

Figure 1.1-10. Transmission Lines in the Vicinity of the Repository

Source: CRWMS M&O 1998c, Figure 3.

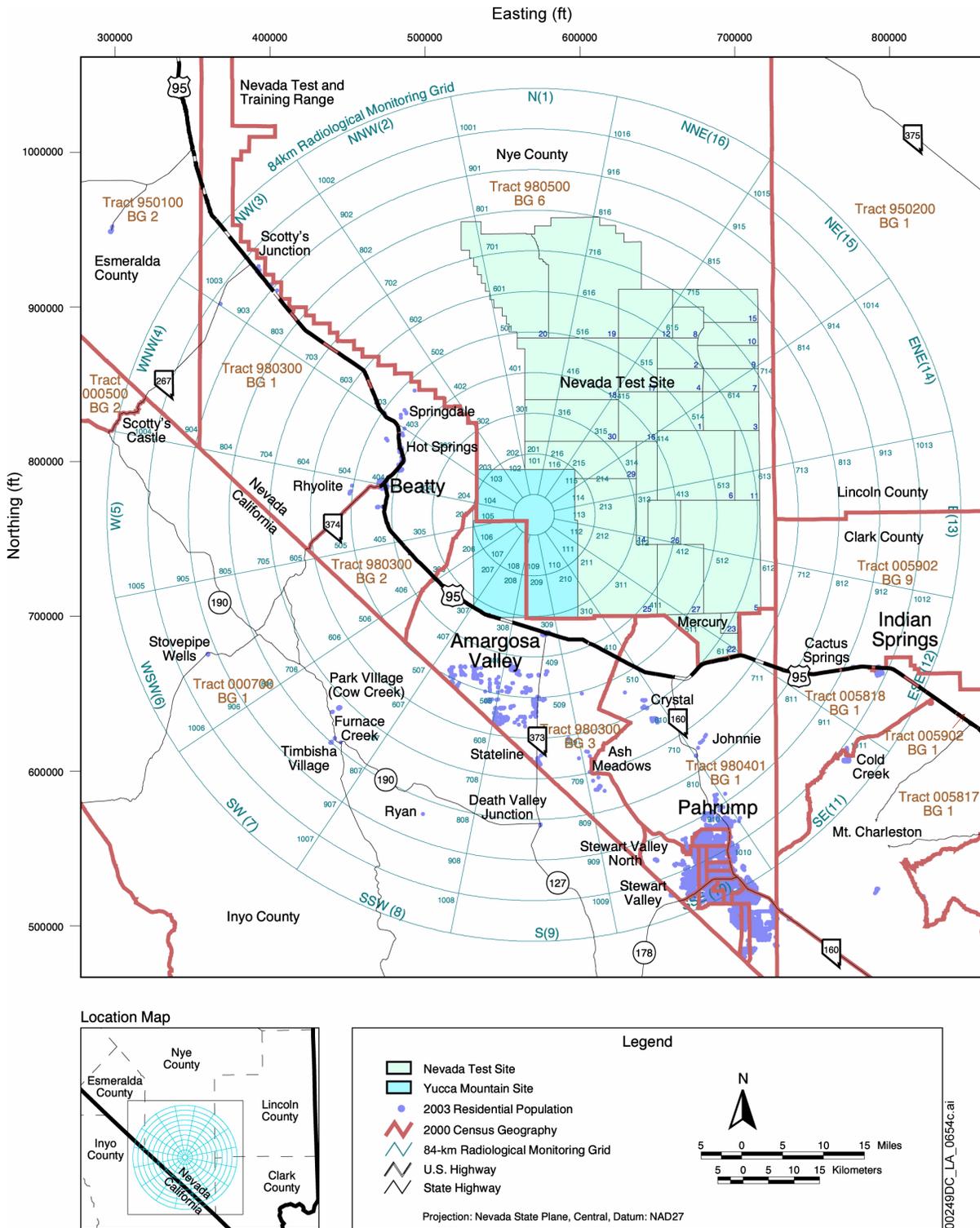


Figure 1.1-11. Population Distribution within the Demographic Study Area (84-km Radiological Monitoring Grid)

NOTE: Nevada State Plane coordinates pertain only to Nevada portion of map.

Source: BSC 2003a, Figure 1.

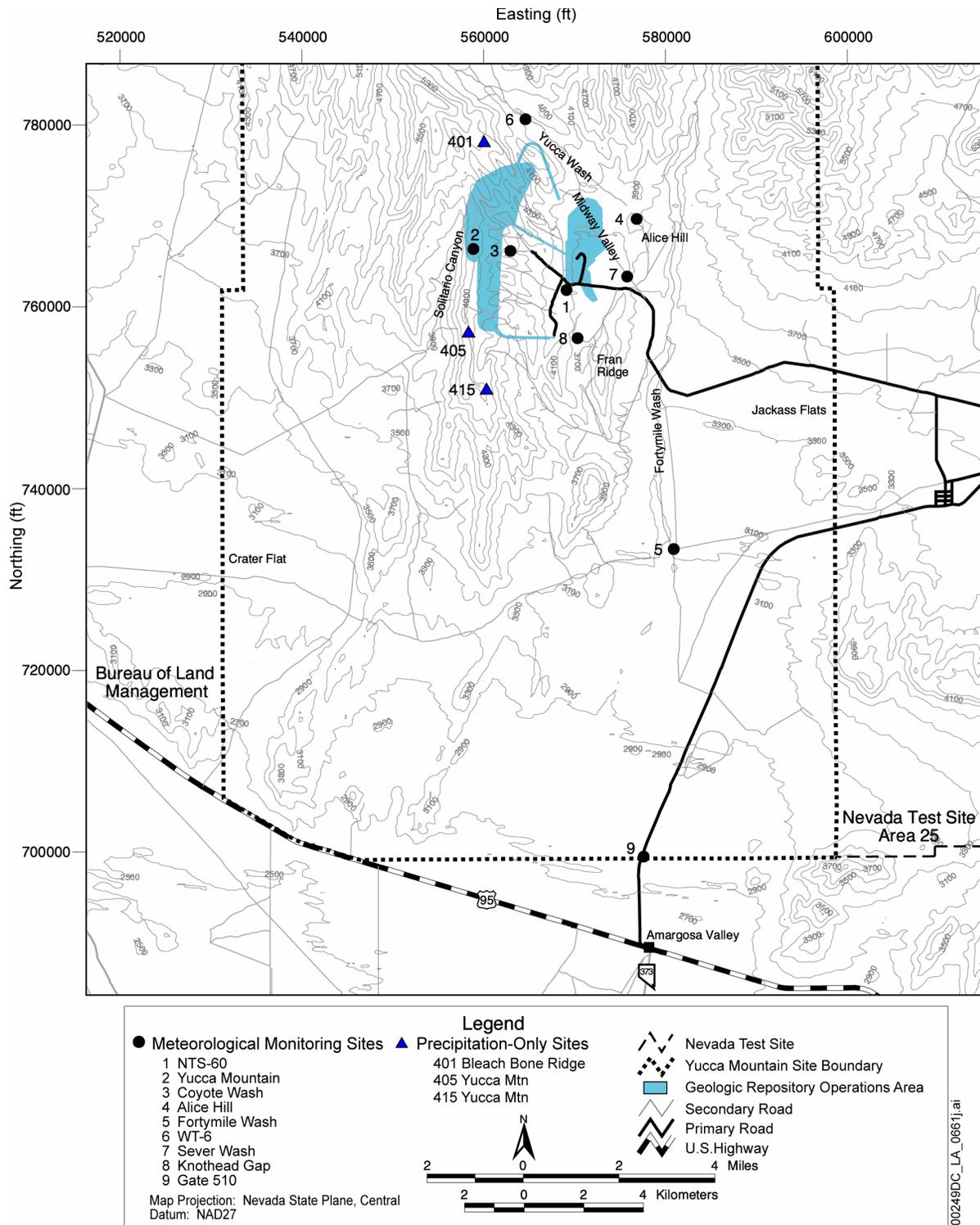


Figure 1.1-12. Yucca Mountain Meteorological Stations

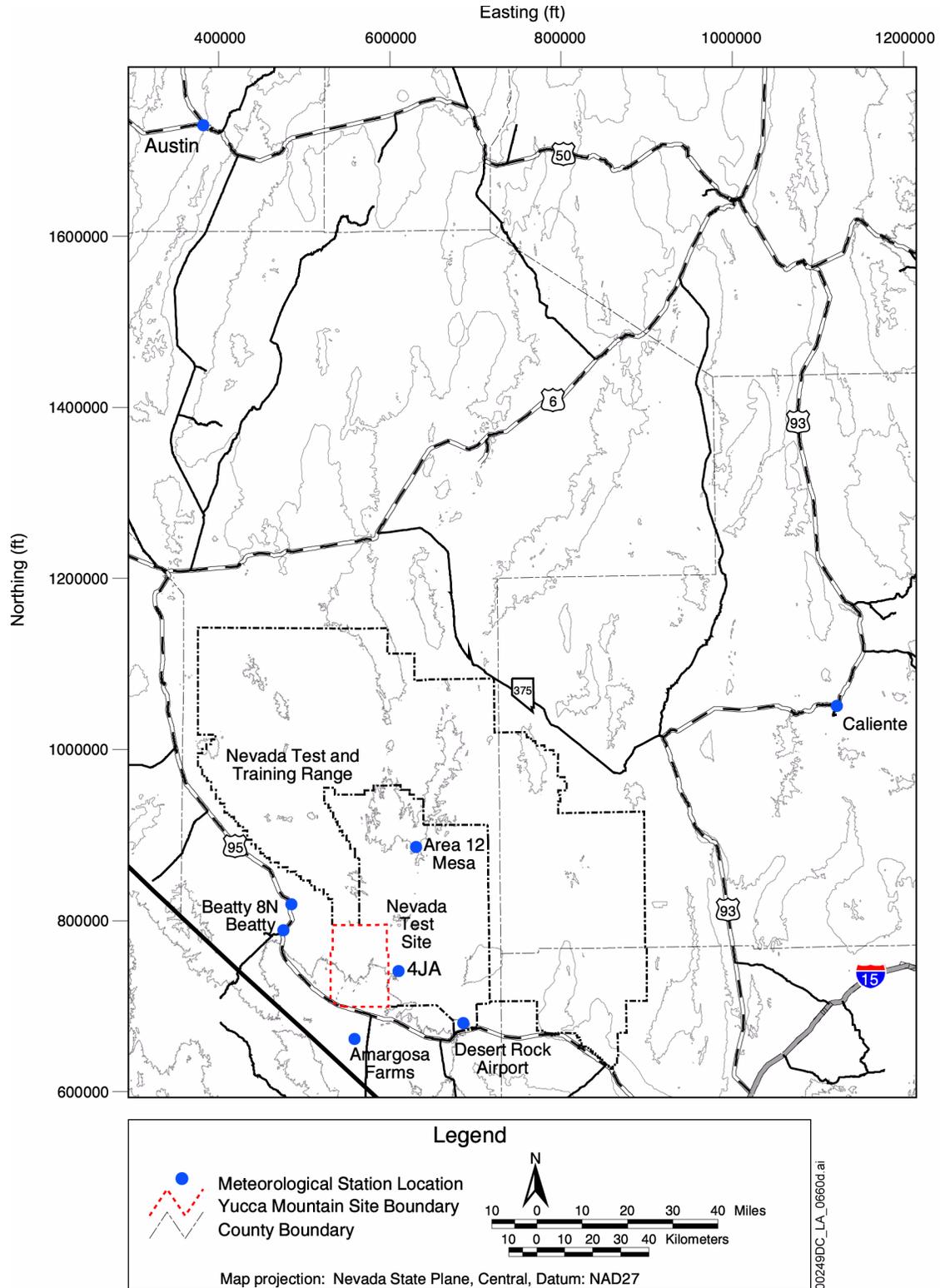


Figure 1.1-13. Locations of the Regional Meteorological Stations

NOTE: Nevada State Plane coordinates pertain only to Nevada portion of map.

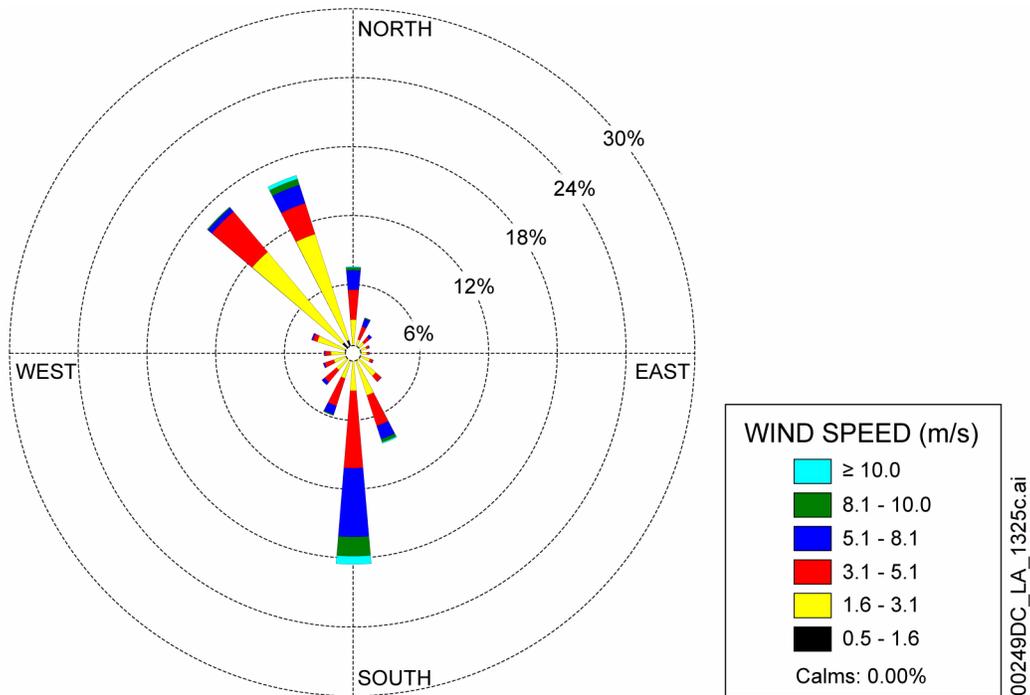


Figure 1.1-14. Wind Rose for Site 1 at 10 m above Ground Level for All Hours (1994 to 2006)

NOTE: Hours used: 98.8% (112,611 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-1.

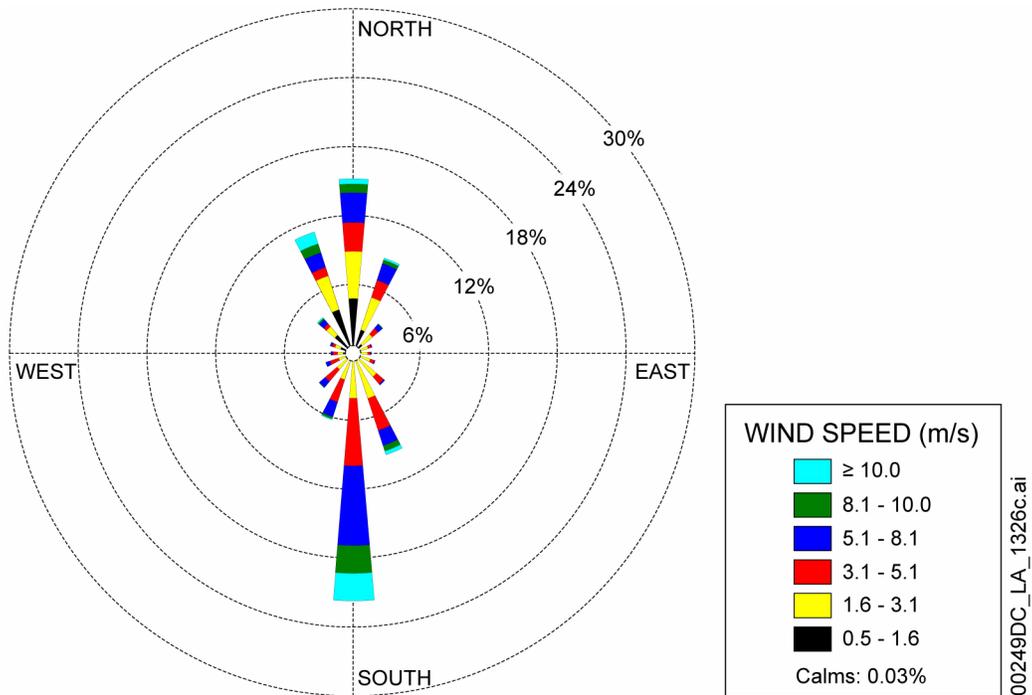


Figure 1.1-15. Wind Rose for Site 1 at 60 m above Ground Level for All Hours (1994 to 2006)

NOTE: Hours used: 98% (111,617 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-2.

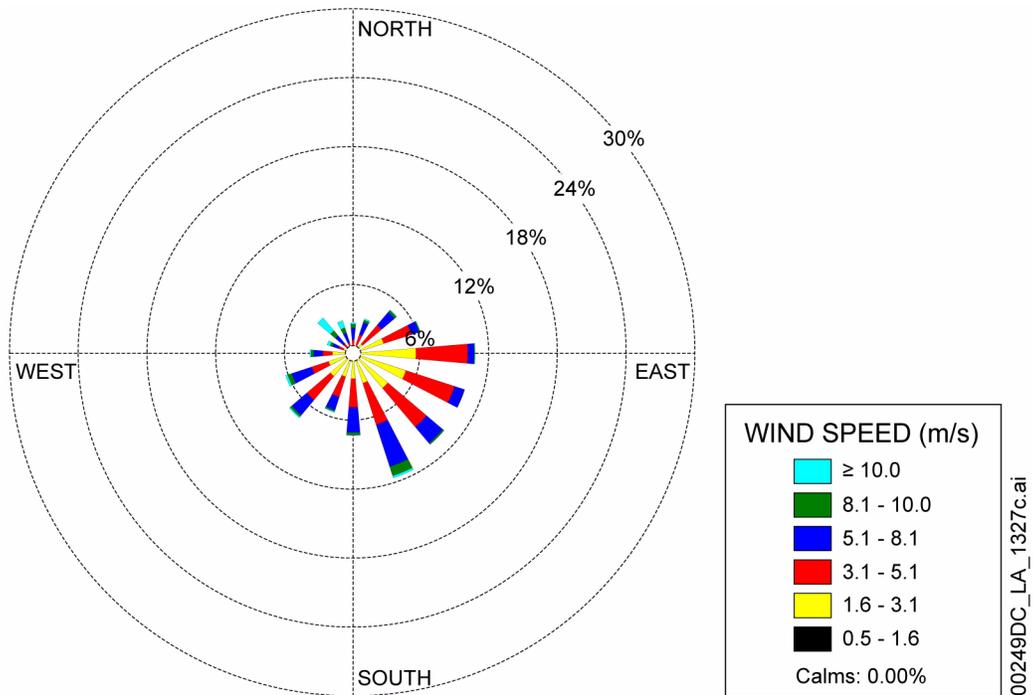


Figure 1.1-16. Wind Rose for Site 2 at 10 m above Ground Level for All Hours (1994 to 2006)

NOTE: Hours used: 99.7% (113,638 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-3.

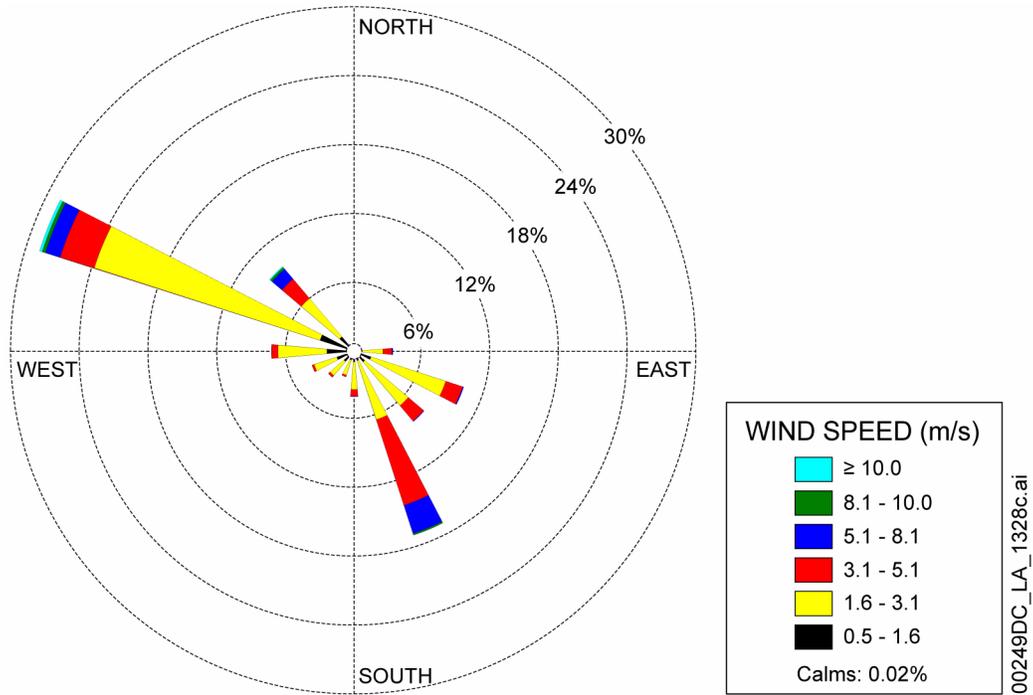


Figure 1.1-17. Wind Rose for Site 3 at 10 m above Ground Level for All Hours (1994 to 1998)

NOTE: Hours used: 99.5% (43,589 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-4.

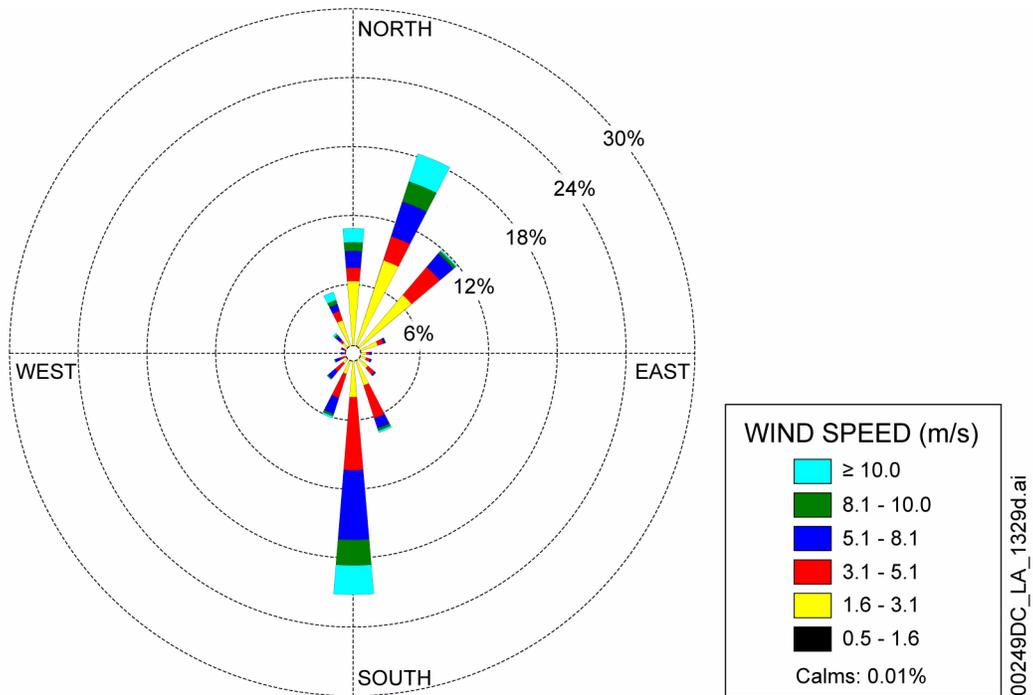


Figure 1.1-18. Wind Rose for Site 4 at 10 m above Ground Level for All Hours (1994 to 2006)

NOTE: Hours used: 99.7% (113,618 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-5.

