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August 19, 2004

VIA OVERNIGHT DELIVERY

Mr. Paul Cort
U.S. Environmental Protection Agency
Region IX, ORC-2
75 Hawthorne Street
San Francisco, CA 94105

Re: 11-Point Analysis Supplement of the Moapa Band of Paiute Indians

Dear Paul:

Enclosed are two copies of the revised 11-Point Analysis Supplement revised to delete the request for client confidential business information status. This document should replace the version that was previously sent to you, although you should retain the compact disk that contained the wind field analyses.

If you have any questions, give me a call.

Sincerely,

Thomas R. Wood

TRW:nh
Enclosures
cc: Mr. Philbert Swain, Moapa Band of Paiutes
Mr. Steven Chestnut
Mr. Fran Streitman
Ms. Eileen Flink
Mr. Lance Latham

Oregon
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California
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Idaho

AIR QUALITY DESIGNATIONS AND BOUNDARY RECOMMENDATIONS FOR MOAPA RIVER INDIAN RESERVATION UNDER THE 8-HOUR OZONE NATIONAL AMBIENT AIR QUALITY STANDARD

THE MOAPA BAND OF PAIUTE INDIANS

August 18, 2004 Supplement

INTRODUCTION

Pursuant to Section 107(d) of the Clean Air Act, the Governor of each State is required to submit to EPA designation recommendations for each portion of the that State. On March 26, 2004, the Governor of the State of Nevada submitted recommended designations for all parts of the State with the exception of the Indian reservations, including the Moapa Band of Pauites' reservation, located in eastern Clark County (the "Reservation"). The State accurately acknowledged that it has no jurisdiction within the reservations and therefore deferred making any recommendations regarding attainment or nonattainment status therein. On April 15, 2004, EPA designated Clark County, Nevada, including the Reservation, as nonattainment for the 8-hour ozone national ambient air quality standard. On June 18, 2004, EPA granted a deferral of the effective date of the 8-hour ozone nonattainment designation to September 13, 2004 in order that the agency might receive and consider additional information as to the appropriate boundary designations within Clark County. On July 30, 2004, the Moapa Band of Pauites (the "Tribe") submitted its recommendations for the designation and boundary determinations within the Reservation. This document is a supplement to that analysis and responds to questions from EPA regarding two of the eleven factors addressed in the July 30 submittal. This supplement is intended to be read in conjunction with the July 30 analysis.

EXECUTIVE SUMMARY

This supplement provides additional information supporting the Tribe's recommendation that EPA not include any portion of the Reservation within the Las Vegas 8-hour ozone nonattainment area. The only documented 8-hour ozone exceedances in Clark County occurred in the urban core of the Las Vegas Valley. As noted in the July 30 analysis, the Reservation is separated, geographically, topographically, politically, jurisdictionally, socio-economically and culturally from the Las Vegas Valley. This supplement provides additional documentation that there is not significant economic integration between the industrial development planned on the Reservation and Las Vegas. In addition, this document provides a windfield analysis documenting that emissions originating from the Reservation would not materially impact Las Vegas. Therefore, the Tribe continues to recommend that the Reservation, in its entirety, be classified as attainment/unclassifiable for ozone.

SUPPLEMENT TO JULY 30, 2004 RESPONSE TO ELEVEN MITIGATING FACTORS

The following analysis supplements the July 30, 2004 11 Factor Analysis recommending that the Reservation, in its entirety, be classified as attainment/unclassifiable for ozone. After reviewing the Tribe's analysis, EPA suggested that the Tribe supplement that analysis to address more fully the linkage between the planned development and the Las Vegas Valley. The first section of this supplement addresses this question. EPA also suggested that the Tribe provide an analysis of the wind direction to support Tribal members' statements that winds blowing from the Reservation towards Las Vegas Valley are unusual and ephemeral. The Tribe's analysis on this point forms the second half of this supplement.

1. Lack of Economic Integration Between Tribal Industrial Development and Las Vegas

As identified in the July 30 submittal, after twenty years of effort, the Tribe has gained the interest of two companies that are considering placing industrial facilities on the Reservation. Calpine Corporation has negotiated with the Tribe to build a natural gas fired power plant on the Reservation. Although EPA issued Calpine an air permit on June 14, 2004, the permit was appealed and is not in effect and it is not clear when or if that permit will take effect. Ash Grove Cement is also in negotiations with the Tribe to build a cement plant on the Reservation. No final agreement is in place for either project.

EPA has suggested that the Tribe discuss the economic linkage between the two projects and Las Vegas. Specifically, EPA has asked that the Tribe answer the question whether the projects are located where they are because of Las Vegas. For example, EPA has asked whether the majority of the output of the two plants is intended for Las Vegas. Stated another way, EPA has asked whether but for the proximity to Las Vegas, the plants would not be built on the Reservation. The simple answer is that the plants are situated where they are for a variety of reasons that have little to do with the proximity of the Las Vegas Valley. The complicated reasons underlying the siting of the plants on the Reservation are discussed below.

A. Calpine Corporation

EPA has expressed interest in whether the Calpine Corporation ("Calpine") project which recently received its PSD permit is likely to have substantial economic integration with the Las Vegas Valley. There is no reasonable basis for assuming that Calpine's project will be built in the foreseeable future or that, if ever built, it will economically link the Reservation to the Las Vegas Valley in any substantial way. In order to understand why, it would be useful to describe the history of the Calpine project.

Independent power producers, such as Calpine, consider four primary criteria in evaluating locations for potential development. The key criteria needed to site an independent power project (i.e., a generation facility not owned by a regulated utility) are available land, water, an interstate natural gas pipeline and a transmission corridor. Independent power producers were attracted to the Reservation because it offered all four attributes in a single location. First, the 72,000 acre Reservation, wholly-owned by a single owner (the Tribe) and wholly undeveloped, offered unique one-stop shopping and flexibility for siting the plant and ancillary rights-of-way

(e.g., for water wells, water pipelines, a natural gas pipeline, electric transmission lines, and access roads). Second, the Tribe was perceived as being able to provide substantial amounts of water, a key ingredient for the preferred generation technology. A water-cooled natural gas fired power plant requires thousands of acre-feet of water annually. Calpine initially specified a need for 5,000 acre-feet per year and shortly thereafter increased that to 7,000 acre-feet per year. It was reasonably presumed that the Tribe, because of its unique status and powerful early priority federally-reserved water rights, was in an especially good position in the region to provide such a volume of water. Third, the Reservation provides excellent access to an interstate natural gas pipeline as the Kern River Pipeline runs through the Reservation. Fourth, the Reservation includes a major right-of-way corridor, dedicated by Congress principally to the siting of interstate electric transmission lines. Although located on Tribal land within the Reservation, the corridor is administered by the Bureau of Land Management ("BLM") under congressionally-delegated authority for issuance of rights-of-way in the corridor. The network of interstate electric transmission lines on and in the vicinity of the Reservation provides easy access to out-of-state power markets. The availability of all four of these factors is unusual and drove several companies to vie for development rights on the Reservation.

Development on the Reservation also provides financial, regulatory and policy advantages not available at off-Reservation sites. For example, the Reservation lands on which the project would be sited are not subject to state or local property taxes. Nor would the state leasehold tax apply to the plant lease or ancillary on-Reservation rights-of-way. As a tax-exempt entity, the Tribe would pay no federal income tax on earnings from the project. The transaction could be structured to share the resulting tax savings with the project operator. Also, because of its on-Reservation location, the project might capture unique additional tax benefits under the Internal Revenue Code such as accelerated depreciation (e.g., property normally depreciable over 20 years can be depreciated over 12 years) and federal income tax credits for the employment of Tribal members and their spouses. The Tribe's capability under the Internal Revenue Code to issue tax-exempt bonds also leaves open the potential for low-interest financing for public infrastructure which could benefit the project.

In 1999, several major independent power producers, including Calpine, separately approached the Tribe about siting a large natural gas-fired, water-cooled power plant on the Reservation. Each company proposed a "merchant" power plant, i.e., one which would be constructed without a prior commitment from a power purchaser to buy the plant's output. Each company expressed confidence that, when constructed, the plant's output would be readily saleable in the open market, principally (but not exclusively) in the California market. The Southern Nevada market was not perceived as a driving force behind any of these projects.

After several months of vigorous competition among the several interested independent power producers, the Tribe selected Calpine because of the superiority of the terms it offered. In January 2000, the Tribe and Calpine entered into a non-binding letter of intent, summarizing the financial terms they had negotiated. Because the plant and associated rights-of-way were to be sited on lands held in trust for the Tribe by the United States, federal law required that a comprehensive plant site lease and detailed right-of-way documents be executed and submitted for approval by the Secretary of the Interior (or her designee). Absent such approval, Calpine

would have no rights on the Reservation. Under NEPA, Secretarial approval could not be given until completion of a comprehensive project Environmental Impact Statement ("EIS").

Over the two-year period following execution of the letter of intent, the Tribe and Calpine negotiated and drafted a plant site lease and related documents and, in cooperation with the Bureau of Indian Affairs ("BIA") and other involved federal agencies, participated in the preparation of the EIS. However, in early 2002, before any of these tasks could be completed, the project came to an abrupt halt. Thus, neither the plant site lease, any on-Reservation right-of-way, nor the EIS were ever finished and none of the legally-required Secretarial approvals were ever issued.

One of the two primary reasons that the Calpine project was halted in early 2002 was water. The Calpine project required 7,000 acre-feet per year of water. To secure firm rights to such water, the Tribe had previously initiated discussions with the major parties in interest (the State of Nevada, Las Vegas Valley Water District ("LVVWD"), Southern Nevada Water Authority, Muddy Valley Irrigation Company, Moapa Valley Water District and the United States (via the Bureau of Indian Affairs)), in an effort to quantify and settle by agreement the Tribe's entitlements to federally-reserved rights to surface water in the Muddy River (which flows through the northeast corner of the Reservation) and to groundwater beneath the Reservation (which was to be the water source for the Calpine project). In early 2002, the parties concurred on a written Water Settlement Agreement, subject to the review and approval of the Secretary of the Interior.[1] Among other features, the Water Settlement Agreement provides for the transfer to the Tribe of certain State groundwater applications held by LVVWD and the groundwater permits to be issued thereunder by the Nevada State Engineer. The Water Settlement Agreement presumed the State Engineer, in response to the LVVWD groundwater applications, would issue groundwater permits sufficient to provide at least the 7,000 acre-feet per year needed for the project. Unfortunately, in April of 2002, the State Engineer issued a permit for only 2,500 acre-feet per year, a fraction of what was needed for the Calpine project. This, in and of itself, stopped the development of the Calpine project. Although the Tribe has appealed that decision, it will be difficult to reverse the State Engineer's decision.

The other primary reason that the Calpine project has stalled is the tremendous change that occurred in the independent power producer market in the wake of the Enron debacle. In 1999 - 2000, when the Tribe was approached by Calpine and its competitors, the independent power industry was booming. A vast number of natural gas-fired power plants were being planned throughout the country. However, beginning mid-2001, there was a dramatic downturn - - many planned plant projects were either put on hold or cancelled, partially constructed projects were mothballed, and the "merchant" power plant model disappeared. The share prices of publicly-traded independent power companies such as Calpine plummeted (and remain in severe decline to date). Calpine became (and remains) no longer able to secure financing for projects like the Moapa project without first obtaining a power purchase agreement for the output of the plant.

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[1] Although the Water Settlement Agreement was formally submitted to the Secretary for approval one year ago, it remains unapproved.

