APPENDIX E: AIR QUALITY

AIR QUALITY LAWS

Federal law for the control of air pollution has been evolving for more than a decade. Congress passed the Air Quality Act, the first clean air legislation, in 1967. This was followed by the Clean Air Acts of 1970 and 1977, in which Congress reaffirmed its determination to cope with the growing national problem of air pollution.

The EPA, which has the major federal role in ensuring compliance with the requirements of the Clean Air Acts, issues national air quality regulations, approves and oversees state implementation plans, and conducts major enforcement programs.

State air pollution control agencies have the primary responsibility for carrying out the acts on non-Indian lands through the development and execution of an acceptable state implementation plan, which must provide for the attainment and maintenance of air quality standards within the state. The states of Wyoming and Montana both have EPA-approved state implementation plans.

The EPA has jurisdiction over the air quality of Indian lands, since it has not been given the authority to delegate that responsibility to the states or the tribes.

To enforce the NAAQS requirements described in chapter 3, every part of the country has been classified as one of the following: (1) an "attainment" area, where air quality levels are better than the NAAQS limits; (2) a "nonattainable" area, where pollution levels in the air exceed the NAAQS limits; or (3) an "unclassified" area, where there is insufficient data for classification. Nonattainment areas, typically urban, are subject to regulatory requirements designed to bring area pollution levels down to the NAAQS ceiling.

The PSD program, which is designed to protect air quality from significant deterioration in areas that meet the NAAQS, allows specific increments above existing pollution levels. PSD requirements are enforced by a complex preconstruction permit system for major new stationary pollution sources and for major modification to existing sources. The PSD permit process involves the study of existing air quality, requirements for the use of best available pollution control technology, and various impact studies to ensure that PSD standards (established thus far only for particulate matter and sulfur dioxide) will not be exceeded by allowing pollution sources to operate in the area.

If the PSD source is to be located near a Class I area, it may not exceed the PSD standards or have any adverse impact on the air quality-related values of the Class I area, including visibility. Visibility is protected both within the Class I area itself and with respect to "integral vistas" extending outside the Class I boundary.

If a proposed PSD source cannot satisfy the maxiumum allowable deterioration increments for a mandatory Class I area, it may have an opportunity to seek a waiver or a variance.

All pollutant sources must be evaluated to determine PSD applicability. Coal mines are subject to a new source review of PSD only if nonfugitive emissions of any regulated pollutant exceed 250 tons per year after application of controls. Surface coal mines will seldom have the potential to exceed that level. This essentially eliminates the proposed lease tracts from the detailed PSD review process. However, end-use facilities such as coal-fired power plants like the proposed Mud Springs power plant are subject to PSD review and "new source" performance standards.

Air pollution also may result in significant visibility reductions. The effects of such reductions include not only the aesthetic degradation of the environment but also economic burdens on society.

METHODOLOGY USED IN ANALYSIS

Advanced computer modeling was used to evaluate the cumulative regional effects of ground-level concentrations of major air contaminants that could be expected under each alternative. The modeling study included determination of worst-case ground-level concentrations of the major air pollutants named above and sulfates, a secondary pollutant deriving from sulfur dioxide.

The resulting projections of pollutant concentrations were compared with state and federal air quality standards to determine the extent to which the standards could potentially be violated under each alternative. Incremental pollutant concentrations also were compared with increments allowable under the regulations for prevention of significant deterioration of air quality to determine the extent to which those regulations could be violated. The effects of air pollutants on visibility also were modeled.

Appendix E: Air Quality

A technical report prepared by PEDCo Environmental, Inc., discusses the models, meteorological data, receptor array, and vistas used in the analysis. It also describes characterization of the source of emission, including emission factors, control devices, and effeciencies. Also included are the major point sources and are sources that would be affected by mines and end-use facilities included in the alternatives.

KEY TO MINES SHOWN ON AIR QUALITY FIGURES

[1] = BLM Tract Included in Alternatives

1. Ridgerunner
2. Porcupine
3. Thundercloud
4. Kintz Creek
5. Mount Logan
6. Timber Creek
7. Donkey Creek
8. Hay Creek
9. Calf Creek
10. Hidden Water
11. Youngs Creek
12. Wolf Mountain Maintenance
13. North Decker II
14. North Decker I
15. Spring Creek
16. Northwest Otter Creek
17. Ashland (Decker-Birney)
18. Downee Coulee
19. Colstrip Maintenance
20. Colstrip C
21. Hanging Woman Creek
22. Mud Springs

(1) = Existing or Committed Operation

1. Antelope
2. North Antelope
3. North Rochelle
4. Black Thunder
5. Jacobs Ranch
6. Keeline
7. WYMO Fuels
8. Coal Creek
9. Cordero
10. Caballo Rojo
11. Pronghorn
12. Belle Ayr
13. Caballo
14. Rocky Butte
15. Wyodak
16. East Gillette
17. East Gillette No. 16
18. South Rawhide
19. Fort Union
20. Dry Fork
21. Eagle Butte
22. ETSI
23. North Rawhide
24. Buckskin
25. Big Horn
26. Ash Creek
27. East Decker
28. West Decker
29. North Decker
30. Spring Creek
31. Coal Creek
32. Big Sky
33. Colstrip A and B
34. Colstrip D

