Soil patterns along a hillslope in the Belalie Valley, Midnorth, South Australia

M. Thomas, R.W. Fitzpatrick, M.G. Cannon and J. McThompson

CSIRO Land and Water Science Report 33/07

May 2007
ISSN: 1883-4563

M. Thomas¹,², R.W. Fitzpatrick¹,², M.G. Cannon³,⁴ and J. McThompson¹,⁴

¹ CSIRO Land and Water. Private Mail Bag 2, Glenn Osmond, SA 5046
² Cooperative Research Centre for Landscape Environments and Mineral Exploration
³ CSIRO Division of Soils, Private Mail Bag P.O. Aitkenvale, Qld 4814
⁴ retired

Copyright and Disclaimer

© 2007 CSIRO To the extent permitted by law, all rights are reserved and no part of this publication covered by copyright may be reproduced or copied in any form or by any means except with the written permission of CSIRO.

Important Disclaimer

CSIRO advises that the information contained in this publication comprises general statements based on scientific research. The reader is advised and needs to be aware that such information may be incomplete or unable to be used in any specific situation. No reliance or actions must therefore be made on that information without seeking prior expert professional, scientific and technical advice. To the extent permitted by law, CSIRO (including its employees and consultants) excludes all liability to any person for any consequences, including but not limited to all losses, damages, costs, expenses and any other compensation, arising directly or indirectly from using this publication (in part or in whole) and any information or material contained in it.

Cover Photograph

Description: Upper slope of Belalie Valley study area, looking due north at Ward Hill, South Australia.
© 2007 CSIRO

Soil patterns along a hillslope in the Belalie Valley, Midnorth, South Australia
Acknowledgements

This report is based on the legacy of fieldwork, laboratory data, draft mapping and subsequent draft reporting conducted by Mike Cannon, Jim McThompson and Dr Rob Fitzpatrick during 1988. This earlier work has facilitated contemporary soil-landscape research in the survey area.

The legacy of research was initiated by Dr Albert Rovira and formed part of a soil pathogen investigation in the study area district. We thank Albert for his contribution, and the support given in the preparation of this report.

The soil survey and laboratory analyses were funded by the Wheat Research Council (1988). The laboratory analyses were carried out by the CSIRO Division of Soils in Adelaide during 1988 under the supervision of Mr A Beech. We thank Sandra Tyrell (CSIRO Land and Water) for her Herculean effort in formatting the soil morphological database presented in this report. Mark Thomas received funding from the Cooperative Research Centre for Landscape Environments and Mineral Exploration (CRC-LEME) and the SA Department for Water, Land and Biodiversity Conservation for research purposes.

Finally, we wish to thank Mr. Tom Cootes and family, the local landholders, for their generous support spanning a couple of generations of soil scientists, who were given free rein to use their property as an “outside laboratory” during the 20 or so years that this report spans.
Executive Summary

This report is based on field morphologies of 124 profiles of variants of Red-brown earths, Brown clays and shallow Terra rossa (Rendzinas) soils that were described in dryland, mixed farming paddocks managed by the Cootes and Ashby families. Together, these paddocks comprise an east-facing hillslope (crest to valley-bottom) in the Belalie Valley, 12 km to the north of the township of Spalding in the Midnorth district of South Australia.

In this report we describe seven soil classes (approximating “soil association”) identified through soil survey and laboratory analysis, which include:

- two Brown clays (A and B);
- four Red-brown earths (C, D, E, and G), and
- a group of shallow examples of Terra rossa and (Rendzinas) (F).

Within these soil classes several morphological and/or chemical-specific variants occur. The soils classified have marked differences in morphological properties including texture, structure and colour of the A horizon, texture profile, levels of free carbonate, presence or absence of bleached A2 (E) horizons, and in chemical properties of the subsoils (neutral and alkaline pH, high sodium).
Table of Contents

1. Introduction ................................................................................................................................. 1

2. Methods and materials ............................................................................................................... 2
   2.1. Study area description ........................................................................................................... 2
       2.1.1. Geology, geomorphology and land use ........................................................................ 4
       2.1.2. Climate .......................................................................................................................... 7
   2.2. Soil survey ............................................................................................................................. 7
       2.2.1. Field methods ............................................................................................................... 7
       2.2.2. Laboratory methods ..................................................................................................... 8

