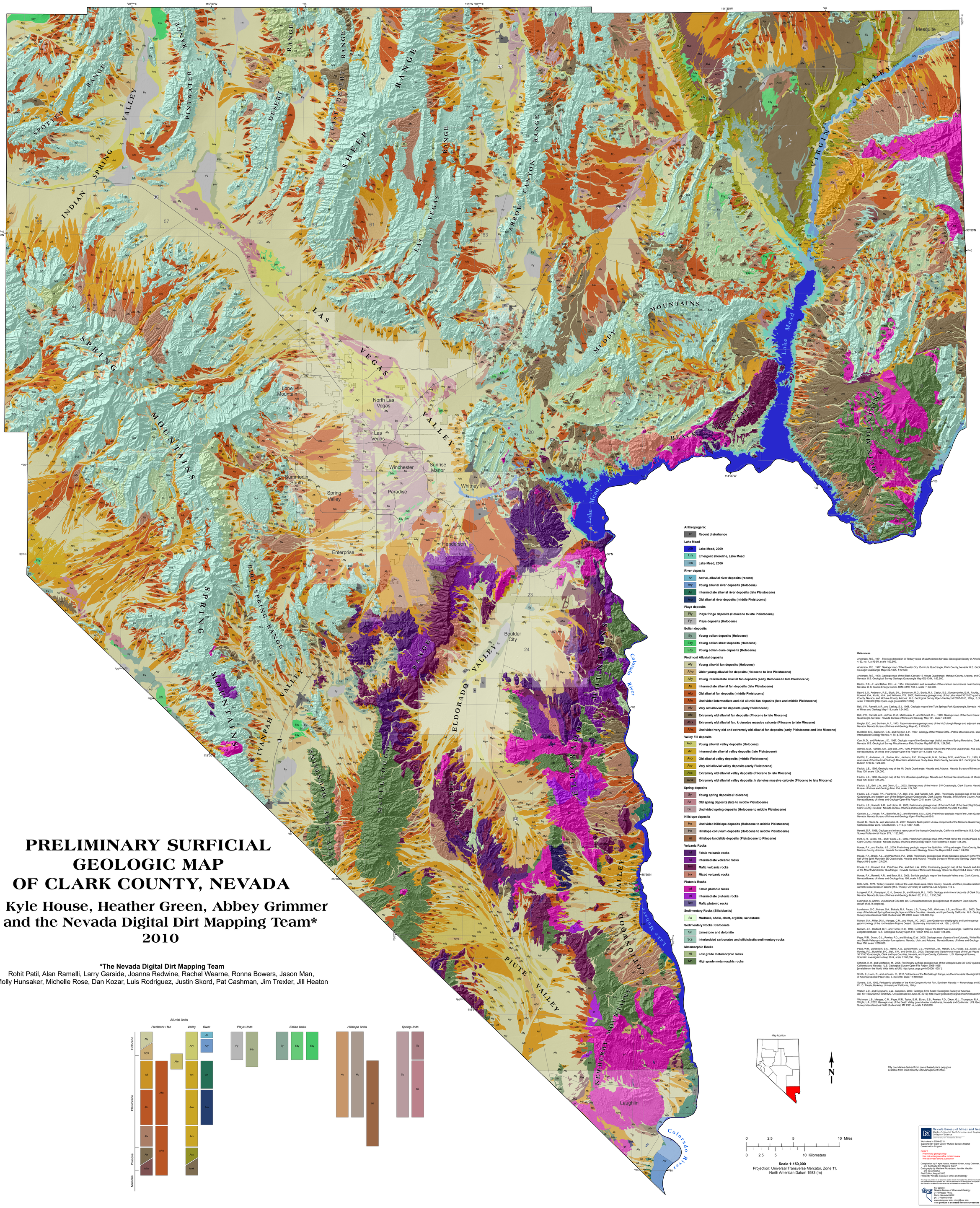

PRELIMINARY SURFICIAL GEOLOGIC MAP OF CLARK COUNTY, NEVADA

P. Kyle House, Heather Green, Abbey Grimmer and the Nevada Digital Dirt Mapping Team*
2010

***The Nevada Digital Dirt Mapping Team**
Rohit Patil, Alan Ramelli, Larry Garside, Joanna Redwine, Rachel Wearne, Ronna Bowers, Jason Man, Molly Hunsaker, Michelle Rose, Dan Kozar, Luis Rodriguez, Justin Skord, Pat Cashman, Jim Trexler, Jill Heaton