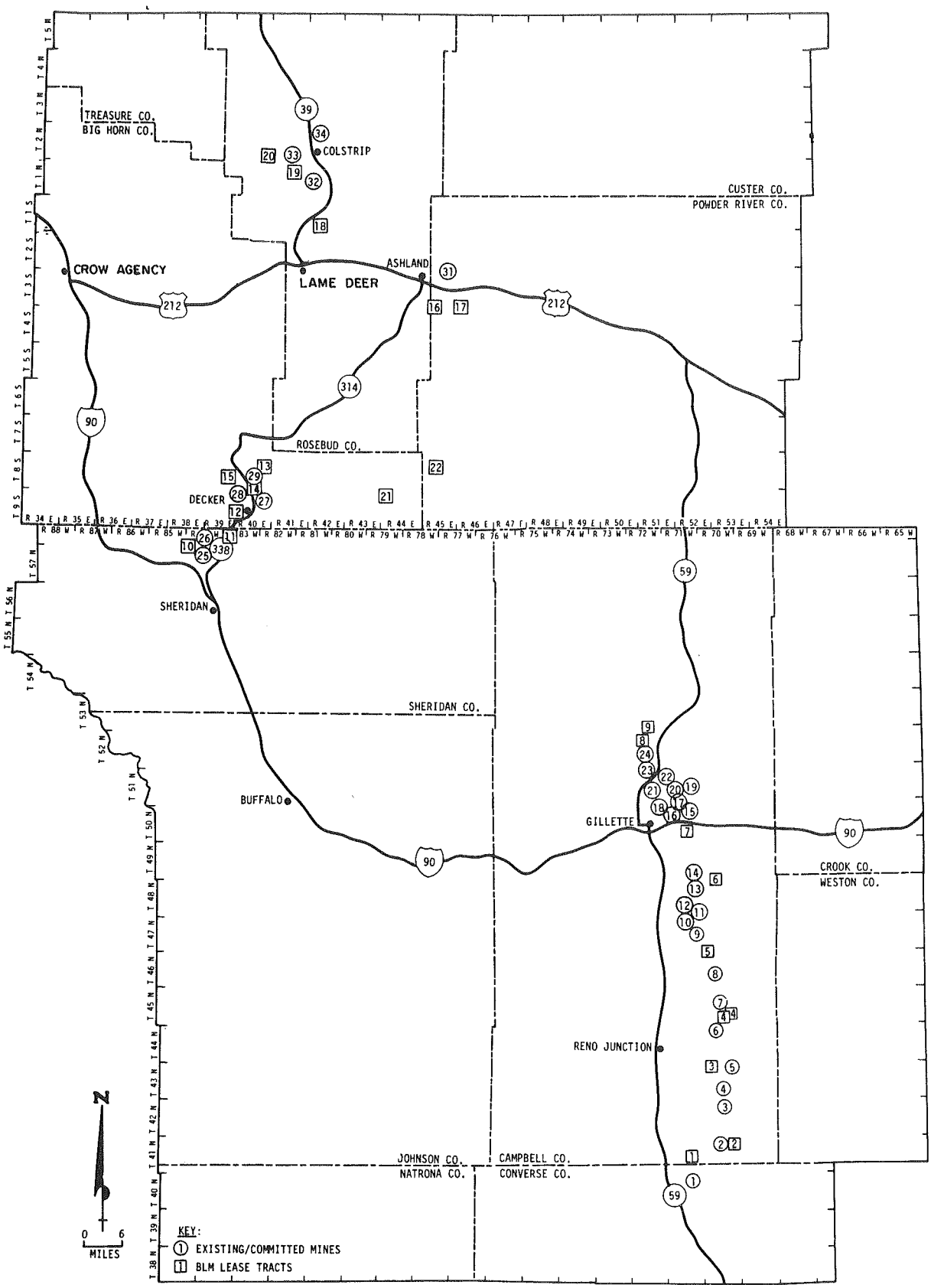

Figure 1. Regional Study Area

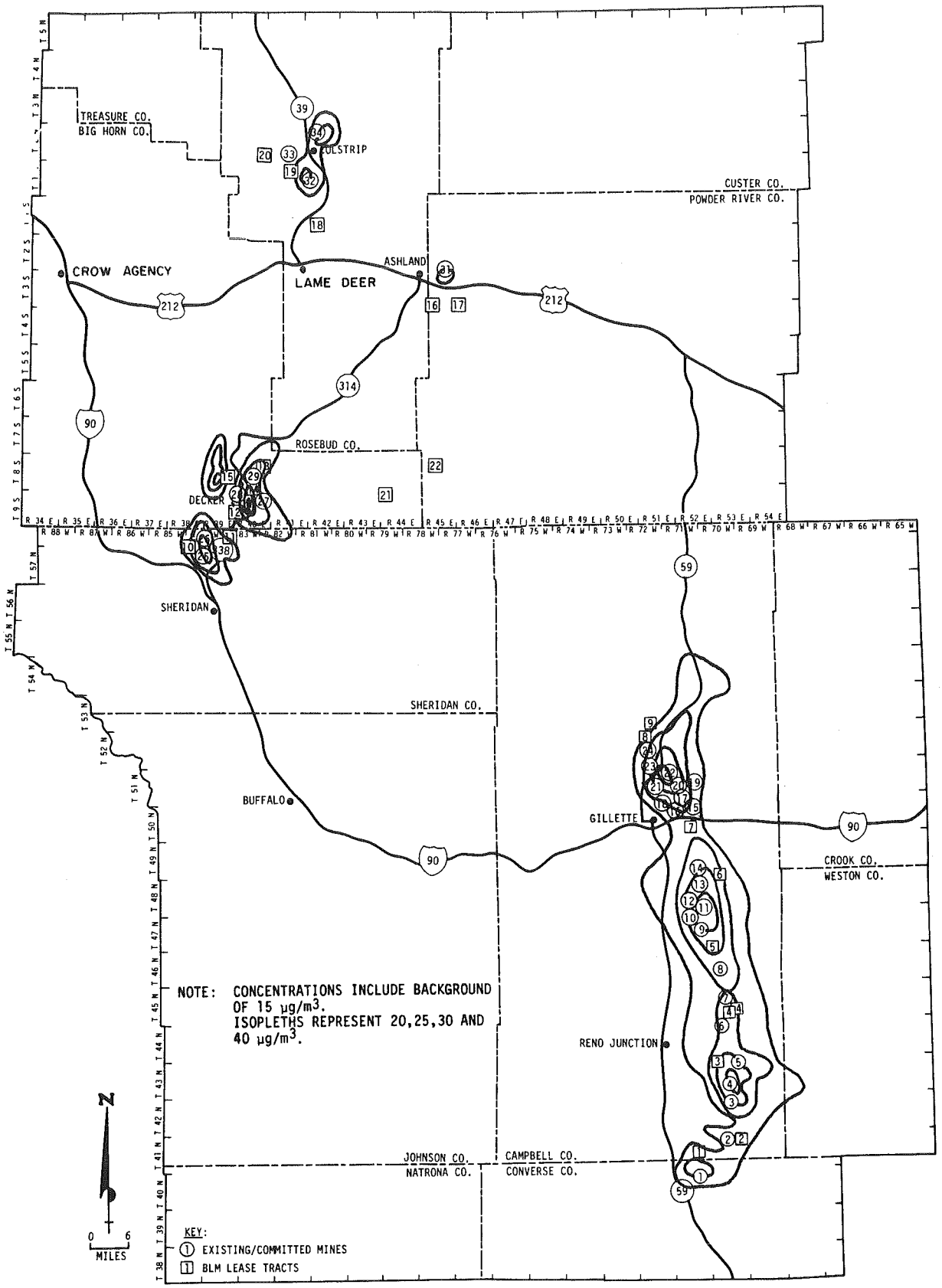

Figure 2. 1995 annual TSP concentrations ($\mu g/m^3$), Alternative 1.

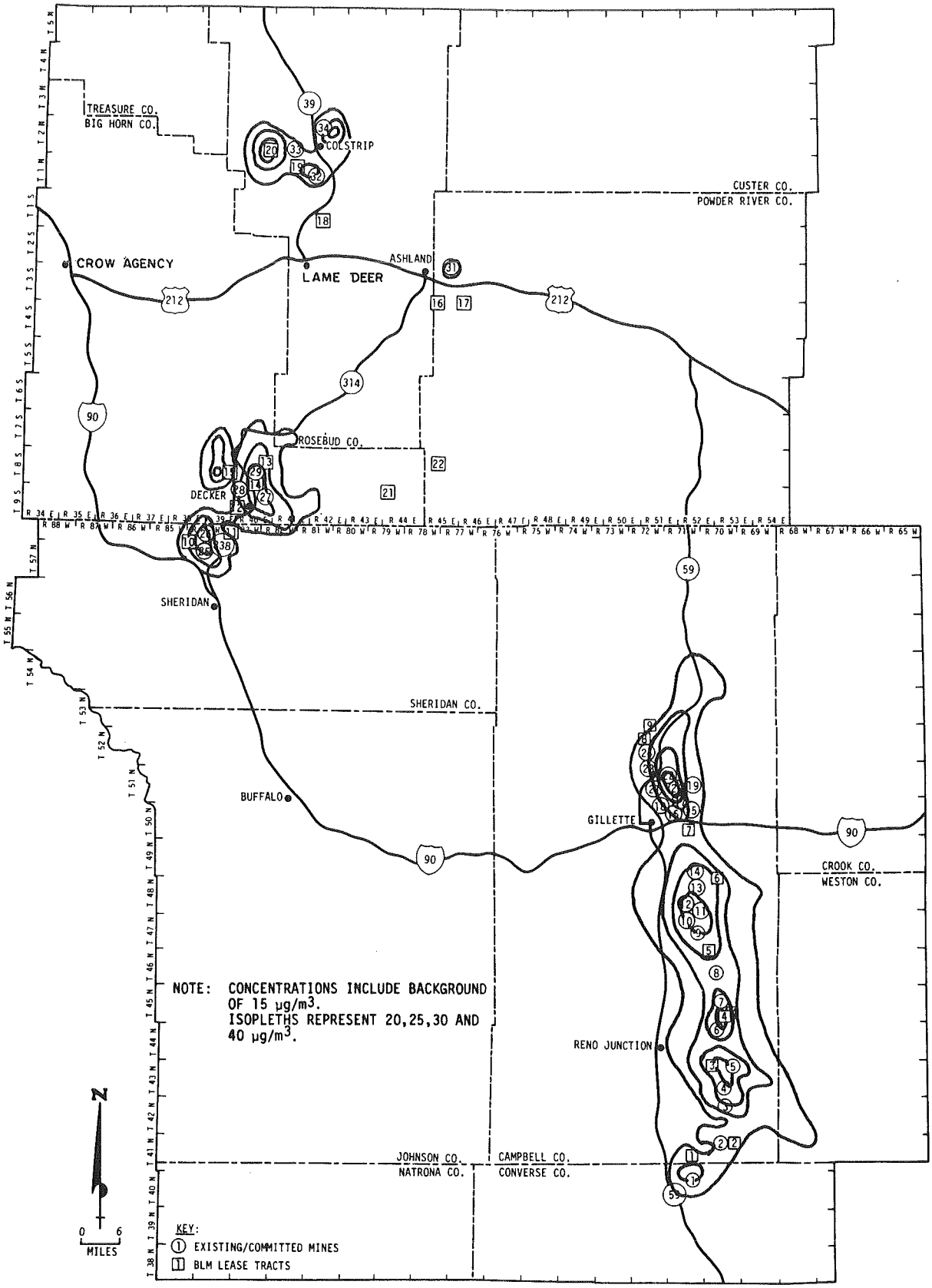

Figure 3. 1995 annual TSP concentrations ($\mu g/m^3$), Alternative 2.

