Review Draft

Surficial Geology and Landscape Development in Northern Frenchman Flat

Interim Summary and Soil Data Report

Raytheon Services Nevada
Environmental Restoration and
Waste Management Division

For the U.S. Department of Energy
Nevada Operations Office

Office of Assistant Manager for Environmental
Restoration and Waste Management

Under Raytheon Services Nevada
Contract DE-AC08-91NV10833

September 1995

Raytheon Services Nevada

ARCHIVE COPY

**SURFICIAL GEOLOGY AND LANDSCAPE DEVELOPMENT
IN NORTHERN FRENCHMAN FLAT,
AREA 5 RADIOACTIVE WASTE MANAGEMENT SITE,
DOE NEVADA TEST SITE**

INTERIM SUMMARY AND SOIL DATA REPORT

**K.E. Snyder and R.D. Van Remortel
Lockheed-Martin Environmental Systems and Technologies Co.
Las Vegas, Nevada**

**D.L. Gustafson, H.E. Huckins-Gang, J.J. Miller, S.E. Rawlinson, and S.M. Parsons
Raytheon Services Nevada
Las Vegas, Nevada**

SEPTEMBER 1995

Prepared by

**RAYTHEON SERVICES NEVADA
Work Performed Under Contract
DE-AC08-91NV10833**

Prepared for

**DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE**

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 GEOLOGIC SETTING	1
3.0 HOLOCENE TECTONISM	2
4.0 SURFICIAL GEOLOGY	4
4.1 Subsurface Investigations	4
4.2 Surficial Mapping	5
4.3 Soils and Stratigraphy	7
5.0 SUMMARY	7
6.0 REFERENCES	8

APPENDIX A Soil Profile Descriptions

APPENDIX B Soil Characterization Data

LIST OF FIGURES

Figure 1. Major Landforms of Northern Frenchman Flat, Nevada Test Site	3
--	---

LIST OF TABLES

Table 1. Estimated Ages for Geomorphic Surfaces Mapped in Northern Frenchman Flat	5
---	---

1.0 INTRODUCTION

This report presents a summary of geologic studies undertaken by Raytheon Services Nevada (RSN) near the Area 5 Radioactive Waste Management Site (RWMS) at the Department of Energy (DOE) Nevada Test Site (NTS) in southern Nevada. These studies are part of a program to satisfy data needs of: (1) the Greater Confinement Disposal (GCD) Program Performance Assessment (PA) being done by Sandia National Laboratory in response to 40 CFR 191, (2) the Low-Level Waste (LLW) PA being done by Reynolds Electrical and Engineering Company (REECo) in response to DOE Order 5820.2A, and (3) the Resource Conservation and Recovery Act (RCRA) permit application being written by RSN. While information needed for the LLW PA was general, data needs of the GCD PA were more specific: (1) determine if basaltic volcanism was a potentially disruptive scenario that should be included in the PA (Guzowski and Newman, 1993), and (2) determine typical erosion depths to be expected at the facility over the 10,000-year regulatory period (Price and others, 1993). Permitting under RCRA requires addressing seismic considerations for facility siting [40 CFR 264.18(a) and 270.14(b)(1)] and site-specific geologic information for a closure plan [40 CFR 267.23(6)].

Rather than establishing discrete (and potentially disjunct) tasks in response to specific regulations and data needs of the PAs, the geologic studies were integrated into a single program that worked toward a landscape evolution model of northern Frenchman Flat, with more detailed geologic studies of particular topics as needed. This approach of building on a general landscape model proved quite flexible when more detailed information on a particular geologic topic was needed, and allowed ready integration of new information into the previous landscape model. Only the Holocene tectonism and surficial geology components of the landscape model are presented in this report. All three elements of the landscape model (tectonism, volcanism, and surficial geology) will be discussed in the final report concerning the geology of northern Frenchman Flat.

2.0 GEOLOGIC SETTING

The Area 5 RWMS is located in northern Frenchman Flat, a closed basin along the eastern boundary of the NTS. This basin is bound by mountains on the south and east consisting primarily of limestone and clastic rocks of Paleozoic age, and on the north and west by pyroclastic rocks of Miocene age (Frizzell and Shulters, 1990). In northern Frenchman Flat, the Miocene volcanic and underlying pre-Tertiary rocks that demarcate the basin are broken by numerous normal faults, resulting in fault blocks that are gently to moderately tilted. Although regional Miocene tectonism began earlier, at least the northern portion of Frenchman Flat formed at some time after deposition of middle Miocene volcanic rocks with an estimated age

of about 11.5 million years (Ma) (Sawyer and others, 1990), but before intrusion of basaltic dikes along some of the faults about 8.5 Ma (Crowe and others, 1983). Extension has continued into the Holocene as evidenced by movement along Cane Springs fault along the western margin of the basin and Rock Valley fault along the southern margin of the basin (Carr, 1984).

The RWMS is located at the juncture of three coalescing alluvial fan piedmonts: the Scarp Canyon and Nye Canyon fan piedmont from the northeast; the southern Halfpint Range and Massachusetts Mountains fan piedmont from the north and northwest; and the Barren Wash fan piedmont from the west (Figure 1). The history of these three prograding fan piedmonts is most relevant to the discussion of landscape evolution at the RWMS during the Quaternary.

3.0 HOLOCENE TECTONISM

Facilities that treat, store, or dispose hazardous waste cannot be located within 61 m of a fault that has had displacement in Holocene time. Remotely sensed data were used to map non-cultural lineaments (i.e., lineaments not associated with roads, fences, or human disturbance) that may be related to surface expression of faults. Tonal contrasts, linear drainages, alluvial and bedrock scarps, topographic saddles, and breaks-in-slope were mapped. Some of these lineaments may not be tectonic in origin.

The remotely sensed data used to construct the lineament map (Miller and others, 1993) included color aerial photographs (scales of 1:12,000 and 1:24,000), infrared aerial photographs (scale of 1:6,000), and side-looking airborne radar images (approximate scale of 1:120,000). Many bedrock faults were mapped by Hinrichs and McKay (1965) and Poole (1985), and most are linear. However, only those faults having topographic expression (i.e., a scarp or slope break) were included on the lineament map. After the lineaments were compiled onto a base map, they were classified according to a system used by Wesling and others (1992) in Midway Valley, 40 km to the west.

Based on lineament mapping, two trenches were excavated to evaluate two lineaments that trend toward the RWMS (Miller and others, 1994b). Soil Trench 1 was excavated immediately outside the northwest corner of the RWMS to investigate a previously mapped erosional scarp (Rawlinson, 1991). Soil Trench 4 was excavated approximately 2 km north-northeast of the RWMS to evaluate a potential fault in surface alluvium suggested by Carr and others (1967). Mapping of exposed trench walls found no evidence of faults in either trench. The results are consistent with pit wall mapping completed inside the RWMS (Snyder and others, 1993).

Figure 1. Major Landforms of Northern Frenchman Flat, Nevada Test Site
(Fan boundaries adapted from Miller and others, 1984a).

4.0 SURFICIAL GEOLOGY

4.0 SURFICIAL GEOLOGY

4.1 Subsurface Investigations

Middle Miocene to late Quaternary alluvium overlies middle Miocene rocks in northern Frenchman Flat. Cuttings from twelve drillholes in northern Frenchman Flat were examined to determine provenance of the alluvium, thus lending insight into basin evolution (Snyder and others, 1994a). Basalt flows estimated to be 8.5 to 8.6 Ma in drillholes northeast of the RWMS (UE-5k and UE-5i) overlie older alluvium in each drillhole (Turrin, 1994). Accumulation of alluvium prior to 8.6 Ma indicates the presence of a proto-Frenchman Flat basin. Occurrence of basalt flows at a similar depth in drillholes 2 km apart suggests either the basalt layer is on a single fault block or that minimal fault activity has taken place since emplacement in middle Miocene time. The provenance study identifies the post-basalt period as a time when the alluvium was dominated by volcanic lithologies, suggesting the dominant source area was the Massachusetts Mountains and Halfpint Range directly to the west and north (Snyder and others, 1994). Below the basalt layer there is an abrupt increase in proportion of Paleozoic limestones and quartzites, with the likely source being Nye Canyon to the north and east.

In addition to the drillhole investigation, 425 m of pit walls at the RWMS were mapped and sampled to a depth of about 8 m to obtain detailed near-surface information about the alluvium and soils (Snyder and others, 1993). The conglomeratic to fine-grained alluvium represents deposition on the lower-middle to distal part of the largest fan piedmont issuing into Frenchman Flat from the north and northeast. The alluvium displays characteristics typical of sediments deposited by sheet-floods, stream channel flows, and debris flows. Although present, debris flow deposits are a minor component compared with the other two. The characteristics of bedding, bedforms, and truncation of paleosols indicate that the landscape at the RWMS developed by planation by relatively shallow streams (less than 1 m deep) and subsequent aggradation, rather than by deep incision and backfilling. Provenance analysis shows that the source area contains a mixture of volcanic (primarily pyroclastic), quartzite, limestone, and minor amounts of other sedimentary rocks. This information, combined with paleoflow measurements, indicate deposition predominantly from the northeast; thus, the Scarp Canyon-Nye Canyon fan piedmont and associated watersheds to the north and east are the source of most of the sediments (Figure 1).

Six allostratigraphic units (North American Commission on Stratigraphic Nomenclature, 1983), which are recognized based on boundary conditions, were identified and mapped in four excavations inside the RWMS. The allostratigraphic units, informally named Unit A1 (lowermost) through A6 (uppermost), are remarkably laterally continuous, both within pit walls

and among the pits, whereas lithofacies often grade into one another both laterally and vertically within an allostratigraphic unit. Associated with the discontinuities between units are soils characterized by structural development and the accumulation of secondary carbonate, indicating repeated periods of surface stability. Soils have overprinted much of the original sedimentological character throughout Units A6, A5, and A3, and are conspicuous at the top of Unit A4 and portions of Unit A1 (Appendix A). Carbonate has accumulated in the B and BC horizons as coatings on clasts with small pebbles and sand cemented beneath, or as common filaments and masses in the matrix (stage I and I+) [following the classification system used by Birkeland (1984) as modified from Gile and others (1966)].

4.2 Surficial Mapping

Large-scale (1:6,000) geomorphic surface maps have been completed for northern Frenchman Flat. This mapping used color and color-infrared aerial photographs and field verification to determine map unit composition and boundaries. Criteria for defining the various geomorphic surfaces were similar to those used in Midway Valley by Gibson and others (1992) and Westling and others (1992): relative geomorphic position, landform morphology, degree of preservation of surface morphology, and soil morphology. A preliminary photo-interpretive map of geomorphic surfaces at a scale of 1:12,000 (Rawlinson and others, 1993) provided a framework for the detailed mapping. Seven major geomorphic surfaces are recognized in northern Frenchman Flat. These surfaces span about 700,000 years, from Middle Pleistocene to historic time (Table 1).

GEOMORPHIC SURFACE	GEOLOGIC AGE
S7 and S6	Late Holocene (<3000 years)
S5	Middle and Early Holocene (3000 to 10000 years)
S4 and S3	Late Pleistocene (10000 to 128000 years)
S2	Middle Pleistocene (128000 to 736000 years)

Table 1. Estimated Ages for Geomorphic Surfaces Mapped in Northern Frenchman Flat. Boundary dates are from Gibson and others (1992).

The most dramatic geomorphic features in northern Frenchman Flat are related to evolution of the Scarp Canyon-Nye Canyon fan piedmont (Figure 1). This piedmont is characterized by broad areas of the oldest geomorphic surfaces (S2 and S3). Drainage patterns and clast provenance of deposits beneath S2 and S3 surfaces indicate that Nye Canyon was the principal source of alluvium issuing into northern Frenchman Flat in S2 and S3 time. Subsurface investigations indicate this deposition extended to the RWMS (Snyder and others, 1993). Subsequent incision of these old surfaces began in either late S3 or early S4 time, and continued through S4 time. Evidence for this is that S3 surfaces are the youngest fan surfaces entrenched by Scarp Canyon and that terrace remnants with S4 surfaces are preserved on the canyon wall until S5 surfaces are found on the canyon bottom. Presumably this incision of Scarp and Nye Canyons was climate-driven, i.e., post glacial maximum. The deep fan-head incision means that these canyons continue to distribute water and alluvium to an inset fan (S4-S7 surfaces) east of the RWMS (Figure 1).

Incision of the Scarp Canyon-Nye Canyon fan piedmont has left the S2 and S3 surfaces as relict fan surfaces. Subsequently, surfaces of S4 and S5 age have formed at the RWMS as a result of: (1) internal drainage on the broad S3 surface; and, (2) drainage along the southeastern flank of the Halfpint Range being directed southwest along the boundary between the Scarp Canyon-Nye Canyon and Southern Halfpint Range-Massachusetts Mountain fan piedmonts. These S4 and S5 surfaces are within the Halfpint Alluvial Fan (Figure 1) of Miller and others (1994a). This area of deposition and the erosional landscape upslope is an active drainage subbasin, with most recent geomorphic activity limited to erosion and deposition along small channels (S6 and S7 surfaces).

Geomorphic mapping of the Southern Halfpint Range-Massachusetts Mountain fan piedmont indicates a regular sequence of prograding fans with entrenchment of the older fans near the mountain fronts and construction of progressively younger inset fans farther from the mountain fronts. At the RWMS, the oldest fan surfaces are of S4 and S5 age. More recent geomorphic activity (S6 and S7 surfaces) has been limited to erosion and deposition along small channels.

Although Barren Wash watershed drains a large part of western Frenchman Flat basin (Miller and others, 1994a), only a small part of the associated piedmont is within the study area (Figure 1). The particular fan of interest issues from the west around the southern tip of the Massachusetts Mountains and converges with the other two fan systems at the RWMS. Much of the fan consists of S3 and S4 fan remnants. As with the other two fans, the most extensive surface near the RWMS is of S5 age, with more recent geomorphic activity (S6 and S7 surfaces) being limited to erosion and deposition along small channels.

4.3 Soils and Stratigraphy

The mapping extended and refined the allostratigraphy established at the RWMS. This was accomplished by detailed mapping and logging of four trenches north of the RWMS (e.g., Snyder and Gustafson, 1994). Typically, the bounding discontinuity between allostratigraphic units was based on recognition and correlation of ground soils and paleosols. Because the boundaries are not traceable from trench to trench, boundary placement is based on a correlation of soils. Seventy-three soil profiles were described and 42 were sampled for physical and chemical analysis (Appendix A).

Field and laboratory analysis showed that soil development was a useful means to segregate different allostratigraphic units and different geomorphic surfaces. The principle discriminators were clay and secondary carbonate accumulation (Snyder and others, 1994b). Soil development in deposits of Late Holocene age (S6 and S7 constructional surfaces) is limited to an A horizon. Soils developed in deposits of Early to Middle Holocene age (S5 constructional surfaces) have structural or color B horizons with some evidence of carbonate accumulation (stage I or I+). An eolian mantle affects the development of older soils. Soils developed in later Late Pleistocene deposits (S4 constructional surfaces) have thicker B horizons than those of oldest Holocene soils. The B horizons contain more secondary carbonate (stage I+ to II) and can show evidence of clay accumulation (weakly-developed Btk horizons). Soils developed in middle to early late Late Pleistocene deposits (S3 constructional surfaces) typically have Bt horizons in the eolian mantle, if the mantle has not been truncated by erosion. These soils also have B horizons with stage II to III carbonate accumulation, as well as some silica. The most well-developed soils with regard to accumulation of clay and secondary carbonate are associated with the Middle Pleistocene deposits (S2 surfaces). These soils are almost universally truncated, leaving thick, indurated, carbonate-rich B horizons (stage III to IV) at the surface.

5.0 SUMMARY

The geologic setting of the RWMS requires a program with three major components: tectonism, volcanism, and surficial geology. Rather than treating these as independent activities, these components have been organized to construct a model of the late-Cenozoic landscape evolution of northern Frenchman Flat. To help identify faults that could impact the proposed facility, lineaments in the northern Frenchman Flat area were mapped using remotely-sensed data and field investigations. No evidence of faulting was found during mapping of alluvium in pit and trench walls at or near the RWMS.

Middle Miocene to Quaternary alluvium overlies the faulted middle Miocene volcanic rocks in northern Frenchman Flat, meaning that a proto-Frenchman Flat basin had formed by middle Miocene time. Drillhole investigations and pit wall mapping at the RWMS obtained detailed near-surface information about the Quaternary alluvium. Soils characterized by structural development and accumulation of secondary carbonate are present throughout exposures at the RWMS, indicating repeated periods of surface stability. Based on this and other trench work, six allostratigraphic units were identified and correlated throughout the study area.

Large-scale (1:6,000) geomorphic surface mapping indicates that the RWMS lies at the juncture of three coalescing alluvial fan piedmonts. Seven geomorphic surfaces are recognized, spanning from Middle Pleistocene to Late Holocene time. Field and laboratory analysis showed that soil development was a useful means to segregate different allostratigraphic units and different geomorphic surfaces. Principle discriminators were clay and secondary carbonate accumulation. Surface mapping indicates a regular sequence of prograding fans with entrenchment of older fan surfaces near the mountain fronts and construction of progressively younger inset fans farther from the mountain fronts. At the RWMS, the oldest surfaces are of Late Pleistocene and Holocene age. The more recent geomorphic activity has been limited to erosion and deposition along small channels.

6.0 REFERENCES

- BIRKELAND, P.W. 1984. *Soils and Geomorphology*. Oxford University Press, NY, 372 p.
- CARR, W.J. 1984. *Regional Structural Setting of Yucca Mountain, Southwestern Nevada, and Late Cenozoic Rates of Tectonic Activity in Part of the Southwestern Great Basin, Nevada and California*. U.S. Geological Open-File Report 84-854, 109 p.
- CARR, W.J., G.D. BATH, D.L. HEALEY, and R.M. HAZLEWOOD. 1967. *Geology of Northern Frenchman Flat, Nevada Test Site*. U.S. Geological Survey Technical Letter NTS-188, 25 p.
- CROWE, B.M., M.T. VANIMAN, and W.J. CARR. 1983. *Status of Volcanic Hazard Studies for the Nevada Nuclear Waste Storage Investigations*. Los Alamos National Laboratory Report LA-9325-MS, 47 p.
- FRIZZELL, V.A., JR. and J. SHULTERS. 1990. *Geologic Map of the Nevada Test Site, Southern Nevada*. U.S. Geological Survey Miscellaneous Investigations Map I-2046, Scale 1:100,000.

GIBSON, J.D., J.R. WESLING, F.H. SWAN, and T.F. BULLARD. 1992. Recent Characterization Activities of Midway Valley as a Potential Repository Surface Facility Site. Proceedings of Waste Management '92, Waste Processing, Transportation, Storage and Disposal, March 1992, v. 1, p. 937-945.

GILE, L.H., F.F. PETERSON, and R.B. GROSSMAN. 1966. Morphological and Genetic Sequences of Carbonate Accumulation In Desert Soils. Soil Science, v. 101, p. 347-360.

GUZOWSKI, R.V. and G. NEUMAN. 1993. Preliminary Identification of Potentially Disruptive Scenarios at the Greater Confinement Disposal Facility, Area 5 of the Nevada Test Site. Sandia National Laboratories Report SAND93-7100.

HINRICHS, E.N. and E.J. MCKAY. 1965. Geologic Map of the Plutonium Valley Quadrangle, Nye and Lincoln Counties, Nevada. U.S. Geological Survey Quadrangle Map GQ-384, Scale 1:24,000.

MILLER, J.J., D.L. GUSTAFSON, and J.S. SCHMELTZER. 1994a. A Multiple-method Approach to Flood Assessment at a Low-Level Radioactive Waste Management Site in Southern Nevada, Proceedings of Waste Management 94, February 1994, v. 3, p. 1715-1718.

MILLER, J.J., D.L. GUSTAFSON, and K.E. SNYDER. 1993. Lineaments Identified in Northern Frenchman Flat, Nye, Lincoln, and Clark Counties, Nevada. Scale 1:12,000, Raytheon Services Nevada, Las Vegas, NV.

MILLER, J.J., D.L. GUSTAFSON, and K.E. SNYDER. 1994b. Selected Lineaments Identified in Northern Frenchman Flat, Nye, Lincoln, and Clark Counties, Nevada. Scale 1:12,000, Raytheon Services Nevada, Las Vegas, NV.

NORTH AMERICAN COMMISSION ON STRATIGRAPHIC NOMENCLATURE. 1983. North American Stratigraphic Code. American Association of Petroleum Geologists Bulletin, v. 67, p. 841-875.

PRICE, L.L., S.H. CONRAD, D.A. ZIMMERMAN, N.E. OLAGUE, K.C. GAITHER, W.B. COX, J.T. MCCORD, and C.P. HARLAN. 1993. Preliminary Performance Assessment of the Greater Confinement Disposal Facility at the Nevada Test Site, Vol. 1: Executive Summary. Sandia National Laboratories Report SAND91-0047, 44 p.

POOLE, F.G. 1965. Geologic Map of the Frenchman Flat Quadrangle, Nye, Lincoln and Clark Counties, Nevada. U.S. Geological Survey Quadrangle Map GQ-456, Scale 1:24,000.

RAWLINSON, S.E. 1991. Surficial Geology of the Area 5 Radioactive Waste Management Site. Interim Report Review Draft. 51 p + Appendices. Raytheon Services Nevada, Las Vegas, NV.

RAWLINSON, S.E., D.L. GUSTAFSON, and K.E. SNYDER. 1993. Preliminary Correlation Map of Geomorphic Surfaces in North-Central Frenchman Flat, Nevada Test Site. Scale 1:12,000, Raytheon Services Nevada, Las Vegas, NV.

SAWYER, D.A., R.J. FLECK, M.A. LANPHERE, R.G. WARREN, R.G. and D.E. BROXTON. 1990. Episodic Volcanism in the Southwest Nevada Volcanic Field: New $^{40}\text{Ar}/^{39}\text{Ar}$ Geochronologic Results. EOS, v. 71, American Geophysical Union, p. 1296.

SNYDER, K.E. and D.L. GUSTAFSON. 1994. Interim Report of Trench Mapping Near the Area 5 Radioactive Waste Management Site, 8 p. + Appendices, Raytheon Services Nevada, Las Vegas, NV.

SNYDER, K.E., D.L. GUSTAFSON, J.J. MILLER, and S.E. RAWLINSON. 1994a. Geologic Components of Site Characterization and Performance Assessment for a Radioactive Waste Management Site at the Nevada Test Site, Proceedings of Waste Management 94, February 1994, v. 2, p. 807-812.

SNYDER, K.E., S.M. PARSONS, and D.L. GUSTAFSON. 1993. Field Results of Subsurface Geologic Mapping at the Area 5 Radioactive Waste Management Site, DOE/Nevada Test Site, Nye County, Nevada. 24 p. + Appendices, Raytheon Services Nevada, Las Vegas, NV.

SNYDER, K.E., R.D. VAN REMORTEL, and D.L. GUSTAFSON. 1994b. Pedogenesis and Stratigraphic Relationships in Late-Quaternary Alluvium in Southern Nevada. Soil Science Society of America and American Society of Agronomy Abstracts with Programs, p. 329.

TURRIN, B.D. 1994. Letter report to D.L. Gustafson of Raytheon Services Nevada dated October 10th. U.S. Geological Survey, Menlo Park, CA.

WESLING, J.R., T.F. BULLARD, F.H. SWAN, R.C. PERMAN, M.M. ANGELL and J.D. GIBSON. 1992. Preliminary Mapping of Surficial Geology of Midway Valley, Yucca Mountain, Nye County, Nevada. Interim Data Report. Sandia National Laboratories Report SAND91-0607, 56 p. + Appendices.

APPENDIX A
SOIL PROFILE DESCRIPTIONS

SOIL PROFILE RC01-P01

Location: Center of south-facing roadcut exposure along cut-and-fill road at RWMS; Nevada State Plane coordinates 776,280 feet north and 710,740 feet east; 1054.9 meters elevation.

Described by: R.D. Van Remortel

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described / sampled: 22 November 1994 / 3 December 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (In Unit (?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Petroargids (?)

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 2 cm. Light brown (7.5YR6/3) extremely gravelly loam, brown (7.5YR4/4) moist; moderate fine platy structure parting to weak medium granular; soft, very friable, slightly sticky and slightly plastic; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles, 10 percent channers, and 55 percent pebbles (from pyroclastic rocks) on the soil surface; clear wavy boundary. (Unit A6 and sample a01a)
- A2** 2 to 8 cm. Light brown (7.5YR6/3) gravelly loam, brown (7.5YR4/4) moist; moderate fine platy structure parting to weak medium granular; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; common moderately thick paleocarbonate coatings on sides of rock fragments; 25 percent channers and 10 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a01b)
- 2Bk1** 8 to 31 cm. Pink (7.5YR7/3) cobbly sandy loam, brown (7.5YR5/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; Stage I carbonate development; many thin carbonate coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on tops and sides of rock fragments; 15 percent cobbles and 15 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a02)

- 2Bk2** 31 to 71 cm. Pink (7.5YR7/3) very gravelly coarse sandy loam, brown (7.5YR5/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a03)
- 2Bck** 71 to 107 cm. Pale brown (10YR6/3) very gravelly coarse sand, dark yellowish brown (10YR4/4) moist; weak fine platy structure, single grain with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a04)
- 2Btkb** 107 to 140 cm. Light brown (7.5YR6/4) very gravelly sandy loam, strong brown (7.5YR4/6) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few thin argillans on contacts between peds and fine pebbles; Stage I- carbonate development; common fine carbonate filaments and common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a05)
- 2Bkb1'** 140 to 173 cm. Pink (7.5YR7/3) very gravelly coarse sandy loam, brown (7.5YR5/4) moist; moderate fine subangular blocky structure; very hard, very firm, nonsticky and slightly plastic; Stage IV carbonate development; 80 percent moderately to strongly carbonate-cemented with pinkish white (7.5YR8/2) 5-mm laminar cap; many thin carbonate coatings, common carbonate pendants, and very few silica cutans on sides of peds and rock fragments; 5 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a06)
- 2Bkb2'** 173 to 191 cm. Pink (7.5YR7/3) extremely gravelly sandy loam, brown (7.5YR5/4) moist; weak fine subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few very fine roots; Stage II carbonate development; 40 percent weakly carbonate-cemented with common carbonate pendants on undersides of rock fragments; 65 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a07)
- 2Bkb3'** 191 to 206 cm. Pink (7.5YR7/3) very gravelly coarse sandy loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; many very fine and fine roots; Stage I+ carbonate development; common thin carbonate coatings and common carbonate pendants on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks. (Unit A5 and sample a08)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 8 cm), cambic horizon (8 to 71 cm), argillic horizon (107 to 140 cm), and petrocalcic horizon (140 to 173 cm). The thickness of the eolian mantle in this pedon is 8 cm. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Camborthids (?).

SOIL PROFILE SC01-P01

Location: Streamcut bank above soil trench 2 at RWMS; Nevada State Plane coordinates 777,540 feet north and 707,210 feet east; 1089.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described / sampled: 8 December 1994 / 15 February 1995

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Petrocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Very pale brown (10YR7/3) very gravelly loam, yellowish brown (10YR5/6) moist; moderate medium platy structure parting to moderate medium granular; slightly hard, friable, sticky and plastic; few fine roots; many fine vesicular pores; common moderately thick etched paleocarbonate coatings on sides of rock fragments; 10 percent cobbles, 10 percent channers, and 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a01a)
- 2BAk** 6 to 11 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR5/6) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; Stage I-carbonate development; few thin carbonate coatings on undersides of rock fragments; many moderately thick etched paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a01b)
- 3Bkb** 11 to 28 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR5/6) moist; few lenses of sandy material in lower part; weak fine subangular blocky structure; hard, firm, nonsticky and nonplastic; few fine and medium roots; Stage II carbonate development; 40 percent weakly carbonate-cemented with many thin carbonate coatings and common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a02)

- 3Bkmb** 28 to 40 cm. Pink (7.5YR8/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; moderate medium and coarse platy structure; very hard, very firm, nonsticky and nonplastic; few medium roots in fractures; Stage III + carbonate development; 90 percent strongly carbonate-cemented with 5-mm overlying laminar cap; common thin carbonate coatings and carbonate pendants on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks; clear broken boundary. (Unit A5 and sample a03)
- 3Bkqb** 40 to 54 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with pockets of faint relict bedding in many parts; slightly hard, friable, nonsticky and nonplastic; common medium and coarse roots; Stage I + carbonate development; few carbonate filaments throughout with common carbonate pendants and common thin silica outcrops on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks; abrupt irregular boundary. (Unit A5 and sample a04)
- 3Bkb'** 54 to 73 cm. Pink (7.5YR8/3) very gravelly sand, light brown (7.5YR6/4) moist; moderate medium platy structure parting to moderate medium subangular blocky; very hard, very firm, nonsticky and nonplastic; few fine roots in fractures; Stage III carbonate development; 70 percent strongly carbonate-cemented with many thin carbonate coatings and carbonate pendants on undersides of peds and rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; clear broken boundary. (Unit A5 and sample a05)
- 3Bckb** 73 to 85 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; common fine roots; Stage I - carbonate development; common thin carbonate coatings on undersides of rock fragments; 35 percent pebbles from pyroclastic rocks; gradual wavy boundary. (Unit A5 and sample a06)
- 3Cb** 85 to 120 cm. Very pale brown (10YR8/3) very gravelly sand, light yellowish brown (10YR6/4) moist; single grain with distinct relict bedding and a few pockets of the overlying horizon material, including a 3-cm discontinuous lens of finer material at 91 cm; loose, nonsticky and nonplastic; common fine and medium roots; very few thin carbonate coatings on undersides of rock fragments; 40 percent pebbles from pyroclastic rocks. (Unit A5 and sample a07)

NOTES: This pedon is matched with Soil Profile SC01-PO2 that is on the summit portion of the fan terrace. Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 6 cm), calcic horizon (11 to 28 cm), and petrocalcic horizon (28 to 40 cm). The thickness of the eolian mantle in this pedon is 6 cm. The old system taxonomic great group of the pedon is Paleorthids (?).

SOIL PROFILE SC01-P02

Location: Streamcut bank above soil trench 2 at RWMS; Nevada State Plane coordinates 777,545 feet north and 707,215 feet east; 1090.0 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 8 December 1994 / 15 February 1995

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: (?) Haplocambid (in Unit (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 2 cm. Very pale brown (10YR7/3) extremely gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and slightly plastic; very few moderately thick etched pale carbonate coatings on sides of rock fragments; 10 percent cobbles, 15 percent channers, and 50 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A5 and sample a01a)
- Btq** 2 to 11 cm. Very pale brown (10YR7/3) gravelly loam, yellowish brown (10YR5/6) moist; moderate medium platy structure; slightly hard, friable, sticky and plastic; very few fine roots; common fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; common thin silica cutans on undersides of peds and rock fragments; 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a01b)
- Btk** 11 to 23 cm. Light brown (7.5YR6/3) very gravelly sandy clay loam, dark brown (7.5YR4/4) moist; moderate thin platy structure; slightly hard, friable, slightly sticky and plastic; few fine roots; few fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I+ carbonate development; few thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 40 percent pebbles from pyroclastic rocks; abrupt irregular boundary. (Unit A5 and sample a02)

2Bkb 23 to 32 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR5/6) moist; weak fine subangular blocky structure; hard, firm, nonsticky and nonplastic; few fine and medium roots; Stage II carbonate development; weakly carbonate-cemented with many thin carbonate coatings on undersides of rock fragments; few lenses of coarser-textured material in lower part; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks. (Unit A5 and sample s03)

NOTES: Partial description for this pedon is matched with Soil Profile SC01-P01 that is on a truncated shoulder portion of the fan terrace. Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 11 cm) and calcic horizon (23 to 32 cm). The thickness of the eolian mantle in this pedon is 23 cm.

SOIL PROFILE SC02-P01

Location: Streamcut bank above soil trench 3 at RWMS; Nevada State Plane coordinates 775,040 feet north and 702,990 feet east; 1119.3 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 16 December 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit A5(?))

Taxonomic classification of pedon: (?) Loamy-skeletal, mixed, thermic Typic Petroargids (?)

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 4 cm. Pale brown (10YR6/3) extremely gravelly fine sandy loam, yellowish brown (10YR5/4) moist; moderate thick platy structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; many medium and coarse continuous vesicular pores; very few moderately thick etched paleocarbonate coatings on sides of rock fragments; 1 percent stones, 5 percent cobbles, 25 percent channers, and 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a01)
- Btkq** 4 to 14 cm. Pink (7.5YR7/3) very gravelly sandy clay loam, strong brown (7.5YR5/6) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and slightly plastic; few fine roots; common fine continuous vesicular pores; common very thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; few thin carbonate coatings and common thin silica cutans on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a02)
- 2Bkb1** 14 to 37 cm. Pink (7.5YR7/3) very gravelly loamy sand, brown (7.5YR5/4) moist; moderate fine subangular blocky structure; hard, firm, nonsticky and nonplastic; common fine roots; Stage II carbonate development; 30 percent weakly to moderately carbonate-cemented with a few strongly-cemented lenses and common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a03)

- 28kb2** 37 to 54 cm. Pink (7.5YR7/3) very gravelly loamy sand, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; very hard, very firm, nonsticky and nonplastic; few medium roots in fractures; Stage III carbonate development; 85 percent moderately to strongly carbonate-cemented with many thick carbonate coatings on undersides of rock fragments; common moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a04)
- 28kb3** 54 to 94 cm. Pink (7.5YR7/3) very gravelly coarse sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I+ carbonate development; few discontinuous weakly carbonate-cemented lenses, and many thin carbonate coatings and carbonate pendants on undersides of rock fragments; 55 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a05)
- 28Ckb** 94 to 130 cm. Pale brown (10YR6/3) extremely gravelly coarse sand, dark yellowish brown (10YR4/4) moist; mostly single grain with many pockets of distinct relict bedding; loose, nonsticky and nonplastic; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 55 percent pebbles from pyroclastic rocks. (Unit A5 and sample a06)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 4 cm), argillic horizon (4 to 14 cm), calcic horizon (14 to 37 cm), and petrocalcic horizon (37 to 54 cm). The thickness of the eolian mantle in this pedon is 14 cm. The old system taxonomic great group of the pedon is Paleargids.

SOIL PROFILE SC03-P01

Location: Streamcut bank at base of hill near turnoff to Scarp Canyon at RWMS; Nevada State Plane coordinates 779,125 feet north and 713,315 feet east; 1094.3 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 16 December 1994 / 15 February 1995

Geomorphic surface: S5b

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(?))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocambids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 9 cm. Very pale brown (10YR7/3) gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common fine roots; 10 percent channers and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a01)
- BAk** 9 to 18 cm. Pink (7.5YR7/3) gravelly loamy sand, brown (7.5YR5/4) moist; very weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a02)
- Bk1** 18 to 29 cm. Pink (7.5YR7/3) gravelly loamy sand, brown (7.5YR5/4) moist; very weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine and fine roots; Stage I carbonate development; few thin carbonate coatings on undersides of rock fragments; 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a03)

- Bk2** 29 to 49 cm. Pink (7.5YR7/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 55 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a04)
- Bk3** 49 to 75 cm. Pink (7.5YR7/3) very gravelly loamy coarse sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine and medium roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 40 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a05)
- 2Bk4** 75 to 90 cm. Pink (7.5YR8/3) very gravelly coarse sand, light brown (7.5YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I- carbonate development; many thin carbonate coatings and very few silica cutans on undersides of rock fragments; 40 percent pebbles from pyroclastic rocks. (Unit A5 and sample a06)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 9 cm) and cambic horizon (18 to 75 cm). The old system taxonomic great group of the pedon is Camborthids.

SOIL PROFILE SC04-P01

Location: Streamcut bank of fan terrace on west side of Scarp Canyon at RWMS; Nevada State Plane coordinates 786,400 feet north and 720,875 feet east; 1132.6 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: R.D. Van Remortel and H.E. Huckins-Gang

Date described and sampled: 29 March 1995 / 3 April 1995

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A ??)

