5.14	5.15 to ≤8.23	8.24 to ≤10.80	>10.80
Palm Springs	29.6%	8.90%	18.3%	26.7%	12.9%	3.20%	0.37%
N SMER	3.36%	23.5%	34.7%	31.0%	7.33%	0.10%	0.00%

In the above tables there appears to be more Calm hours at Palm Springs than at the SMER North Tower. This is an artifact of the starting thresholds (sensitivity) of the wind sensors at the Palm Springs Airport compared to the SMER station.

In summary, the Palm Springs airport wind speeds are significantly greater than at SMER. Please feel free to call either of us if there are any questions.