Anthropogenic

- Xi — **Recent disturbance**

Lake Mead

- L09 — **Lake Mead, 2009**
- Luy — **Emergent shoreline, Lake Mead**
- L06 — **Lake Mead, 2006**

River deposits

- Ar — **Active, alluvial river deposits (recent)**
- Ary — **Young alluvial river deposits (Holocene)**
- Ari — **Intermediate alluvial river deposits (late Pleistocene)**
- Aro — **Old alluvial river deposits (middle Pleistocene)**

Playa deposits

- Pfy — **Playa fringe deposits (Holocene to late Pleistocene)**
- Py — **Playa deposits (Holocene)**

Eolian deposits

- Ey — **Young eolian deposits (Holocene)**
- Esy — **Young eolian sheet deposits (Holocene)**
- Edy — **Young eolian dune deposits (Holocene)**

Piedmont Alluvial deposits

- Afy — **Young alluvial fan deposits (Holocene)**
- Afyo — **Older young alluvial fan deposits (Holocene to late Pleistocene)**
- Afiy — **Young intermediate alluvial fan deposits (early Holocene to late Pleistocene)**
- Afi — **Intermediate alluvial fan deposits (late Pleistocene)**
- Afo — **Old alluvial fan deposits (middle Pleistocene)**
- Afio — **Undivided intermediate and old alluvial fan deposits (late and middle Pleistocene)**
- Afv — **Very old alluvial fan deposits (early Pleistocene)**
- Afx — **Extremely old alluvial fan deposits (Pliocene to late Miocene)**
- Afvk — **Extremely old alluvial fan, k denotes massive calcrete (Pliocene to late Miocene)**
- Afvx — **Undivided very old and extremely old alluvial fan deposits (early Pleistocene and late Miocene)**

Valley Fill deposits

- Avy — **Young alluvial valley deposits (Holocene)**
- Avi — **Intermediate alluvial valley deposits (late Pleistocene)**
- Avo — **Old alluvial valley deposits (middle Pleistocene)**
- Avv — **Very old alluvial valley deposits (early Pleistocene)**
- Avx — **Extremely old alluvial valley deposits (Pliocene to late Miocene)**
- Avxk — **Extremely old alluvial valley deposits, k denotes massive calcrete (Pliocene to late Miocene)**

Spring deposits

- Sy — **Young spring deposits (Holocene)**
- So — **Old spring deposits (late to middle Pleistocene)**
- Su — **Undivided spring deposits (Holocene to middle Pleistocene)**

Hillslope deposits

- Hu — **Undivided hillslope deposits (Holocene to middle Pleistocene)**
- Hc — **Hillslope colluvium deposits (Holocene to middle Pleistocene)**
- Hl — **Hillslope landslide deposits (Pleistocene to Pliocene)**

Volcanic Rocks

- Vif — **Felsic volcanic rocks**
- Vi — **Intermediate volcanic rocks**
- Vim — **Mafic volcanic rocks**
- Vix — **Mixed volcanic rocks**

Plutonic Rocks

- Ipf — **Felsic plutonic rocks**
- Ipi — **Intermediate plutonic rocks**
- Ipm — **Mafic plutonic rocks**

Sedimentary Rocks (Siliciclastic)

- Ss — **Mudrock, shale, chert, argillite, sandstone**

Sedimentary Rocks: Carbonate

- Sc — **Limestone and dolomite**
- Scs — **Interbedded carbonates and siliciclastic sedimentary rocks**

Metamorphic Rocks

- Ml — **Low grade metamorphic rocks**
- Mh — **High grade metamorphic rocks**

References

Anderson, R.E., 1971, Thin skin distension in Tertiary rocks of southeastern Nevada: Geological Society of America Bulletin v. 82, no. 1, p.43-58, scale 1:62,500.