In the past year, Calpine made two unsuccessful efforts to revive the project. First, in the summer of 2003, Calpine responded to a solicitation by PacifiCorp for supplying power to Utah. Calpine proposed to provide 500 megawatts of power to Utah from a down-sized plant (requiring considerably less water) to be constructed on the Reservation. We understand that 15 to 20 companies submitted bids in response to the Utah solicitation and that the Calpine bid was included by PacifiCorp on the short list of six. Ultimately, however, we understand that PacifiCorp rejected all bids and decided to meet its needs by developing its own plant. Calpine also responded to a solicitation from Nevada Power Company for approximately 500 megawatts. After the Calpine bid received a favorable initial response, Calpine re-initiated its efforts to get obtain an air permit and requested that the Tribe ask BIA to resume work on the EIS. While EPA was willing to issue the air permit, the Tribe was unwilling to approach BIA without an agreement in principle with Calpine on the terms that would be applicable to the smaller 500 megawatt plant. This led to discussions between the Tribe and Calpine in late 2003 and early 2004, but before such terms could be finalized Nevada Power Company decided to purchase the partially-completed and mothballed 1200 megawatt Duke power plant at Apex, and lost interest in the Calpine proposal.

Calpine and the Tribe have not met since January 2004, the EIS process remains dormant, and neither Calpine nor any other company has identified any other prospect for siting such a project on the Reservation. Both because EPA has issued it an air permit and because the Tribe does not want to cut off any development possibility with Calpine, the Calpine project was identified as a potential source in the July 30 submittal. However, the likelihood of the project ever being developed appears small. The likelihood of it ever selling power into southern Nevada appears even smaller.

In summary, the Calpine project was not proposed to be sited on the Reservation for the purpose of serving the southern Nevada market. The project was pursued for many other wholly independent reasons. There is no reasonable basis now for assuming the project is likely to become viable or will serve the Las Vegas Valley market in any substantial way in the foreseeable future. Thus, in analyzing whether the Reservation should be included in the ozone nonattainment area, EPA has no basis to view the Calpine project as economically linking the Reservation to the Las Vegas Valley. Given EPA's fiduciary responsibility to the Tribe (as outlined in the Tribe's May 18, 2004 letter to Lydia Wegman), and that designating the Reservation as nonattainment will surely impair the Tribe's ability to achieve sorely-needed industrial development, it would be unreasonable for EPA to justify a nonattainment designation on the basis of pure speculation that the Calpine project will somehow be achieved and economically link the Reservation to the Las Vegas Valley.

B. Ash Grove Cement Company

In order to understand the siting of a cement plant, it is necessary to understand how cement is manufactured and marketed. Cement is manufactured based on a thermal process that, in very simple terms, involves calcining and heating to incipient fusion carefully ground and mixed raw materials in an inclined, coal and natural gas fired rotary kiln. The primary raw ingredient is limestone, which provides calcium carbonate and makes up 82% to 85% of the raw material. The plant would use approximately 2 million tons of limestone per year. In addition, the process requires a suite of supplementary materials. The main supplementary materials are silica sand

(which provides silicon dioxide and makes up roughly 3% of the raw materials or 68,000 tons per year), clay and fly ash (which provide aluminum oxide and makes up roughly 12 to 15% of the raw materials or roughly 320,000 tons per year) and iron slag (which provides ferric oxide and makes up roughly 1.5% of the raw materials or 35,000 tons per year). These materials are precisely blended, crushed and ground into a fine powder called raw mix. Once fed into the kiln, the raw mix is calcined and ultimately burned to incipient fusion (2750 degrees F) at which point the materials react chemically and form clinker—hard pebble sized pieces of fused, stony matter. The clinker leaves the lower end of the kiln at approximately 2,000 degrees F. After cooling, the clinker is mixed with approximately 4% gypsum by weight (approximately 60,000 tons per year) and ground to the desired fineness. The final product, portland cement, is stored pending bulk shipment.

Portland cement is very stable and capable of being shipped by truck or by rail long distances. It is typically shipped to terminals that serve regional areas. The terminals supply portland cement to construction contractors who are the ultimate end users. Because it takes 1.52 tons of raw material and 0.12 tons of coal to manufacture a ton of cement, it is substantially cheaper to site a cement plant close to the raw materials than it is to site a cement plant close to the ultimate markets. This is why cement plants often ship product long distances.

There are many factors that go into siting a greenfield cement plant in the western United States. First is the availability of a large piece of property as a cement plant occupies a large footprint. This property must be available for either sale or long term (50+year) lease. Second, there must be immediate access to a supply of high quality limestone. The single most important element in siting a cement plant is proximity to the limestone source. While it is possible to convey limestone several miles from a quarry to a plant site, there are obvious practical and economic limits to this approach that require that cement plants be relatively close to the quarry. Third, there must be a source of the secondary raw materials, i.e., silica, aluminum oxide, iron and gypsum. Fourth, there must be a source of coal for primary fuel and a high volume natural gas supply. Fifth, there must be a substantial power supply (approximately 25 megawatt). Sixth, there must be a water supply to support the manufacturing process, emission controls and quarry operations. Seventh, there must be excellent rail transportation to enable shipment of the final product and as well as those supplementary raw materials and coal that must be brought in from off site. Finally, there must be reasonable access to an interstate for any material or final product shipments that arrive or depart by road. Few locations are able to provide an optimum blend of all these factors. The Reservation is just such a location.

Ash Grove has indicated interest in locating on the Reservation because it offers a unique blend of the factors needed to site such a plant. First, Ash Grove is able to obtain a long term ground lease (75 years) from the Tribe for a parcel large enough for a cement plant. Not having to negotiate with multiple landowners is a distinct advantage over typical locations. Second, the Reservation offers large deposits of high quality limestone adequate to last the life of the plant. These reserves are in the Arrow Canyon Range that runs along the western edge of the Reservation. Third, the reservation is also able to provide many of the secondary materials. For example, quality sand, clay and gypsum deposits have all been found on the Reservation. Ash Grove is currently preparing to drill the area to prove the reserves of the supplementary materials (i.e., determine their life expectancy). The Reservation also offers close proximity to a source of fly ash (the Reid Gardner power plant) and an alternate source of silica (the Simplot facility in

Overton, Nevada—approximately 20 miles to the southeast of the Reservation). Several sources of ferric oxide have been identified in southern Utah that will supply the plant. The Reservation also offers unique access to high volume power and natural gas, as both electricity transmission lines and the Kern River natural gas pipeline run through the Reservation close to the limestone deposits. The Reservation is able to provide adequate water to the plant. Finally, the Reservation is crossed by a major rail line and interstate highway that allows for the importation of raw materials and the shipment of product throughout the southwest. With 1.5 million tons of production ultimately planned for the plant, Ash Grove must have access to a rail line that can handle substantial additional traffic. In short, Ash Grove is interested in siting on the Reservation because of the close proximity to raw materials, energy, and bulk transportation.

Ash Grove is interested in locating in Nevada so that it can sell cement throughout the southwestern United States. The southwest United States currently has a shortage of cement and that shortage is projected to continue into the foreseeable future. As a result, foreign vendors sold more than 2.6 million tons of cement into the southwestern U.S. that was shipped from overseas, primarily Asia. Because of changes in world cement markets, imports do not always provide a reliable source of portland cement to growing U.S. construction markets. Ash Grove wants to displace a percentage of those foreign imports and so intends to market cement supplied from its Moapa plant into Los Angeles and surrounding areas. Figure 1-A is a map showing the broad array of sources that currently supply cement into the Southern Nevada market. This map documents graphically that the cement business operates over vast regions, not localized regions. In addition to supplying southern California, Ash Grove has also targeted Phoenix, Arizona as a key market that can be supplied from the Moapa plant. Cement transported to southern California or Arizona would either be shipped directly to customers or to new cement terminals. In addition, Ash Grove plans to supply customers in southwest Utah from the Moapa plant.

The Moapa cement plant will form the hub of Ash Grove's 4-state regional marketing strategy. Ash Grove already has a cement terminal in Las Vegas that it has supplied for years from its Durkee, Oregon plant (859 miles north of Las Vegas) and Leamington, Utah plant (324 miles northwest of Las Vegas). Those plants will continue to supply the Las Vegas terminal, which has a annual capacity of nearly 700,000 tons, for the near future, although Ash Grove intends to ultimately phase out supplying the Las Vegas market from the Durkee plant. The company wishes to situate a plant in a location that is strategically located to supply cement to Ash Grove terminals and/or customers in each of the four states in its market plan. Figure 1-B is a map showing the projected supply chain from Ash Grove's western operations and Figure 1-C is a map showing the planned marketing network assuming the Moapa plant is built. Because of the rail connections through the Reservation, Ash Grove believes that this site will allow it to lead the way in meeting the cement needs of southwest Utah, southern Nevada, Arizona and southern California.

The location of raw materials and transportation connections to key markets are the primary drivers behind the location of the Ash Grove plant on the Reservation. EPA has asked whether "but for" the nonattainment status of the Las Vegas Valley Ash Grove would have located on the