3. Results and discussion ................................................................................................................. 9
   3.1. Soil description ..................................................................................................................... 9
       3.1.1. Brown clays .................................................................................................................. 9
       3.1.2. Red-brown earths ....................................................................................................... 9
       3.1.3. Terra rossa and Rendzina soils ................................................................................... 11
   3.2. Soil classification .................................................................................................................. 11
   3.3. Constraints to use .................................................................................................................. 14

4. Conclusions ............................................................................................................................... 15

References ....................................................................................................................................... 16
1. Introduction

Following the appearance in the mid-1980’s of small patches of poor growth in a wheat crop on the farm owned by Mr Tom Cootes near Spalding, South Australia, Dr Albert Rovira and members of his research team visited the field, sampled plants, and examined the roots for damage from *Rhizoctonia solani* AG 8. Elsewhere, earlier studies had shown that *Rhizoctonia solani* AG8 caused patches of poor growth in wheat sown by direct drilling (Rovira 1986) similar to those that were observed in the paddock at Cootes’. There was also strong interest at the time of farming issues associated with abrasive soils (Fitzpatrick 2004; Fitzpatrick et al. 1990). Accordingly, a research project was initiated by the CSIRO Division of Soils during 1988 with funding from the Wheat Research Council with aims to investigate both soil issues (soil pathogen presence and distribution of abrasive soils), and their implications to successful farming enterprise in areas with similar soils in South Australia.

The starting point of the research was a soil inventory consisting of a detailed soil survey on Mr Cootes’ and neighbouring properties, covering, within a single hillslope, several paddocks that has a history of many decades of cultivation. This report concentrates on the following aspects in relation to the detailed soil survey:

- design of detailed soil survey and field methods;
- laboratory analyses of selected soil cores;
- soil mapping based on soil units approximating soil series, and
- description of key soil morphological features considered to have bearing on agricultural production and land capability, e.g. extent, severity and distribution of soil issues such as salinity, sodicity and waterlogging.
2. Methods and materials

2.1. Study area description

The Midnorth defines the geographic region situated between the Barossa Valley in the south, the Yorke Peninsula to the west, and the semi-arid pastoral areas to the north and east. In the context of much of South Australia’s agricultural land, the Midnorth is an important dryland broadacre agricultural region that features soils with high agricultural potential, especially under favourable seasonal and management conditions. The highest agricultural land capability is associated with the soils on the mid and lower hillslopes, where deeper soils tend to coincide with good drainage. The dominant agricultural land use of the Midnorth involves winter cropping (e.g. wheat, barley, canola and peas), often in rotation with sheep grazing, which is sometimes supplemented by growing lucerne and hay.

Stephens et al. (1945) reported that by 1945, most of the land had been cleared of native vegetation since the region had been opened up to farming during the 1870s. Nowadays, the farmland has almost replaced the original open savannah cover of the region. Native grasses, such as wallaby grass (*Darthonia semi-annularis*), iron grass (*Lomandra dura*) and Themeda triandra dominated the low-lying valley areas, while woody species occupied the elevated, better drained areas. These woody species included sheoak (*Casuarina stricta*), wattles (*Acacia spp.*) and Mallee habit (*Eucalyptus odorata*).

The survey site (location: 33°24'04.84" S, 138°37'31.95" E) is situated approximately 200 km north of Adelaide, 25 km south of the regional centre of Jamestown, and 20 km north of the small centre of Spalding, as shown in Figure 1.
Figure 1. Locality map showing the South Australian setting (inset box) for the Midnorth study area, featuring elevation classes (m) and annual rainfall isohyets (mm).

The survey site is located on the east-facing flank of the wide (~ 7 km) Belalie Valley in the Midnorth of South Australia (Figure 2).
2.1.1. Geology, geomorphology and land use