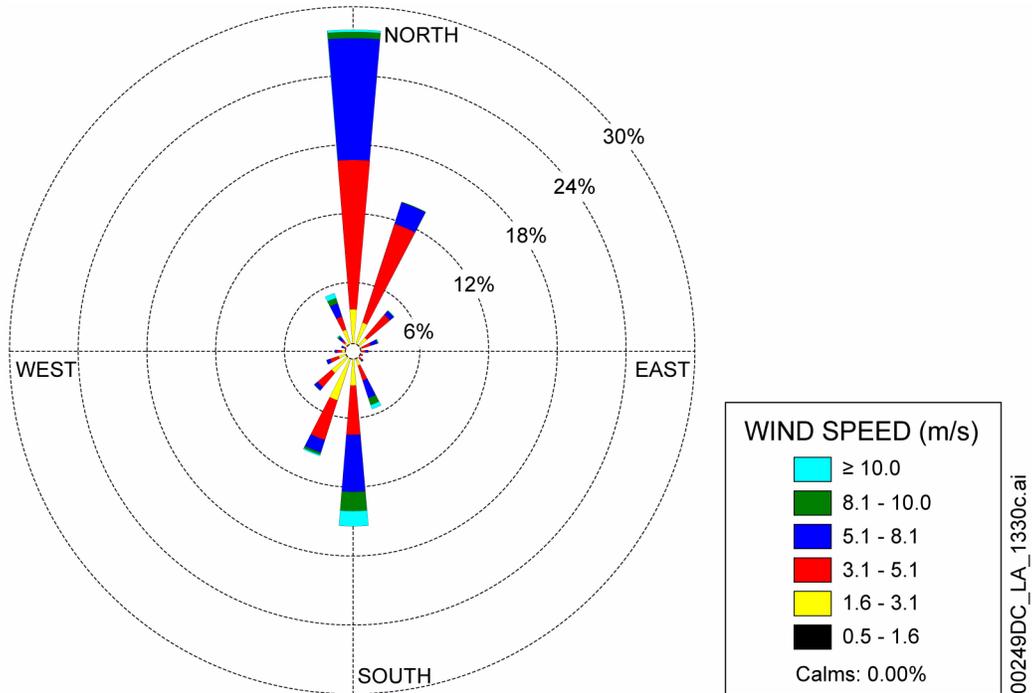


Figure 1.1-19. Wind Rose for Site 5 at 10 m above Ground Level for All Hours (1994 to 1998)

NOTE: Hours used: 99.3% (43,517 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-6.

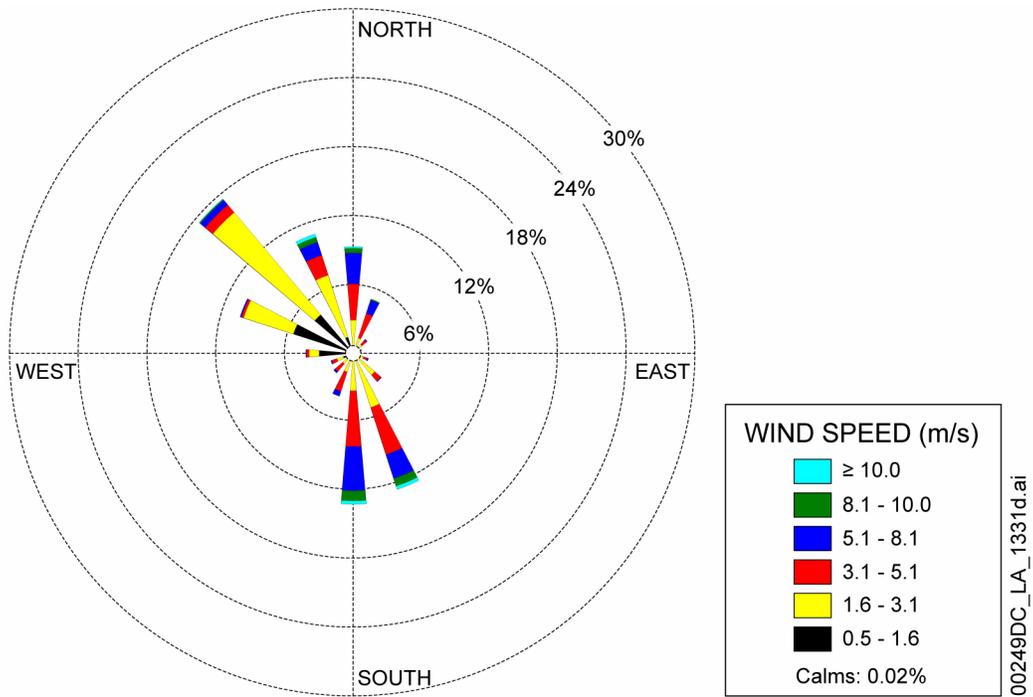


Figure 1.1-20. Wind Rose for Site 7 at 10 m above Ground Level for All Hours (1994 to 1998)

NOTE: Hours used: 99.8% (43,732 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-7.

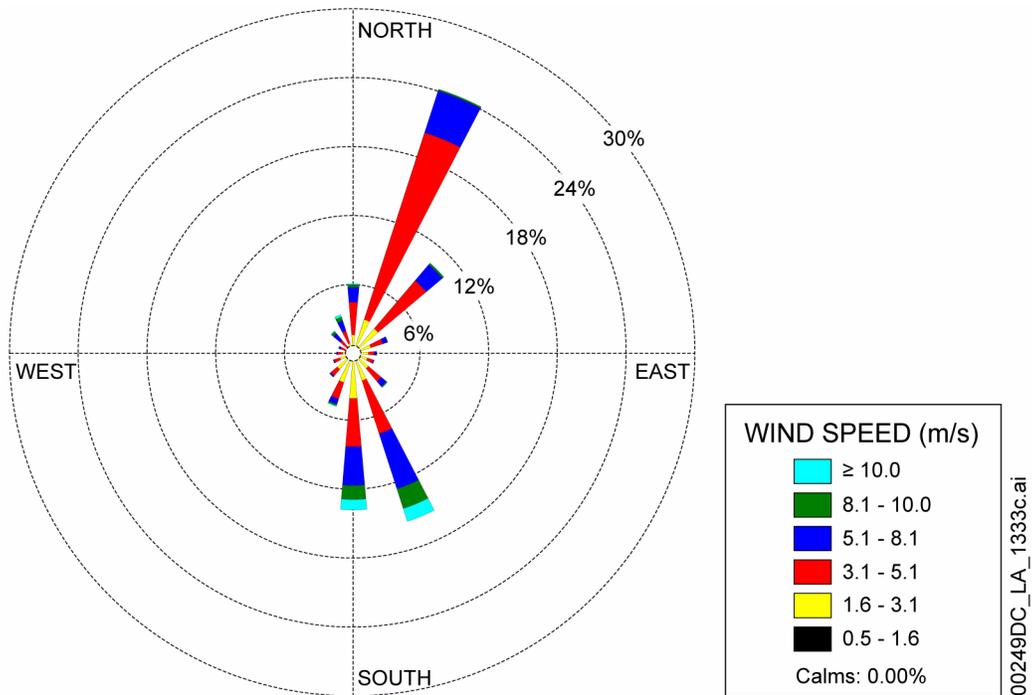


Figure 1.1-21. Wind Rose for Site 9 at 10 m above Ground Level for All Hours (1994 to 2006)

NOTE: Hours used: 98.6% (112,328 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure E-8.

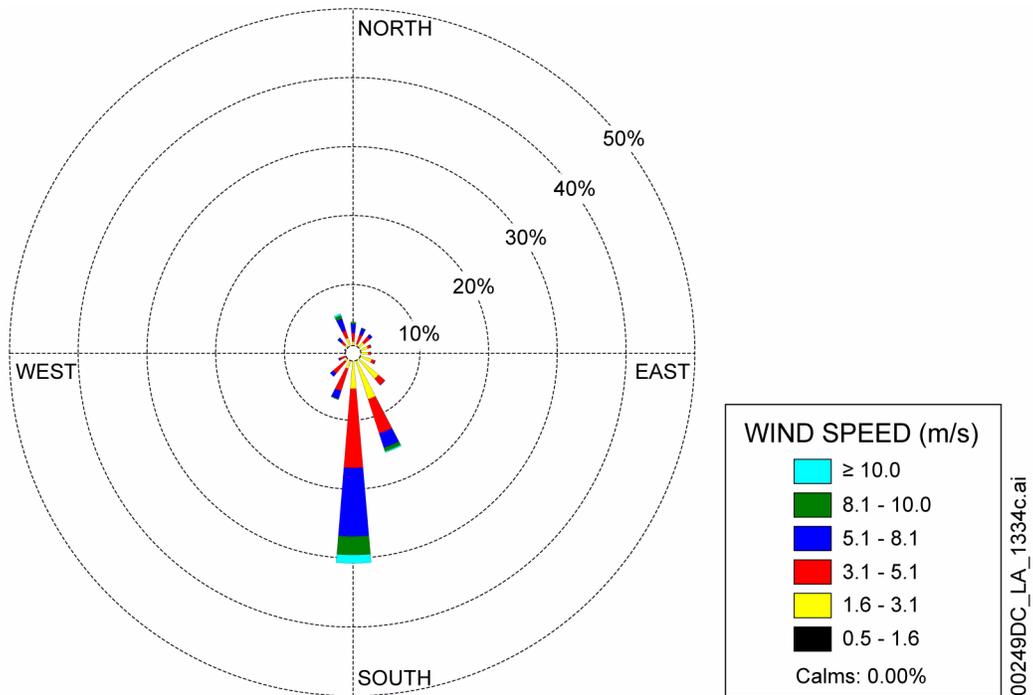


Figure 1.1-22. Wind Rose for Site 1 at 10 m above Ground Level for Daylight Hours (1994 to 2006)

NOTE: Hours used: 98.4% (56,505 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-1.

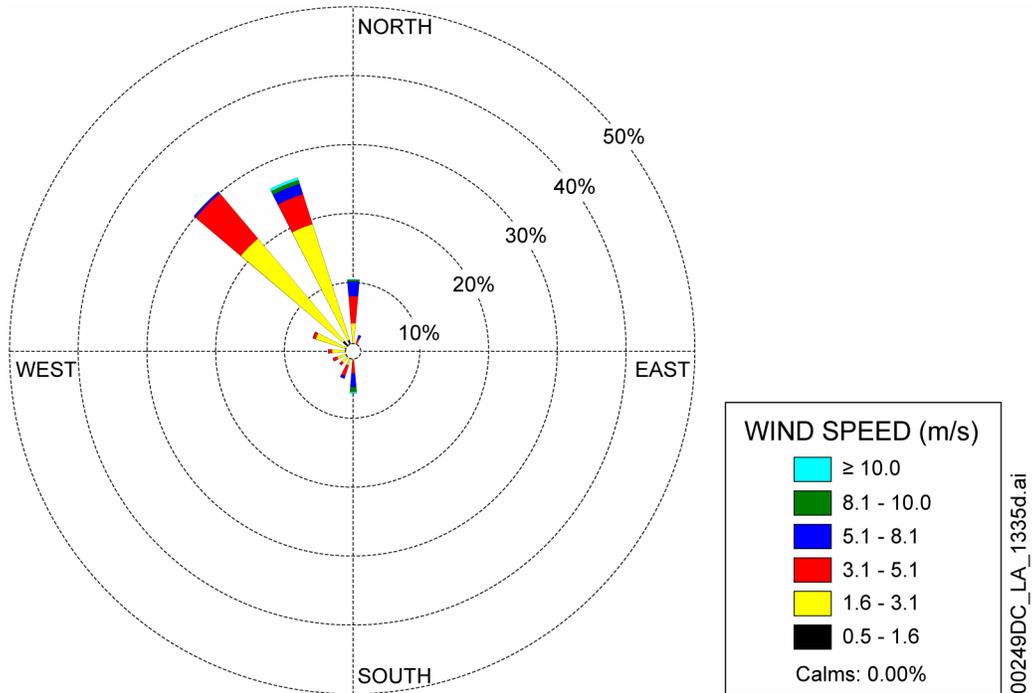


Figure 1.1-23. Wind Rose for Site 1 at 10 m above Ground Level for Night Hours (1994 to 2006)

NOTE: Hours used: 99.2% (56,102 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-2.

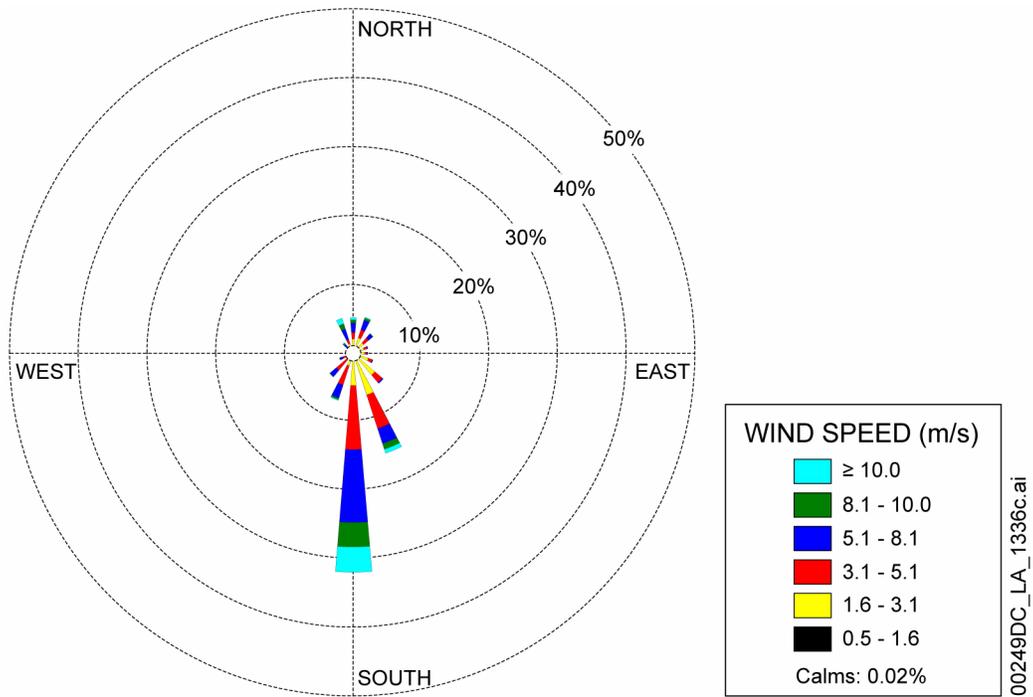


Figure 1.1-24. Wind Rose for Site 1 at 60 m above Ground Level for Daylight Hours (1994 to 2006)

NOTE: Hours used: 97.4% (55,924 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-3.

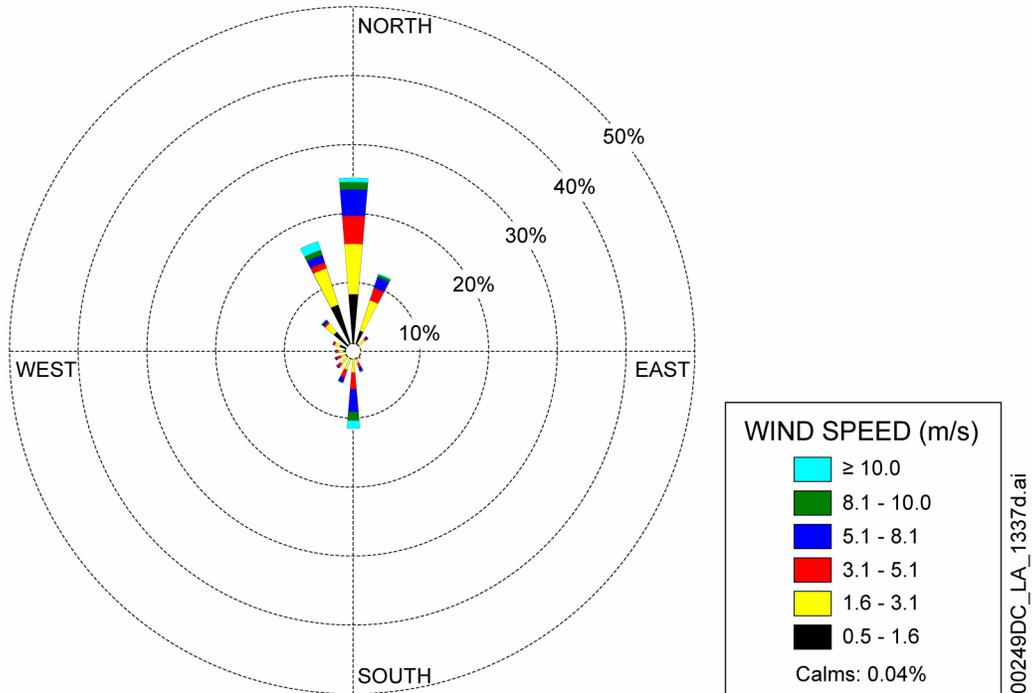


Figure 1.1-25. Wind Rose for Site 1 at 60 m above Ground Level for Night Hours (1994 to 2006)

NOTE: Hours used: 98.5% (55,693 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-4.

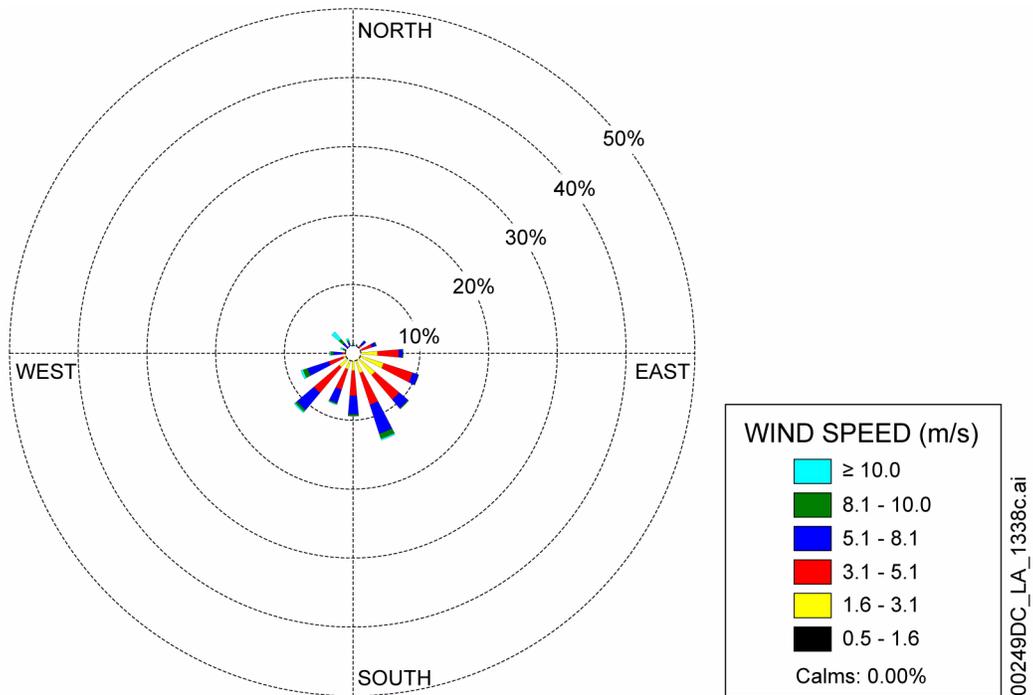


Figure 1.1-26. Wind Rose for Site 2 at 10 m above Ground Level for Daylight Hours (1994 to 2006)

NOTE: Hours used: 99.6% (57,173 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-5.

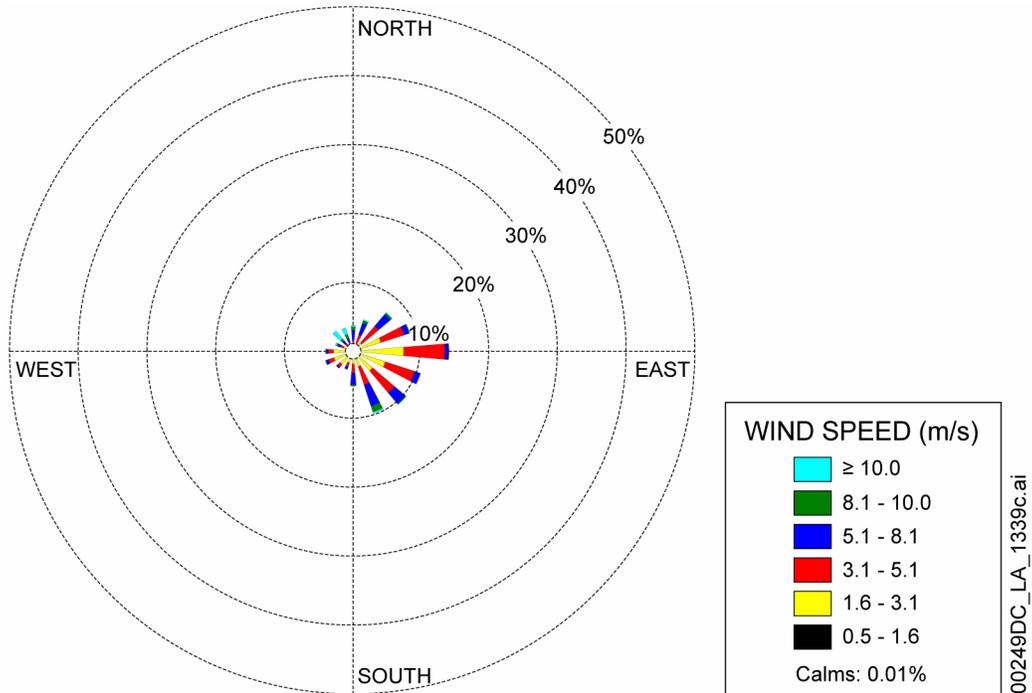


Figure 1.1-27. Wind Rose for Site 2 at 10 m above Ground Level for Night Hours (1994 to 2006)

NOTE: Hours used: 99.9% (56,465 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-6.

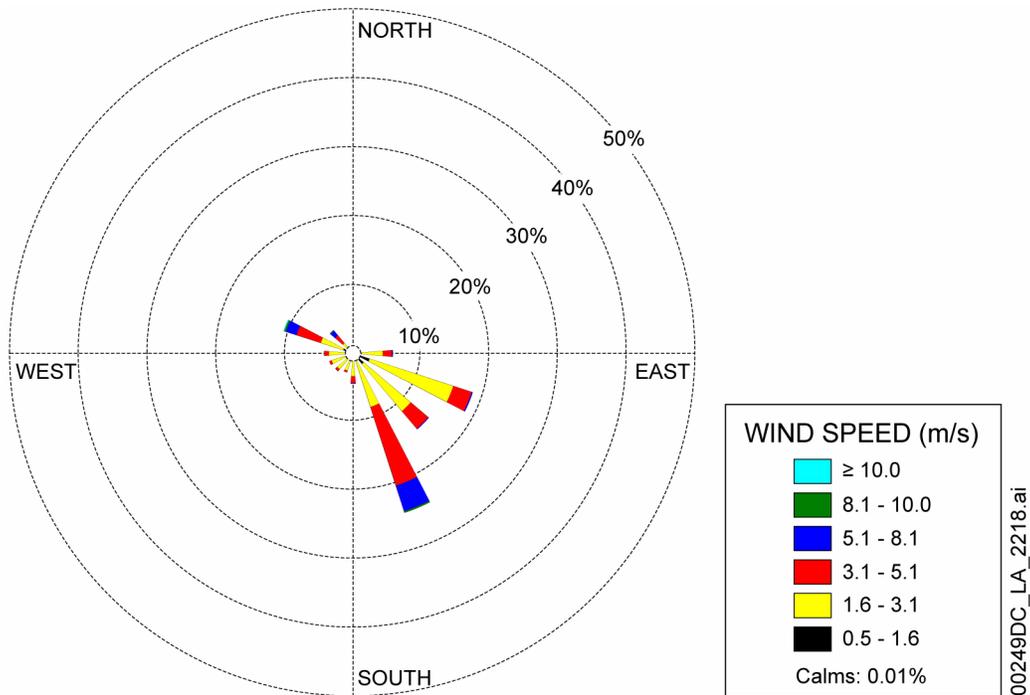


Figure 1.1-28. Wind Rose for Site 3 at 10 m above Ground Level for Daylight Hours (1994 to 1998)

NOTE: Hours used: 99.3% (21,913 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-7.