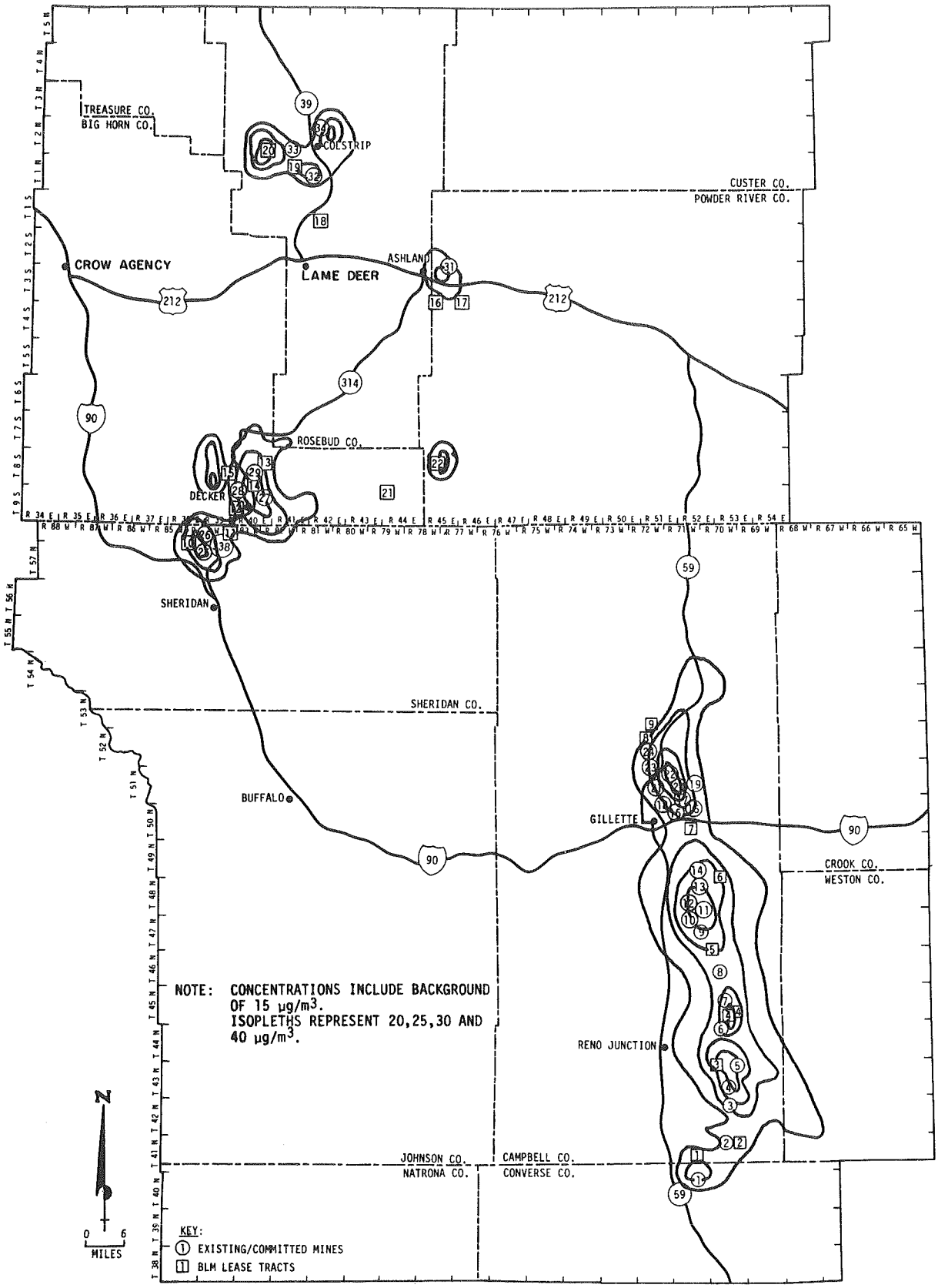

Figure 4. 1995 annual TSP concentrations ($\mu g/m^3$), Alternative 3.

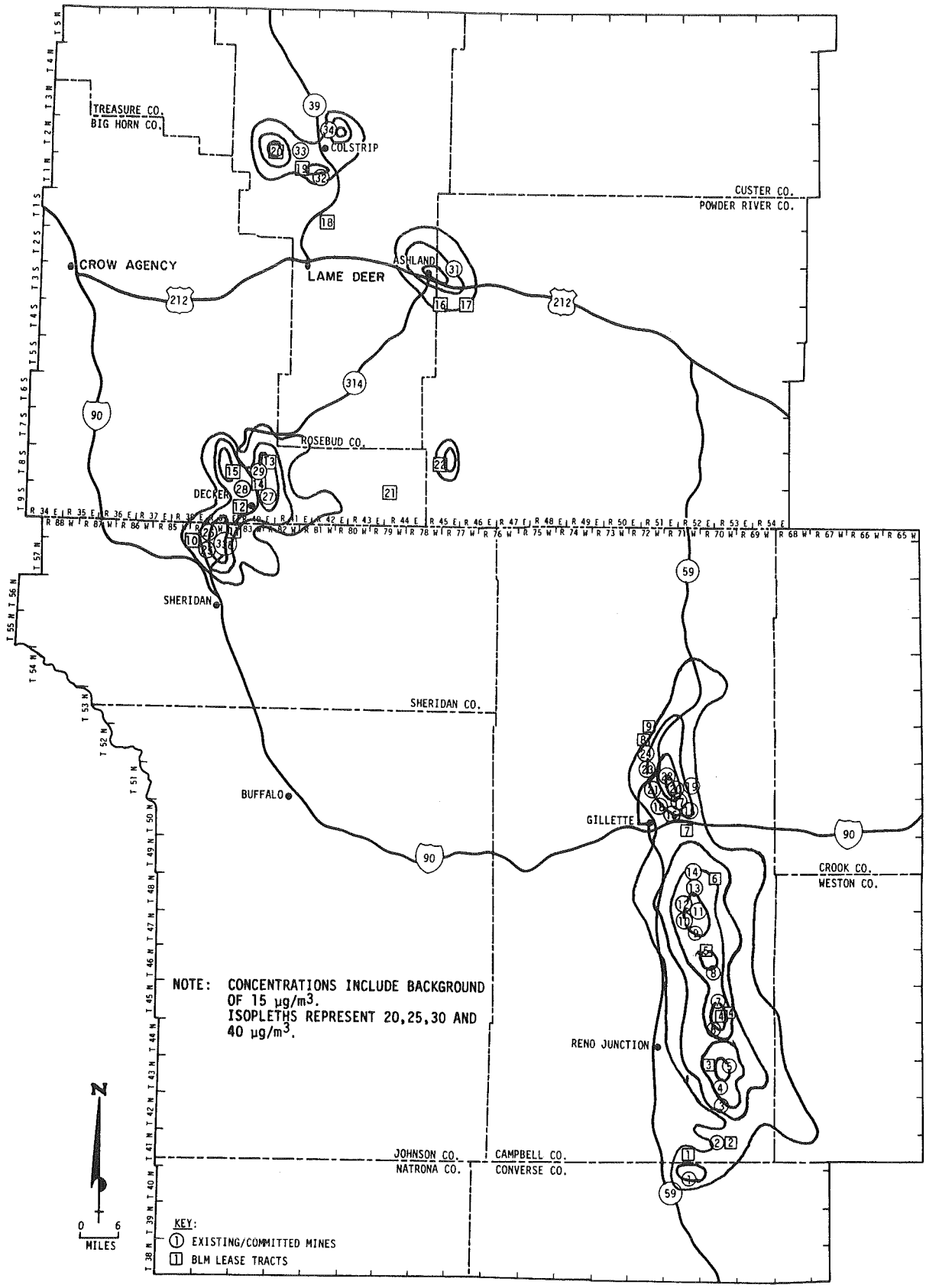

Figure 5. 1995 annual TSP concentrations ($\mu g/m^3$), Alternative 4.