The geology (Burra 1:250,000 scale sheet, Geological Survey of South Australia 1964) comprising interbedded tillites, shales, siltstones, mudstones, quartzites, and dolomites that form the summit and flanks, and quaternary alluvial sediment infill in the valley bottom. The survey site covers a hillslope approximately 1,650 m in length from the summit (Ward Hill; 480 m elevation) in the west to Freshwater Creek in the valley floor (380 m elevation). The geomorphological features of the hillslope transect (A'-A", Figure 3) are shown in Figure 4. Freshwater Creek occupies the base of a deep (12 m) erosional gully formed during the 1940s (Cresswell and Liddicoat 2004). During summer, the gully floor contains a series of wetlands that are sustained by saline groundwaters. The soils on the crests of the low hills appear to have formed in situ from the fine sedimentary rocks.
Figure 3. Survey area hillslope, featuring a rectified aerial photograph, terrain (2 m contours) and the transect A’-A’’.
The soils of the very gently inclined to moderately inclined slopes have few obvious alluvial outwash features such as gravel bedding and are more probably a mixture of alluvial outwash and *in situ* weathering. Where the slopes meet the level plain of Freshwater Creek there is evidence of buried soils of both slope origin and alluvium depicting the common intermixing often seen where two major geomorphic elements abut. The multi-layered profile seen in Freshwater Creek lacks gravels and would appear to be a sequence of deposits which have had varying amounts of calcareous materials accumulated in weak pans.

Airborne aeromagnetic surveys (Munday *et al.* 2003) have exposed an intricate network of buried paleochannels containing accumulations of magnetic materials at various depths in the valley bottom sediments. These paleochannels have been identified as important contributors to regional salt drainage (Cresswell and Liddicoat 2004).

The land use of the survey area is almost exclusively agricultural, and includes sheep grazing on the steep upper slopes and summit ridges, and on the lower slopes and valley bottom.
2.1.2. Climate

Long-term weather records from Clare (60 km south) indicate a Mediterranean climate in the region. Approximately 70% of the 450 mm annual rainfall falls during winter months (May to September). Here, winters are cool and wet, and summers hot and dry. The soil temperature regime is mesic, and the annual soil moisture deficit confers a xeric regime (Soil Survey Staff 2006).

Figure 5. Mean monthly rainfall (mm) (●), mean monthly daily maximum temperatures (°C) (▲); (iii) mean monthly daily minimum temperatures (°C) (■); and (iv) mean monthly daily 3 pm relative humidity (●) records for the years 1862 to 1994 for the town of Clare, which is comparable to the Midnorth study area climatic conditions (source: Australian Bureau of Meteorology, www.bom.gov.au/climate/averages/tables/cw_021014).

2.2. Soil survey

2.2.1. Field methods

The soil survey was conducted on a semi-fixed grid, making allowances for fence lines and farm improvements. The grid lines were aligned at 270 degrees and 90 degrees off the fence line bordering the road running roughly north to south from Spalding. The grid lines (i.e. east to west) were approximately 200 m apart and soil survey sites selected along these at an interval of approximately 100 m. All survey sites were situated within cultivated paddocks. Additional survey sites were established beyond the strict survey grid to account for where fences did not allow for sufficient coverage within a paddock, or to cover locally distinct soil features (e.g. changes in soil surface colour). The soils were described from undisturbed cores taken with the Investigator Drilling Rig; the first meter was taken with a 75 mm tube and the second and subsequent cores were taken with a 50 mm tube. All soils were examined to a depth of two meters - unless bedrock or other drilling impediments was encountered. Surface rock fragments were recorded but since the majority of the paddocks had been stone picked this feature has not been highlighted in the form of soil phases as would be appropriate at this scale of mapping. One hundred and twenty five cores were analysed, shown in Figure 6.
2.2.2. Laboratory methods

The laboratory methods involved a full suite of physiochemical analyses (e.g. particle size distribution, EC$_{1:5}$, pH, exchangeable cations and CEC, ESP, inorganic carbon, etc.) (McKenzie et al. 2002; Rayment and Higginson 1992). The analyses were conducted on a selection of 18 cores (Figure 6).
3. Results and discussion

3.1. Soil description

Seven soil classes have been recognised at approximately “soil association” level (Isbell 1988). The resultant map is presented in Figure 7. The soil classes have been named Spalding “A” to “G”, and variants are given a lower case symbol referring to the particular feature that separates them from the central concept of the soil class (e.g. “Ab” refers to soil class “A”, and “b” the soil has a pale or bleached A2 horizon). (Note that since the current survey was only concerned with the soils of a selected area, variants found may prove to be more extensive/dominant in other localities)

The soils have been classified according to Factual Key (Northcote 1992), Great Soil Group (Stace et al. 1968), to subgroup level in Soil Taxonomy (Soil Survey Staff 2006), and to suborder of Australian Soil Classification (Isbell 1996). The terminology to describe soil morphology follows McDonald et al. (1998). Appendix 1 presents the profile morphological descriptions, and Appendix 2 presents the results of physicochemical analyses. Descriptions of the soil classes are presented in the following sections, and referred to the mapping presented in Figure 7. In the descriptions, soils are grouped by Great Soil Group (Stace et al. 1968), and subdivided according to variant concepts.