Cement Import Sources

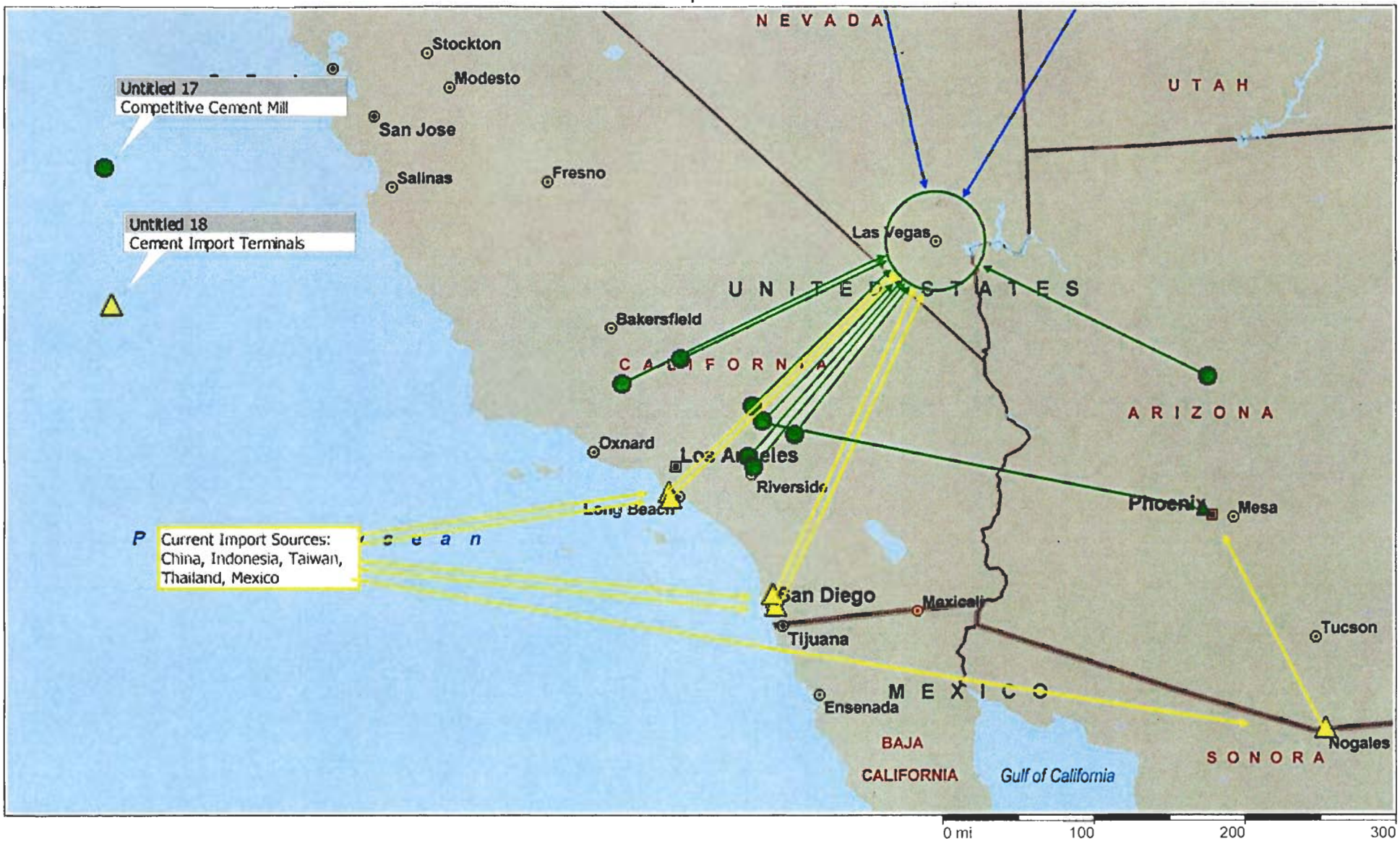


FIGURE 1-A

Ash Grove Southwest Marketing

FIGURE 1-B

Ash Grove Terminal Distribution with Southwest Marketing2

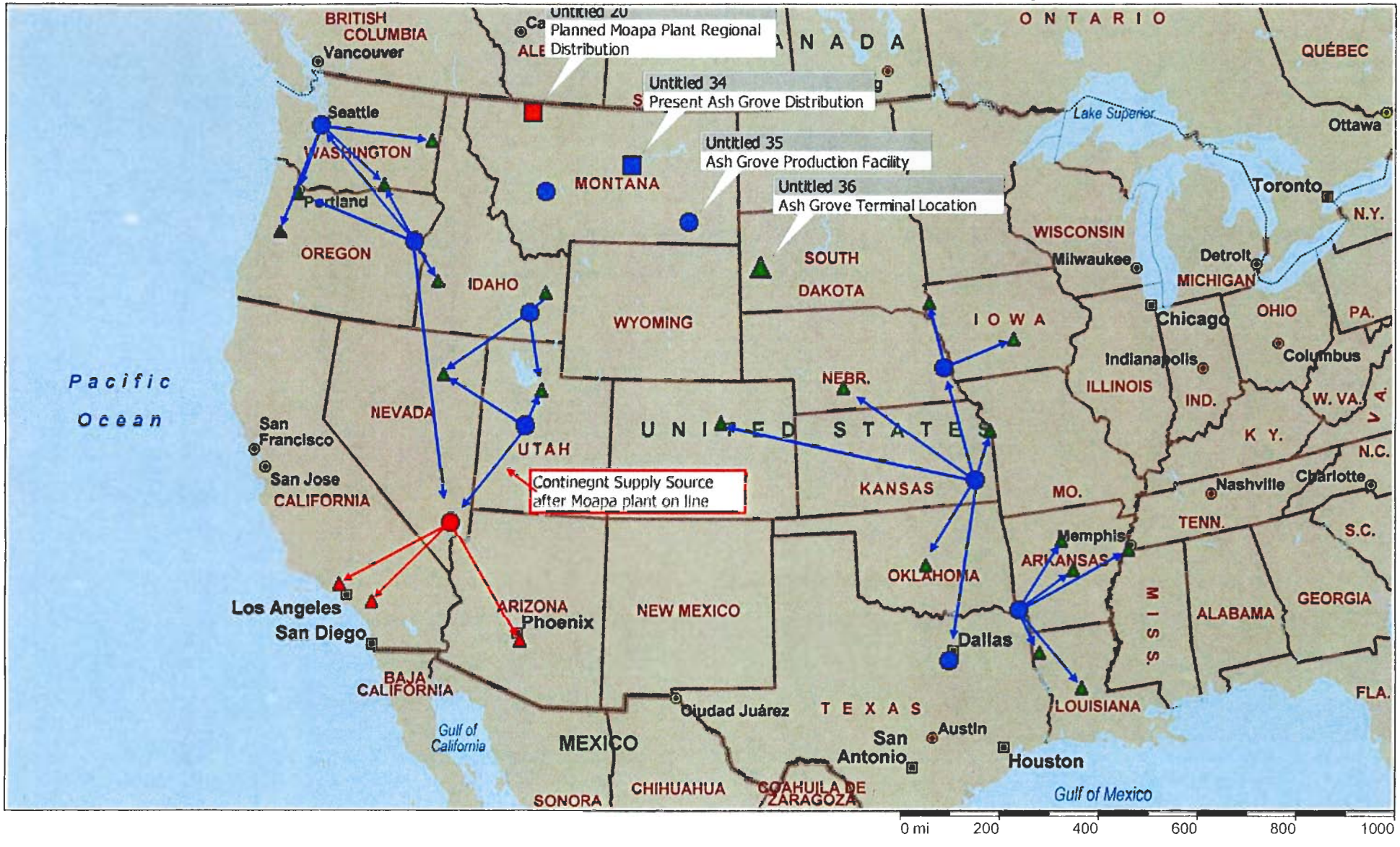


FIGURE 1-C

Reservation. The answer is that Ash Grove located on the reservation because that was the best location in light of manufacturing and marketing considerations. Locating a mine-mouth cement plant in Southern California these days is extremely difficult and there are few locations where there is adequate quality limestone, let alone adequate rail, natural gas and power service. Ash Grove investigated numerous sites throughout southern Nevada as the state has historically been friendly to mining/manufacturing operations and because the southern part of the state has good access to southern California. Ultimately, the best location was determined to be the Reservation.

In summary, Ash Grove is considering locating its plant on the Reservation because of the unique mix of attributes it provides. The plant is being situated in Southern Nevada as part of Ash Grove's business strategy to increase its market position in Arizona and Southern California. Ash Grove did not choose to locate on the Reservation to avoid locating in Las Vegas Valley because of that area's nonattainment problems. Ash Grove seeks to locate on the Reservation because of what the Reservation offers, not because of what it avoids. The placement of the cement plant on the Reservation will not materially change the absence of economic integration between the Reservation and Las Vegas. For these reasons, the Tribe does not believe that there is any basis to include the Reservation within the Las Vegas nonattainment area based upon economic integration.

2. Meteorological Data Document That Emissions From the Reservation Do Not Impact Las Vegas Valley

Attached to this document is an exhaustive analysis of ground level meteorological data in the Las Vegas area and extending out to the Reservation. EPA suggested that the Tribe supplement its 11 point analysis to assess whether there is any material potential for emissions emanating from the Reservation to be blown into Las Vegas Valley. The July 30 submittal included wind roses derived from meteorological data from McCarran Airport and the Apex monitoring station. These wind roses demonstrate that the overwhelming pattern is for wind to blow out of the south and southwest towards the north and northeast (See Attachment 1). However, EPA suggested that the Tribe examine the wind data in greater detail to ensure that ozone exceedances were not attributable to the limited periods during which wind blew from the Reservation towards Las Vegas Valley. The Tribe has responded to this request with a comprehensive assessment of the wind patterns leading up to the days where elevated ozone has been detected at either the Apex monitor or the Joe Neal monitor.

The Tribe's consultants (Trinity Consultants) have assembled meteorological and ozone data for monitors in the central and northeast portions of Clark County. Specifically, wind direction and magnitude data, as well as ozone readings, were plotted on an hourly basis for key monitors in the Las Vegas Valley, as well as Apex and Mesquite.[2] In addition to the ambient air monitors, the Tribe determined that the Flood Control District maintains a meteorological station on the Reservation that it refers to as "California Wash 3." This monitor is located where the dot labeled "Crystal" appears on Figure 2. Starting two days before the day (or days) of each ozone

[2] A few monitors in Las Vegas Valley are not included in the analysis because including all of the monitors made the results harder to read. Limiting the number of monitors displayed for the Las Vegas Valley does not change the results.

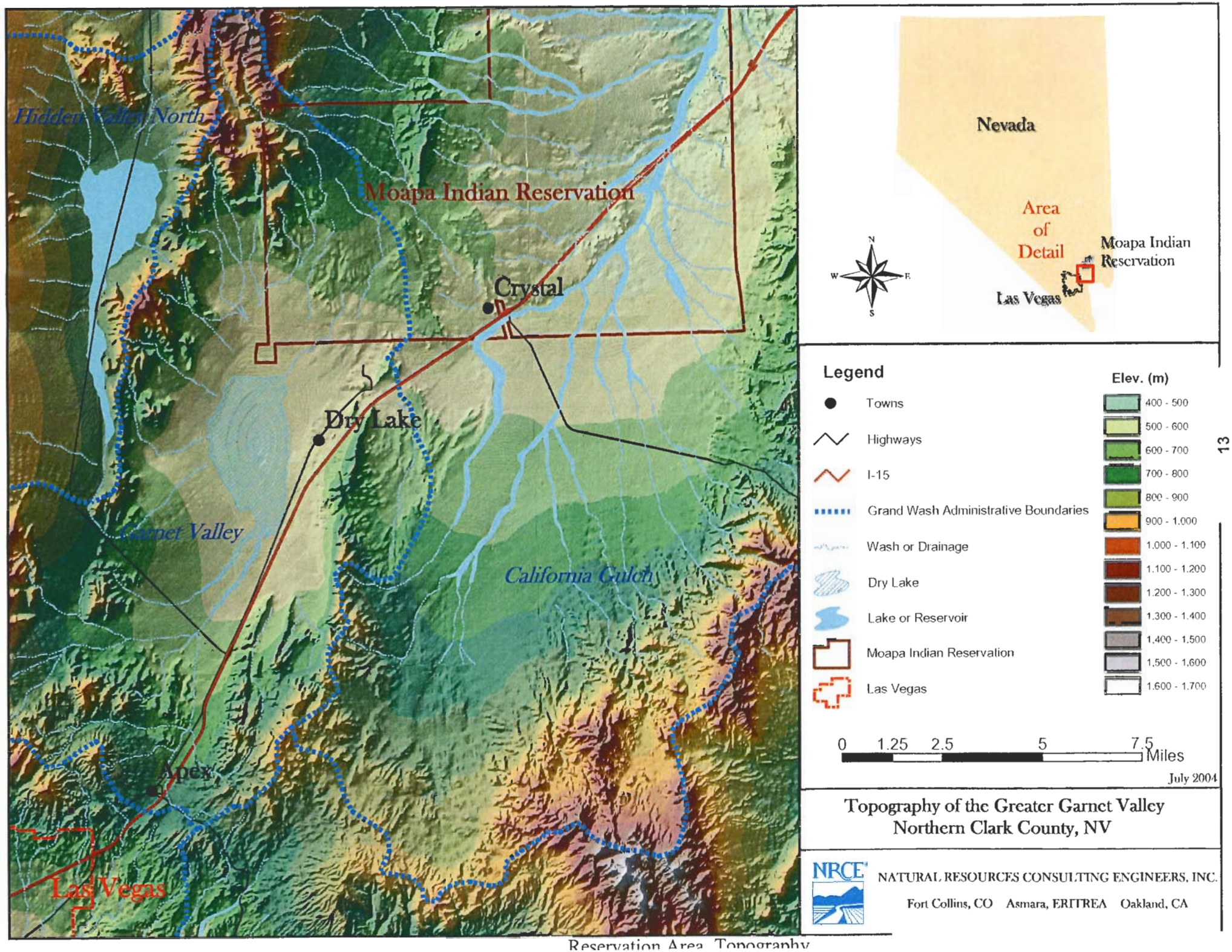
exceedance at Apex or Joe Neal, Trinity plotted the hourly wind direction at each of these monitors using an arrow. The arrow size is directly related to wind magnitude; the bigger the arrow, the stronger the wind. The ozone concentration was printed next to each monitor for each hour, where data were available. No ozone concentrations were included for the California Wash 3 monitor as it is only a weather station.