Anderson, R.E., 1977, Geologic map of the Boulder City 15-minute Quadrangle, Clark County, Nevada: U.S. Geological Survey Geologic Quadrangle Map GQ-1395, 1:62,500.

Anderson, R.E., 1978, Geologic map of the Black Canyon 15-minute Quadrangle, Mohave County, Arizona, and Clark County, Nevada: U.S. Geological Survey Geologic Quadrangle Map GQ-1394, 1:62,500.

Barton, P.B., Jr., and Behne, C.H., Jr., 1954, Interpretation and evaluation of the uranium occurrences near Goodsprings, Nevada: U. S. Atomic Energy Comm. RME-3119, 108 p, scale ~1:65,000.

Beard, L.S., Anderson, R.E., Block, D.L., Bohannon, R.G., Brady, R.J., Castor, S.B., Duebendorfer, E.M., Faulds, J.E., Felger, T.J., Howard, K.A., Kuntz, M.A., and Williams, V.S., 2007, Preliminary geologic map of the Lake Mead 30' X 60' quadrangle, Clark County, Nevada, and Mohave County, Arizona: U.S. Geological Survey Open-File Report 2007-1010, 109 p., 3 plates, scale 1:100,000 [http://pubs.usgs.gov/of/2007/1010/].

Bell, J.W., Ramelli, A.R., and Caskey, S.J., 1998, Geologic map of the Tule Springs Park Quadrangle, Nevada: Nevada Bureau of Mines and Geology Map 113, scale 1:24,000.

Bell, J.W., Ramelli, A.R., dePolo, C.M., Maldonado, F., and Schmidt, D.L., 1999, Geologic map of the Corn Creek Springs Quadrangle, Nevada: Nevada Bureau of Mines and Geology Map 121, scale 1:24,000.

Bingler, E.C., and Bonham, H.F., 1973, Reconnaissance geologic map of the McCullough Range and adjacent areas, Clark County, Nevada: Nevada Bureau of Mines and Geology Map 45, 1:125,000.

Burchfiel, B.C., Cameron, C.S., and Royden, L.H., 1997, Geology of the Wilson Cliffs—Potosi Mountain area, southern Nevada: International Geology Review, v. 39, p. 830–854.

Carr, M.D., and Pinkston, J.C., 1987, Geologic map of the Goodsprings district, southern Spring Mountains, Clark County, Nevada: U.S. Geological Survey Miscellaneous Field Studies Map MF-1514, 1:24,000.

dePolo, C.M., Ramelli, A.R., and Bell, J.W., 1999, Preliminary geologic map of the Pahrump Quadrangle, Nye County, Nevada: Nevada Bureau of Mines and Geology Open-File Report 99-14, scale 1:24,000.

DeWitt, E., Anderson, J.L., Barton, H.N., Jachens, R.C., Podwysocki, M.H., Brickey, D.W., and Close, T.J., 1989, Mineral resources of the South McCullough Mountains Wilderness Study Area, Clark County, Nevada: U.S. Geological Survey Bulletin 1730-C, 1:24,000.

Faulds, J.E., 1995, Geologic map of the Mt. Davis Quadrangle, Nevada and Arizona: Nevada Bureau of Mines and Geology Map 105, scale 1:24,000.

Faulds, J.E., 1996, Geologic map of the Fire Mountain quadrangle, Nevada and Arizona: Nevada Bureau of Mines and Geology Map 106, scale 1:24,000.