3.1.1. Brown clays

Spalding A – comprising a moderate to strongly structured clay subsoil with the field textures dominated by silt in the upper horizons; the soil is deep with what appears to be buried soils of generally redder colour than the overlying Brown clay at depths of one metre or more; sodic subsoils were also observed, and a pale A2 variant (Ab) is recognised.

Spalding B - restricted to the very gently inclined to moderately inclined slopes emanating from the low hills and rises. The soils may have a weak self mulching surface and a clay profile that may extend beyond two meters but the underlying calcareous shales are at a mean depth of 160 cm and a range of 0.7 m to 2 m. A shallow variant (Bs) is recognised whose depth was 38 cm over the calcareous basement.

3.1.2. Red-brown earths

Spalding C – comprising hard setting A horizons of light sandy clay loam to clay loam texture and a clear to sharp change to a dark reddish brown strongly structured medium to heavy clay B horizon. The solum is usually greater than two metres deep. A shallow variant (C-s) has been recognised for those profiles that are less than 0.5 m to the C horizon. The majority of profiles are calcareous although there is considerable variation in depth to the calcareous layer(s), which may be soft, hard, nodular or concretionary. One profile (7D) in the group has a neutral pH (Cn).

Spalding D - similar profile characteristics to Spalding C, but differs in that it has a sporadic bleach of varying thickness and prominence.
Spalding E - comprising gradational texture profiles. The colours of the major horizons are generally less red than the more common duplex profile forms of Red-brown earths. Spalding E may be a transitional form to the brown clay profiles of Spalding A and B. The landscape position of soils of this group is generally near the transition from uniform profile forms to duplex forms. These gradational features may have been enhanced by the cultivation practices resorting surface horizons.

Figure 7. Soil map showing soil class units, with a hillshade applied to accentuate local relief.
Spalding G - the main morphological feature that distinguishes this class of soil from the other Red-brown earths is a lighter surface texture with accompanying poorer structure; the B horizons are strongly structured, and possess a medium to heavy clay texture; free lime is evident in the majority of profiles with one exception (7E). The soils are described by giving a detailed description of a profile(s) for the representative soil, and a representative profile for the variants, and then defining the class limits for the major attributes where a range was recorded.

3.1.3. Terra rossa and Rendzina soils

Spalding F - these soils generally have moderate profile development with moderate to strong structure throughout; the soil textures are uniformly loamy; shallow profiles dominate the class. The soils are darker and browner than Spalding C, D, E and G.

3.2. Soil classification

The soils in the current survey area have been mapped at reconnaissance/regional scale on a number of occasions to satisfy the regional agricultural and land management imperatives of the time (e.g. French et al. 1967; Soil and Land Information 2002; Stephens et al. 1945). French et al. (1967) have described the soils in the survey and neighbouring areas in terms of Group and Subgroup classifications. The soils encountered during the current survey fall within the following Group classes:

- Red-brown earths (Group 2);
- shallow soils over calcareous rocks (Group 3); and to a lesser degree,
- dark brown cracking clays (Group 7).

The most prominent soil of the survey area was Red-brown earths. Morphological observations during the current survey revealed the population Red-brown earths to differ from those typically observed by French et al. (1967). We found the occurrence of sporadically bleached A2 horizons to be less common, and soils with pale A2 horizons (Dr2.23) were not encountered. Morphological differences such as these may be site specific and not regionally typical, and the wider range of Red-brown earth morphologies encountered by French et al. a function of the more extensive, regionally-based survey conducted.

The soils have been classified and cross-referenced (Table 1) according to:

- Australian Great Soil Groups (Stace et al. 1968),
- Factual Key (Northcote 1992);
- Australian Soil Classification (Isbell 1996); and
- Soil Taxonomy (Soil Survey Staff 2006).

Placement in the latter classification is dependent on laboratory determinations according to specified methods, and are therefore provisional. Although Spalding A and B are Brown clays they probably do not crack sufficiently to satisfy the criteria for Vertisols, and would be best placed in the Entisol order subgroup, Vertic Ustorthents.
Spalding C, D, E and G are typical of the range found in the Red-brown earths; the high base status and strong argillic horizon development place them in the Great Group of Paleustalfs in Soil Taxonomy.