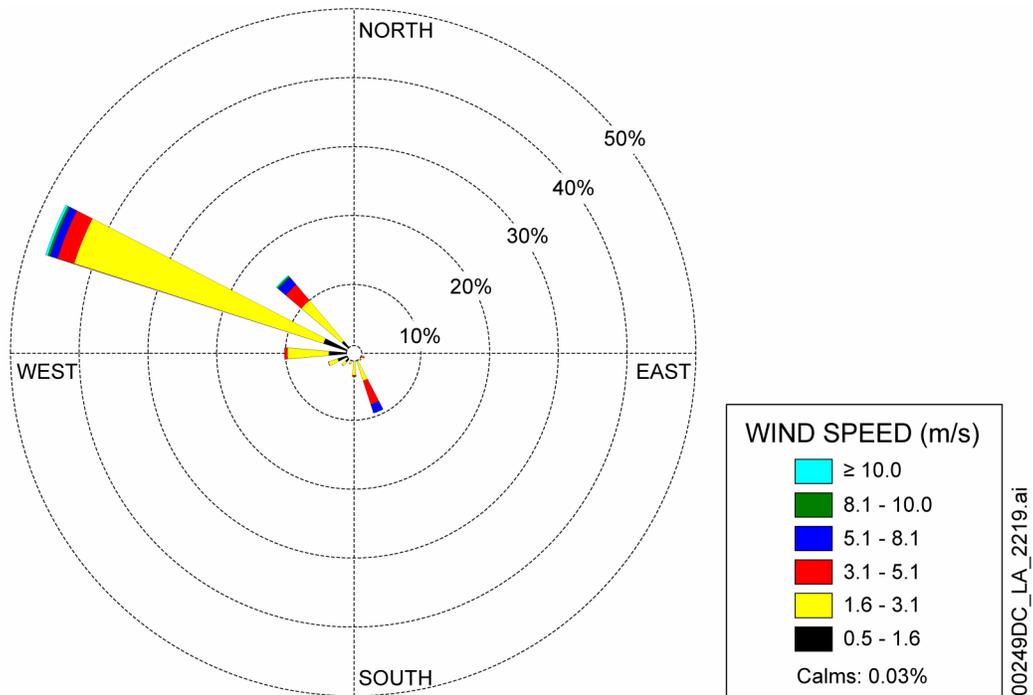


Figure 1.1-29. Wind Rose for Site 3 at 10 m above Ground Level for Night Hours (1994 to 1998)

NOTE: Hours used: 99.7% (21,676 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-8.

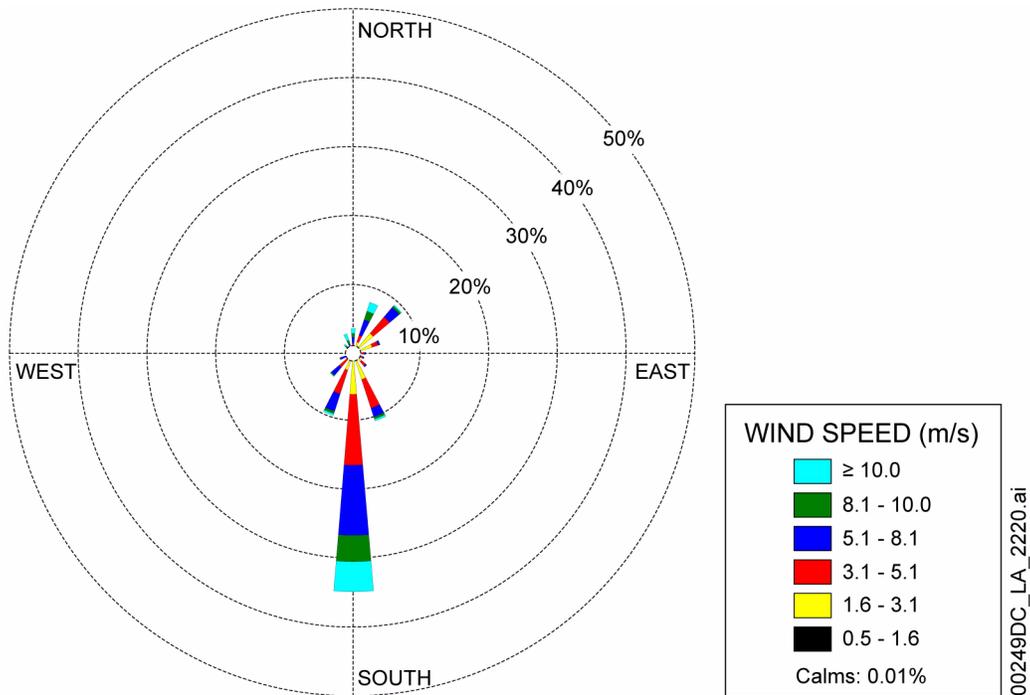


Figure 1.1-30. Wind Rose for Site 4 at 10 m above Ground Level for Daylight Hours (1994 to 2006)

NOTE: Hours used: 99.6% (57,178 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-9.

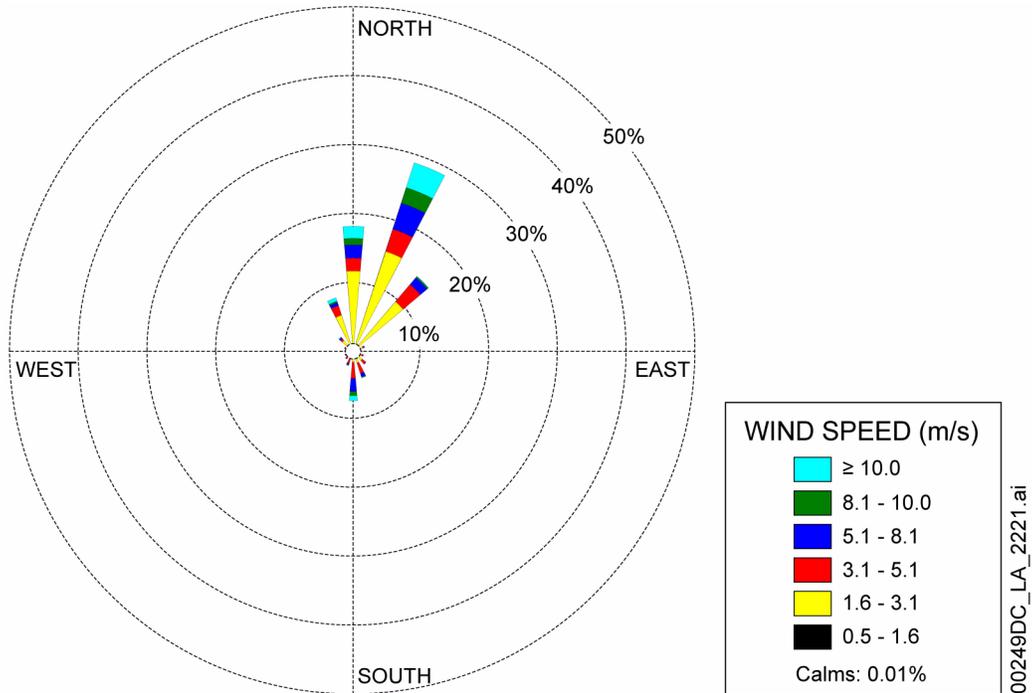


Figure 1.1-31. Wind Rose for Site 4 at 10 m above Ground Level for Night Hours (1994 to 2006)

NOTE: Hours used: 99.8% (56,440 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-10.

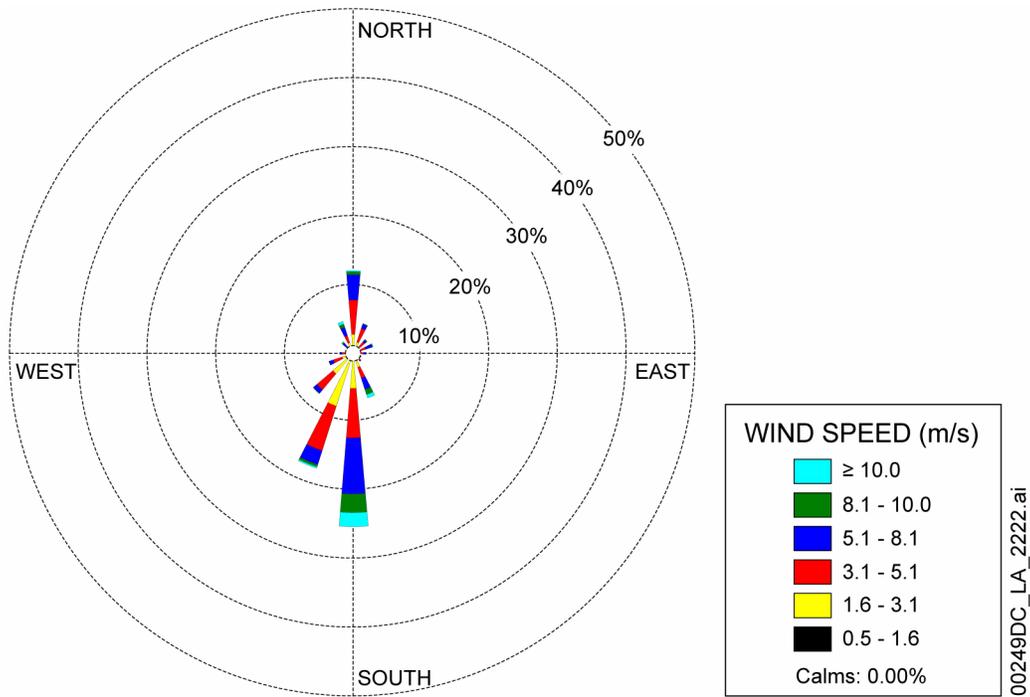


Figure 1.1-32. Wind Rose for Site 5 at 10 m above Ground Level for Daylight Hours (1994 to 1998)

NOTE: Hours used: 99.1% (21,880 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-11.

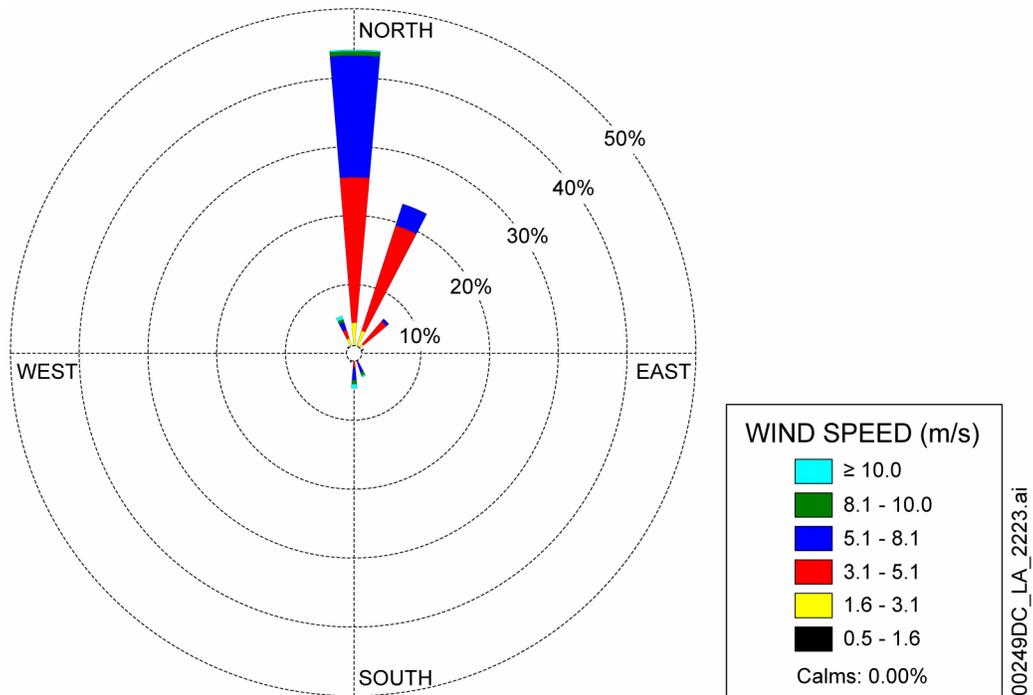


Figure 1.1-33. Wind Rose for Site 5 at 10 m above Ground Level for Night Hours (1994 to 1998)

NOTE: Hours used: 99.5% (21,637 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-12.

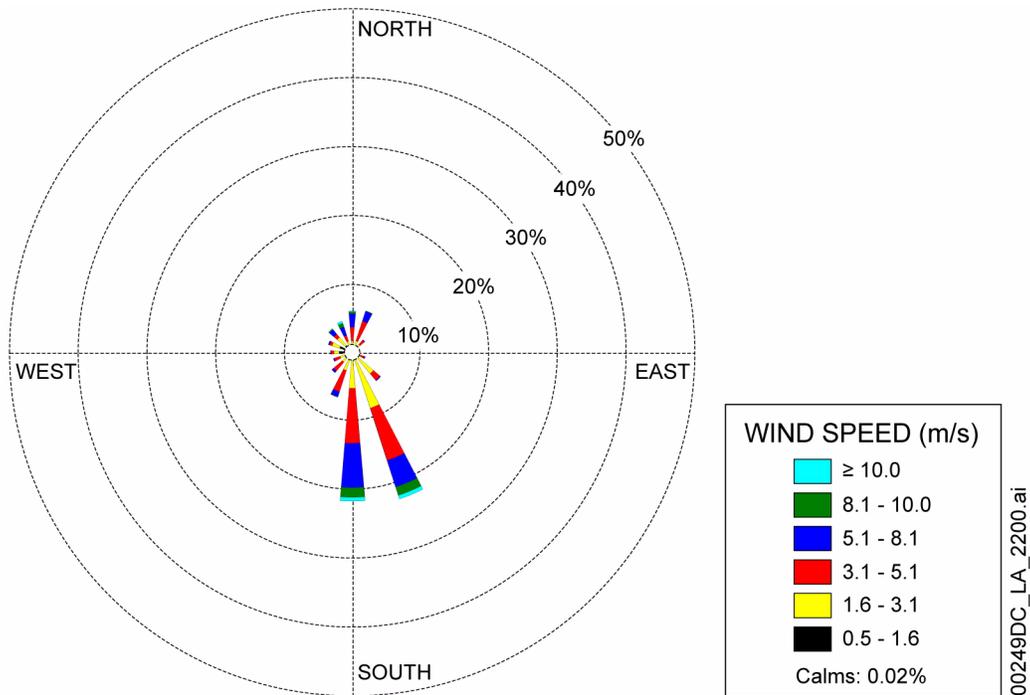


Figure 1.1-34. Wind Rose for Site 7 at 10 m above Ground Level for Daylight Hours (1994 to 1998)

NOTE: Hours used: 99.6% (21,990 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-13.

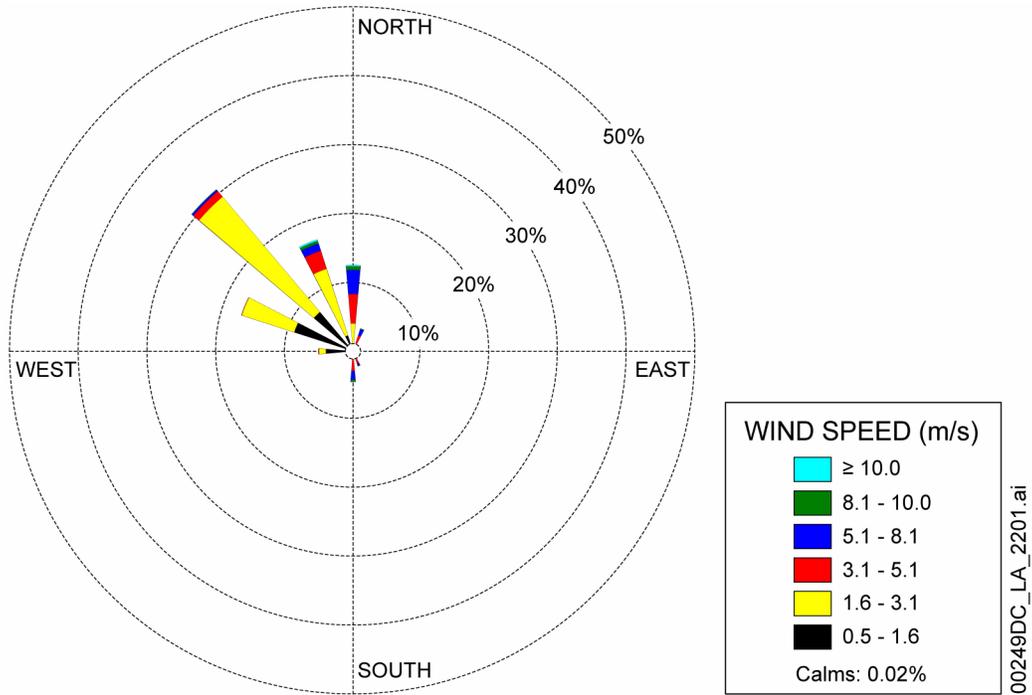


Figure 1.1-35. Wind Rose for Site 7 at 10 m above Ground Level for Night Hours (1994 to 1998)

NOTE: Hours used: 99.9% (21,742 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-14.

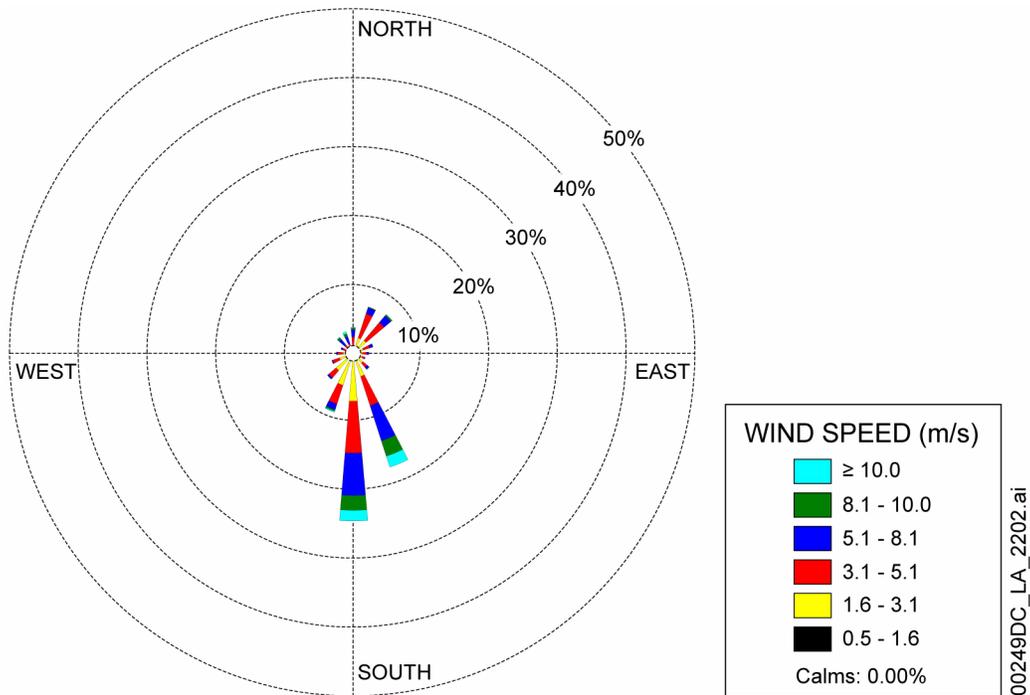


Figure 1.1-36. Wind Rose for Site 9 at 10 m above Ground Level for Daylight Hours (1994 to 2006)

NOTE: Hours used: 98.3% (56,450 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-15.

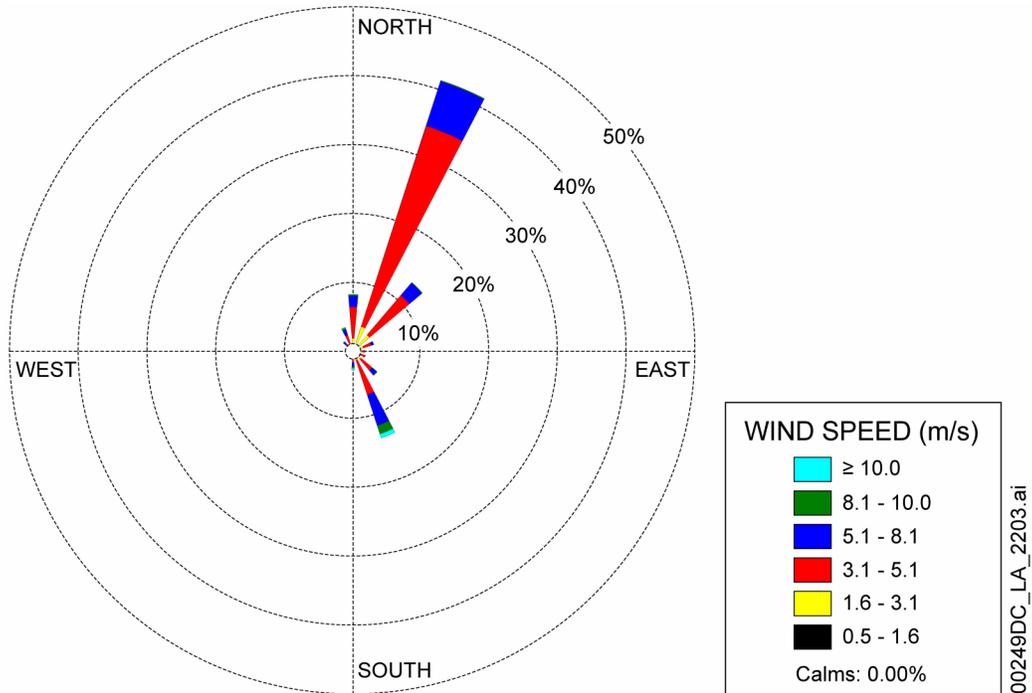


Figure 1.1-37. Wind Rose for Site 9 at 10 m above Ground Level for Night Hours (1994 to 2006)

NOTE: Hours used: 98.8% (55,878 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure F-16.

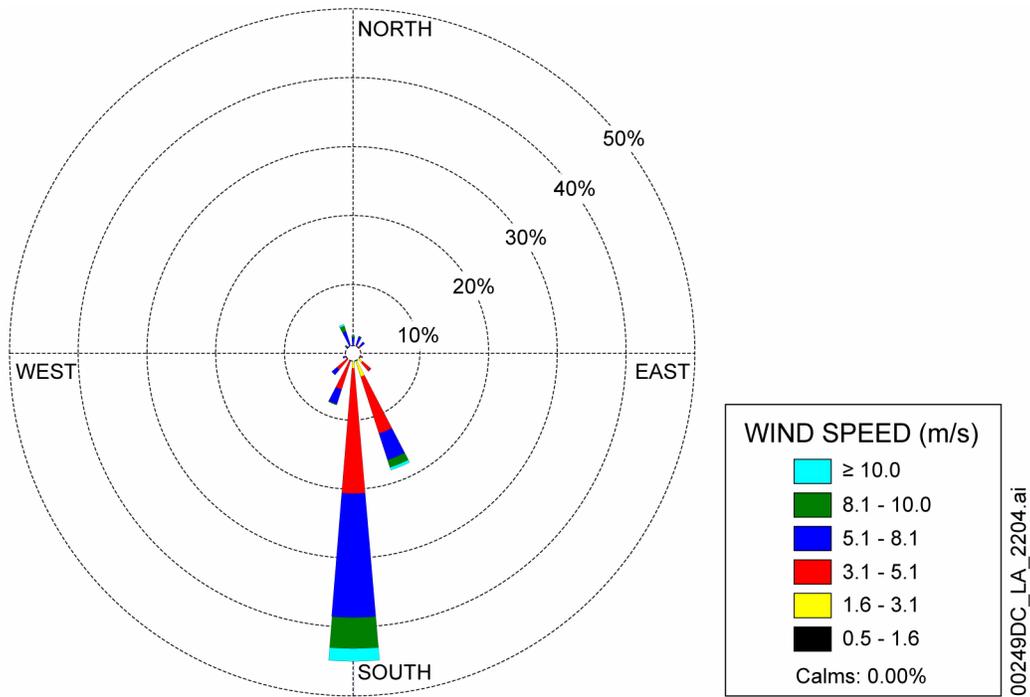


Figure 1.1-38. Wind Rose for Stability Category A at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.6% (20,000 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-1.