The wind data and ozone concentrations were plotted hour by hour for each hour leading up to and beyond an ozone exceedance. A separate page is included for each hour. Because of the large number of hours involved, and the benefit of being able to scroll through the hours on-screen, we are submitting the wind plots electronically. The following time periods are addressed:

Identifier	Monitors ≥ 85 ppb (8-hour average)	High 8-hour Average (ppb)	Date(s) of Exceedance	Dates Assessed
Episode 1	Joe Neal	94, 85	August 9 & 10, 2001	August 7-11, 2001
Episode 2	Joe Neal Apex	88 90	June 16, 2002 June 16, 2002	June 14-17, 2002
Episode 3	Joe Neal	93, 87	June 27 & 28, 2002	June 25-29, 2002
Episode 4	Joe Neal	86	August 11, 2002	August 9-12, 2002
Episode 5	Joe Neal	86	August 18, 2002	August 16-19, 2002
Episode 6	Joe Neal	90, 86	May 26-27, 2003	May 24-28, 2003
Episode 7	Joe Neal	86	June 1, 2003	May 30-June 2, 2003
Episode 8	Joe Neal	87	June 6, 2003	June 4-7, 2003
Episode 9	Joe Neal	85	June 13, 2003	June 11-14, 2003
Episode 10	Joe Neal Apex	94 92	June 29, 2003 June 29, 2003	June 27-30, 2003
Episode 11	Joe Neal	90	July 9, 2003	July 7-10, 2003
Episode 12	Joe Neal	92	July 21, 2003	July 19-22, 2003
Episode 13	Apex	85	May 10, 2004	May 8-11, 2004
Episode 14	Apex	85	May 15, 2004	May 13-16, 2004

In considering these data it is necessary to focus on the topographical features that lie between the Flood Control District monitor (identified as "Cal"), the Apex monitor and Las Vegas Valley. Figure 2 from the July 30 submittal shows the Dry Lake Range which ends north of Interstate 15 and northeast of the spot identified as Dry Lake on Figure 2. Interstate 15 crosses the end of the Dry Lake Range through a notch blasted in the ridge. The Dry Lake Range ends at the southern border of the Reservation, but the topography along the western edge of the Reservation continues as a slight ridge until meeting the finger of the Arrow Canyon Range running along the western edge of the Reservation. This topography results in a noticeable distinction between the land occupied by the Reservation and the basin that extends between Dry Lake and Apex. For winds to move from the Flood Control District monitor at Crystal into the Garnet Valley basin and towards Apex, there needs to be a wind directly out of the east. From the Flood Control District monitor, a wind out of the northeast would be obstructed by the Dry Lake Range. A wind out of the north would blow from the Flood Control District monitor into the California Gulch.

The attached wind plots demonstrate that there is little potential for emissions to blow from the Reservation into Las Vegas Valley. The few hours where the wind at Apex is blowing towards



Reservation Area Topography

the Las Vegas Valley are often accompanied by winds on the Reservation blowing in different directions—sometimes the exact opposite direction. This is not to say that there are not times when the wind direction at both the Flood Control District monitor and the Apex monitor are blowing towards Las Vegas Valley, but these hours are few and they do not appear linked to the exceedances. The one clear linkage that is shown through the wind plots is that Apex is influenced by strong winds out of the southwest entering Las Vegas Valley (i.e., at the Jean monitor). However, there is no indication that there is material transport from the Reservation towards the Las Vegas Valley.

The Tribe recently focused on the fact that Reid Gardner has been operating two meteorological stations as a condition of its solid waste permit. The Tribe has located electronic data from these monitors for the second quarter of 2003 and a written assessment of the data from one of the monitors for both the second and third quarters of 2003. The one quarter of electronic data has been included in the wind plots. These data substantiate the data from the other monitors assessed in the wind plots. Specifically, the wind roses document that wind rarely blows out of the northeast at the Reid Gardner location (i.e., at the northeast corner of the Reservation). For example, in the third quarter of 2003, the wind at Reid Gardner only blew out of the northeast 2.85% of the time and during 70% of those hours when the wind blew out of the northeast, the wind was less than 5 miles per hour. That means that only 19 hours out of the 2,208 hours monitored that quarter had a wind out of the northeast that was 5 miles per hour or greater. The second quarter of 2003 documents an even starker contrast. In that quarter, wind came out of the northeast only 1.74% of the time. This equates to 38 hours of wind from the northeast. During only 13 hours of that entire quarter did the wind out of the northeast equal or exceed five miles per hour and never did a northeast wind exceed 10 miles per hour. With the limited duration and speed of breezes out of the northeast, it would be virtually impossible for Reservation emissions to materially impact the Las Vegas Valley. Copies of the Reid Gardner 2003 ozone season wind roses and the underlying data sheets are attached as Attachment 2.

The Tribe has also reviewed the back trajectory analyses that were prepared for the County by Desert Research Institute and included in the County's 11 Point Analysis. These reverse trajectories are consistent with the data presented in the attached wind plots. In each of the reverse trajectory summaries, with the exception of June 28-29, 2003, the wind trajectories leading up to the day of the episode come from the southwest. On the June 28-29, 2003 episode, the trajectories came out of the north, sweep out to the west and then come into the Las Vegas Valley from the northwest. However, while that episode indicates wind coming from the north, those winds turn west and cut across Lincoln and Nye counties long before they reach the Reservation. None of these episodes suggests that air from the Reservation is entering the Las Vegas Valley in material amounts on days where the ozone standard is being exceeded.

In conclusion, the Tribe believes that its analysis of wind patterns presents a compelling case that the airshed overlying the Reservation is decoupled from the Las Vegas Valley. Based upon this evidence, we believe that it is appropriate to designate the Reservation as attainment for the 8-hour ozone standard.

OTHER FACTORS

Although this supplement focuses on the two factors for which EPA requested additional information (economic integration and meteorology), the Tribe believes that it is appropriate to also address the factor of air quality in adjacent areas. The Tribe believes that the air over the Reservation is in compliance with the 8-hour ozone standard now and will continue in compliance with the 8-hour standard even if both hoped for projects (Calpine and Ash Grove) are built. Neither project will emit substantial amounts of VOC. Likewise, the adjacent Reid Gardner plant emits only a nominal amount of VOC. As a result, even if NOx emissions are present over the Reservation, there is not adequate VOC in the area to support ozone formation. The Tribe feels a strong duty to protect the health of its inhabitants. If there was concern over ozone levels threatening the health of the Tribal members, the Tribe would not be pursuing these projects.

The Tribe does not believe that the planning decisions by the County should impact the designation decision by EPA. We are aware that the County submitted an 11 Point Analysis requesting that the lands within its jurisdiction that lie within Hydrographic Area 218 (i.e., lands other than the Reservation) be designated as nonattainment for the 8-hour ozone standard. It appears that this decision was driven largely by the desire to include within the nonattainment area the Reid Gardner power plant—one of the largest NOx sources in the County. The Tribe respects the County's choice to make this recommendation. However, the Tribe does not believe that this recommendation has relevance to EPA's decision how to designate the Reservation.

The Reservation has a long history of social and economic separation from the County in general, and Las Vegas in particular, that supports it being excluded from the Las Vegas nonattainment area. Unlike on County property, there are environmental controls on development on the Reservation that ensure that the Tribe's air quality is protected. The Bureau of Indian Affairs must comply with NEPA (including preparation of an EIS for major projects) before land can be leased or otherwise authorized for development by industry. The EIS process is specifically designed to assess cumulative impacts associated with past, present and reasonably foreseeable future development activities on and off the Reservation. Some of the procedures required before Reservation development can occur may have contributed to the economic isolation that has so impacted the Tribe. However, these procedures also ensure that any possible environmental impacts attributable to an on-Reservation project are considered more fully and publicly than would necessarily occur with an off-Reservation project.

The Tribe is also confident that designating the Reservation as in attainment will not result in a rush by developers to site future projects on the Reservation in order to avoid the Las Vegas nonattainment area. There are several constraints that will limit the Reservation's development potential. First, is the EIS process outlined above. Second, there is limited water availability. Third, any major new source must demonstrate that it does not cause or contribute to an ambient air quality standard exceedance. If some "dirty" source sought to locate on the Reservation in the hope it could emit large quantities of NOx and VOC, that source would be stopped both by the Tribal Council and the requirement to demonstrate that it does not impact the nonattainment area. Fourth, the Tribe does not have before it any other viable development prospects and has no reason to believe that there will be a rush of significant additional development if the

Reservation is designated as in attainment.

DESIGNATION RECOMMENDATIONS

The Tribe recommends that the Reservation, in its entirety, be designated as attainment for the 8-hour ozone NAAQS. This recommendation is based primarily upon the following considerations:

- The Reservation is a sparsely populated area that is not integrated into the Las Vegas Valley. It does not materially contribute to traffic flows into Las Vegas Valley or attract material numbers of vehicle trips from the Las Vegas Valley.
- There are no stationary sources on the Reservation at this time and the area and mobile source emission inventory is both minimal and concentrated on the northwest side of the Reservation.
- There are two industrial development prospects for the Reservation. The Calpine project (whose future is highly speculative) is subject to the most stringent NOx emission limit in the country and has modeled minimal air quality impacts. The Ash Grove project will have to demonstrate that it will not cause or contribute to an exceedance of the 8-hour ozone standard. That plant will be a state-of-the-art plant, subject to rigorous pollution controls as the result of the BACT process.
- Activities on the Reservation (current and planned) are not an extension of the Las Vegas economy. If both planned projects (Calpine and Ash Grove) are actually built, the existence of the projects will not materially link the Reservation economically to the Las Vegas Valley.
- To the extent ozone transport occurs out of Las Vegas Valley along the I-15 corridor, the distance and topography allow for adequate dispersion before that plume reaches the Reservation.
- The wind data collected on the northeast corner and southern border of the Reservation, when viewed in conjunction with the wind data from the Apex monitor and the Las Vegas Valley monitors, strongly suggest that emissions from Reservation sources will not impact the Las Vegas Valley.
- The design values for the Apex monitor and the Mesquite monitor are both comfortably below the 8-hour ozone standard and 2004 results through August 16, 2004, while neither fully audited nor complete, strongly suggest that the 2004 4th high value will be significantly lower than recent years.

ATTACHMENT 1

Trinity Report: Dispersion Modeling Research Project; Wind Patterns Near Moapa

Trinity Consultants

MEMORANDUM

TO: Tom Wood
FROM: Arron Heinerikson
DATE: May 7, 2004
RE: Dispersion Modeling Research Project – Wind Patterns near Moapa

Figure 1 provides a wind rose for the ozone season (May 1, 2000 – Oct 1, 2000) based on McCarran International Airport data. The wind rose shows the direction that the wind blows from. The larger the shaded area, the greater the percentage of time that the wind is in a particular direction. The winds are predominately from the South, South-West towards the North, North-East.

