

6.0 REFERENCES

- Ahlstrom, R.V.N. and H. Roberts. 2001. Archaeology at the Apex Excavations in the Apex Upland Project Area, Southern Nevada. HRA Conservation Archaeology Report No. 99-05, Las Vegas.
- ARCADIS U.S., Inc. (ARCADIS). 2006a. Rare Plant Survey Report for the Lincoln County Land Act Groundwater Development and Utility Right-of-Way Project EIS. ARCADIS U.S., Inc. Highlands Ranch, Colorado.
- _____. 2006b. Desert Tortoise Survey Report for the Lincoln County Land Act Groundwater Development and Utility Right-of-Way Project EIS. ARCADIS U.S., Inc. Highlands Ranch, Colorado.
- _____. 2008. Lincoln County Land Act Groundwater Development and Utility Right-of-Way Project, Cultural Resources Inventory of Additional Right-of-Way Corridors, Lincoln County, Nevada. Nevada BLM Cultural Resources Report No. 8111 NV-04-08-1764.
- Avery, M.L., P.F. Springer, and N.S. Dailey. 1978. Avian mortality at manmade structures: an annotated bibliography. Unites States Fish and Wildlife Service, Washington D.C.
- Avian Power Line Interaction Committee (APLIC). 1994. Mitigating Bird Collisions with Power Lines: The State of the Art in 1994. Edison Electric Institute. Washington, D.C., 78 pp.
- _____. 1996. Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996. Edison Electric Institute/Raptor Research Foundation. Washington, D.C.
- Bartz, E. 2008. Bureau of Land Management, Las Vegas, Nevada. Personal Communication to L. Luther, ARCADIS, Phoenix, Arizona. Regarding Range Allotments, September 29, 2008.
- Bell, C.J. and J.I. Mead. 1998. Late Pleistocene Microtine Rodents from Snake Creek Burial Cave, White Pine County, Nevada. Great Basin Naturalist, vol. 58, no. 1, pp. 82-86.
- Berger, D. 2008. Tule Desert Geological and Hydrological Investigations. U.S. Geological Survey Open File Report. Draft. Containing Sections by Mike Lico, Keith Halford and Wayne Belcher. Northern Nevada Hydrologic Studies, Nevada Water Science Center, Carson City, NV

- Berger, D.L., Halford, K.J., Belcher, W.R., and Lico, M.S., 2008. Technical Review of Water Resources Investigations of the Tule Desert, Lincoln County, Southern Nevada, U.S. Geological Survey Open-File Report 2008-1354, 19 p.
- Bio-West, Inc. 2005. Meadow Valley Wash Riparian Evaluation. Hydrologic Conditions Report.
- BLM: see US. Department of the Interior, Bureau of Land Management (BLM)
- Board of Lincoln County Commissioners. 1998. 1998 Lincoln County Overall Economic Development Plan. Submitted To: U.S. Department of Commerce, Economic Development Administration.
- _____. 2006. 2005 Annual Report Lincoln County Comprehensive Economic Development Strategy. Submitted To: U.S. Department of Commerce, Economic Development Administration. April.
- _____. 2007. Southeastern Lincoln County Habitat Conservation Plan: Public Review Draft. October 22.
- Brooks, M.L., and J.R. Matchett. 2006. Spatial and temporal patterns of wildfires in the Mojave Desert, 1980-2004. *Journal of Arid Environments*, vol. 67, pp. 148-164.
- Brown, W.M. 1993. Avian Collisions with Utility Structures: Biological Perspectives. In: *Proceedings: Avian Interactions with Utility Structures*. Intern. Workshop, Miami, Florida. Sponsored by APLIC and EPRI.
- Buck, P.E., W.T. Hartwell, G. Haynes, and D. Rhode. 1998. Archaeological Investigations at Two Early Holocene Sites Near Yucca Mountain, Nye County, Nevada. Quaternary Sciences Center, Desert Research Center, Las Vegas.
- Burbey, T.J. 1997. Hydrogeology and Potential for Ground-Water Development, Carbonate-Rock Aquifers, Southern Nevada and Southeastern California. Water-Resources Investigations 95-4168. Prepared by U.S. Geological Survey in cooperation with the State of Nevada.
- Council for Environmental Quality (CEQ). 1997. Environmental Justice Guidance under the National Environmental Policy Act, <http://www.whitehouse.gov/CEQ> (accessed February 14, 2007).
- CH2MHill. 2002a. Water Resources Technical Report: Focused Hydrogeological Assessment of the Tule Desert Hydrographic Area Including Relevant Aspects of the Virgin River Hydrographic Area in Southeastern Nevada. April.
- CH2MHill. 2002b. Groundwater Geochemistry of the Tule Desert and Surrounding Hydrographic Areas in Southeastern Nevada and Potential Groundwater Interflow Between the Areas. Prepared for Toquop Energy, Inc. May

- Chambers, J.C. 2006. Climate Change and the Great Basin. In proceedings, Collaborative Watershed Research and management Conference: Nov. 28-30, 2006, Reno, NV. Accessed at: www.cabnr.unr.edu/GreatBasinWatershed/Issues_Papers.
- City of Caliente. 2007. City of Caliente, Lincoln County, Nevada. Web page located at: www.lincolncountynevada.com/caliente.html. Accessed April 3, 2007.
- City of Mesquite. 2007. City of Mesquite Long-Range Comprehensive Plan – Land Use Element. Accessed at: <http://www.mesquitenv.gov/SiteObjects/published/3E5E0C29ED1D8A9691E63E547AB9637E/6DE2C78D7151872EC2B9749A473D8DD8/file/LandUseElement.pdf>.
- Clark County Department of Air Quality and Environmental Management. 2006. Air Quality and Environmental Management Web Site. Available at <http://www.accessclarkcounty.com/dagem/index.html>.
- Dames and Moore, 1992. Kern River Gas Pipeline, Paleontological Resources, Final Technical Report, Nevada Portion. Prepared for Kern River Gas Transmission Company.
- _____. 1990. Kern River Gas Pipeline, Paleontological Resources Assessment and Final Mitigation Plan, Nevada Portion. Prepared for Kern River Gas Transmission Company. September.
- Daniel B. Stephens & Associates, Inc. (DBS&A). 2008. Mean Annual Recharge Report for the Tule Desert Hydrographic Basin Lincoln County, Nevada. Consultant Report Prepared for Lincoln County Water District and Vidler Water Company.
- dePolo, C.M., L.M. Jones, D.M. dePolo, and S. Tingley. 2000. Living with Earthquakes in Nevada. Nevada Bureau of Mines and Geology. Special Publication 27.
- Dettinger, M.D. 1992. Geohydrology of Area Being Considered for Exploratory Drilling, Development of the Carbonate-Rock Aquifers in Southern Nevada–Preliminary Assessment, USGS Water Resources investigation Report 90-4077.
- Dettinger, M.D., Harrill, J.R., Schmidt, D.L., and J.W. Hess, 1995. Distribution of carbonate-rock aquifers and the potential for their development, southern Nevada and parts of Arizona, California, and Utah: U.S. Geological Survey Water-Resources Investigations Report 91-4146, 100 pp. <<http://pubs.er.usgs.gov/pubs/wri/wri914146>
- Dixon, K. 2006. Planning Department, Lincoln County, Nevada. Personal communication to S. Riggs, ARCADIS, Boulder Colorado. Regarding transportation planning, August 22, 2006.