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocambids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 7 cm. Pink (7.5YR7/3) extremely cobbly sandy loam, brown (7.5YR4/4) moist; moderate medium platy structure parting to moderate medium granular; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; many fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent stones, 20 percent cobbles, 25 percent channers, and 25 percent pebbles from pyroclastic rocks; abrupt irregular boundary. (Unit A6 and sample a01)

B&t 7 to 25 cm. Pinkish gray (7.5YR7/2) gravelly loamy sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and slightly plastic; few very fine roots; few fine vesicular pores; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; very few pockets of weakly carbonate-cemented soil; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a02)

- Bk2** 25 to 49 cm. Pink (7.5YR7/3) very gravelly coarse sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine and medium roots; Stage I+ carbonate development; many carbonate pendants and very few silica cutans on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 55 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a03)
- Bk3** 49 to 84 cm. Pink (7.5YR7/3) very gravelly loamy coarse sand, brown (7.5YR5/3) moist; weak thin platy structure with a few pockets of faint relict bedding in lower part; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; Stage I- carbonate development; many thin carbonate coatings and very few thin silica cutans on undersides of rock fragments; few lenses of weakly carbonate-cemented soil in upper part; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent stones, 10 percent cobbles, and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a04)
- Bk4** 84 to 111 cm. Pink (7.5YR7/3) very gravelly loamy coarse sand, light brown (7.5YR6/3) moist; weak medium subangular blocky structure; hard, firm, nonsticky and nonplastic; few very fine roots; Stage I- carbonate development; few thin carbonate coatings, few carbonate pendants, and very few thin silica cutans on undersides of rock fragments; few thin lenses of weakly carbonate-cemented soil; few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a05)
- Bk5** 111 to 123 cm. Pink (7.5YR7/3) very gravelly loamy coarse sand, brown (7.5YR5/3) moist; moderate thin platy structure parting to weak medium subangular blocky; hard, firm, nonsticky and nonplastic; few very fine roots; Stage I- carbonate development; common thin carbonate coatings, common carbonate pendants, and very few thin silica cutans on undersides of rock fragments; common thin lenses of weakly carbonate-cemented soil; few moderately thick paleocarbonate coatings on sides of rock fragments; 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a06)
- Bk6** 123 to 153 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR6/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; Stage I- carbonate development; few thin carbonate coatings and very few thin silica cutans on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent cobbles and 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a07)

- Bk7** 153 to 169 cm. Pinkish gray (7.5YR7/2) extremely gravelly sand, light brown (7.5YR6/4) moist; weak medium subangular blocky structure; hard, firm, nonsticky and nonplastic; Stage I- carbonate development; very weakly carbonate-cemented throughout; few thin carbonate coatings and common thin pendants on undersides of rock fragments; 60 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a08)
- Bk8** 169 to 194 cm. Pinkish gray (7.5YR7/2) very gravelly sand, brown (7.5YR6/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 15 percent cobbles and 40 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a09)
- Bk9** 194 to 210+ cm. Pinkish gray (7.5YR7/2) extremely gravelly sand, brown (7.5YR6/3) moist; weak medium subangular blocky structure; hard, firm, nonsticky and nonplastic; few moderately thick lenses of fine sandy material throughout; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 15 percent cobbles and 50 percent pebbles from pyroclastic rocks. (Unit A6 and sample a10)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 7 cm) and cambic horizon (7 to 25 cm). There appears to be a weak time-discontinuity at 49 cm. The old system taxonomic great group of the pedon is Camborthids.

SOIL PROFILE SC05-P01

Location: Streamcut bank of high fan terrace on east side of Scarp Canyon at RWMS; Nevada State Plane coordinates 783,900 feet north and 721,720 feet east; 1106.7 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: R.D. Van Remortel and H.E. Huckins-Gang

Date described and sampled: 29 March 1995 / 4 April 1995

Geomorphic surface: S2

Taxonomic classification of uppermost deposit: Petrocalcic (in Unit A (?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Argic Petrocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 1 cm. Pale brown (10YR6/3) extremely gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine vesicular pores; common thin green algae deposits on undersides of rock fragments; 1 percent stones, 10 percent cobbles, 40 percent pebbles, and 15 percent channel-sized pan fragments dominantly from mixed quartzite and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a01a)

Btkm1 1 to 9 cm. Very pale brown (10YR7/3) very gravelly clay loam, yellowish brown (10YR5/4) moist; strong coarse subangular blocky structure; very hard, very firm, sticky and plastic; very few fine roots; many fine and medium vesicular pores; common moderately thick argillans on contacts between peds and pebbles; Stage III carbonate development; 95 percent moderately carbonate-cemented with many moderately thick carbonate coatings and common moderately thick pendants on undersides of rock fragments; common moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles, 30 percent pebbles, and 5 percent channel-sized pan fragments dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a01b)

- Btkm2** 9 to 20 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR5/6) moist; moderate medium subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; few very fine roots; few very fine vesicular pores; common thin argillans on contacts between peds and pebbles; Stage II carbonate development; 95 percent moderately carbonate-cemented with many thick carbonate coatings and common thick pendants on undersides of rock fragments; 10 percent cobbles and 45 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a02)
- Bk1** 20 to 49 cm. Pink (7.5YR7/3) very gravelly loamy sand, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; hard, firm, nonsticky and nonplastic; common fine and medium roots; Stage II carbonate development; 45 percent moderately carbonate-cemented with many moderately thick carbonate coatings and common moderately thick pendants on undersides of rock fragments; few lenses of unaltered sand and fine gravel above lower boundary of horizon; 2 percent cobbles and 45 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a03)
- Bk2** 49 to 72 cm. Pink (7.5YR7/3) very gravelly loamy sand, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; hard, firm, nonsticky and nonplastic; common fine and medium roots; Stage II carbonate development; 30 percent weakly to moderately carbonate-cemented with many moderately thick carbonate coatings and common moderately thick pendants on undersides of rock fragments; 2 percent cobbles and 55 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a04)
- Bk3** 72 to 98 cm. Pink (7.5YR7/4) very gravelly loamy sand, strong brown (7.5YR5/6) moist; weak medium subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine and medium roots; Stage II carbonate development; 15 percent weakly carbonate-cemented with common thin carbonate coatings and pendants on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a05)
- Bck** 98 to 129 cm. Pink (7.5YR7/3) extremely gravelly loamy sand, brown (7.5YR5/4) moist; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; Stage I+ carbonate development; common thin carbonate coatings and few thin carbonate pendants on undersides of rock fragments; few lenses of single grain gravelly sand material with very faint relict bedding; 5 percent cobbles and 65 percent pebbles from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a06)

Ck 129 to 160 cm. Light gray (10YR7/2) very gravelly sand, brown (10YR5/3) moist; single grain with faint relict bedding; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common thin carbonate coatings and few thin pendants on undersides of rock fragments; 55 percent pebbles from mixed quartzite and calcareous sedimentary rocks. (Unit A5 and sample s07)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include argillic horizon (1 to 9 cm), petrocalcic horizon (1 to 20 cm), and calcic horizon (20 to 72 cm). Few thin carbonate coatings occur on all sides of rock fragments. The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE SC06-P01

Location: Uppermost axial streamcut west of Paleomag Wash at RWMS; Nevada State Plane coordinates 775,470 feet north and 698,400 feet east; 1127.4 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 May 1995

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 7 cm. Pale brown (10YR6/3) very cobbly loam, dark yellowish brown (10YR4/4) moist; moderate fine platy structure parting to moderate fine subangular blocky and moderate medium granular; soft, very friable, sticky and plastic; common fine roots; common fine vesicular pores; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 5 percent stones, 15 percent cobbles, and 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6)
- 2Bk1** 7 to 15 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine and medium roots; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- 2Bk2** 15 to 36 cm. Pink (7.5YR7/3) gravelly sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many very fine roots and few fine and medium roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)

3Bkb 36 to 45 cm. Pinkish gray (7.5YR7/2) very gravelly sandy loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; Stage II carbonate development; 30 percent weakly to moderately carbonate-cemented with common carbonate pendants and coatings on undersides of rock fragments; 5 percent cobbles and 40 percent pebbles from pyroclastic rocks. (Unit A5)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 7 cm), cambic horizon (7 to 36 cm), and calcic horizon (36 to 45+ cm). The thickness of the eolian mantle in this pedon is 7 cm. The old system taxonomic great group of the pedon is Calcorthids.

SOIL PROFILE SC07-P01

Location: Colluvial fan terrace streamcut along west edge Paleomag Wash at RWMS; Nevada State Plane coordinates 774,960 feet north and 698,260 feet east; 1122.0 meters elevation.

Described by: R.D. Van Remortel

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described / sampled: 15 May 1995 / 12 June 1995

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit A6(?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 2 cm. Light yellowish brown (10YR6/4) extremely gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common fine vesicular pores; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 15 percent cobbles and 66 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a01)
- A2** 2 to 12 cm. Very pale brown (10YR7/4) very gravelly loam, dark yellowish brown (10YR4/6) moist; moderate medium platy structure parting to moderate medium granular; slightly hard, friable, sticky and plastic; few very fine roots; many fine vesicular pores; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a02)
- Bk1** 12 to 39 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; Stage 1- carbonate development; few thin carbonate coatings on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 50 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a03)

- 2Bkb1** 39 to 52 cm. Pink (7.5YR8/3) extremely gravelly sandy loam, brown (7.5YR5/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine and medium roots; Stage I+ carbonate development; common thin carbonate pendants on undersides of rock fragments; 2 percent cobbles and 65 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a04)
- 2Bkb2** 52 to 81 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; Stage I carbonate development; common thin carbonate coatings on sides and undersides of rock fragments; 10 percent cobbles and 40 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a05)
- 2Btkb1** 81 to 98 cm. Pink (7.5YR7/3) very gravelly sandy clay loam, strong brown (7.5YR4/6) moist; moderate medium subangular blocky structure; hard, firm, sticky and plastic; few medium roots; common thin argillans on undersides of peds and rock fragments; Stage II carbonate development; 30 percent weakly to moderately carbonate-cemented with many thin carbonate pendants on undersides of rock fragments; 5 percent cobbles and 45 percent pebbles from pyroclastic rocks; gradual wavy boundary. (Unit A5 and sample a06)
- 2Btkb2** 98 to 119 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and plastic; few fine roots; few thin argillans on contacts between peds and rock fragments; Stage II carbonate development; 30 percent weakly to moderately carbonate-cemented with common thin carbonate pendants on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; gradual wavy boundary. (Unit A5 and sample a07)
- 2Bkb'** 119 to 160 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 5 percent cobbles and 45 percent pebbles from pyroclastic rocks. (Unit A5 and sample a08)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 12 cm), cambic horizon (12 to 81 cm), argillic horizon (81 to 119 cm), and calcic horizon (81 to 119 cm). The thickness of the eolian mantle in this pedon is 39 cm. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE SC08-P01

Location: Stream terrace with superjacent fan alluvium along eastern edge of Paleomag Wash at RWMS; Nevada State Plane coordinates 774,660 feet north and 698,210 feet east; 1116.2 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 May 1995

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplocambids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 1 cm. Very pale brown (10YR7/3) extremely cobbly fine sandy loam, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, sticky and plastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 25 percent cobbles and 40 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- A2** 1 to 9 cm. Pale brown (10YR6/3) very gravelly loam, brown (10YR5/3) moist; moderate medium platy structure parting to weak medium subangular blocky; slightly hard, friable, sticky and plastic; common fine roots; many fine vesicular pores; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 15 percent cobbles and 25 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- 2BAtk** 9 to 20 cm. Pale brown (10YR6/3) very gravelly sandy loam, brown (10YR5/3) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few thin argillans on undersides of rock fragments; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; few moderately thick etched paleocarbonate coatings on sides and undersides of rock fragments; 10 percent cobbles and 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6)

- 2Bk1** 20 to 30 cm. Light brown (7.5YR6/3) very gravelly sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 40 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6)
- 2Bk2** 30 to 48 cm. Pink (7.5YR7/3) extremely gravelly loamy sand, brown (7.5YR5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 85 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- Bckqb1** 48 to 59 cm. Light brown (7.5YR6/3) very gravelly sand, brown (7.5YR4/3) moist; weak moderate subangular blocky structure with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; common thin silica cutans on undersides of rock fragments; 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- Bckqb2** 59 to 85 cm. Light brown (7.5YR6/3) very gravelly sand, brown (7.5YR4/4) moist; weak moderate subangular blocky structure with faint relict bedding in some parts; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; common thin silica cutans on undersides of rock fragments; 10 percent cobbles and 40 percent pebbles from pyroclastic rocks. (Unit A6)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 9 cm) and cambic horizon (9 to 48 cm). The thickness of the eolian mantle in this pedon is 9 cm. Apparent stream alluvium from Paisomag Wash is evident below 48 cm. The old system taxonomic great group of the pedon is Camborthids.

SOIL PROFILE SC09-P01

Location: Colluvial fan terrace along axial drainage on east side of Paleomag Wash at RWMS; Nevada State Plane coordinates 773,250 feet north and 897,630 feet east; 1102.7 meters elevation.

Described by: R.D. Van Remortel

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 16 May 1995 / 12 June 1995

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplargid (in Unit A6(?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Very pale brown (10YR7/3) very cobbly loam, dark yellowish brown (10YR4/4) moist; weak fine platy structure parting to moderate fine subangular blocky; slightly hard, friable, sticky and plastic; few fine roots; common very fine vesicular pores; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 6 percent stones, 20 percent cobbles, and 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6 and sample a01)
- Bk1** 6 to 29 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and plastic; common very fine roots; Stage I carbonate development; few thin carbonate coatings on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent stones, 15 percent cobbles, and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a02)
- 2Bkb** 29 to 47 cm. Light brown (7.5YR6/3) extremely gravelly sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and plastic; common very fine and fine roots; Stage I carbonate development; common thin carbonate coatings on rock fragments; 2 percent stones, 5 percent cobbles, and 60 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6 and sample a03)

- 2Btkb1** 47 to 88 cm. Light brown (7.5YR6/4) very gravelly sandy loam, strong brown (7.5YR4/6) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few fine roots; common thin argillans on undersides of peds and rock fragments; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 2 percent stones, 10 percent cobbles, and 25 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5 and sample a04)
- 2Btkb2** 88 to 86 cm. Light brown (7.5YR6/4) very gravelly sandy loam, strong brown (7.5YR4/6) moist; weak fine subangular blocky structure; hard, firm, slightly sticky and plastic; few fine roots; few thin argillans on undersides of peds and rock fragments; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 2 percent stones, 10 percent cobbles, and 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5 and sample a05)
- 2BCb** 86 to 110 cm. Light brown (7.5YR6/4) very stony sandy loam, strong brown (7.5YR4/6) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few very fine roots; very few thin carbonate coatings on undersides of rock fragments; 30 percent stones, 5 percent cobbles, and 20 percent pebbles from pyroclastic rocks. (Unit A5 and sample a06)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 6 cm), cambic horizon (6 to 47 cm), and argillic horizon (47 to 86 cm). The thickness of the eolian mantle in this pedon is 29 cm. Hard carbonate lenses at edge of pedon are likely to be residual pinchout case-hardened strata emanating from adjacent axial drainage. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE SC10-P01

Location: Stream terrace along west edge of Paleomag Wash at RWMS; Nevada State Plane coordinates 772,790 feet north and 697,520 feet east; 1096.0 meters elevation.

Described by: R.D. Van Remortel

Date described: 16 May 1995

Geomorphic surface: S6

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(7))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Fluventic Haplocambids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Pale brown (10YR6/3) extremely gravelly sand, yellowish brown (10YR5/4) moist; weak thin platy structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; few fine roots; common very fine vesicular pores; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 5 percent cobbles and 60 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- BA** 2 to 10 cm. Light brownish gray (10YR6/2) extremely gravelly sand, brown (10YR5/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few fine roots; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent cobbles and 60 percent pebbles from pyroclastic rocks; gradual wavy boundary. (Unit A6)
- Bw** 10 to 50 cm. Light brownish gray (10YR6/2) extremely cobbly coarse sand, grayish brown (10YR5/2) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; very few moderately thick etched paleocarbonate coatings on sides and undersides of rock fragments; 30 percent cobbles and 40 percent pebbles from pyroclastic rocks. (Unit A6)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 2 cm) and cambic horizon (10 to 50 cm). Almost an A-C profile except for the very weak ped development and the apparent lack of relict bedding. The old system taxonomic great group of the pedon is Camborthids.

SOIL PROFILE SC11-P01

Location: Colluvial fan footslope across Paleomag Wash from Soil Profile SC10-P01 at RWMS; Nevada State Plane coordinates 772,700 feet north and 697,500 feet east; 1094.5 meters elevation.

Described by: R.D. Van Remortel

Date described: 16 May 1995

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplocambids (?)

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Pale brown (10YR6/3) extremely cobbly sandy loam, dark yellowish brown (10YR3/4) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 5 percent stones, 50 percent cobbles and 40 percent pebbles from pyroclastic rocks as 28-cm thick rubble overlying the surface; clear irregular boundary. (Unit A6)
- Bw** 6 to 27 cm. Light brown (7.5YR6/4) extremely cobbly sandy loam, strong brown (7.5YR4/6) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent stones, 30 percent cobbles, and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- BC** 27 to 35 cm. Light brown (7.5YR6/4) very gravelly coarse sand, dark brown (7.5YR3/4) moist; weak thin platy structure with faint relict bedding; soft, very friable, nonsticky and nonplastic; very few moderately thick etched paleocarbonate coatings on sides and undersides of rock fragments; 35 percent fine pebbles from pyroclastic rocks. (Unit A6)

- Bkb1** 35 to 71 cm. Pinkish gray (7.5YR6/2) very cobbly sandy loam, brown (7.5YR4/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium and coarse roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent stones, 25 percent cobbles, and 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6)
- Bkb2** 71 to 111 cm. Pink (7.5YR7/3) extremely gravelly sandy loam, brown (7.5YR4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; common fine tubular pores; Stage I- carbonate development; many moderately thick carbonate coatings on undersides of rock fragments; 5 percent cobbles and 65 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6)
- Bwb** 111 to 130 cm. Pink (7.5YR7/4) very gravelly sandy loam, brown (7.5YR4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine and medium roots; very few thin carbonate coatings on undersides of rock fragments; 10 percent stones, 5 percent cobbles, and 25 percent pebbles from pyroclastic rocks. (Unit A6)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 6 cm) and cambic horizon (8 to 27 cm). The BC horizon is presumed to be stream alluvium deposited by Paleomag Wash during relict channel-cutting stage. The old system taxonomic great group of the pedon is Camborthids.

SOIL PROFILE SC12-P01

Location: Intermediate fan terrace cutbank on west side of lower Scarp Canyon at RWMS; Nevada State Plane coordinates 780,400 feet north and 721,300 feet east; 1082.3 meters elevation.

Described by: R.D. Van Remortel

Date described: 19 September 1995

Geomorphic surface: S4 (?)

Taxonomic classification of uppermost deposit: Haplargid (In Unit ?)

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Petroargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Pale brown (10YR6/3) extremely gravelly fine sandy loam, yellowish brown (10YR5/4) moist; moderate fine platy structure; soft, very friable, nonsticky and nonplastic; 15 percent cobbles and 50 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt smooth boundary. (Unit A6)
- AB** 2 to 10 cm. Pink (7.5YR8/3) gravelly sandy clay loam, strong brown (7.5YR5/6) moist; strong fine platy structure; slightly hard, friable, slightly sticky and plastic; few fine roots; few fine vesicular pores; very few thin silica cutans on undersides of rock fragments; 2 percent cobbles and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6)
- Btk** 10 to 26 cm. Pink (7.5YR8/3) very gravelly sandy clay loam, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; common fine roots; few thin argillans on contacts between peds and fine pebbles; Stage 1+ carbonate development; common carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear irregular boundary. (Unit A6)

- 2BCKq** 26 to 32 cm. Pinkish gray (7.5YR7/2) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; Stage I carbonate development; few carbonate coatings and few carbonate pendants on undersides of rock fragments; 2 percent stones, 10 percent cobbles, and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6)
- 3Bkmb** 32 to 49 cm. Pinkish white (7.5YR8/2) extremely gravelly loamy sand, light brown (7.5YR6/3) moist; moderate medium platy structure; very hard, very firm, nonsticky and nonplastic; Stage III + carbonate development; 90 percent moderately to strongly carbonate-cemented with white (7.5YR8/1, 7/3 moist) 2-mm laminar cap; common moderately thick carbonate coatings and many carbonate pendants on undersides of rock fragments; 15 percent cobbles and 45 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 3BCKb** 49 to 71 cm. Pinkish gray (7.5YR7/2) very gravelly sand, light brown (7.5YR6/3) moist; weak coarse subangular blocky structure with prominent relict bedding in many parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I + carbonate development; few thin carbonate strata throughout and few carbonate pendants on undersides of rock fragments; 5 percent cobbles and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5)
- 3Cb** 71 to 80 cm. Light gray (10YR7/2) very cobbly sand, grayish brown (10YR5/2) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; 25 percent cobbles and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include an argillic horizon (10 to 24 cm) and petrocalcic horizon (32 to 49 cm). The thickness of the eolian mantle in this pedon is 26 cm. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE SC13-P01

Location: High fan terrace cutbank north of SC05 on east side of Scarp Canyon at RWMS; Nevada State Plane coordinates 784,520 feet north and 721,630 feet east; 1109.8 meters elevation.

Described by: R.D. Van Remortel

Date described: 19 September 1995

Geomorphic surface: S2

Taxonomic classification of uppermost deposit: Petrocalcic (In Unit A (7))

Taxonomic classification of pedon: Fine-loamy, mixed, thermic Argic Petrocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Very pale brown (10YR7/3) extremely gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, very friable, slightly sticky and slightly plastic; 1 percent stones, 20 percent cobbles, 35 percent pebbles, and 35 percent channer-sized pan fragments dominantly from mixed quartzite and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btkq** 2 to 10 cm. Pinkish gray (7.5YR7/2) gravelly clay loam, reddish yellow (7.5YR6/6) moist; strong fine platy structure parting to moderate medium subangular blocky; hard, firm, slightly sticky and slightly plastic; many fine vesicular pores; few thin argillans on contacts between peds and pebbles; Stage II carbonate development; weakly carbonate-cemented with common thin carbonate coatings and common pendants on undersides of rock fragments; 2 percent cobbles and 25 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bkqm1** 10 to 20 cm. Pink (7.5YR7/3) very gravelly loamy sand, strong brown (7.5YR5/6) moist; strong thick platy structure; very hard, very firm, nonsticky and nonplastic; Stage IV carbonate development; 95 percent strongly carbonate-cemented with white (7.5YR8/1, 7/3) moist) 1-mm laminar cap; many moderately thick carbonate coatings, many carbonate pendants, and common thin silica cutans on undersides of rock fragments; 5 percent cobbles and 30 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)

- 2Bkqm2** 20 to 39 cm. Pink (7.5YR8/2) very gravelly loamy sand, reddish yellow (7.5YR6/6) moist; moderate medium platy structure parting to moderate medium subangular blocky; very hard, very firm, nonsticky and nonplastic; Stage III carbonate development; 90 percent moderately to strongly carbonate-cemented with common moderately thick carbonate coatings, many carbonate pendants, and few thin silica cutans on undersides of rock fragments; 5 percent cobbles and 40 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bkq1** 39 to 47 cm. Pink (7.5YR7/3) very gravelly loamy sand, strong brown (7.5YR5/5) moist; moderate medium subangular blocky structure; hard, firm, nonsticky and nonplastic; common fine and medium roots; Stage II carbonate development; 40 percent weakly carbonate-cemented with many carbonate pendants and common thin silica cutans on undersides of rock fragments; 50 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bkq2** 47 to 67 cm. Pinkish white (7.5YR8/2) very cobbly loamy sand, light brown (7.5YR6/3) moist; weak medium subangular blocky structure; hard, firm, nonsticky and nonplastic; Stage II carbonate development; 30 percent weakly carbonate-cemented with many carbonate pendants and few thin silica cutans on undersides of rock fragments; 40 percent cobbles and 15 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bk** 67 to 95 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; Stage I+ carbonate development; common thin carbonate coatings and common carbonate pendants on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5)
- 2Bck** 95 to 120 cm. Very pale brown (10YR7/3) extremely gravelly sand, yellowish brown (10YR5/4) moist; hard, firm, nonsticky and nonplastic; Stage I+ carbonate development; common thin carbonate coatings and few thin carbonate pendants on undersides of rock fragments; few lenses of single grain gravelly sand material with very faint relict bedding; 5 percent cobbles and 65 percent pebbles from mixed quartzite and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)

NOTES: This pedon is matched with Soil Profile SC13-P02 that is on the summit portion of the fan terrace. Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include argillic horizon (2 to 9 cm), petrocalcic horizon (9 to 39 cm), and calcic horizon (39 to 67 cm). The thickness of the eolian mantle in this pedon is 9 cm. Few thin carbonate coatings occur on all sides of rock fragments. The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE SC13-P02

Location: High fan terrace summit next to SC13-P01 on east side of Scarp Canyon at RWMS; Nevada State Plane coordinates feet 784,525 north and 721,635 feet east; 1109.9 meters elevation.

Described by: R.D. Van Remortel

Date described: 19 September 1995

Geomorphic surface: S2

Taxonomic classification of uppermost deposit: Petrocalcic (in Unit A (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 2 cm. Very pale brown (10YR7/3) extremely gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, very friable, slightly sticky and slightly plastic; 1 percent stones, 20 percent cobbles, 45 percent pebbles, and 15 percent channer-sized pan fragments dominantly from mixed quartzite and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

Btkq 2 to 16 cm. Pinkish gray (7.5YR7/2) gravelly clay loam, reddish yellow (7.5YR6/6) moist; strong fine platy structure parting to moderate medium subangular blocky; hard, firm, slightly sticky and slightly plastic; many fine vesicular pores; few thin argillans on contacts between peds and pebbles; Stage II carbonate development; weakly carbonate-cemented with common thin carbonate coatings and common pendants on undersides of rock fragments; 2 percent cobbles and 25 percent pebbles dominantly from mixed quartzite and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

NOTES: This partial pedon is matched with Soil Profile SC13-P01 that is approximately 2 meters away and has been truncated at the surface because of its proximity to the drainage. Location was determined from orthotopoquads and is accurate to within 20 feet. Few thin carbonate coatings occur on all sides of rock fragments. The old system taxonomic great group of the pedon is Calciorthis.

SOIL PROFILE SH01-P01

Location: West side of U11-B shot hole embankment near turnoff to Scarp Canyon at RWMS; Nevada State Plane coordinates 778,990 feet north and 712,110 feet east; 1097.6 meters elevation.

Described by: R.D. Van Remortel

Date described: 8 December 1994

Geomorphic surface: S4 (?)

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Petrocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 4 cm. Very pale brown (10YR7/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent stones, 5 percent cobbles, 10 percent channers, and 25 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- Bw** 4 to 17 cm. Pink (7.5YR7/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few fine roots; common very fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- 2Bk1** 17 to 30 cm. Pink (7.5YR7/3) gravelly sandy loam, strong brown (7.5YR4/6) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; discontinuous 4-cm lenses of weakly carbonate-cemented material; common thin carbonate coatings and common carbonate pendants on undersides of peds and rock fragments; 2 percent cobbles and 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6)

- 2Bk2** 30 to 69 cm. Pink (7.5YR8/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; Stage I+ carbonate development; common thin carbonate coatings and common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 40 percent pebbles from pyroclastic rocks; gradual wavy boundary. (Unit A6)
- 2Bck** 69 to 101 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with single grain faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I- carbonate development; few carbonate filaments and few thin carbonate coatings on undersides of rock fragments; common moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent stones, 5 percent cobbles, and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6)
- 3Bkqmb** 101 to 152 cm. Pink (7.5YR8/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; moderate medium and coarse platy structure; very hard, very firm, nonsticky and nonplastic; Stage III+ carbonate development; 90 percent strongly carbonate-cemented with pink (7.5YR8/3) 3-mm laminar cap and irregular laminar layers throughout; many thick carbonate coatings and common thin silica cutans on undersides of peds and rock fragments; 2 percent stones, 5 percent cobbles, and 40 percent pebbles from pyroclastic rocks; clear irregular boundary. (Unit A5)
- 3Bkb** 152 to 175 cm. Pink (7.5YR8/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; weak medium subangular blocky structure; hard, firm, nonsticky and nonplastic; few fine roots; Stage II carbonate development; 40 percent weakly carbonate-cemented with many thin carbonate coatings on sides of rock fragments; 2 percent stones, 5 percent cobbles, and 40 percent pebbles from pyroclastic rocks. (Unit A5)

NOTES: Bench break at 105 cm. Location was determined from orthotopoquads and is accurate to within 20 feet. Diagnostic features include ochric epipedon (0 to 4 cm), calcic horizon (17 to 69 cm), and petrocalcic horizon (101 to 152 cm). The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE ST01-P01

Location: 3 meters west of the east stake, along south wall of soil trench 1 at RWMS; Nevada State Plane coordinates 768,338 feet north and 707,552 feet east; 974.8 meters elevation.

Described by: K.E. Snyder and R.D. Van Remortel

Sampled by: K.E. Snyder and R.D. Van Remortel

Date described and sampled: 6 April 1993

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Petroargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 10 cm. Pale brown (10YR6/3) very gravelly loamy sand, dark brown (10YR4/3) moist; moderate medium and weak coarse granular structure; soft, very friable, nonsticky and nonplastic; few fine roots; few moderately thick etched paleocarbonate coatings on sides of rock fragments; 10 percent channers and 25 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6(2) and sample a01)

Bw 10 to 46 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine and medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few fine and few medium roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent channers and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6(2) and sample a02)

- Bck** 46 to 71 cm. Pale brown (10YR6/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; weak very fine and fine subangular blocky structure with 20 percent of the horizon containing relict bedding; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I carbonate coatings on rock fragments; few moderately thick etched pale carbonate coatings on sides of rock fragments; 20 percent channers and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(2) and sample a03)
- 2Btkqb1** 71 to 97 cm. Light brown (7.5YR6/3) gravelly sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure with weak thin platy in upper 5 cm of horizon; soft, friable, nonsticky and nonplastic; few fine roots; few thin faint argillans on undersides of peds and bridging sand grains; few thin prominent silica cutans on undersides of rock fragments; very thin (0.5 mm) carbonate lamina at top of the horizon; common very fine irregular soft carbonate filaments in peds; Stage I carbonate coatings on rock fragments; 10 percent channers and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6(1) and sample a04)
- 2Btkqb2** 97 to 135 cm. Light brown (7.5YR6/3) very gravelly loamy sand, brown (7.5YR4/4) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few very fine roots; few very fine discontinuous tubular pores; few thin faint argillans on faces of peds and in pores; few thin prominent very pale brown (10YR8/4 and 7/3) silica cutans on undersides of rock fragments and bridging sand grains beneath rock fragments; Stage I carbonate coatings on rock fragments; 25 percent of the horizon consists of hard, firm, pinkish gray (7.5YR7/2, 4/4 moist) discontinuous cemented lenses, typically 3 to 5 cm thick, with thin (0.5 mm) pinkish white (7.5YR8/2, 6/3 moist) carbonate lamina at the top of the lenses and lining medium and coarse pores; 5 percent cobbles at base of horizon, 15 percent channers and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(1) and sample a05)
- 3Btkmb1** 135 to 152 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, brown (7.5YR4/4) moist; weak thick and moderately thick platy structure; very hard, firm, nonsticky and nonplastic; few fine roots in carbonate-lined root tubes and on ped surfaces; common very fine and fine discontinuous tubular pores; few thin argillans on contacts between peds and fine pebbles; moderately to strongly carbonate-cemented with very thin (0.5 mm) pinkish white (7.5YR8/2, 6/4 moist) carbonate lamina at top of horizon and on ped surfaces; Stage III carbonate development; 5 percent channers and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a06)

- 3Btkmb2** 152 to 180 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, brown (7.5YR4/4) moist; weak coarse subangular blocky structure parting to fine weak subangular blocky; hard, firm, nonsticky and nonplastic; few very fine roots in carbonate-lined root tubes; common fine discontinuous tubular pores; few thin argillans on contacts between peds and fine pebbles; moderately to strongly carbonate-cemented; Stage III carbonate development; 5 percent channers and 25 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a07)
- 3Btkb** 180 to 216 cm. Light brown (7.5YR6/3) very gravelly loamy sand, brown (7.5YR4/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few thin faint argillans on faces of peds; Stage I carbonate coatings on rock fragments; 5 percent cobbles, 10 percent channers and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample a08)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 10 cm), cambic horizon (10 to 46 cm), argillic horizon (71 to 97 cm), calcic horizon (97 to 135 cm), and petrocalcic horizon (135 to 180 cm). The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST01-P02

Location: 9 meters west of the east stake, along south wall of soil trench 1 at RWMS; Nevada State Plane coordinates 768,352 feet north and 707,539 feet east; 974.7 meters elevation.

Described by: K.E. Snyder and R.D. Van Remortel

Sampled by: K.E. Snyder and R.D. Van Remortel

Date described and sampled: 8 April 1993

Geomorphic surface: S8

Taxonomic classification of uppermost deposit: Torrifluent (In Unit A6(3))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Arenic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- AC** 0 to 10 cm. Pale brown (10YR6/3) very channery sand, dark brown (10YR4/3) moist; weak very fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 25 percent channers and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(3) and sample a01)
- C1** 10 to 25 cm. Pale brown (10YR6/3) very gravelly loamy sand, brown (10YR4/3) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; few very fine and fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 20 percent channers and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(3) and sample a02)
- C2** 25 to 36 cm. Pale brown (10YR6/3) extremely channery sand, brown (10YR5/3) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; few very fine, fine, and medium roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 40 percent channers and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(3) and sample a03)

- C3** 36 to 58 cm. Pale brown (10YR6/3) very gravelly loamy sand, brown (10YR4/3) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; few fine roots; few moderately thick pale carbonate coatings on sides of rock fragments; 15 percent channers and 25 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(3) and sample a04)
- 2Btkqb1** 58 to 81 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine and medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few thin faint argillans on undersides of peds and bridging sand grains beneath pebbles; common thin prominent very pale brown (10YR7/4) and yellow (10YR7/6) silica cutans bridging sand grains and in pendants beneath rock fragments; very thin (0.5 mm) carbonate lamina at top of the horizon; Stage I carbonate coatings on rock fragments; 10 percent channers and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(1) and sample a06)
- 2Btkqb2** 81 to 130 cm. White (7.5YR8/1) and pinkish gray (7.5YR7/2) very gravelly loamy sand, light brown (7.5YR6/3) moist; massive; very hard, very firm, nonsticky and nonplastic; few very fine roots; few very fine discontinuous tubular pores; few thin faint argillans on faces of peds and in pores; common thin prominent very pale brown (10YR7/4) and yellow (10YR7/6) silica cutans bridging sand grains and in pendants beneath rock fragments; thin (0.5 mm) pinkish white (7.5YR8/2, 6/3 moist) carbonate lamina at the top of horizon and lining medium and coarse pores; Stage II carbonate development; about 20 percent of the horizon has light brown (7.5YR6/3, 4/4 moist), weak medium and coarse subangular blocky structure that is slightly hard and firm; 10 percent cobbles at base of horizon, 20 percent channers, and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6(1) and sample a06)
- 2BCKb** 130 to 150 cm. Pale brown (10YR6/3) very gravelly loamy sand, dark yellowish brown (10YR4/4) moist; single grain; loose, nonsticky and nonplastic; few thin prominent silica cutans bridging sand grains in pendants beneath rock fragments; Stage I carbonate coatings on rock fragments; discontinuous faint relict bedding; 20 percent channers and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(1) and sample a07)
- 3Btkmb** 150 to 165 cm. Pinkish gray (7.5YR7/2) gravelly loamy sand, brown (7.5YR4/4) moist; weak medium platy and subangular blocky structure; very hard, very firm, nonsticky and nonplastic; few thin argillans on contacts between peds and fine pebbles; moderately to strongly carbonate-cemented with thin carbonate lamina at top of the horizon; Stage III carbonate development; 5 percent channers and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6 and sample a08)

38tkb 165 to 185 cm. Light brown (7.5YR6/3) very gravelly loamy sand, brown (7.5YR4/4) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few thin faint argillans on faces of peds and undersides of rock fragments; few thin prominent very pale brown (10YR7/4) silice cutans on rock fragments and bridging sand grains in pendants beneath rock fragments; a few pockets of discontinuous moderate carbonate cementation; Stage I carbonate coatings on rock fragments; 5 percent cobbles, 5 percent channers, and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample s09)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include a buried soil (at 58 cm), argillic horizon (58 to 81 cm), and petrocalcic horizon (150 to 165 cm). The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST01-P03

Location: 18 meters west of the east stake, along soil trench 1 at RWMS; Nevada State Plane coordinates 768,374 feet north and 707,519 feet east; 974.9 meters elevation.