Figure 1. McCarran International Airport – Wind Rose – May 1, 2000 – Oct 1, 2000

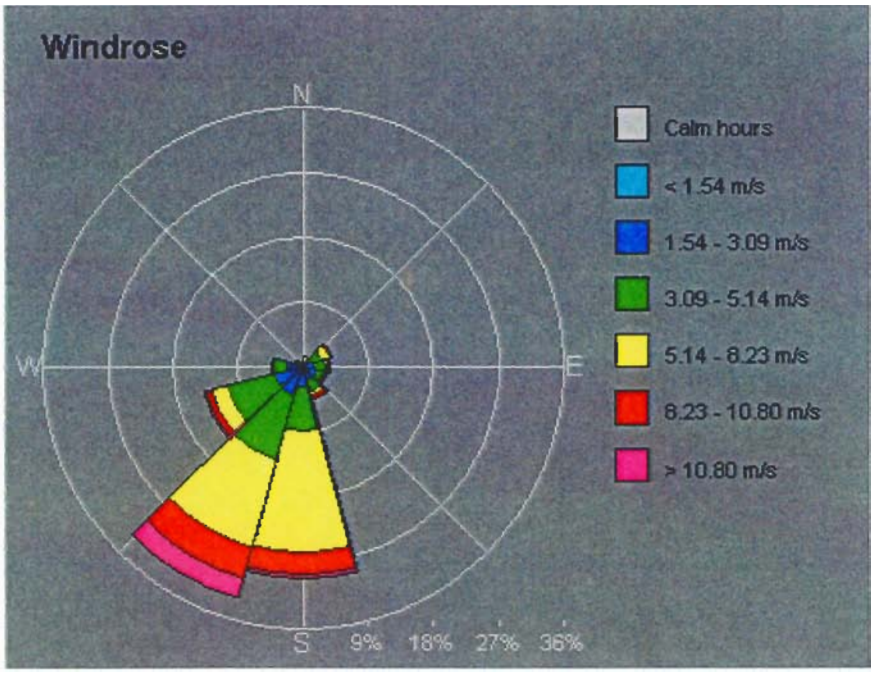


Figure 2 provides a wind rose for the entire year, 2000, based on McCarran International Airport data. The wind rose shows the direction that the wind blows from. The winds are predominately from the South, South-West towards the North, North-East.

Figure 2. McCarran International Airport – Wind Rose – Calendar Year 2000

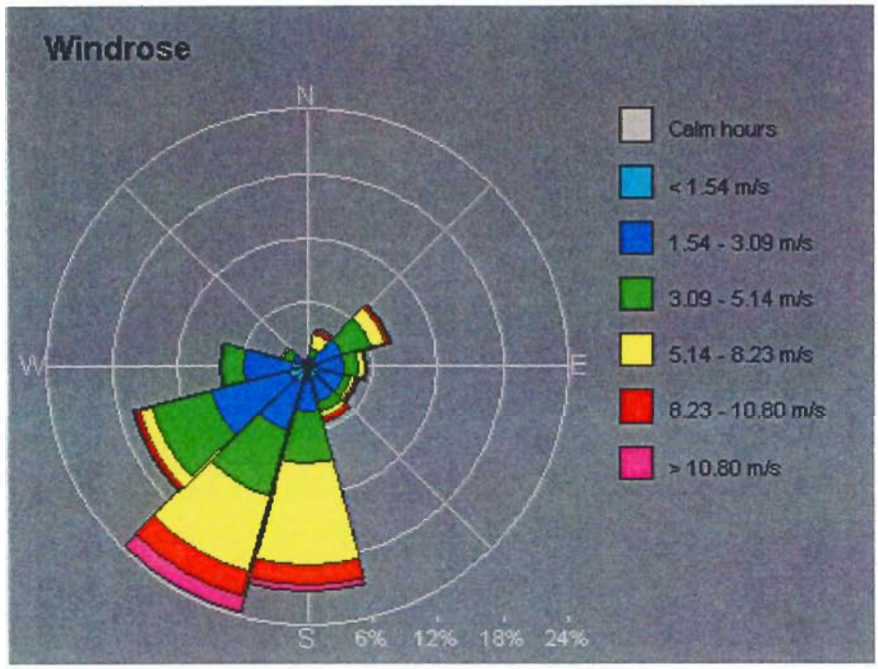
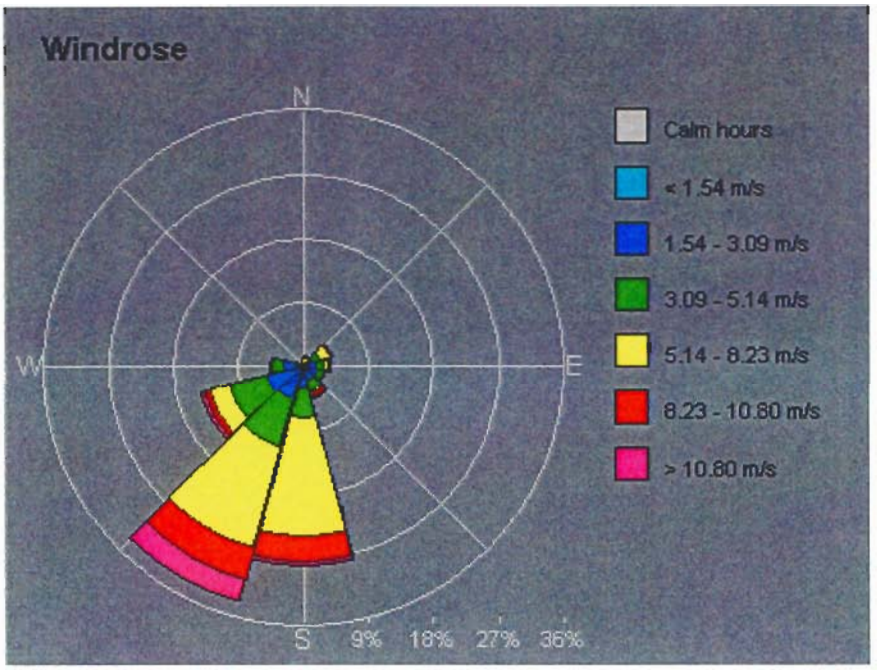


Figure 3 provides a wind rose for the ozone season (May 1, 2000 – Oct 1, 2000) based on a meteorological station in Apex, Nevada (closer to Moapa). The wind rose shows the direction that the wind blows from. The winds are predominately from the South, South-West towards the North, North-East.

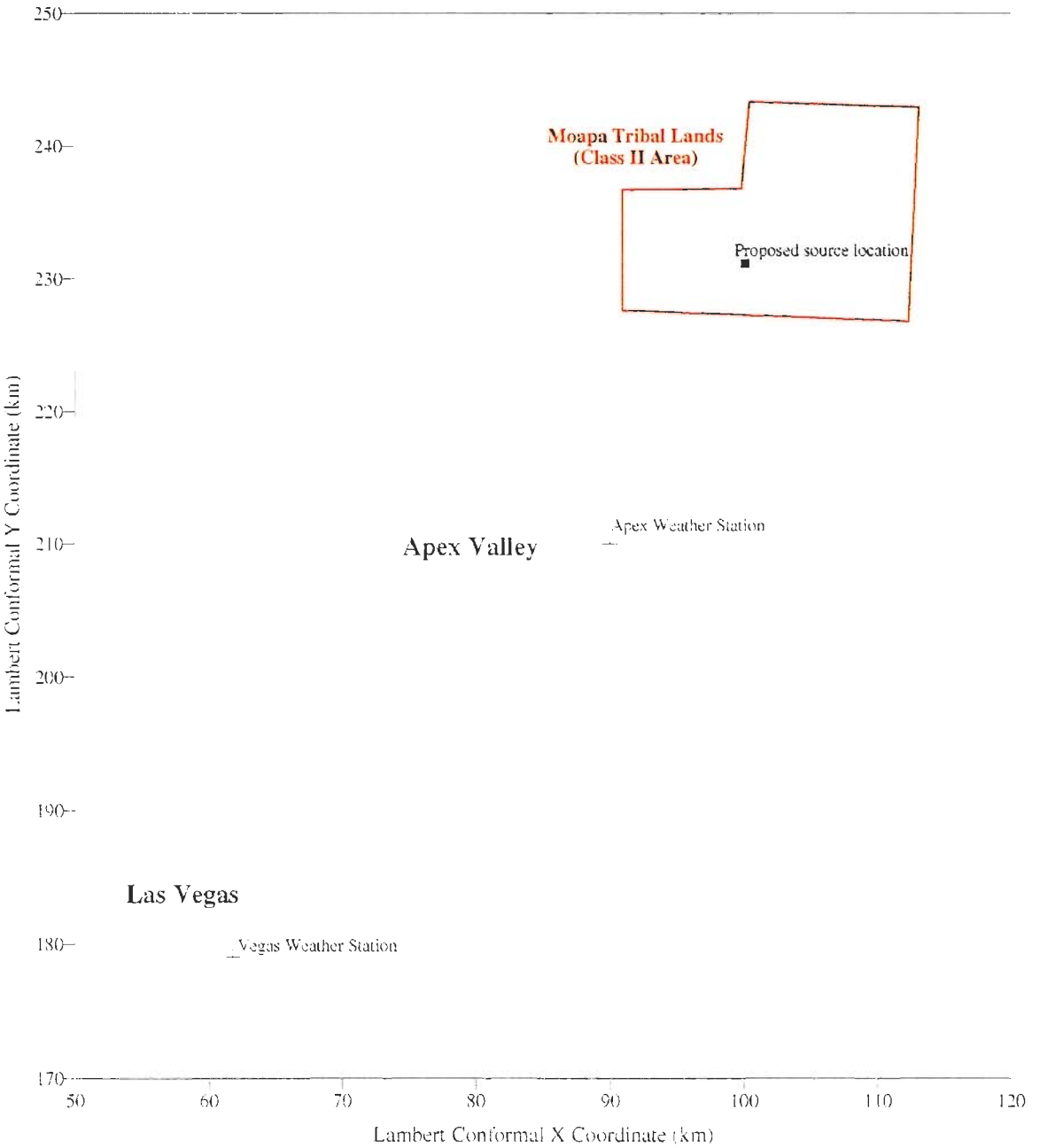
Figure 3. Apex Met Station – Wind Rose – May 1, 2000 – Oct 1, 2000



Note that the wind roses do not change significantly with time of year or location of the meteorological station.

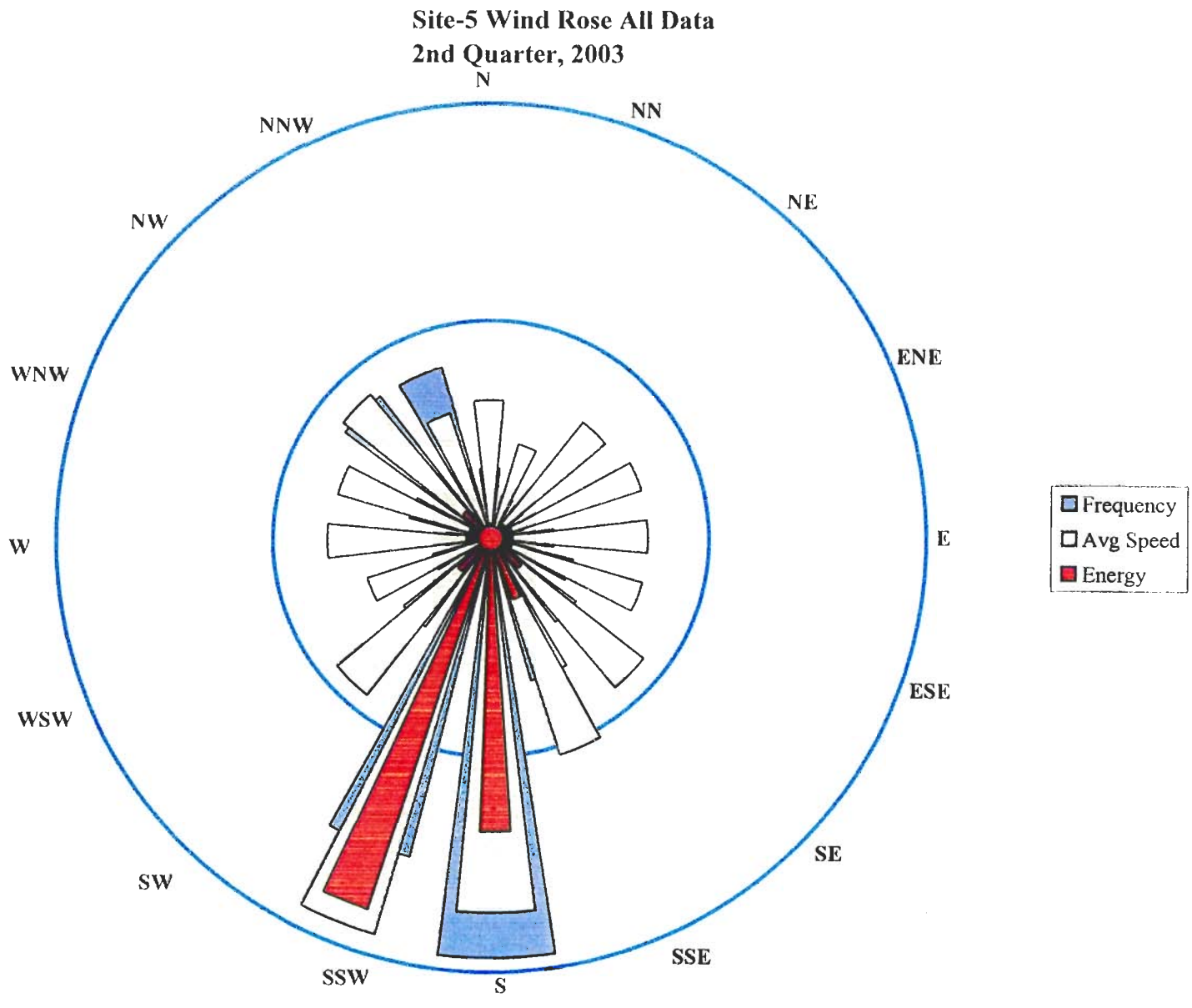
The Apex ozone monitor is located to the South of the proposed plant location towards Las Vegas as shown in Figure 4. It is clear from the wind roses that winds blow from Las Vegas towards Apex and Moapa. Sources in the Moapa area would have little, to no, impact on monitored concentrations in the Las Vegas area.