Faulds, J.E., Bell, J.W., and Olson, E.L., 2002, Geologic map of the Nelson SW Quadrangle, Clark County, Nevada: Nevada Bureau of Mines and Geology Map 134, scale 1:24,000.

Faulds, J.E., House, P.K., Pearthree, P.A., Bell, J.W., and Ramelli, A.R., 2004, Preliminary geologic map of the Davis Dam Quadrangle, and eastern part of the Bridge Canyon Quadrangle, Clark County, Nevada, and Mohave County, Arizona: Nevada Bureau of Mines and Geology Open-File Report 03-5, scale 1:24,000.

Faulds, J.E., Ramelli, A.R., and Lledo, H., 2006, Preliminary geologic map of the North half of the Searchlight Quadrangle, Clark County, Nevada: Nevada Bureau of Mines and Geology Open-File Report 06-15 scale 1:24,000.

Garside, L.J., House, P.K., Burchfiel, B.C., and Rowland, S.M., 2009, Preliminary geologic map of the Jean Quadrangle, Nevada: Nevada Bureau of Mines and Geology Open-File Report 09-5.

Guest, B., Niemi, N., and Wernicke, B., 2007, Stateline fault system: A new component of the Miocene-Quaternary Eastern California shear zone. GSA Bulletin, v. 119, p. 1337–1346.

Hewett, D.F., 1956, Geology and mineral resources of the Ivanpah Quadrangle, California and Nevada: U.S. Geological Survey Professional Paper 275, 1:125,000.

Hinz, N.H., Green, H.L., and Faulds, J.E., 2009, Preliminary geologic map of the West half of the Ireteba Peaks quadrangle, Clark County, Nevada: Nevada Bureau of Mines and Geology Open-File Report 09-4 scale 1:24,000.

House, P.K., and Faulds, J.E., 2009, Preliminary geologic map of the Spirit Mtn. NW quadrangle, Clark County, Nevada and Mohave County, Arizona: Nevada Bureau of Mines and Geology Open-File Report 09-6 scale 1:24,000.

House, P.K., Brock, A.L., and Pearthree, P.A., 2008, Preliminary geologic map of late Cenozoic alluvium in the West half of the Spirit Mountain SE Quadrangle, Nevada and Arizona: Nevada Bureau of Mines and Geology Open-File Report 08-3 scale 1:24,000.

House, P.K., Howard, K.A., Pearthree, P.A., and Bell, J.W., 2004, Preliminary geologic map of the Nevada and Arizona parts of the Mount Manchester Quadrangle: Nevada Bureau of Mines and Geology Open-File Report 04-4 scale 1:24,000.

House, P.K., Ramelli, A.R., and Buck, B.J., 2006, Surficial geologic map of the Ivanpah Valley area, Clark County, Nevada: Nevada Bureau of Mines and Geology Map 156, scale 1:50,000.

Kohl, M.S., 1978, Tertiary volcanic rocks of the Jean-Sloan area, Clark County, Nevada, and their possible relationship to carnotite occurences in caliche [M.S. Thesis]: University of California, Los Angeles, 116 p.

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., 1:250,000.

Ludington, S. (2010), unpublished GIS data set, Generalized bedrock geological map of southern Clark County (south of 35.75 degrees).

Lundstrom, S.C., Mahan, S.A., Blakely, R.J., Paces, J.B., Young, O.D., Workman, J.B., and Dixon G.L., 2003, Geologic map of the Mount Spring Quadrangle, Nye and Clark Counties, Nevada, and Inyo County California: U.S. Geological Survey Miscellaneous Field Studies Map MF-2339, scale 1:24,000, 9 p.

Mahan, S.A., Miller, D.M., Menges, C.M., and Yount, J.C., 2007, Late Quaternary stratigraphy and luminescence geochronology of the northeastern Mojave Desert: Quaternary International vol. 166, p. 61–78.