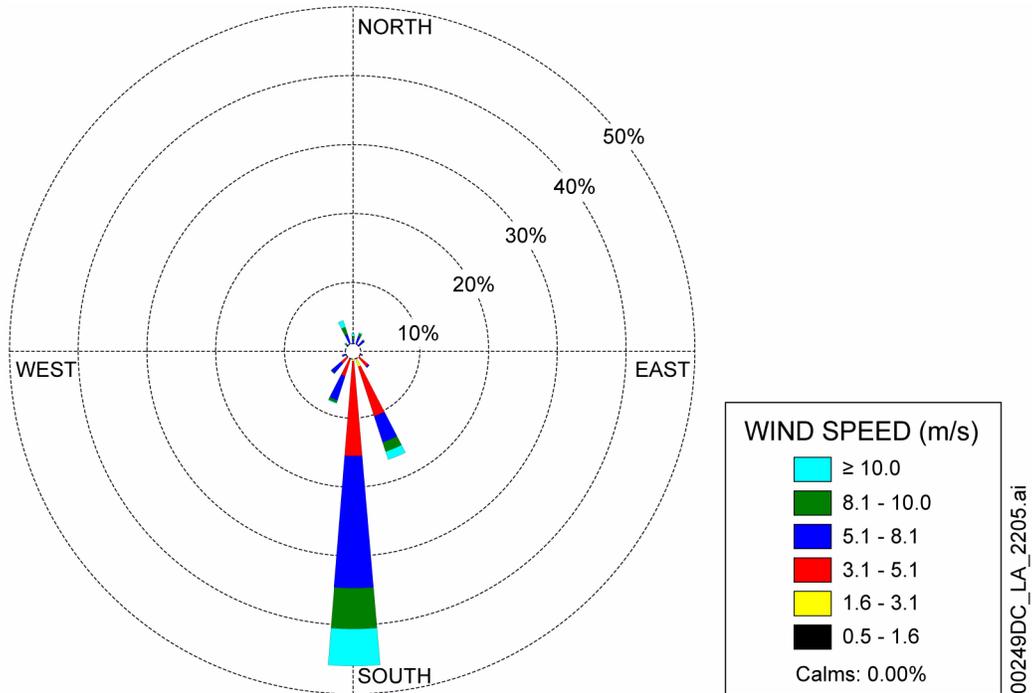


Figure 1.1-39. Wind Rose for Stability Category A at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.2% (19,724 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-2.

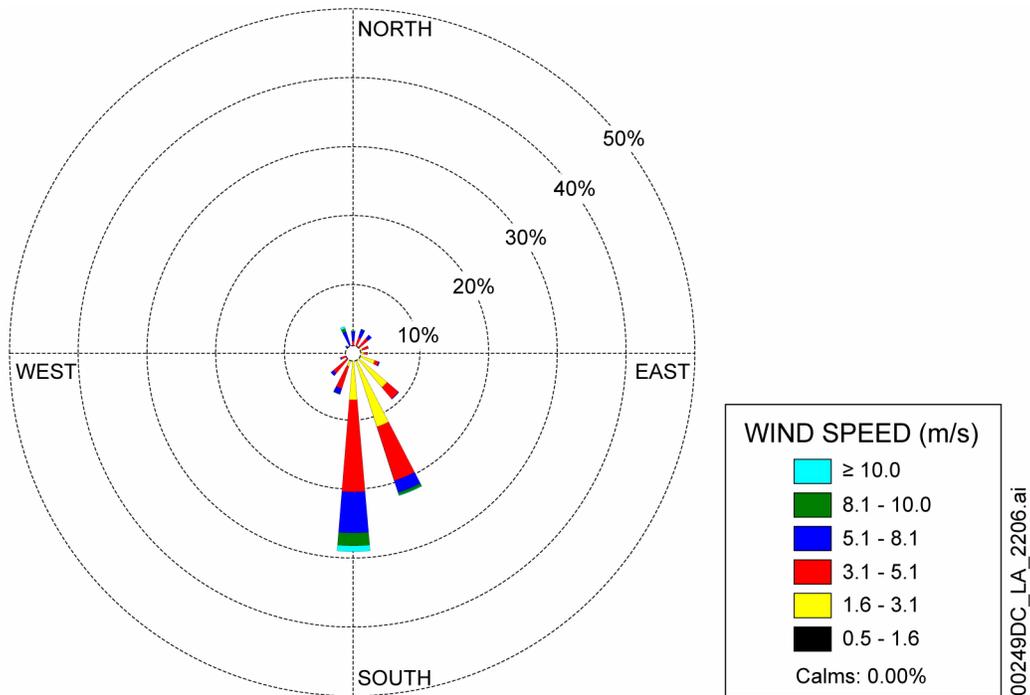


Figure 1.1-40. Wind Rose for Stability Category B at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.8% (5,417 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-3.

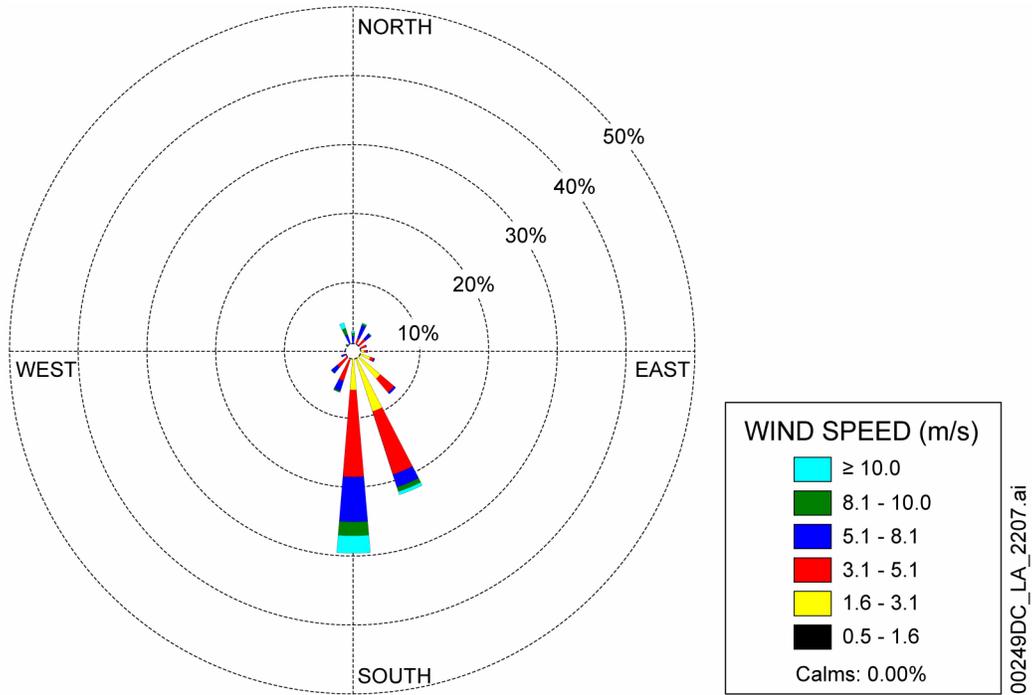


Figure 1.1-41. Wind Rose for Stability Category B at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.8% (5,360 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-4.

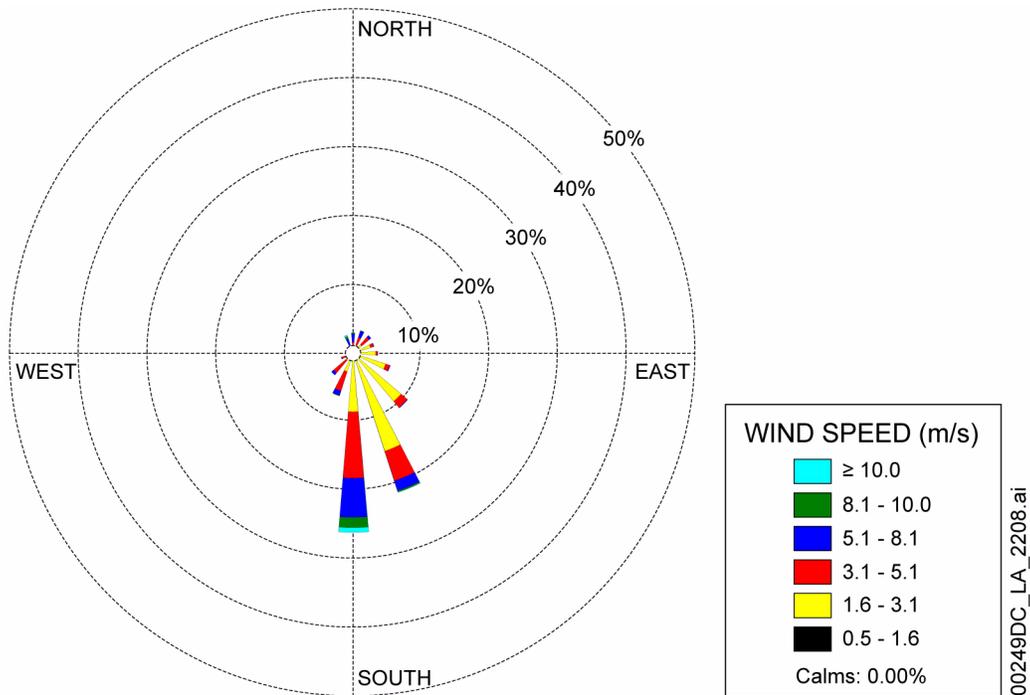


Figure 1.1-42. Wind Rose for Stability Category C at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.7% (5,322 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-5.

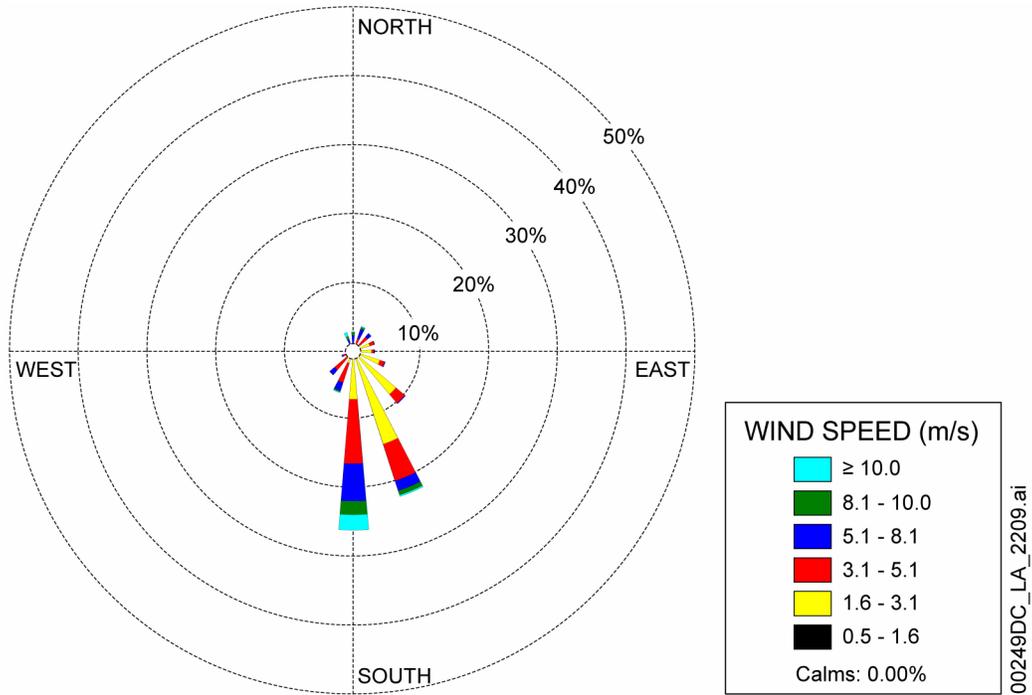


Figure 1.1-43. Wind Rose for Stability Category C at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.7% (5,269 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-6.

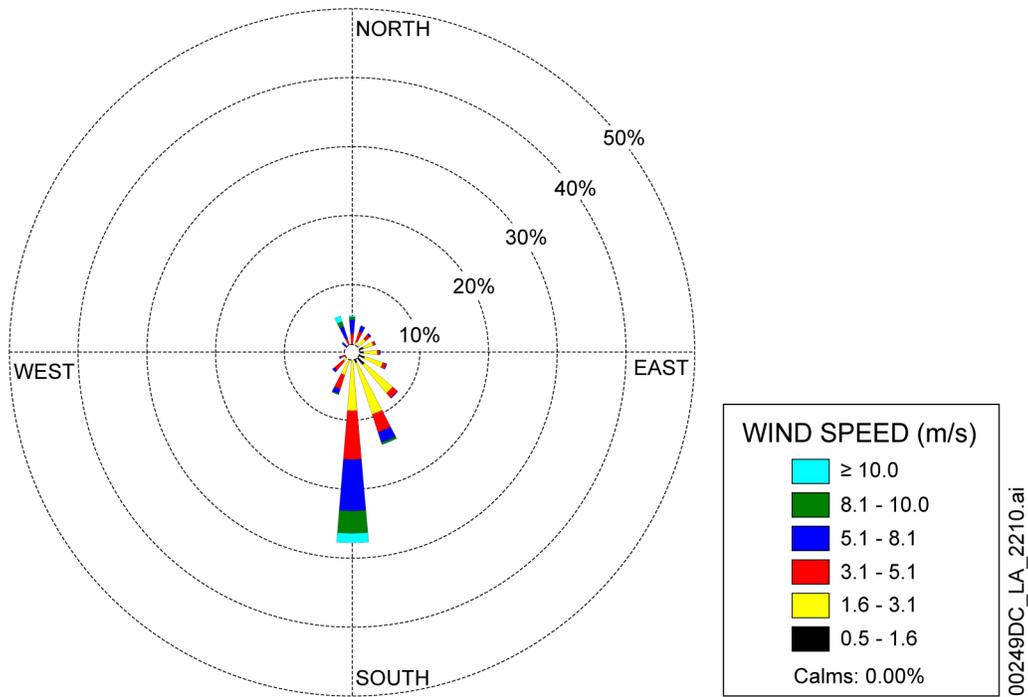


Figure 1.1-44. Wind Rose for Stability Category D at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.4% (16,004 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-7.

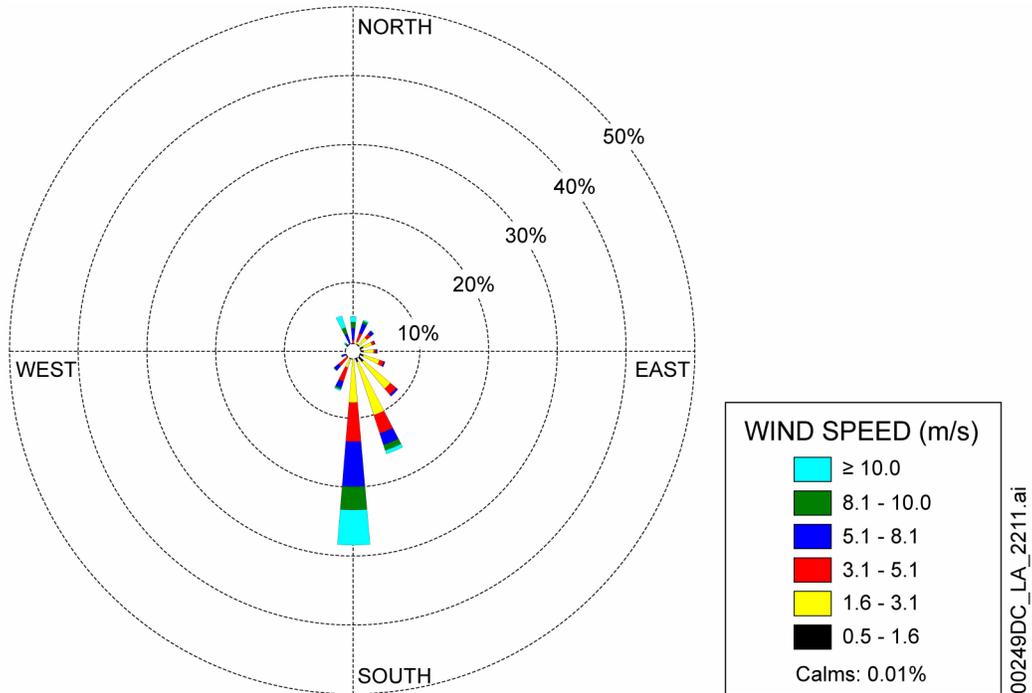


Figure 1.1-45. Wind Rose for Stability Category D at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.9% (15,920 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-8.

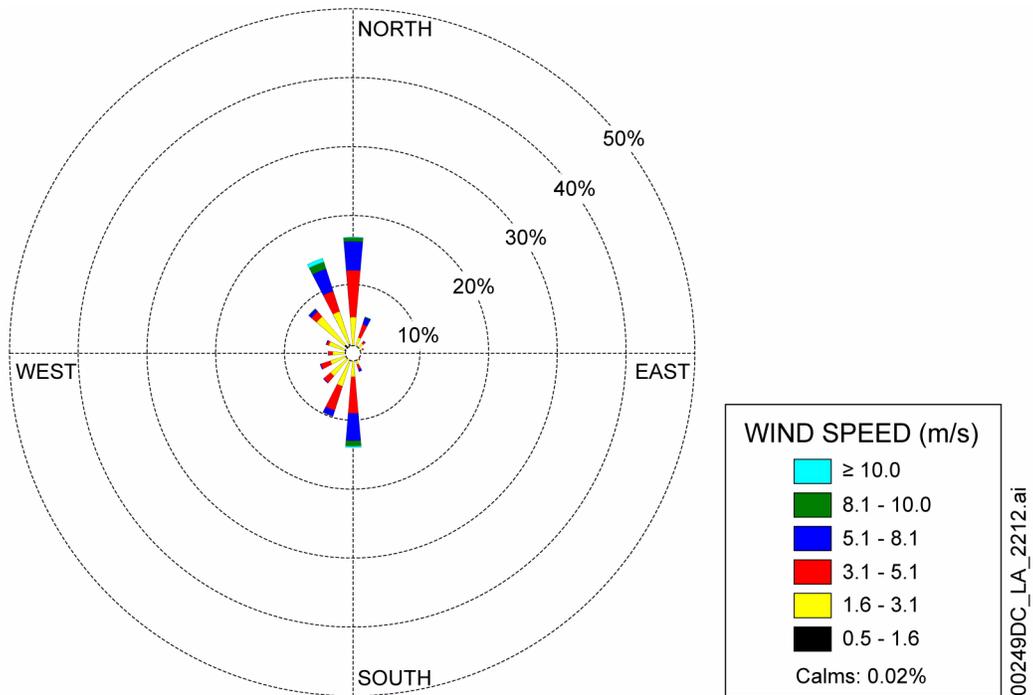


Figure 1.1-46. Wind Rose for Stability Category E at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.3% (23,772 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-9.

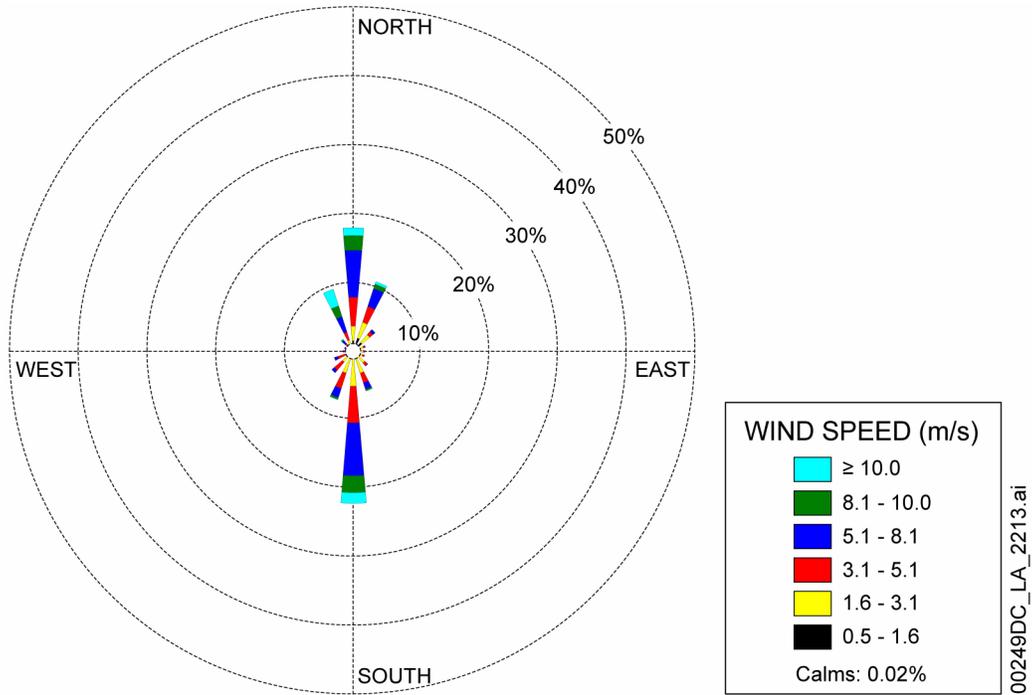


Figure 1.1-47. Wind Rose for Stability Category E at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.8% (23,660 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-10.

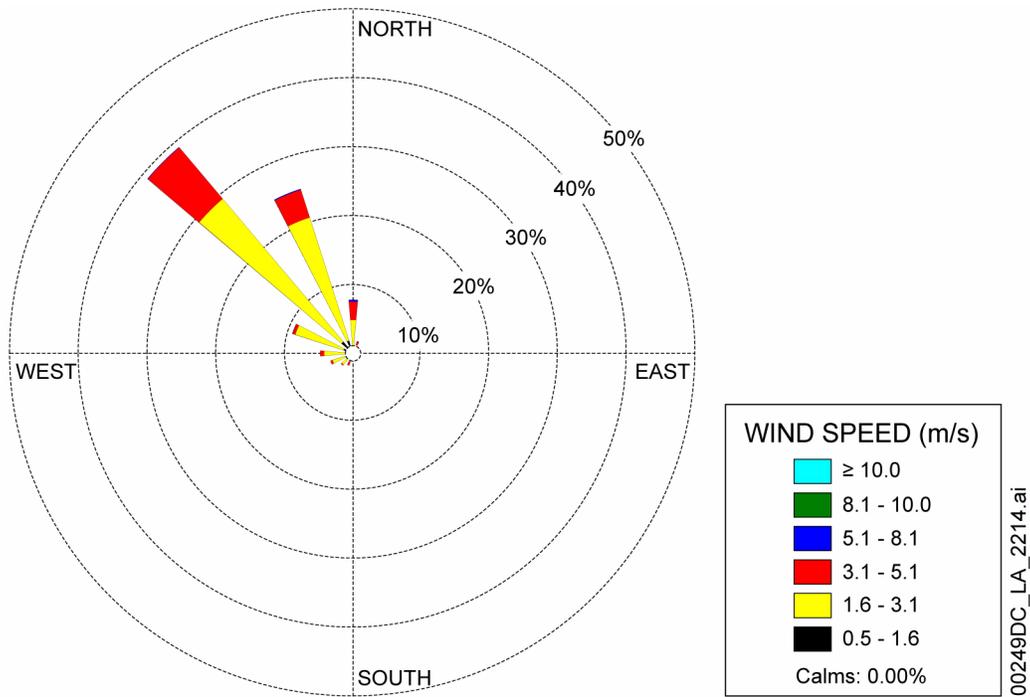


Figure 1.1-48. Wind Rose for Stability Category F at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.7% (22,481 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-11.