Described by: K.E. Snyder and R.D. Van Remortel

Sampled by: K.E. Snyder and R.D. Van Remortel

Date described / sampled: 8 April 1993 / 28 April 1993

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Haplargids

Remarks: Description and samples taken adjacent to creosotebush (*Larrea divaricata*). Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 8 cm. Brown (10YR5/3) channery loamy sand, dark yellowish brown (10YR3/4) moist; moderate fine and medium granular structure; soft, friable, nonsticky and nonplastic; few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent channers and 5 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(2) and sample a01)
- Bw** 8 to 30 cm. Pale brown (10YR6/3) sandy loam, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent channers and 5 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6(2) and sample a02)
- Bk** 30 to 79 cm. Pale brown (10YR6/3) channery sandy loam, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 10 percent channers and 5 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6(2) and sample a03)

- 2Btkqb1** 79 to 112 cm. Light brown (7.5YR6/3) gravelly sandy loam, brown (7.5YR4/4) moist, with 30 percent lenses of very gravelly sand; weak medium subangular blocky structure; soft, friable, slightly sticky and slightly plastic; few thin faint argillans on faces of peds and coating sand grains; few thin prominent very pale brown (10YR7/4) and yellow (10YR7/6) silica cutans bridging sand grains and in pendants beneath rock fragments; common fine irregular slightly hard carbonate concretions in peds; Stage I carbonate coatings on rock fragments; 10 percent channers and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(1) and sample a04)
- 2Btkqb2** 112 to 182 cm. White (7.5YR8/1) and pinkish gray (7.5YR7/2) very gravelly loamy sand, light brown (7.5YR6/3) moist; massive; very hard, very firm, nonsticky and nonplastic; few very fine roots; few very fine discontinuous tubular pores; few thin faint argillans on faces of peds and in pores; common thin prominent very pale brown (10YR7/4) and yellow (10YR7/6) silica cutans bridging sand grains and in pendants beneath rock fragments; thin (0.5 mm) pinkish white (7.5YR8/2, 6/3 moist) carbonate lamina at the top of horizon and lining medium and coarse pores; Stage II carbonate development; about 25 percent of horizon is light brown (7.5YR6/3, 4/4 moist) with weak medium subangular blocky structure, and is slightly hard and firm; 30 percent channers and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6(1) and sample a05)
- 3Btkmb** 182-190 cm. (Unit A5; horizon not described or sampled)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 8 cm), cambic horizon (30 to 112 cm), and petrocalcic horizon (182 to 190 cm). The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST02-P01

Location: 1 meter west of the east stake, along the south wall of soil trench 2 at RWMS; Nevada State Plane coordinates 771,379 feet north and 708,070 feet east; 1000.0 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 22 June 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplocambids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 3 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark brown (10YR4/3) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 25 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A6(2) and sample a01)
- BA** 3 to 10 cm. Very pale brown (10YR7/3) gravelly loam, yellowish brown (10YR5/4) moist; weak coarse prismatic structure parting to moderate fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few medium vesicular pores; very few thin argillans on faces of peds; very few medium soft carbonate masses and filaments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a02)
- 2Bk1** 10 to 23 cm. Very pale brown (10YR7/3) very gravelly sandy loam, brown (10YR5/3) moist; weak medium and fine subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 1 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a03)

- 2Bk2** 23 to 49 cm. Very pale brown (10YR7/3) very gravelly sandy loam, brown (10YR5/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 55 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(2) and sample s04)
- 2Bk3** 49 to 61 cm. Pale brown (10YR6/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure with pockets of faint relict bedding in the lower part; soft, very friable, slightly sticky and slightly plastic; common fine roots; Stage I carbonate development; common thin carbonate coatings and very few thin silica cutans on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample s05)
- 3Bkb** 61 to 95 cm. Pink (7.5YR7/3) gravelly loam, light brown (7.5YR6/4) moist; weak medium and fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 1 percent cobbles and 15 percent pebbles from pyroclastic rocks. (Unit A5(2) and sample s06)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 3 cm) and cambic horizon (10 to 49 cm). Rock fragments in Bk horizon have carbonate coatings on all surfaces. The old system taxonomic great group of the pedon is Camborthids.

SOIL PROFILE ST02-P02

Location: 6 meters west of the east stake, along the south wall of soil trench 2 at RWMS; Nevada State Plane coordinates 771,376 feet north and 706,041 feet east; 999.8 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 22 June 1994

Geomorphic surface: S6

Taxonomic classification of uppermost deposit: Haplocambid (in Units A6(3) and A6(2))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Calcicgids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 1 cm. Pale brown (10YR6/3) extremely gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick pale carbonate coatings on sides of rock fragments; 60 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A6(3), sample a02a)
- A2** 1 to 9 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few moderately thick pale carbonate coatings on sides of rock fragments; 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(3) and sample a02b)
- 2Bkb1** 9 to 24 cm. Pale brown (10YR6/3) gravelly fine sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on rock fragments; few moderately thick pale carbonate coatings on sides of rock fragments; 20 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(2) and sample a03)

- 2Bkb2** 24 to 37 cm. Pale brown (10YR6/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure with few pockets of faint relict bedding in lower part; soft, very friable, slightly sticky and slightly plastic; few fine roots; Stage I- carbonate development; many thin carbonate coatings and very few thin silica cutans on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 1 percent cobbles and 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a04)
- 3Btkb** 37 to 45 cm. Pink (7.5YR7/3) gravelly loam, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I+ carbonate development; common fine soft carbonate masses and many thin carbonate coatings on rock fragments; 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a05)
- 3Bkqb** 45 to 87 cm. Pink (7.5YR7/3) very gravelly sandy loam, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; Stage II carbonate development; 35 percent weakly to moderately carbonate-cemented with white (7.5YR8/1, 6/3 moist) 3-mm laminar cap; common carbonate pendants and few silica cutans on undersides of rock fragments; 1 percent stones, 2 percent cobbles, and 55 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a06)
- 3Bkb** 87 to 100 cm. Light brown (7.5YR6/3) very gravelly sandy loam, light brown (7.5YR6/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; common thin carbonate coatings and few carbonate pendants on undersides of rock fragments; 40 percent pebbles from pyroclastic rocks. (Unit A5(2) and sample a07)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 9 cm), cambic horizon (9 to 37 cm), argillic horizon (37 to 45 cm), and calcic horizon (45 to 87 cm). Rock fragments in 2Bkb2 horizon have carbonate coatings on all surfaces. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST02-P03

Location: 22 meters west of the east stake, along the south wall of soil trench 2 at RWMS; Nevada State Plane coordinates 771,368 feet north and 705,989 feet east; 999.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described / sampled: 22 June 1994 / 23 June 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: (?) Sandy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 1 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 50 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A6(2) and sample a01a)
- A2** 1 to 8 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark yellowish brown (10YR4/4) moist; moderate fine platy structure; slightly hard, friable, slightly sticky and slightly plastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a01b)
- BAk** 8 to 20 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; Stage I-carbonate development; common thin carbonate coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 20 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(2) and sample a02)

- Bk1** 20 to 28 cm. Pale brown (10YR6/3) gravelly fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common medium roots; Stage I-carbonate development; many thin carbonate coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a03)
- 2Bk2** 28 to 43 cm. Very pale brown (10YR7/3) very gravelly loam, yellowish brown (10YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; Stage I-carbonate development; common thin carbonate coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(2) and sample a04)
- 2Bk3** 43 to 75 cm. Pale brown (10YR6/3) very gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure with massive areas; soft, very friable, nonsticky and nonplastic; common fine roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a05)
- 3Bkqb** 75 to 106 cm. Pink (7.5YR7/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; Stage III + carbonate development; 55 percent weakly to moderately carbonate-cemented with white (7.5YR8/1) 3-mm laminar cap; common carbonate pendants and common thin silica cutans on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a06)
- 3Bkb** 106 to 138 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, brown (10YR5/3) moist; weak coarse subangular blocky structure, with irregular relict bedding in lower part of horizon; slightly hard, friable, slightly sticky and slightly plastic; Stage I + carbonate development; many carbonate pendants on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a07)
- 3Ckb** 138 to 234 cm. Very pale brown (10YR7/3) extremely gravelly sand, yellowish brown (10YR5/4) moist; single grain with prominent relict bedding; 60 percent pebbles from pyroclastic rocks; Stage I-carbonate development; common thin carbonate coatings on undersides of rock fragments; abrupt wavy boundary. (Unit A5(2) and sample a08)

- 4Btkb** 234 to 242 cm. Light brown (7.5YR6/4) very gravelly loamy sand, strong brown (7.5YR5/6) moist; weak coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few thin argillans on contacts between pebbles and fine pebbles; Stage II carbonate development; weakly carbonate-cemented with common carbonate pendants on undersides of rock fragments; 10 percent cobbles and 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(1) and sample a09)
- 4Bkb** 242 to 260 cm. Pink (7.5YR7/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; weak medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; Stage III carbonate development; weakly to moderately carbonate-cemented with many carbonate pendants and very few silica cutans on undersides of rock fragments; 10 percent cobbles and 45 percent pebbles from pyroclastic rocks. (Unit A5(1) and sample a10)

NOTES: Bench break at 138 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 8 cm), cambic horizon (8 to 75 cm), and calcic horizon (75 to 106 cm). The thickness of the soil mantle in this pedon is 28 cm (?). The old system taxonomic great group of the pedon is Calcorthids.

SOIL PROFILE ST02-P04

Location: 37 meters west of the east stake, along the south wall of soil trench 2 at RWMS; Nevada State Plane coordinates 771,360 feet north and 705,940 feet east; 999.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 22 June 1994

Geomorphic surface: S6

Taxonomic classification of uppermost deposit: Haplocalcid (in Unit A6(2))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 13 cm. Pale brown (10YR6/3) very gravelly loam, dark brown (10YR3/3) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 40 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(3) and sample a01)
- AC** 13 to 23 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark brown (10YR4/3) moist; weak fine granular structure with relict bedding in some parts; soft, very friable, slightly sticky and slightly plastic; many fine roots; very few thin silica cutans and few moderately thick paleocarbonate coatings on sides of rock fragments; 40 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(3) and sample a02)
- 2Bkb** 23 to 55 cm. Very pale brown (10YR7/3) very gravelly loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; Stage I carbonate development; few medium soft carbonate masses and many thin carbonate coatings on undersides of rock fragments; 1 percent stones, 2 percent cobbles, and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a03)

- 3Bkqb** 55 to 79 cm. Pink (7.5YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; Stage III+ carbonate development; 85 percent moderately to strongly carbonate-cemented with white (7.5YR8/1, 6/3 moist) 4-mm laminar cap; common carbonate pendants and common thin silica cutans on undersides of rock fragments; 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a04)
- 3Bkb** 79 to 123 cm. Pink (7.5YR7/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate coarse subangular blocky structure; very hard, firm, slightly sticky and slightly plastic; Stage III carbonate development; 80 percent moderately to strongly carbonate-cemented with common carbonate pendants on undersides of rock fragments; abrupt wavy boundary. (Unit A5(2) and sample a05)
- 3Ckb** 123 to 226 cm. Very pale brown (10YR7/3) extremely gravelly sand, yellowish brown (10YR5/4) moist; single grain with prominent relict bedding; Stage I- carbonate development; pockets and stringers of carbonate accumulation with common thin carbonate coatings on undersides of rock fragments; 5 percent stones, 10 percent cobbles, and 50 percent pebbles from pyroclastic rocks; clear broken boundary. (Unit A5(2) and sample a06)
- 4Btkb** 226 to 233 cm. Light brown (7.5YR6/4) very gravelly sandy loam, strong brown (7.5YR4/6) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common thin argillans on contacts between peds and fine pebbles; Stage I- carbonate development; common thin carbonate coatings on corners of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt broken boundary. (Unit A5(1) and sample a07)
- 4Bkb** 233 to 300 cm. Pink (7.5YR6/3) very gravelly loamy sand, pale brown (10YR6/3) moist; weak coarse subangular blocky structure; very hard, firm, nonsticky and nonplastic; Stage III+ carbonate development; 70 percent strongly carbonate-cemented with white (10YR 8/1, 7/3 moist) 5-mm laminar cap; many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 46 percent pebbles from pyroclastic rocks. (Unit A5(1) and sample a08)

NOTES: Bench break at 120 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 13 cm) and calcic horizon (55 to 123 cm). The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE ST02-P05

Location: 52 meters west of the east stake, along the south wall of soil trench 2 at RWMS; Nevada State Plane coordinates 771,352 feet north and 705,896 feet east; 1000.0 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 23 June 1994

Geomorphic surface: S6

Taxonomic classification of uppermost deposit: Haplocalcid (in Unit A6(2))

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Light yellowish brown (10YR6/4) extremely gravelly loamy sand, dark brown (10YR4/3) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; 65 percent pebbles from pyroclastic rocks; few moderately thick paleocarbonate coatings on sides of rock fragments; abrupt wavy boundary. (Unit A6(3) and sample s01a)
- AC** 2 to 20 cm. Light yellowish brown (10YR6/4) gravelly sandy loam, dark brown (10YR4/3) moist; weak fine granular structure with faint relict bedding in some parts; soft, very friable, slightly sticky and slightly plastic; common fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 25 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(3) and sample s01b)
- 2Bkb1** 20 to 30 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark brown (10YR4/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(2) and sample s02a)

- 2Bkb2** 30 to 62 cm. Very pale brown (10YR7/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I-carbonate development; many thin carbonate coatings on undersides of rock fragments; 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a02b)
- 3Bkqb** 62 to 103 cm. Pink (7.5YR8/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; Stage III+ carbonate development; 60 percent moderately to strongly carbonate-cemented with white (7.5YR8/1, 6/3 moist) 3-mm laminar cap; common carbonate pendants and common thin silica cutans on undersides of rock fragments; 1 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a03)
- 3Bkb** 103 to 119 cm. Pink (7.5YR8/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 1 percent stones and 35 percent pebbles from pyroclastic rocks; gradual wavy boundary. (Unit A5(2) and sample a04)
- 3BCb** 119 to 165 cm. Pink (7.5YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; 5 percent cobbles and 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a05)
- 3Ckb** 165 to 239 cm. Very pale brown (10YR7/3) very gravelly sand, yellowish brown (10YR5/4) moist; single grain with prominent relict bedding; pockets of somewhat better structure and development throughout, including stringers of carbonate accumulation; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a06)
- 4Bkb** 239 to 290 cm. Pink (7.5YR7/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; moderate medium subangular blocky structure; very hard, firm, nonsticky and nonplastic; Stage III carbonate development; moderately to strongly carbonate-cemented with many carbonate pendants on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks. (Unit A5(3) and sample a07)

NOTES: Bench break at 120 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 20 cm) and calcic horizon (62 to 119 cm). The surface eolian mantle straddles the very fine sandy loam, fine sandy loam, and loamy fine sand textural class boundaries; such overlap is within the documented range of measurement error for particle size analysis. A discontinuity was not used to separate the eolian mantle from the underlying alluvium because the mantle apparently has been reworked by local alluvium in a non-predictable pattern, making the distinction between the two contrasting parent materials difficult to establish with certainty. The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE ST02-TL-RSN10

Location: 12 meters west of the east stake, along the south wall of soil trench 2 at RWMS; Nevada State Plane coordinates 771,372 feet north and 706,016 feet east; 1000.0 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark brown (10YR4/3) moist; moderate medium platy structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few moderately thick pale carbonate coatings on sides of rock fragments; 2 percent cobbles and 25 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A6(2))
- Bw** 2 to 11 cm. Very pale brown (10YR7/4) gravelly loam, yellowish brown (10YR5/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few medium vesicular pores; very few thin argillans on faces of peds; very few medium soft carbonate masses and filaments; few moderately thick pale carbonate coatings on sides of rock fragments; 2 percent cobbles and 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))
- Bk** 11 to 19 cm. Very pale brown (10YR7/4) very gravelly sandy loam, yellowish brown (10YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 1 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))
- Bck** 19 cm. horizon not described. (Unit A6(2))

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-10 is vertical sample taken at 13 cm depth. RSN-10A is bag sample taken at 18 to 28 cm. The thickness of the eolian mantle in this pedon is 11 cm.

SOIL PROFILE ST03-P01

Location: 6 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,365 feet north and 703,548 feet east; 1006.2 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 30 June 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(1))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Calcicgids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 1 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 50 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A6(1) and sample a01a)
- A2** 1 to 8 cm. Pale brown (10YR6/3) very fine sandy loam, dark brown (10YR4/3) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; common fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 5 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a01b)
- Bw** 8 to 20 cm. Pale brown (10YR6/3) very fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine vesicular pores; few thin carbonate filaments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 5 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a02)

- 2Bk1** 20 to 48 cm. Pink (7.5YR7/3) very gravelly fine sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few coarse roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 10 percent cobbles and 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a03)
- 2Bk2** 48 to 89 cm. Pink (7.5YR7/4) very gravelly sandy loam, brown (7.5YR4/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I- carbonate development; many thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a04)
- 3Btkb1** 89 to 122 cm. Pink (7.5YR7/3) gravelly loam, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; common thin argillans on contacts between peds and fine pebbles; Stage I+ carbonate development; common thin carbonate coatings on faces of peds and common carbonate pendants on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a05)
- 3Btkb2** 122 to 135 cm. Pink (7.5YR7/3) very gravelly sandy loam, light brown (7.5YR6/4) moist; moderate medium subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage II carbonate development; 40 percent weakly to moderately carbonate-cemented with common thin carbonate coatings on faces of peds and common carbonate pendants on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a06)
- 3BCKb** 135 to 198 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR5/6) moist; weak fine platy structure, with faint relict bedding in some parts; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; few thin stringers of carbonate accumulation throughout; few carbonate pendants on undersides of rock fragments; 5 percent cobbles and 40 percent pebbles from pyroclastic rocks; gradual irregular boundary. (Unit A5(2) and sample a07a)
- 3Ckb** 198 to 217 cm. Very pale brown (10YR7/3) very gravelly sand, yellowish brown (10YR5/6) moist; single grain with distinct relict bedding; loose, nonsticky and nonplastic; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a07b)

- 4Btkb1** 217 to 248 cm. Pink (7.5YR8/3) very gravelly sandy loam, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on sides of peds and rock fragments; 10 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a08)
- 4Btkb2** 248 to 273 cm. Pink (7.5YR7/3) very gravelly loam, strong brown (7.5YR4/6) moist; moderate fine subangular blocky structure; hard, firm, sticky and plastic; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on sides of peds and rock fragments; 1 percent stones, 5 percent cobbles, and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a09)
- 4Bkb** 273 to 300 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR4/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from pyroclastic rocks. (Unit A5(2) and sample a10)

NOTES: Bench break at 105 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 8 cm), argillic horizon (89 to 135 cm), and calcic horizon (122 to 135 cm). The thickness of the eolian mantle in this pedon is 20 cm. Rock fragments in Bk horizons have carbonate coatings on all surfaces. Unit A5(2) includes horizons that may have developed from varying debris flow and sandy gravel deposits. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST03-P02

Location: 17 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,370 feet north and 703,512 feet east; 1005.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 29 June 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark brown (10YR4/3) moist; weak medium platy structure parting to moderate fine granular; soft, very friable, slightly sticky and slightly plastic; common very fine roots; few fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))
- Bw** 6 to 14 cm. Brown (10YR5/3) gravelly fine sandy loam, dark yellowish brown (10YR4/4) moist; weak medium platy structure parting to weak medium subangular blocky; soft, very friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))
- 2Bkb1** 14 to 29 cm. Pale brown (10YR6/3) very gravelly loam, dark yellowish brown (10YR4/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; Stage I-carbonate development; few thin carbonate coatings on faces of peds and on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))

- 2Bkb2** 29 to 45 cm. Pink (7.5YR7/3) very gravelly loam, strong brown (7.5YR4/4 moist); weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; Stage I carbonate development; common thin carbonate coatings on faces of peds and sides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))
- 2Bkb3** 45 to 76 cm. Pink (7.5YR7/3) very gravelly sandy loam, strong brown (7.5YR4/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; many carbonate pendants on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- 3Btkb** 76 to 113 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common thin argillans on contacts between peds and fine pebbles; Stage I+ carbonate development; common thin carbonate coatings on faces of peds and common carbonate pendants on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks. (Unit A6(2))

NOTES: Bench break at 113 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 6 cm) and argillic horizon (76 to 113 cm). The thickness of the eolian mantle in this pedon is 14 cm. Rock fragments in 2Bkb1 horizon have carbonate coatings on all surfaces. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST03-P03

Location: 26 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,379 feet north and 703,483 feet east; 1006.2 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 28 June 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 4 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark yellowish brown (10YR3/4) moist; weak coarse prismatic structure parting to weak medium platy; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a01a)
- Bw** 4 to 16 cm. Pale brown (10YR6/3) gravelly fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to weak fine platy and moderate medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular pores; very few silica cutans on undersides of peds and rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a01b)
- 2Bk1** 16 to 37 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a02)

- 2Bk2** 37 to 76 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium and coarse roots; Stage I- carbonate development; many thin carbonate coatings on undersides of rock fragments; 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a03)
- 2Bck** 76 to 91 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak fine subangular blocky structure with faint relict bedding in a few parts; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I+ carbonate development; common thin carbonate coatings and few carbonate pendants on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a04)
- 3Btkb1** 91 to 122 cm. Light brown (7.5YR6/4) gravelly loam, brown (7.5YR4/4) moist; moderate fine and medium subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; common thin argillans on contacts between peds and fine pebbles; Stage I+ carbonate development; common carbonate filaments and common thin carbonate coatings on faces of peds and sides of rock fragments; 2 percent cobbles and 25 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a05)
- 3Btkb2** 122 to 147 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; moderate fine subangular blocky structure; very hard, very firm, slightly sticky and slightly plastic; few thin argillans on contacts between peds and fine pebbles; Stage II+ carbonate development; 45 percent weakly carbonate-cemented with few carbonate pendants on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a06)
- 3Bkb** 147 to 180 cm. Pink (7.5YR8/3) very gravelly sandy loam, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure with faint relict bedding in lowermost part; hard, firm, slightly sticky and slightly plastic; Stage I+ carbonate development; common carbonate pendants and thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a07)
- 4Btkb** 180 to 202 cm. Pinkish gray (7.5YR7/2) very gravelly sandy loam, brown (7.5YR5/3) moist; weak coarse subangular blocky structure; hard, firm, nonsticky and nonplastic; Stage IV carbonate development; 80 percent moderately to strongly cemented with white (7.5YR8/1, 7/3 moist) 2-mm laminar cap; common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a08)

- 4Bkb** 202 to 224 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 15 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a09)
- 4BCkb** 224 to 259 cm. Pink (7.5YR8/3) very gravelly sandy loam, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure, single grain with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; Stage I carbonate development; few thin carbonate coatings on undersides of rock fragments; 10 percent cobbles and 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a10)
- 4Ckb** 259 to 291 cm. Light gray (10YR7/2) very gravelly sand, brown (10YR5/3) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; Stage I carbonate development; common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a11)
- 5Bwb** 291 to 310 cm. Reddish yellow (7.5YR6/6) very gravelly sandy loam, strong brown (7.5YR4/6) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks. (Unit A5(1) and sample a12)

NOTES: Bench break at 130 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 16 cm), cambic horizon (16 to 76 cm), argillic horizon (91 to 147 cm), and calcic horizon (147 to 202 cm). The thickness of the eolian mantle in this pedon is 16 cm. The 4BCkb horizons may contain debris flow materials. Rock fragments in the 2Bkb horizon have carbonate coatings on all surfaces. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST03-P04

Location: 31 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,377 feet north and 703,467 feet east; 1006.1 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 29 June 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplargid (in Unit A6)

Taxonomic classification of pedon: Loamy-skeletal, mixed, thermic Typic Haplargids (?)

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Light yellowish brown (10YR6/4) gravelly fine sandy loam, dark brown (10YR4/3) moist; weak coarse prismatic structure parting to moderate medium granular; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; common moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 25 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))
- Bw** 6 to 20 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark brown (10YR4/3) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; common moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))
- 2Btkb1** 20 to 35 cm. Pink (7.5YR7/3) very gravelly sandy clay loam, brown (7.5YR5/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; common fine roots; common thin argillans on contacts between peds and fine pebbles; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))

- 2Btk2b** 35 to 61 cm. Pink (7.5YR7/3) very gravelly sandy clay loam, brown (7.5YR5/4) moist; moderate medium subangular blocky structure; soft, very friable, sticky and plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common soft carbonate masses between peds and thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))
- 2Bkb** 61 to 71 cm. Pink (7.5YR8/3) very gravelly sandy clay loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; common thin carbonate coatings and few carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))
- 2Bckqb** 71 to 82 cm. Pink (7.5YR8/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure with faint relict bedding in some parts; soft, very friable, slightly sticky and slightly plastic; few fine roots; Stage I+ carbonate development; common carbonate pendants and common thin silica cutans on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- 3Btkb1** 82 to 111 cm. Pink (7.5YR7/4) very gravelly sandy loam, strong brown (7.5YR5/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I+ carbonate development; few carbonate pendants on undersides of rock fragments; 2 percent cobbles and 40 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(3))
- 3Btkb2** 111 to 125 cm. Pink (7.5YR7/3) gravelly sandy clay loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few thin argillans on contacts between peds and fine pebbles; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks. (Unit A5(2))

NOTES: Bench break at 120 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 6 cm) and argillic horizon (20 to 61 cm). Beginning at small wash just east of this profile, the Bk character in Unit A6(1) shifts to a Btk and continues to west end of the trench; clay content may be attributable to textural differences in original deposits (i.e., juvenile argillic development). The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST03-P05

Location: 43 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,383 feet north and 703,428 feet east; 1005.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 29 June 1994

Geomorphic surface: S6

Taxonomic classification of uppermost deposit: Torrifluent (in Unit A6(2))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

AC 0 to 9 cm. Pale brown (10YR6/3) very gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak medium granular structure with very faint relict bedding in parts; soft, very friable, nonsticky and nonplastic; few fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(3))

Bwb 9 to 16 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 30 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2))

NOTES: Partial description. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 8 cm) and cambic horizon (9 to 16 cm).

SOIL PROFILE ST03-P06

Location: 45 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,384 feet north and 703,421 feet east; 1005.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 28 June 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (In Unit A6(2))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 8 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark brown (10YR4/3) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a01)
- Bw** 8 to 23 cm. Very pale brown (10YR7/3) very gravelly sand, dark yellowish brown (10YR4/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(2) and sample a02)
- 2Btkb** 23 to 41 cm. Pink (7.5YR7/3) gravelly loam, strong brown (7.5YR5/6) moist; weak coarse subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; common fine vesicular pores; common thin argillans on faces of peds; Stage 1 carbonate development; common thin carbonate coatings on faces of peds and sides of rock fragments; very few thin silica cutans on undersides of rock fragments; 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a03)

- 2Bkb** 41 to 54 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 40 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a04)
- 2Bckb** 54 to 77 cm. Pink (7.5YR8/3) very gravelly sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure, single grain with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage II- carbonate development; 20 percent weakly carbonate-cemented with irregular discontinuous 1-mm laminar cap and many thin carbonate coatings and common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 40 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a05)
- 3Btkb1** 77 to 86 cm. Pink (7.5YR7/4) cobbly sandy loam, strong brown (7.5YR4/6) moist; strong fine and medium subangular blocky structure; very hard, firm, slightly sticky and slightly plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on faces of peds and sides of rock fragments; 2 percent stones, 15 percent cobbles, and 15 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a06)
- 3Btkb2** 86 to 98 cm. Pink (7.5YR7/4) cobbly sandy loam, strong brown (7.5YR4/6) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 2 percent stones, 15 percent cobbles, and 15 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A5(2) and sample a07)
- 3Bkb1** 98 to 139 cm. Very pale brown (10YR7/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I+ carbonate development; very few carbonate pendants on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a08)
- 3Bkb2** 139 to 162 cm. Pink (7.5YR7/3) gravelly loam, brown (7.5YR5/4) moist; moderate medium platy structure; slightly hard, friable, sticky and plastic; Stage I- carbonate development; common thin carbonate coatings on undersides of peds; 5 percent cobbles and 25 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a09)
- 3Bckb** 162 to 218 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I+ carbonate development; few carbonate pendants on undersides of rock fragments; 2 percent cobbles and 45 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a10)

- 4Bkb** 218 to 253 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure, faint relict bedding in parts; slightly hard, friable, slightly sticky and slightly plastic; Stage I carbonate development; common thin carbonate coatings and very few carbonate pendants on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A5(2) and sample a11)
- 4Ckb** 253 to 270 cm. Very pale brown (10YR7/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; Stage I- carbonate development; few thin carbonate coatings and very few carbonate pendants on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles from pyroclastic rocks. (Unit A5(2) and sample a12)

NOTES: Bench break at 110 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 8 cm), cambic horizon (8 to 23 cm), and argillic horizon (23 to 41 cm). The 3BCkb horizon probably developed in alternating deposits of flow debris and alluvium. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST03-P07

Location: 52 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,388 feet north and 703,399 feet east; 1006.0 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 28 June 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplargid (in Unit A6)

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Haplargids (?)

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Light yellowish brown (10YR6/4) gravelly very fine sandy loam, dark yellowish brown (10YR3/4) moist; weak fine platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; 3 percent cobbles and 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a01)
- Bw** 6 to 17 cm. Pale brown (10YR6/3) gravelly loam, dark yellowish brown (10YR4/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common thin silt coatings on peds; common fine vesicular pores; 3 percent cobbles and 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a02)
- 2Btk** 17 to 40 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage 1- carbonate development; few thin carbonate coatings on undersides of rock fragments; 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a03)

- 2Bk** 40 to 67 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1) and sample a04)
- 2Bck** 67 to 96 cm. Pink (7.5YR8/3) very gravelly sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 55 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1) and sample a05)
- 3Btkb** 96 to 110 cm. Pink (7.5YR7/4) cobbly sandy loam, strong brown (7.5YR4/6) moist; moderate fine subangular blocky structure, weak medium in lower part; hard, firm, slightly sticky and slightly plastic; few fine roots; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 15 percent cobbles and 15 percent pebbles from pyroclastic rocks. (Unit A5(2) and sample a08)

NOTES: Bench break at 105 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 6 cm) and argillic horizon (17 to 40 cm). The thickness of the eolian mantle in this pedon is 17 cm. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST03-TL-RSN6

Location: 0.2 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,362 feet north and 703,568 feet east; 1006.0 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(1))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 1 cm. Pale brown (10YR6/3) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; very few moderately thick paleocarbonate coatings on sides of rock fragments; 50 percent pebbles (from pyroclastic rocks) on the soil surface; abrupt wavy boundary. (Unit A6(1))
- A2** 1 to 8 cm. Pale brown (10YR6/3) very fine sandy loam, dark brown (10YR4/3) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; common fine vesicular pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 5 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))
- BA** 8 to 20 cm. Pale brown (10YR6/3) very fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine vesicular pores; few thin carbonate filaments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 5 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))

2Bk 20 to 25 cm. Pink (7.5YR7/3) very gravelly fine sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few coarse roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 10 percent cobbles and 30 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-6 is vertical sample taken at 15 cm depth. RSN-6A is bag sample taken at 36 to 46 cm depth. The thickness of the eolian mantle in this pedon is 20 cm.

SOIL PROFILE ST03-TL-RSN7

Location: 9 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,366 feet north and 703,538 feet east; 1006.3 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 5 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark brown (10YR4/3) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; common fine vesicular pores; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 5 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))
- BA** 5 to 12 cm. Pale brown (10YR6/3) fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine vesicular pores; few thin carbonate filaments; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 5 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- Bw1** 12 to 20 cm. Pale brown (10YR6/3) fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine vesicular pores; few thin carbonate filaments; few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))

- Bw2** 20 to 28 cm. Pale brown (10YR6/3) very fine sandy loam, dark yellowish brown (10YR4/4) moist; moderate coarse prismatic structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; few medium roots; few fine vesicular pores; few thin carbonate filaments; few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- 2Bk** 28 cm. horizon not described. (Unit A6(1))

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-7 is vertical sample taken at 23 cm depth. RSN-7A is bag sample taken at 36 to 46 cm depth. RSN-7G is bulk gamma sample taken at 10 to 23 cm. The thickness of the eolian mantle in this pedon is 28 cm.

SOIL PROFILE ST03-TL-RSN8

Location: 26 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,379 feet north and 703,483 feet east; 1008.2 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit A6(2))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A1** 0 to 4 cm. Pale brown (10YR6/3) gravelly very fine sandy loam, dark yellowish brown (10YR3/4) moist; weak coarse prismatic structure parting to weak medium platy; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine vesicular pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- A2** 4 to 15 cm. Pale brown (10YR6/3) gravelly fine sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to weak fine platy; slightly hard, friable, slightly sticky and slightly plastic; common fine roots; few fine vesicular pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 15 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- 2Bk** 15 to 40 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I carbonate development; common thin carbonate coatings on undersides of rock fragments; 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-8 is vertical sample taken at 13 cm depth. RSN-8A is bag sample taken at 26 to 36 cm depth. The thickness of the eolian mantle in this pedon is 15 cm.

SOIL PROFILE ST03-TL-RSN9

Location: 54 meters west of the east stake, along the south wall of soil trench 3 at RWMS; Nevada State Plane coordinates 771,389 feet north and 703,392 feet east; 1006.0 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S4

Taxonomic classification of uppermost deposit: Haplargid (in Unit A6(1))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Light yellowish brown (10YR6/4) gravelly very fine sandy loam, dark yellowish brown (10YR3/4) moist; weak fine platy structure parting to weak fine granular; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; 3 percent cobbles and 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- BA** 2 to 16 cm. Pale brown (10YR6/3) gravelly loam, dark yellowish brown (10YR4/4) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; common thin silt coatings on peds; 3 percent cobbles and 20 percent pebbles from pyroclastic rocks; abrupt wavy boundary. (Unit A6(1))
- 2Btk** 16 to 26 cm. Pink (7.5YR7/3) very gravelly loam, brown (7.5YR4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; common fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I- carbonate development; few thin carbonate coatings on undersides of rock fragments; 35 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))
- 2Bk** 26 to 40 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, friable, nonsticky and nonplastic; few medium roots; Stage I- carbonate development; common thin carbonate coatings on undersides of rock fragments; 45 percent pebbles from pyroclastic rocks; clear wavy boundary. (Unit A6(1))

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-9 is horizontal sample taken at 8 cm depth. RSN-9A is bag sample taken at 16 to 28 cm depth. The thickness of the collan mantle in this pedon is 16 cm.

SOIL PROFILE ST04-P01

Location: 5 meters west of the east stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,606 feet north and 712,431 feet east; 1003.7 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 28 July 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Calcicargid (in Unit (?))