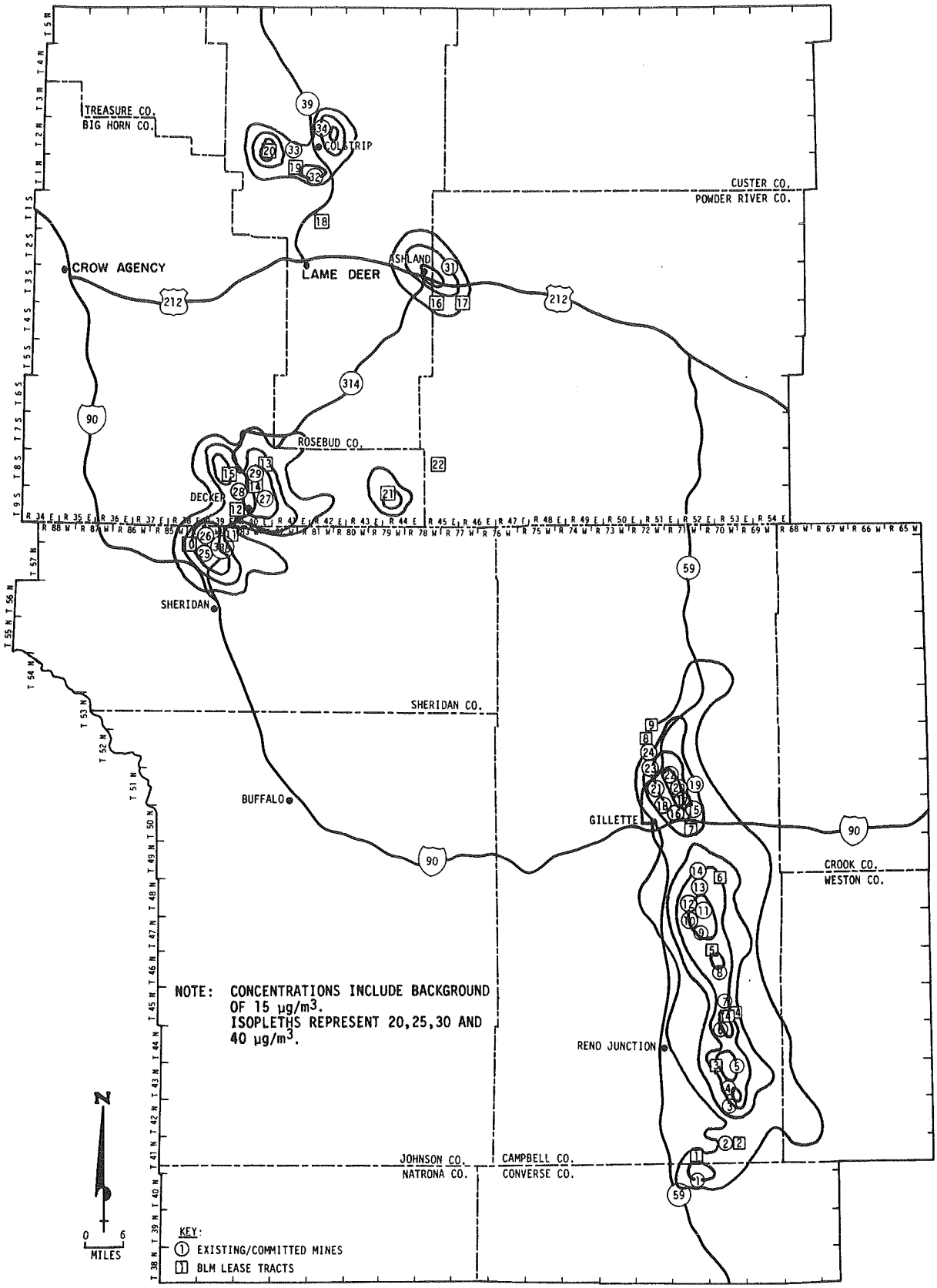

Figure 6. 1995 annual TSP concentrations ($\mu g/m^3$), Alternative 5.

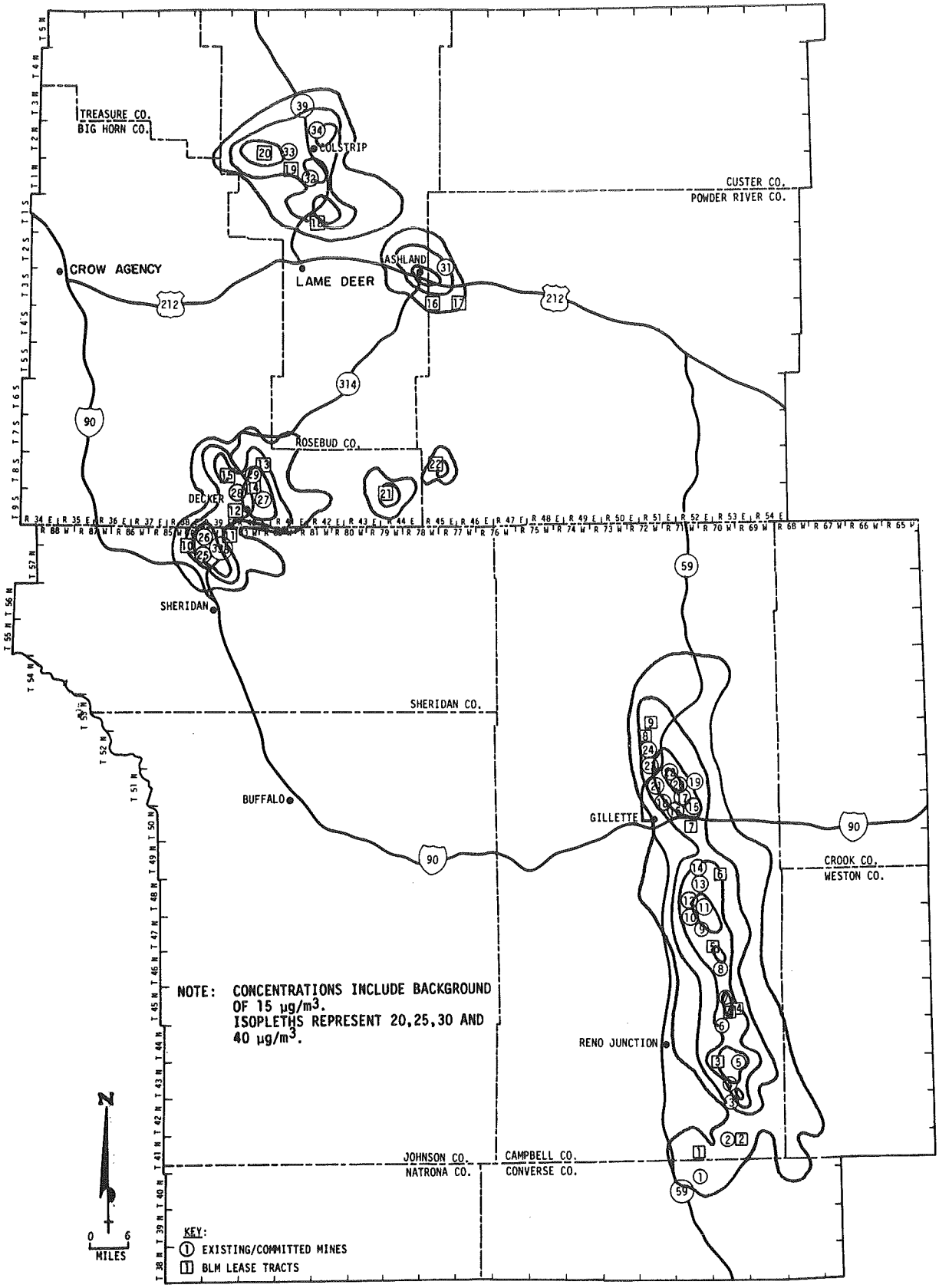

Figure 7. 1995 annual TSP concentrations ($\mu g/m^3$), Alternative 6.