- Drew, M., and E. Ingbar. 2004. Technical Report: Cultural Resources Analysis and Probability Model for the Bureau of Land Management, Ely Field Office. Gnome Inc. ENSR International, Fort Collins, Colorado.
- Eakin, T.E. 1964. Ground-Water Appraisal of Coyote Spring and Kane Springs Valleys and Muddy River Springs Area, Lincoln and Clark Counties, Nevada. U.S. Geological Survey, Ground-Water Resources–Reconnaissance Series Report 25.
- _____. 1966. A Regional Interbasin Groundwater System in the White River Area, Southeastern Nevada. United States Geological Survey: Water Resources Research, vol. 2, No.2, pp. 251-271.
- Ekren E.B, Orkild P.P., Sargent K.A., and Dixon G.L. 1977. Geologic Map of Tertiary Rocks, Lincoln County, Nevada. Scale 1:250,000. USGS Miscellaneous Investigations Series. Map I-1041.
- Elliot P.E., Beck D.A., and Prudic D.E. 2006. Characterization of Surface-Water Resources in the Great Basin National Park area and their susceptibility to groundwater withdrawal in adjacent valleys, White Pine County Nevada: USGS Scientific Investigations No. 2006-5099, 156p.
- ENSR. 2004. Mineral Potential Report for the Ely BLM District Resource Management Plan, White Pine, Lincoln, and Northeastern Nye Counties, Nevada. Prepared for the Bureau of Land Management, Ely Field Office, Nevada. April.
- Ezzo, J.A. 1995. A Class I Cultural Resources Survey of the Moapa and Virgin Valleys, Clark County, Nevada. Technical Series No. 58, Statistical Research, Tucson.
- Fertig, W., R. Black, and P. Wolken. 2005. Rangewide Status Review of Ute Ladies'-Tresses (*Spiranthes diluvialis*). Prepared for the U.S. Fish and Wildlife Service and Central Utah Water Conservancy District. September 30. 101 pages.
- Fowler, D.D., D.B. Madsen, and E.M. Hattori. 1973. Prehistory of Southern Nevada. Desert Research Institute Publication in the Social Sciences No. 6. Reno, Nevada.
- Freeze, R.A., and Cherry, J.A. 1979. Groundwater: Englewood Cliffs, New Jersey, Prentice-Hall, 604 p.
- Glancy, Patrick A. and A. S. Van Denburgh. 1969. Water Resources Appraisal of the Lower Virgin River Valley Area, Nevada. USGS Water Resources Reconnaissance Series Report 51.
- Grayson, D.K. 1993. The Desert's Past: A Natural Prehistory of the Great Basin. Smithsonian Institution Press, Washington, D.C.
- Hardenbrook, B. 2007. Nevada Department of Wildlife, Southern Region, Las Vegas, Nevada. Personal communication to P. Golden, ARCADIS, Highlands Ranch, Colorado. Regarding Comments on PADEIS document, February 13, 2007.

- Harper, C., S. Eskenazi, R.V.N. Ahlstrom, H. Roberts, and D.W. Jolly. 2008. An Archaeological Survey of Lands Associated with the Lincoln County Land Act Groundwater Development and Utility Right-of-Way Project, Lincoln County, Nevada. Nevada BLM Cultural Resource Report No. 8111 NV04-07-1618. HRA, Inc, Las Vegas, Nevada and ARCADIS U.S., Inc, Phoenix, Arizona.
- Harrill, J.R., and D.E. Prudic, 1998. Aquifer systems in the Great Basin Region of Nevada, Utah, and adjacent states--Summary report: U.S. Geological Survey Professional Paper 1409-A, 66 pp.
- Harrill, J.R., J.S. Gates, and J.M. Thomas. 1988. Major Ground-water flow systems in the Great Basin Region of Nevada, Utah, and adjacent states: U.S. Geological Survey Hydrologic Investigations Atlas HA-694-C.
- Hintze, L.F., and G.J. Axen. 2001. Geologic Map of the Lime Mountain Quadrangle, Lincoln County, Nevada. Nevada Bureau of Mines and Geology, Reno, Nevada.
- Hudson, M.R., Rosenbaum, J.G., Gromme, C.s., Scott, R.B, and Rowley, P.D., 1998, Paleomagnetic evidence for counterclockwise rotation in a broad sinistral shear zone, Basin and Range province, southeastern Nevada and southwestern Utah: in Faults, J.E., and Stewart, J.H., eds., Accommodation Zones and Transfer Zones: The Regional Segmentation of the Basin and Range Province: Boulder, Colorado, Geological Society of America Special Paper 323, pp. 149-179.
- Holt, R. L. 1992. Beneath These Red Cliffs: An Ethnohistory of the Utah Paiutes. University of New Mexico Press, Albuquerque, NM.
- Invasive.org. 2006. Nevada State Noxious Weed and Invasive Species List, <http://www.invasive.org/listview.cfm?list=43> (accessed April 16, 2007).
- Intergovernmental Panel on Climate Change (IPCC). 2001. Third Assessment Report: Climate Change 2001, Cambridge University Press, Accessible on the internet at: www.ipcc.ch/pub/online.htm.
- _____. 2007. Climate Change 2007: The Physical Basis (Summary for Policy Makers), Cambridge University Press, accessible on the Internet at <http://www.ipcc.ch/SPMfeb07.pdf>.
- Johnson, B.W. 2003. Out of Sight, Out of Mind? A study on the costs and benefits of undergrounding overhead power lines. Prepared for Edison Electric Institute.
- Johnson, M. E. 2000. Hydrogeology and Groundwater Conditions of the Tertiary Muddy Creek Formation in the Lower Virgin River Basin of Southeastern Nevada, Arizona, and Utah. Geological Society of America Abstracts with programs, Vol. 32, No. 7.

- Johnson, S. 2008. Bureau of Land Management, Caliente, Nevada. Personal Communication to S. Fairchild, ARCADIS, Phoenix, Arizona. Regarding Range Allotments, September 19, 2008.
- Jolly, D.W. 2006. Class I Cultural Resource Inventory of Lands Associated with the Lincoln County Groundwater Development and Utility Right-of-Way Project, Lincoln County, Nevada. ARCADIS U.S., Phoenix, Arizona.
- Jones, G.T., C. Beck, E.E. Jones, and R.E. Hughes. 2003. Lithic Source Use and Paleoarchaic Foraging Territories in the Great Basin. *American Antiquity*, vol. 68, no 1, pp. 5-38.
- Katzer, T., Dixon, G.L., and Johnson, M.J., 2002, Impact analysis of water resource development in Lincoln County, on the water resources of the Lower Virgin River Valley, Clark County, Nevada, Virgin Valley Report No. 2.
- Katzer, T. and Dixon, G.L. 2002. *Geology and Hydrogeology of the Lower Virgin River Valley in Nevada, Arizona, and Utah*. Prepared for the Virgin River Water District. Report VVWD-01.
- Kelly, I.T., and C.S. Fowler. 1986. Southern Paiute. In *Handbook of North American Indians*, vol. 11, Great Basin. Smithsonian Institute, Washington, D.C.
- Kenney, K. and C. Tomlinson. 2005. Survey of Bats at Spring and Water Development Sites in Lincoln County, Nevada. Nevada Department of Wildlife, Southern Region.
- Kipke, T. 2007. Personal communication [July 23 email to P. Golden, ARCADIS-U.S., Inc., Highlands Ranch, Colorado. RE: Trout fishery in Clover Creek]. Biologist, Nevada Department of Wildlife, Habitat Bureau, Las Vegas, Nevada. 1 page.
- Lincoln County Planning Commission. 2006. Master Plan for Lincoln County, Nevada:
- Lincoln County Water District (LCWD). 2007. Lincoln County Land Act Groundwater Development and Utility Right-of-Way Project Plan of Development. Prepared by the Lincoln County Water District, Pioche, NV. February.
- Lincoln County Water District and Vidler Water Company. 2008. Groundwater Resources Study. Additional Data Submittal. Tule Desert, Lincoln County, Nevada. Prepared for The Office of the State Engineer of the State of Nevada.
- Livingston, S. 2001. Report of Reconnaissance Survey for Paleontological Potential on Lands to be Sold Under the Lincoln County Lands Act 2000.
- Longwell, C.R, Pampeyan, E.H., Bowyer, B., and Roberts, R.J. 1965. Geology and Mineral Deposits of Clark County, Nevada. Nevada Bureau of Mines and Geology Bulletin 62. 218 p.