Taxonomic classification of pedon: Fine-loamy, mixed, thermic Typic Calcicargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 2 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick pale carbonate coatings on sides of rock fragments; 2 percent cobbles and 20 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5 and sample s01a)

BA1 2 to 8 cm. Very pale brown (10YR7/3) loam, yellowish brown (10YR5/4) moist; moderate coarse prismatic structure parting to moderate medium platy; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; very few argillans on rounded edges of some peds; very few moderately thick pale carbonate coatings on sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample s01b)

- Btk1** 8 to 19 cm. Pink (7.5YR7/3) sandy clay loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to moderate coarse platy; hard, firm, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on faces of peds and sides of rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a02)
- 2Btk2** 19 to 25 cm. Pink (7.5YR7/3) gravelly loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to weak coarse subangular blocky; very hard, firm, sticky and slightly plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common carbonate filaments and common thin carbonate coatings on faces of peds and sides of rock fragments; thin gravel surface lag and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a03)
- 2Bk** 25 to 36 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I+ carbonate development; few carbonate coatings and common carbonate pendants on undersides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a04)
- 3Bkb1** 36 to 59 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; hard, firm, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 20 percent weakly carbonate-cemented with many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a05)
- 3Bkb2** 59 to 99 cm. Pink (7.5YR8/3) very gravelly sand, brown (7.5YR5/4) moist; weak very coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; many carbonate pendants on undersides of rock fragments; 15 percent cobbles and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a06)
- 3Bkb3** 99 to 139 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak very coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5 and sample a07)
- 3BCKqb** 139 to 192 cm. Light gray (10YR7/2) very gravelly loamy sand, brown

(10YR5/3) moist; weak very coarse subangular blocky structure, single grain with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; irregular discontinuous 1-mm carbonate lamina throughout; common carbonate pendants and many thin silica cutans on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual irregular boundary. (Unit A5 and sample a08)

3Ckb 192 to 280 cm. Light gray (10YR7/1) very gravelly sand, grayish brown (10YR5/2) moist; single grain with prominent relict bedding; hard, firm, nonsticky and nonplastic; few medium roots; Stage I- carbonate development; periodic lenses of carbonate lamina predominantly in upper part; few carbonate pendants and silica cutans on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Bench break at 140 cm, and lower profile is offset 120 cm west of upper profile. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 2 cm), argillic horizon (2 to 25 cm), and calcic horizon (25 to 114 cm). The thickness of the eolian mantle in this pedon is 19 cm. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST04-P02

Location: 13 meters west of the east stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,616 feet north and 712,407 feet east; 1003.4 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 28 July 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit ?)

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 6 cm. Light yellowish brown (10YR6/4) sandy loam, dark yellowish brown (10YR4/6) moist; weak medium and coarse subangular blocky structure parting to moderate fine granular; slightly hard, friable, nonsticky and nonplastic; common medium roots; common medium interstitial pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a01)

BAk 6 to 25 cm. Light yellowish brown (10YR6/4) sandy loam, dark yellowish brown (10YR4/6) moist; moderate medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common medium roots; common fine interstitial pores; Stage I carbonate development; common thin carbonate coatings on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a02)

- 2Btkb** 25 to 35 cm. Pink (7.5YR7/3) gravelly loamy sand, strong brown (7.5YR5/6) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; few thin argillans on contacts between sand grains and fine pebbles; Stage I+ carbonate development; many carbonate pendants and common thin silica cutans on undersides of rock fragments; 5 percent cobbles and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5 and sample s03)
- 2Bkb1** 35 to 57 cm. Pinkish white (7.5YR8/2) very gravelly loamy sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 20 percent weakly to moderately carbonate-cemented with many carbonate pendants and very few thin silica cutans on undersides of rock fragments; 10 percent cobbles and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample s04)
- 2Bkb2** 57 to 106 cm. Pink (7.5YR7/3) very gravelly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants and very few thin silica cutans on undersides of rock fragments; 5 percent stones, 10 percent cobbles, and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample s05)
- 2Bkb3** 106 to 130 cm. Pinkish white (7.5YR8/2) very gravelly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants and very few thin silica cutans on undersides of rock fragments; 10 percent cobbles and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample s06)

NOTES: Surface disturbed by excavation. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 5 cm) and calcic horizon (35 to 130+ cm). The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE ST04-P03

Location: 32 meters west of the east stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,639 feet north and 712,348 feet east; 1003.7 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 28 July 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit (?))

Taxonomic classification of pedon: Fine-loamy, mixed, thermic Typic Calcargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 1 cm. Very pale brown (10YR7/4) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5, not sampled)
- BA1** 1 to 9 cm. Very pale brown (10YR7/4) loam, dark yellowish brown (10YR4/4) moist; moderate coarse prismatic structure parting to moderate coarse platy and moderate fine granular; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; few thin argillans in pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a02)

- Btk** 9 to 18 cm. Pink (7.5YR7/3) gravelly sandy clay loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to moderate coarse platy; hard, firm, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on faces of peds and sides of rock fragments; 5 percent cobbles and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a03)
- 2Btk** 18 to 27 cm. Pink (7.5YR8/3) cobbly loam, strong brown (7.5YR5/6) moist; moderate medium platy structure parting to moderate coarse subangular blocky; hard, firm, slightly sticky and slightly plastic; few fine roots; few fine interstitial pores; few thin argillans on contacts between peds and fine pebbles; Stage II carbonate development; 40 percent weakly to moderately carbonate-cemented with common carbonate pendants on undersides of rock fragments and common thin carbonate coatings on peds; very few thin silica cutans on undersides of rock fragments; 15 percent cobbles and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a04)
- 2Bk1** 27 to 35 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5 and sample a05)
- 2Bk2** 35 to 67 cm. Pinkish white (7.5YR8/2) very gravelly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure with very faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants on undersides of rock fragments; 5 percent cobbles and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample a06)
- 3Bkb** 67 to 80 cm. Pink (7.5YR8/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; moderate medium platy structure; very hard, very firm, nonsticky and nonplastic; few fine roots; Stage III+ carbonate development; 80 percent moderately to strongly carbonate-cemented with white (7.5YR8/1, 6/3 moist) 1-mm laminar cap; many carbonate pendants on undersides of rock fragments; 5 percent cobbles and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a07)

- 3Bkqb** 80 to 141 cm. Pink (7.5YR8/3) very gravelly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure with very faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants and common thin silica cutans on undersides of rock fragments; 5 percent stones, 20 percent cobbles, and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual irregular boundary. (Unit A5 and sample #08)
- 3Ckb** 141 to 150 cm. Light gray (10YR7/1) very gravelly sand, grayish brown (10YR5/2) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; few medium roots; Stage I- carbonate development; irregular discontinuous 1-mm lenses of carbonate lamina predominantly in upper part; common carbonate pendants and very few silica cutans on undersides of rock fragments; 5 percent stones, 10 percent cobbles, and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample #09)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 9 cm), argillic horizon (9 to 35 cm), and calcic horizon (18 to 80 cm). The thickness of the eolian mantle in this pedon is 18 cm. the argillic horizon has 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST04-P04

Location: 108 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,891 feet north and 712,215 feet east; 1003.6 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 3 August 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit (?))

Taxonomic classification of pedon: Fine-loamy, mixed, thermic Typic Calcargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 3 cm. Very pale brown (10YR7/4) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 40 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5)
- BA** 3 to 13 cm. Very pale brown (10YR7/3) sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse prismatic structure parting to weak medium subangular blocky; soft, very friable, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- Btk1** 13 to 23 cm. Pink (7.5YR7/3) sandy clay loam, strong brown (7.5YR5/6) moist; weak coarse prismatic structure parting to moderate coarse platy; slightly hard, friable, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on faces of peds and sides of rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- Btk2** 23 to 36 cm. Pink (7.5YR8/3) loam, strong brown (7.5YR5/6) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; hard, firm, slightly sticky and slightly plastic; few fine roots; few fine interstitial pores; few thin argillans on contacts between peds and fine pebbles; Stage II carbonate development; 30 percent weakly carbonate-cemented with many carbonate pendants on undersides of rock fragments and common thin carbonate coatings and filaments on faces of peds; few thin silica cutans on undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bk1** 36 to 49 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I carbonate development; common carbonate coatings on sides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk2** 49 to 87 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage II carbonate development; 20 percent weakly to moderately carbonate-cemented with many carbonate pendants on undersides of rock fragments; 5 percent cobbles and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 3Bkb** 87 to 104 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; hard, firm, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 20 percent weakly to moderately carbonate-cemented with many carbonate pendants on undersides of rock fragments; 1 percent stones, 15 percent cobbles, and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 3Bckqb** 104 to 193 cm. Light gray (10YR7/2) very gravelly sand, brown (10YR5/3) moist; weak coarse subangular blocky structure, single grain with relict bedding in some parts; hard, friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; few 1-mm carbonate lamina throughout with common carbonate pendants and common thin silica cutans on undersides of rock fragments; 20 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual irregular boundary. (Unit A5)
- 3Ctb** 193 to 300 cm. Light gray (10YR7/2) very gravelly sand, brown (10YR5/3) moist; single grain with prominent relict bedding; slightly hard, friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; irregular discontinuous lenses of carbonate accumulation with few carbonate pendants on undersides of rock fragments; 5 percent cobbles and 45 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 3 cm), argillic horizon (13 to 36 cm), and calcic horizon (23 to 130 cm). The thickness of the eolian mantle in this pedon is 36 cm (?). The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST04-P05

Location: 98 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,704 feet north and 712,182 feet east; 1003.5 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 3 May 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit ?)

Taxonomic classification of pedon: Fine-loamy, mixed, thermic Typic Calcargide

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 1 cm. Very pale brown (10YR7/4) very gravelly loamy sand, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5)
- BA** 1 to 11 cm. Light yellowish brown (10YR6/4) clay loam, brown (10YR4/3) moist; moderate very coarse prismatic structure parting to moderate medium platy; slightly hard, friable, sticky and plastic; few medium roots; many medium continuous vesicular pores; very few thin argillans on ped faces; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btk** 11 to 23 cm. Very pale brown (10YR7/3) gravelly clay loam, yellowish brown (10YR5/4) moist; moderate very coarse prismatic structure parting to moderate medium platy; hard, firm, sticky and plastic; few fine and medium roots; few fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings and very few thin silica cutans on sides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- 2Bk1** 23 to 37 cm. Pink (7.5YR7/4) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine roots; few fine interstitial pores; Stage I carbonate development; few thin carbonate coatings and very few thin silica cutans on undersides of rock fragments; 2 percent cobbles and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk2** 37 to 53 cm. Pink (7.5YR8/4) gravelly sandy loam, light yellowish brown (7.5YR6/4) moist; weak coarse subangular blocky structure; hard, firm, slightly sticky and slightly plastic; few fine roots; few fine interstitial pores; Stage II carbonate development; 30 percent weakly carbonate-cemented with common carbonate pendants and very few thin silica cutans on undersides of rock fragments; 2 percent cobbles and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk3** 53 to 73 cm. Pink (7.5YR8/3) gravelly loamy sand, brown (7.5YR5/3) moist; moderate coarse subangular blocky structure; very hard, very firm, nonsticky and nonplastic; Stage II carbonate development; 40 percent weakly to moderately carbonate-cemented with many carbonate pendants on undersides of rock fragments; 2 percent cobbles and 25 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk4** 73 to 96 cm. Pinkish white (7.5YR8/2) very gravelly loamy sand, light brown (7.5YR6/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; Stage I + carbonate development; common thin carbonate coatings on peds and many pendants on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk5** 96 to 111 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/3) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; few fine roots; Stage I + carbonate development; many carbonate pendants on undersides of rock fragments; 15 percent cobbles and 25 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bckq** 111 to 167 cm. Light gray (10YR7/2) very cobbly sand, grayish brown (10YR5/2) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I + carbonate development; few 1-mm carbonate lamina throughout with many carbonate pendants and common thin silica cutans on undersides of rock fragments; 5 percent stones, 20 percent cobbles, and 30 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual irregular boundary. (Unit A5)

2Ck 167 to 175 cm. Light gray (10YR7/1) very gravelly sand, grayish brown (10YR5/2) moist; single grain with prominent relict bedding; slightly hard, friable, nonsticky and nonplastic; few medium roots; Stage I- carbonate development; common 1-mm carbonate lamina throughout with few carbonate pendants on undersides of rock fragments; 15 percent cobbles and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Bench break at 125 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 1 cm), argillic horizon (11 to 23 cm), and calcic horizon (23 to 167 cm). The thickness of the solon mantle in this pedon is 23 cm. The argillic horizon contains 3 percent or more clay than the original C horizon parent material is presumed to have contained. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST04-P06

Location: 42 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,772 feet north and 712,010 feet east; 1003.1 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 3 May 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocalcid (in Unit (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 7 cm. Yellowish brown (10YR5/4) very cobbly loamy sand, dark yellowish brown (10YR4/4) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent stones, 20 percent cobbles and 25 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6)
- Bw** 7 to 17 cm. Yellowish brown (10YR5/6) very cobbly sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent stones, 15 percent cobbles, and 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6)
- Bkb** 17 to 29 cm. Brownish yellow (10YR6/6) cobbly sandy loam, yellowish brown (10YR5/6) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 10 percent cobbles and 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

NOTES: Partial description. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 7 cm), cambic horizon (7 to 17 cm), and calcic horizon (17 + cm).

SOIL PROFILE ST04-P07

Location: 39 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,776 feet north and 712,001 feet east; 1002.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 3 May 1994

Geomorphic surface: S7

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 5 cm. Yellowish brown (10YR5/4) gravelly sandy loam, dark brown (10YR3/4) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6)
- 2Bwb** 5 to 15 cm. Light yellowish brown (10YR6/4) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6)
- 3Bkb** 15 to 20 cm. Pink (7.5YR7/4) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Partial description. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 5 cm), cambic horizon (5 to 15 cm), and calcic horizon (15+ cm).

SOIL PROFILE ST04-P08

Location: 35 meters east of the west stake, along of the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,780 feet north and 711,989 feet east; 1002.6 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 2 August 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocalcid (In Unit (7))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 5 cm. Pale brown (10YR6/3) gravelly sandy loam, dark brown (10YR3/4) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine interstitial pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a01)
- Bw** 5 to 13 cm. Very pale brown (10YR7/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and slightly plastic; few fine roots; few moderately thick paleocarbonate coatings on sides of rock fragments; 5 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6 and sample a02)
- Bkb1** 13 to 29 cm. Brownish yellow (10YR6/6) very gravelly sandy loam, yellowish brown (10YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage 1 carbonate development; few thin carbonate coatings on undersides of rock fragments; 2 percent cobbles, and 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5 and sample a03)
- 2Bkb2** 29 to 52 cm. Pink (7.5YR8/3) very cobbly sandy loam, reddish yellow

(7.5YR6/6) moist; moderate medium subangular blocky structure; hard, firm, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 40 percent weakly to moderately carbonate-cemented with common carbonate pendants and few thin silica cutans on undersides of rock fragments; 15 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample s04)

2Bkqb 52 to 84 cm. Pink (7.5YR6/3) very cobbly sand, light brown (7.5YR6/3) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; many carbonate pendants and many thin silica cutans on undersides of rock fragments; 15 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5 and sample s05)

2Bckqb 84 to 150 cm. Pink (7.5YR7/4) very cobbly sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure, single grain with relict bedding in parts; soft, very friable, nonsticky and nonplastic; few medium roots; Stage I+ carbonate development; many carbonate pendants and common thin silica cutans on undersides of rock fragments; 15 percent cobbles and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample s06)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 5 cm), cambic horizon (5 to 13 cm), and calcic horizon (29 to 84 cm). The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE ST04-P09

Location: 29 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,787 feet north and 711,971 feet east; 1002.7 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 2 August 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocalcid (in Unit ?)

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

A 0 to 5 cm. Brownish yellow (10YR6/6) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium granular structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few fine interstitial pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 15 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6 and sample a01a)

BAk 5 to 22 cm. Brownish yellow (10YR6/6) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few fine roots; few carbonate filaments and thin carbonate coatings on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 15 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a01b)

- Bkb1** 22 to 73 cm. Pink (7.5YR7/3) very gravelly sandy loam, brown (7.5YR6/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common medium roots; Stage I carbonate development; common thin carbonate coatings on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6 and sample a02)
- 2Bkb2** 73 to 86 cm. Pink (7.5YR6/3) very cobbly loamy sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; very hard, very firm, nonsticky and nonplastic; few medium roots in fractures; Stage III + carbonate development; 80 percent weakly to moderately carbonate-cemented with white (7.5YR8/1, 6/3 moist) 1-mm laminar cap; common carbonate pendants on undersides of rock fragments; 2 percent stones, 20 percent cobbles, and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5) and sample a03a)
- 2Bkb3** 86 to 118 cm. Pink (7.5YR6/3) very cobbly loamy sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine and medium roots; Stage I + carbonate development; common carbonate pendants on undersides of rock fragments; 2 percent stones, 20 percent cobbles, and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5 and sample a03b)
- 2BCKqb** 118 to 163 cm. Pink (7.5YR6/3) very cobbly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure, single grain with relict bedding in parts; soft, very friable, nonsticky and nonplastic; few medium roots; Stage I + carbonate development; many carbonate pendants and many thin silica cutans on undersides of rock fragments; 2 percent stones, 20 percent cobbles, and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual irregular boundary. (Unit A5 and sample a04)
- 2Ckb** 163 to 215 cm. Light gray (10YR7/1) very gravelly sand, grayish brown (10YR5/2) moist; single grain with prominent relict bedding; slightly hard, friable, nonsticky and nonplastic; few medium roots; Stage I- carbonate development; few pockets and stringers of very weak carbonate cementation with few carbonate pendants on undersides of rock fragments; 2 percent stones, 15 percent cobbles, and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample a05)
- 3BCKb** 215 to 300 cm. Light gray (10YR7/2) very gravelly sand, brown (10YR5/3) moist; weak coarse subangular blocky structure, single grain with faint relict bedding in some parts; hard, friable, nonsticky and nonplastic; few medium roots; Stage I carbonate development; common carbonate pendants on undersides of rock fragments; 10 percent cobbles and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample a06)

NOTES: Bench break at 150 cm. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 5 cm) and calcic horizon (22 to 118 cm). The old system taxonomic great group of the pedon is Calcicorthids.

SOIL PROFILE ST04-P10

Location: 20 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,798 feet north and 711,943 feet east; 1002.4 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Date described: 3 May 1994

Geomorphic surface: S7

Taxonomic classification of uppermost deposit: Riverwash (in Unit (7))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- C** 0 to 15 cm. Very pale brown (10YR7/4) very gravelly coarse sand, yellowish brown (10YR5/4) moist; single grain riverwash with prominent relict bedding; loose, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6)
- 2Bwb** 15 to 24 cm. Very pale brown (10YR7/4) gravelly loamy coarse sand, yellowish brown (10YR5/4) moist; weak fine platy structure; soft, very friable, nonsticky and nonplastic; few thin carbonate coatings and common thin silica cutans on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 20 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A6)
- 3Bkb** 24 to 49 cm. Pink (7.5YR8/3) very gravelly sand, light brown (7.5YR6/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage II carbonate development; 20 percent weakly to moderately carbonate-cemented with common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)

- 3Bkqb** 49 to 72 cm. Pink (7.5YR8/3) very gravelly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants and common thin silica cutans on undersides of rock fragments; 2 percent cobbles and 36 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 3BCKqb** 72 to 100 cm. Light brown (7.5YR6/3) very cobbly sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure, single grain in lower part; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; 1-mm laminar cap due to abrupt hydraulic gradient; many carbonate pendants and common thin silica cutans on undersides of rock fragments; 15 percent cobbles and 26 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include riverwash (0 to 15 cm), cambic horizon (15 to 24 cm), and calcic horizon (24 to 72 cm). The old system taxonomic great group of the pedon is Calciorthids.

SOIL PROFILE ST04-P11

Location: 8 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,811 feet north and 711,812 feet east; 1002.9 meters elevation.

Described by: R.D. Van Remortel and K.E. Snyder

Sampled by: K.E. Snyder and H.E. Huckins-Gang

Date described and sampled: 30 June 1994

Geomorphic surface: S5a

Taxonomic classification of uppermost deposit: Haplocambid (in Unit (?))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Haplocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 6 cm. Very pale brown (10YR7/4) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; few fine roots; few fine interstitial pores; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 20 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a01)
- Bw** 6 to 20 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common medium roots; few silica cutans on undersides of rock fragments; very few moderately thick paleocarbonate coatings on sides of rock fragments; 2 percent cobbles and 20 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a02)
- Bckb** 20 to 52 cm. Very pale brown (10YR7/4) very gravelly loamy sand, light yellowish brown (10YR6/4) moist; weak medium subangular blocky structure, single grain in lower part; slightly hard, friable, nonsticky and nonplastic; common fine roots; Stage I carbonate development; common thin carbonate coatings on sides of rock fragments; 2 percent cobbles and 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A6 and sample a03)

- 2Bkb1** 52 to 67 cm. Pink (7.5YR8/3) very cobbly sand, light brown (7.5YR6/4) moist; weak medium platy structure; hard, firm, nonsticky and nonplastic; few fine roots; Stage III carbonate development; 65 percent weakly to moderately carbonate-cemented with common carbonate pendants on undersides of rock fragments; 5 percent stones, 15 percent cobbles, and 25 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample s04a)
- 2Bkb2** 67 to 86 cm. Pink (7.5YR8/3) very gravelly sand, light brown (7.5YR6/4) moist; weak medium platy structure; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 5 percent cobbles and 35 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5 and sample s04b)
- 2Bkb3** 86 to 120 cm. Pink (7.5YR8/3) very cobbly sand, light brown (7.5YR6/4) moist; weak coarse subangular blocky structure; hard, firm, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 5 percent stones, 20 percent cobbles, and 20 percent pebbles dominantly from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5 and sample s04c)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 6 cm), cambic horizon (6 to 20 cm), and calcic horizon (52 to 120 cm). The old system taxonomic great group of the pedon is Calcorthids.

SOIL PROFILE ST04-P12

Location: 91 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,713 feet north and 712,160 feet east; 1003.5 meters elevation.

Described by: R.D. Van Remortel

Date described: 12 December 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Camborthid (in Unit A (?))

Taxonomic classification of pedon: Sandy-skeletal, mixed, thermic Typic Petrocalcids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Light yellowish brown (10YR6/4) extremely gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 65 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt smooth boundary. (Unit A5)
- BA** 2 to 14 cm. Pink (7.5YR7/3) fine sandy loam, brown (7.5YR5/4) moist; moderate coarse prismatic structure parting to weak thin platy; slightly hard, friable, slightly sticky and plastic; few fine roots; many fine continuous vesicular pores; very few thin argillans on rounded edges of some peds; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Btk** 14 to 19 cm. Pink (7.5YR6/3) sandy loam, reddish yellow (7.5YR6/6) moist; moderate coarse prismatic structure parting to moderate thin platy; hard, firm, slightly sticky and slightly plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage II carbonate development; 35 percent weakly to moderately carbonate-cemented with common thin carbonate coatings on undersides of peds and rock fragments; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 5 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- 2Bk** 19 to 28 cm. Pink (7.5YR7/3) very gravelly loamy sand, strong brown (7.5YR5/6) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common fine roots; common fine vesicular pores; Stage I carbonate development; common thin carbonate coatings on peds and rock fragments; 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bkm** 28 to 48 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; strong coarse platy structure parting to moderate medium subangular blocky; very hard, very firm, nonsticky and nonplastic; few fine roots in fractures; Stage III+ carbonate development; 90 percent strongly carbonate-cemented with 1-mm thick overlying laminar cap and many thick carbonate coatings on undersides of rock fragments; very few silica cutans on undersides of rock fragments; 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bk'** 48 to 71 cm. Pink (7.5YR7/3) very gravelly sand, strong brown (7.5YR5/6) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants on undersides of rock fragments; 2 percent cobbles and 50 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual irregular boundary. (Unit A5)
- 2Bck1** 71 to 80 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with very faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 50 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bck2** 80 to 103 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with very faint relict bedding in some parts; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; many carbonate pendants on undersides of rock fragments; 15 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bck3** 103 to 127 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 5 percent cobbles and 50 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; gradual wavy boundary. (Unit A5)

- 2Ckb** 127 to 168 cm. light gray (10YR7/2) very gravelly sand, pale brown (10YR6/3) moist; single grain with distinct relict bedding; loose, nonsticky and nonplastic; Stage I + carbonate development; common carbonate pendants on undersides of rock fragments; 10 percent cobbles and 45 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt broken boundary. (Unit A5)
- 3BCkb** 168 to 197 cm. Pink (7.5YR6/3) very gravelly loamy sand, light brown (7.5YR6/4) moist; weak medium subangular blocky structure with very faint relict bedding in some parts; hard, firm, nonsticky and nonplastic; Stage II carbonate development; 40 percent weakly carbonate-cemented with common carbonate pendants on undersides of rock fragments; 15 percent cobbles and 40 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear irregular boundary. (Unit A5)
- 3Ckb** 197 to 250 cm. light gray (10YR7/2) very gravelly sand, pale brown (10YR6/3) moist; single grain with distinct relict bedding; slightly hard, friable, nonsticky and nonplastic; Stage I - carbonate development; few thin carbonate coatings on undersides of rock fragments; few carbonate-cemented lenses 5-mm thick; 10 percent cobbles and 45 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Bench break at 110 cm. Co-located with ST04-TL-RSN5. Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 2 cm) and petrocalcic horizon (28 to 48 cm). The thickness of the aeolian mantle in this pedon is 28 cm. The old system taxonomic great group of the pedon is Calciorthis.

SOIL PROFILE ST04-P13

Location: 54 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,743 feet north and 712,047 feet east; 1003.2 meters elevation.

Described by: R.D. Van Remortel

Date described: 17 May 1995

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit A (?))

Taxonomic classification of pedon: Coarse-loamy, mixed, thermic Typic Haplargids

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Light yellowish brown (10YR8/4) very gravelly loamy sand, dark yellowish brown (10YR4/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent cobbles and 55 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt smooth boundary. (Unit A5)
- BA** 2 to 10 cm. Pink (7.5YR7/3) fine sandy loam, brown (7.5YR5/4) moist; moderate coarse prismatic structure parting to weak thin platy; slightly hard, friable, slightly sticky and plastic; few fine roots; many fine continuous vesicular pores; very few thin argillans on rounded edges of some peds; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btk1** 10 to 23 cm. Pink (7.5YR7/3) loam, brown (7.5YR5/4) moist; moderate coarse prismatic structure parting to moderate thin platy; hard, firm, sticky and plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on peds and rock fragments; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 5 percent cobbles and 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- 2Btk2** 23 to 34 cm. Pink (7.5YR7/3) cobbly sandy loam, brown (7.5YR5/4) moist; moderate coarse prismatic structure parting to moderate fine subangular blocky; hard, firm, slightly sticky and plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage II carbonate development; 40 percent weakly to moderately carbonate-cemented with common thin carbonate coatings on undersides of peds and rock fragments; very few paleocarbonate coatings on sides and undersides of rock fragments; 10 percent cobbles and 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk** 34 to 52 cm. Pink (7.5YR7/3) very gravelly loamy sand, strong brown (7.5YR5/8) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bck1** 52 to 101 cm. Pink (7.5YR7/3) very gravelly sand, brown (7.5YR5/4) moist; weak medium subangular blocky structure with faint relict bedding in some parts; soft, very friable, nonsticky and nonplastic; few fine roots; Stage I+ carbonate development; common carbonate pendants on undersides of rock fragments; 2 percent cobbles and 50 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- 2Bck2** 101 to 120 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; faint relict bedding with few pockets of weak medium subangular blocky structure throughout; slightly hard, friable, nonsticky and nonplastic; few fine roots; Stage I- carbonate development; many thin carbonate coatings on undersides of rock fragments; 15 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. Diagnostic features include ochric epipedon (0 to 2 cm), argillic horizon (10 to 34 cm), and calcic horizon (23 to 34 cm). The thickness of the eolian mantle in this pedon is 23 cm. The old system taxonomic great group of the pedon is Haplargids.

SOIL PROFILE ST04-TL-RSN1

Location: 21 meters west of the east stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,625 feet north and 712,382 feet east; 1003.5 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit A (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 1 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent cobbles and 20 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5)
- BA** 1 to 10 cm. Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; moderate coarse prismatic structure parting to moderate medium platy; hard, firm, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; very few thin argillans on rounded edges of some peds; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btk1** 10 to 18 cm. Pink (7.5YR7/3) sandy clay loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to moderate coarse platy; very hard, firm, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common fine soft carbonate masses and thin carbonate coatings on faces of peds and sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- Btk2** 18 to 26 cm. Pink (7.5YR7/3) gravelly loam, strong brown (7.5YR5/8) moist; moderate coarse prismatic parting to weak coarse subangular blocky structure; very hard, firm, sticky and slightly plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles surfaces; Stage I carbonate development; common carbonate filaments and few thin carbonate coatings on faces of peds and sides of rock fragments; 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- Bk** 26 to 37 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I+ carbonate development; few carbonate coatings on undersides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bkb** 37 to 40 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 30 percent weakly carbonate-cemented with many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-1 is horizontal film canister sample taken at 9 cm depth. RSN-1A is bag sample taken at 26 to 33 cm depth.

SOIL PROFILE ST04-TL-RSN2

Location: 38 meters west of the east stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,846 feet north and 712,330 feet east; 1003.6 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit A ??)

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 1 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent cobbles and 20 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5)
- BA** 1 to 12 cm. Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; moderate coarse prismatic structure parting to moderate medium platy; hard, firm, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; very few thin argillans on rounded edges of some peds; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btk1** 12 to 24 cm. Pink (7.5YR7/3) sandy clay loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to moderate coarse platy; very hard, firm, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common fine soft carbonate masses and thin carbonate coatings on faces of peds and sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- Btk2** 24 to 39 cm. Pink (7.5YR7/3) gravelly loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to weak coarse subangular blocky; very hard, firm, sticky and slightly plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage II carbonate development; 40 percent weakly carbonate-cemented with common carbonate filaments and common thin carbonate coatings on faces of peds and sides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- Bk** 39 to 49 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I- carbonate development; few carbonate coatings on undersides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bkb** 49 to 55 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 30 percent weakly carbonate-cemented with many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-2 is horizontal film canister sample taken at 18 cm depth. RSN-2A is bag sample taken at 25 to 43 cm depth. The A horizon was obliterated in this area of the trench, so depth and properties are presumed.

SOIL PROFILE ST04-TL-RSN3&4

Location: 107 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,693 feet north and 712,209 feet east; 1003.7 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (In Unit A (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 2 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent cobbles and 20 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5)
- BA** 2 to 8 cm. Very pale brown (10YR7/3) sandy loam, yellowish brown (10YR5/4) moist; moderate coarse prismatic structure parting to moderate medium platy; hard, firm, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; very few thin argillans on rounded edges of some peds; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btk1** 8 to 13 cm. Pink (7.5YR7/3) sandy clay loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to moderate coarse platy; very hard, firm, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common fine soft carbonate masses and thin carbonate coatings on faces of peds and sides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- Btk2** 13 to 34 cm. Pink (7.5YR7/3) gravelly loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to weak coarse subangular blocky; very hard, firm, sticky and slightly plastic; few fine roots; few very fine vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common carbonate filaments and few thin carbonate coatings on faces of peds and sides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; clear wavy boundary. (Unit A5)
- Bk** 34 to 45 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage I- carbonate development; few carbonate coatings on undersides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bkb** 45 to 50 cm. Pink (7.5YR8/3) very gravelly loamy sand, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage II carbonate development; 40 percent weakly carbonate-cemented with many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-3 is horizontal film canister sample taken at 31 cm depth. RSN-4 is horizontal film canister sample taken at 20 cm depth. RSN-34A is bag sample taken at 35 to 43 cm depth. RSN-34G is bulk gamma sample taken at 15 to 35 cm depth, immediately west of RSN-3&4.

SOIL PROFILE ST04-TL-RSN5

Location: 91 meters east of the west stake, along the south wall of soil trench 4 at RWMS; Nevada State Plane coordinates 771,713 feet north and 712,159 feet east; 1003.7 meters elevation.

Described by: R.D. Van Remortel

Date described: 15 February 1994

Geomorphic surface: S3

Taxonomic classification of uppermost deposit: Haplargid (in Unit A (?))

Taxonomic classification of pedon: N/A

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 1 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 2 percent cobbles and 20 percent pebbles (from mixed pyroclastic, quartzite, and calcareous sedimentary rocks) on the soil surface; abrupt wavy boundary. (Unit A5)
- BA** 1 to 13 cm. Very pale brown (10YR7/3) loam, yellowish brown (10YR5/4) moist; moderate coarse prismatic structure parting to moderate medium platy; hard, firm, slightly sticky and slightly plastic; few fine roots; many fine continuous vesicular pores; very few thin argillans on rounded edges of some peds; very few moderately thick paleocarbonate coatings on sides and undersides of rock fragments; 10 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- Btk** 13 to 29 cm. Pink (7.5YR7/3) gravelly sandy clay loam, strong brown (7.5YR5/6) moist; moderate coarse prismatic structure parting to moderate coarse platy; very hard, firm, sticky and slightly plastic; few fine roots; common very fine continuous vesicular pores; few thin argillans on contacts between peds and fine pebbles; Stage I carbonate development; common thin carbonate coatings on peds and undersides of rock fragments; 20 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)

- 2Bk1** 29 to 35 cm. Pink (7.5YR8/3) gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; few medium roots; Stage II- carbonate development; weakly carbonate-cemented with common carbonate coatings on undersides of rock fragments; 15 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks; abrupt wavy boundary. (Unit A5)
- 2Bk2** 35 to 40 cm. Pink (7.5YR8/3) very gravelly sandy loam, brown (7.5YR5/4) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few medium roots; Stage II carbonate development; weakly carbonate-cemented with many carbonate pendants on undersides of rock fragments; 10 percent cobbles and 35 percent pebbles from mixed pyroclastic, quartzite, and calcareous sedimentary rocks. (Unit A5)

NOTES: Location was determined by triangulation using surveyed reference stakes and is accurate to within 2 feet. RSN-5 is vertical sample taken at 20 cm depth. RSN-5A is bag sample taken at 38 to 48 cm depth. RSN-5G is bulk gamma sample taken at 15 to 30 cm depth about 0.5 m west of TL-RSN-5. The thickness of the eolian mantle in this pedon is 29 cm.

SOIL PROFILE WB-1264

Location: West wall of pit 6 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 20 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 15 cm.

Bk 15 to 43 cm. Pale brown (10YR6/3) channery sandy loam, yellowish brown (10YR5/4) moist; weak medium and coarse subangular blocky; soft with slightly hard areas, friable, slightly sticky and nonplastic; common thin prominent carbonate coatings on surfaces of peds; common fine irregular soft carbonate filaments in peds; Stage 1+ carbonate coatings on rock fragments; 10 percent channers and 10 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)

Bck 43 to 68 cm. Pale brown (10YR6/3) very channery sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few distinct silica cutans bridging sand grains and fine pebbles in pendants beneath rock fragments; Stage 1+ carbonate coatings on rock fragments; 10 percent cobbles, 15 percent channers, and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)

2Bkb 68 to 83 cm. Pale brown (10YR6/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium and coarse subangular blocky structure with weak thick platy in upper 3 cm of horizon; slightly hard, friable, slightly sticky and nonplastic; few thin faint argillans bridging sand grains; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments; thin prominent white (10YR8/1) carbonate coatings on surfaces of plates; many fine irregular soft white (10YR8/1) carbonate filaments in peds; Stage 1+ carbonate coatings on rock fragments; 25 percent pebbles; clear broken boundary. (Unit A5 and no sample)

2BCKb1 83 to 130 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage 1+ carbonate coatings on rock fragments; 30 percent pebbles; gradual wavy boundary. (Unit A5 and sample A5a2)

- 2BCKb2** 130 to 206 cm. Light yellowish brown (10YR6/4) very gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings remaining on sides and bottoms of rock fragments; discontinuous faint relict bedding; 10 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a3)
- 3BCKb3** 206 to 234 cm. Very pale brown (10YR7/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few (15 percent) distinct silica cutans bridging sand grains in pendants beneath rock fragments; Stage I+ carbonate coatings on rock fragments; 5 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)
- 3Ck** 234 to 260 cm. Pale brown (10YR6/3) extremely gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; few distinct silica cutans bridging sand grains in pendants beneath rock fragments; common (20 percent of horizon) coarse hard layers of white (10YR8/1) carbonate cemented fine earth and pebbles; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; discontinuous prominent relict bedding; 5 percent cobbles and 60 percent pebbles. (Unit A4 and sample A4a2)

SOIL PROFILE WB-1272

Location: West wall of pit 6 at RWMS

Described by: K.E. Snyder, S.M. Parsons, and J.J. Miller

Sampled by: K.E. Snyder

Date described and sampled: 20 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 64 cm.