FIGURE 4. RELATIVE LOCATIONS OF WEATHER STATIONS AND MOAPA TRIBAL LANDS

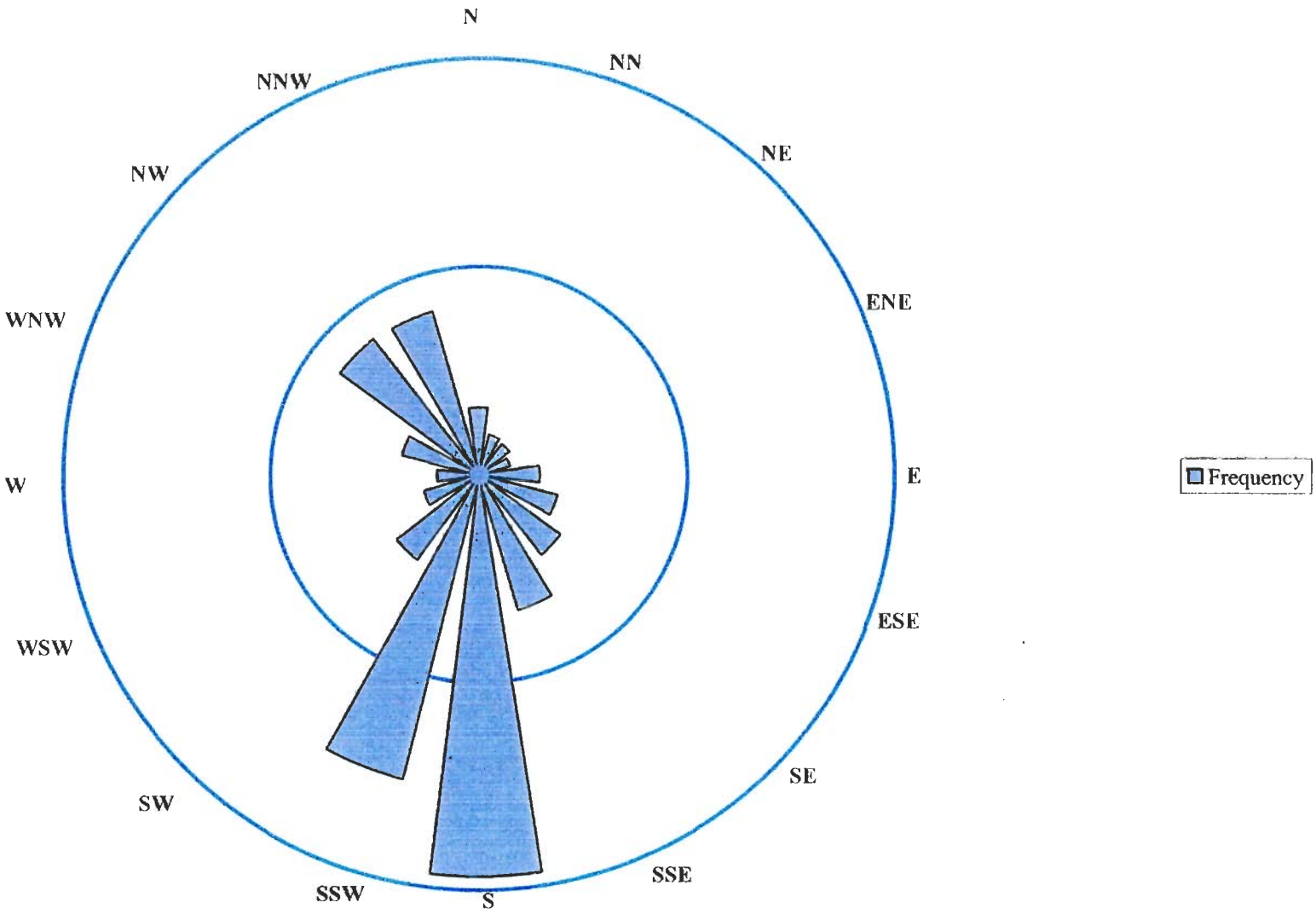


ATTACHMENT 2

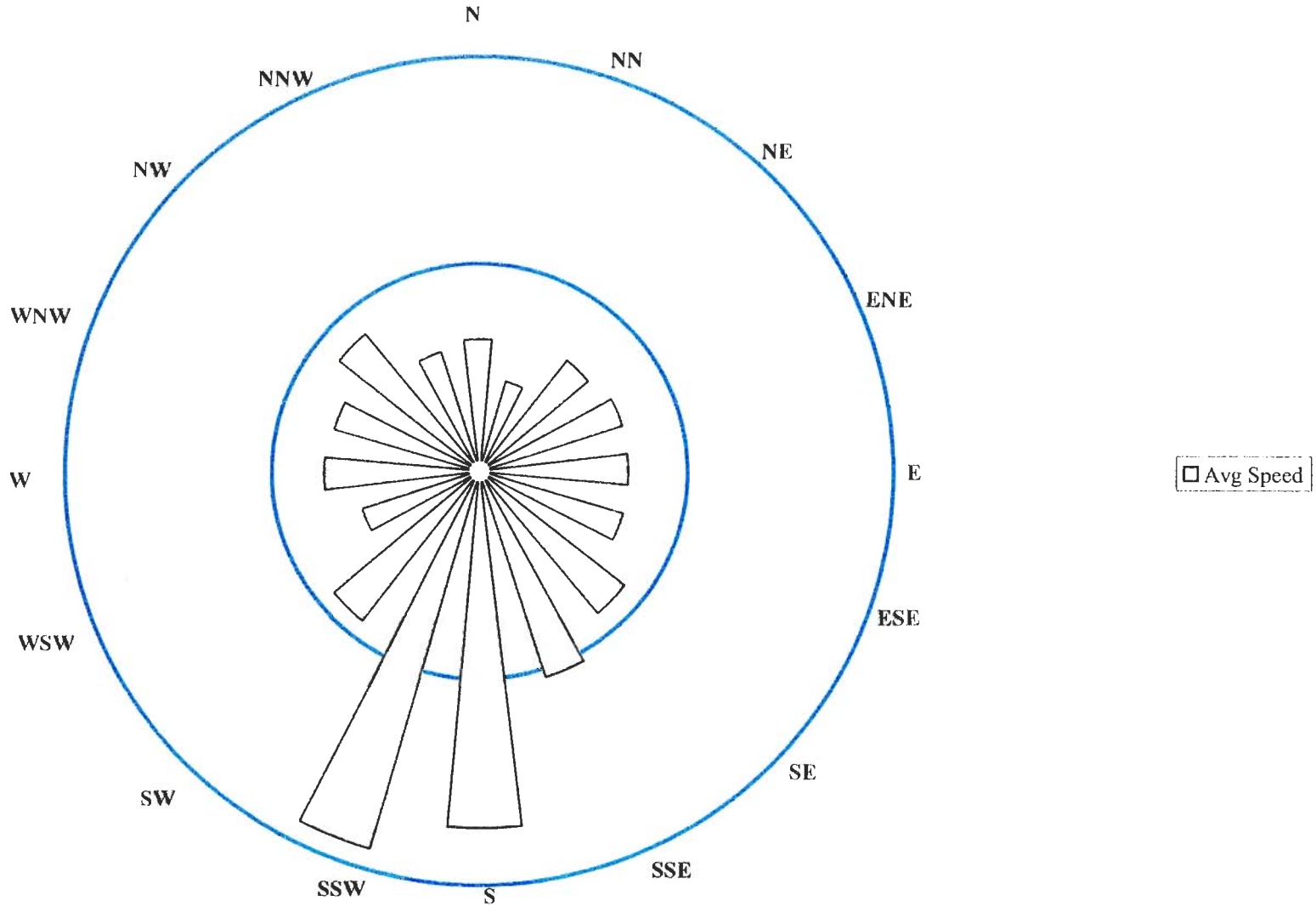
Meteorological Data Report and Wind Roses From Reid Gardner Monitor


Site-5 Wind Rose All Data
2nd Quarter, 2003
N
NN
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
Frequency
Avg Speed
Energy