- Lyneis, M.M. 1982. An Archaeological Element for the Nevada Historic Preservation Plan. University of Nevada, Las Vegas. Submitted to Nevada Division of Historic Preservation and Archaeology, Carson City.
- Madsen, D.B. 1989. Exploring the Fremont. University of Utah Occasional Publication No. 8. Utah Museum of Natural History, Salt Lake City.
- Madsen, D.B., and S.R. Simms. 1998. The Fremont Complex: A Behavioral Perspective. *Journal of World Prehistory*, vol. 12, no. 3, pp. 255-336.
- Marwitt, J.P. 1986. Fremont Cultures. Handbook of North American Indians, Volume 11, Great Basin. W.C. d'Azevedo, ed. Smithsonian Institution, Washington, D.C., pp. 161-172.
- Meadow Valley/Clover Creek Technical Review Team (MVCCTRT). 2000. Final Meadow Valley/Clover Creek Watershed Management Plan (Phase 1). Approved by Lincoln County CRM Steering Committee.
- Mesquite Area Chamber of Commerce. 2007. <http://www.mesquite-chamber.com/>. Accessed May 2007.
- McHugh J.B. and W.H. Ficklin. 1984. A hydrogeochemical survey in Clover, Delamar, Meadow Valley, and Mormon Mountain, Lincoln County, Nevada. USGS Open File Report 84-354.
- Mizer, T. 2008. Personal communication [April 10 telephone conversation with Patrick Golden, ARCADIS, Highlands Ranch, Colorado. RE: 2005 Southern Nevada Complex fire acreages]. Fire Operations Supervisor, BLM Caliente Field Station, Caliente, Nevada. 1 page.
- Mock, Peter. 2008. Projection of Groundwater Impacts in Response to Proposed Pumping from Beneath the Tule Desert in Southeastern Nevada Using MODFLOW-2000, Version 3. Peter Mock Groundwater Consulting, Inc., Paradise Valley, AZ. June 24, 2008. 26 pp.
- Myrick, D.F. 1962. Railroads of Nevada and Eastern California. Berkeley, Howell-North Books. California.
- National Audubon Society 2005. The Important Bird Areas Historical Results. Web page. Located at: <http://iba.audubon.org/iba/profileReport.do?siteId=1105&navSite=search&pagerOffset=0&page=1> Date of access unknown.
- Natural Resources Conservation Service (NRCS). 2000. Soil Survey of Lincoln County, Nevada, South Part.
- Nevada Bureau of Mines and Geology (NBMG). 2006. Earthquakes in Nevada, <http://www.seismo.unr.edu/ftp/pub/updates/louie/graphics/brochure.html> (accessed August 17, 2006).

- Nevada Department of Agriculture, Plant Industry Division (NDA). 2006. Noxious Weed List, http://agri.nv.gov/nwac/PLANT_NoxWeedList.htm (accessed February 15, 2007).
- Nevada Department of Employment, Training, and Rehabilitation, 2006. Nevada Counties 2005 Total Payrolls With Average ages by Industry, <http://www.nevadaworkforce.com> (accessed October 4, 2006).
- _____. 2008. Labor Force, Nevada Counties from Nevada Workforce Informer, <http://www.nevadaworkforce.com>. (accessed April 2008).
- Nevada Division of Environmental Protection Bureau of Water Quality Planning (NDEP). 2003a. Lower Virgin River- Boron Total Maximum Daily Loads. Submitted to EPA Region IX, October 15, 2002. Approved by EPA Region IX, January 14, 2003.
- _____. 2003b. Water Quality Standards. Nevada Administrative Code (NAC) Chapter 445A, pp. 118-225.
- _____. 2005a. EPA Approved Final Nevada's 2004 (303)d Impaired Waters List. November 2005.
- _____. 2007a. NDEP, Bureau of Waste Management, 2007 Solid Waste Management Plan, <http://ndep.nv.gov/BWM/swmp/swp05.htm>; (accessed January 2, 2008).
- _____. 2007b. State of Nevada Department of Conservation and natural Resources Division of Environmental Protection. Web page located at: www.ndep.nv.gov/. Access date unknown.
- Nevada Department of Taxation. 2006. Lincoln County Budget for the Fiscal Year Ending June 30, 2006. State of Nevada Department of Taxation, 1550 E. College Parkway, Carson City, Nevada.
- Nevada Department of Taxation 2007 – Lincoln County Budget for the Fiscal Year Ending June 30, 2006. State of Nevada Department of Taxation, 1550 E. College Parkway, Carson City, Nevada.
- Nevada Department of Wildlife (NDOW). 2005. State of Nevada Comprehensive Wildlife Conservation Strategy. Reno, Nevada, <http://www.ndow.org/wild/conservation/cwcs/> (accessed August 21, 2006).
- _____. 2007. Native Fish and Amphibians Field Trip Report. September, 2007.
- Nevada Division of Water Resources (NDWR). 1992. Nevada Water Facts: Background on the State's Water Resources, Groundwater, Perennial Yield and Committed Resource Details. <http://water.nv.gov/water%20planning/wat-fact/yield.cfm> (accessed February 2007).

- _____ 2005. Designated Groundwater Basins of Nevada. Department of Conservation and Natural Resources, Office of the State Engineer, Division of Water Resources
- _____ 2006. Water Rights Database, http://water.nv.gov/Water%20Rights/permitdb/permitdb_disclaimer.htm?CFID=8586&CFTOKEN=17669127 (accessed August 18, 2006).
- _____ 2007. Water Rights Database, http://water.nv.gov/Water%20Rights/permitdb/permitdb_disclaimer.htm?CFID=8586&CFTOKEN=17669127 (accessed March 12, 2007).
- Nevada Division of State Parks. 2006a. Beaver Dam State Park. Web page located at: www.parks.nv.gov/bd.htm. Access date unknown.
- Nevada Natural Heritage Program (NNHP). 2001. Nevada Rare Plant Atlas, Rare Plant Fact Sheets, <http://heritage.nv.gov/atlas/atlasndx.htm>. (accessed February 16, 2007).
- _____ 2005a. State of Nevada List of Fully Protected Plant Species, <http://heritage.nv.gov/stplants.htm>. (accessed February 14, 2007).
- _____ 2005b. Detailed Rare Plant and Lichen List, <http://heritage.nv.gov/plantbig.htm> (accessed February 14, 2007).
- Nevada State Demographer's Office. 2006. Nevada County Population Estimates July 1, 1990 to July 1, 2005: Includes Cities and Towns, http://www.nsbdc.org/what/data_statistics/demosgrapher/pubs/pop_increas/ (accessed October 4, 2006).
- _____ 2007. Nevada County Population Projections 2006 to 2026, http://www.nsbdc.org/what/data_statistics/demosgrapher/pubs/docs/NV_2006_Projections.pdf (accessed: 2007).
- Olendorff, R.R., A.D. Miller, and R.N. Lehnman. 1981. Suggested Practices for Raptor Protection on Power Lines: State of the Art in 1981. Raptor Research Foundation Report, no. 4.
- Page, W.R., G.L. Dixon, P.D. Rowley, and D.W. Brickey. 2005a. Geologic map of parts of the Colorado, White River, and Death Valley groundwater flow systems, Nevada, Utah, and Arizona. U.S. Nevada Bureau of Mines and Geology Map 150.
- Page, W.R., Lundstrom, S.C., Harris, A.G., Langenheim, V.E., Workman, J.B., Mahan, S.A., Paces, J.B., Rowley, P.D., Dixon, G.L., Burchfiel, B.C., Bell, J.W., and E.I. Smith, 2005b. Geologic and geophysical maps of the Las Vegas 30' x 60' Quadrangle, Clark and Nye Counties, Nevada, and Inyo County, California: U.S. Geological Survey Scientific Investigations Map 2814, 1:100,000-scale.