Bk 64 to 94 cm. Light gray (10YR7/2) channery sandy loam, yellowish brown (10YR5/4) moist, and light brownish gray (10YR6/2) ped interiors; weak medium and coarse subangular blocky structure with weak medium and fine platy in the upper 3 cm of the horizon; slightly hard, friable, slightly sticky and nonplastic; few thin faint argillans bridging sand grains; very few thin distinct silica cutans on the bottom of subangular blocks; few distinct silica cutans bridging sand grains in pendants beneath rock fragments; prominent white (10YR8/1) carbonate coatings on surfaces of plates; common fine irregular soft carbonate filaments and masses in peds; Stage I+ carbonate coatings on rock fragments; 15 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)

Bck 94 to 130 cm. Light gray (10YR7/2) very channery loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few distinct silica cutans bridging sand grains in pendants beneath rock fragments; common irregular soft white (10YR8/1) carbonate masses; Stage I+ carbonate coatings on rock fragments; 20 percent channers and 15 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a2)

2Bkb 130 to 152 cm. Pale brown (10YR6/3) gravelly sandy loam, yellowish brown (10YR5/4) moist, and light yellowish brown (10YR6/4) ped interiors; weak coarse and medium subangular blocky structure parting to fine subangular blocky with weak medium platy in the upper 3 cm of the horizon; hard, friable, slightly sticky and slightly plastic; few thin faint argillans lining medium and fine tubular pores (root traces) and bridging sand grains; few thin distinct silica cutans on the surface of plates; prominent white (10YR8/2) carbonate coatings on surfaces of peds; common fine irregular soft white (10YR8/1) carbonate filaments in peds; Stage I+ carbonate coatings on rock fragments; 20 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)

- 2BCKb** 152 to 216 cm. Pale brown (10YR6/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; soft, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; few etched carbonate paleocoatings remaining on sides of cobbles and large pebbles; discontinuous very faint relict bedding; 10 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 2C** 216 to 257 cm. Light gray (10YR7/2) gravelly loamy sand, yellowish brown (10YR5/4) moist; single grained; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on cobbles and large pebbles; discontinuous faint relict bedding; 30 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a3)
- 3BCKb** 257 to 277 cm. Light gray (10YR7/2) gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; few etched carbonate paleocoatings on tops and sides of large pebbles; discontinuous very faint relict bedding; 30 percent pebbles; clear smooth boundary. (Unit A4 and sample A4a1)
- 3C** 277 to 292 cm. Light gray (10YR7/2) and light brownish gray (10YR6/2) gravelly loamy sand/sand, brown (10YR5/3) moist; single grained; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; discontinuous prominent relict bedding; 30 percent pebbles. (Unit A4 and sample A4a2)

SOIL PROFILE WB-1279

Location: West wall of pit 6 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 20 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 104 cm.

Bck 104 to 137 cm. Light gray (10YR7/2) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; few distinct silica cutans bridging and coating sand grains in pendants beneath rock fragments; common medium soft light brownish gray (10YR6/2) carbonate masses and common fine irregular soft white (10YR8/2) filaments in peds; thin carbonate lamina at top of horizon; Stage I+ carbonate coatings on rock fragments; 10 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)

Ck 137 to 160 cm. Light gray (10YR7/2) gravelly loamy sand, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; few distinct silica cutans bridging sand grains in pendants beneath rock fragments; Stage I+ carbonate coatings on rock fragments; continuous prominent relict bedding; the material is filling a local paleochannel eroded into the underlying unit; 10 percent cobbles (as lens at top) and 15 percent pebbles; abrupt broken boundary. (Unit A6 and sample A6a2)

2Bkb 160 to 175 cm. Very pale brown (10YR7/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium and coarse subangular blocky structure with moderate thick and medium platy in upper 5 cm of horizon; hard, friable, slightly sticky and slightly plastic; few thin faint argillans lining fine pores; few thin faint argillans bridging sand grains, and on medium and fine sand in pendants beneath rock fragments; few distinct silica cutans bridging and coating sand grains in pendants beneath rock fragments; prominent thin white (10YR8/2) carbonate coating the surface of plates and as a continuous lamina at top of the horizon; many fine irregular soft white (10YR8/1) carbonate filaments in peds; Stage I+ carbonate coatings on rock fragments; 15 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)

- 2Bckb** 175 to 246 cm. Very pale brown (10YR7/3) gravelly loamy sand, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments; few fine irregular soft white (10YR8/2) carbonate masses in peds; Stage I+ carbonate coatings on rock fragments; common etched carbonate paleocoatings remaining on sides of large pebbles; 20 percent pebbles; gradual wavy boundary. (Unit A5 and sample A5a2)
- 2C1** 246 to 302 cm. Light gray (10YR7/2) gravelly loamy sand, brown (10YR5/3) moist; single grained; slightly hard, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; common etched carbonate paleocoatings remaining on tops and sides of large pebbles; continuous prominent relict bedding; 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a3)
- 3C2** 302 to 320 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard with hard areas, friable, nonsticky and nonplastic; common (10 percent of horizon) discontinuous white (10YR8/2) carbonate layers 2 to 5 mm thick; few irregular soft white (10YR8/1) carbonate masses in peds; Stage I carbonate coatings on rock fragments; continuous faint relict bedding; 25 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)
- 3C3** 320 to 345 cm. Light gray (10YR7/2) gravelly sand, brown (10YR5/3) moist; single grained; slightly hard, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; discontinuous prominent relict bedding becoming fainter toward top of horizon; 30 percent pebbles. (Unit A4 and sample A4a2)

SOIL PROFILE WB-1285

Location: West wall of trench 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Date described: 18 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 107 cm.

Ck 107 to 147 cm. Light gray (10YR7/2) extremely channery loamy sand, brown (10YR5/3) moist; single grained; slightly hard, friable, nonsticky and nonplastic; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments and in cemented layers; common fine irregular soft white (10YR8/1) carbonate filaments; discontinuous layers (15 percent of horizon) of hard white (10YR8/1) carbonate cemented rock fragments and fine earth; Stage I+ carbonate coatings on rock fragments; 30 percent channers and 30 percent pebbles; abrupt wavy boundary. (Unit A5)

2Bkb 147 to 178 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium and coarse subangular blocky structure with weak medium platy in upper 7 cm of horizon; slightly hard, friable, nonsticky and nonplastic; few thin discontinuous faint argillans lining pores and on surfaces of peds, and very few bridging sand grains; prominent white (10YR8/1) carbonate coatings on surfaces of peds; thin irregular soft white (10YR8/1) carbonate filaments; Stage I+ carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A5)

2BCkb 178 to 208 cm. Light gray (10YR7/2) very gravelly loamy sandy, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 10 percent cobbles (in upper half of horizon) and 25 percent pebbles; clear wavy boundary. (Unit A5)

2C 208 to 236 cm. Light brownish gray (10YR6/2) gravelly loamy sand/sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings remaining on sides of large pebbles; 25 percent pebbles; abrupt wavy boundary. (Unit A5)

- 3Bkb** 236 to 254 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak thick platy structure; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 20 percent pebbles; clear wavy boundary. (Unit A4)
- 3BCb** 254 to 287 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 20 percent pebbles. (Unit A4)

SOIL PROFILE WB-1292

Location: West wall of trench 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Date described: 18 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 84 cm.

Bk 84 to 102 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse subangular blocky structure parting to medium and fine subangular blocky; slightly hard, friable, slightly sticky and nonplastic; few distinct silica cutans in large pores; few distinct silica cutans bridging sand grains in pendants beneath rock fragments; common fine irregular soft white (10YR8/1) carbonate filaments in peds and lining pores; masses of hard white (10YR8/1) carbonate cemented pebbles and fine earth; Stage I+ carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A6)

Bck 102 to 124 cm. Light brownish gray (10YR6/2) very gravelly loamy sand, brown (10YR4/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few thin faint argillans on and bridging sand grains; masses of hard white (10YR8/1) carbonate cemented pebbles and fine earth; Stage I+ carbonate coatings on rock fragments; 5 percent cobbles, 20 percent channers, and 20 percent pebbles; clear wavy boundary. (Unit A6)

Ck 124 to 163 cm. Very pale brown (10YR7/3) very gravelly loamy sandy, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; few thin distinct silica cutans bridging and coating sand grains and pebbles in pendants beneath rock fragments; Stage I+ carbonate coatings on rock fragments; 5 percent cobbles, 20 percent channers, and 20 percent pebbles; abrupt wavy boundary. (Unit A6)

2Bckb 163 to 180 cm. Very pale brown (10YR7/3) very gravelly loamy sand, brown (10YR5/3) moist; massive; hard, firm, nonsticky and nonplastic; common coarse tubular pores (root traces); Stage I+ carbonate coatings on rock fragments; 5 percent stones, 20 percent cobbles, and 15 percent pebbles; clear wavy boundary. (Unit A5)

- 2C** 180 to 236 cm. Light gray (10YR7/2) gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 30 percent pebbles; abrupt wavy boundary. (Unit A5)
- 3BCKb** 236 to 257 cm. Light gray (10YR7/2) very gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 10 percent cobbles and 35 percent pebbles; clear wavy boundary. (Unit A4)
- 3Ck** 257 to 277 cm. Light gray (10YR7/2) gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 20 percent pebbles. (Unit A4)

SOIL PROFILE WB-1299

Location: West wall of trench 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Date described: 18 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 91 cm.

Bk1 91 to 107 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse and medium subangular blocky structure parting to fine subangular blocky; hard, friable, slightly sticky and nonplastic; few thin faint argillans lining pores and bridging sand grains; many prominent white (10YR8/2) carbonate coatings on surfaces of peds; many fine irregular soft white (10YR8/2) carbonate filaments in peds; Stage I carbonate coatings on rock fragments; 10 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6)

Bk2 107 to 137 cm. Light gray (10YR7/2) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium and coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; very few thin discontinuous faint argillans on sand grains; common thin carbonate lining pores and as irregular soft masses in peds; Stage I carbonate coatings on rock fragments; 10 percent channers and 25 percent pebbles; clear wavy boundary. (Unit A6)

Bck 137 to 168 cm. Very pale brown (10YR7/3) very gravelly loamy sandy, brown (10YR5/3) moist; massive; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 5 percent cobbles, 10 percent channers, and 25 percent pebbles; abrupt wavy boundary. (Unit A6)

2Bckb 168 to 198 cm. Light gray (10YR7/2) very gravelly loamy sand, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 10 percent cobbles and 25 percent pebbles; clear wavy boundary. (Unit A5)

2C1 198 to 254 cm. Light gray (10YR7/2) very gravelly loamy sand/sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on sides and bottoms of rock fragments; continuous distinct relict bedding; 10 percent cobbles and 25 percent pebbles; clear wavy boundary. (Unit A5)

3C2

254 to 289 cm. Very pale brown (10YR7/3) extremely gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium and thick platy structure from relict sedimentary bedding; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings remaining on sides and bottoms of rock fragments; 15 percent cobbles and 45 percent pebbles. (Unit A4)

SOIL PROFILE WB-1310

Location: East end of south wall of Pit 3 at RWMS

Described by: K.E. Snyder and R.D. Van Remortel

Sampled by: K.E. Snyder

Date described / sampled: 8 July 1992 / 2 October 1995

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined. The description encompasses portions of the A2 and A1 allostratigraphic units.

DESCRIPTION

- Cb** 0 to 24 cm. Pale brown (10YR6/3) extremely gravelly sand, dark yellowish brown (10YR4/4) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 25 percent channers and 30 percent pebbles; abrupt smooth boundary. (Unit A2 and sample e)
- 2Bkb** 24 to 33 cm. Pink (7.5YR7/3) gravelly sandy loam, light brown (7.5YR6/4) moist; medium coarse prismatic structure parting to weak coarse platy structure; slightly hard, friable, nonsticky and slightly plastic; few fine vesicular pores; very few thin argillans bridging sand grains; Stage I- carbonate development; common thin lime coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 20 percent pebbles; clear wavy boundary. (Unit A1 and sample a01)
- 2BCKb1** 33 to 45 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, light brown (7.5YR6/3) moist; weak medium subangular blocky structure with faint relict bedding in some parts; slightly hard, friable, nonsticky and slightly plastic; Stage I- carbonate development; common thin lime coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 16 percent pebbles; gradual wavy boundary. (Unit A1 and sample a02)
- 2BCKb2** 45 to 58 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, light brown (7.5YR6/3) moist; weak medium platy structure parting to weak coarse subangular blocky, with faint relict bedding in some parts; slightly hard, friable, nonsticky and slightly plastic; Stage I- carbonate development; common thin lime coatings on undersides of rock fragments; few moderately thick paleocarbonate coatings on sides of rock fragments; 15 percent pebbles; gradual wavy boundary. (Unit A1 and sample a03)

2Cb

58 to 88 cm. Light gray (10YR7/2) very gravelly loamy sand, light yellowish brown (10YR6/3) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; very few moderately thick paleocarbonate coatings on sides of rock fragments; 40 percent pebbles. (Unit A1 and sample a04)

SOIL PROFILE WB-1312

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 4 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- BA1** 0 to 5 cm. Light brownish gray (10YR6/2) channery sandy loam, brown (10YR5/3) moist; moderate medium platy structure parting to fine platy; slightly hard, friable, nonsticky and nonplastic; 15 percent channers; abrupt smooth boundary. (Unit A6 and sample A6a1)
- BA2** 5 to 25 cm. Light brownish gray (10YR6/2) very channery sandy loam, yellowish brown (10YR5/4) moist; weak fine and medium subangular blocky structure; hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 5 percent cobbles, 15 percent channers, and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)
- Bk1** 25 to 46 cm. Light brownish gray (10YR6/2) channery sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 15 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a3)
- Bk2** 46 to 64 cm. Light gray (10YR7/2) very gravelly sandy loam, brown (10YR5/3) moist; massive with areas of weak medium subangular blocky structure parting to fine subangular blocky; loose and soft, loose and friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 10 percent cobbles, 10 percent channers, and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a4)
- 2Bck1** 64 to 102 cm. Light gray (10YR7/2) extremely gravelly sandy loam, brown (10YR5/3) moist; massive with areas of weak medium subangular blocky structure parting to fine subangular blocky; loose and soft, loose and friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 15 percent cobbles, 15 percent channers, and 40 percent pebbles; gradual wavy boundary. (Unit A6 and sample A6a5)

- 2Bck2** 102 to 127 cm. Very pale brown (10YR7/3) extremely gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 15 percent cobbles, 15 percent channers, and 40 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a6)
- 3Bkb1** 127 to 150 cm. Light gray (10YR7/2) very gravelly sandy loam, brown (10YR5/3) moist; weak medium and coarse subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; fine irregular soft carbonate masses and filaments; Stage I+ carbonate coatings on rock fragments; 10 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)
- 3Bkb2** 150 to 183 cm. Light gray (10YR7/2) extremely stony sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common irregular soft carbonate filaments; Stage I carbonate coatings on rock fragments; 30 percent stones, 20 percent cobbles, and 15 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 3C** 183 to 208 cm. Light gray (10YR7/2) very gravelly sandy loam, yellowish brown (10YR5/4) moist; single grained; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 40 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a3)
- 4Bkb** 208 to 226 cm. Very pale brown (10YR7/3) gravelly sandy loam, light yellowish brown (10YR6/4) moist; weak medium and fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; few thin distinct silica cutans beneath rock fragments; Stage I carbonate coatings on rock fragments; 25 percent pebbles; abrupt wavy boundary. (Unit A4 and sample A4a1)
- 4C** 226 to 254 cm. Light gray (2.5Y7/2) very gravelly loamy sand, light olive brown (2.5Y5/3) moist; single grained; loose, nonsticky and nonplastic; few thin distinct silica cutans beneath rock fragments; Stage I carbonate coatings on rock fragments; 50 percent pebbles. (Unit A4 and sample A4a2)

NOTES: The A horizon has been removed by heavy equipment. Presumably the platy structure in the BA1 horizon developed from the subangular blocky structure of the underlying BA2 horizon.

SOIL PROFILE WB-1317

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Dates described / sampled: 4 August 1992 / 5 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- BA1** 0 to 8 cm. Light brownish gray (10YR6/2) channery sandy loam, brown (10YR4/3) moist; moderate medium and thick platy structure parting to thin platy; soft, friable, nonsticky and nonplastic; 15 percent channers; abrupt wavy boundary. (Unit A6 and no sample)
- BA2** 8 to 20 cm. Light brownish gray (10YR6/2) very channery sandy loam, brown (10YR5/3) moist; weak coarse and medium subangular blocky structure; hard, friable, nonsticky and nonplastic; common (10 percent) fine irregular soft carbonate filaments; Stage I carbonate coatings on rock fragments; 20 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and no sample)
- Bk** 20 to 36 cm. Pale brown (10YR6/3) very channery sandy loam, brown (10YR5/3) moist; weak fine subangular blocky structure with massive areas; soft, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 25 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6 and no sample)
- Bck** 36 to 66 cm. Light gray (10YR7/2) very gravelly sandy loam, dark yellowish brown (10YR4/4) moist; massive; soft, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 20 percent channers and 35 percent pebbles; abrupt smooth boundary. (Unit A6 and no sample)
- 2BCKb** 66 to 122 cm. Light gray (10YR7/2) extremely channery foamy sand, dark yellowish brown (10YR4/4) moist; massive; soft, very friable, nonsticky and nonplastic; 10 percent of horizon hard white (10YR8/1) carbonate cemented fine earth and rock fragments as layers 2 to 5 cm thick and 30 to 60 cm long; Stage I carbonate coatings on rock fragments; discontinuous very faint relict bedding; 30 percent channers and 30 percent pebbles; abrupt wavy boundary. (Unit A6 and no sample)

- 3Bkb1** 122 to 130 cm. Pinkish gray (7.5YR7/2) very gravelly sandy loam, brown (7.5YR5-4/4) moist; moderate coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; few thin faint argillans on and bridging sand grains, and lining fine pores; common fine irregular soft white (10YR8/1) carbonate filaments; Stage II carbonate on and between rock fragments; 35 percent pebbles; clear broken boundary. (Unit A5 and sample A5a1)
- 3Bkb2** 130 to 142 cm. Light gray (10YR7/2) very gravelly loamy sand, yellowish brown (10YR5/4) moist; massive with areas of moderate medium and coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine irregular soft white (10YR8/1) carbonate filaments; Stage I+ carbonate coatings on rock fragments; 35 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 3Bckb** 142 to 183 cm. Light gray (10YR7/2) gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; discontinuous (35 percent of horizon) very faint relict bedding; 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a3)
- 3C** 183 to 206 cm. Pale brown (10YR6/3) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I (85 percent) and Stage I+ (15 percent) carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; continuous prominent relict bedding; 10 percent channers and 30 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a4)
- 4Bkb** 206 to 213 cm. Light brownish gray (10YR6/2) very gravelly sandy loam, brown (10YR4/3) moist; weak medium and coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 5 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)
- 4C** 213 to 231 cm. Very pale brown (10YR7/3) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; few thin distinct silica cutans beneath rock fragments; Stage I (90 percent) and Stage I+ (10 percent) carbonate coatings on rock fragments; etched carbonate paleocoatings remaining on sides and bottoms of rock fragments; 5 percent cobbles and 35 percent pebbles. (Unit A4 and sample A4a2)

NOTES: The A horizon has been removed by heavy equipment. Presumably the platy structure in the BA1 horizon developed from the subangular blocky structure of the underlying BA2 horizon.

SOIL PROFILE WB-1320

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder and J.J. Miller

Sampled by: K.E. Snyder

Date described and sampled: 10 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined. The description begins at the base of the Unit A4/A3 contact and includes all of Unit A3.

DESCRIPTION

- Bkb1** 0 to 10 cm. Light gray (10YR7/2) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak medium and coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine pores; very few thin discontinuous faint argillans on pebbles; common fine irregular soft white (10YR8/1) carbonate filaments; Stage I carbonate on rock fragments; 25 percent pebbles; clear wavy boundary. (Unit A3 and sample A3a1)
- Bkb2** 10 to 23 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak coarse and medium subangular blocky structure; hard, friable, nonsticky and nonplastic; common fine irregular soft white (10YR8/1) carbonate filaments; Stage I carbonate coatings on rock fragments; 25 percent pebbles; clear wavy boundary. (Unit A3 and sample A3a2)
- BCkb1** 23 to 43 cm. Very pale brown (10YR7/3) gravelly sandy loam, brown (10YR5/3) moist; massive with areas (20 percent of horizon) of weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine irregular soft carbonate filaments; Stage I carbonate coatings on rock fragments; 25 percent pebbles; clear wavy boundary. (Unit A3 and sample A3a3)
- BCkb2** 43 to 91 cm. Light gray (10YR7/2) gravelly loamy sand, pale brown (10YR6/3) moist; massive; hard, friable, nonsticky and nonplastic; Stage I carbonate on rock fragments; 25 percent pebbles. (Unit A3 and sample A3a4)

SOIL PROFILE WB-1324

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 5 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- BA1** 0 to 5 cm. Pale brown (10YR6/3) channery sandy loam, dark yellowish brown (10YR4/4) moist; strong medium platy structure parting to thin platy; soft, very friable, nonsticky and nonplastic; 10 percent channers and 10 percent pebbles; abrupt smooth boundary. (Unit A6 and sample A6a1)
- BA2** 5 to 18 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; massive with areas (15 percent of horizon) of weak medium platy structure; slightly hard, friable, nonsticky and nonplastic; 10 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)
- Bk** 18 to 38 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive with areas (20 percent of horizon) of weak medium and fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; 10 percent of horizon hard carbonate cemented fine earth and rock fragments; Stage 1 carbonate coatings on rock fragments; 10 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a3)
- Bck** 38 to 53 cm. Light brownish gray (10YR6/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage 1 carbonate coatings on rock fragments; 10 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a4)
- 2Bkb1** 53 to 61 cm. Light brown (7.5YR6/3) gravelly sandy loam, brown (7.5YR4/4) moist; moderate medium and coarse subangular blocky structure parting to weak fine subangular blocky; slightly hard, friable, nonsticky and nonplastic; many fine and medium vesicular pores; very few thin faint argillans bridging sand grains and lining pores; common (10 percent) fine irregular soft carbonate filaments; Stage 1 carbonate coatings on rock fragments; 30 percent pebbles; clear broken boundary. (Unit A6 and sample A6a5)

- 2Bkb2** 61 to 76 cm. Light brown (7.5YR6/3) gravelly sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure with massive areas; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a6)
- 2Bkb3** 76 to 127 cm. Pink (7.5YR7/3) very channery sandy loam, brown (7.5YR4/4) moist; weak fine subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common (15 percent) masses of hard white (10YR8/2) carbonate cemented fine earth and rock fragments; Stage I+ carbonate coatings on rock fragments; 30 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a7)
- 3Bkb4** 127 to 135 cm. White (10YR8/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak coarse subangular blocky structure; hard, friable, nonsticky and nonplastic; common (5 to 10 percent) thin irregular soft carbonate filaments and masses; thin continuous carbonate lamina at top of the horizon; Stage I+ carbonate coatings on rock fragments; 30 percent pebbles; clear broken boundary. (Unit A5 and sample A5a1)
- 3Bckb** 135 to 173 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; soft, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 30 percent pebbles. (Unit A5 and sample A5a2)

NOTES: The A horizon has been removed by heavy equipment. Presumably the platy structure in the BA1 horizon developed from the massive and subangular blocky structure of the underlying BA2 horizon.

SOIL PROFILE WB-1334

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder, S.M. Parsons, and J.J. Miller

Sampled by: K.E. Snyder

Dates described / sampled: 7 August 1992 / 10 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- BA1** 0 to 5 cm. Pale brown (10YR6/3) channery loam, dark yellowish brown (10YR4/4) moist; moderate medium and thin platy structure; soft, very friable, slightly sticky and nonplastic; common fine and very fine vesicular pores; 10 percent channers and 5 percent pebbles; abrupt smooth boundary. (Unit A6 and sample A6a1)
- BA2** 5 to 15 cm. Pale brown (10YR6/3) gravelly loam, dark yellowish brown (10YR4/4) moist; massive with areas of weak medium and fine subangular blocky structure; soft, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; 5 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)
- Bk** 15 to 36 cm. Pale brown (10YR6/3) very channery sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings remaining on sides and bottoms of rock fragments; 25 percent channers and 25 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a3)
- 2BCKb1** 36 to 69 cm. Light gray (10YR7/2) channery loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, slightly sticky and nonplastic; common fine irregular soft carbonate filaments; Stage I carbonate coatings on rock fragments; 10 percent channers and 10 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a4)

- 2BCKb2** 69 to 88 cm. Pale brown (10YR6/3) very channery sandy loam, yellowish brown (10YR5/4) moist; massive with areas of weak medium and fine subangular blocky structure; prominent white (10YR8/1) carbonate on surfaces of peds; slightly hard, friable, nonsticky and nonplastic; few thin distinct silica cutans beneath rock fragments; Stage I+ carbonate coatings on rock fragments; 20 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a5)
- 2BCKb3** 88 to 122 cm. Very pale brown (10YR7/3) very gravelly sandy loam, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; few thin distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments; common areas (15 to 20 percent of horizon) of very hard white (10YR8/1, 10YR7/3m) carbonate-cemented pebbles and fine earth; Stage I+ carbonate coatings on rock fragments; 50 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a6)
- 3Bkb** 122 to 142 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, brown (7.5YR5/4) moist; weak thick and medium platy structure parting to thin platy with massive areas; very hard, very firm, nonsticky and nonplastic; few thin faint argillans bridging sand grains; many (35 percent) areas of carbonate-cemented fine earth and pebbles; Stage II carbonate development; 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)
- 3BCKb1** 142 to 160 cm. Pink (7.5YR7/3) gravelly sandy loam, brown (7.5YR5/4) moist; massive; hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 3BCKb2** 160 to 198 cm. Very pale brown (10YR7/3) gravelly sandy loam, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common fine irregular soft carbonate filaments; Stage I+ carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a3)
- 3C** 198 to 239 cm. Light gray (10YR7/2) very gravelly sand, dark yellowish brown (10YR4/4) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; carbonate paleocoatings on rock fragments; continuous faint relict bedding; 10 percent cobbles and 45 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a4)
- 4BCKb** 239 to 259 cm. Light gray (10YR7/2) very gravelly sand, pale brown (10YR6/3) moist; massive; hard, firm, nonsticky and nonplastic; 40 percent of horizon as hard white (10YR8/2, 10YR8/3m) carbonate cemented pebbles and fine earth, Stage II+ carbonate; etched carbonate paleocoatings on rock fragments in noncemented areas; 10 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)

4Ck 259 to 315 cm. Pale brown (10YR8/3) gravelly sand, brown (10YR4/3) moist; single grained; loose, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; 30 percent pebbles. (Unit A4 and sample A4s2)

NOTES: The A horizon has been removed by heavy equipment. Presumably the platy structure in the BA1 horizon developed from the massive and subangular blocky structure of the underlying BA2 horizon.

SOIL PROFILE WB-1338

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder and J.J. Miller

Sampled by: K.E. Snyder

Date described and sampled: 11 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- A** 0 to 8 cm. Pale brown (10YR6/3) very channery sandy loam, brown (10YR4/3) moist; moderate medium and coarse platy structure parting to weak thin platy; slightly hard, friable, nonsticky and nonplastic; common fine vesicular pores; 30 percent channers and 15 percent pebbles; abrupt smooth boundary. (Unit A6 and sample A6a1)
- Bk** 8 to 53 cm. Pale brown (10YR6/3) extremely channery sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 50 percent channers and 25 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a2)
- 2BCKb** 53 to 79 cm. Pale brown (10YR6/3) channery sandy loam, yellowish brown (10YR5/4) moist; massive; soft, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 25 percent channers; clear wavy boundary. (Unit A6 and sample A6a3)
- 2Ck** 79 to 160 cm. Light gray (10YR7/2) extremely channery loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; very few thin discontinuous faint angillans on and bridging sand grains; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments and in cemented areas; alternating layers of light gray (10YR7/1, 10YR6/3m) Stage I+ carbonate coatings on rock fragments (70 percent of horizon) and very hard white (10YR8/1d,m) carbonate cemented rock fragments and fine earth, Stage II (30 percent of horizon); 45 percent channers and 20 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a4)

- 3Bkb** 160 to 180 cm. Light gray (10YR7/2) gravelly sandy loam, brown (10YR5/3) moist; weak very coarse prismatic structure parting to weak coarse and medium subangular blocky; very hard, firm, nonsticky and nonplastic; few thin faint argillans lining fine tubular (root traces) and vesicular pores; thin white (10YR8/1) carbonate lamina at the top of the horizon; Stage I+ carbonate coatings on rock fragments; 20 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)
- 3BCkb** 180 to 213 cm. Light gray (10YR7/2) gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; few thin faint argillans lining fine tubular and vesicular pores; very few thin faint argillans on sand grains; Stage I carbonate coatings on rock fragments; 20 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 3C** 213 to 257 cm. Very pale brown (10YR7/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 35 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a3)
- 4BCkb** 257 to 295 cm. Pale brown (10YR6/3) gravelly loamy sand, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; common tubular pores (root traces) in upper 3 cm of horizon; soft white (10YR8/1) carbonate masses of pebbles and fine earth; Stage I carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)
- 4C** 295 to 333 cm. Light gray (10YR7/2) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 10 percent channers and 45 percent pebbles. (Unit A4 and sample A4a2)

NOTES: The original A horizon has been removed by heavy equipment. Presumably the platy structure in the A horizon developed from the massive structure of the underlying Bk horizon.

SOIL PROFILE WB-1345

Location: South wall of pit 3 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Dates described / sampled: 6 August 1992 / 7 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- BA1** 0 to 8 cm. Pale brown (10YR6/3) gravelly sandy loam, brown (10YR4/3) moist; weak thick and medium platy structure parting to thin platy; slightly hard, friable, nonsticky and nonplastic; common fine vesicular pores in upper 3 cm of horizon; 10 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)
- BA2** 8 to 23 cm. Pale brown (10YR6/3) gravelly sandy loam, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; 10 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)
- Bk1** 23 to 43 cm. Pale brown (10YR6/3) channery sandy loam, yellowish brown (10YR5/4) moist; weak medium and fine subangular blocky structure with massive areas; soft, very friable, nonsticky and nonplastic; 10 percent of horizon has fine earth and rock fragments cemented; Stage I carbonate coatings on rock fragments; 10 percent channers and 5 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a3)
- Bk2** 43 to 56 cm. Very pale brown (10YR7/3) channery sandy loam, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 10 percent channers and 5 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a4)
- 2C** 56 to 81 cm. Pale brown (10YR6/3) very channery sandy loam, dark yellowish brown (10YR4/4) moist; single grained; loose, nonsticky and nonplastic; few thin distinct silica cutans bridging sand grains and pebbles beneath rock fragments; Stage I carbonate coatings on rock fragments; 30 percent channers and 30 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a5)

- 3Btkb1** 81 to 91 cm. Pinkish gray (7.5YR7/2) gravelly loam, strong brown (7.5YR4/6) moist; moderate medium and thick platy structure parting to thin platy; very hard, firm, slightly sticky and nonplastic; common thin continuous faint argillans lining common tubular pores and on pebbles; few distinct silica cutans on surfaces of peds; prominent white (10YR8/2, 10YR8/3m) carbonate on surfaces of peds; Stage II+ carbonate on and between rock fragments; 25 percent pebbles; abrupt smooth boundary. (Unit A5 and sample A5a0)
- 3Btkb2** 91 to 99 cm. Light brown (7.5YR6/3) gravelly loam, brown (7.5YR5/4) moist, pinkish white (7.5YR8/2) ped surfaces; strong thick platy structure parting to medium platy; very hard, firm, slightly sticky and nonplastic; common thin continuous faint argillans lining common tubular pores and on fine pebbles; few distinct silica cutans on surfaces of peds; prominent white (10YR8/1) carbonate coatings on surfaces of peds; fine irregular soft white (10YR8/1) carbonate filaments; Stage II+ carbonate on and between rock fragments; 25 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a1)
- 3Btkb3** 99 to 119 cm. Pinkish gray (7.5YR7/2) gravelly sandy loam, brown (7.5YR5/4) moist; moderate very coarse to medium subangular blocky structure parting to fine subangular blocky; hard, friable, nonsticky and nonplastic; few thin discontinuous faint argillans on and bridging sand grains; very few thin distinct silica coatings in carbonate cemented areas and in pendants beneath rock fragments; Stage II carbonate on and between rock fragments; 5 percent channers and 25 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 3Bkb** 119 to 132 cm. Pinkish gray (7.5YR7/2) very gravelly sandy loam, brown (7.5YR5/4) moist; moderate coarse and medium subangular blocky structure parting to fine subangular blocky; slightly hard, friable, nonsticky and nonplastic; very few thin distinct silica cutans in pendants beneath rock fragments; Stage I+ carbonate coatings on rock fragments; 5 percent cobbles, 5 percent channers, and 25 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a3)
- 3Bckb** 132 to 168 cm. Very pale brown (10YR7/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; 5 percent cobbles and 40 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a4)
- 3C** 168 to 188 cm. Light gray (10YR7/2) very gravelly loamy sand, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; very few distinct silica cutans beneath rock fragments; Stage I carbonate coatings on rock fragments; 40 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a5)
- 4Bckb** 188 to 218 cm. Very pale brown (10YR7/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; very few thin discontinuous faint argillans beneath rock fragments; Stage I carbonate coatings on rock fragments; 15 percent pebbles; clear smooth boundary. (Unit A5 and sample A5a/A4a1)

- 4C** 218 to 249 cm. Light gray (10YR7/2) extremely gravelly loamy sand, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 20 percent cobbles and 40 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a/A4a2)
- 5Bkb** 249 to 267 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak coarse and medium subangular blocky structure parting to fine subangular blocky; slightly hard, friable, nonsticky and nonplastic; upper 3 cm has common tubular pores (root traces); common fine irregular soft white (10YR8/2) carbonate filaments; Stage I carbonate coatings on rock fragments; 15 percent pebbles; clear wavy boundary. (Unit A4 and sample A5a/A4a3)
- 5C** 267 to 279 cm. Very pale brown (10YR7/3) extremely gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; few distinct silica coatings beneath rock fragments; Stage I carbonate coatings on rock fragments; 20 percent cobbles and 40 percent pebbles. (Unit A4 and sample A5a/A4a4)

NOTES: The A horizon has been removed by heavy equipment. Presumably the platy structure in the BA1 horizon developed from the massive structure of the underlying BA2 horizon.

SOIL PROFILE WB-1357

Location: East wall of pit 4 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 19 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 122 cm.

Bk 122 to 140 cm. Light gray (10YR7/2) very channery sandy loam, yellowish brown (10YR5/4) moist; weak coarse and medium subangular blocky structure with weak thin and medium platy in upper 5 cm of horizon; hard, friable, slightly sticky and nonplastic; common thin discontinuous faint argillans on and bridging sand grains; thin prominent white (10YR8/1) carbonate lining medium and coarse tubular pores (root traces) and as a lamina capping the horizon; Stage I+ carbonate coatings on rock fragments; 30 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)

Ck 140 to 198 cm. Pale brown (10YR6/3) very channery loamy sand, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; few distinct silica cutans bridging and coating sand grains in carbonate cemented areas; common white (10YR8/1) carbonate coating and bridging sand grains in pendants beneath rock fragments; many layers of hard light gray (10YR7/2) carbonate cemented fine earth and pebbles, Stage II carbonate; 30 percent channers and 20 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a2)

2Bckb1 198 to 216 cm. Light gray (10YR7/2) very gravelly loamy sand/sandy loam, dark yellowish brown (10YR4/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I coatings on rock fragments; 5 percent cobbles and 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)

2Bckb2 216 to 259 cm. Light gray (10YR7/2) very gravelly loamy sand/sandy loam, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 5 percent cobbles and 35 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)

- 2C** 259 to 300 cm. Light gray (10YR7/2) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings remaining on sides and bottoms of rock fragments; 5 percent cobbles and 35 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a3)
- 3BCkb** 300 to 315 cm. Light gray (10YR7/2) very gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 15 percent cobbles and 35 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)
- 3C** 315 to 351 cm. Light gray (10YR7/2) very gravelly sandy loam, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; continuous prominent relict bedding; 15 percent cobbles and 35 percent pebbles. (Unit A4 and sample A4a2)

SOIL PROFILE WB-1364

Location: East wall of pit 4 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 19 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 104 cm.