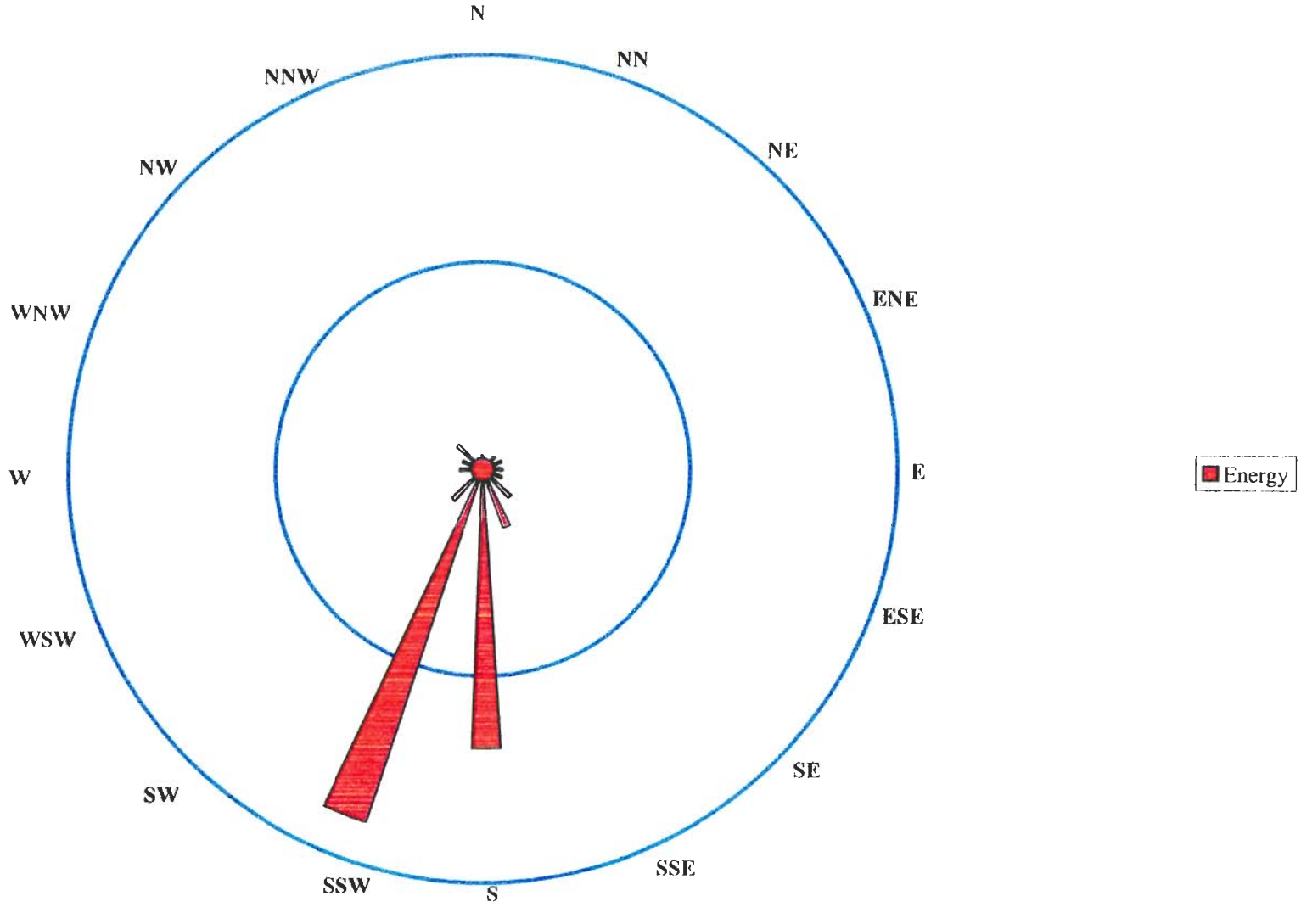
Site-5 Frequency Data
2nd Quarter, 2003



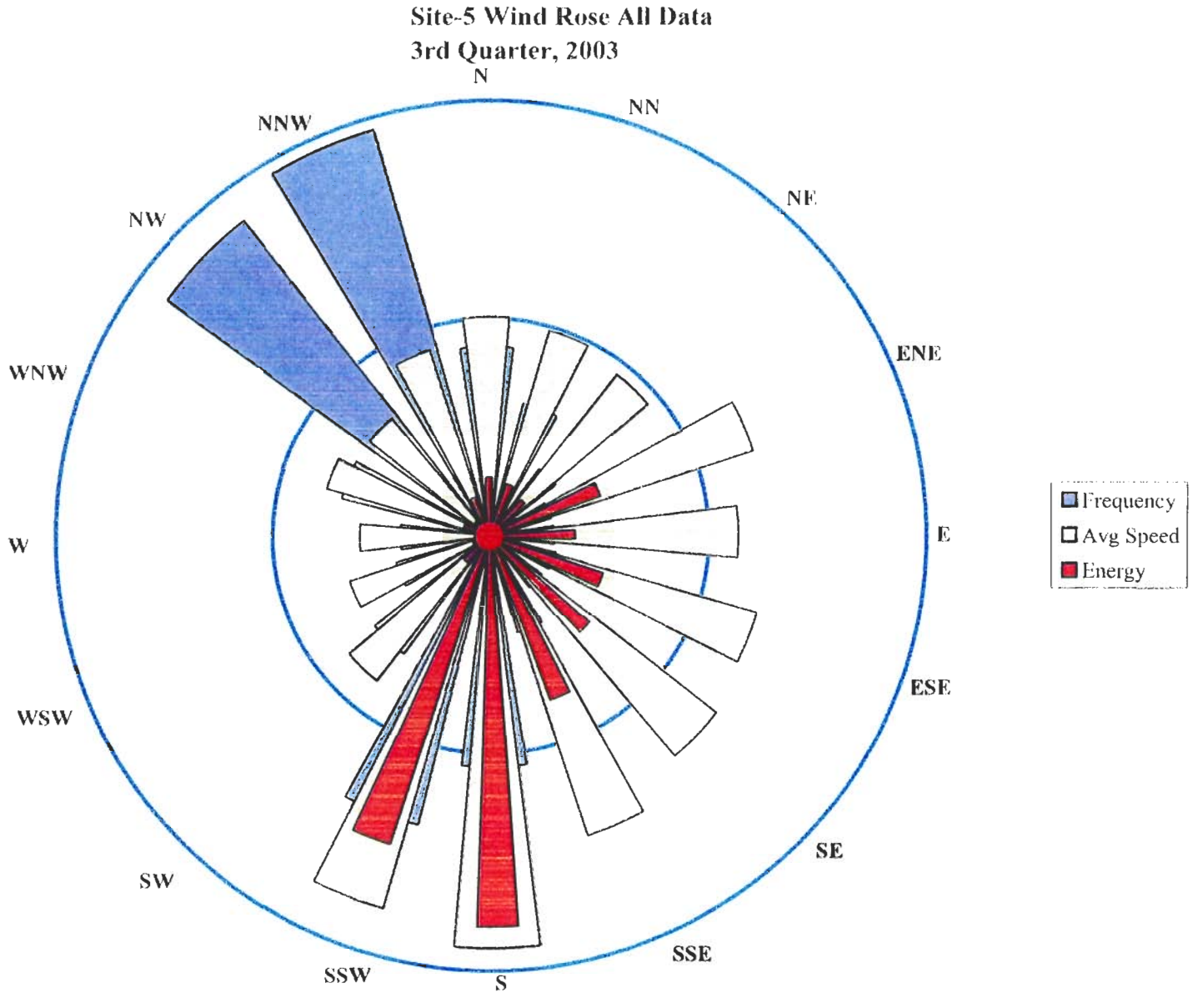
Site-5 Velocity Data
2nd Quarter, 2003



Site-5 Energy Data
2nd Quarter, 2003



	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	0.0°	22.5°	45.0°	67.5°	90.0°	112.5°	135.0°	157.5°	180.0°	202.5°	225.0°	247.5°	270.0°	292.5°	315.0°	337.5°	TOTAL
1-5 MPH	2.11%	1.47%	1.15%	1.10%	2.06%	2.57%	2.89%	3.39%	4.86%	3.90%	3.44%	2.29%	1.38%	2.34%	4.86%	5.78%	45.60%
5-10 MPH	0.73%	0.41%	0.60%	0.23%	0.50%	0.83%	1.19%	2.34%	6.56%	4.40%	0.87%	0.23%	0.28%	1.15%	2.11%	1.47%	23.17%
10-15 MPH	0.23%	0.00%	0.00%	0.14%	0.18%	0.28%	0.50%	0.69%	5.64%	3.26%	0.09%	0.05%	0.28%	0.09%	0.50%	0.32%	12.25%
15-20 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.15%	1.74%	0.32%	0.00%	0.00%	0.05%	0.18%	0.18%	3.62%
20-25 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	1.01%	0.05%	0.05%	0.00%	0.00%	0.18%	0.00%	1.47%
25-30 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
30-35 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
35+ MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rose Min	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	# Observations
0.50%	3.07%	1.88%	1.74%	1.47%	2.75%	3.67%	4.59%	6.42%	18.39%	14.36%	4.77%	2.61%	1.93%	3.62%	7.84%	7.75%	2180
Avg Speed	3.1506	2.2435	3.3764	3.5903	3.5591	3.5764	4.4087	5.1620	8.5595	9.4195	4.5306	2.9343	3.7101	3.6139	4.2656	2.9929	4.3183
Normal Speed	0.0604	0.0430	0.0647	0.0688	0.0682	0.0685	0.0845	0.0989	0.1640	0.1805	0.0868	0.0562	0.0711	0.0693	0.0817	0.0574	0.0827
Speed Cubed	31.27	11.29	38.49	46.28	45.08	45.75	85.69	137.55	627.12	835.76	93.00	25.26	51.07	47.20	77.61	26.81	139.0767
Energy Normal	0.0064	0.0050	0.0079	0.0095	0.0092	0.0094	0.0175	0.0281	0.1283	0.1710	0.0190	0.0052	0.0104	0.0097	0.0159	0.0055	0.0286
Compass Slot-Lo	348.75	11.25	33.75	56.25	78.75	101.25	123.75	146.25	168.75	191.25	213.75	236.25	258.75	281.25	303.75	326.25	
Compass Slot-Hi	11.25	33.75	56.25	78.75	101.25	123.75	146.25	168.75	191.25	213.75	236.25	258.75	281.25	303.75	326.25	348.75	


Site-5 Wind Rose All Data
3rd Quarter, 2003
N
NN
NE
ENE
E
ESE
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SSE
S
SSW
SW
WSW
W
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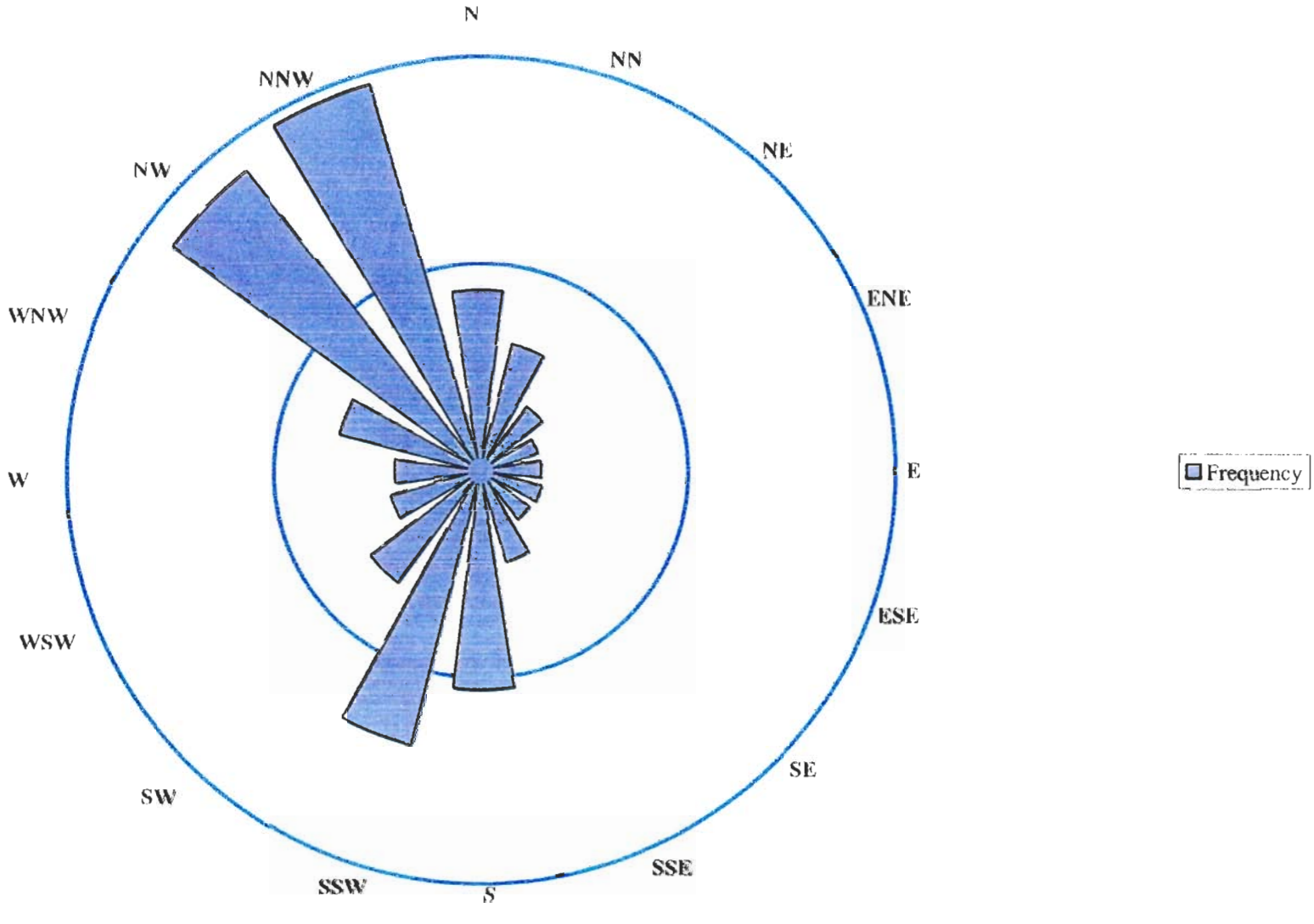
NW
NNW
Frequency
Avg Speed
Energy