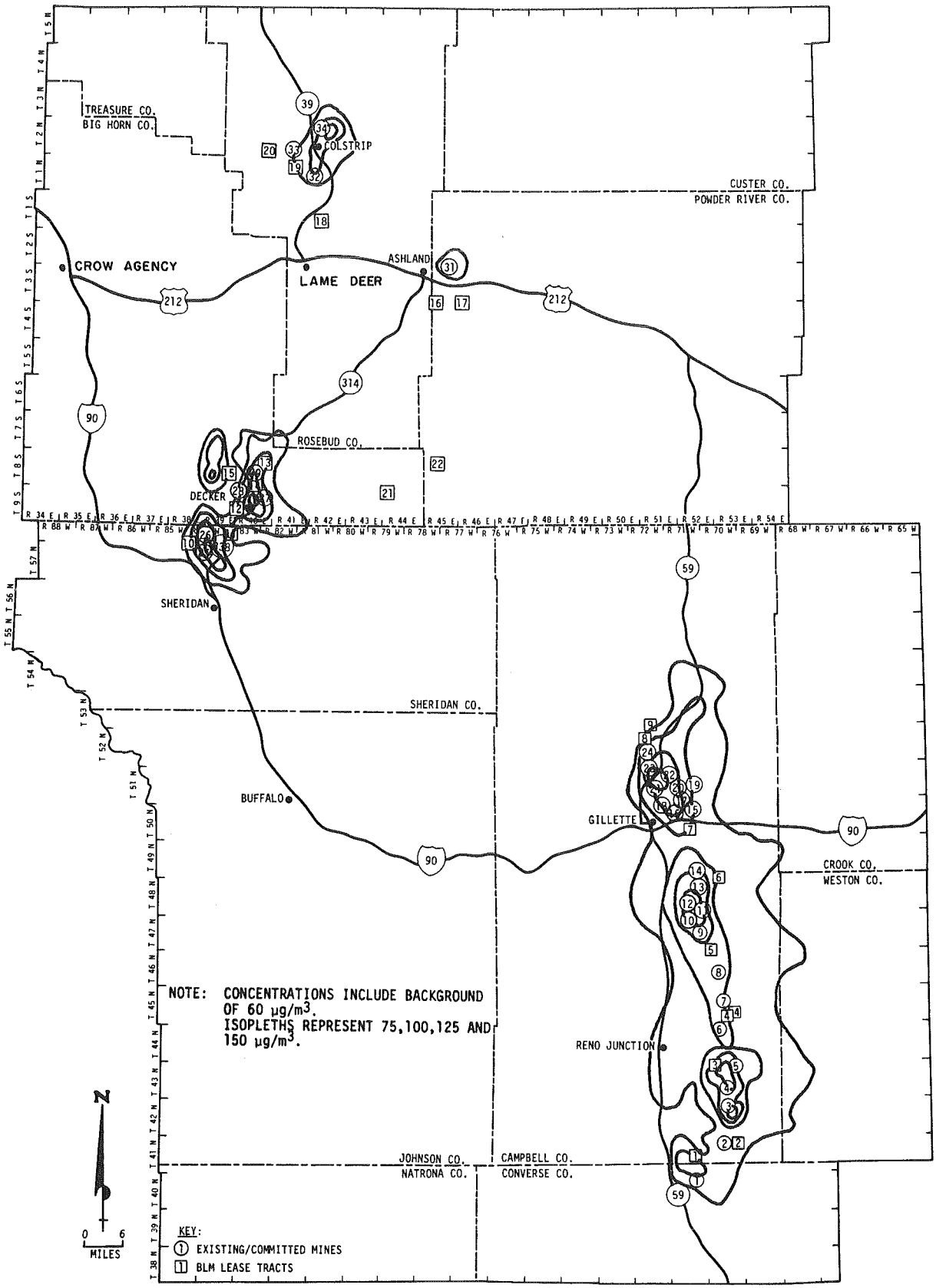

Figure 8. 1995 second-maximum 24-hour TSP concentrations ($\mu g/m^3$), Alternative 1.

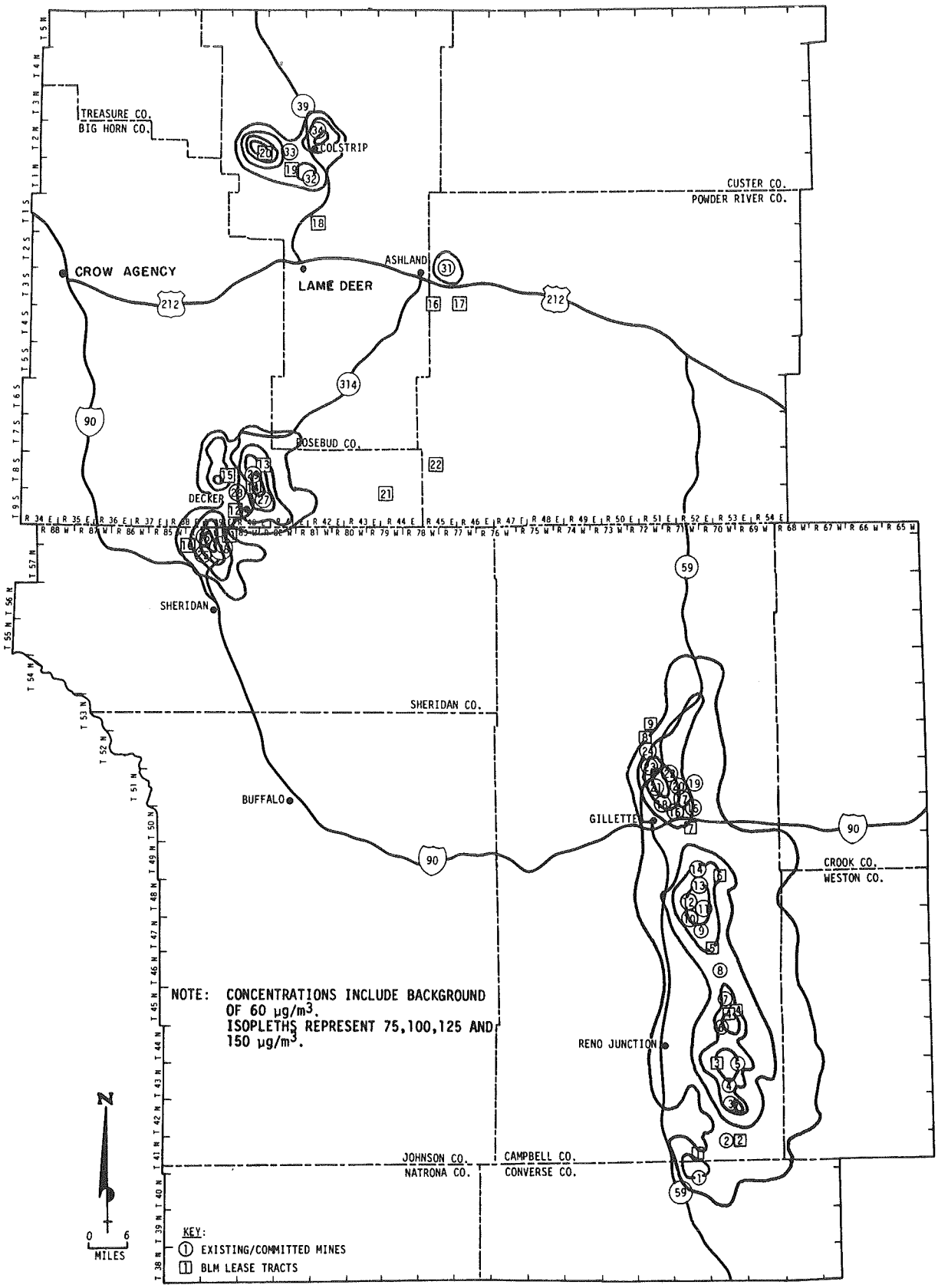

Figure 9. 1995 second-maximum 24-hour TSP concentrations ($\mu g/m^3$), Alternative 2.