Bk 104 to 122 cm. Light brownish gray (10YR6/2) very channery sandy loam, yellowish brown (10YR5/4) moist; moderate medium and thin platy structure; hard, friable, slightly sticky and slightly plastic; few thin faint argillane bridging sand grains; very few distinct silica cutans on surfaces of peds; prominent thin white (10YR8/1) carbonate on surfaces of peds; Stage II carbonate on and between rock fragments; 20 percent channers and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)

Bck 122 to 234 cm. Pale brown (10YR6/3) very channery sandy loam, brown (10YR5/3) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 5 percent cobbles, 20 percent channers, and 20 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)

2Bckb 234 to 244 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments overlying calcareous and siliceous laminae totaling 2 mm in thickness; 5 percent cobbles and 25 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)

2C 244 to 295 cm. Pale brown (10YR6/3) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; continuous faint relict bedding; 5 percent cobbles and 35 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a2)

3BCKb 295 to 320 cm. Light gray (10YR7/2) extremely cobbly sandy loam, yellowish brown (10YR5/4) moist; massive; soft, very friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 15 percent stones, 35 percent cobbles, and 35 percent pebbles. (Unit A4 and sample A4a1)

SOIL PROFILE WB-1369

Location: East wall of pit 4 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 19 August 1992

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 97 cm.

Bk 97 to 119 cm. Light gray (10YR7/2) very channery sandy loam, brown (10YR5/3) moist; weak medium and coarse subangular blocky structure with weak medium platy in upper 3 cm of horizon; hard, friable, slightly sticky and nonplastic; very few thin faint argillans bridging sand grains and lining pores; prominent thin white (10YR8/1) carbonate coatings on surfaces of peds and lining tubular pores (old root channels); fine irregular soft white (10YR8/1) carbonate filaments; Stage I+ carbonate coatings on rock fragments; 20 percent channers and 20 percent pebbles; clear irregular boundary. (Unit A6 and sample A6a1)

Bck 119 to 150 cm. Light gray (10YR7/2) very channery loamy sand, brown (10YR5/3) moist; massive; soft, very friable, nonsticky and nonplastic; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments; Stage I+ carbonate coatings on rock fragments; 20 percent channers and 40 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a2)

2Bkb 150 to 178 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium and coarse subangular blocky structure parting to fine subangular blocky with 45 percent massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 30 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)

2BCKb 178 to 231 cm. Very pale brown (10YR7/3) very gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 5 percent cobbles and 40 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)

- 2C** 231 to 262 cm. Pale brown (10YR6/3) very gravelly loamy sand, brown (10YR4/3) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; 35 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a3)
- 3Ck** 262 to 267 cm. Light gray (10YR7/2) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments; Stage I+ carbonate coatings on rock fragments; continuous faint relict bedding; 35 percent pebbles. (Unit A4 and sample A4a1)

SOIL PROFILE WB-1374

Location: East wall of pit 4 at RWMS

Described by: K.E. Snyder and S.M. Parsons

Sampled by: K.E. Snyder

Date described and sampled: 19 August 1982

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

Cover 0 to 107 cm.

Bk/BA 107 to 119 cm. Light gray (10YR7/2) very channery sandy loam, brown (10YR5/3) moist; moderate medium and thick platy structure (1/3 of horizon), weak fine and medium granular and subangular blocky where roots have been (1/3 of horizon), and (very hard, firm) weak medium platy and subangular blocky (1/3 of horizon); slightly hard, friable, slightly sticky and slightly plastic; few thin faint argillans lining medium pores; very few distinct silica cutans bridging sand grains in pendants beneath rock fragments; prominent white (10YR8/2) carbonate on surfaces of plates and subangular blocks; Stage I+ carbonate coatings on rock fragments; 35 percent channers and 15 percent pebbles; clear wavy boundary. (Unit A6 and sample A6a1)

Bck 119 to 170 cm. Very pale brown (10YR7/3) very channery loamy sand, brown (10YR5/3) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few distinct silica cutans bridging sand grains and pebbles in pendants beneath rock fragments and in carbonate cemented area; hard white (10YR8/2) carbonate cemented fine earth and pebbles (20 percent of horizon); Stage I+ carbonate coatings on rock fragments; 35 percent channers and 15 percent pebbles; abrupt wavy boundary. (Unit A6 and sample A6a2)

2Bkb 170 to 185 cm. Light gray (10YR7/2) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak coarse and medium subangular blocky structure with massive areas; slightly hard, friable, nonsticky and nonplastic; few thin discontinuous faint argillans beneath pebbles; Stage I+ carbonate coatings on rock fragments; 20 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a1)

- 2BCKb** 185 to 228 cm. Very pale brown (10YR7/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; massive; slightly hard, friable, nonsticky and nonplastic; Stage I+ carbonate coatings on rock fragments; discontinuous (less than 20 percent of horizon) faint relict bedding; 20 percent pebbles; clear wavy boundary. (Unit A5 and sample A5a2)
- 2C** 228 to 272 cm. Pale brown (10YR6/3) gravelly loamy sand, yellowish brown (10YR5/4) moist; single grained; loose, nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on rock fragments; continuous faint relict bedding; 25 percent pebbles; abrupt wavy boundary. (Unit A5 and sample A5a3)
- 3BCKb** 272 to 290 cm. Very pale brown (10YR7/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; massive; slightly hard, friable; nonsticky and nonplastic; Stage I carbonate coatings on rock fragments; 25 percent pebbles; clear wavy boundary. (Unit A4 and sample A4a1)
- 3Ck** 290 to 325 cm. Light gray (10YR7/2) very gravelly loamy sand, brown (10YR5/3) moist; single grained; loose, nonsticky and nonplastic; common (5 percent of horizon) thick (5 to 10 mm) white (10YR8/1) discontinuous layers of carbonate cemented fine earth and pebbles; Stage I carbonate coatings on rock fragments; etched carbonate paleocoatings on sides and bottom of rock fragments; continuous prominent relict bedding; 5 percent cobbles and 30 percent pebbles. (Unit A4 and sample A4a2)

NOTES: Apparently this description is from beneath a large bush that has been removed during site operations.

SOIL PROFILE WB-1630

Location: Survey point 4 in Pit 6 at RWMS

Described and sampled by: K.E. Snyder

Date described and sampled: 15 June 1994

Remarks: Matrix colors are for crushed and smoothed hand samples, while colors of surface features and concentrations are for undisturbed samples. All colors are for dry conditions unless noted otherwise. The textures given are field-determined.

DESCRIPTION

- Cb** 0 to 18 cm. Pale brown (10YR6/3) extremely gravelly loamy sand, dark yellowish brown (10YR4/4) moist; single grain with prominent relict bedding; loose, nonsticky and nonplastic; few moderately thick paleocarbonate coatings on sides of rock fragments; 25 percent channers and 30 percent pebbles; abrupt smooth boundary. (Unit A0 and sample a01)
- 2Ab** 18 to 21 cm. Light gray (10YR7/2) gravelly sandy loam, light yellowish brown (10YR6/4) moist; weak fine subangular blocky structure; soft, friable, nonsticky and nonplastic; common fine and medium vesicular and tubular pores; 20 percent pebbles; clear broken boundary. (Unit A0 and sample a02)
- 2Btkqb** 21 to 38 cm. Pale brown (10YR6/3) gravelly sandy loam, dark yellowish brown (10YR4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I carbonate and silica development; 20 percent pebbles; abrupt wavy boundary. (Unit A0 and sample a03)
- 2Btkqb** 38 to 51 cm. Pale brown (10YR6/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; few thin argillans on fine pebbles; Stage I carbonate and silica development; 20 percent pebbles with stone line along top of horizon; clear wavy boundary. (Unit A0 and sample a04)
- 2Bkb1** 51 to 67 cm. Pale brown (10YR6/3) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; Stage I carbonate development; 20 percent pebbles; clear wavy boundary. (Unit A0 and sample a05)
- 2Bkb2** 67 to 91 cm. Pale brown (10YR6/3) very gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I carbonate development; 35 percent pebbles, with pockets containing less than 15 percent pebbles; abrupt wavy boundary. (Unit A0 and sample a06)

- 3Btkb** 91 to 106 cm. Pinkish gray (7.5YR7/2) gravelly loam, brown (7.5YR5/4) moist; moderate medium and coarse subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few fine discontinuous tubular pores; many thin faint argillans on surfaces of peds and lining pores; Stage I carbonate development; 20 percent pebbles; clear wavy boundary. (Unit A0 and sample a07)
- 3Bkb** 106 to 131 cm. Light yellowish brown (10YR6/4) gravelly sandy loam, yellowish brown (10YR5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; Stage I carbonate development; 20 percent pebbles. (Unit A0 and sample a08)

APPENDIX B

SOIL CHARACTERIZATION DATA

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-6mm	6-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
RC01P01A6a01	A	0.9	10	7.4	69.8	21.8	8.3	SL	L	GRX
RC01P01A6a02	Bk1	13.3	14.4	9.8	74.7	19.8	6.5	SL	SL	CB
RC01P01A6a03	Bk2	1.3	34.1	15.1	78.7	17.6	3.8	LS	COSL	GRV
RC01P01A6a04	Bck	0.4	27.7	22.2	63.6	12.0	4.6	LS	COS	GRV
RC01P01A5a05	2Btkb	9.2	26.9	18.0	69.6	18.7	11.6	SL	SL	GRV
RC01P01A5a06	2Bkb1	17.6	28.2	14.3	73.0	20.9	6.1	SL	COSL	GRV
RC01P01A5a07	2Bkb2	15.5	41.2	10.2	73.1	20.6	6.4	SL	SL	GRX
RC01P01A5a08	2Bkb3	25.6	27.9	9.0	60.8	16.6	2.6	LS	COSL	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.06mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
RC01P01A6a01	A	5.3	8.6	9.2	20.1	26.6	12.1	9.7	8.3
RC01P01A6a02	Bk1	9.5	9.7	9.9	19.5	26.1	13.2	6.6	6.5
RC01P01A6a03	Bk2	11.6	9.6	10.5	21.7	25.4	11.6	6.9	3.8
RC01P01A6a04	Bck	18.7	15.9	14.8	18.6	16.6	7.6	4.3	4.5
RC01P01A5a05	2Btkb	14.2	13.2	11.2	16.5	14.6	10.2	8.6	11.6
RC01P01A5a06	2Bkb1	10.7	11.1	10.4	19.1	21.6	11.6	9.5	6.1
RC01P01A5a07	2Bkb2	9.8	9.1	10.3	22.8	21.1	9.1	11.4	6.4
RC01P01A5a08	2Bkb3	11.2	10.5	10.7	22.1	26.2	13.4	3.3	2.6

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
RC01P01A6a01	A	9.14	5.6			0.315	0.057
RC01P01A6a02	Bk1	9.40	7.6			0.27	0.065
RC01P01A6a03	Bk2	9.43	4.3			0.287	0.096
RC01P01A6a04	Bck	8.66	1.7			0.292	0.081
RC01P01A5a06	2Btkb	7.77	0.2			0.372	0.086
RC01P01A5a06	2Bkb1	8.53	8.1			0.274	0.113
RC01P01A5a07	2Bkb2	8.95	15.3			0.222	0.107
RC01P01A5a08	2Bkb3	8.65	5.5			0.187	0.093

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RVMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
SC01P01A5a01	A/BAk	27.9	20.6	9.3	62.6	20.9	16.5	SL	L/SL	GRV
SC01P01A5a02	2Bkb	8.9	33.8	17.5	83.3	11.6	5.1	LS	SL	GRV
SC01P01A5a03	2Bkmb	30.8	34.6	8.5	85.9	10.4	3.7	LS	LS	GRV
SC01P01A5a04	2Bkqb	9.2	41.3	16.7	88.2	9.4	2.4	S	S	GRV
SC01P01A5a05	2Bkb'	8.2	44.2	13.6	88.0	9.4	2.6	S	S	GRV
SC01P01A5a06	2Bckb	6.4	24.9	21.5	91.4	6.3	2.4	S	S	GRV
SC01P01A5a07	2Cb	0.5	32.4	21.0	93.9	3.6	2.6	S	S	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RVMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
SC01P01A5a01	A/BAk	8.6	10.9	9.4	14.8	18.9	11.3	9.6	16.5
SC01P01A5a02	2Bkb	24.4	17.8	11.7	14.9	14.5	6.2	5.3	5.1
SC01P01A5a03	2Bkmb	19.5	18.1	15.0	18.3	15.0	5.1	5.3	3.7
SC01P01A5a04	2Bkqb	17.9	21.9	17.2	17.7	13.5	5.7	3.8	2.4
SC01P01A5a05	2Bkb'	21.8	17.9	15.4	18.0	14.8	5.5	3.9	2.6
SC01P01A5a06	2Bckb	28.7	24.9	15.4	12.9	9.4	3.7	2.6	2.4
SC01P01A5a07	2Cb	22.9	25.7	20.3	16.3	7.8	2.4	1.2	2.6

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC01P01A5a01	A/BAk	8.87	9.0			0.320	0.102
SC01P01A5a02	2Bkb	8.95	9.6			0.145	0.084
SC01P01A5a03	2Bkmb	8.82	14.1			0.089	0.118
SC01P01A5a04	2Bkqb	9.40	5.4			0.169	0.093
SC01P01A5a05	2Bkb'	9.59	12.4			0.095	0.083
SC01P01A5a06	2BCkb	9.41	7.6			0.088	0.072
SC01P01A5a07	2Cb	8.28	1.8			0.176	0.046

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
SC01P02A5a01	A	1.1	16.4	11.4	56.2	31.5	12.3	SL	SL/L	GR
SC01P02A5a02	BAk	1.5	26.4	15.3	66.9	20.3	12.8	SL	SCL	GRV
SC01P02A5a03	2Bkb	0.8	41.0	18.4	86.4	9.6	3.9	LS	SL	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
SC01P02A5a01	A	6.6	6.3	6.7	13.8	20.5	17.9	13.6	12.3
SC01P02A5a02	BAk	15.7	12.2	8.4	13.0	17.5	11.6	8.7	12.8
SC01P02A5a03	2Bkb	23.3	18.1	14.8	16.7	13.6	5.7	3.9	3.9

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC01P02A5a01	A	8.79	5.3			0.487	0.091
SC01P02A5a02	BAk	8.89	3.9			0.263	0.069
SC01P02A5a03	2Bkb	8.71	9.9			0.118	0.071

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
SC02P01A5a01	A	10.8	27.8	10.9	55.0	30.7	14.4	SL	FSL	GRX
SC02P01A5a02	Btkq	10.5	37.0	12.8	61.0	21.4	17.6	SL	SCL	GRV
SC02P01A5a03	2Bkb1	32.5	33.7	9.4	81.6	13.1	5.3	LS	LS	GRV
SC02P01A5a04	2Bkb2	16.0	40.6	14.8	86.7	10.2	3.1	LS	LS	GRV
SC02P01A5a05	2Bkb3	4.6	41.7	20.0	89.6	8.4	3.0	S	COS	GRV
SC02P01A5a06	2BCKb	0.9	45.4	25.1	91.2	6.2	2.7	S	COS	GRX

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.06mm	0.06-0.02mm	0.2-0.002mm	<0.002mm
SC02P01A5a01	A	7.9	7.5	6.2	13.8	19.5	13.8	16.9	14.4
SC02P01A5a02	Btkq	11.5	9.6	8.3	14.9	16.8	9.4	12.0	17.6
SC02P01A5a03	2Bkb1	10.2	12.7	11.2	22.9	24.6	8.1	5.0	5.3
SC02P01A5a04	2Bkb2	18.2	13.8	10.1	21.4	23.1	7.3	3.0	3.1
SC02P01A5a05	2Bkb3	21.9	20.4	14.8	17.7	13.7	5.1	3.3	3.0
SC02P01A5a06	2BCKb	35.7	26.4	11.1	9.8	8.1	3.5	2.7	2.7

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate Equivalent (wt %)	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
				Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC02P01A5a01	A	8.88	5.7			0.388	0.074
SC02P01A5a02	Btkq	8.84	3.8			0.346	0.083
SC02P01A5a03	2Bkb1	8.96	14.4			0.103	0.080
SC02P01A5a04	2Bkb2	9.62	9.9			0.084	0.124
SC02P01A5a05	2Bkb3	8.42	6.7			0.149	0.093
SC02P01A5a06	2Bckb	8.96	4.0			0.169	0.063

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
SC03P01A6a01	A	2.9	20.0	17.3	81.8	14.2	4.0	LS	LS	GR
SC03P01A6a02	BAk	2.1	20.9	15.6	83.3	12.9	3.8	LS	LS	GR
SC03P01A6a03	Bk1	1.5	16.7	14.9	84.7	11.5	3.8	LS	LS	GR
SC03P01A6a04	Bk2	6.0	20.8	13.8	83.5	12.7	3.8	LS	LS	GRV
SC03P01A6a05	Bk3	6.9	32.4	15.4	85.4	10.5	4.1	LS	LCOS	GRV
SC03P01A5a06	2Bk4	3.6	31.4	21.8	89.8	7.2	3.0	S	COS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
SC03P01A6a01	A	15.4	15.8	14.2	19.6	16.9	9.0	5.3	4.0
SC03P01A6a02	BAk	16.6	15.2	15.3	19.9	16.2	8.9	4.0	3.8
SC03P01A6a03	Bk1	14.1	16.4	17.4	21.6	15.3	6.7	4.8	3.8
SC03P01A6a04	Bk2	11.7	13.3	16.1	24.0	18.4	7.6	5.1	3.8
SC03P01A6a05	Bk3	13.0	17.4	18.1	22.4	14.5	5.7	4.8	4.1
SC03P01A5a06	2Bk4	18.8	20.0	20.7	20.3	10.0	3.7	3.6	3.0

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC03P01A6a01	A	9.24	3.4			0.201	0.048
SC03P01A6a02	BAk	9.63	3.3			0.176	0.041
SC03P01A6a03	Bk1	9.89	2.3			0.198	0.058
SC03P01A6a04	Bk2	9.88	2.4			0.198	0.069
SC03P01A6a05	Bk3	9.90	2.8			0.157	0.068
SC03P01A5a06	2Bk4	10.07	2.2			0.147	0.044

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.05-0.002mm	<0.002mm			
SC04P01A6a01	A	8.2	16.0	23.4	53.3	22.0	24.8	SCL	SL	CBX
SC04P01A6a02	Bk1	12.9	22.5	11.6	79.3	10.9	9.8	LS	LS	GR
SC04P01A6a03	Bk2	13.7	40.9	12.6	81.2	10.2	8.6	LS	COS	GRV
SC04P01A6a04	Bk3	11.6	31.0	17.7	86.7	2.9	10.4	LS	LCOS	GRV
SC04P01A6a05	Bk4	12.5	35.1	18.6	84.2	6.0	9.9	LS	LCOS	GRV
SC04P01A6a06	Bk5	14.3	41.1	6.4	84.1	7.0	8.9	LS	LCOS	GRV
SC04P01A6a07	Bk6	6.6	24.5	42.4	85.4	5.9	8.7	LS	SL	GRV
SC04P01A6a08	Bk7	15.8	27.1	10.9	89.6	2.7	7.7	S	S	GRX
SC04P01A6a09	Bk8	8.3	29.6	33.8	89.1	5.2	5.7	S	S	GRV
SC04P01A6a10	Bk9	11.8	29.7	23.3	85.0	7.5	7.5	LS	S	GRX

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.06mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
SC04P01A6a01	A	5.4	7.9	9.4	16.4	14.1	7.6	14.3	24.8
SC04P01A6a02	Bk1	11.2	16.7	16.6	21.8	13.0	4.0	6.8	9.8
SC04P01A6a03	Bk2	16.0	17.3	16.3	20.2	11.4	3.9	6.3	8.6
SC04P01A6a04	Bk3	12.9	18.5	23.0	23.3	9.1	1.2	1.7	10.4
SC04P01A6a05	Bk4	15.0	19.7	20.0	20.1	9.4	2.3	3.6	9.9
SC04P01A6a06	Bk5	7.7	13.5	20.1	29.7	13.1	3.3	3.6	8.9
SC04P01A6a07	Bk6	13.7	15.9	20.7	24.9	10.2	1.8	4.1	8.7
SC04P01A6a08	Bk7	13.7	24.4	22.5	21.4	7.7	1.2	1.5	7.7
SC04P01A6a09	Bk8	9.9	16.3	22.1	29.1	11.6	2.3	2.9	5.7
SC04P01A6a10	Bk9	12.1	17.2	16.6	24.2	14.9	4.1	3.4	7.5

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate Equivalent (wt %)	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
				Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC04P01A6a01	A	9.18	2.6			0.343	0.111
SC04P01A6a02	Bk1	9.64	3.1			0.231	0.102
SC04P01A6a03	Bk2	8.43	4.8			0.168	0.096
SC04P01A6a04	Bk3	8.30	6.5			0.151	0.089
SC04P01A6a05	Bk4	8.57	4.6			0.158	0.066
SC04P01A6a06	Bk5	8.69	2.8			0.190	0.064
SC04P01A6a07	Bk6	8.90	2.1			0.179	0.064
SC04P01A6a08	Bk7	9.34	1.9			0.181	0.056
SC04P01A6a09	Bk8	9.02	2.2			0.184	0.053
SC04P01A6a10	Bk9	9.16	2.1			0.197	0.059

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
SC05P01A5a01	A/Btkm1	6.4	21.1	24.1	41.2	19.6	39.2	CL	L	GRV
SC05P01A5a02	Btkm2	6.9	29.7	46.5	68.3	8.2	23.5	SCL	SL	GRV
SC05P01A5a03	Bk1	10.5	32.8	30.9	83.7	5.6	10.6	LS	LS	GRV
SC05P01A5a04	Bk2	9.0	34.2	30.3	88.0	6.5	5.6	LS	LS	GRV
SC05P01A5a05	Bk3	11.3	35.0	28.4	86.2	5.4	8.4	LS	LS	GRV
SC05P01A5a06	Bck	5.7	31.9	44.5	85.7	10.5	3.8	LS	LS	GRX
SC05P01A5a07	Ck	16.8	42.6	11.5	84.9	9.9	5.2	LS	S	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
SC05P01A5a01	A/Btkm1	1.5	3.7	9.3	15.9	10.8	5.9	13.7	39.2
SC05P01A5a02	Btkm2	7.9	10.2	17.2	23.4	9.7	1.9	6.4	23.5
SC05P01A5a03	Bk1	10.8	17.9	25.1	24.0	5.9	2.9	2.7	10.6
SC05P01A5a04	Bk2	8.5	16.7	25.1	26.2	11.5	2.0	4.5	5.6
SC05P01A5a05	Bk3	11.7	18.5	25.1	22	8.9	3.3	2.1	8.4
SC05P01A5a06	Bck	9.3	17.2	24.4	22.6	12.2	4.3	6.2	3.8
SC05P01A5a07	Ck	14.1	15.8	20.8	24.1	10.1	5.9	4.0	5.2

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC05P01A5a01	A/Btkm1	9.02	8.4			0.396	0.126
SC05P01A5a02	Btkm2	8.98	14.2			0.243	0.093
SC05P01A5a03	Bk1	9.02	14.2			0.148	0.084
SC05P01A5a04	Bk2	8.93	17.1			0.149	0.098
SC05P01A5a05	Bk3	9.46	18.0			0.182	0.083
SC05P01A5a06	Bck	8.86	16.1			0.106	0.117
SC05P01A5a07	Ck	8.93	24.1			0.140	0.089

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
SC07P01A5a01	A1	10.8	27.6	14.1	54.6	33.8	11.5	SL	SL	GRX
SC07P01A5a02	A2	4.4	21.6	17.0	54.8	35.7	9.5	SL	L	GRV
SC07P01A5a03	Bk1	0.9	27.5	16.1	62.0	31.9	6.1	SL	L	GRV
SC07P01A5a04	Bk2	4.1	40.1	14.9	75.6	20.2	4.1	LS	SL	GRX
SC07P01A5a05	Bk3	25.9	26.6	9.2	67.3	29.8	2.9	SL	SL	GRV
SC07P01A5a06	Btk1	16.7	26.2	13.8	63.0	31.6	5.5	SL	SCL	GRV
SC07P01A5a07	Btk2	9.2	31.4	13.3	59.7	34.1	6.2	SL	SL	GRV
SC07P01A5a08	Bk	12.3	31.4	13.5	65.7	30.0	4.3	SL	SL	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.06mm	0.06-0.02mm	0.2-0.002mm	<0.002mm
SC07P01A5a01	A1	9.6	7.1	5.2	13.0	19.6	16.3	17.6	11.5
SC07P01A5a02	A2	10.0	8.1	5.5	13.6	17.5	20.3	15.4	9.5
SC07P01A5a03	Bk1	13.5	8.8	5.9	14.8	19.1	19.9	12.1	6.1
SC07P01A5a04	Bk2	12.3	8.6	7.1	20.6	27.2	14.2	6.1	4.1
SC07P01A5a05	Bk3	9.0	7.5	5.9	17.5	27.5	19.7	10.1	2.9
SC07P01A5a06	Btk1	8.2	6.6	5.2	16.0	27.0	20.6	11.0	5.5
SC07P01A5a07	Btk2	8.4	7.5	6.0	16.4	21.4	21.1	13.0	6.2
SC07P01A5a08	Bk	3.0	8.2	6.5	18.5	22.3	19.9	10.1	4.3

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC07P01A5a01	A1	9.14	1.5			0.347	0.088
SC07P01A5a02	A2	9.20	1.3			0.339	0.085
SC07P01A5a03	Bk1	8.79	1.8			0.269	0.077
SC07P01A5a04	Bk2	8.64	8.6			0.166	0.062
SC07P01A5a05	Bk3	8.22	4.9			0.209	0.069
SC07P01A5a06	Btk1	8.05	5.1			0.232	0.070
SC07P01A5a07	Btk2	7.90	4.2			0.268	0.072
SC07P01A5a08	Bk	8.04	7.4			0.216	0.063

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
SC09P01A6a01	A	20.6	16.1	7.4	55.4	32.2	12.4	SL	L	CBV
SC09P01A6a02	Bk1	29.7	29.9	5.7	69.7	24.3	6.0	SL	L	GRV
SC09P01A6a03	Bk2	5.9	48.0	13.8	76.9	19.5	3.6	LS	SL	GRX
SC09P01A6a04	Btk1	4.9	18.1	13.5	59.8	35.8	4.4	SL	SL	GRV
SC09P01A6a05	Btk2	19.0	19.2	14.1	57.7	28.4	13.6	SL	SL	GRV
SC09P01A6a06	BC	16.9	22.6	10.9	67.8	24.3	7.9	SL	SL	STV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.06mm	0.06-0.02mm	0.2-0.002mm	<0.002mm
SC09P01A6a01	A	4.0	5.5	5.5	14.3	24.7	19.4	12.8	12.4
SC09P01A6a02	Bk1	9.9	10.0	9.0	19.4	21.4	15.2	9.1	6.0
SC09P01A6a03	Bk2	6.0	11.7	10.2	18.7	20.0	10.7	8.8	3.6
SC09P01A6a04	Btk1	8.8	7.0	6.4	16.6	21.0	13.3	22.5	4.4
SC09P01A6a05	Btk2	9.7	7.5	6.4	16.2	18.0	15.0	13.4	13.6
SC09P01A6a06	BC	7.0	9.6	7.3	16.2	19.7	13.0	11.3	7.9

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
SC09P01A6a01	A	9.12	1.9			0.413	0.084
SC09P01A6a02	Bk1	9.15	3.1			0.254	0.079
SC09P01A6a03	Bk2	9.41	3.4			0.224	0.084
SC09P01A6a04	Btk1	9.64	1.0			0.349	0.084
SC09P01A6a05	Btk2	9.70	0.8			0.351	0.084
SC09P01A6a06	BC	8.68	0.9			0.282	0.068

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST01P01A6a01	A	3.5	18.7	7.6	80.9	14.5	4.6	LFS	LS	GRV
ST01P01A6a02	Bw	4.5	28.6	12.8	78.6	16.5	4.9	LS	SL	GR
ST01P01A6a03	Bck	3.8	38.3	18.6	88.3	8.7	5.0	COS	LS	GRV
ST01P01A6a04	2Btkqb1	1.5	23.2	15.7	71.6	19.3	9.1	SL	SL	GR
ST01P01A6a05	2Btkqb2	6.3	46.3	18.4	87.4	6.5	6.1	LCOS	LS	GRV
ST01P01A5a06	3Btkmb1	8.5	41.4	20.2	84.1	5.6	10.3	LCOS	SL	GR
ST01P01A5a07	3Btkmb2	10.2	28.2	14.7	77.1	10.3	12.6	FSL	SL	GR
ST01P01A5a08	3Btkb	10.3	33.2	11.5	83.6	9.6	7.0	LCOS	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST01P01A6a01	A	5.0	6.1	8.8	28.5	32.5	9.8	4.8	4.6
ST01P01A6a02	Bw	12.5	9.7	10.8	23.3	22.3	9.4	7.1	4.9
ST01P01A6a03	Bck	13.2	13.5	15.4	27.2	17.1	6.0	3.7	5.0
ST01P01A6a04	2Btkqb1	11.7	11.0	10.0	19.9	19.1	8.1	11.1	9.1
ST01P01A6a05	2Btkqb2	15.5	19.5	18.0	22.3	12.2	1.4	5.1	6.1
ST01P01A5a06	3Btkmb1	25.3	23.3	15.7	13.1	6.8	1.1	4.5	10.3
ST01P01A5a07	3Btkmb2	6.2	7.7	10.4	29.4	23.5	4.5	5.8	12.6
ST01P01A5a08	3Btkb	14.0	12.5	12.8	23.8	20.4	3.9	5.6	7.0

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 6 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST01P01A6a01	A	8.84	2.0	0.014	0.037	0.411	0.065
ST01P01A6a02	Bw	9.01	2.8	0.007	0.029	0.326	0.056
ST01P01A6a03	BCk	9.35	3.6	0.006	0.026	0.239	0.061
ST01P01A6a04	2Btkqb1	9.30	2.6	0.008	0.024	0.336	0.073
ST01P01A6a05	2Btkqb2	8.82	9.5	0.006	0.019	0.200	0.077
ST01P01A5a06	3Btkmb1	9.00	1.7	0.008	0.023	0.274	0.066
ST01P01A5a07	3Btkmb2	8.02	5.1	0.007	0.030	0.335	0.079
ST01P01A5a08	3Btkb	8.58	4.8	0.008	0.035	0.324	0.109

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
ST01P02A6a01	AC	9.0	37.7	17.1	88.0	8.2	3.8	COS	S	CNV
ST01P02A6a02	C1	7.2	39.3	17.9	86.4	8.9	4.6	LCOS	LS	GRV
ST01P02A6a03	C2	3.3	35.3	33.1	86.2	9.5	4.2	LCOS	S	CNX
ST01P02A6a04	C3	1.9	33.9	21.5	87.8	8.7	3.5	COS	LS	GRV
ST01P02A6a05	2Btkqb1	2.8	20.3	15.7	74.1	20.2	5.7	COSL	SL	GR
ST01P02A6a06	2Btkqb2	12.8	31.7	17.5	87.0	8.5	6.5	LCOS	LS	GRV
ST01P02A6a07	2BCkb	9.1	37.3	17.7	87.8	3.8	8.4	LCOS	LS	GRV
ST01P02A5a08	3Btkmb	5.8	31.5	16.8	80.2	8.3	11.5	SL	LS	GR
ST01P02A5a09	3Btkb	11.5	29.9	15.6	84.8	8.3	6.9	LCOS	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST01P02A6a01	AC	17.0	16.5	16.4	22.8	15.3	5.0	3.2	3.8
ST01P02A6a02	C1	14.8	14.6	16.2	23.8	17.0	5.3	3.7	4.6
ST01P02A6a03	C2	25.8	18.0	11.8	17.0	13.6	5.0	4.5	4.2
ST01P02A6a04	C3	19.4	23.9	15.8	17.3	11.4	4.8	3.8	3.5
ST01P02A6a05	2Btkqb1	15.2	11.1	9.3	18.8	18.7	9.5	10.7	5.7
ST01P02A6a06	2Btkqb2	25.6	20.7	13.1	16.7	10.8	2.3	4.2	6.5
ST01P02A6a07	2BCkb	19.9	22.0	18.1	18.8	9.1	1.2	2.6	8.4
ST01P02A5a08	3Btkmb	7.3	11.0	13.6	26.0	22.3	3.5	4.8	11.5
ST01P02A5a09	3Btkb	14.3	17.6	14.5	20.2	18.1	4.0	4.2	6.9

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST01P02A6a01	AC	8.97	1.8	0.010	0.030	0.268	0.047
ST01P02A6a02	C1	9.08	2.4	0.008	0.031	0.255	0.044
ST01P02A6a03	C2	9.13	2.1	0.006	0.020	0.202	0.039
ST01P02A6a04	C3	9.10	2.2	0.017	0.026	0.226	0.046
ST01P02A6a05	2Btkqb1	8.84	3.5	0.007	0.024	0.324	0.064
ST01P02A6a06	2Btkqb2	9.07	4.7	0.006	0.023	0.227	0.068
ST01P02A6a07	2Bckb	8.44	3.4	0.004	0.016	0.247	0.063
ST01P02A5a08	3Btkmb	8.42	8.9	0.009	0.028	0.285	0.070
ST01P02A5a09	3Btkb	8.81	5.6	0.010	0.021	0.269	0.061

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
ST01P03A6a01	A	0.8	9.9	8.6	86.6	9.1	4.3	LFS	LS	CN
ST01P03A6a02	Bw	1.5	7.8	6.3	85.7	9.7	4.7	LFS	SL	na
ST01P03A6a03	Bk	6.0	17.5	8.9	85.6	9.7	4.7	LFS	SL	CN
ST01P03A6a04	2Btkqb1	0.6	19.0	16.9	85.3	9.6	5.1	LCOS	SL	GR
ST01P03A6a05	2Btkqb2	18.8	22.9	15.5	84.6	9.1	6.3	LS	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST01P03A6a01	A	3.0	3.7	7.1	38.7	34.1	5.9	3.2	4.3
ST01P03A6a02	Bw	3.3	4.0	8.1	41.0	29.4	5.8	3.9	4.7
ST01P03A6a03	Bk	6.1	6.6	9.1	38.2	26.5	5.5	4.1	4.7
ST01P03A6a04	2Btkqb1	21.7	14.2	10.6	22.0	16.8	4.2	5.3	5.1
ST01P03A6a05	2Btkqb2	9.2	11.2	12.8	30.1	21.3	4.8	4.3	6.3

Table A-3. Chemical Parameters of the Fine-Earth (< 2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST01P03A6a01	A	9.08	2.1	0.009	0.031	0.378	0.06
ST01P03A6a02	Bw	8.98	3.0	0.013	0.032	0.352	0.053
ST01P03A6a03	Bk	8.22	4.3	0.004	0.016	0.337	0.079
ST01P03A6a04	2Btkqb1	8.08	2.3	0.006	0.015	0.291	0.060
ST01P03A6a05	2Btkqb2	7.95	5.9	0.003	0.016	0.263	0.072

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.09mm	0.05-0.002mm	<0.002mm			
ST02P01A6a01	A	0.0	7.8	7.1	69.8	26.5	3.7	VFSL	VFSL	GR
ST02P01A6a02	BA	9.6	24.5	8.3	74.2	21.4	4.4	FSL	L	GR
ST02P01A6a03	Bk1	5.7	44.2	10.3	78.5	17.1	4.3	LS	SL	GRV
ST02P01A6a04	Bk2	7.5	39.2	13.6	85.4	11.9	2.7	LCOS	SL	SL
ST02P01A6a05	Bck	3.2	38.2	17.6	86.4	9.9	3.7	LCOS	SL	GRV
ST02P01A6a06	2Btkb	6.9	23.5	13.1	68.6	23.3	8.1	FSL	L	GR

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST02P01A6a01	A	3.9	4.6	4.8	19.2	37.3	19.2	7.4	3.7
ST02P01A6a02	BA	7.0	6.1	6.1	21.3	33.7	14.8	6.6	4.4
ST02P01A6a03	Bk1	11.5	8.4	7.7	21.0	29.9	12.1	5.0	4.3
ST02P01A6a04	Bk2	17.4	14.7	10.4	18.1	24.8	8.4	3.5	2.7
ST02P01A6a05	Bck	14.8	17.0	14.7	22.1	17.8	5.7	4.2	3.7
ST02P01A6a06	2Btkb	9.5	7.5	7.2	19.8	24.5	11.1	12.2	8.1