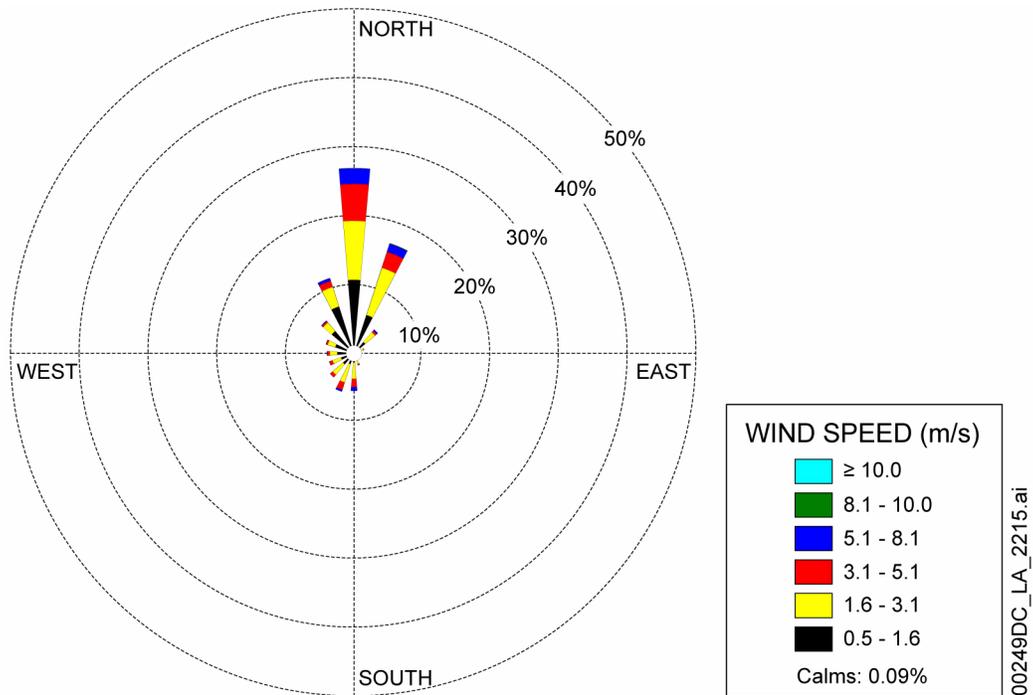


Figure 1.1-49. Wind Rose for Stability Category F at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.9% (22,318 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-12.

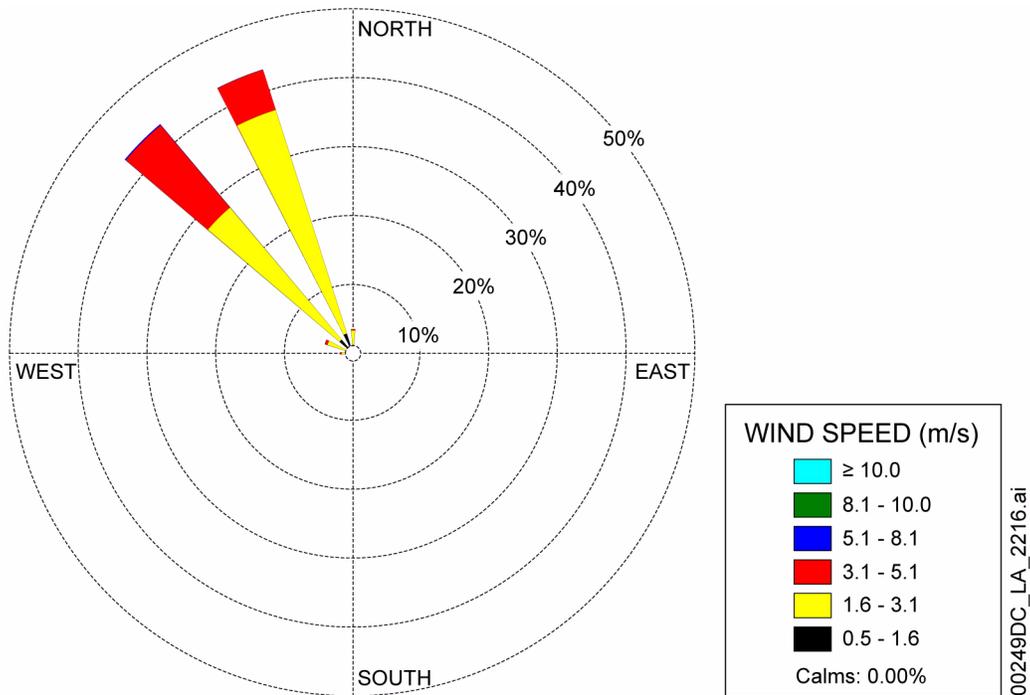


Figure 1.1-50. Wind Rose for Stability Category G at Site 1 at 10 m above Ground Level (1994 to 2006)

NOTE: Hours used: 99.7% (14,795 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-13.

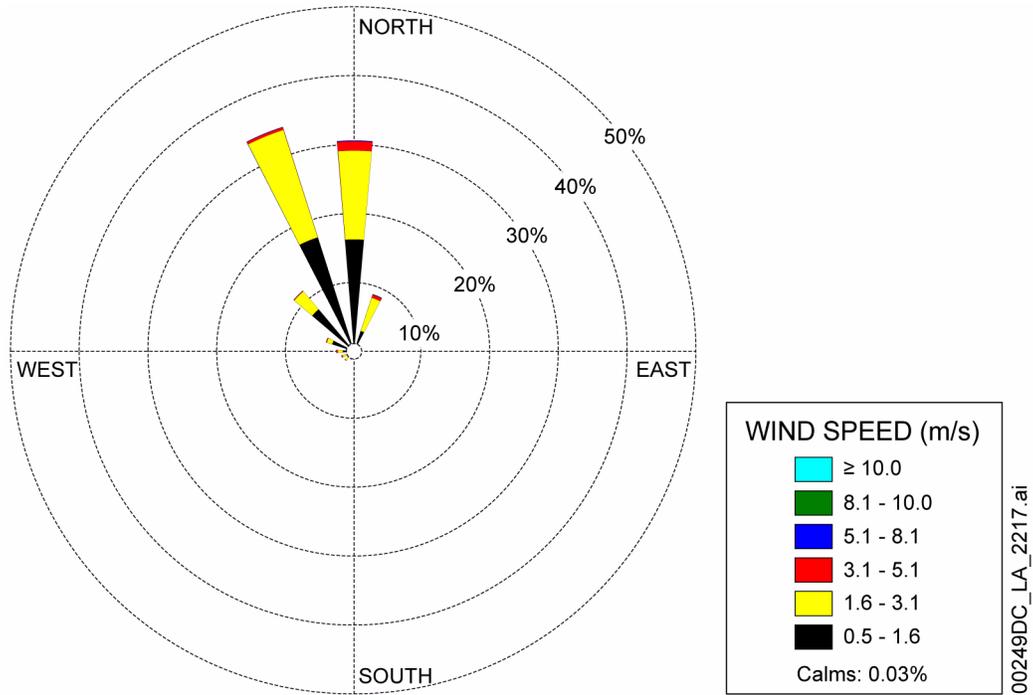


Figure 1.1-51. Wind Rose for Stability Category G at Site 1 at 60 m above Ground Level (1994 to 2006)

NOTE: Hours used: 98.7% (14,655 hours). Display: Wind direction (blowing from). Wind speeds are equal to or greater than the lower limit and are less than the upper limit.

Source: BSC 2007e, Figure G-14.

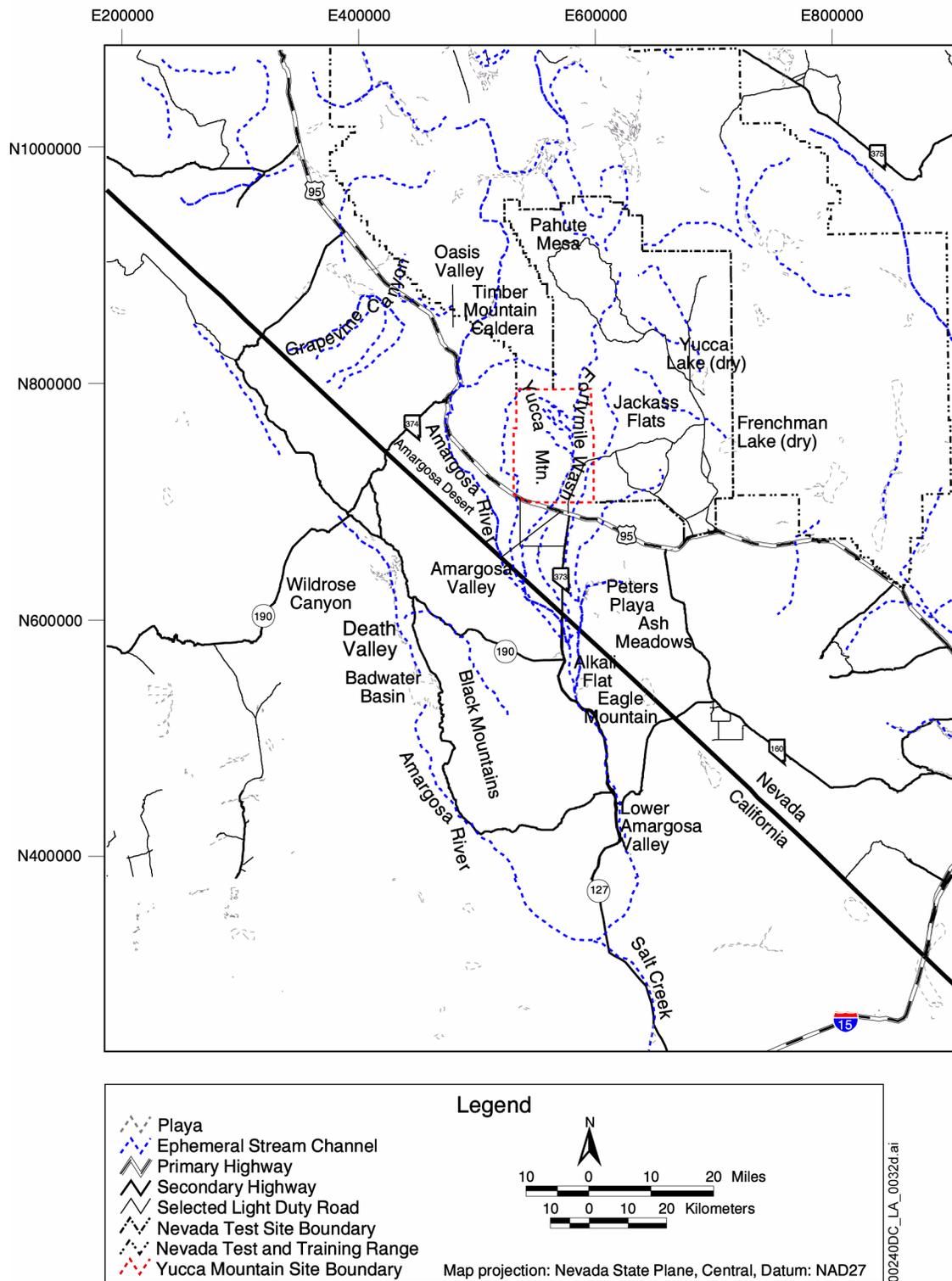
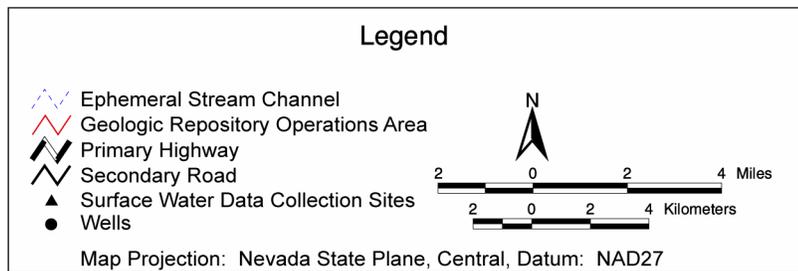
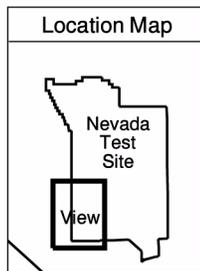
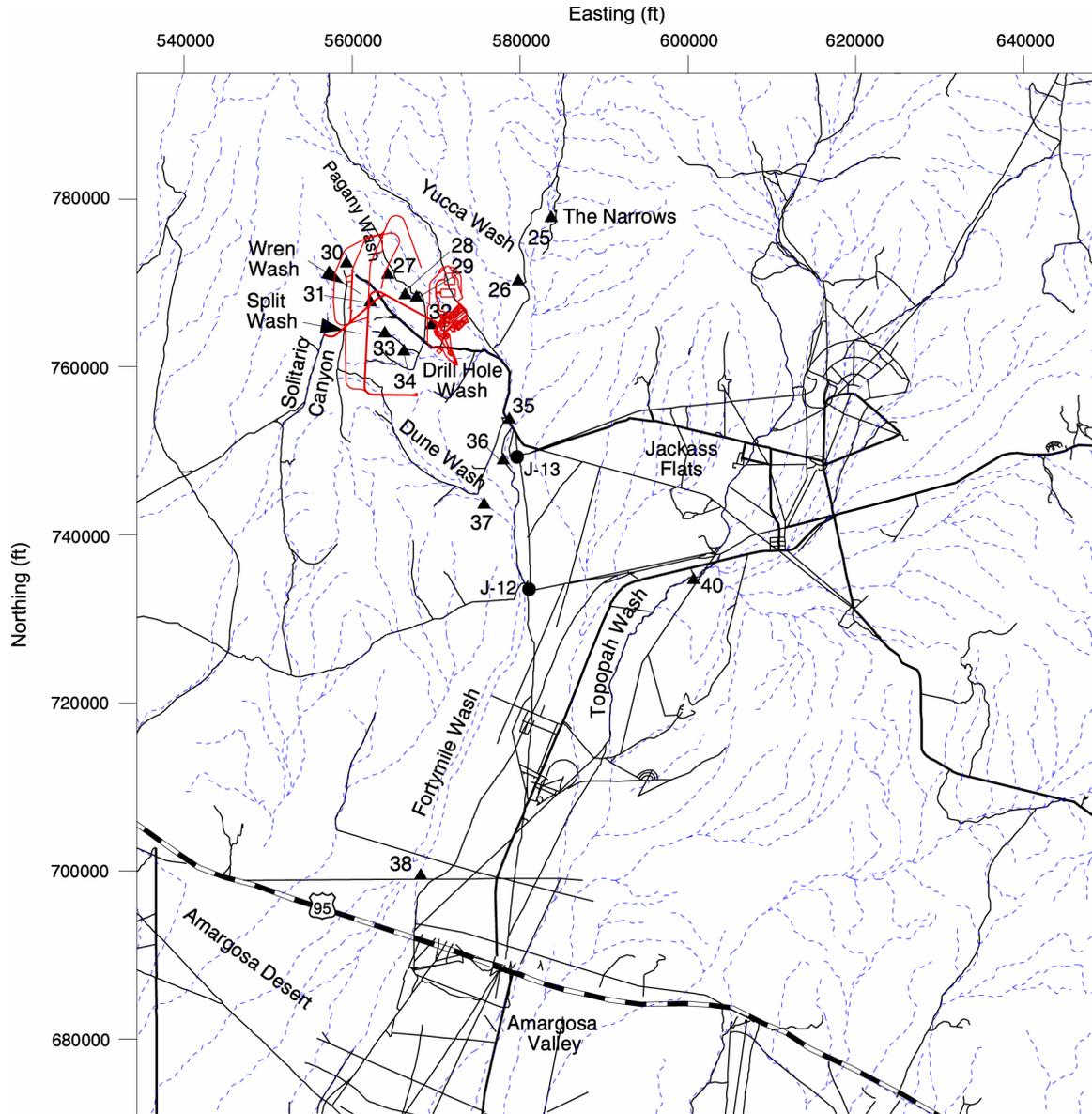


Figure 1.1-52. Surface Water Features in the Yucca Mountain Region



00240DC_LA_0033g.ai

Figure 1.1-53. Surface Water Data Collection Sites Near Yucca Mountain

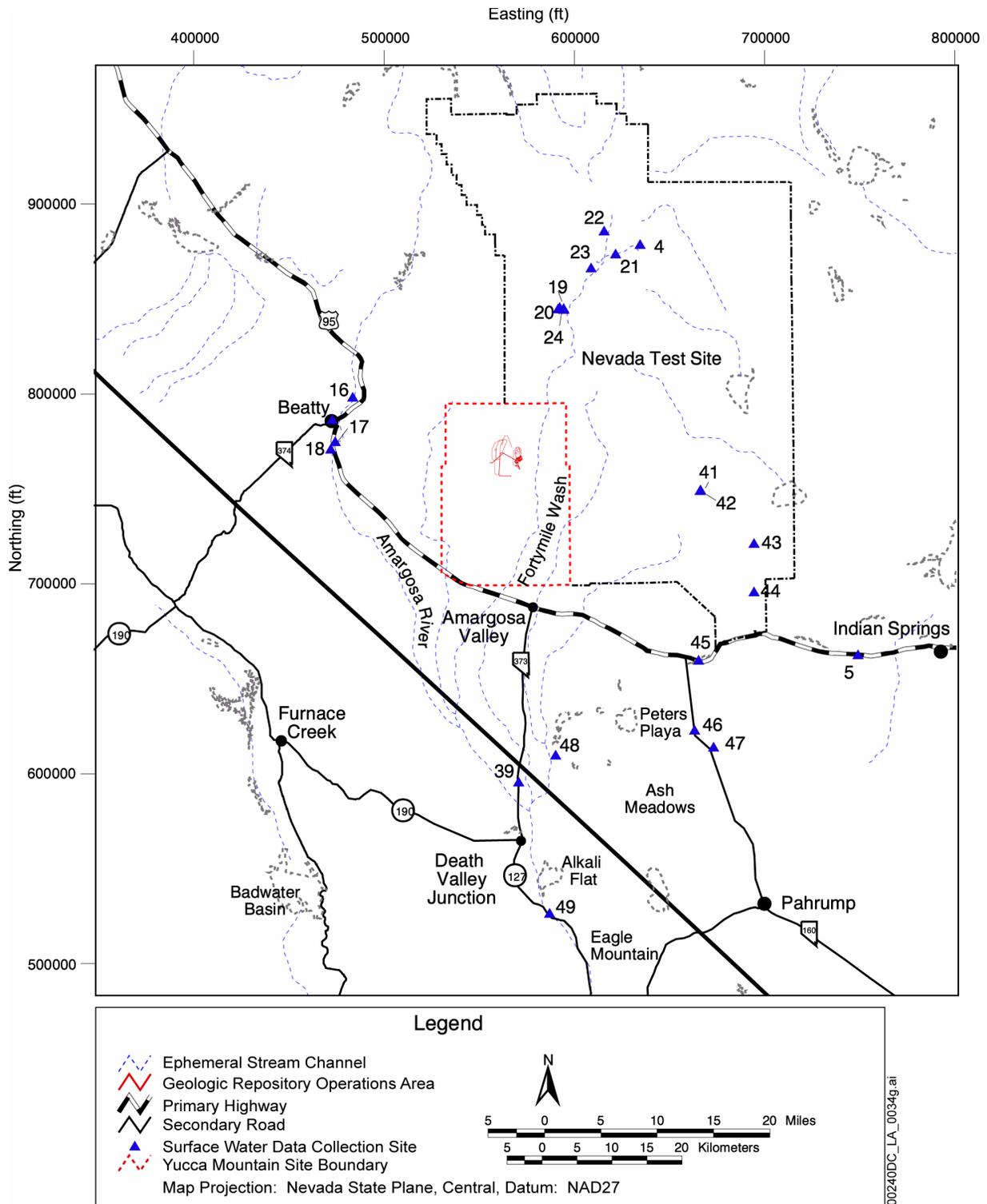


Figure 1.1-54. Surface Water Data Collection Sites in the Yucca Mountain Vicinity

