

APPENDIX: SAMPLE LOCALITIES (DATA ARCHIVE #1)
(GPS=latitude-longitude coordinates from Global Positioning System)

Santa Rosa (SR): Santa Rosa Sandstone of Dockum Group from Canadian River valley TX (Riggs et al., 1996). Tabular crossbedded to horizontally laminated fluvial sandstone of braided channel system including pebbly horizons resting unconformably on Permian Quartermaster Formation.

TRU: Trujillo Formation of Dockum Group from headwaters of Red River TX. Green micaceous fluvial sandstone ~2 m from base of Trujillo Formation (resting on Tecovas Formation) in cliff beside TX Highway 256 ~10 mi east of Silverton TX and 1.2 mi downhill from rest area at eastern edge of caliche caprock on Llano Estacado at lip of its eastern escarpment. GPS (30 m distant from cliff face and 3 m from white line marking south edge of roadway): 34° 28.182' N, 101° 05.788' W.

COO: Cooper Canyon Formation of Dockum Group from headwaters of Brazos River TX (from type area in Garza County SW of Post TX) provided by Thomas M. Lehman (Lehman et al., 1992).

Currie (CUR): Shinarump Member (or Formation) of Chinle Formation (Stewart, 1980, p. 64) or Group (Lucas and Orchard, 2007) near Currie NV. Craggy knob (off road to Mizpah) of horizontally laminated fluvial sandstone of a locally pebbly channel complex (Gehrels and Dickinson, 1995). GPS (base of outcrop): 40° 22.0' N, 114° 47.1' W.

CP4: Gartra Member of Chinle Formation near Vernal UT. Pebbly fluvial sandstone of braided channel complex forming prominent cuesta and exposed in double-sided roadcut on US Highway 191 located 10.7 mi north of its intersection with US Highway 40 in downtown Vernal UT. GPS (1 m east of white sideline on east side of roadway within sample area): 40° 05.041' N, 108° 20.055' W.

CP5: Trujillo Formation of Chinle Group near Tucumcari NM. Fluvial sandstone from lowest two sandstone bodies, each 8-9 m thick, of multistory channel complex exposed in long roadcut on NM Highway 104 west of Conchas Reservoir 2.9 to 3.4 mi west of its intersection with NM Highway 129 (south toward Tucumcari). GPS (1.5 m south of white line marking south edge of roadway at center of shaly parting between sampled sandstone bodies): 35° 17.846' N, 104° 17.426' W.

CP6: Tres Lagunas Member of Santa Rosa Formation of Chinle Group in Santa Rosa NM. Coarse fluvial sandstone in cutbank of empty building pad on north side of main east-west street (opposite McDonalds Restaurant and between La Quinta Inn and Best Western Adobe Inn) leading east from the Interstate Highway I40 exit into downtown Santa Rosa. GPS (at base of cutbank): 34° 56.726' N, 104° 48.124' W.

CP8: Holbrook Member of Moenkopi Formation near Winslow AZ. Red fluvial sandstone of coarsening-upward packet exposed in saddle atop prominent butte reached by proceeding north on North Park Drive for 2.7 mi from Interstate I40 offramps in Winslow AZ, then west on Five

Mountains Road to its terminus, and finally via small dirt tracks to base of butte. GPS (in outcrop saddle): 35° 04.393' N, 110° 42.964' W.

CP11: Shinarump Member of Chinle Formation near Cameron AZ. Trough-crossbedded and red-weathering fluvial sandstone in roadcut beside abandoned (closed) overweight vehicle crossing of Little Colorado River (on north wall of gorge). GPS (on outcrop ±1 m from sample horizon): 35° 52.683' N, 111° 24.473' W.

CP17: Moss Back Member of Chinle Formation in Fry Canyon UT. Coarse horizon in horizontally laminated fluvial sandstone exposed in small ravine just below BLM Road 258 leading from Fry Canyon to Red Canyon at old mine workings on south side of head of Fry Canyon (tributary to White Canyon). GPS (near north end of ~10 m strike length of sample horizon): 37° 35.222' N, 110° 08.218' W.

CP18: Shinarump Member of Chinle Formation near Sanders AZ. Trough-crossbedded fluvial sandstone in blasted excavation 0.7 mi east along Interstate Highway I40 from Querino Road overpass NE of Sanders AZ (located between I40 roadcuts and railway cuts along bank of Puerco River). GPS (atop one of two sampled megablocks of indurated sandstone within excavated area): 35° 15.944' N, 109° 16.132' W.