Site-5 Frequency Data
3rd Quarter, 2003



Site-5 Velocity Data
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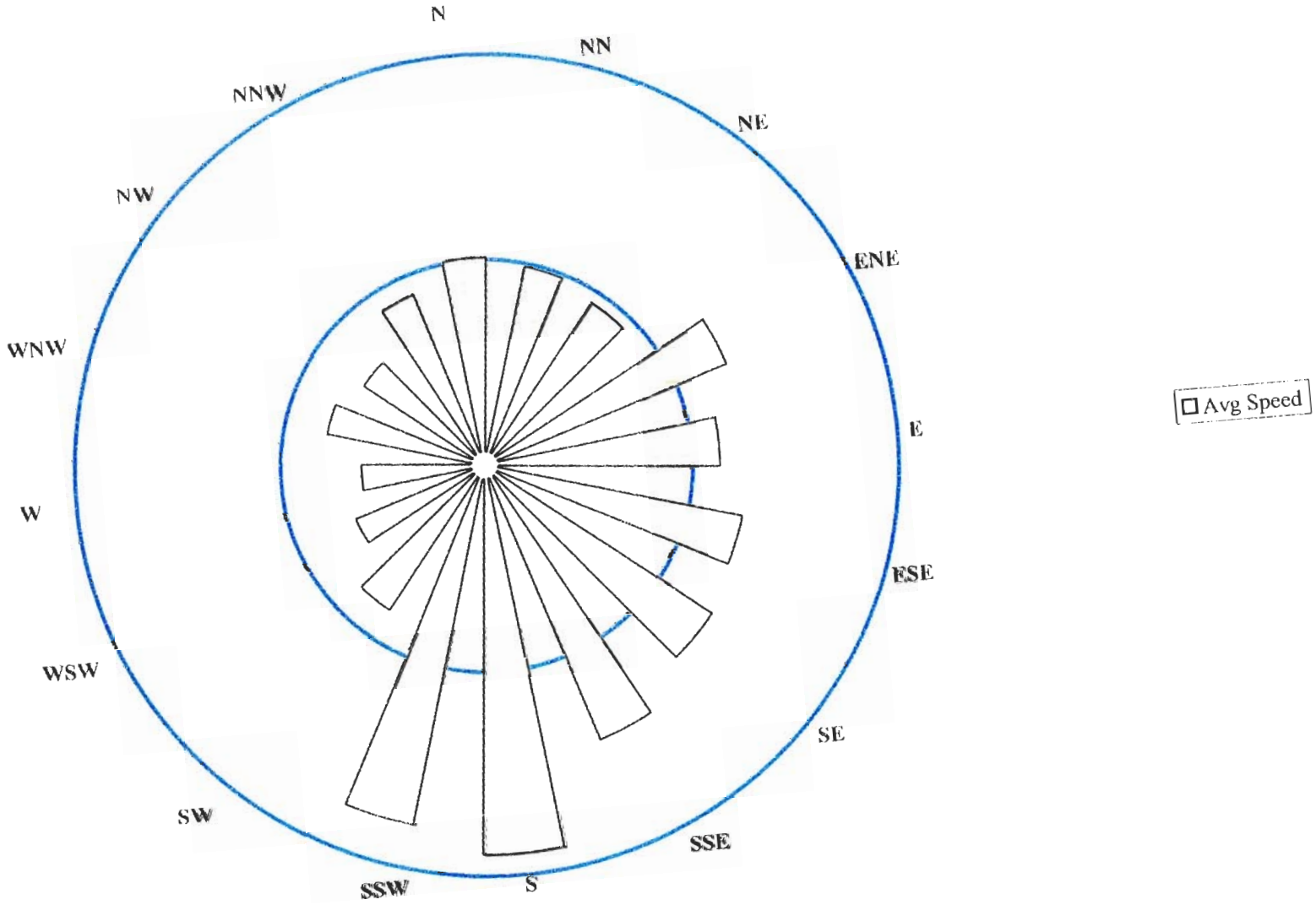
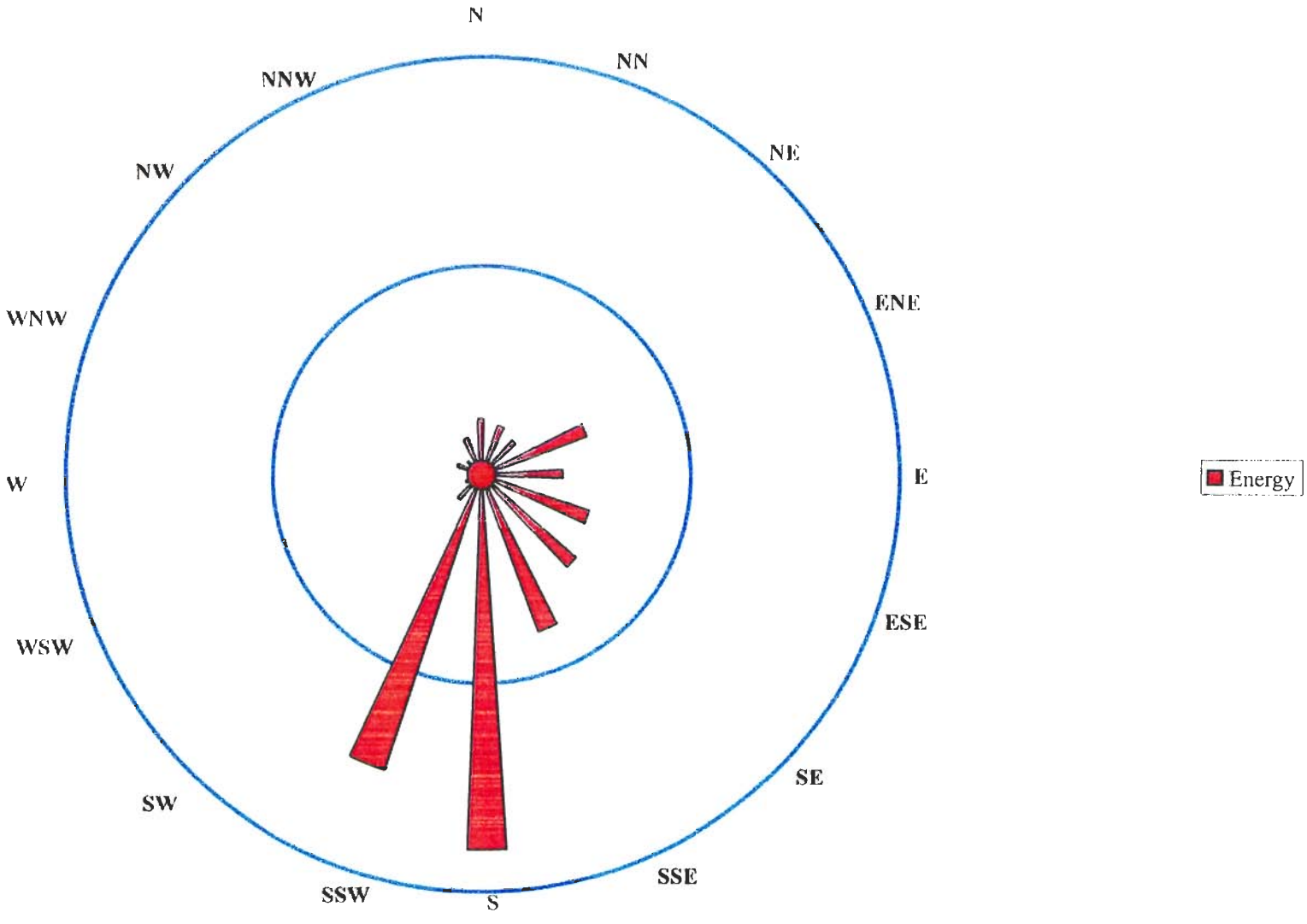


Site-5 Energy Data
3rd Quarter, 2003



	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
	0.0°	22.5°	45.0°	67.5°	90.0°	112.5°	135.0°	157.5°	180.0°	202.5°	225.0°	247.5°	270.0°	292.5°	315.0°	337.5°	TOTAL
1-5 MPH	4.39%	3.71%	1.99%	1.45%	1.54%	1.40%	1.18%	1.54%	2.31%	3.99%	3.85%	3.26%	2.76%	3.71%	11.55%	10.64%	59.28%
5-10 MPH	1.40%	0.82%	0.77%	0.36%	0.50%	0.72%	0.86%	1.54%	3.58%	4.17%	1.09%	0.09%	0.32%	1.49%	1.45%	2.85%	20.61%
10-15 MPH	0.68%	0.14%	0.09%	0.32%	0.18%	0.09%	0.18%	0.36%	1.72%	1.68%	0.09%	0.00%	0.00%	0.05%	0.72%	0.95%	7.25%
15-20 MPH	0.05%	0.05%	0.00%	0.05%	0.00%	0.09%	0.00%	0.00%	0.32%	0.27%	0.00%	0.00%	0.00%	0.00%	0.05%	0.09%	0.95%
20-25 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%
25-30 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%
30-35 MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
35+ MPH	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rose Min	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	# Observations
0.50%	6.52%	4.71%	2.85%	2.17%	2.22%	2.31%	2.22%	3.44%	7.97%	10.28%	5.03%	3.35%	3.08%	5.25%	13.77%	14.54%	2208
Avg Speed	3.9918	3.9005	3.7375	5.0351	4.5208	5.0544	5.2274	5.7504	7.5406	7.0850	3.3433	2.6808	2.3700	3.0896	2.7800	3.5545	4.3539
Normal Speed	0.0754	0.0737	0.0706	0.0952	0.0854	0.0955	0.0988	0.1087	0.1425	0.1339	0.0632	0.0507	0.0448	0.0584	0.0525	0.0672	0.0823
Speed Cubed	63.61	59.34	52.21	127.65	92.39	129.12	142.84	190.15	428.77	355.64	37.37	19.27	13.31	29.49	21.48	44.91	112.9727
Energy Normal	0.0200	0.0187	0.0164	0.0402	0.0291	0.0407	0.0450	0.0599	0.1350	0.1120	0.0118	0.0061	0.0050	0.0093	0.0068	0.0141	0.0356
Compass Slot-Lo	348.75	11.25	33.75	56.25	78.75	101.25	123.75	146.25	168.75	191.25	213.75	236.25	258.75	281.25	303.75	326.25	
Compass Slot-Hi	11.25	33.75	56.25	78.75	101.25	123.75	146.25	168.75	191.25	213.75	236.25	258.75	281.25	303.75	326.25	348.75	