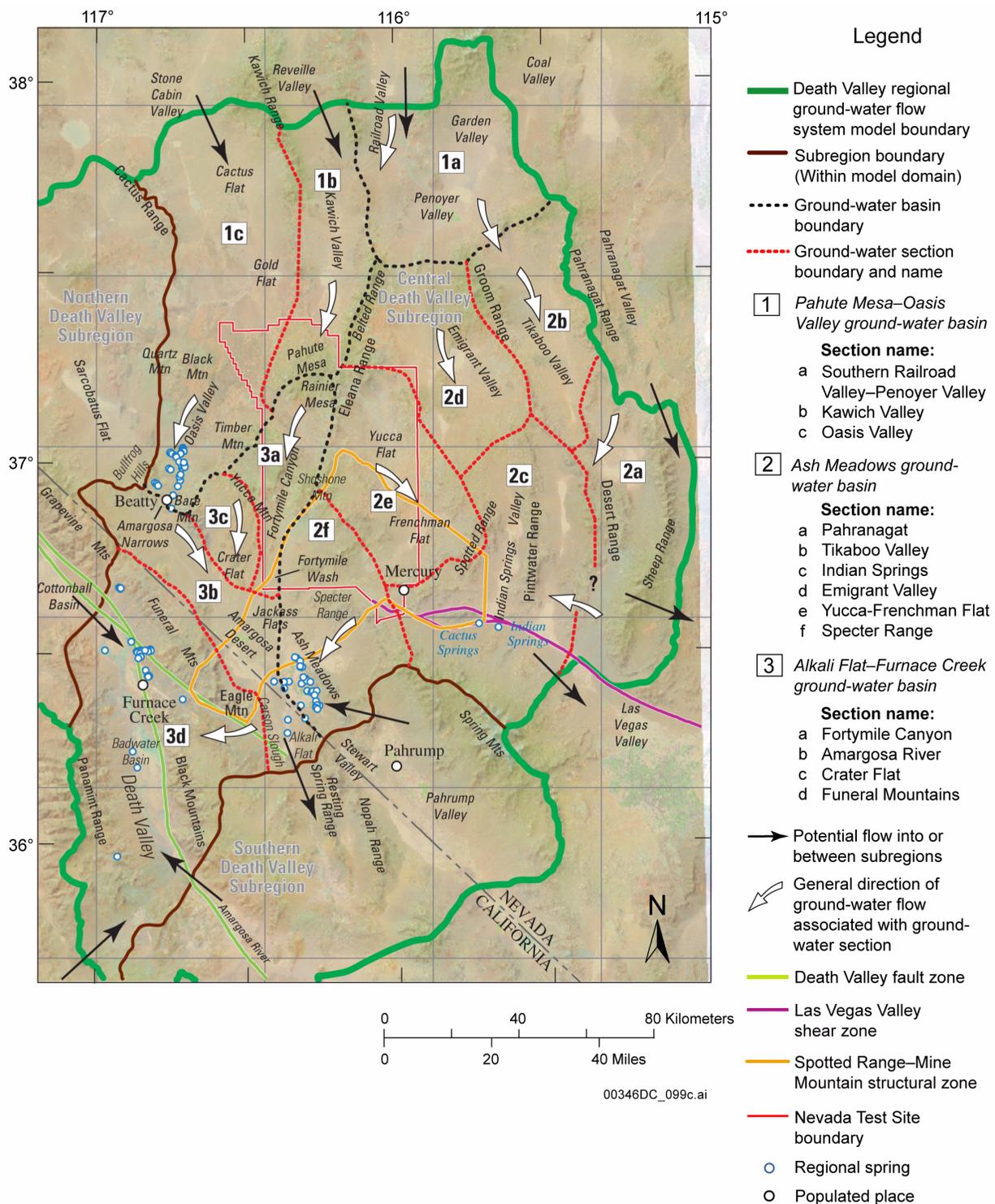
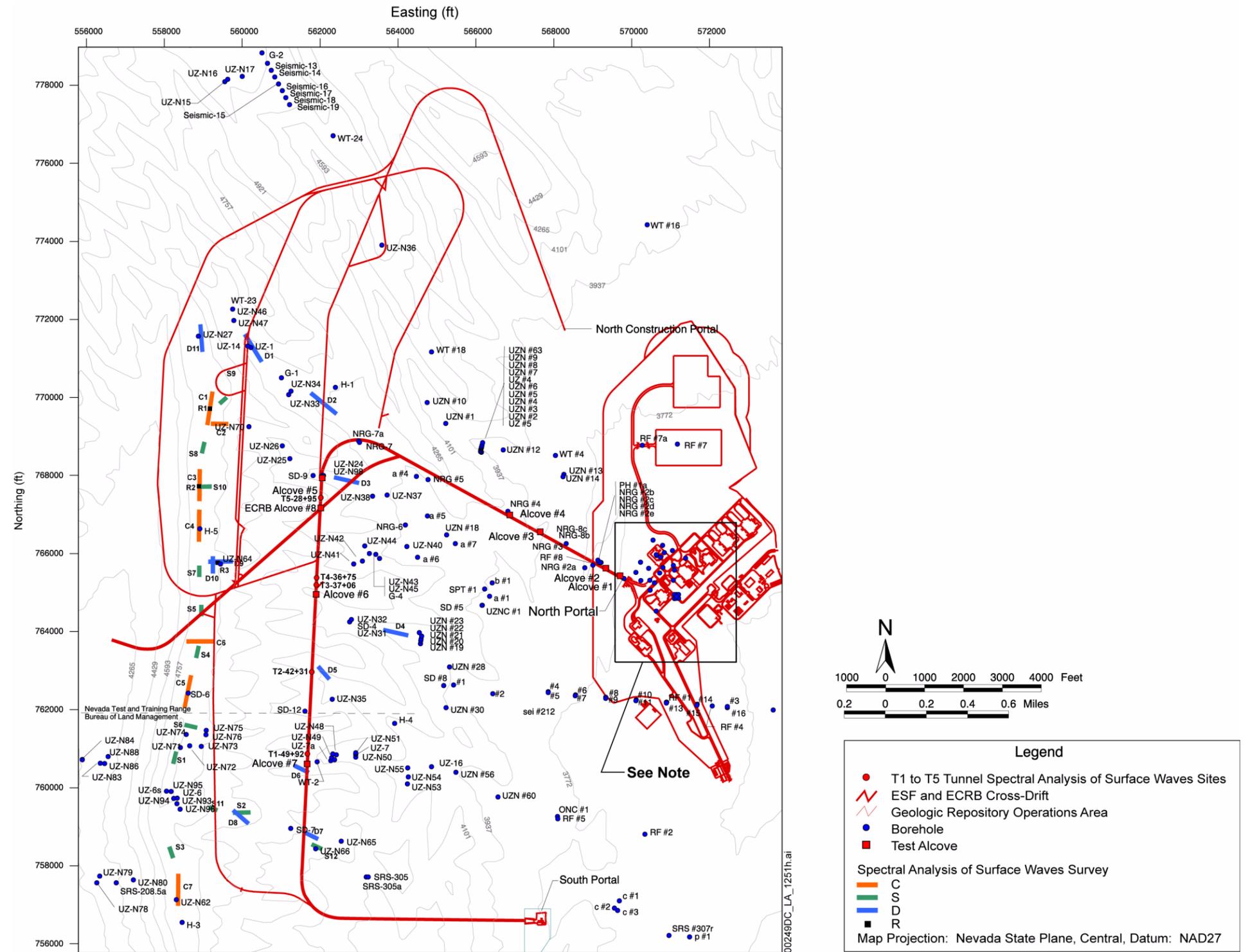


Figure 1.1-55. Inferred Groundwater Flow Paths in the Central Death Valley Subregion

NOTE: The central Death Valley subregion is one of three subregions identified in the Death Valley regional flow model.

Source: Belcher 2004, Figure D-7.

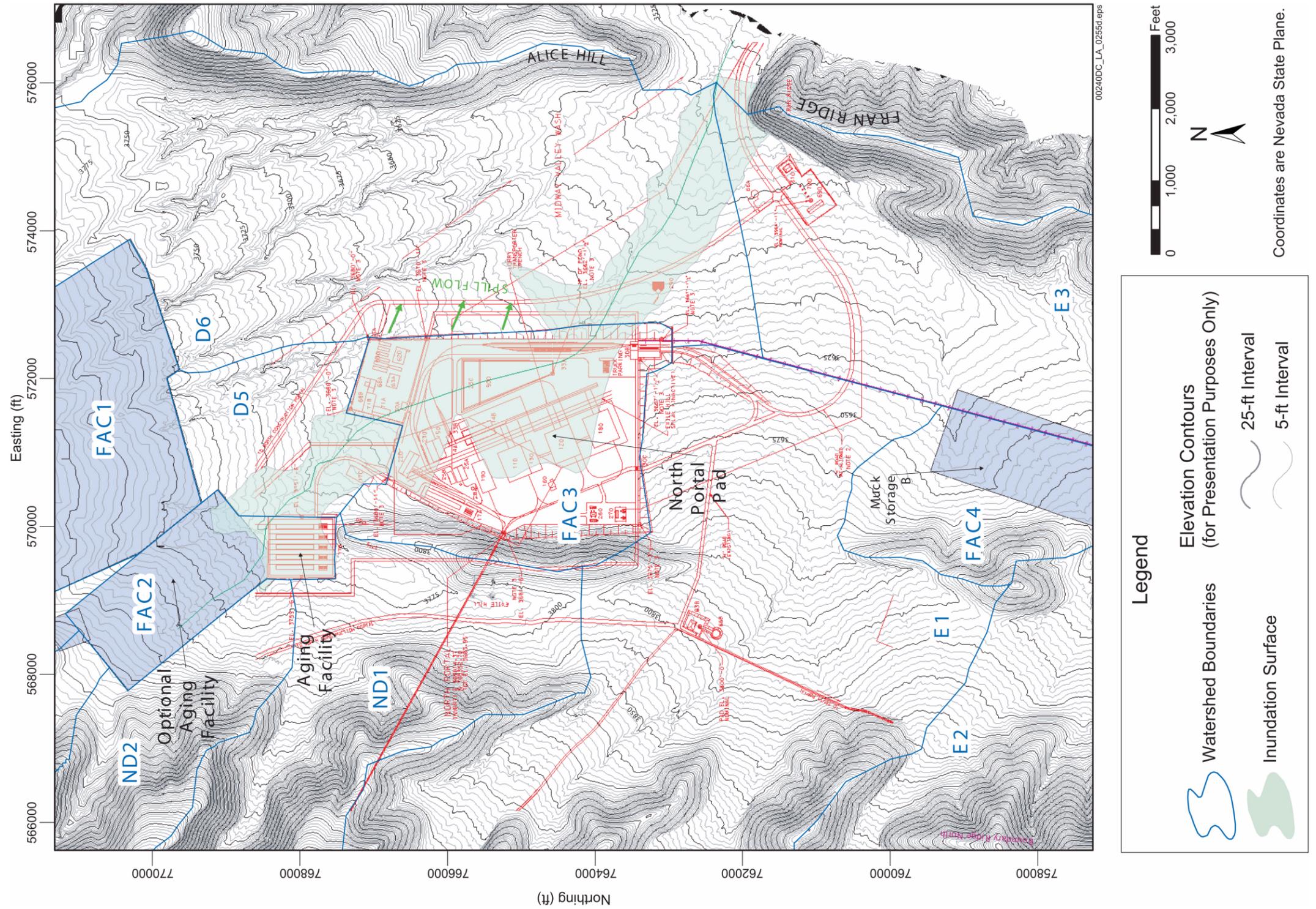


NOTE: Area is shown in detail in Figures 1.1-141 and 1.1-145.

Source: BSC 2002b, Figures 144 and 157; BSC 2005d, Figure I-1.

Figure 1.1-56. Locations of Pre-2004 Exploration Relative to Exploratory Studies Facility and Repository

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NOTE: Facility layout shown is obsolete and does not represent current facility layout. Figure is intended to only present the probable maximum flood scenario without mitigation and to illustrate the inundation surface at the surface GROA vicinity. Flood mitigation for current site layout is shown in Figure 1.2.2-7. D5, D6, E1, E2, E3, FAC1, FAC2, FAC3, FAC4, ND1, and ND2 are names used for watersheds in the probable maximum flood calculation.

Figure 1.1-57. Inundation Surface for No-Mitigation Scenario

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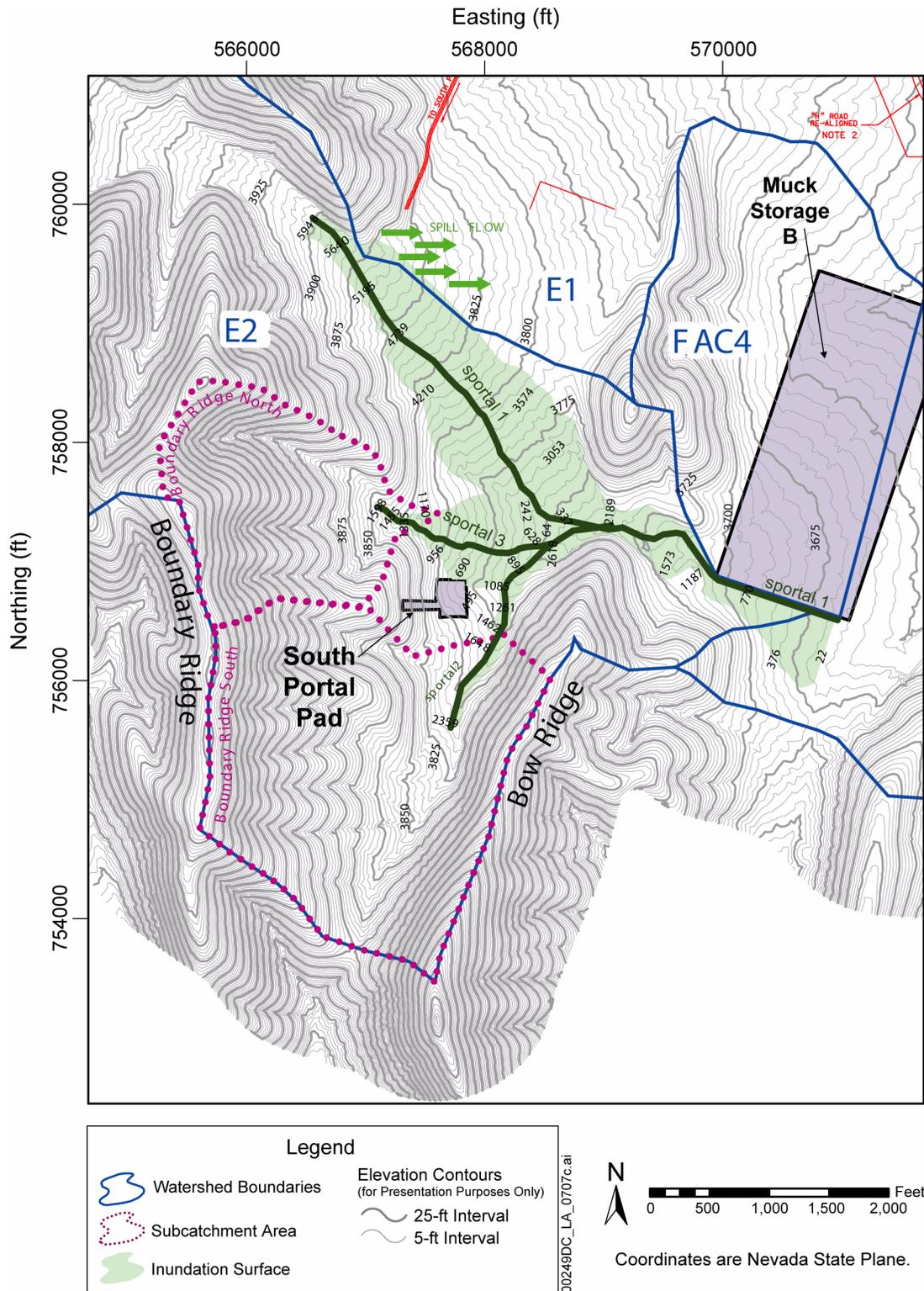


Figure 1.1-58. Inundation Surface around South Portal

NOTE: E1, E2, and FAC4 are the names used for the watersheds in the probable maximum flood calculation.

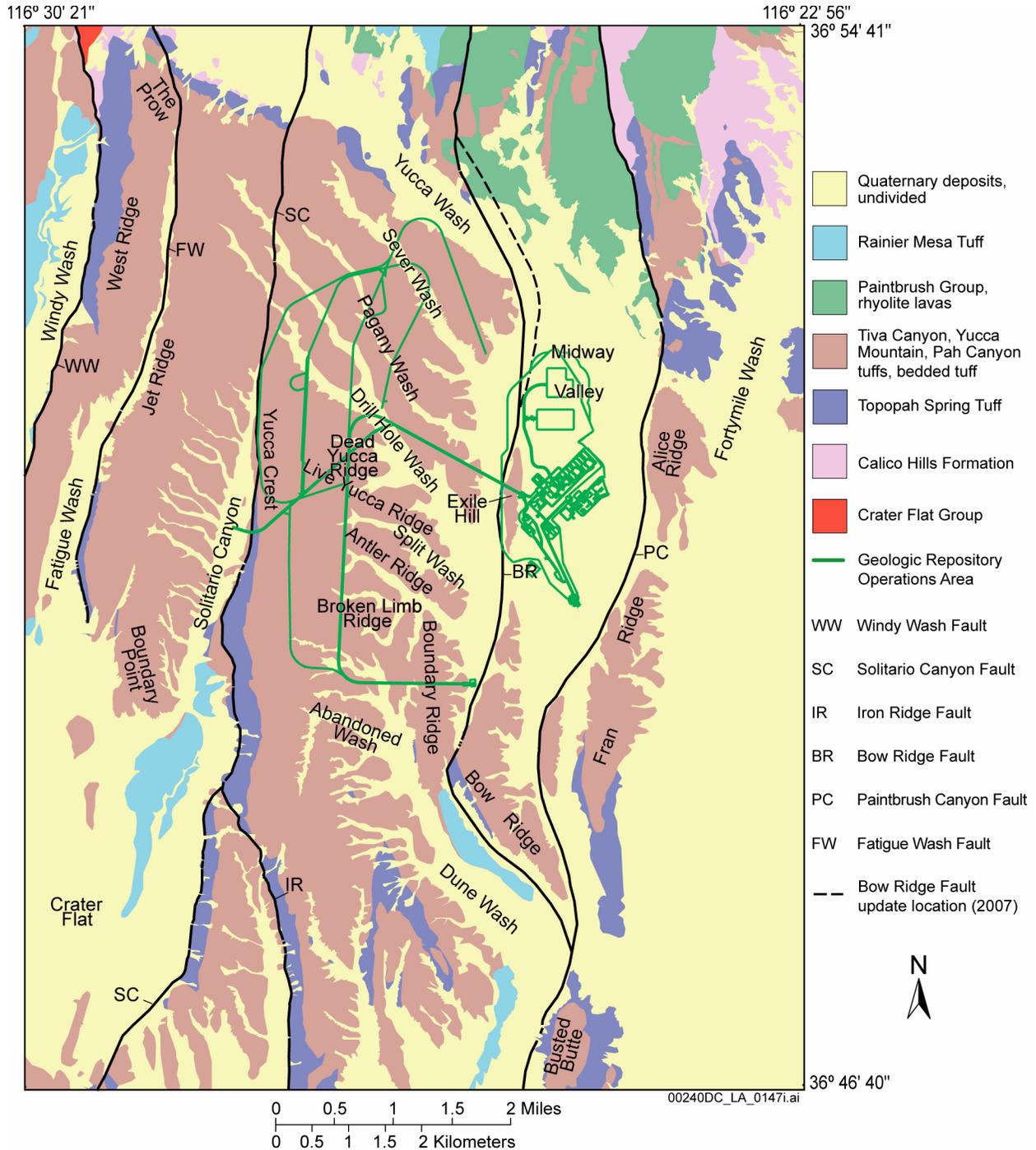


Figure 1.1-59. Generalized Geologic Map of Yucca Mountain Repository Area

NOTE: Major faults are shown with solid lines, although large segments of some are concealed or inferred beneath Quaternary deposits. Recent geotechnical drilling investigations in Midway Valley indicate that the location of the Bow Ridge Fault is further to the east in the vicinity of the aging pads (Orrell 2007). The Bow Ridge Fault location update is shown with a dashed line.

Source: Potter et al. 2002; Day, Dickerson et al. 1998; BSC 2004I, Figure 6-2.

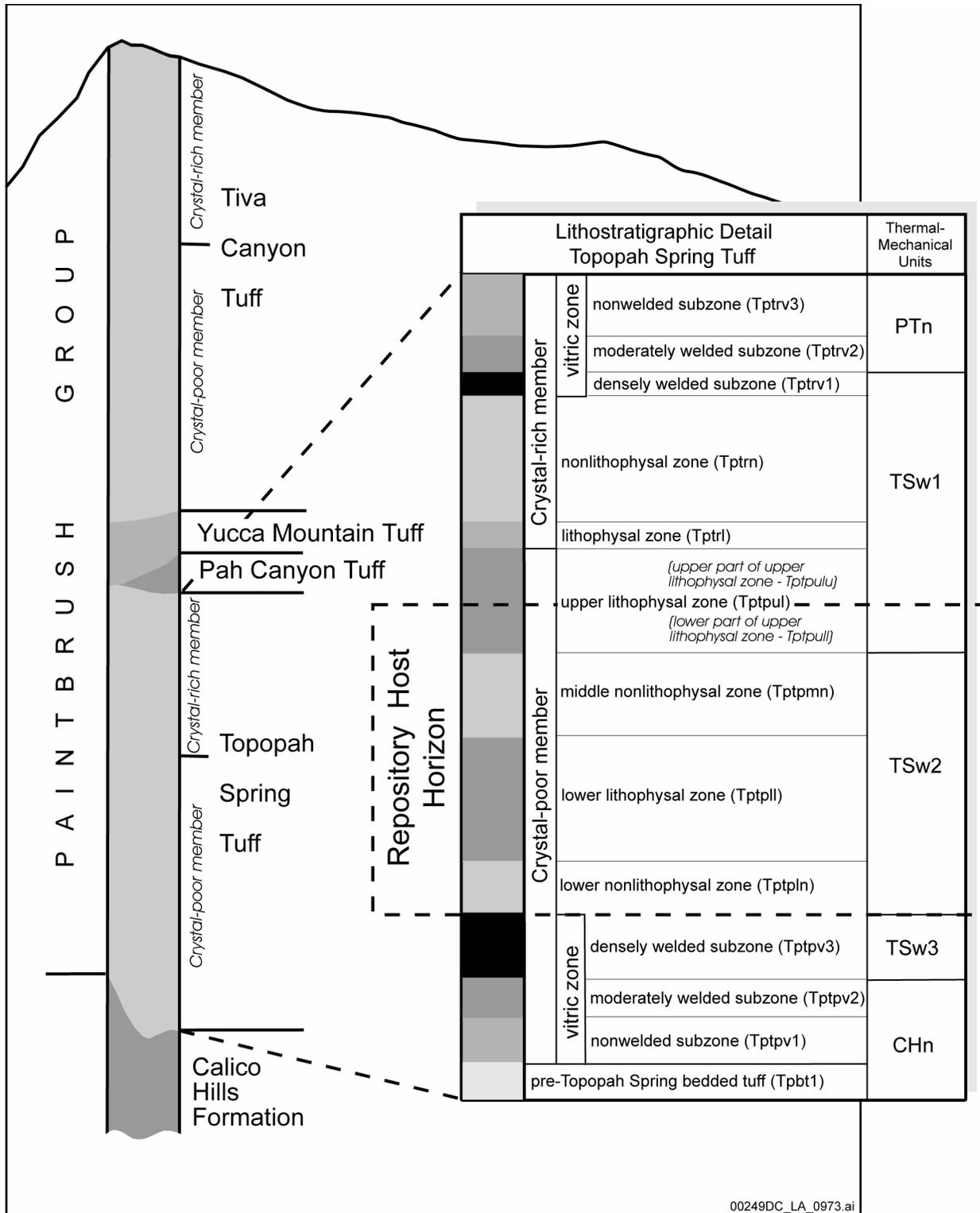


Figure 1.1-60. Stratigraphic Column with Lithostratigraphic Detail for the Repository Host Horizon

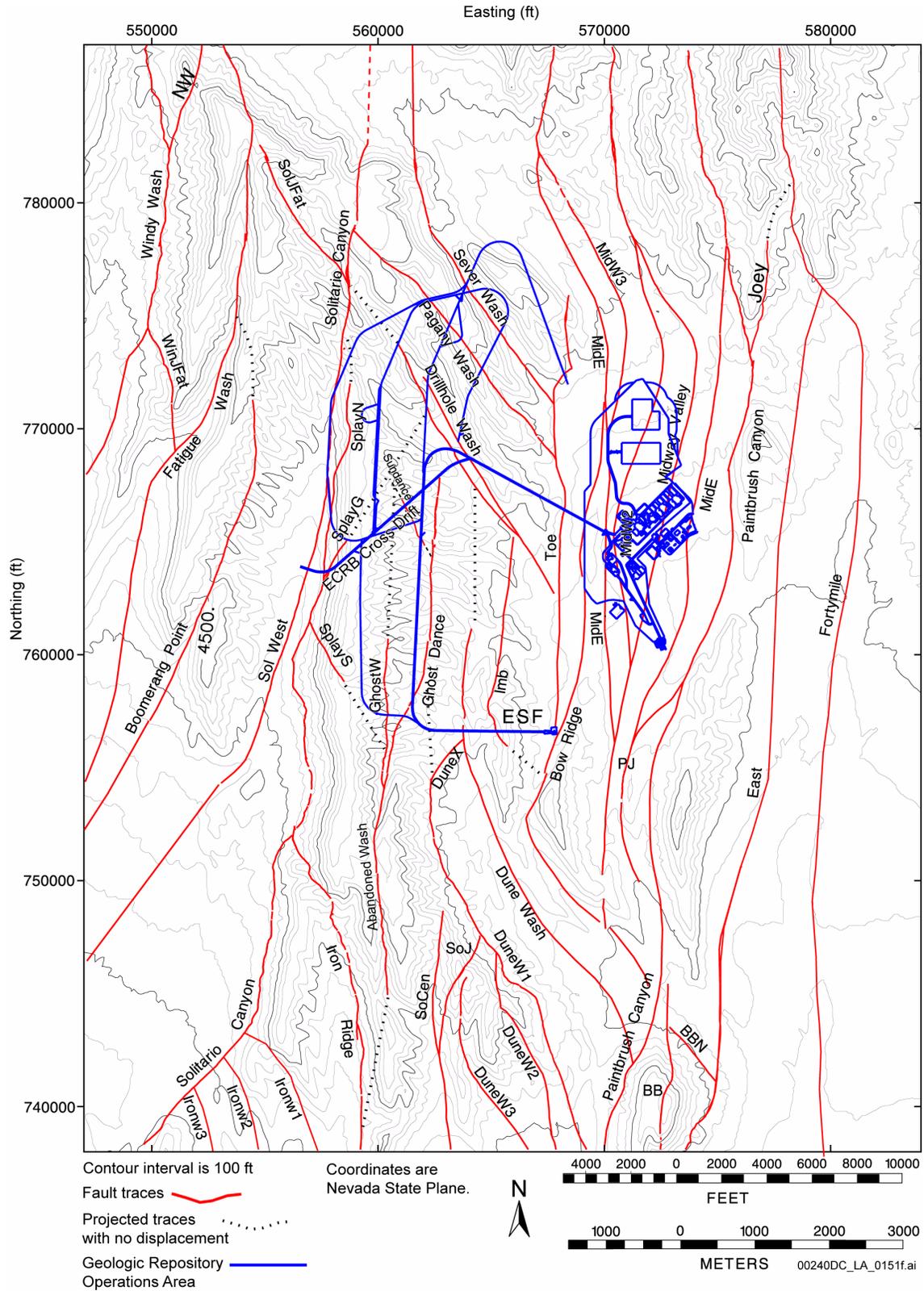


Figure 1.1-61. Fault Traces Used in the Geologic Framework Model

Source: BSC 2004I, Figure 6-2.