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST02P01A6a01	A	8.61	0.7	0.020	0.053	0.460	0.055
ST02P01A6a02	BA	8.63	2.7	0.009	0.034	0.402	0.051
ST02P01A6a03	Bk1	8.86	7.5	0.006	0.026	0.352	0.045
ST02P01A6a04	Bk2	9.06	1.6	0.004	0.018	0.253	0.038
ST02P01A6a05	Bck	9.53	4.2	0.005	0.021	0.265	0.047
ST02P01A6a06	2Btkb	9.61	5.6	0.009	0.035	0.341	0.063

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-8mm	6-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST02P02A6a02	A1/A2	3.9	32.6	20.4	83.5	12.2	4.2	LCOS	SL	GR
ST02P02A6a03	Bk1	9.5	34.9	10.2	94.5	1.2	4.3	S	FSL	GR
ST02P02A6a04	Bk2	4.3	41.7	12.8	85.5	11.9	2.6	LCOS	SL	GRV
ST02P02A6a05	2Btkb	2.2	28.3	13.9	72.7	20.0	7.4	FSL	L	GR
ST02P02A5a06	2Bkqb	17.5	35.4	14.3	85.7	10.6	3.7	LS	SL	GRV
ST02P02A5a07	2Bkb	24.9	27.1	12.7	85.9	10.9	3.2	LCOS	SL	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST02P02A6a02	A1/A2	15.2	14.3	11.4	21.6	21.2	8.1	4.2	4.2
ST02P02A6a03	Bk1	9.3	14.6	23.8	34.7	12.0	4.0	5.2	4.3
ST02P02A6a04	Bk2	12.2	12.6	12.6	24.3	23.8	7.8	4.1	2.6
ST02P02A5a05	2Btkb	7.8	8.2	7.9	22.3	26.5	10.7	9.3	7.4
ST02P02A5a06	2Bkqb	13.6	9.8	8.6	23.9	29.7	7.2	3.3	3.7
ST02P02A5a07	2Bkb	16.3	10.9	9.2	24.7	24.9	6.7	4.2	3.2

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate Equivalent (wt %)	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
				Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST02P02A6a02	A1/A2	8.87	3.0	0.012	0.040	0.293	0.041
ST02P02A6a03	Bk1	8.81	6.8	0.008	0.028	0.314	0.047
ST02P02A6a04	Bk2	8.83	4.8	0.005	0.026	0.299	0.051
ST02P02A5a05	2Btkb	8.80	6.2	0.007	0.029	0.366	0.08
ST02P02A5a06	2Bkqb	9.25	8.9	0.003	0.024	0.145	0.051
ST02P02A5a07	2Bkb	9.69	7.2	0.004	0.020	0.178	0.059

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.05-0.002mm	<0.002mm			
ST02P03A6a01	A1/A2	3.8	26.4	10.6	72.2	23.5	4.3	VFSL	VFSL	GR
ST02P03A6a02	BAk	2.7	24.0	12.0	76.0	19.0	4.9	VFSL	VFSL	GR
ST02P03A6a03	Bk1	12.2	23.6	14.3	60.6	16.7	3.6	SL	FSL	GR
ST02P03A6a04	Bk2	26.0	26.2	8.3	61.9	15.7	2.5	LS	L	GRV
ST02P03A6a05	Bk3	7.5	33.7	19.3	65.5	11.6	2.9	LCOS	LS	GRV
ST02P03A5a06	2Bkqb	11.6	48.2	12.7	62.7	11.5	5.8	LCOS	SL	GR
ST02P03A5a07	2Bkb	15.1	37.6	13.1	67.6	9.7	2.7	COS	SL	GR
ST02P03A5a08	2Cb	2.6	33.6	25.3	61.6	4.8	3.7	COS	S	GRX
ST02P03A5a09	3Btkb	19.1	37.5	15.2	77.7	14.9	7.5	LCOS	LS	GRV
ST02P03A5a10	3Bkb	5.1	26.0	20.4	65.1	11.3	3.6	LCOS	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.6mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST02P03A6a01	A1/A2	7.0	4.9	5.0	18.3	37.0	18.2	5.2	4.3
ST02P03A6a02	BAk	8.6	6.9	5.5	18.3	36.7	13.6	5.4	4.9
ST02P03A6a03	Bk1	13.6	11.6	8.4	18.7	28.2	11.3	4.4	3.6
ST02P03A6a04	Bk2	9.2	8.8	7.8	21.4	34.7	12.6	3.1	2.5
ST02P03A6a05	Bk3	22.4	14.9	9.0	16.0	23.3	8.6	3.1	2.9
ST02P03A5a06	2Bkqb	16.2	11.8	9.9	21.8	23.0	6.2	5.3	5.8
ST02P03A5a07	2Bkb	16.7	10.8	8.8	22.3	29.0	6.6	3.2	2.7
ST02P03A5a08	2Cb	31.1	21.2	13.7	15.2	10.3	2.6	2.1	3.7
ST02P03A5a09	3Btkb	14.2	11.0	10.2	21.2	21.1	7.9	7.0	7.5
ST02P03A5a10	3Bkb	16.6	13.7	10.3	21.3	23.2	6.9	4.4	3.6

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST02P03A6a01	A1/A2	8.73	1.8			0.418	0.058
ST02P03A6a02	BAk	8.85	3.1	0.010	0.030	0.404	0.059
ST02P03A6a03	Bk1	8.88	5.3	0.007	0.028	0.354	0.061
ST02P03A6a04	Bk2	8.98	6.1	0.005	0.024	0.333	0.052
ST02P03A6a05	Bk3	9.24	5.1	0.004	0.015	0.273	0.054
ST02P03A6a06	2Bkqb	9.15	15.7	0.003	0.028	0.199	0.080
ST02P03A6a07	2Bkb	8.61	4.3	0.004	0.020	0.242	0.077
ST02P03A6a08	2Cb	8.87	3.1	0.004	0.018	0.218	0.054
ST02P03A6a09	3Btkb	8.87	13.4	0.004	0.020	0.233	0.078
ST02P03A6a10	3Bkb	9.09	7.5	0.005	0.022	0.213	0.060

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST02P04A6a01	A	3.0	47.9	14.7	79.4	16.5	4.1	LS	L	GRV
ST02P04A6a02	AC	4.0	47.4	15.7	80.3	14.6	5.2	LCOS	SL	GRV
ST02P04A6a03	Bkb	5.8	32.6	15.9	77.9	14.9	7.2	LCOS	L	GRV
ST02P04A5a04	2Bkqb	11.7	37.2	14.8	79.4	15.1	5.5	LS	SL	GR
ST02P04A5a05	2Bkb	39.4	24.6	7.8	85.1	11.4	3.6	LS	SL	GRV
ST02P04A5a06	2Ckb	9.0	37.1	17.4	83.8	13.2	3.0	LCOS	S	GRX
ST02P04A5a07	3Btkb	11.2	34.6	18.1	79.6	12.2	8.2	COSL	SL	GRV
ST02P04A5a07	3Btkb	16.5	41.8	5.7	78.6	12.1	9.3	COSL	SL	GRV
ST02P04A5a08	3Bkb	4.3	43.3	17.2	89.1	8.2	3.7	COS	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST02P04A6a01	A	11.3	8.8	8.3	22.2	28.8	12.1	4.3	4.1
ST02P04A6a02	AC	18.1	14.2	10.7	18.6	16.8	8.7	5.8	5.2
ST02P04A6a03	Bkb	14.3	12	9.9	20.4	21.4	7.9	6.9	7.2
ST02P04A5a04	2Bkqb	10.4	11.3	9.3	22.3	26.1	8.8	6.5	5.5
ST02P04A5a05	2Bkb	10.2	10.1	10.7	27.0	27.0	7.1	4.3	3.6
ST02P04A5a06	2Ckb	17.1	13.9	11.2	19.8	21.7	8.6	4.8	3.0
ST02P04A5a07	3Btkb	14.5	13.8	12.2	21.5	17.5	5.9	6.3	8.2
ST02P04A5a07	3Btkb	10.3	9.5	9.9	26.4	22.5	6.2	5.9	9.3
ST02P04A5a08	3Bkb	20.4	15.8	12.8	21.8	17.5	4.9	3.3	3.7

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate Equivalent (wt %)	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
				Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST02P04A6a01	A	8.75	3.9	0.028	0.034	0.301	0.039
ST02P04A6a02	AC	8.71	3.6	0.030	0.030	0.264	0.042
ST02P04A6a03	Bkb	8.75	4.9	0.028	0.021	0.287	0.060
ST02P04A5a04	2Bkqb	8.63	15.1	0.022	0.017	0.045	0.004
ST02P04A5a05	2Bkb	9.24	9.7	0.034	0.023	0.167	0.074
ST02P04A5a06	2Ckb	9.12	7.4	0.026	0.016	0.196	0.041
ST02P04A5a07	3Btkb	8.46	7.0	0.031	0.029	0.242	0.064
ST02P04A5a07	3Btkb	8.66	11.8			0.244	0.099
ST02P04A5a08	3Bkb	8.94	8.1	0.042	0.019	0.171	0.047

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST02P05A6a01	A/AC	1.9	38.2	16.3	86.0	9.8	4.2	LS	LS	GR
ST02P05A6a02	2Bkb	2.4	40.9	18.1	82.4	12.5	5.1	LS	SL	GRV
ST02P05A5a03	2Bkqb	2.4	43.2	17.1	83.2	11.6	5.2	LS	SL	GRV
ST02P05A5a04	3Bkb	11.4	40.6	15.2	77.7	16.6	5.7	LS	SL	GRV
ST02P05A5a05	3BCb	4.5	34.4	20.6	88.2	9.3	2.5	S	SL	GR
ST02P05A5a06	3Ckb	18.0	40.0	14.5	84.0	13.7	2.3	LS	S	GRV
ST02P05A5a07	4Bkb	0.5	22.2	29.2	90.4	4.8	4.8	S	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST02P05A6a01	A/AC	14.6	15.0	11.7	23.9	20.7	6.4	3.4	4.2
ST02P05A6a02	2Bkb	15.9	15.7	13.2	20.3	17.4	6.9	5.5	5.1
ST02P05A5a03	2Bkqb	18.4	18.0	12.8	17.7	16.4	6.4	5.2	5.2
ST02P05A5a04	3Bkb	14.8	12.0	9.5	19.2	22.1	10.1	6.5	5.7
ST02P05A5a05	3BCb	16.7	15.3	12.9	22.9	20.5	5.8	3.4	2.5
ST02P05A5a06	3Ckb	17.6	11.9	10.2	21.1	23.1	9.2	4.5	2.3
ST02P05A5a07	4Bkb	28.5	22.6	14.6	15.0	9.8	2.4	2.4	4.8

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST02P05A5a01	A/AC	8.95	3.0	0.008	0.017	0.238	0.039
ST02P05A5a02	2Bkb	9.06	4.2	0.006	0.011	0.220	0.045
ST02P05A5a03	2Bkqb	9.03	3.8	0.004	0.011	0.191	0.047
ST02P05A5a04	3Bkb	9.05	12.0	0.003	0.023	0.188	0.080
ST02P05A5a05	3BCb	9.21	5.2	0.003	0.017	0.166	0.065
ST02P05A5a06	3Ckb	8.86	7.3	0.002	0.021	0.171	0.048
ST02P05A5a07	4Bkb	8.95	1.3	0.005	0.011	0.186	0.044

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST03P01A6a01	A1/A2	2.5	10.6	7.2	70.4	23.8	5.8	VFSL	VFSL	na
ST03P01A6a02	Bw	5.3	14.6	7.2	66.1	25.0	8.9	VFSL	VFSL	na
ST03P01A6a03	Bk1	4.9	31.7	10.3	73.7	23.7	2.6	LVFS	FSL	GRV
ST03P01A6a04	Bk2	10.7	35.1	11.8	89.4	7.2	3.4	S	SL	GRV
ST03P01A5a05	2Btkb1	3.6	33.1	14.8	56.2	38.2	5.6	FSL	L	GR
ST03P01A5a06	2Btkb2	9.7	41.9	18.6	81.2	14.4	4.4	LCOS	SL	GRV
ST03P01A5a07	2BCkb/2Cb	2.8	40.7	18.1	82.0	14.5	3.5	LCOS	SL/S	GRV
ST03P01A5a08	3Btkb1	14.0	28.2	12.8	79.7	13.4	6.8	LS	SL	GRV
ST03P01A5a09	3Btkb2	29.0	18.8	9.3	71.7	20.0	8.3	FSL	L	GRV
ST03P01A5a10	3Bkb	23.5	26.3	9.5	75.4	20.3	4.3	LFS	SL	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST03P01A6a01	A1/A2	4.1	4.3	4.7	20.8	36.5	15.5	8.3	5.8
ST03P01A6a02	Bw	3.3	3.9	4.3	19.5	36.0	15.5	9.4	8.9
ST03P01A6a03	Bk1	7.5	5.7	6.3	22.5	31.7	16.4	7.3	2.6
ST03P01A6a04	Bk2	5.8	12.1	23.3	37.2	11.0	-1.6	8.8	3.4
ST03P01A5a05	2Btkb1	8.7	6.7	5.9	14.1	20.8	18.7	19.5	5.6
ST03P01A5a06	2Btkb2	21.4	14.4	9.3	18.0	18.0	8.3	6.1	4.4
ST03P01A5a07	2BCkb/2Cb	18.7	15.7	10.7	17.9	18.9	9.3	5.3	3.5
ST03P01A5a08	3Btkb1	13.3	11.1	9.4	21.5	24.4	7.9	5.5	6.8
ST03P01A5a09	3Btkb2	4.0	6.2	8.0	24.1	29.4	9.0	11.0	8.3
ST03P01A5a10	3Bkb	7.9	7.2	7.9	23.2	29.2	13.2	7.1	4.3

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST03P01A6a01	A1/A2	8.73	2.5	0.014	0.043	0.446	0.059
ST03P01A6a02	Bw	8.87	6.4	0.010	0.034	0.437	0.062
ST03P01A6a03	Bk1	8.81	6.0	0.005	0.030	0.318	0.054
ST03P01A6a04	Bk2	9.40	5.0	0.005	0.027	0.207	0.063
ST03P01A5a05	2Btkb1	9.31	4.7	0.007	0.029	0.381	0.050
ST03P01A5a06	2Btkb2	8.22	8.2	0.005	0.032	0.181	0.057
ST03P01A5a07	2BCkb/2Cb	8.48	3.4	0.006	0.033	0.225	0.052
ST03P01A5a08	3Btkb1	8.22	4.1	0.007	0.029	0.261	0.064
ST03P01A5a09	3Btkb2	8.82	7.8	0.007	0.028	0.286	0.068
ST03P01A5a10	3Bkb	8.63	3.0	0.005	0.022	0.247	0.056

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-6mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST03P03A6a01	A1/A2	1.3	25.3	13.9	69.9	29.4	0.7	FSL	FSL	GR
ST03P03A6a02	Bk1	0.7	53.4	10.3	78.8	19.7	3.5	LFS	L	GRV
ST03P03A6a03	Bk2	3.5	30.2	16.8	72.5	24.0	3.5	SL	L	GRV
ST03P03A6a04	Bck	10.3	32.3	15.5	74.3	22.1	3.6	SL	SL	GRV
ST03P03A5a05	2Btkb1	9.3	30.1	14.0	60.4	33.6	6.0	FSL	L	GR
ST03P03A5a06	2Btkb2	32.9	22.5	10.7	69.4	25.4	5.2	FSL	SL	GRV
ST03P03A5a07	2Bkb	3.6	32.0	20.6	76.2	16.8	7.0	COSL	SL	GRV
ST03P03A5a08	3Btkb	40.2	23.9	10.6	78.4	13.8	7.8	LCOS	SL	GRV
ST03P03A5a09	3Bkb	20.6	34.5	11.5	86.2	10.8	3.0	LCOS	SL	GRV
ST03P03A5a10	3BCkb	9.6	44.9	11.8	82.8	14.2	3.0	LS	SL	GRV
ST03P03A5a11	3Cb	0.0	39.8	25.7	89.5	8.8	1.7	COS	S	GRV
ST03P03A5a12	4Bwb	5.0	51.7	12.7	69.0	22.5	8.5	COSL	SL	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	
ST03P03A6a01	A1/A2	9.0	6.9	6.1	16.8	31.0	16.1	13.3	0.7
ST03P03A6a02	Bk1	7.4	7.0	7.6	22.8	31.9	14.3	5.4	3.5
ST03P03A6a03	Bk2	14.8	9.9	6.1	17.2	22.5	14.9	9.0	3.5
ST03P03A6a04	Bck	12.8	11.1	10.3	19.7	20.5	13.6	8.5	3.6
ST03P03A5a05	2Btkb1	6.9	5.3	5.1	16.7	26.3	17.6	16.0	6.0
ST03P03A5a06	2Btkb2	7.2	7.2	7.1	20.7	27.2	14.5	10.9	5.2
ST03P03A5a07	2Bkb	21.3	14.9	8.1	14.0	17.8	9.6	7.2	7.0
ST03P03A5a08	3Btkb	15.2	12.2	9.1	19.7	22.2	7.3	6.4	7.8
ST03P03A5a09	3Bkb	13.1	12.0	11.0	24.5	25.7	7.0	3.8	3.0
ST03P03A5a10	3BCkb	11.4	9.9	10.7	23.8	26.9	9.5	4.6	3.0
ST03P03A5a11	3Cb	16.6	11.3	13.5	27.3	20.8	6.8	2.0	1.7
ST03P03A5a12	4Bwb	16.1	8.9	6.2	16.6	22.3	11.8	10.7	8.5

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST03P03A6a01	A1/A2	8.80	3.0	0.012	0.047	0.269	0.043
ST03P03A6a02	Bk1	8.70	7.1	0.006	0.033	0.258	0.033
ST03P03A6a03	Bk2	8.86	3.0	0.006	0.029	0.285	0.083
ST03P03A6a04	BCk	9.24	3.9	0.004	0.036	0.277	0.041
ST03P03A5a05	2Btkb1	9.26	3.2	0.010	0.038	0.324	0.054
ST03P03A5a06	2Btkb2	8.12	4.8	0.030	0.033	0.226	0.067
ST03P03A5a07	2Bkb	8.54	9.1	0.006	0.029	0.206	0.068
ST03P03A5a08	3Btkb	8.71	12.2	0.004	0.040	0.363	0.066
ST03P03A5a09	3Bkb	8.55	5.8	0.005	0.036	0.190	0.088
ST03P03A5a10	3BCkb	8.95	9.9	0.004	0.032	0.170	0.053
ST03P03A5a11	3Cb	9.24	2.4	0.003	0.027	0.157	0.030
ST03P03A5a12	4Bwb	8.74	0.8	0.010	0.043	0.313	0.083

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST03P06A6a01	A	5.6	38.4	12.5	80.5	15.0	4.5	LS	SL	GRV
ST03P06A6a02	Bw	2.8	35.0	17.6	83.7	12.0	4.3	LCOS	S	GRV
ST03P06A6a03	Btk	12.2	34.9	14.6	72.7	17.8	9.5	COSL	L	GR
ST03P06A6a04	Bk	2.0	32.4	18.5	86.6	9.6	3.8	LCOS	LS	GRV
ST03P06A6a05	Bck	18.1	38.0	14.7	81.9	14.8	3.3	LCOS	S	GRV
ST03P06A6a06	2Btkb1	18.0	36.0	16.9	72.9	21.2	5.9	COSL	SL	CB
ST03P06A6a07	2Btkb2	34.6	30.0	7.2	70.1	25.1	4.8	FSL	SL	CB
ST03P06A6a08	2Bkb1	3.5	42.7	17.1	84.7	11.5	3.7	LCOS	LS	GRV
ST03P06A6a09	2Bkb2	7.1	25.1	13.1	64.3	26.0	9.7	FSL	L	GR
ST03P06A6a10	2Bckb	2.1	25.4	17.6	88.9	7.6	3.5	COS	SL	GRV
ST03P06A6a11	3Bkb	12.6	35.2	13.1	82.0	11.9	6.1	LCOS	SL	GRV
ST03P06A6a12	3Cb	3.7	39.4	17.9	78.4	17.1	4.5	LS	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST03P06A6a01	A	10.6	10.1	11.0	24.0	24.8	10.2	4.8	4.5
ST03P06A6a02	Bw	16.4	16.1	13.4	20.3	17.4	7.1	4.9	4.3
ST03P06A6a03	Btk	13.9	15	11.3	16.3	16.2	8.8	9.0	9.5
ST03P06A6a04	Bk	23.8	22.1	15.0	15.1	10.7	5.1	4.5	3.8
ST03P06A6a05	Bck	15.8	20.9	17.0	17.5	10.8	10.1	4.6	3.3
ST03P06A5a06	2Btkb1	14.7	13.1	8.9	16.4	19.9	10.9	10.3	5.9
ST03P06A5a07	2Btkb2	7.0	9.3	8.9	19.4	25.5	15.3	9.8	4.8
ST03P06A5a08	2Bkb1	16.7	13.9	13.1	22.1	16.9	7.0	4.5	3.7
ST03P06A5a09	2Bkb2	8.9	7.1	6.8	18.8	24.8	10.1	15.9	9.7
ST03P06A5a10	2Bckb	17.2	11.4	10.0	23.8	26.4	3.7	3.9	3.5
ST03P06A5a11	3Bkb	14.7	10.8	9.3	22.1	25.2	7.7	4.3	6.1
ST03P06A5a12	3Cb	12.1	10.8	10.5	22.0	23.0	11.2	6.0	4.5

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate Equivalent (wt %)	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
				Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST03P06A5a01	A	8.76	2.4	0.042	0.032	0.339	0.045
ST03P06A5a02	8w	8.82	2.2	0.028	0.029	0.310	0.047
ST03P06A5a03	8tk	8.75	5.9	0.035	0.026	0.269	0.059
ST03P06A5a04	8k	8.82	4.2	0.026	0.014	0.242	0.047
ST03P06A5a05	8Ck	9.09	2.9	0.028	0.017	0.046	0.004
ST03P06A5a06	2Btkb1	9.08	7.7	0.030	0.035	0.291	0.062
ST03P06A5a07	2Btkb2	9.00	12.3	0.030	0.021	0.265	0.065
ST03P06A5a08	2Bkb1	9.27	3.8	0.038	0.023	0.236	0.055
ST03P06A5a09	2Bkb2	9.24	9.6	0.034	0.028	0.363	0.071
ST03P06A5a10	2BCkb	9.16	5.2	0.030	0.019	0.239	0.055
ST03P06A5a11	3Bkb	8.43	6.2	0.024	0.020	0.236	0.067
ST03P06A5a12	3Cb	8.83	3.7	0.029	0.018	0.294	0.056

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-6mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST03P07A6a01	A	3.5	22.7	9.7	47.8	44.1	8.1	L	VFSL	GR
ST03P07A6a02	Bw	1.8	34.6	14.7	66.1	24.4	9.4	SL	L	GR
ST03P07A6a03	Btk	1.9	30.7	17.4	65.3	27.1	7.6	SL	L	GRV
ST03P07A6a04	Bk	2.1	33.8	19.1	73.4	21.7	5.0	COSL	SL	GRV
ST03P07A6a06	Bck	6.2	41.4	20.5	87.8	9.1	3.1	COS	S	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST03P07A6a01	A	2.9	3.6	4.1	12.5	24.8	21.3	22.8	8.1
ST03P07A6a02	Bw	9.2	8.6	7.8	17.7	22.9	14.6	9.8	9.4
ST03P07A6a03	Btk	5.8	11.6	9.8	18.0	20.0	18.0	9.1	7.6
ST03P07A6a04	Bk	16.7	12.8	9.3	16.6	17.9	12.6	9.2	5.0
ST03P07A6a05	Bck	26.0	18.6	13.4	18.0	11.8	6.2	3.9	3.1

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Calcium Carbonate		Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
		pH in Water	Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST03P07A6a01	A	9.03	3.0	0.046	0.043	0.593	0.072
ST03P07A6a02	Bw	8.84	2.7	0.036	0.026	0.340	0.056
ST03P07A6a03	Btk	8.49	1.0	0.031	0.025	0.351	0.053
ST03P07A6a04	Bk	8.94	2.1	0.032	0.024	0.261	0.058
ST03P07A6a05	Bck	9.18	2.6	0.028	0.022	0.178	0.039

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST04P01A6a01	A/BA1	3.2	9.2	5.3	61.1	27.4	11.5	FSL	L	GR
ST04P01A6a02	Btk1	6.5	10.0	11.7	64.5	17.2	16.2	FSL	SCL	na
ST04P01A6a03	Btk2	2.2	13.3	11.3	65.3	29.5	5.2	SL	L	GR
ST04P01A6a04	Bk	3.5	18.8	12.2	77.8	10.4	11.8	SL	SL	GR
ST04P01A5a05	2Bkb1	5.9	18.6	11.0	84.7	10.1	5.2	LS	LS	GRV
ST04P01A5a06	3Bkb2	8.6	21.1	11.0	89.5	6.6	3.9	S	S	GRV
ST04P01A5a07	3Bkb3	11.6	19.8	11.2	91.1	6.2	2.7	S	S	GRV
ST04P01A5a08	3BCKb	12.5	22	15.0	94.4	2.8	2.7	S	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST04P01A6a01	A/BA1	2.9	9.1	15.4	19.7	14.0	7.7	19.7	11.5
ST04P01A6a02	Btk1	4.2	9.5	14.8	21.4	14.6	6.2	11.0	16.2
ST04P01A6a03	Btk2	5.9	10.6	14.5	20.6	13.7	5.2	24.3	5.2
ST04P01A6a04	Bk	7.3	13.2	18.6	24.1	14.5	5.4	4.9	11.8
ST04P01A5a05	2Bkb1	9.1	13.2	19.9	28.0	15.4	5.7	4.3	5.2
ST04P01A5a06	3Bkb2	8.1	14.7	20.7	29.4	16.6	3.6	3.0	3.9
ST04P01A5a07	3Bkb3	13.9	17.7	20.5	24.3	14.8	3.4	2.8	2.7
ST04P01A5a08	3BCKb	12.7	23.6	29.8	21.0	7.4	1.6	1.2	2.7

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST04P01A6a01	A/BAt	9.03	4.0	0.018	0.047	0.324	0.060
ST04P01A6a02	Btk1	9.26	4.4	0.011	0.035	0.258	0.054
ST04P01A6a03	Btk2	9.33	3.1	0.009	0.036	0.307	0.074
ST04P01A6a04	Bk	9.12	4.3	0.007	0.026	0.244	0.061
ST04P01A5a05	2Bkb1	9.33	7.8	0.004	0.027	0.183	0.063
ST04P01A5a06	3Bkb2	8.13	9.8	0.003	0.024	0.150	0.050
ST04P01A5a07	3Bkb3	7.84	4.8	0.003	0.025	0.128	0.045
ST04P01A5a08	3BCkb	8.34	5.9	0.018	0.028	0.162	0.038

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-6mm	6-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
ST04P02A6a01	A	3.7	11.0	8.5	78.1	16.3	4.6	LS	SL	na
ST04P02A6a02	BAk	12.1	19.5	7.9	83.6	11.2	5.2	LS	SL	na
ST04P02A5a03	Btk	13.6	13.3	9.0	81.3	10.0	8.7	LS	LS	GR
ST04P02A5a04	2Bkb1	4.5	17.6	10.1	89.0	5.6	5.4	S	LS	GRV
ST04P02A5a05	3Bkb2	19.2	16.7	8.7	89.9	7.4	2.7	S	S	GRV
ST04P02A5a06	3Bkb3	18.1	30.0	13.5	94.4	2.6	3.0	COS	S	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST04P02A6a01	A	6.1	12.2	14.9	21.9	23.9	9.6	6.7	4.6
ST04P02A6a02	BAk	7.3	12.3	16.5	25.2	22.3	6.5	4.8	5.2
ST04P02A5a03	Btk	7.1	13.3	18.6	24.6	17.6	5.3	4.7	8.7
ST04P02A5a04	2Bkb1	8	14.3	20.1	29.9	16.7	2.7	2.9	5.4
ST04P02A5a05	3Bkb2	7.7	13.9	22.7	28.5	17.1	4.8	2.6	2.7
ST04P02A5a06	3Bkb3	19.6	26.4	24.3	18.4	5.7	1.3	1.3	3.0

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST04P02A6a01	A	8.63	4.0	0.016	0.042	0.284	0.050
ST04P02A6a02	BAk	9.01	4.2	0.011	0.039	0.277	0.039
ST04P02A6a03	Btk	9.02	8.2	0.007	0.030	0.239	0.052
ST04P02A5a04	2Bkb1	8.99	9.2	0.004	0.021	0.162	0.039
ST04P02A5a05	3Bkb2	9.34	6.5	0.003	0.020	0.125	0.034
ST04P02A5a06	3Bkb3	9.68	7.5	0.006	0.022	0.149	0.032

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST04P03A6e02	BA _t	2.9	9.3	14.5	20.6	15.2	6.4	18.5	12.5
ST04P03A6e03	B _{tk}	5.7	10.7	16.4	19.0	11.6	4.5	9.4	22.7
ST04P03A6e04	2B _{tkb}	8.3	16.1	22.6	23.3	10.2	3.4	4.3	11.9
ST04P03A6e05	2B _k b	3.6	18.1	25.7	26.5	9.6	8.2	2.7	5.6
ST04P03A6e06	2B _C k _b	13.0	20.6	28.3	26.2	6.6	1.3	1.5	2.5
ST04P03A6e07	3B _k b	9.2	15.3	19.0	27.4	14.4	3.0	4.4	7.2
ST04P03A6e08	3B _C k _b	17	22.0	22.5	21.6	9.3	2.0	2.3	3.4
ST04P03A6e09	3C _b	20.8	26.7	23.0	16.9	6.1	1.8	1.9	2.7

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area B RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST04P03A6a02	BA1	9.06	8.4	0.036	0.041	0.353	0.063
ST04P03A6a03	Btk	9.06	6.6	0.031	0.032	0.320	0.072
ST04P03A6a04	2Btkb	8.97	10.0	0.03	0.023	0.195	0.067
ST04P03A6a05	2Bkb	9.24	6.8	0.039	0.019	0.140	0.056
ST04P03A6a06	2BCkb	9.53	6.5	0.027	0.014	0.111	0.048
ST04P03A5a07	3Bkb	9.26	13.4	0.042	0.026	0.154	0.077
ST04P03A5a08	3BCkb	8.64	9.1	0.021	0.020	0.106	0.049
ST04P03A5a09	3Cb	8.31	9.6	0.021	0.020	0.110	0.031

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
ST04P08A6a01	A	6.1	18.7	10.3	83.1	14.3	2.6	LS	SL	GR
ST04P08A6a02	Bw	0.8	19.7	18.1	88.3	8.5	3.2	LCOS	SL	GR
ST04P08A6a03	2Bkb1	4.2	34.9	14.6	81.8	12.1	6.1	LCOS	SL	GRV
ST04P08A5a04	3Bkb2	16.9	15.4	8.8	83.1	9.0	7.9	LS	SL	CBV
ST04P08A5a05	3Bkb3	14.9	16.0	8.8	92.4	4.4	3.2	S	S	CBV
ST04P08A5a06	3BCKb	16.9	25.2	10.1	95.2	2.2	2.6	COS	S	CBV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
ST04P08A6a01	A	8.6	11.7	13.9	23.3	25.5	11.1	3.1	2.6
ST04P08A6a02	Bw	14.0	15.4	16.8	26.0	17.1	5.4	3.0	3.2
ST04P08A6a03	2Bkb1	17.0	16.8	18.8	18.3	11.2	7.6	4.5	6.1
ST04P08A5a04	3Bkb2	8.2	13.6	17.3	27.1	17.0	4.4	4.6	7.9
ST04P08A5a05	3Bkb3	9.7	15.9	22.8	29.2	14.8	2.4	2.0	3.2
ST04P08A5a06	3BCKb	12.1	18.7	27.7	26.3	8.3	1.0	1.2	2.6

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST04P08A6a01	A	8.66	2.2	0.013	0.043	0.277	0.035
ST04P08A6a02	Bw	9.06	2.8	0.009	0.036	0.247	0.051
ST04P08A6a03	28kb1	9.11	4.3	0.008	0.037	0.236	0.062
ST04P08A5a04	38kb2	9.16	16.6	0.005	0.018	0.114	0.048
ST04P08A5a05	38kb3	9.48	6.3	0.003	0.022	0.127	0.042
ST04P08A5a06	3BCkb	8.77	7.1	0.006	0.027	0.146	0.048

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		76-20mm	20-6mm	6-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
ST04P09A6a01	A/BAk	2.7	14.2	8.9	81.4	13.0	5.5	LS	SL	GR
ST04P09A6a02	2Bkb1	4.4	18.8	12.1	84.8	10.5	4.9	LS	SL	GRV
ST04P09A5a03	3Bkb2	2.0	24.0	11.5	89.1	7.9	3.0	COS	LS	CBV
ST04P09A5a04	3BCkb	1.5	39.1	16.1	90.8	4.9	4.3	COS	S	CBV
ST04P09A5a05	3Cb	25.7	18.7	9.7	88.6	5.4	6.0	COS	S	GRV
ST04P09A5a06	4BCkb	27.2	27.1	9.7	94.8	2.9	2.4	COS	S	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.6mm	0.6-0.25mm	0.25-0.1mm	0.10-0.06mm	0.06-0.02mm	0.2-0.002mm	<0.002mm
ST04P09A6a01	A/BAk	6.4	9.1	12.7	27.4	25.8	7.3	5.8	5.5
ST04P09A6a02	2Bkb1	9.2	11.2	13.8	25.7	24.6	6.4	4.1	4.9
ST04P09A5a03	3Bkb2	10.2	15.6	16.6	25.5	21.1	5.0	2.9	3
ST04P09A5a04	3BCkb	16.5	18.9	18.7	22.5	14.2	3.7	1.2	4.3
ST04P09A5a05	3Cb	12.0	17.9	21.0	25.1	12.7	2.4	3.0	6
ST04P09A5a06	4BCkb	11.3	22.6	28.8	24.4	7.7	1.8	1.1	2.4

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
ST04P09A5a01	A/BAk	9.01	3.3	0.012	0.035	0.322	0.045
ST04P09A5a02	2Bkb1	8.94	3.9	0.008	0.029	0.276	0.042
ST04P09A5a03	3Bkb2	9.31	3.7	0.008	0.038	0.240	0.048
ST04P09A5a04	3Bckb	9.72	3.3	0.005	0.036	0.201	0.041
ST04P09A5a05	3Cb	8.66	11.2	0.005	0.027	0.128	0.049
ST04P09A5a06	4Bckb	8.13	7.0	0.005	0.015	0.117	0.036

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)				Fine-Earth Fraction (wt %)				USOA Texture		
		Coarse	Medium	Fine		Sand	Silt	Clay		Lab	Field	Modifier
		76-20mm	20-8mm	5-2mm		2-0.06mm	0.06-0.002mm	<0.002mm				
ST04P11A6a01	A	0.0	13.2	10.4		79.2	18.0	4.9		LS	SL	GR
ST04P11A6a02	Bw	1.7	17.9	12.2		85.3	10.3	4.4		LS	SL	GR
ST04P11A6a03	2Bckb	5.0	24.8	25.2		91.1	5.2	3.8		COS	LS	GRV
ST04P11A5a04	3Bkb1/2	7.4	19.3	11.6		89.8	4.4	5.8		COS	S	CBV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.06mm	0.06-0.02mm	0.02-0.002mm	<0.002mm
ST04P11A6a01	A	7.9	9.5	11.0	23.1	27.7	9.4	6.6	4.9
ST04P11A6a02	Bw	9.8	11.3	13.1	25.8	25.2	6.5	3.8	4.4
ST04P11A6a03	2Bckb	25.7	18.7	15.5	18.6	12.6	3.0	2.2	3.8
ST04P11A5a04	3Bkb1/2	12.4	16.6	20.0	27.5	13.4	1.8	2.6	5.8

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate		Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)	
ST04P11A6a01	A	8.85	2.0	0.015	0.039	0.361	0.06	
ST04P11A6a02	Bw	9.07	3.1	0.007	0.027	0.335	0.061	
ST04P11A6a03	2Bckb	9.52	4.2	0.005	0.021	0.212	0.049	
ST04P11A5a04	3Bkb1/2	9.42	7.2	0.004	0.014	0.202	0.066	