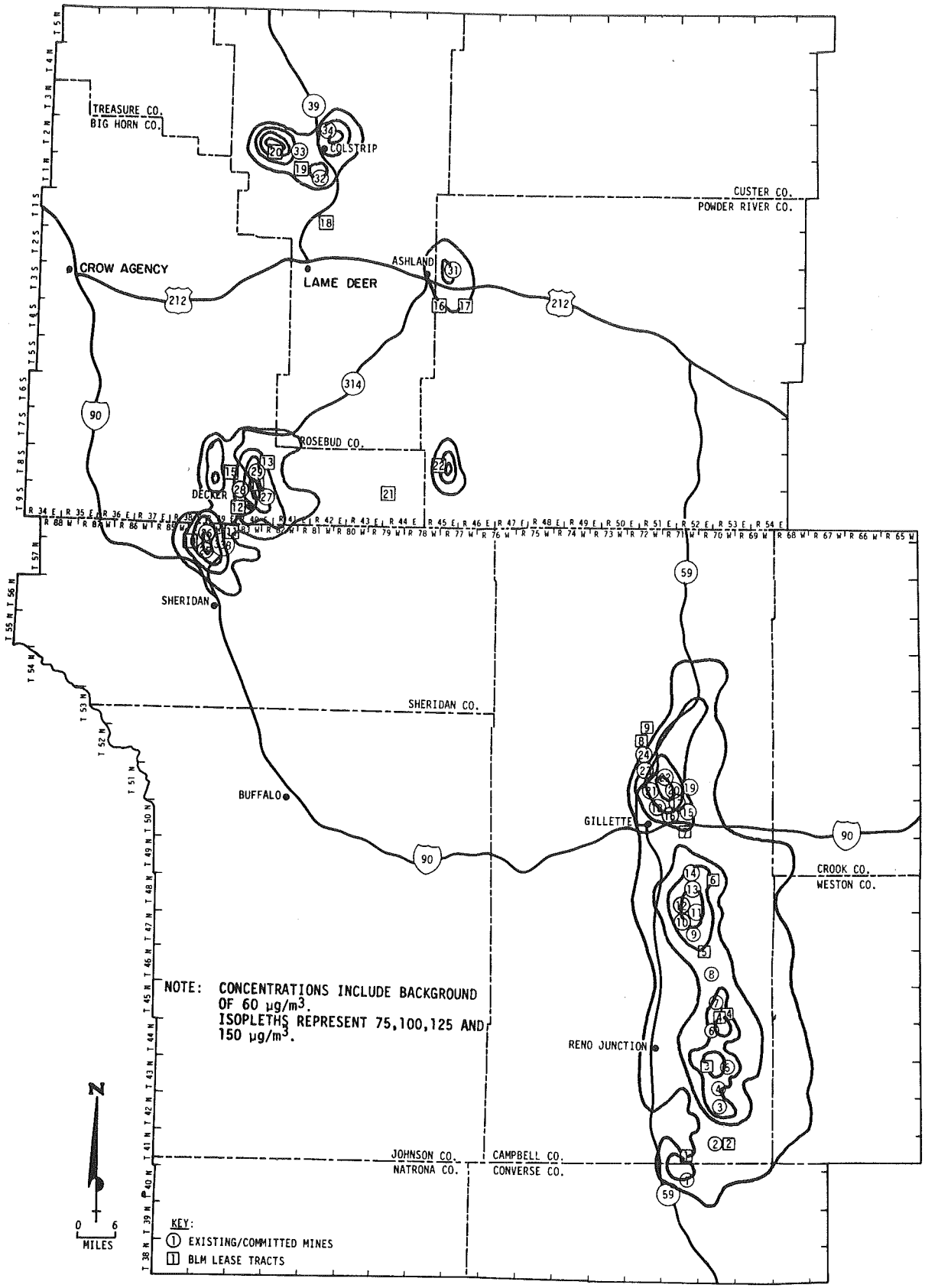

Figure 10. 1995 second-maximum 24-hour TSP concentrations ($\mu g/m^3$), Alternative 3.

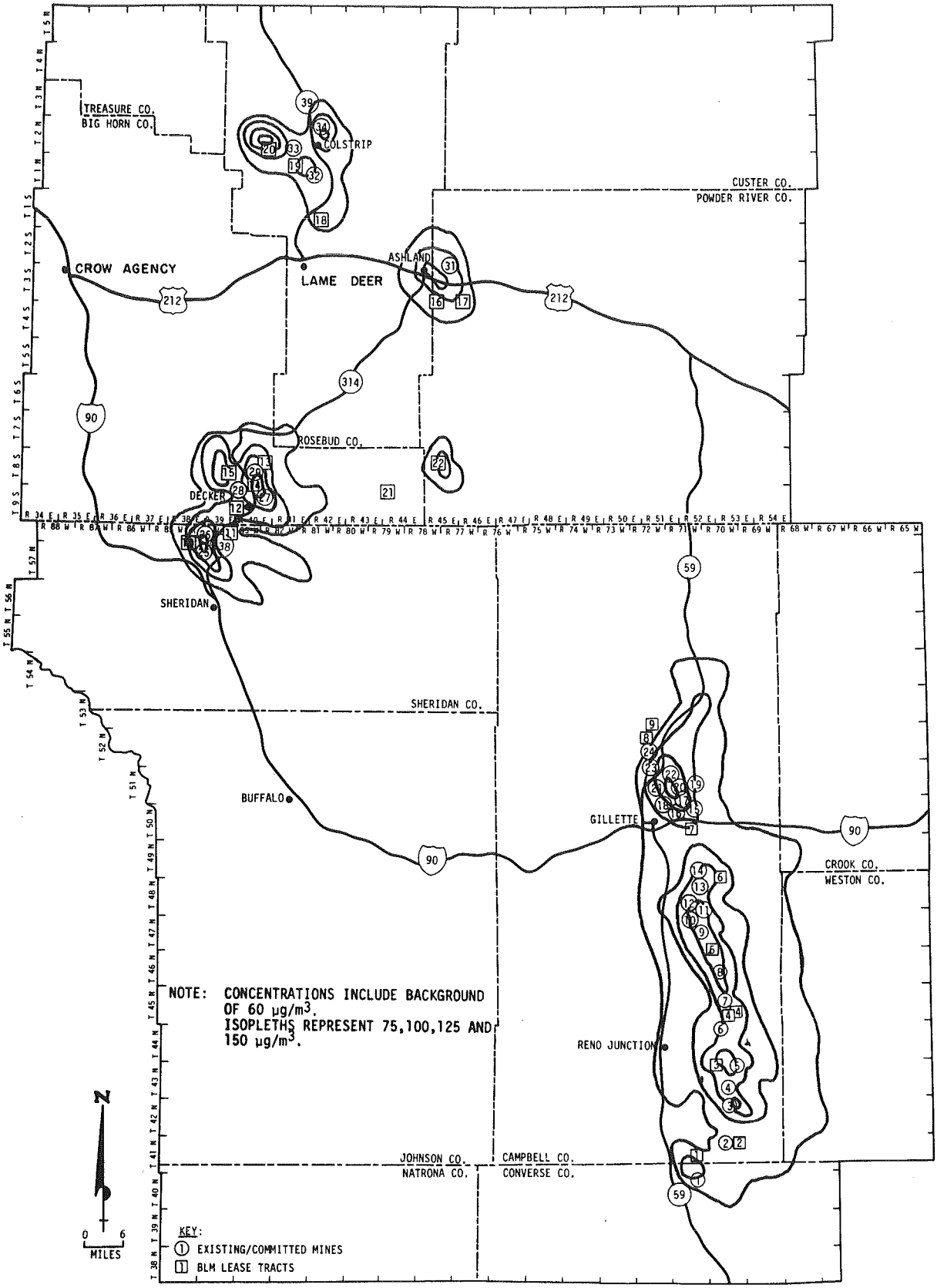

Figure 11. 1995 second-maximum 24-hour TSP concentrations ($\mu g/m^3$), Alternative 4.