- Page, W.R., D.S. Scheirer, and V.E. Langenheim. 2006. Geologic cross sections of parts of the Colorado, While River, and Death Valley groundwater fow systems, Nevada, Utah, and Arizona. U.S. Geolgoical Survery Open-File report 2006-1040.
- PBS&J. 2002. City of Mesquite, Nevada, Land Sale Environmental Assessment. Prepared from U.S. Department of the Interior, BLM, Las Vegas Field Office on Behalf of City of Mesquite, Nevada. July.
- Peterson, R.T. 1990. Western Birds. Houghton Mifflin Company, New York, New York.
- Plume, R.C., and Carlton, S.M. 1988. Hydrogeology of the Great Basin Region of Nevada, Utah and adjacent states. Scale 1:1,000,000. USGS. HA 694-A.
- Price, J.G., C.D. Henry, S.B. Castor, L. Garside, and J. Faulds. 1999. Geology of Nevada. Nevada Bureau of Mines and Geology, University of Nevada, Reno.
- Prudic D.E., J.R. Harrill, and T.J. Burbey. 1995. Conceptual Evaluation of Regional Groundwater Flow in the Carbonate Rock Province of the Great Basin, Nevada, Utah, and Adjacent States. United States Geological Survey Professional Paper 1409-D.
- Resource Concept, Inc. 2001. A Water Plan for Lincoln County. Final Plan, March 20, 2001. Prepared for Lincoln County Commission and Vidler Water Company.
- Reynolds, R. E. and Lindsay, E. H. 1999. Late Tertiary basins and vertebrate faunas along the Nevada-Utah border. *Pp. 469-478 In: Gillette, D. D., editor. Vertebrate paleontology in Utah.* Miscellaneous Publication 99-1. Utah Geological Survey, Salt Lake City.
- Rush F.E. 1964. Groundwater Appraisal of the Meadow Valley Area, Lincoln and Clark Counties, Nevada. Nevada Department of Conservation and Natural Resources. Groundwater Resources Reconnaissance Report 27, 43 p.
- Schaefer, D.H. 1996. Distribution of oil and natural gas wells in relation to groundwater flow systems in the Great Basin Regions of Nevada, Utah, and adjacent states. USGS HA – 694-E.
- Shaefer, D.H., Thiros S.A., and Rosen M.R. 2005. Groundwater Quality in Carbonates-Rock of the Great Basin, Nevada and Utah, 2003. USGS Water Resource Investigations Report No. 2005-5232, 32p.
- SEARCHUS. 2007. Campgrounds and RV Parks, Utah, USA. Web Page located at: www.searchus.com. Accessed on April 3, 2007.
- Sharifi, M.R., A.C. Gibson, and P.W. Rundel. 1997. Surface dust impacts on gas exchange in Mojave Desert shrubs. *Journal of Applied Ecology*, vol. 34, pp. 837-846.

- Sogge, M., R. Marshall, S. Sferra, and T. Tibbits. 1997. A Southwestern Willow Flycatcher Natural History Summary and Survey Protocol. Technical Report NPS/NAUCPRS/NRTR-97-12. USGS Colorado Plateau Field Station/Northern Arizona University.
- St. George Area Chamber of Commerce. 2007. <http://www.stgeorgechamber.com/>. Accessed May 2007.
- Stebbins, R.C. 2003. Western Reptiles and Amphibians. Third Edition. Houghton Mifflin Company, New York, New York.
- Sterner, M.A. and J. Ezzo. 1996. Religion, Ranching, and Railroads: History of the Muddy and Virgin River Valleys. In A Class I Cultural resources Survey of the Moapa and Virgin Valleys. Clark County, Nevada. Statistical Research Inc., Tucson, Arizona. Submitted to the U.S. Department of the Interior, Bureau of Reclamation Lower Colorado Region, Boulder City, Nevada.
- Stevenson, C. 2006. Nevada Department of Wildlife. Personal Communication to J. MacDonald, ARCADIS U.S., Inc, Highlands Ranch, Colorado. Regarding Southern Lincoln County and Northern Clark County information, July 11, 2006.
- Styles, A. 2007. Personal communication [*July 20* email to P. Golden, ARCADIS-U.S., Inc., Highlands Ranch, Colorado. *RE: Riparian habitat along Clover Creek*]. Wildlife Biologist, Bureau of Land Management, Caliente Field Station, Caliente, Nevada. 1 page.
- _____. 2008. Personal communication [*March 18* email to Patrick Golden, ARCADIS, Highlands Ranch, Colorado. *RE: Las Vegas buckwheat population data (3 shapefiles attached to email)*]. Wildlife Biologist, BLM Caliente Field Station, Caliente, Nevada. 1 page.
- Tingley, J.V., 1998. Mining districts of Nevada (second edition): Nevada Bureau of Mines and Geology Report 47, 128 p., 1:1,000,000.
- Toth, J., 1963, A theoretical analysis of groundwater flow in small drainage basins: Journal of Geophysical Research, v. 69, p. 4795-4812.
- Tschanz, C.M. and E.H. Pampeyan. 1970. Geology and Mineral Deposits of Lincoln County, Nevada. Nevada Bureau of Mines and Geology Bulletin 73. Mackay School of Mines, University of Nevada, Reno.
- United States Census Bureau. 2000. Profile of Selected Social Characteristics: 2000 Data Set: Census 2000 Summary File 3 (SF 3) – Sample Data; Lincoln County, Nevada, <http://factfinder.census.gov>.
- _____. 2007a. State and County QuickFacts. Web page located at: <http://quickfacts.census.gov/qfd/states/32000.html>. Accessed February 19, 2007.

_____ 2007b. State and county QuickFacts. Web page located at: <http://quickfacts.census.gov/qfd/states/32003.html>. Accessed February 19, 2007.

_____ 2007c. State and county QuickFacts. Web page located at: <http://quickfacts.census.gov/qfd/states/32017.html>. Accessed February 19, 2007.

_____ 2007d. State and county QuickFacts. Web page located at: <http://quickfacts.census.gov/qfd/states/49000.html>. Accessed March 28, 2007.

_____ 2007e. State and county QuickFacts. Web page located at: <http://quickfacts.census.gov/qfd/states/49053.html>. Accessed March 28, 2007.

University of Nevada at Reno (UNR). 2004a. Analysis of Socio-Economic Data and Trends for the Comprehensive Economic Development Strategy (CEDS) for Lincoln County: Part I. Technical Report UCED 2004/05-05. <http://www.ag.unr.edu/uced/reports/technicalreports/> (accessed October 4, 2006).

_____ 2006. Earthquake Catalogue, <http://www.seismo.unr.edu/Catalog/catalog-search.html> (accessed: August 17, 2006).

U.S. Department of Defense (DOD) – Nellis Air Force Base. 1999. F-22 Force Development Evaluation and Weapons School Beddown, Nellis Air Force Base Final Environmental Impact Statement. 1999.

U.S. Department of Agriculture (USDA). 2006. Federal Noxious Weed List (as of June 30, 2006), <http://www.aphis.usda.gov/ppq/weeds/weedlist2006.pdf>. (accessed April 16, 2007).

U.S. Department of the Interior, Bureau of Land Management (BLM). 1999. Proposed Caliente Management Framework Plan Amendment and Final Environmental Impact Statement for the Management of Desert Tortoise Habitat. Prepared by the BLM Ely Field Office, Ely, Nevada.

_____ 2000. Ely District Office Managed Natural and Prescribed Fire Plan. Ely Field Office, Ely, Nevada.

_____ 2003. Proposed Toquop Land Disposal Amendment to the Caliente Management Framework Plan and Final Environmental Impact Statement for the Toquop Energy Project. BLM Ely District, Ely, Nevada.

_____ 2005. Draft Resource Management Plan and Environmental Impact Statement for the Ely District. Prepared by the BLM Ely Field Office, Ely, Nevada.

_____ 2006a. Summary Report of Scoping Comments in the Lincoln County Land Act Groundwater Development and Utility Right of Way Project EIS Scoping Report.

_____ 2006b. BLM Ely Field Office Weed Inventory Data 2006. Ely Field Office, Ely Nevada.

- _____ 2006d. Wilderness, <http://www.nv.blm.gov/ely/Wilderness.htm> (accessed August 16, 2006).
- _____ 2006e. Hydrologic Basins and Flow Systems Map. 12 May.
- _____ 2007a. LR2000 Database Search. Active and Closed Rights-of-Way in the Project Area.
- _____ 2007b. Toquop Energy Project, Draft Environmental Impact Statement, October 2007, Ely Field Office, Nevada.
- _____ 2009. BLM Water Rights Policy As Outlined in US. Department of the Interior, BLM, Manual Transmittal Sheet 7250 – Water Rights 3/19/84. Accessed at <http://www.blm.gov/nstc/WaterLaws/blmwaterpolicy.html>. Accessed on January 20, 2009.
- U.S. Department of the Interior – U.S. Fish and Wildlife Service (USFWS). 1985. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status and Critical Habitat for the Big Spring Spinedace; Final Rule. Federal Register Vol. 50(60): 12298-12302
- _____ 1989. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Virgin River Chub; Final Rule. Federal Register 50(163): 35305-35311.
- _____ 1992. Endangered and threatened wildlife and plants; Final Rule to List the Plant *Spiranthes diluvialis*, Ute Ladies'- Tresses, as a Threatened Species. Federal Register 57, 2048-2054.
- _____ 1994a. Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Mojave Population of the Desert Tortoise, Final Rule. Federal Register 59(26): 5820-5866.
- _____ 1994b. Desert tortoise (Mojave population) recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 73 pp + appendices.
- _____ 2000. Endangered and threatened wildlife and plants; Designation of critical habitat for the woundfin and Virgin River chub. Federal Register 65(17): 4140-4156.
- _____ 2001. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Species That are Candidates or Proposed for Listing as Endangered or Threatened, Annual Notice of Findings on Recycled Petitions, and Annual Description of Progress on Listing Actions; Proposed Rule. Federal Register 68, No. 210, 54808-54832.
- _____ 2002. Southwestern Willow Flycatcher Recovery Plan. Albuquerque, New Mexico. i-ix + pp. 210, Appendices A-O.