CP20: Sonsela Member of Petrified Forest Formation of Chinle Group (formerly Sonsela Sandstone Bed of Petrified Forest Member of Chinle Formation) near Black Pinnacle AZ. Sand-rich interval, exposed midway up face of roadcut on Navajo Route 12 on Defiance Plateau at crest of grade just north of Wheatfields Reservoir, within trough-crossbedded and locally pebbly fluvial sandstone body (~5 m thick) that backfilled a unitary braided channel. GPS (midway across spacing of ~5 m between edge of pavement and face of roadcut): 36° 14.775' N, 109° 09.775' W.

CP26: Poleo Formation of Chinle Group (formerly Poleo Sandstone Lentil of Chinle Formation) near Abiquiu Dam NM. Festoon-crossbedded lens of fluvial sandstone near top of multistory channel complex (with pebbly mudchip lags at bases of internal scours) in roadcut on south side of US Highway 84 at a point 0.9 mi east of its intersection with NM Highway 96 leading to Abiquiu Dam. GPS (midway across spacing of ~5 m between edge of pavement and face of roadcut): 36° 14.555' N, 106° 24.068' W.

CP28: Tecolotito Member of Santa Rosa Formation of Chinle Group near Anton Chico NM. Trough-crossbedded and horizontally laminated fluvial sandstone exposed in local side ravine (from north) ~250 m westward up small draw draining toward Pecos River across NM Highway 386 at a point 4.9 mi from its intersection with US Highway 84 (at a point 19.9 mi south of Interstate Highway I15 at Romeroville NM). GPS (near center of sample area): 35° 12.034' N, 105° 10.256' W.

CP38: Shinarump Member of Chinle Formation near Kanab UT. Trough cross-bedded fluvial sandstone with pebble lenses and stringers at east end of Shinarump Cliffs on south face of low knoll just south of US Highway 89 opposite large parking area on north side of highway 6.2 mi

east of turnoff into Johnson Canyon east of Kanab. GPS (~2.5 m from sample outcrop just south of double power pole): 37° 02.382' N, 112° 15.114' W.

CP42: Shinarump Member of Chinle Formation in Circle Cliffs UT. Trough crossbedded and locally pebbly fluvial sandstone in cliffs forming north side of narrows of Wolverine Canyon 9.7 mi from the west junction of Wolverine Loop Road with UT Highway 12. GPS (at foot of cliff face within ±3 m of sample along sandy horizon ~1 m thick): 38° 18.394' N, 111° 12.336' W.

CP44: Moss Back Member of Chinle Formation in Buckhorn Draw UT. Trough-crossbedded fluvial sandstone from lenticular fluvial channel lens (midway through multistory channel complex) exposed above bench on spur enclosed by pointed curve in Buckhorn Draw road at northern end of San Rafael Swell. GPS (within ±5 m along strike on bench below sample horizon ~1 m thick): 39° 06.232' N, 110° 40.184' W.

CP47: Shinarump Member of Chinle Formation in Monument Valley AZ. Tabular-crossbedded fluvial sandstone in small draw east of US Highway 163 with access from parking area at culvert 10.7 mi south of AZ-UT state line, 0.3 mi north of turnoff via Navajo Rte 6450 to Oljato, and 12.1 mi north of intersection of US Highways 160 and 163 in Kayenta AZ. GPS (on small boulder ~1 m from sampled cliff face within ~1 m stratigraphically and ±5 m along strike): 36° 51.490' N, 110° 15.967' W.

CP48: Shinarump Member of Chinle Formation near Canyon de Chelly AZ. Trough-crossbedded and locally pebbly fluvial sandstone on east side of downhill end of long roadcut on Navajo Route 164 at a point 11.1 mi from junction of Navajo Route 164 with US Highway 191 in Chinle AZ, 8.5 mi from entrance to Canyon de Chelly National Monument Visitor Center, and 2.1 mi from turnoff to Antelope House Overlook. GPS (~1 m from curbside bush and ~3 m from white line marking edge of northbound lane of highway near midpoint of ~15 m strike lengths of relatively fine-grained and relatively coarse-grained crossbed sets <1 m apart stratigraphically from which the sample was composited): 36° 12.002' N, 109° 24.868' W.

CP50: Lower Member of Dolores Formation (equivalent to Moss Back Member of Chinle Formation) between Dolores and Rico CO. Crossbedded fluvial sandstone of multistory channel complex in roadcut beside Dolores River on north side of CO Highway 145 at a point 7.9 mi east of bridge over Stoner Creek and 0.4 mi west of parking area for Bear Creek Trailhead. GPS (~1 m from white line at edge of roadway and ~2 m from face of roadcut ~3 m vertically below coarse sample horizon): 37° 34.605' N, 108° 11.479' W.

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