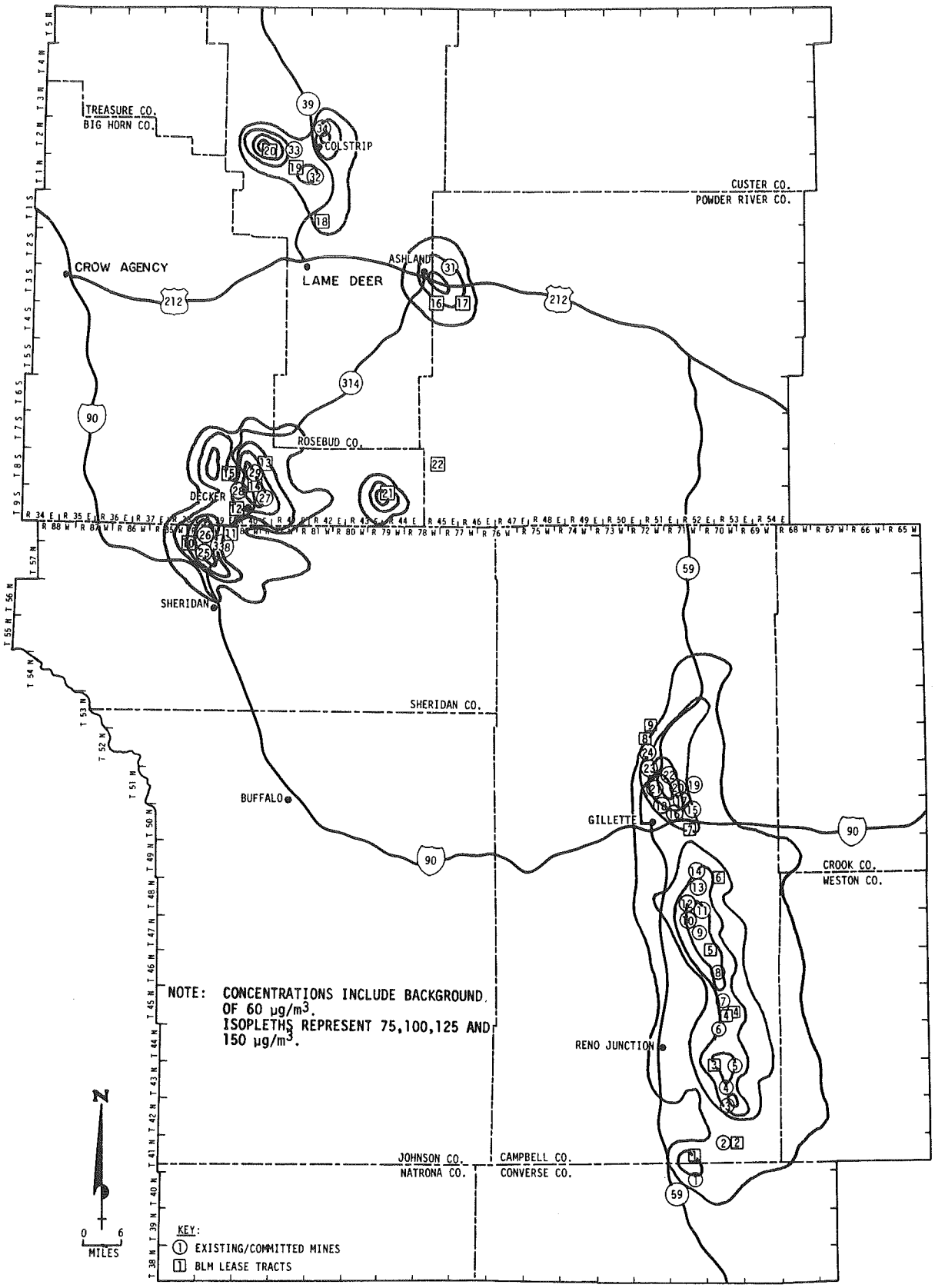

Figure 12. 1995 second-maximum 24-hour TSP concentrations ($\mu g/m^3$), Alternative 5.

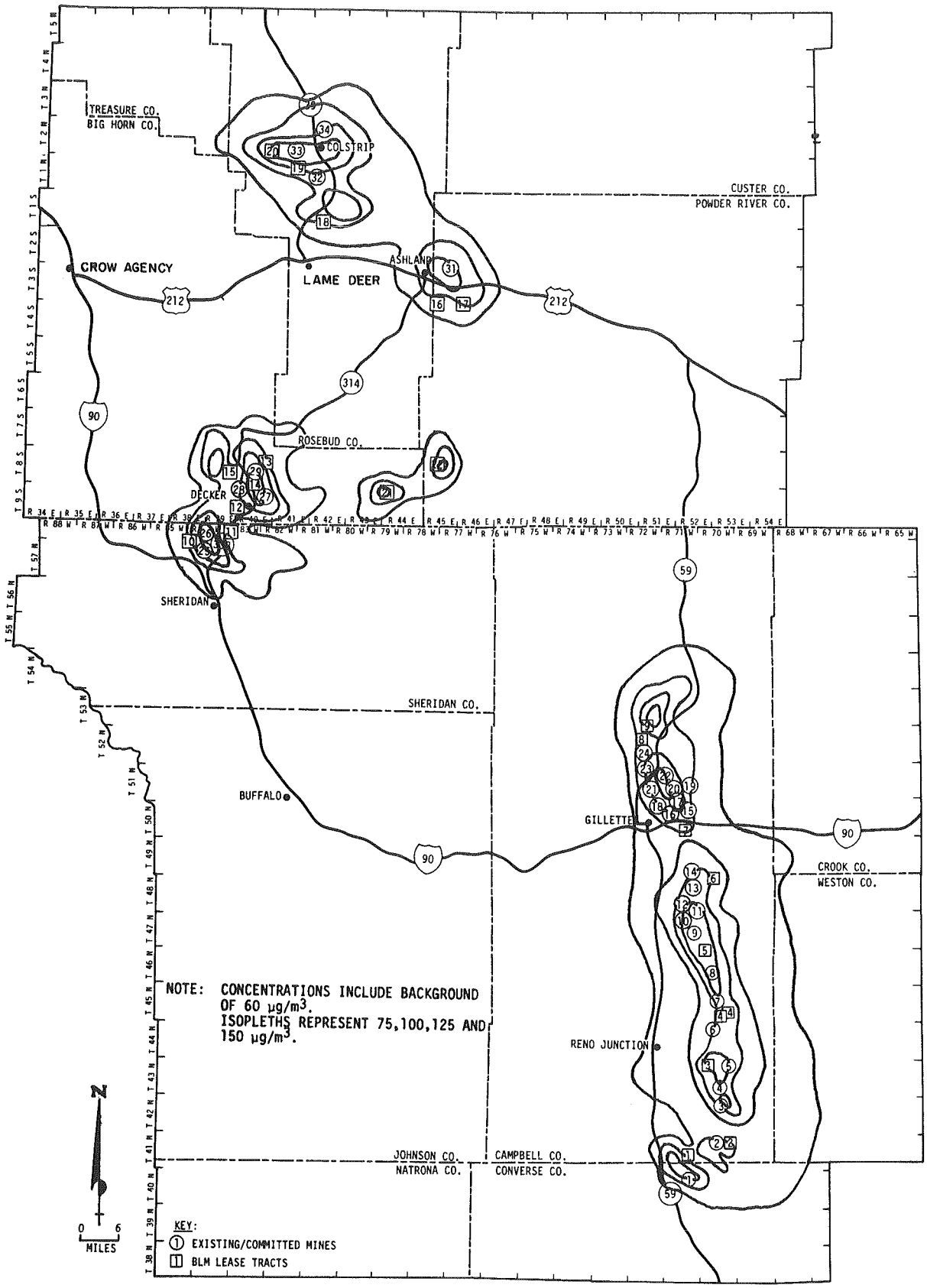

Figure 13. 1995 second-maximum 24-hour TSP concentrations ($\mu g/m^3$), Alternative 6.

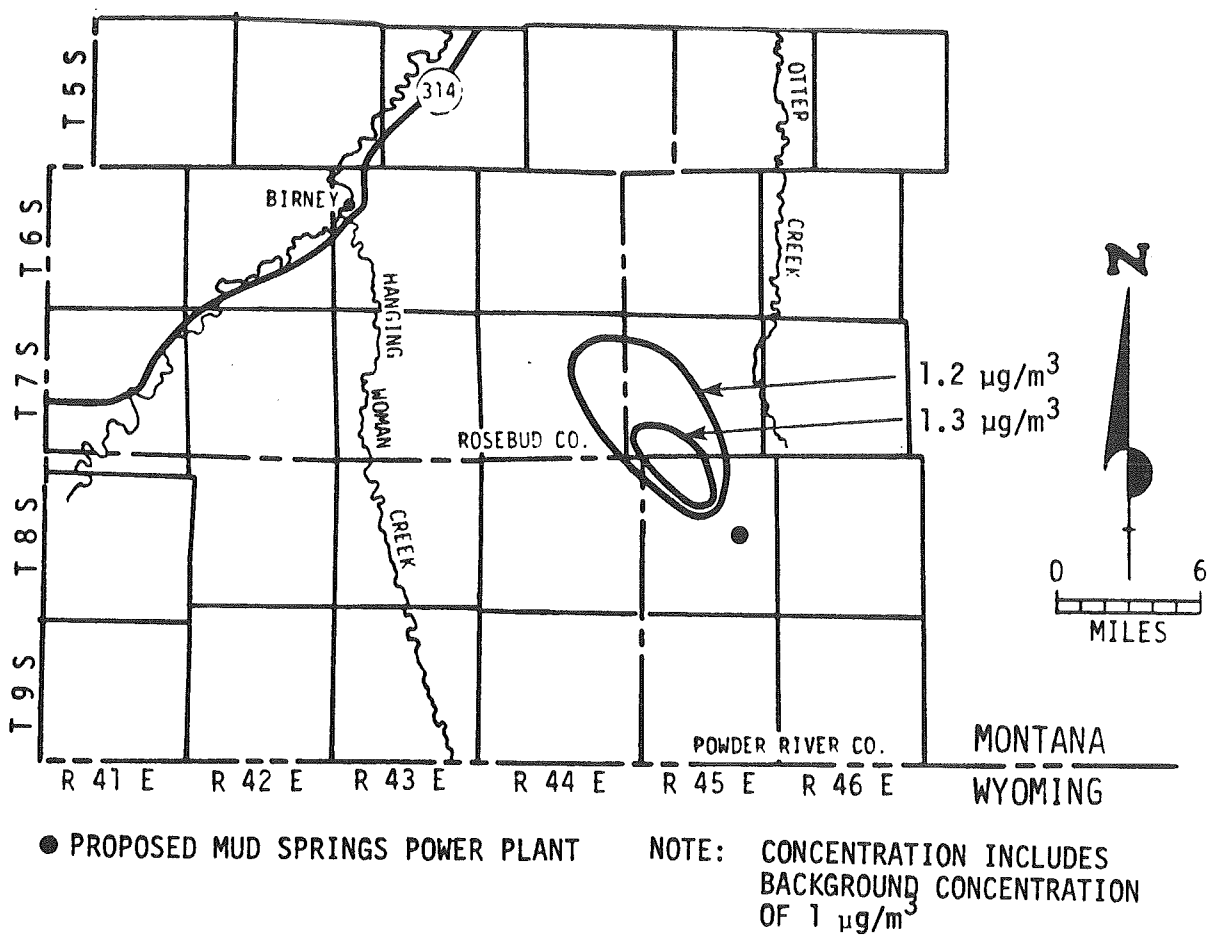

Figure 14. Annual Sulfur Dioxide Concentrations ($\mu g/m^3$)