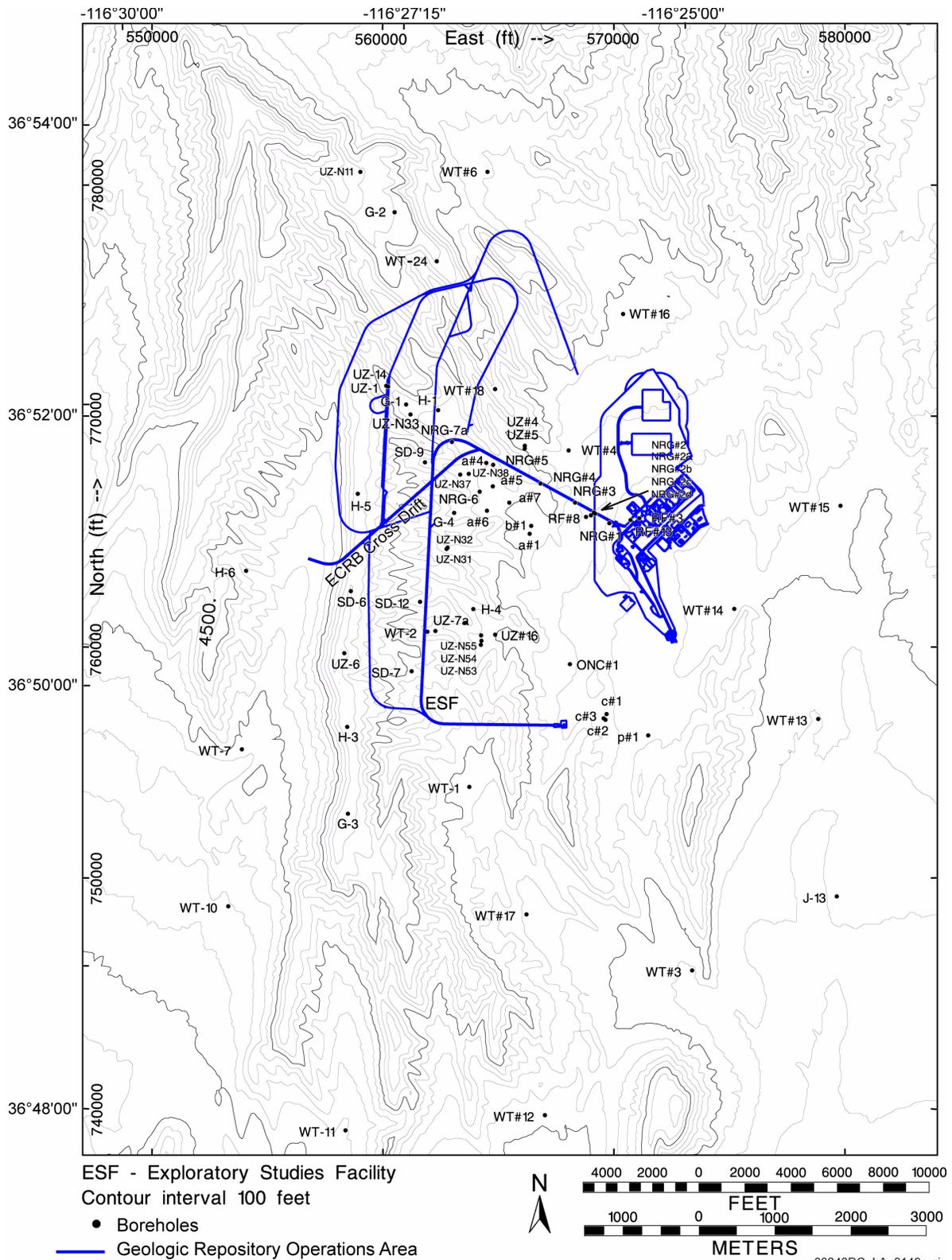


Figure 1.1-62. Locations of Boreholes

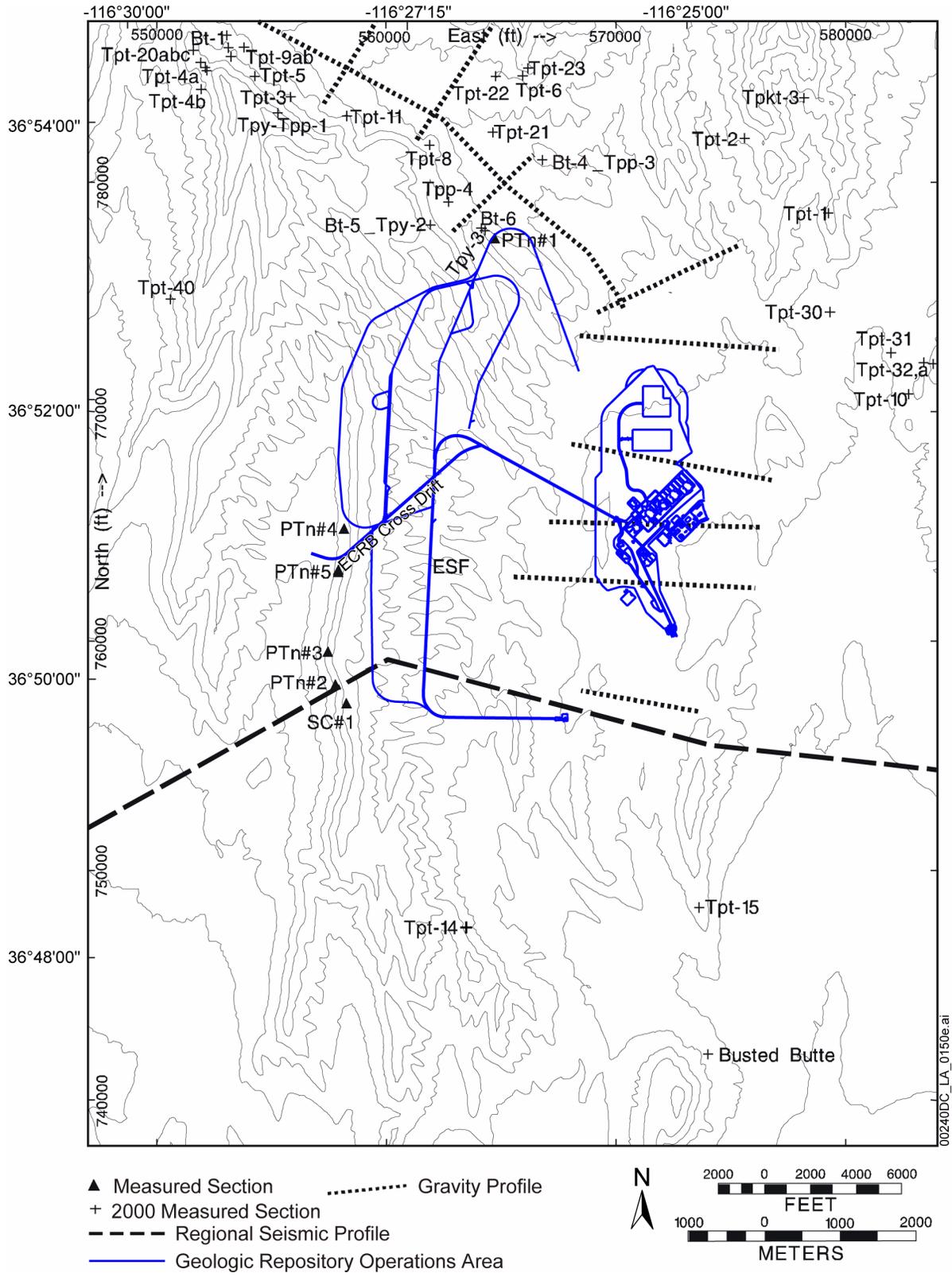
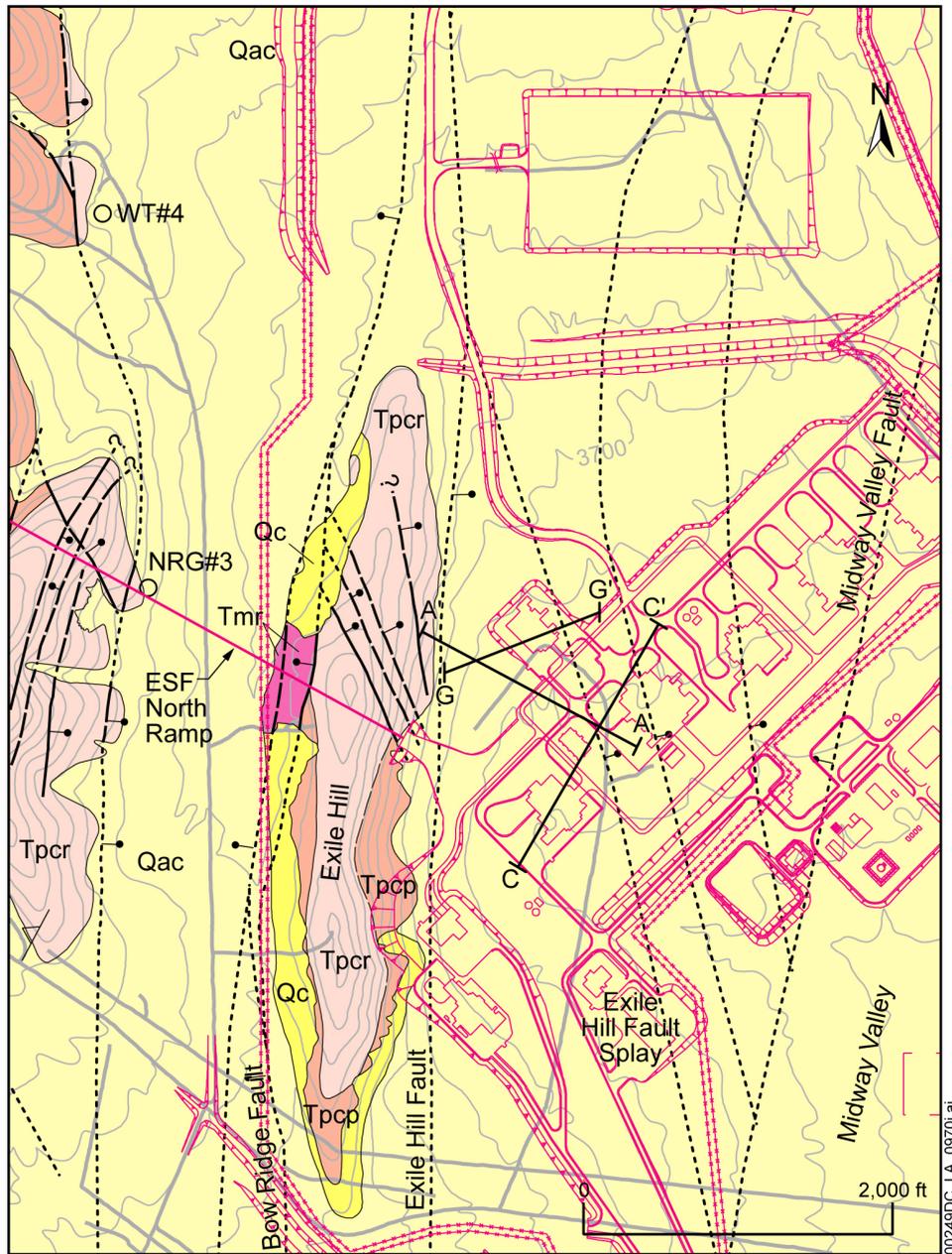


Figure 1.1-63. Locations of Measured Sections, Gravity Profiles, and Seismic Profiles



Qac Quaternary alluvial and colluvial deposits	— Exposed fault	— Unimproved road
Qc Quaternary colluvial deposits	- - - Approximate fault location	○ NRG#3 Borehole location and number
Tmr Rainier Mesa Tuff	- · - · - Fault concealed beneath Quaternary cover	— Geologic Repository Operations Area
Tpcr Tiva Canyon Tuff, crystal-rich member	? Fault inferred or uncertain	
Tpcp Tiva Canyon Tuff, crystal-poor member	⊥ Downthrown side of fault	

Figure 1.1-64. Generalized Geologic Map of the Surface Geologic Repository Operations Area, Including Exile Hill

NOTE: Cross section A-A' shown in Figure 1.1-66. Cross section C-C' shown in Figure 1.1-67. Cross section G-G' shown in Figure 1.1-65.

Source: Day, Dickerson et al. 1998; BSC 2002b, Figures 223 and 224.

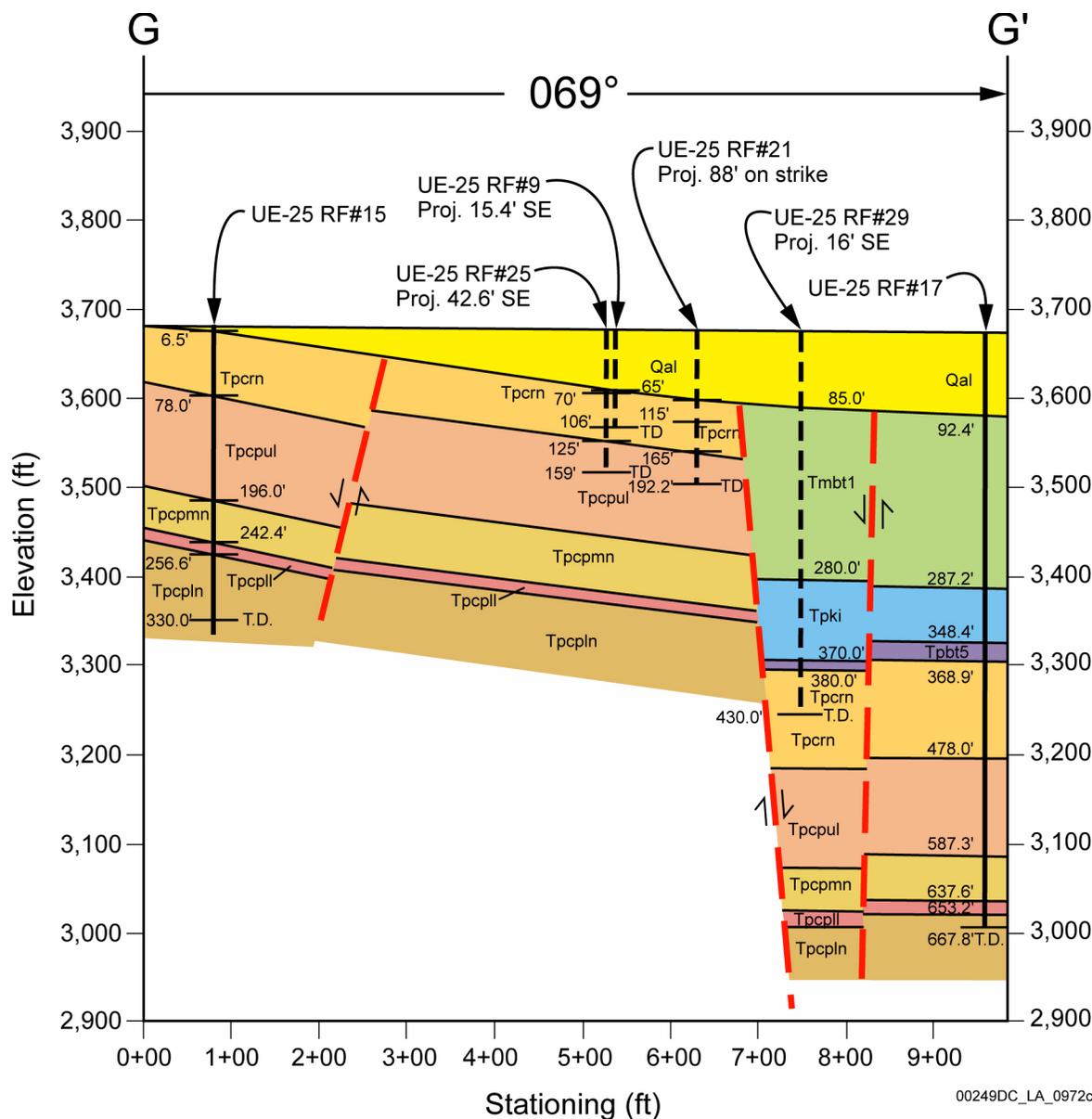


Figure 1.1-65. Surface Geologic Repository Operations Area Geologic Cross Section G-G', Looking Northwest

NOTE: Line of section G-G' is shown on Figure 1.1-64.

Qal = Quaternary alluvium; Tmbt1 = pre-Rainier Mesa Tuff bedded tuffs; Tpki = Tuff unit "x"; Tpbt5 = pre-Tuff unit "x" bedded tuffs; Tpcrn = Tiva Canyon Tuff crystal rich member, nonlithophysal zone; Tpcpul = Tiva Canyon Tuff crystal poor member, upper lithophysal zone; Tpcpmn = Tiva Canyon Tuff crystal poor member, middle nonlithophysal zone; Tpcpll = Tiva Canyon Tuff crystal poor member, lower lithophysal zone; Tpcpln = Tiva Canyon Tuff crystal poor member, lower nonlithophysal zone.

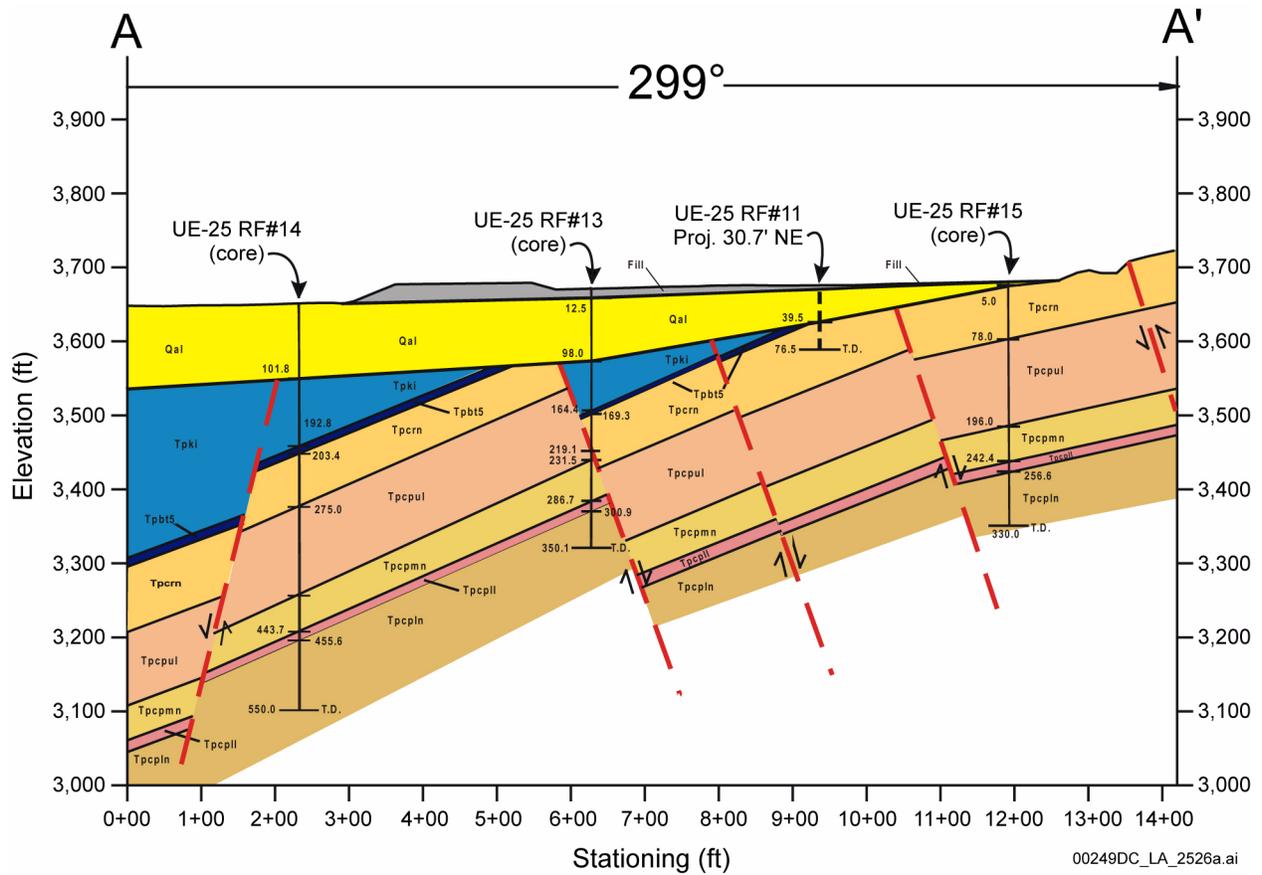


Figure 1.1-66. Surface Geologic Repository Operations Area Geologic Cross Section A-A', Looking South

NOTE: Line of section A-A' is shown on Figure 1.1-64. Stratigraphic unit names are shown on Figure 1.1-65.

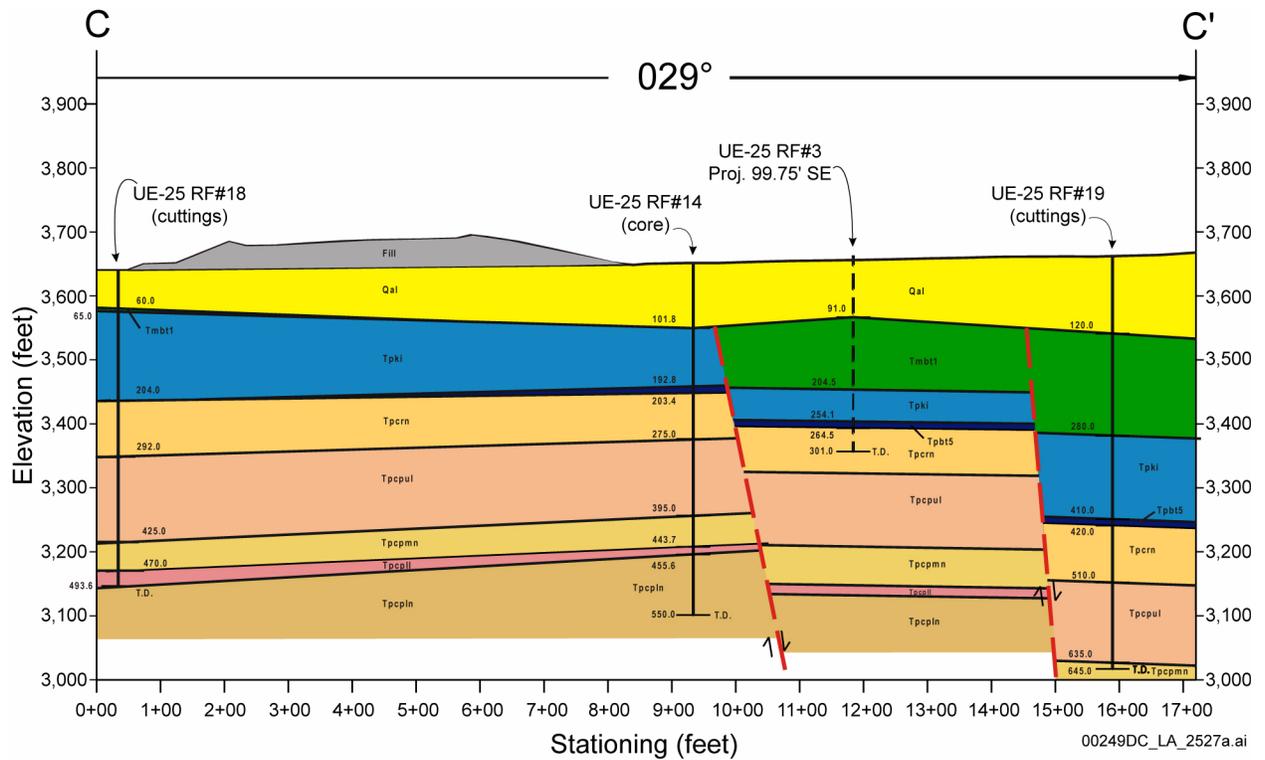


Figure 1.1-67. Surface Geologic Repository Operations Area Geologic Cross Section C-C', Looking West

NOTE: Line of section C-C' is shown on Figure 1.1-64; Stratigraphic unit names are shown on Figure 1.1-65.