Nielson, J.E., Bedford, D.R., and Turner, R.D., 1999, Geologic map of the Hart Peak Quadrangle, California and Nevada; a digital database: U.S. Geological Survey Open-File Report 1999-34, scale 1:24,000.

Page, W.R., Dixon, G.L., Rowley, P.D., and Brickey, D.W., 2005, Geologic map of parts of the Colorado, White River, and Death Valley groundwater flow systems, Nevada, Utah, and Arizona: Nevada Bureau of Mines and Geology Map 150, scale 1:250,000.

Page, W.R., Lundstrom, S.C., Harris, A.G., Langenheim, V.E., Workman, J.B., Mahan, S.A., Paces, J.B., Dixon, G.L., Rowley, P.D., Burchfiel, B.C., Bell, J.W., and Smith, E.I., 2005, 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, scale 1:100,000, 58 p.

Schmidt, K.M., and McKackin, M., 2006, Preliminary surficial geologic map of the Mesquite Lake 30' X 60' quadrangle, California and Nevada: U.S. Geological Survey Open-File Report 2006-1035 [available on the World Wide Web at URL http://pubs.usgs.gov/of/2006/1035/]

Smith, E., Honn, D., and Johnsen, R., 2010, Volcanoes of the McCullough Range, southern Nevada: Geological Society of America Special Paper 463, p. 203-219, scale ~1:160,000.

Sowers, J.M., 1985, Pedogenic calcretes of the Kyle Canyon Alluvial Fan, Southern Nevada — Morphology and Development: Ph. D. Thesis, Berkeley, University of California, 160 p.

Walker, J.D., and Geissman, J.W., compilers, 2009, Geologic Time Scale: Geological Society of America, doi: 10.1130/2009.CTS004R2C. Uri (accessed on June 26, 2010): http://www.geosociety.org/science/timescale/timescl.pdf

Workman, J.B., Menges, C.M., Page, W.R., Taylor, E.M., Ekren, E.B., Rowley, P.D., Dixon, G.L., Thompson, R.A., and Wright, L.A., 2002, Geologic map of the Death Valley ground-water model area, Nevada and California: U.S. Geological Survey Miscellaneous Field Studies Map MF 2381-A, scale 1:250,000.

Alluvial Units

	Piedmont / fan		Valley	River
Holocene	Afy, Afyo		Avy	Ar, Ary
Pleistocene	Afi, Afo, Afv	Afio	Avi, Avo, Avv	Ari, Aro
Pliocene	Afx, Afvk	Afvx	Avx, Avxk	
Miocene				

Playa Units: Py, Pfy

Eolian Units: Ey, Edy, Esy

Hillslope Units: Hu, Hc, Hl

Spring Units: Sy, Su, So

N

City boundaries derived from parcel based place polygons available from Clark County GIS Management Office.

0 2.5 5 10 Miles
0 2.5 5 10 Kilometers

Scale 1:150,000
Projection: Universal Transverse Mercator, Zone 11, North American Datum 1983 (m)

Nevada Bureau of Mines and Geology
Mackay School of Earth Sciences and Engineering
College of Science
University of Nevada, Reno

Work done in 2008-2010
Supported by Clark County Multiple Species Habitat Conservation Program

DRAFT
Preliminary geologic map
Not to be reproduced for field review
Will be revised before publication

Compilation by P. Kyle House, Heather Green, Abby Grimmer, and the Digital Dirt Mapping Team*
Cartography by Matthew Richardson, Jennifer Maulbin and Jesse Beatye
First Printing December 2010
Printed by Nevada Bureau of Mines and Geology

This map was printed on an electronic plotter directly from digital files. Dimensional calibration may vary between electronic plotters and X and Y directions on the same plotter, and paper may change size; therefore, scale and proportions may not be exact on copies of this map.

For sale by:
Nevada Bureau of Mines and Geology
2175 Raggio Pkwy.
Reno, Nevada 89512
ph. (775) 682-8766
www.nbmg.unr.edu; nbmg@unr.edu
This product is available free on our website

2101