- _____ 2003. Biological Opinion for the Proposed Toquop Energy Natural Gas Fired Power Plant Project. Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada. File No. 1-5-02-F-494. June 16, 2003.
- _____ 2006b. Range-wide Monitoring of the Mojave Population of the Desert Tortoise: 2001-2005 Summary Report. Report by the Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service. Reno, Nevada.
- _____ 2006c. Personal communication. Email from Jeri Krueger (USFWS Fish and Wildlife Biologist) to Sandra Fairchild (ARCADIS Project Manager) Re: Acreage of USFWS jurisdiction over National Wildlife Refuge in Lincoln County. April 20.
- _____ 2006d. Moapa Valley National Wildlife Refuge. Web page located at: www.fws.gov/desertcomplex/moapavalley. Access date not documented.
- U.S. Department of the Interior, U.S. Geological Survey (USGS). USGS Professional Paper Series. 1409, Regional Aquifer-System Analysis-Great Basin, Nevada-Utah. Ongoing series.
- _____ 1971. Water Resources and Inter-Basin Flows. Prepared for the Division of Water Resources, State Engineers Office, State of Nevada.
- _____ 2003. Discharge and Physical-Property Measurements from Virgin River Narrows, Arizona, to Lake Mead, Nevada, February 12, 2003. Prepared in cooperation with National Park Service. Scientific Investigations Report 2005-5286.
- _____ 2005. WSGS Water-Data Report NV-2005.
- U.S. Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. Office of Noise Abatement and Control. EPA 550/9-74-004. March.
- _____ 1986. Quality Criteria for Water (Gold Book), Pub. No. EPA 440/5-86-001.
- _____ 2006. National Ambient Air Quality Standards. <http://epa.gov/air/criteria.html>
- Utah Governor's Office of Planning and Development. 2007. Web Page located at: <http://www.governor.utah.gov/DEA/LongTermProjections.html>. Accessed March 27, 2007.
- Utah Department of Workforce Services, Wage and Employment Data. 2005. Web Page located at: <http://jobs.utah.gov/jsp/wi/utalmis/gotoCounties.do>. Accessed March 27, 2007 and 2008.

- Wagonner, B. 2007. Bureau of Land Management, Ely Field Office, Ely, Nevada. Personal communication to P. Golden, ARCADIS, Highlands Ranch, Colorado. Regarding comments on PADEIS document, January 30, 2007.
- Warren, C.N., and R.H. Crabtree. 1986. Prehistory of the Southern Area. In *Great Basin, Handbook of North America Indians*, vol. 11. Smithsonian Institution press, Washington, DC. pp.183-193 .
- Washington County Clerk's Office. 2007. Washington County, Utah Financial Statements.
- Welch, A.H., and Bright, D.J.,eds., 2007, Water resources of the Basin and Range carbonate-rock aquifer system, White Pine County, Nevada, and adjacent areas in Nevada and Utah—Draft Report: U.S. Geological Survey Open-File Report 2007-1156,102 p.
- Western Regional Climate Center, Desert Research Institute, Division of Atmospheric Sciences (WRCC). 2007. Western U.S. Climate Historical Summaries [Webpage]. Located at <http://www.wrcc.dri.edu/summary/climsmnv.html>.
- Whitson, T.D., L.C. Burrill, S.A. Dewey, D.W. Cudney, B.E. Nelson, R.D. Lee, R. Parker. 2000. Weeds of the West. The Western Society of Weed Science in cooperation with the Western U.S. Land Grant Universities, Cooperative Extension Services. University of Wyoming. Laramie, Wyoming. 630 pp.
- Williams, R.D. 2006. Nevada Fish and Wildlife Office, Reno, Nevada. Personal communication to P. Golden, ARCADIS, Highlands Ranch, CO. Regarding Species List for the Proposed Lincoln County Land Act Groundwater Development and Utility Right-of-Way Project, Lincoln County, Nevada, May 12, 2006
- Willig, J.A., and M.C. Aikens. 1988. The Clovis-Archaic Interface in Far Western North America. In *Early Human Occupation in Far Western North America: The Clovis Archaic Inter face*. Edited by J.A. Willig, C.M. Aikens, and J.L. Fagan, Anthropological Papers, Nevada State Museum, Carson, Vol. 21, pp. 1–41.
- Wilson, R.P., and S.J. Owen-Joyce. 1994. River aquifer and accounting surface in the lower Colorado River Valley, Clover Mountains, Nevada-Utah. U.S. Bureau of Reclamation, Water-resources Investigations Report 94-4005.
- Woods, C. 2003. Ely RMP/EIS Ethnographic Studies Technical Report. BLM, Ely Field Office, Nevada.

- Young, J.A., and C.D. Clements, 2006. Historic cheatgrass fueled wildfires in Nevada [abstract]. Nevada Wildland Fire Research and Outreach Conference. May 25, 2006, Reno, NV, 6 pp.
- Zeanah, D.W., E.E. Ingbar, R.G. Elston, and C.D. Zeier. 2004. Archaeological Predictive Model, Management Plan, and Treatment Plans for Northern Railroad Valley, Nevada. Prepared by Intermountain Research, Silver City, Nevada for submission to the Bureau of Land Management (original report dated 1999). Cultural Resources Series No. 15. Bureau of Land Management, Nevada.
- Zimmerman, J. and T. Harris. 2000. An Update of Federal and State Land-Based Payments in Nevada. University of Nevada, Reno: Reno, Nevada. University Center for Economic Development, Technical Report UCED 2000/01-06.

GLOSSARY

Access (road)	Road used for passage to project sites and along utility corridors for purposes of construction, operation, and maintenance.
Acre-foot	The volume of water required to cover one acre to a depth of one foot: 43,560 cubic feet, 325,851 U.S. gallons, or 1,233 cubic meters.
Advisory Council on Historic Preservation	A 19-member body appointed to advise the President and Congress in the coordination of actions by federal agencies on matters relating to historic preservation.
Aeolian	Of or caused by the wind; wind-blown.
Aesthetic quality	Referring to the perception of beauty of a natural or cultural landscape.
Affected environment	Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action.
Air quality	Measure of the health-related and visual characteristics of the air, often derived from quantitative measurements of the concentrations of specific injurious or contaminating substances.
Air quality classes	Classifications established under the Prevention of Significant Deterioration portion of the Clean Air Act that limit the amount of air pollution considered significant within an area. Class I applies to areas where almost any change in air quality would be significant; Class II applies to areas where the deterioration normally accompanying moderate well-controlled growth would be permitted; and Class III applies to areas where industrial deterioration would generally be allowed.
Air Quality Standards	The level of pollutants prescribed by regulation that may not be exceeded during a specified time in a defined area.
Alkaline	Having a pH value greater than 7.
Alluvial fan	Cone-shaped deposits of alluvium made by a stream. Fans generally form where streams emerge from mountains onto the lowland.
Alluvial, alluvium	Relating to material deposited by running water, such as clay, silt, sand, and gravel. Sedimentary material transported and deposited by the action of flowing water.
Alluvium	A geologic term describing beds of sand, gravel, silt, and clay deposited by flowing water.
Alternative (action)	An option for meeting the stated purpose and need.
Ambient	The surrounding natural conditions (or environment) in a given place and time.