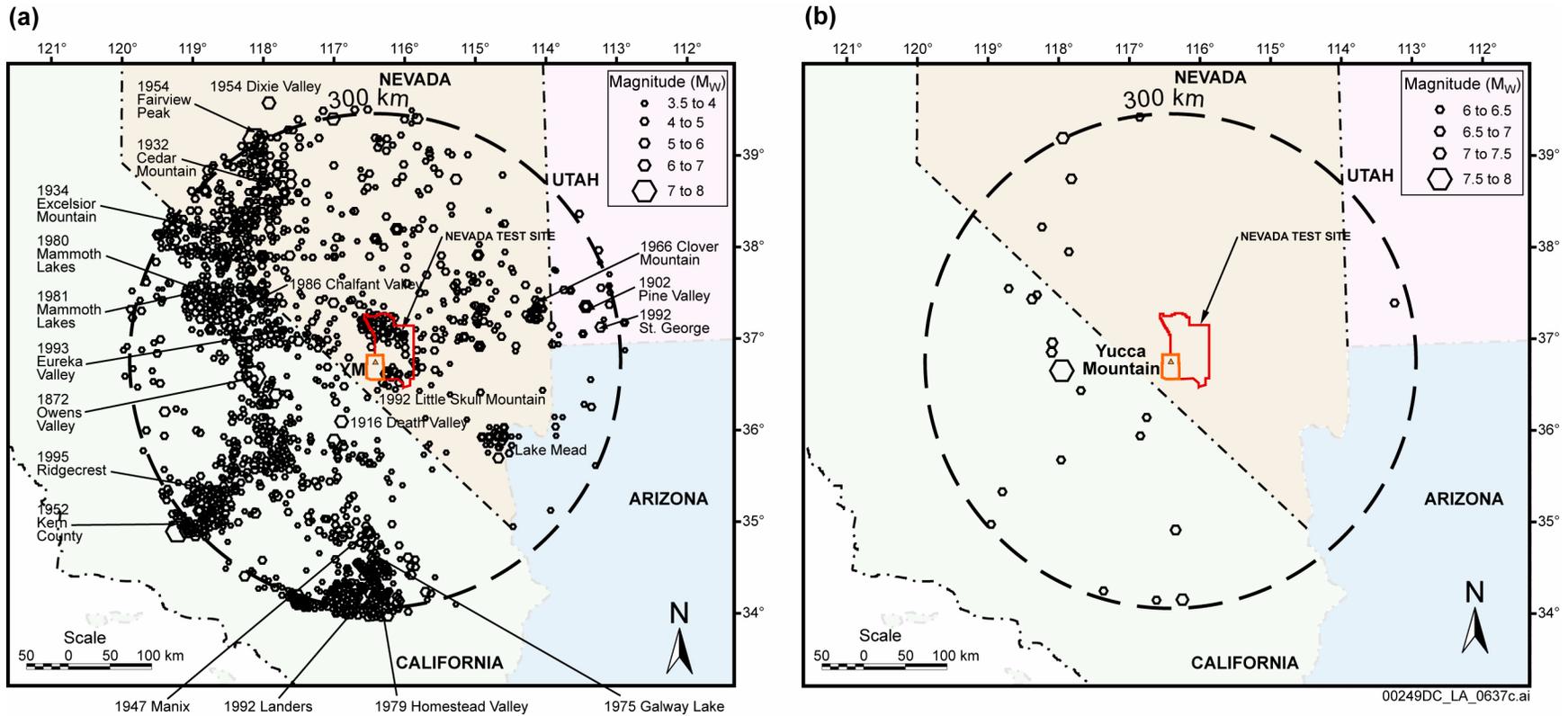


Figure 1.1-68. Historical Earthquake Epicenters within 300 km of Yucca Mountain

NOTE: Part (a) shows earthquakes of M_w greater than 3.5. Part (b) shows earthquakes of M_w greater than or equal to 6.0. Note change in magnitude scale. Earthquakes from 1868 to 1996 are shown. Coverage of older seismicity is sparse because of the absence or limited availability of seismographic coverage in the late 1800s and early 1900s. The cluster of earthquakes near the southern boundary of the Nevada Test Site in (a) represents the 1992 Little Skull Mountain earthquake and its numerous aftershocks. Many of the events in the northern part of the Nevada Test Site occurred in response to underground nuclear weapons tests. Earthquakes of note are labeled with year of occurrence. In part (a), the Dixie Valley and Kern County earthquakes are greater than 300 km from Yucca Mountain but are shown because of their historical and seismological significance.

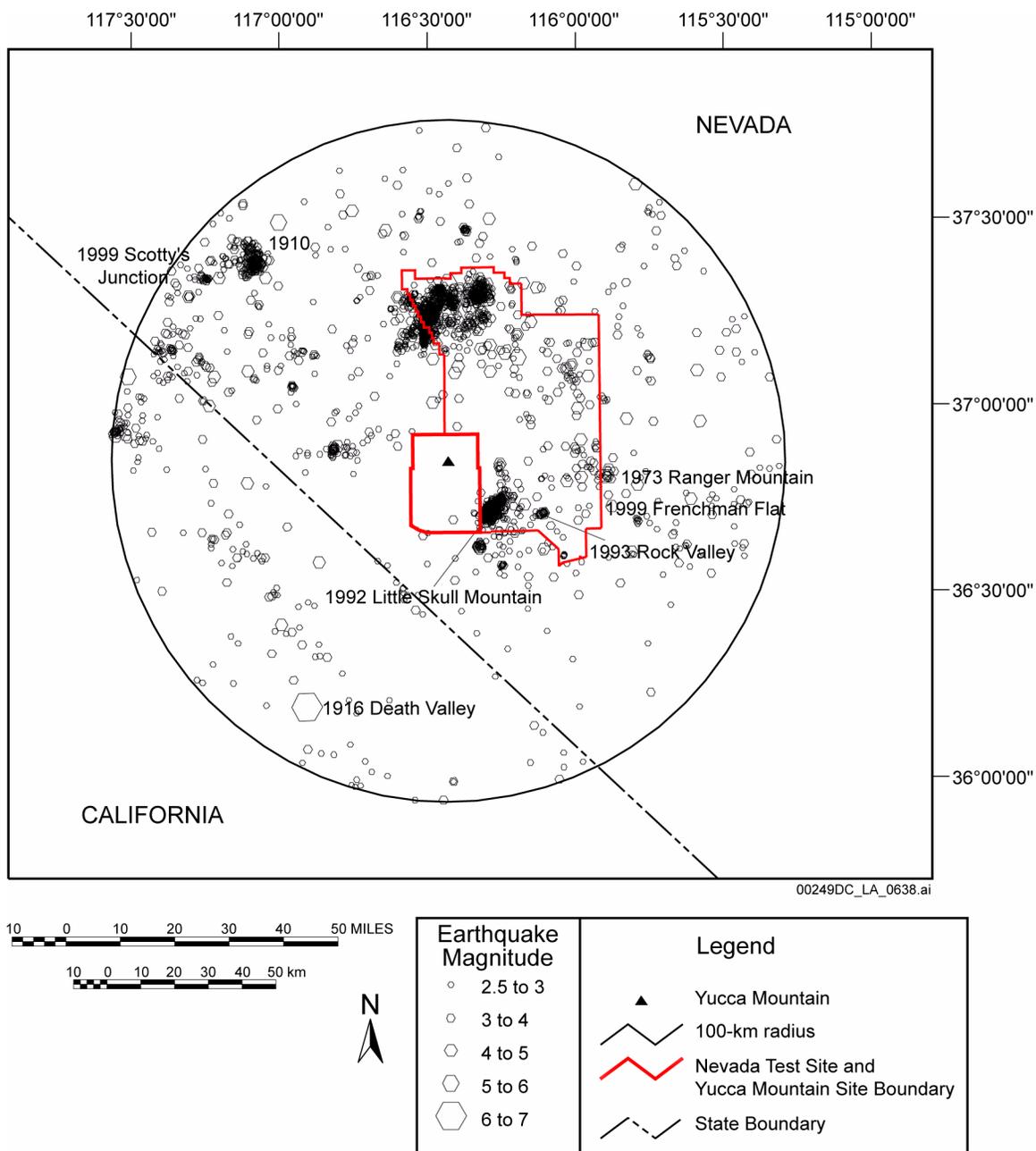


Figure 1.1-69. Historical Earthquake Epicenters within 100 km of Yucca Mountain

NOTE: Earthquakes from 1904 to 1998 are shown. Earthquakes associated with the 1999 Scotty's Junction and 1999 Frenchman Flat sequences are also shown. Significant earthquakes or earthquake sequences are shown with years of occurrence. Activity in the northwestern corner of the Nevada Test Site is related to underground nuclear testing.

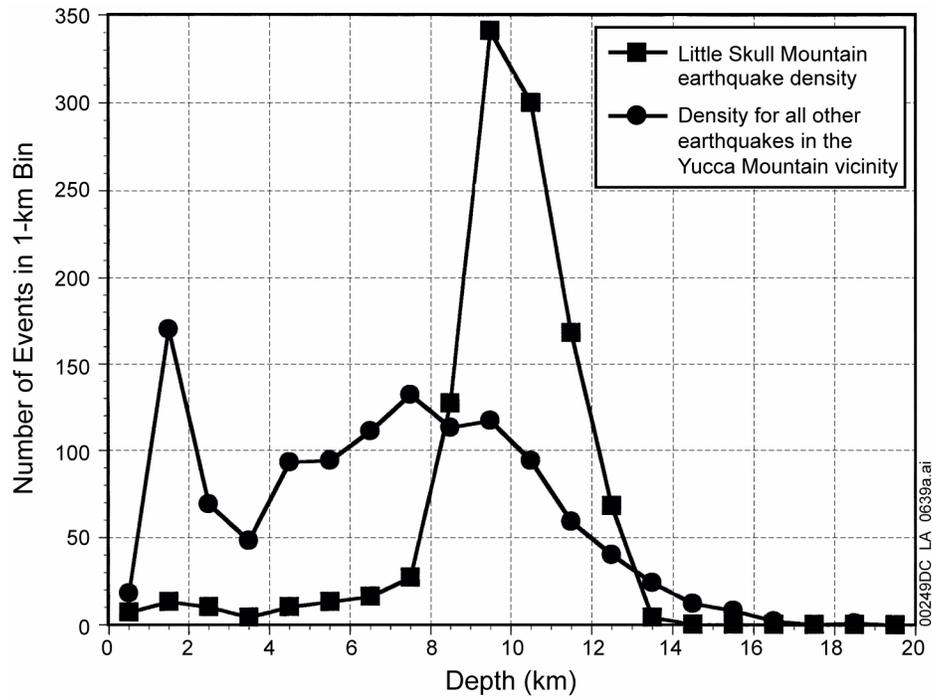


Figure 1.1-70. Focal Depth Distribution of Earthquakes in the Yucca Mountain Vicinity for the Period October 1, 1999, to September 30, 2000

NOTE: The density has been computed separately for Little Skull Mountain earthquakes and all other earthquakes in the Yucca Mountain vicinity.

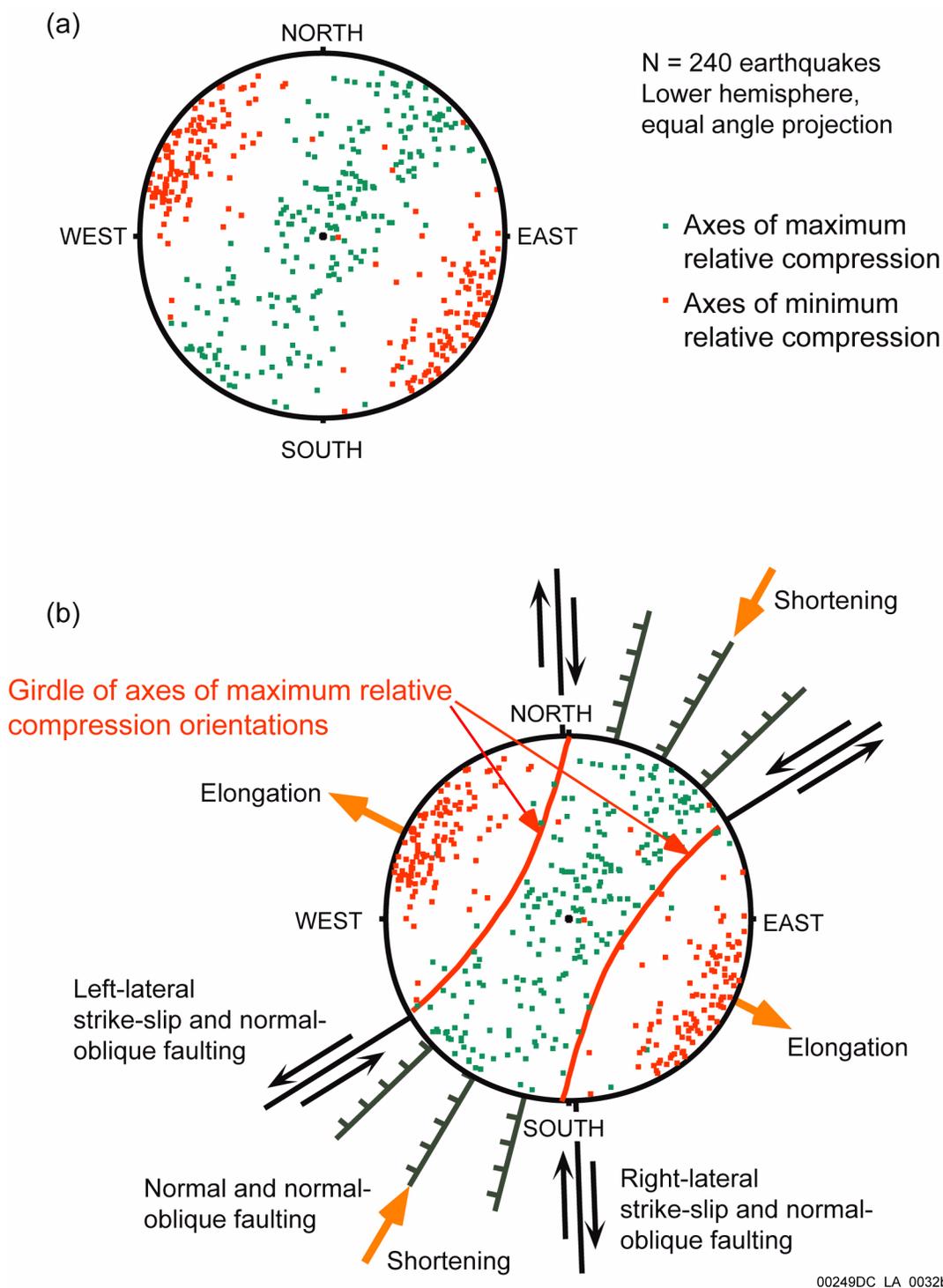


Figure 1.1-71. Focal Mechanisms for Earthquakes in the Vicinity of Yucca Mountain

NOTE: Part (a) shows the data and part (b) shows the inferred orientations of faulting consistent with the stress orientations. Maximum relative compression axes form a girdle from vertical to northeast-southwest orientation, whereas extensional (minimum relative compression) axes trend northwest-southeast.

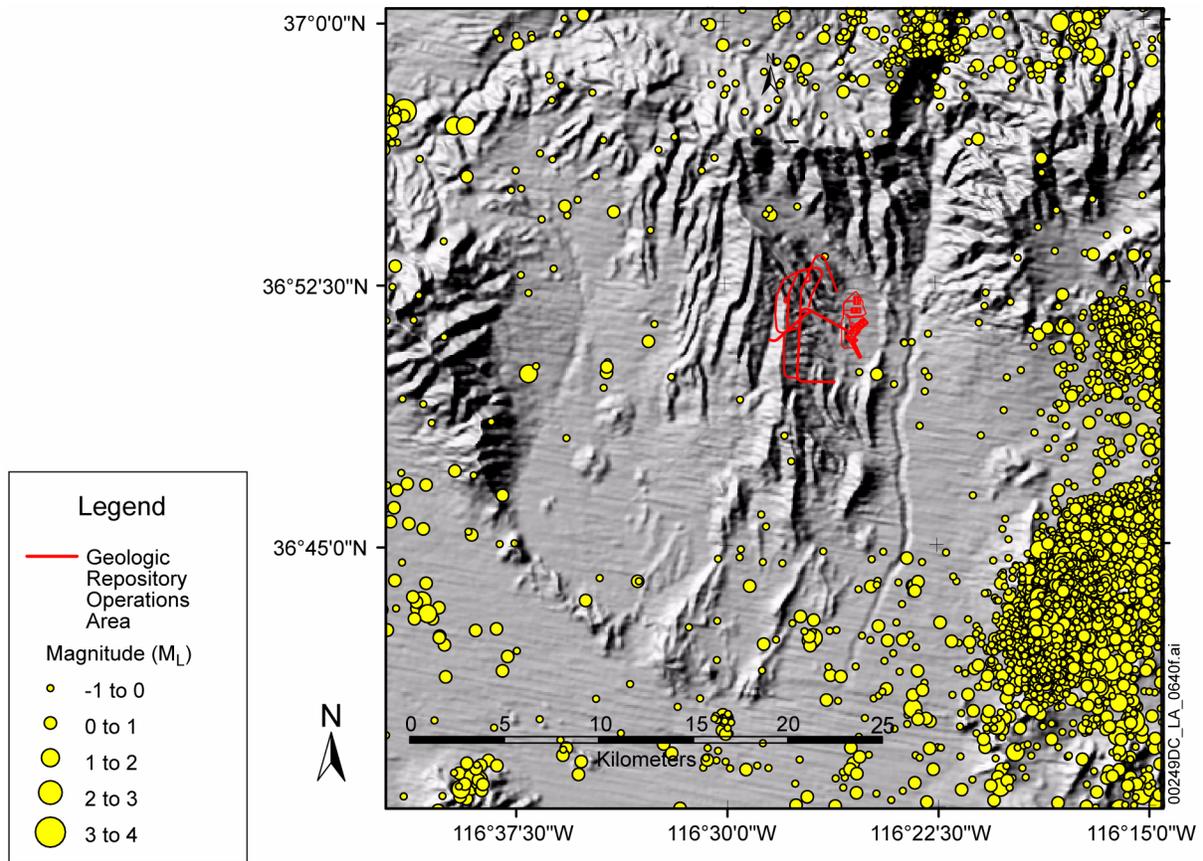


Figure 1.1-72. Seismicity at Yucca Mountain from October 1, 1995, to September 30, 2002

NOTE: The large number of detected earthquakes southeast of Yucca Mountain are mainly small magnitude (M_L less than 3) aftershocks of the June 1992 Little Skull Mountain earthquake. Improved seismic monitoring capabilities instituted in 1995 result in recording large numbers of very small magnitude earthquakes. Magnitudes are shown as M_L , which is the magnitude in which they were determined.

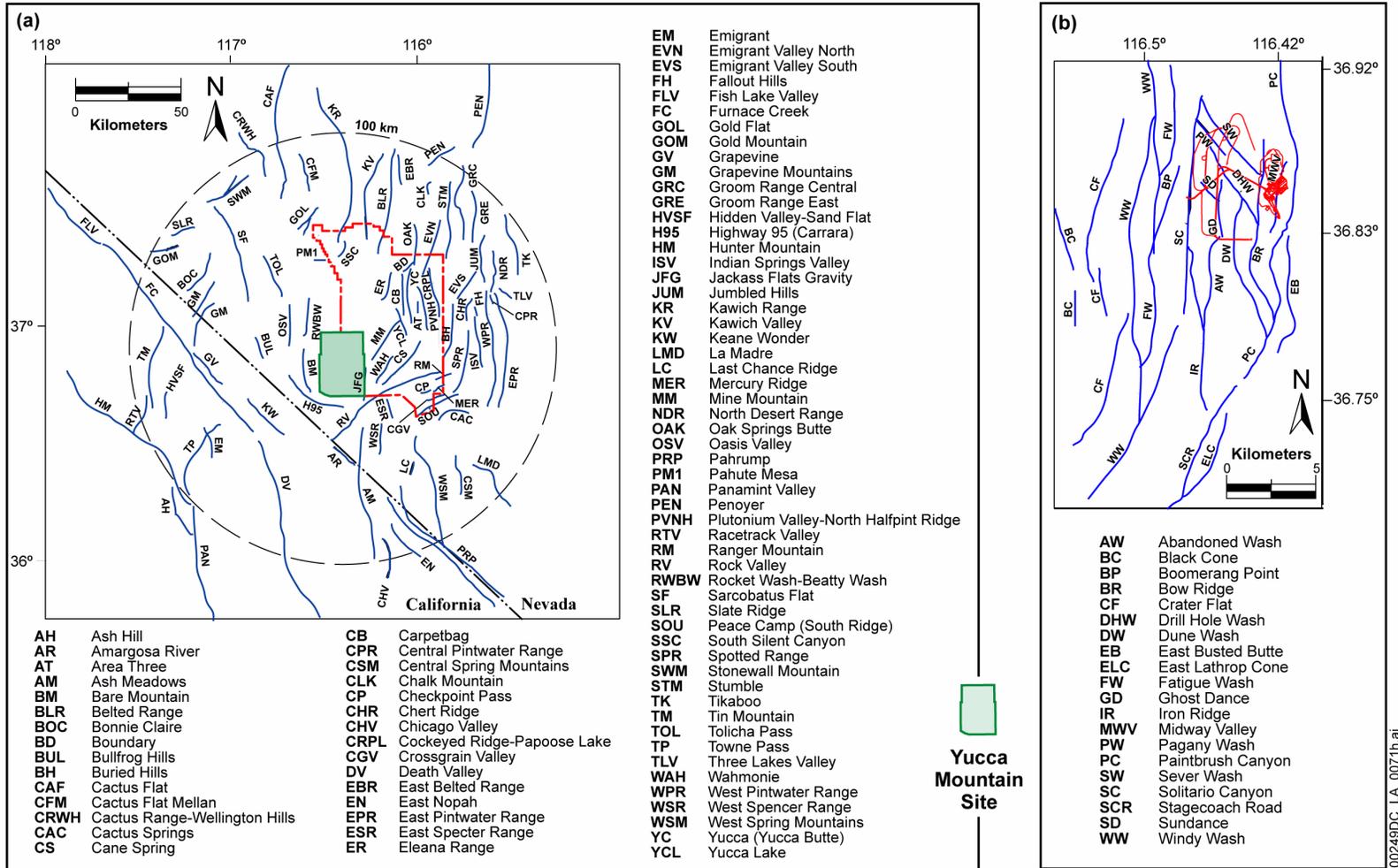


Figure 1.1-73. Known or Suspected Quaternary Faults and Other Notable Faults in the Yucca Mountain Region

NOTE: (a) Known or suspected Quaternary faults within 100 km of Yucca Mountain. (b) Detail of (a) showing known or suspected faults near Yucca Mountain.