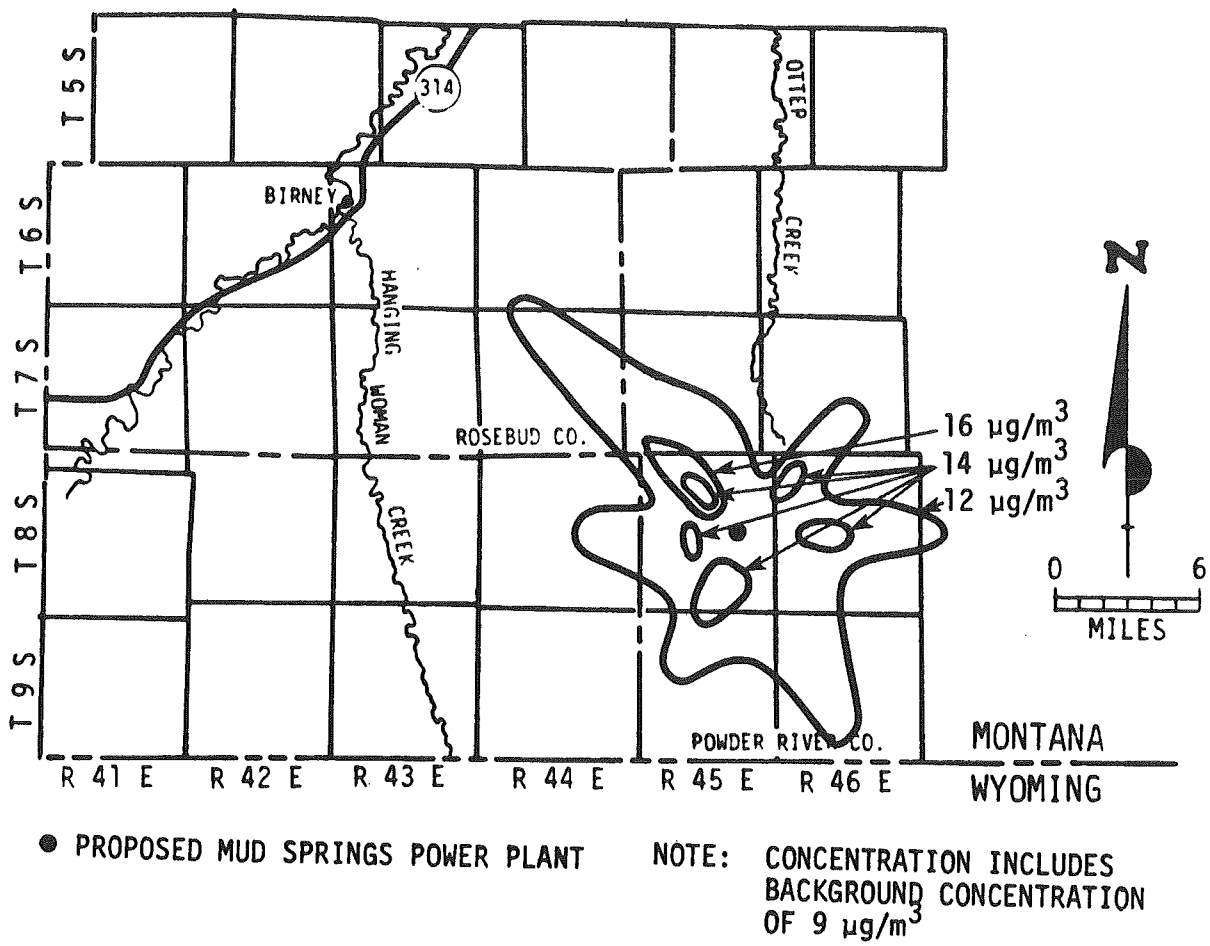

Figure 15. Highest Second High 24-Hour Sulfur Dioxide Concentrations ($\mu g/m^3$)

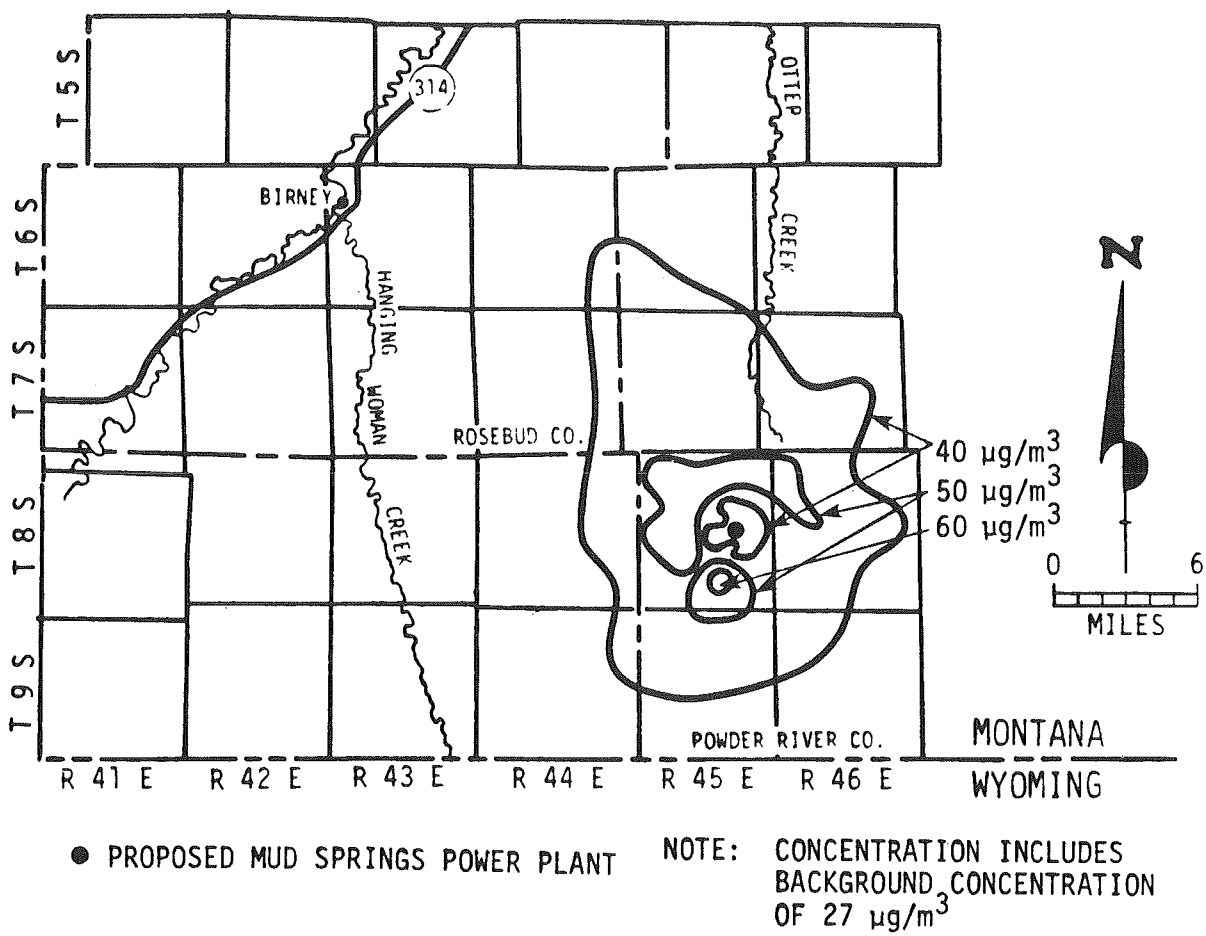

Figure 16. Highest Second High 3-Hour Sulfur Dioxide Concentrations ($\mu g/m^3$)