Animal Unit Month (AUM)	The amount of forage necessary for the sustenance of one cow or its equivalent (one cow, bull, steer, heifer, horse, burro, mule, five sheep, or five goats over the age of 6 months at the time of entering the public lands or other lands administered by BLM) for a period of 1 month.
Anode	An electrode through which electric current flows into a polarized electrical device.
Applicant	Lincoln County Water District
Aquatic	Growing or living in or near the water.
Aquifer	A water-bearing formation that provides a ground water reservoir; a formation, a group of formations, or part of a formation that contains sufficient permeable material capable of yielding significant quantities of water to wells and springs.
Archaeology	The scientific study of the life and culture of ancient peoples, as by excavation of ancient cities, relics, or artifacts.
Area of Critical Environmental Concern	A BLM designation for an area within public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources, or other natural systems or processes; or to protect life from natural hazards.
Artifact	Any object showing human workmanship or modification, especially from a prehistoric or historic culture.
Artifact Scatters (Historic)	Historic artifact scatters are a common type of site and include individual artifacts that may or may not include features. Artifacts include a variety of glass, ceramics, porcelain, and metal fragments.
Artifact Scatters (Prehistoric)	Artifact scatters commonly include chipped and ground stone debitage and possibly ceramics. Artifact scatters are the most common prehistoric sites. These sites are invaluable for data on interpreting subsistence strategies, settlement patterns, trade, and chronology.
Assessment (environmental)	An evaluation of existing resources and potential impacts on them from a proposed act or change to the environment.
Basaltic	Composed of, containing, or characteristic of basalt (the dark, dense igneous rock of a lava flow or minor intrusion, composed essentially of labradorite and pyroxene and often displaying a columnar structure).
Basic	Of or relating to a base; Containing a base, especially in excess of acid; Alkaline.
Burials	Burials refers to human inhumations may occur away from habitation sites in isolated areas such as rocky outcrops, talus slopes, crevices, caves, and under ledges.

Calcareous	Composed of, containing, or characteristic of calcium carbonate, calcium, or limestone; chalky.
Caldera	Volcanic feature formed by the collapse of land following a volcanic eruption.
Caliche Cave	Small cave, generally used by desert tortoise and other small reptiles and mammals, formed in calcium carbonate crust that forms on stony soils in arid regions.
Cambrian	The earliest geologic period in the Paleozoic Era, spanning the time of 570 to 500 million years ago, and marked by a profusion of marine animals.
Campsites (Prehistoric)	These sites represent a short-term occupation that may have occurred to procure food or raw material. Typically, these sites consist of chipped and ground stone debitage, and possibly ceramics. Fire pits or burned areas are common features associated with these sites.
Candidate species	A plant or animal species not yet officially listed as threatened or endangered, but which is undergoing status review by the USFWS.
Capture	Water withdrawn artificially from an aquifer is derived from a decrease in storage in the aquifer, a reduction in the previous discharge from the aquifer, an increase in the recharge, or a combination of these changes. The decrease in discharge plus the increase in recharge is termed capture.
Carbonate rock	Most carbonate rocks originate as sedimentary deposits in marine environments. Compaction, cementation, and dolomitization processes act on the deposits as they lithify and greatly change their porosity and permeability. The principal postdepositional change in carbonate rocks is the dissolution of part of the rock by circulating slightly acidic ground water. Solution openings in carbonate rocks range from small tubes and widened joints to caverns that may be tens of meters wide and hundreds to thousands of meters in length. Where they are saturated, carbonate rocks with well-connected networks of solution openings yield large amounts of water to wells that penetrate the openings (see carbonate aquifer), although the undissolved rock between the large openings may be almost impermeable.
Carbonate aquifer	Most carbonate-rock aquifers consist of limestone, but dolomite and marble locally yield water. The water-yielding properties of carbonate rocks vary widely; some yield almost no water and are considered to be confining units, whereas others are among the most productive aquifers known.
Cathodic Protection	Cathodic protection is a technique to control the corrosion of a metal surface by placing in contact with the metal to be protected another more easily corroded metal to act as a sacrificial anode.

Clastic Rocks	Rocks formed by fragments of pre-existing rocks
Clay lens	A soil mantle consisting of a layer of clay of variable thickness.
Clean Water Act	Provides for pollution control activities and funding at the federal level including grant programs, research and related programs, as well as provisions for setting standards and enforcement actions.
Cone of Depression	A depression in the water table or potentiometric surface of a ground water body that is in the shape of an inverted cone and develops around a well which is being pumped. It defines the area of influence of the pumping well.
Cooperating agency	Any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major federal action significantly affecting the quality of the human environment. The selection and responsibilities of a cooperating agency are described in 40 CFR 1501.6. A State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may by agreement with the lead agency become a cooperating agency.
Council on Environmental Quality	An advisory council to the President established by Title II of the National Environmental Policy Act of 1969. It reviews federal programs for their effort on the environment studies, and advises the President on environmental matters.
Cryptobiotic	Of or related to the state of cryptobiosis (a state in which an animal's metabolic activities come to a reversible standstill).
Cubic feet per second	Unit of discharge, or volume rate of flow, equal to 0.0283 cubic meters per second. As a rate of streamflow, a cubic foot of water passing a referenced section in 1 second. A measure of a moving volume of water (1 cfs = 0.0283 m ³ /s).
Cultural resources	A broad, general term meaning any cultural property reflecting past human activity or use that has a definite location, and any traditional lifeway value important to a contemporary social and/or cultural group's traditional systems of religious belief, cultural practices, or social interaction.
Cumulative impact	The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions—regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7).
Deuterium	Also called heavy hydrogen, is a stable (non radioactive) isotope of hydrogen with a natural abundance in the oceans of Earth of

approximately one atom in 6500 of hydrogen. Measurements of small variations in the natural abundances of deuterium, along with those of the stable heavy oxygen isotopes ^{17}O and ^{18}O , are of importance in hydrology, to trace the origin of Earth's waters. The heavy isotopes of hydrogen and oxygen in rainwater are enriched as a function of the environmental temperature of the region in which the precipitation falls. Evaporative and other processes in water also alter the ratios of heavy hydrogen and oxygen isotopes in characteristic ways. For example, precipitation falling in areas with lower temperatures or at higher latitudes will tend to have lower deuterium values. On the other hand, water from springs originating from deep regional aquifer systems would have different deuterium values due to different geographical origin as well as geochemical processes acting along its path.

Direct effect	See effects.
Drawdown	The vertical distance the free water elevation is lowered, or the reduction of the pressure head due the removal of free water.
Effects	(a) Direct effects, which are caused by the action and occur at the same time and place; (b) Indirect effects, which are caused by the action and are later in time or farther time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects and impacts as used in [the CEQ] regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.
Endangered species	Any species in danger of extinction throughout all or a significant portion of its range.
Endemic	Plants or animals that are native to a particular region or country.
Environment	The surrounding conditions, influences or forces that affect or modify an organism or an ecological community and ultimately determine its form and survival.
Environmental Impact Statement	A formal public document prepared to analyze the impacts on the environment of the proposed project or action and released for comment and review. An EIS must meet the requirements of NEPA, CEQ guidelines, and directives of the agency responsible for the proposed project or action.

Environmental Impact Statement, Final	The final version of the public document required by NEPA.
Ephemeral	Present only during a portion of the year. Generally refers to water courses.
Ephemeral Stream	An ephemeral stream is one that remains dry during most of the year, flowing only during a few days or weeks in response to direct runoff. Ephemeral streams do not intercept ground water flow and therefore, have no baseflow.
Evapotranspiration (ET)	The combined processes by which water is transferred from the earth's surface to the atmosphere; evaporation of liquid or solid water plus transpiration from plants.
Fault	A fracture or fracture zone in the earth's surface along which there has been displacement of the sides relative to one another.
Fault Zone	A fault that is expressed as a zone of numerous small fractures or of breccia or fault gouge. A fault zones may be hundreds of feet wide.
Fauna	The wildlife or animals of a specified region or time.
Federal Land Policy and Management Act of 1976	Public Law 94-579 signed by the President on October 21, 1976. Established public land policy for management lands administered by the Bureau of Land Management (BLM). FLPMA specifies several key directions for the BLM, notably: 1) management on the basis of multiple use and sustained yield; 2) land use plans prepared to guide management actions; 3) public lands for the protection, development, and enhancement of resources; 4) public lands retained in federal ownership; and 5) public participation used in reaching management decisions.
Floodplain	That flat portion of a river or stream valley adjacent to the river channel that is built of sediments and is inundated with water when the stream overflows its banks.
Fossil	The remains or traces of an organism or assemblage of organisms that have been preserved by natural processes in the earth's crust.
Geologic formation	A rock unit distinguished from adjacent deposits by some common physical characteristic, such as its composition, origin, color, or age.
Geology	The science that studies the earth. The materials, processes, environments, and history of the planet, especially the lithosphere, including the rocks and their formation and structure.
Ground Water	1) That part of the subsurface water that is in the saturated zone; or 2) loosely, all subsurface water as distinct from surface water.