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
WB1272P01A6a01	Bk	1.7	10.7	12.8	82.1	11.9	6.1	LS	SL	CN
WB1272P01A6a02	Bck	2.7	12.9	10.2	90.8	4.9	4.3	S	LS	CNV
WB1272P01A5a01	2Bkb	1.9	13.1	18.6	88.2	5.2	6.6	S	SL	GR
WB1272P01A5a02	2BCkb	8.8	8.1	8.0	87.7	7.6	4.7	LS	LS	GRV
WB1272P01A5a03	2C	2.6	18.4	13.3	88.7	6.1	5.2	S	LS	GR
WB1272P01A4a01	3BCkb	0.7	7.6	7.8	85.9	6.8	7.4	LS	LS	GR
WB1272P01A4a02	3C	0.5	12.4	13.3	91.0	4.4	4.6	S	LS	GR
WB1272P01A6a	Cb	4.8	9.8	9.3	86.1	8.6	5.3	LS	LS	GR
WB1272P01A5g	Cb	9.7	11.3	9.7	86.3	8.3	5.4	LS	SL	GR
WB1272P01A5b	Cb	9.9	11.5	7.4	87.2	8.0	4.9	LS	SL	GRV
WB1272P01A4f	Cb	2.4	11.6	12.2	91.1	3.6	5.2	S	LS	GRV
WB1272P01A4h	Cb	40.1	22.0	4.7	92.3	4.6	3.2	S	SL	CBX
WB1272P01A3b	Cb	0.5	11.6	11.1	87.9	6.3	5.8	LS	SL	GR
WB1272P01A2e	C	3.9	20.6	13.2	93.4	2.5	4.1	S	LS	GR
WB1272P01A2d	C	1.6	11.0	10.5	91.6	3.5	4.9	S	S	GRV
WB1272P01A1b	C	0.2	9.4	7.4	86.1	5.7	6.2	LS	SL	GR

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	
WB1272P01A6a01	Bk	5.4	7.9	15.9	37.8	15.1	7.8	4.1	5.1
WB1272P01A6a02	BCk	10.9	13.1	21.9	32.4	12.5	2.3	2.6	4.3
WB1272P01A5a01	2Bkb	7.0	10.1	17.4	38.8	16.8	1.2	4.0	6.6
WB1272P01A5a02	2BCkb	7.4	10.4	18.4	35.5	16.0	5.0	2.7	4.7
WB1272P01A5a03	2C	10.7	17.1	23.1	28.2	9.5	1.8	4.3	5.2
WB1272P01A4a01	3BCkb	6.5	12.6	21.6	31.8	13.4	4.5	2.1	7.4
WB1272P01A4a02	3C	9.0	18.5	26.2	28.9	10.4	2.4	2.0	4.6
WB1272P01A6a	Cb	9.8	12.3	19.2	32.2	12.6	4.7	3.8	5.3
WB1272P01A5g	Cb	6.2	9.1	17.2	38.0	15.8	5.4	2.9	5.4
WB1272P01A5b	Cb	8.6	11.5	19.9	35.1	12.0	5.5	2.5	4.9
WB1272P01A4f	Cb	8.8	18.7	26.6	26.8	10.3	1.7	1.9	5.2
WB1272P01A4h	Cb	7.7	14.0	25.3	32.9	12.4	2.5	2.1	3.2
WB1272P01A3b	Cb	9.3	17.3	24.4	28.8	10.1	2.4	4.0	5.8
WB1272P01A2e	C	15.9	26.5	32.2	16.4	2.3	0.6	1.9	4.1
WB1272P01A2d	C	8.9	19.0	30.3	27.4	5.9	1.0	2.5	4.9
WB1272P01A1b	C	5.7	9.4	20.2	40.1	10.8	2.4	3.3	8.2

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.08mm	0.05-0.002mm	<0.002mm			
WB1310P01A2e	Cb	3.1	23.5	14.3	98.0	0.9	3.1	S	S	GRX
WB1310P01A1a01	2Bkb	0.6	5.2	7.1	85.4	7.3	7.3	LS	SL	GR
WB1310P01A1a02	2BCKb1	1.3	6.2	8.6	85.9	8.1	6.0	LS	SL	GR
WB1310P01A1a03	2BCKb2	3.8	10.6	6.3	91.8	3.7	4.4	S	SL	GR
WB1310P01A1a04	2Cb	1.9	10.5	6.5	91.4	4.2	4.4	S	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.6mm	0.6-0.25mm	0.25-0.1mm	0.10-0.06mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
WB1310P01A2e	Cb	7.6	18.4	40.4	26.8	2.8	0.2	0.6	3.1
WB1310P01A1a01	2Bkb	4.4	8.6	20.2	38.2	14.0	3.3	4.0	7.3
WB1310P01A1a02	2BCKb1	4.3	8.0	19.2	40.1	14.4	3.4	4.7	6.0
WB1310P01A1a03	2BCKb2	6.8	10.6	23.8	39.9	10.9	1.7	2.1	4.4
WB1310P01A1a04	2Cb	4.7	10.6	24.5	40.0	11.7	1.4	2.7	4.4

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
WB1310P01A2e	Cb	8.72	4.5			0.170	0.068
WB1310P01A1a01	2Bkb	9.35	8.0			0.141	0.067
WB1310P01A1a02	2BCKb1	8.65	7.6			0.132	0.058
WB1310P01A1a03	2BCKb2	8.99	3.8			0.149	0.059
WB1310P01A1a04	2Cb	9.53	4.7			0.128	0.058

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
WB1312P01A6a01	BA1	0.3	17.6	11.1	85.2	9.6	5.2	LS	SL	CN
WB1312P01A6a02	BA2	1.6	12.7	8.2	85.0	9.4	5.6	LFS	SL	CNV
WB1312P01A6a03	Bk1	0.0	15.6	16.0	85.3	9.3	5.4	LS	SL	CN
WB1312P01A6a04	Bk2	1.1	18.3	13.0	83.4	10.7	5.9	LS	SL	GRV
WB1312P01A6a05	2BCk1	11.4	29.8	14.1	87.6	7.4	5.1	LS	SL	GRX
WB1312P01A6a06	2BCk2	5.8	16.0	12.9	89.4	5.4	5.2	S	SL	GRX
WB1312P01A5a01	3Bkb1	7.4	14.6	10.3	86.9	6.7	6.4	LS	SL	GRV
WB1312P01A5a02	3Bkb2	7.3	16.1	10.9	92.4	5.2	2.4	S	SL	STX
WB1312P01A5a03	3Cb	7.9	13.6	8.1	92.4	4.4	3.2	S	SL	GRV
WB1312P01A4a01	4Bkb	1.8	12.5	8.7	85.4	8.3	6.3	LS	SL	GR
WB1312P01A4a02	4C	17.7	18.0	12.4	93.6	2.7	3.6	COS	LS	GRV
WB1312P01A4a02	Cb	2.6	16.9	11.3	93.1	3.4	3.5	na	na	na
WB1312P01A6a	Cb	11.0	18.1	10.6	84.8	8.9	6.3	LS	SL	GRX
WB1312P01A5a	Cb	21.5	19.2	11.4	90.3	5.1	4.6	S	SL	GRV
WB1312P01A5b	Cb	14.7	11.1	8.7	89.6	5.4	5.0	S	SL	GRV
WB1312P01A4h	Cb	33.5	7.2	5.6	86.9	6.2	6.9	LS	LS	CBX
WB1312P01A4i	Cb	7.6	25.0	16.3	95.2	1.7	3.1	S	S	GRV
WB1312P01A4g	Cb	42.1	13.9	5.7	91.8	4.3	3.9	S	SL	CBX
WB1312P01A3b	Cb	2.0	9.2	8.5	89.9	4.7	5.4	S	SL	GRV
WB1312P01A2a	Cb	2.1	16.1	14.5	95.0	1.2	3.6	S	LS	GRV
WB1312P01A1e	Cb	6.0	20.1	10.9	94.5	1.6	3.6	S	LS	GRV
WB1312P01A1b	Cb	4.2	12.2	6.7	89.5	5.0	5.5	S	LS	GRV
WB1312P01A1f	Cb	10.6	21.0	9.2	92.1	3.4	4.4	S	LS	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.8mm	0.6-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	
WB1312P01A6a01	BA1	7.6	8.7	10.9	32.2	25.6	4.6	5.0	5.2
WB1312P01A6a02	BA2	4.9	6.6	10.3	36.6	26.6	5.2	4.2	5.6
WB1312P01A6a03	Bk1	8.7	10.2	12.8	30.7	22.8	5.4	4.0	5.4
WB1312P01A6a04	Bk2	8.4	11.1	14.9	29.3	19.7	6.3	4.4	5.9
WB1312P01A6a05	2Bck1	11.8	12.8	16.4	29.8	16.6	3.9	3.5	5.1
WB1312P01A6a06	2Bck2	9.3	11.4	17.7	34.3	16.6	2.4	3.0	5.2
WB1312P01A5a01	3Bkb1	7.1	9.9	16.8	35.9	17.2	2.7	4.0	6.4
WB1312P01A5a02	3Bkb2	8.1	11.6	20.3	35.8	16.6	2.2	3.0	2.4
WB1312P01A5a03	3Cb	9.2	15.4	24.2	31.2	12.4	2.0	2.4	3.2
WB1312P01A4a01	4Bkb	7.1	12.4	21.0	29.9	14.9	2.3	6.0	6.3
WB1312P01A4a02	4C	16.9	25.4	23.8	20.2	7.1	1.3	1.4	3.8
WB1312P01A4a02	Cb	10.6	20.3	25.3	26.0	11.0	2.0	1.4	3.5
WB1312P01A6a	Cb	7.5	10.6	13.1	30.9	22.7	4.3	4.6	6.3
WB1312P01A5a	Cb	13.1	12.0	16.8	32.2	17.2	2.1	3.0	4.6
WB1312P01A5b	Cb	9.4	15.4	22.5	30.1	12.3	1.6	3.9	5.0
WB1312P01A4h	Cb	6.0	13.3	21.0	31.2	15.4	2.3	3.9	6.9
WB1312P01A4i	Cb	16.5	28.8	26.4	18.4	6.2	0.5	1.1	3.1
WB1312P01A4g	Cb	8.0	16.5	24.6	29.7	13.0	2.6	1.7	3.9
WB1312P01A3b	Cb	7.7	15.0	23.5	32.4	11.3	1.5	3.2	5.4
WB1312P01A2e	Cb	13.2	26.1	32.4	20.3	3.0	-0.1	1.3	3.8
WB1312P01A1a	Cb	10.8	20.2	28.9	26.4	6.2	0.4	1.2	3.8
WB1312P01A1b	Cb	6.1	11.0	21.9	37.2	13.3	1.9	3.1	5.5
WB1312P01A1f	Cb	10.5	16.9	24.4	30.5	9.9	1.0	2.4	4.4

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
WB1312P01A6a01	8A1	9.16	2.4	0.009	0.037	0.306	0.059
WB1312P01A6a02	8A2	9.08	3.3	0.006	0.025	0.335	0.055
WB1312P01A6a03	8k1	9.09	3.8	0.006	0.022	0.269	0.059
WB1312P01A6a04	8k2	9.09	3.6	0.004	0.027	0.219	0.063
WB1312P01A6a05	2Bck1	9.37	5.2	0.003	0.021	0.183	0.065
WB1312P01A6a06	2Bck2	9.06	8.0	0.004	0.018	0.217	0.070
WB1312P01A5a01	3Bkb1	9.17	10.4	0.003	0.017	0.168	0.072
WB1312P01A5a02	3Bkb2	8.19	7.8	0.003	0.022	0.147	0.059
WB1312P01A5a03	3Cb	8.48	5.4	0.004	0.027	0.202	0.052
WB1312P01A4a01	4Bkb	9.15	8.4	0.004	0.029	0.179	0.066
WB1312P01A4a02	4C	9.05	7.9	0.004	0.017	0.179	0.048
WB1312P01A4a02	Cb	9.71	5.7	0.005	0.025	0.195	0.039
WB1312P01A6a	Cb	9.13	3.6	0.006	0.021	0.242	0.054
WB1312P01A5a	Cb	9.00	8.6	0.003	0.009	0.157	0.060
WB1312P01A5b	Cb	8.41	4.7	0.002	0.013	0.164	0.063
WB1312P01A4h	Cb	8.40	9.2	0.004	0.019	0.178	0.054
WB1312P01A4i	Cb	9.37	8.1	0.004	0.011	0.138	0.033
WB1312P01A4g	Cb	9.62	6.0	0.008	0.021	0.181	0.039
WB1312P01A3b	Cb	9.54	5.3	0.004	0.019	0.140	0.039
WB1312P01A2e	Cb	9.50	6.4	0.003	0.015	0.112	0.037
WB1312P01A1e	Cb	9.65	7.8	0.004	0.003	0.149	0.033
WB1312P01A1b	Cb	9.10	3.6	0.006	0.011	0.140	0.050
WB1312P01A1f	Cb	9.32	5.6	0.004	0.013	0.136	0.040

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)				Fine-Earth Fraction (wt %)				USDA Texture		
		Coarse 75-20mm	Medium 20-6mm	Fine 5-2mm	Sand 2-0.05mm	Silt 0.05-0.002mm	Clay <0.002mm	Lab	Field	Modifier		
WB1320P01A3e01	Bkb1	2.0	13.7	11.1	80.8	8.6	10.5	LS	SL			GR
WB1320P01A3e02	Bkb2	2.2	11.7	8.1	86.6	7.1	8.3	LS	SL			GR
WB1320P01A3e03	Bckb1	0.0	10.3	9.0	89.3	6.1	4.7	S	SL			GR
WB1320P01A3e04	Bckb2	1.3	9.2	8.0	74.1	21.8	4.0	SL	LS			GR

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse 2-1mm	Coarse 1-0.8mm	Medium 0.6-0.25mm	Fine 0.25-0.1mm	V. Fine 0.10-0.05mm	Coarse 0.06-0.02mm	Fine 0.2-0.002mm	
WB1320P01A3e01	Bkb1	6.9	10.5	20.0	30.8	12.6	3.2	5.5	10.5
WB1320P01A3e02	Bkb2	6.7	12.2	21.2	31.4	15.1	2.7	4.3	8.3
WB1320P01A3e03	Bckb1	6.9	12.7	24.0	35.0	10.6	3.1	2.9	4.7
WB1320P01A3e04	Bckb2	11.7	10.0	9.8	20.8	22.0	18.9	2.9	4.0

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate		Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)	
WB1320P01A3e01	Bkb1	9.54	4.5	0.006	0.022	0.228	0.057	
WB1320P01A3e02	Bkb2	9.77	5.2	0.006	0.035	0.192	0.065	
WB1320P01A3e03	Bckb1	9.89	4.8	0.006	0.034	0.170	0.045	
WB1320P01A3e04	Bckb2	9.16	6.6	0.005	0.023	0.132	0.045	

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.05mm	0.05-0.002mm	<0.002mm			
WB1334P01A6a01	BA1	0.6	10.6	8.0	78.1	15.8	6.1	LFS	L	CN
WB1334P01A6a02	BA2	2.8	19.2	11.6	84.1	10.6	5.4	LS	L	GR
WB1334P01A6a03	Bk	10.4	25.9	13.6	85.8	9.7	4.6	LS	SL	CNV
WB1334P01A6a04	2BCKb1	0.7	14.4	11.3	82.4	12.6	5.0	LS	L	CN
WB1334P01A6a05	2BCKb2	1.5	22.2	16.2	83.0	12.7	4.3	LS	SL	CNV
WB1334P01A6a06	2BCKb3	11.8	29.7	14.4	89.1	6.3	4.6	COS	SL	GRV
WB1334P01A5a01	3Bkb	5.8	20.8	15.2	86.4	5.9	7.6	LS	SL	GR
WB1334P01A5a02	3BCKb1	4.6	11.6	8.7	91.4	5.4	3.2	S	SL	GR
WB1334P01A5a03	3BCKb2	2.7	11.2	8.4	89.5	5.8	4.7	S	SL	GR
WB1334P01A5a04	3C	6.8	18.5	13.6	95.6	1.6	2.6	COS	S	GRV
WB1334P01A4a01	4BCKb	10.0	26.2	14.0	92.3	2.4	5.3	COS	S	GRV
WB1334P01A4a02	4Ckb	3.9	16.8	11.4	95.1	1.7	3.2	COS	S	GR
WB1334P01A1a01	Cb	0.0	10.9	11.6	88.5	4.5	7.1	na	na	na
WB1334P01A1a02	Cb	1.7	8.6	7.9	92.2	3.2	4.6	na	na	na
WB1334P01A1a03	Cb	4.3	20.1	10.1	92.4	3.5	4.1	na	na	na
WB1334P01A6a	Cb	4.0	25.7	14.9	85.1	10.7	4.2	LS	SL	GRX
WB1334P01A5a	Cb	9.1	15.3	8.6	91.6	4.8	3.6	S	LS	GR
WB1334P01A4g	Cb	13.7	18.2	10.8	93.6	2.1	4.3	S	LS	CBX
WB1334P01A4a	Cb	13.1	20.6	9.3	93.6	2.9	3.4	S	LS	GRV
WB1334P01A3a	Cb	4.1	10.1	8.6	90.7	4.6	4.7	S	LS	GR
WB1334P01A2d	Cb	0.8	10.9	9.4	93.1	3.3	3.6	S	LS	GR
WB1334P01A1f	Cb	16.6	15.9	7.6	94.3	2.1	3.6	S	LS	GRV
WB1334P01A1d	Cb	0.4	8.5	11.3	91.9	2.7	5.4	S	LS	GR

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
WB1334P01A6a01	BA1	5.3	6.4	8.3	29.4	26.7	8.6	7.2	8.1
WB1334P01A6a02	BA2	8.0	9.3	10.6	30.2	26.0	6.2	4.4	5.4
WB1334P01A6a03	Bk	12.1	12.0	12.1	28.2	21.3	5.5	4.2	4.6
WB1334P01A6a04	2BCKb1	6.8	9.4	11.8	30.1	24.4	6.6	6.1	5.0
WB1334P01A6a05	2BCKb2	10.7	11.0	13.2	29.3	18.8	5.4	7.3	4.3
WB1334P01A6a06	2BCKb3	13.2	13.4	15.3	29.8	17.3	3.6	2.7	4.6
WB1334P01A5a01	3Bkb	6.0	9.8	16.4	34.5	19.9	2.1	3.8	7.6
WB1334P01A5a02	3BCKb1	6.0	9.6	17.4	37.4	21.0	2.6	2.8	3.2
WB1334P01A5a03	3BCKb2	7.0	10.6	19.2	36.1	16.7	2.4	3.4	4.7
WB1334P01A5a04	3C	15.1	20.4	28.6	25.5	6.1	0.6	1.0	2.8
WB1334P01A4a01	4BCKb	13.7	21.6	26.0	23.6	7.4	-1.6	4.0	5.3
WB1334P01A4a02	4CKb	10.6	20.2	32.1	25.6	6.7	1.1	0.6	3.2
WB1334P01A1a01	Cb	7.2	12.7	23.7	34.5	10.4	1.6	2.9	7.1
WB1334P01A1a02	Cb	6.7	13.1	24.5	37.7	10.1	1.5	1.6	4.6
WB1334P01A1a03	Cb	7.0	16.1	29.9	32.0	7.4	1.7	1.8	4.1
WB1334P01A6a	Cb	9.2	10.9	13.3	30.5	21.2	5.4	5.3	4.2
WB1334P01A5a	Cb	10.3	11.4	20.4	34.4	15.1	2.3	2.5	3.8
WB1334P01A4g	Cb	11.1	19.7	29.9	25.2	7.8	0.7	1.4	4.3
WB1334P01A4a	Cb	11.2	18.0	26.6	26.7	11.2	1.1	1.8	3.4
WB1334P01A3a	Cb	10.7	14.5	24.0	31.3	10.2	1.7	2.9	4.7
WB1334P01A2d	Cb	8.1	20.7	30.7	26.4	7.1	1.2	2.1	3.6
WB1334P01A1f	Cb	6.7	12.6	26.3	38.0	10.8	0.9	1.2	3.6
WB1334P01A1d	Cb	10	18.1	27.1	29.4	7.4	0.5	2.2	5.4

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
WB1334P01A6a01	BA1	9.13	1.4	0.011	0.030	0.363	0.058
WB1334P01A6a02	BA2	9.04	3.0	0.008	0.027	0.324	0.061
WB1334P01A6a03	Bk	9.12	4.1	0.004	0.029	0.267	0.055
WB1334P01A6a04	2BCkb1	9.03	3.1	0.005	0.028	0.282	0.062
WB1334P01A6a05	2BCkb2	9.16	13.0	0.003	0.025	0.246	0.068
WB1334P01A6a06	2BCkb3	8.72	6.4	0.003	0.027	0.175	0.071
WB1334P01A5a01	3Bkb	8.07	11.5	0.003	0.018	0.198	0.070
WB1334P01A5a02	3BCkb1	8.32	7.5	0.003	0.019	0.188	0.060
WB1334P01A5a03	3BCkb2	8.30	7.5	0.003	0.025	0.188	0.061
WB1334P01A5a04	3C	8.60	4.5	0.004	0.011	0.167	0.041
WB1334P01A4a01	4BCkb	8.69	8.4	0.004	0.025	0.166	0.050
WB1334P01A4a02	4Ckb	9.18	5.0	0.003	0.020	0.101	0.039
WB1334P01A1a01	Cb	8.71	6.5			0.158	0.078
WB1334P01A1a02	Cb	9.21	5.6			0.161	0.066
WB1334P01A1a03	Cb	9.55	4.7			0.133	0.047
WB1334P01A6a	Cb	9.06	6.9	0.004	0.009	0.193	0.051
WB1334P01A5a	Cb	8.78	7.5	0.002	0.015	0.149	0.052
WB1334P01A4g	Cb	8.90	6.9	0.002	0.013	0.168	0.044
WB1334P01A4e	Cb	9.63	5.1	0.006	0.017	0.182	0.039
WB1334P01A3a	Cb	8.92	6.6	0.003	0.017	0.134	0.044
WB1334P01A2d	Cb	8.94	6.7	0.003	0.007	0.131	0.039
WB1334P01A1f	Cb	8.72	5.5	0.003	0.009	0.136	0.036
WB1334P01A1d	Cb	9.00	6.8	0.002	0.008	0.121	0.045

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-5mm	5-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
WB1345P01A6a01	BA1	7.2	12.8	9.9	83.5	10.8	5.6	LFS	SL	GR
WB1345P01A6a02	BA2	4.1	20.1	10.5	86.9	8.8	4.4	LS	SL	GR
WB1345P01A6a03	Bk1	1.6	17.0	12.3	83.8	12.0	4.2	LS	SL	CN
WB1345P01A6a04	Bk2	0.0	16.4	15.8	81.1	14.7	4.2	LS	SL	CN
WB1345P01A6a05	2C	1.8	35.2	22.7	90.0	6.0	4.0	COS	SL	CNV
WB1345P01A5a00	3Btkb1	0.4	14.4	19.9	76.3	14.5	9.1	FSL	L	GR
WB1345P01A5a01	3Btkb2	3.3	10.3	18.8	79.6	12.7	7.7	LS	L	GR
WB1345P01A5a02	3Btkb3	3.6	14.3	9.9	89.8	5.2	5.0	S	SL	GR
WB1345P01A5a03	3Bkb	1.9	14.6	13.4	83.6	8.6	7.6	LS	SL	GRV
WB1345P01A5a04	3BCkb	7.2	15.6	10.7	92.5	4.5	3.0	S	SL	GRV
WB1345P01A5a05	3Cb	4.3	19.3	12.1	93.9	3.2	2.9	S	LS	GRV
WB1345P01A4a01	4BCkb	2.4	10.8	6.7	90.0	5.3	4.6	S	LS	GR
WB1345P01A4a02	4Cb	7.1	16.2	9.0	76.9	19.6	3.5	LS	LS	GRX
WB1345P01A4a03	5Bkb	4.5	11.7	7.3	82.6	10.1	7.2	LS	SL	GR
WB1345P01A4a04	5Ckb	11.3	17.7	6.8	90.6	5.6	3.9	S	LS	GRV
WB1345P01A5a	Cb	6.9	18.1	11.9	93.1	3.9	3.0	S	LS	GRV
WB1345P01A5f	Cb	7.2	16.0	8.7	90.8	5.3	3.9	S	SL	GRV
WB1345P01A5g	Cb	15.7	13.8	7.6	91.0	5.2	3.7	S	SL	CBV
WB1345P01A4b	Cb	4.6	11.5	8.1	95.1	6.3	6.5	LS	SL	GR
WB1345P01A4a	Cb	13.5	18.6	9.8	95.8	1.7	2.5	S	LS	GRV
WB1345P01A4a02	Cb	3.5	19.6	14.7	95.5	1.8	2.7	S	LS	GRV
WB1345P01A4a03	Cb	6.4	27.0	12.1	91.0	5.0	4.0	S	LS	GRV
WB1345P01A4g02	Cb	9.9	26.3	13.5	95.8	1.0	3.2	S	LS	GRV
WB1345P01A3b	Cb	1.5	12.1	9.5	90.9	4.3	4.6	S	SL	GR
WB1345P01A1a	Cb	12.8	22.4	9.6	93.3	2.7	4.1	S	LS	GRX

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	
WB1345P01A6a01	BA1	5.9	8.1	10.4	32.1	27.1	6.7	4.2	5.6
WB1345P01A6a02	BA2	8.7	8.4	10.2	32.8	26.8	5.4	3.3	4.4
WB1345P01A6a03	Bk1	8.0	8.9	10.4	30.5	26.0	7.1	4.9	4.2
WB1345P01A6a04	Bk2	11.2	11.1	12.1	25.3	21.3	8.4	6.3	4.2
WB1345P01A6a05	2C	22.1	19.5	17.1	20.7	10.6	2.6	3.6	4.0
WB1345P01A5a00	3Btkb1	4.4	8.7	13.4	32.0	17.8	4.3	10.2	9.1
WB1345P01A5a01	3Btkb2	6.2	9.9	14.0	32.6	18.9	3.3	9.3	7.7
WB1345P01A5a02	3Btkb3	7.8	10.7	15.6	35.7	20.0	2.3	2.9	5.0
WB1345P01A5a03	3Bkb	6.0	8.7	14.9	35.3	18.6	3.0	5.6	7.8
WB1345P01A5a04	3BCkb	10.1	12.0	17.7	33.2	19.5	2.5	2.0	3.0
WB1345P01A5a05	3Cb	12.3	16.1	23.8	29.6	12.1	1.3	1.9	2.9
WB1345P01A4a01	4BCkb	5.5	9.5	20.8	39.1	15.0	2.1	3.2	4.8
WB1345P01A4a02	4Cb	9.2	8.5	8.2	21.0	29.9	17.3	2.3	3.5
WB1345P01A4a03	5Bkb	4.0	11.3	20.4	30.7	16.3	3.0	7.2	7.2
WB1345P01A4a04	5Ckb	7.3	13.9	24.0	31.0	14.4	2.3	3.3	3.9
WB1345P01A5a	Cb	11.5	14.3	22.1	31.8	13.4	1.7	2.2	3.0
WB1345P01A5f	Cb	6.1	9.9	16.5	36.5	21.8	2.7	2.6	3.9
WB1345P01A5g	Cb	9.2	15.1	22.8	32.9	11.1	2.7	2.5	3.7
WB1345P01A4b	Cb	6.2	11.5	20.9	30.7	15.8	2.8	5.6	6.6
WB1345P01A4e	Cb	12.0	27.1	31.5	19.7	5.5	0.7	1.0	2.5
WB1345P01A4a02	Cb	16.8	31.3	26.4	16.3	4.8	0.8	1.0	2.7
WB1345P01A4a03	Cb	10.0	18.1	23.5	25.3	14.1	2.7	2.3	4.0
WB1345P01A4g02	Cb	17.9	29.2	26.1	16.3	4.3	0.1	0.9	3.2
WB1345P01A3b	Cb	8.2	14.8	24.7	33.4	9.9	1.5	2.8	4.8
WB1345P01A1e	Cb	10.2	15.7	27.8	31.5	8.0	0.9	1.7	4.1

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
WB1345P01A6a01	BA1	9.17	3.6	0.007	0.026	0.232	0.053
WB1345P01A6a02	BA2	9.10	3.9	0.005	0.026	0.278	0.051
WB1345P01A6a03	Bk1	9.22	3.8	0.005	0.018	0.255	0.051
WB1345P01A6a04	Bk2	9.32	2.6	0.005	0.028	0.278	0.056
WB1345P01A6a05	2C	8.11	4.0	0.004	0.014	0.205	0.052
WB1345P01A5a00	3Btkb1	8.01	11.6	0.005	0.034	0.282	0.080
WB1345P01A5a01	3Btkb2	7.95	13.7	0.005	0.026	0.238	0.077
WB1345P01A5a02	3Btkb3	8.27	5.8	0.005	0.022	0.219	0.068
WB1345P01A5a03	3Bkb	8.15	10.5	0.004	0.018	0.196	0.070
WB1345P01A5a04	3BCkb	8.32	6.6	0.003	0.016	0.165	0.061
WB1345P01A5a05	3Cb	8.47	6.5	0.003	0.024	0.151	0.047
WB1345P01A4a01	4BCkb	8.60	6.9	0.005	0.021	0.149	0.048
WB1345P01A4a02	4Cb	8.52	5.2	0.005	0.027	0.199	0.049
WB1345P01A4a03	5Bkb	8.37	7.5	0.005	0.034	0.251	0.062
WB1345P01A4a04	5Ckb	8.96	5.3	0.006	0.028	0.184	0.050
WB1345P01A5e	Cb	8.38	6.3	0.003	0.007	0.153	0.052
WB1345P01A5f	Cb	8.19	5.8	0.004	0.021	0.174	0.055
WB1345P01A5g	Cb	8.65	4.5	0.003	0.015	0.189	0.046
WB1345P01A4b	Cb	8.75	5.3	0.005	0.021	0.230	0.052
WB1345P01A4c	Cb	9.69	5.4	0.003	0.009	0.148	0.031
WB1345P01A4e02	Cb	9.57	6.8	0.002	0.015	0.158	0.027
WB1345P01A4e03	Cb	9.34	5.6	0.004	0.005	0.168	0.043
WB1345P01A4g02	Cb	9.63	5.8	0.005	0.021	0.175	0.029
WB1345P01A3b	Cb	9.56	6.0	0.004	0.011	0.164	0.043
WB1345P01A1e	Cb	9.62	6.1	0.003	0.013	0.155	0.043

Table A-1. Rock Fragment Content and Particle-Size Distribution for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Pebbles (wt %)			Fine-Earth Fraction (wt %)			USDA Texture		
		Coarse	Medium	Fine	Sand	Silt	Clay	Lab	Field	Modifier
		75-20mm	20-6mm	6-2mm	2-0.06mm	0.06-0.002mm	<0.002mm			
WB1374P01A6a01	Bk/BA	11.7	30.3	15.3	82.2	8.2	9.6	LS	SL	CNV
WB1374P01A6a02	BCk	8.2	28.2	16.2	85.1	8.9	6.1	LS	LS	CNV
WB1374P01A5a01	2BCkb	3.5	17.2	12.5	83.3	7.8	9.0	LS	SL	GR
WB1374P01A5a02	2BCkb	5.0	9.5	7.8	85.5	9.5	5.0	LS	LS	GR
WB1374P01A5a03	2C	6.8	16.4	9.2	90.9	4.8	4.3	S	LS	GR
WB1374P01A4a01	3BCkb	2.6	9.4	9.0	85.8	6.3	7.9	LS	SL	GR
WB1374P01A4a02	3Ck	9.2	24.7	13.7	93.6	3.0	3.4	S	LS	GRV
WB1374P01A5b	Cb	8.1	13.0	8.3	86.7	8.5	4.9	LS	SL	GRV
WB1374P01A4e	Cb	7.9	24.9	16.9	86.5	7.6	6.0	LS	LS	GRX
WB1374P01A4f	Cb	8.1	11.8	8.6	89.6	6.1	4.3	S	S	GRV
WB1374P01A3b	Cb	1.2	11.6	9.9	88.2	6.6	5.2	LS	SL	GR
WB1374P01A1b	Cb	3.7	12.3	10.4	86.3	8.5	5.1	LS	SL	GRV
WB1374P01A1e	Cb	8.8	22.6	11.8	92.5	2.7	4.8	S	S	GRV

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.6mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
WB1374P01A6a01	Bk/BA	10.5	10.4	13.1	30.5	17.7	4.7	3.5	9.5
WB1374P01A6a02	Bck	12.4	12.5	15.6	30.7	13.7	5.9	3.0	6.1
WB1374P01A6a01	2BCkb	7.3	9.7	17.0	31.6	17.7	3.2	4.5	9.0
WB1374P01A5a02	2BCkb	5.2	9.6	16.9	35.8	16.1	5.9	3.5	5.0
WB1374P01A5a03	2C	9.7	13.6	22.8	35.8	8.8	2.2	2.6	4.3
WB1374P01A4a01	3BCkb	8.0	13.2	21.5	29.0	14.1	2.3	3.9	7.9
WB1374P01A4a02	3Ck	12.2	18.2	29.1	26.4	7.7	1.5	1.5	3.4
WB1374P01A5b	Cb	7.1	11.2	20.4	35.1	12.9	5.2	3.3	4.9
WB1374P01A4e	Cb	16.3	23.5	21.4	16.5	8.8	3.6	4.0	6.0
WB1374P01A4f	Cb	5.5	13.6	24.9	31.7	13.8	3.3	2.8	4.3
WB1374P01A3b	Cb	7.8	11.1	22.8	34.8	11.6	3.1	3.5	5.2
WB1374P01A1b	Cb	5.8	11.1	23.4	37.6	8.4	5.7	2.9	5.1
WB1374P01A1e	Cb	13.9	24.0	30.5	20.0	4.0	0.3	2.4	4.8

Table A-2. Particle-Size Separates of the Fine-Earth (< 2 mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	Sand Separates (wt %)					Silt Separates (wt %)		Clay (wt %)
		V. Coarse	Coarse	Medium	Fine	V. Fine	Coarse	Fine	
		2-1mm	1-0.5mm	0.5-0.25mm	0.25-0.1mm	0.10-0.05mm	0.05-0.02mm	0.2-0.002mm	<0.002mm
WB1630P01A0a01	Cb	15	13.7	15.5	25.6	17.2	5.7	3.9	3.4
WB1630P01A0a02	2Ab	12.1	11.7	13.5	24.8	15.5	5.1	10.6	6.8
WB1630P01A0a03	2Bkqb	11.4	12.7	15.2	27.5	17.4	4.0	6.3	5.5
WB1630P01A0a04	2Btkqb	6.1	9.0	14.8	33.9	19.9	4.8	4.9	6.6
WB1630P01A0a05	2Bkb1	7.1	7.8	10.8	37.8	26.1	1.3	4.3	4.9
WB1630P01A0a06	2Bkb2	14.9	14.9	18.8	28.9	13.7	2.6	3.1	3.2
WB1630P01A0a07	3Btkb	6.5	8.8	12.3	28.2	21.2	4.6	8.3	10.1
WB1630P01A0a08	3Bkb	10.5	9.6	12.7	29.8	23.9	5.0	3.7	4.9

Table A-3. Chemical Parameters of the Fine-Earth (<2mm) Fraction for Area 5 RWMS Soil Characterization Samples

Field Sample Code	Horizon	pH in Water	Calcium Carbonate	Acid-Oxalate		Citrate-Bicarbonate-Dithionite	
			Equivalent (wt %)	Fe (wt %)	Si (wt %)	Fe (wt %)	Si (wt %)
WB1630P01A0a01	Cb	8.75	2.8	0.006	0.024	0.201	0.039
WB1630P01A0a02	2Ab	8.44	10.4	0.006	0.018	0.193	0.060
WB1630P01A0a03	2Bkqb	8.65	3.9	0.006	0.025	0.250	0.052
WB1630P01A0a04	2Btkqb	8.21	10.8	0.005	0.027	0.215	0.053
WB1630P01A0a05	2Bkb1	8.46	8.2	0.004	0.028	0.221	0.050
WB1630P01A0a06	2Bkb2	8.64	3.9	0.004	0.030	0.179	0.045
WB1630P01A0a07	3Btkb	8.34	11.4	0.007	0.026	0.287	0.063
WB1630P01A0a08	3Bkb	8.65	6.8	0.005	0.026	0.260	0.055