Ground Water Flow	Ground water flow takes place below the ground water table in the form of saturated flow through alluvial deposits and other water-bearing formations beneath the soil mantle.
Gypsiferous	Containing gypsum.
Habitat	The region where a plant or animal naturally grows or lives. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and home range.
Head	1) The pressure of a fluid on a given area, at a given point represented by the height of the fluid above the point; 2) the water-level elevation in a well, or elevation to which water of a flowing well rises in a pipe extended high enough to stop the flow.
Historic Roads and Trails	Historic trails/roads have been identified within Nevada. A few of the historic trails include the Old Spanish Trail/Mormon Road, which connected Santa Fe to Los Angeles.
Historic Property	A prehistoric, historic or traditional site, district, building, structure, or object that is listed in or eligible for the National Register of Historic Places (NRHP) under the Criteria for Eligibility (36 CFR 60.4)
Human environment	Interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (See the definition of "effects" (1508.8).) This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.
Hydraulic Conductivity	For an isotropic porous medium and homogeneous fluid, the volume of water at the existing kinematic viscosity that moves in unit time under a unit hydraulic gradient through a unit area measured at right angles to the direction of flow.
Hydraulic Gradient	Slope of the water or potential surface. The change in static head per unit of distance in a given direction. If not specified, the direction generally is understood to be that of the maximum rate of decrease in head.
Hydraulic Head	The height above a datum plane (such as sea level) of the column of water that can be supported by the hydraulic pressure at a given point in a ground water system. For a well, the hydraulic head is equal to the distance between the water level in the well and the datum plane. See Head.

Hydrology	The science that studies the properties, distribution, and circulation of natural surface water and ground water.
Impact	A modification in the status of the environment brought about by a proposed action.
Indirect effect	See effects.
Infrastructure	The basic installations and facilities on which the continuance and growth of a community depend (for example, roads, schools, sewers, power plants, transportation, and communication systems).
Isolate/Isolated Artifact	A single artifact, feature, or object not associated with other cultural resources. An isolate is not normally considered a property.
Isolated Occurrences / Small Concentrations (Prehistoric)	Isolated artifacts are common finds on the landscape. Isolated artifacts and small site concentrations may consist of projectile points, ground stone, flakes, and cores as well as pot busts or a small discrete cluster of chipped stone debitage.
Karst topography	A three-dimensional landscape shaped by the dissolution of a soluble layer or layers of bedrock, usually carbonate rock such as limestone or dolomite.
Kilovolt	1,000 volts (a volt is a measure of electrical potential difference that would cause a current of 1 ampere to flow through a conductor whose resistance is 1 ohm).
Kilowatt	A unit of power equivalent to 1,000 watts.
Lacustrine	Of or relating to lakes; Living or growing in or along the edges of lakes.
Landform	A term used to describe the many types of land surfaces that exist as a result of geologic activity and weathering (for example, plateaus, mountains, plains, and valleys).
Lead agency	The agency or agencies preparing or having taken primary, responsibility for preparing the environmental impact statement.
Lithic	Pertaining to stone or a stone tool (for example, lithic artifact).
Lithology	The appearance, structure, and composition of rocks as determined by study with the unaided eye or with little magnification.
Megawatt	1,000 kilowatts or 1 million watts (a watt is a unit of electrical power equal to 1/756th horsepower).
Mesa	An isolated, nearly level land mass, formed of nearly horizontal rocks, standing above the surrounding country and bounded with steep sides.
Migratory	Birds, animals, or people, that migrate or move from one region or country to another.

Mineral resource	Any inorganic or organic substance occurring naturally in the earth that has a consistent and distinctive set of physical properties. Examples of mineral resources include coal, nickel, gold, silver, and copper.
Mining	There are several components to a mine, from the early stages of prospecting and laying claims with rock cairns, shafts, and adits to the development of mining towns with grocery and merchandise stores, saloons, tailors, churches, meat markets, bakeries, barber shops, jails, blacksmiths, law offices, cemeteries, schools, and brothels.
Mississippian	A period of the Paleozoic Era, spanning in time from about 345 to 320 million years ago.
Mitigate	To alleviate, reduce, or render less intense or severe.
Mitigation	(a) Avoiding the impact altogether by not taking a certain action or parts of an action. (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation. (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment. (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action. (e) Compensating for the impact by replacing or providing substitute resources or environments.
National Ambient Air Quality Standards	Air quality standards established by the Clean Air Act. The primary NAAQS are intended to protect the public health with an adequate margin of safety; the secondary NAAQS are intended to protect the public welfare from any known or anticipated adverse effects of a pollutant.
National Environmental Policy Act of 1969	Public Law 91-190. Establishes environmental policy for the nation. Among other items, NEPA requires federal agencies to consider environmental values in decision-making processes.
National Register Criteria	The National Register's standards for evaluating the significance of properties were developed to recognize the accomplishments of all peoples who have made a significant contribution to our country's history and heritage. The criteria are designed to guide State and local governments, Federal agencies, and others in evaluating potential entries in the National Register.
National Register of Historic Places	A listing of architectural, historical, archaeological, and cultural sites of local, state, or national significance, established by the Historic Preservation Act of 1966.
Native vegetation	Vegetation originating in a certain region or country.
Nonattainment area	An air quality control region (or portion thereof) in which the U.S. Environmental Protection Agency has determined that ambient air concentrations exceed national ambient air quality standards for one or more criteria pollutants.

100-year flood	A flood with a magnitude that may occur once every 100 years on average. An area has a 1-in-100 chance of being inundated during any single year.
Orogeny	The process of mountain formation.
Ozone	A form of oxygen, O ₃ , produced especially when an electric spark is passed through oxygen or air.
Paleontology	The science that deals with the life of past geological ages through the study of the fossil remains of organisms.
Paleozoic	The geologic era between the Precambrian and Mesozoic eras covering the time between 550 million and 225 million years ago. The era was characterized by the development of the first fishes, amphibians, reptiles, and land plants.
Particulates	Minute, separate particles, such as dust or other air pollutants.
Pennsylvanian	A period of the Paleozoic Era, spanning from about 320 million to 280 million years ago.
Perennial	Lasting, or active through the whole year. May refer to rivers, streams, or plants.
Perennial Stream	A perennial stream is one that always has flow. During low-flow periods, the flow of perennial streams is baseflow.
Perennial Yield	The maximum quantity of water that can be withdrawn annually from a ground water supply under a given set of conditions without causing an undesirable result.
Permeability	The measure of the ease with which a fluid can diffuse through a particular porous material.
Permian	The seventh and last period of the Paleozoic Era, spanning from about 280 to 225 million years ago, characterized by increased reptile life and major mountain building in North America.
Petroglyph	A symbolic design or drawing of an animal or human pecked or carved into a rock or cliff face—generally prehistoric.
Physiographic Province	A large area characterized by distinctive topography, geologic structure, and other features and phenomena of nature.
Piezometer	A facility emplaced to measure and record ground water levels.
Plateau	An elevated tract of relatively level land, such as a tableland or large mesa.
Playa	The shallow central lake basin of a desert plain, in which water gathers after a rain and is evaporated.

Pleistocene	The first geologic epoch during the Quaternary period, spanning from 1.8 million years ago to approximately 10,000 years ago, characterized by extensive continental glaciation in the Northern Hemisphere.
Policy	A guiding principle upon which is based a specific decision or set of decisions.
Pore space	The open spaces or voids within a soil or rock. It is a measure of the amount of liquid or gas that may be absorbed or yielded by a particular formation.
Porosity	1) An index of the void characteristics of a soil or rock material; degree of perviousness. 2) The ratio usually expressed as a percentage of the volume of the interstices, whether isolated or connected, in a given quantity of material to the total volume of the material.
Potentiometric Surface	An imaginary surface representing the elevation and pressure head of ground water and defined by the level to which water rises in a well or piezometer. The water table is a particular potentiometric surface.
Precambrian	The earliest geologic era covering all time from the formation of the earth and ending at the Paleozoic Era, which began about 520 million years ago.
Primitive	An area that is not developed, a pristine natural area.
Quaternary	The geologic period following the Tertiary in the Cenozoic Era, beginning about 1.8 million years ago, composed of the Pleistocene and Holocene epochs, characterized by the evolution of Hominids into modern humans.
Range	A large, open area of land over which livestock can wander and graze.
Raptor	A bird of prey.
Rare	A plant or animal restricted in distribution. May be locally abundant in a limited area or few in number over a wide area.
Recharge	Replenishment of ground water by a downward infiltration of water from rainfall, streams, and other sources.
Recharge Area	The area that contributes water to an aquifer.
Reclamation	Returning disturbed lands to a form and productivity that will be ecologically balanced.
Rectifier	An electrical device that converts alternating current (AC) to direct current (DC)
Region	A large tract of land generally recognized as having similar character types and physiographic types.

Revegetation	The reestablishment and development of self-sustaining plant cover. On disturbed sites, this normally requires human assistance such as reseeding.
Right-of-way	Strip of land acquired by legal means, over which the utility corridors and access roads would pass.
Rill erosion	Rill erosion refers to the erosion process on sloping fields in which numerous and random small channels are formed by water; occurs mainly on recently cultivated soils.
Roasting Pits	These sites are common within the Prehistoric and Ethnohistoric American Southwest. Roasting pits may be associated with large habitation sites or within close proximity of resource procurement areas.
Rock Alignments	These sites are rocks that have been intentionally placed in a circular, semi-circular, or linear alignment. The alignments may have been constructed as hunting blinds, walls, or possibly game drives.
Rock Art Site	Rock art sites are relatively common in the Great Basin, and they come in a variety of styles and substyles. Rock art styles vary from geomorphic, zoomorphic, to anthropomorphic designs. Rock art sites include petroglyphs and pictographs.
Rockshelters/Caves	Rockshelters/caves are an important component of the cultural resource assemblage in the southwest, including Nevada. Rockshelters/caves have been occupied during all time periods; some caves appear to have considerable antiquity. In general, most rockshelters / caves were typically used for short periods of time, possibly as temporary camping locations.
Sacred site	Any specific, discrete, narrowly delineated location on Federal land identified by an Indian Tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the Tribe or appropriately authoritative representative has informed the agency of the existence of such a site.
Scenic quality class	The designation (A, B, or C) assigned a scenic quality rating unit to indicate the visual importance or quality of a unit relative to other units within the same physiographic province (BLM designation).
Scenic quality rating unit	A portion of the landscape that displays primarily homogeneous visual characteristics of the basic landscape features (landform, water, vegetation, and structures and modifications) that separate it from the surrounding landscape.

Sediment	Solid fragmental material, either mineral or organic, that is transported or deposited by air, water, gravity, or ice.
Seep	An area, generally small, where water, or other liquid such as oil, percolates slowly to the land surface. For water, it may be considered as a synonym of a seepage spring, but it is used by some for flows, too small to be considered a spring.
Seismicity	The relative frequency and distribution of earthquakes.
Semiarid	A climate or region characterized by little yearly rainfall and by the growth of a number of short grasses and shrubs.
Sensitive species	Species whose populations are small and widely dispersed or restricted to a few localities. Species that are listed or candidates for listing by the state or federal government.
Sensitivity	The state of being readily affected by the actions of external influence.
Sheet erosion	Sheet erosion refers to the removal of a relatively uniform thin layer of soil from the land surface by rainfall and surface runoff.
Siliceous	Containing, resembling, relating to, or consisting of silica.
Site	In archaeology, any locale showing evidence of human activity.
Socioeconomic	Of or involving both social and economic factors.
Soil mantle	A layer of soil with a greater hydrologic conductivity than the layer above.
Species	A group of individuals of common ancestry that closely resemble each other structurally and physiologically, and in nature interbreed to produce fertile offspring.
Spring	A place where ground water flows naturally from a rock or the soil onto the land surface or into a body of surface water.
Storage Sites	Storage sites are structures or caches that were constructed to store food and other items. These sites include aboveground storage structures constructed of masonry or adobe and belowground storage pits.
Strata	Plural of stratum, which is a layer of sedimentary rock that was originally deposited horizontally.
Study area	A given geographical area delineated for specific research.
Subspecies	Any natural subdivision of a species that exhibits small, but persistent morphological variations from other subdivisions of the same species living in different geographical regions or times.

Substrate	Sediment that lies beneath the surface of the earth.
Take	A prohibited action under federal law, except where authorized. To harass, harm, pursue, hunt, wound, kill, trap, capture, or collect a federally listed threatened or endangered species, or to attempt to do so. Take may include disturbance of the listed species, nest, or habitat, when disturbance is extensive enough to disrupt normal behavioral patterns for the species, although the affected individuals may not actually die.
Talus	A sloping mass of rocky fragments at the base of a cliff.
Telegraph and Telephone Lines	These features are identified with the themes of communication, development, and commerce and are often associated with ranching, mining, and development of towns.
Tertiary	The first period in the Cenozoic Era, spanning from 65 to 1.8 million years ago characterized by the development of mammals.
Theis Method	Theis analytical solution is a widely accepted method in hydrology for analyzing effect on an aquifer of groundwater withdrawal from a well. The Theis method calculates the expected drawdown assuming uniform radial flow in an confined aquifer of infinite extent.
Threatened species	Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.
Toolstone Sources and Quarries	These sites are areas that may contain toolstone material (e.g., obsidian, chert, basalt, and quartzite), discarded cores, blanks, or a dominance of decortication flakes. Hammerstones, hammerstone spalls, anvil stones, fire-cracked rock (heat treatment), flaked cobble scatters, and spatially discrete knapping areas may also be present.
Topography	The relative positions and elevations of surface features of an area.
Total Dissolved Solids (TDS)	The quantity of mineral (salts) in solution in water, usually expressed in milligrams per liter.
Traditional cultural property	A term referring to a tangible site, district, structure, building, or object with defensible boundaries that is important to a contemporary human community and has been for 50 years or more, that has significance under one or more criteria of the National Register of Historic Places, and with integrity of location, design, setting, materials, workmanship, feeling, and association in the perspective of those who value the place.
Transmissivity	The rate of which water of the prevailing kinematic viscosity is transmitted through a unit width of the aquifer under a unit hydraulic gradient; equal to the hydraulic conductivity times the aquifer thickness.

Triassic	The first period in the Mesozoic Era, spanning from 225 to 190 million years ago and following the Permian Period of the Paleozoic Era; characterized by the first appearance of many reptiles, including the dinosaurs.
Tributary	A stream or river that flows into a larger stream or river.
Trigger point	A threshold value that is established by the NV State Engineer.
Tuffaceous	Composed of, containing, or characteristic of a tuff (fragmental rock consisting of the smaller kinds of volcanic detritus, as ash or cinder, usually more or less stratified).
Unsaturated Zone	The zone between the land surface and the water table. It includes the capillary fringe and may contain water under pressure less than that of the atmosphere.
Utility corridor	A route used by a utility for pipelines and transmission lines.
Vegetation community	Species of plants that commonly live together in the same region or ecotone.
View shed	Visible portion of the specific landscape seen from a specific viewpoint, normally limited by landform, vegetation, distance, and existing cultural modifications.
Visual resource management class	Classification of landscapes according to the kinds of structures and changes that are acceptable to meet established visual goals (BLM).
Water Table	1) The upper surface of a saturated zone except where that surface is formed by an impermeable body, 2) locus of points in soil water at which the pressure is equal to atmospheric pressure; or 3) the surface where ground water is encountered in a well in an unconfined aquifer. The water table is a particular potentiometric surface.
Waters of the United States	All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce including adjacent wetlands and tributaries to waters of the United States; and all waters by which the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce.
Well Log	1) A record made by the driller, geologist, or engineer of a well which lists geologic materials encountered during drilling and information on the construction of the well (such as casing perforations and sanitary seal); or 2) a log obtained from a special device lowered in a well, showing such information as resistivity, radioactivity, spontaneous potential, and acoustic velocity as a function of depth; especially a lithologic record of the rocks penetrated.
Wetlands	Lands or areas exhibiting hydric soils, saturated or inundated soil during some portion of the plant growing season, and plant species tolerant of such conditions (includes swamps, marshes, bogs).

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