Spalding F soils cannot readily be placed in the Australian Great Soil Groups or the American Soil Taxonomy and are thus only approximations.
Table 1. Soil survey soil classification and cross-referenced.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spalding A</td>
<td>Brown clay</td>
<td>Uf6.31,Uf4.41</td>
<td>Brown Sodosol</td>
<td>Vertic Xerorthent</td>
</tr>
<tr>
<td>Spalding B</td>
<td>Brown clay</td>
<td>Uf6.31,Uf6.32</td>
<td>Lithocalcic Calcarosol, Brown Sodosol</td>
<td>Vertic Xerorthent</td>
</tr>
<tr>
<td>Spalding C</td>
<td>Red-brown earth</td>
<td>Dr2.13,Dr2.12, Dd3.13</td>
<td>Red Sodosol</td>
<td>Natrixeralfs/ Palexeralfs</td>
</tr>
<tr>
<td>Spalding D</td>
<td>Red-brown earth</td>
<td>Dr2.33</td>
<td>Red Sodosol</td>
<td>Natrixeralfs/ Palexeralfs</td>
</tr>
<tr>
<td>Spalding E</td>
<td>Red-brown earth</td>
<td>Gn3.13,Gn3.12</td>
<td>Red Sodosol</td>
<td>Natrixeralfs/ Palexeralfs</td>
</tr>
<tr>
<td>Spalding F</td>
<td>Renndzina, Terra rossa</td>
<td>Um6.43,Um6.41, Um6.24</td>
<td>Petrocalcic Dermosol, Petrocalcic Kandosol</td>
<td>Xerorthents</td>
</tr>
<tr>
<td>Spalding G</td>
<td>Red-brown earth</td>
<td>Dr2.13,Dr2.33, Dr2.12, Dr2.53, Gn3.19</td>
<td>Red Sodosol</td>
<td>Palexeralfs/Haploxeralfs</td>
</tr>
</tbody>
</table>

Soil Patterns along a hill slope in the Belalie Valley, Midnorth Region, South Australia
3.3. Constraints to use

Spalding A and B class soils have good surface soil structural characteristics, and a texture profile that is generally not restrictive to good drainage - though Spalding A profiles with pale A2 horizons do indicate slightly poorer drainage. Within both soil classes, poorly structured horizons were noted at depth and this may indicate sodicity, and therefore should be carefully noted where soil conservation or drainage earthworks may expose these highly erodible horizons. Erosion is already evident in the Spalding area. The Spalding B class soils generally have a better structure on the surface and would appear to be able to cope with the continual cropping. However, a profile within the class had a gleyed horizon at 1.65 m depth, and free water was evident. This is of some concern in a landscape devoid of trees, and with a low-potential leaching environment. This is a sign that harmful water perching is possible. Laboratory analysis indicates some soils to be salt-affected.

The loamy surfaced Red-brown earths (Spalding C, D, and E class soils) show a poorer structure in the surface horizons, and while the thin walled tube sampling allowed an obvious cultivation break to be seen, no plough pans were observed. The structure and quantity of the roots, however, depicted a very common physical restriction at the interface of the Ap horizon and the horizon below. The B horizons in all soils are strongly structured and very porous, and other than the presence of sodic subsoils, present no restriction to plant growth. All the soils appeared to be moderately- to well-drained as no mottling was observed. There is no water balance model available for these soils but it would appear that there is substantial soil water reserve in the subsoil at the end of the summer fallow. Spalding E class soils are generally saline in the surface and subsoil (e.g. profile 6B).

Spalding F class soils were generally well structured throughout the profile and appeared to have no major constraints. The major constraints to these soils are generally shallow profiles (limited water storage), and high carbonate content in the rootzone. In some areas of these soils, cultivation may be hampered by rock outcropping and slope gradient.

Spalding G class soils have the lightest surface textures of all the hillslope soils described, and with this, the poorest structure. As such, these soils provide a poor medium for seedling emergence and early crop growth. Marked texture and structural changes were observed between the Ap horizon and the horizon immediately below. This was highlighted at many sites by roots deviating from vertical, downwards growth, to horizontal growth at the lower horizon boundary. This textural difference will have a major influence on overall plant growth, and may also contribute to the formation of a seasonal soil layer of moisture deficit. This may also provide conditions suitable for build-up of plant pathogens exceeding typical levels found in similar soils. Salinity is evident in the subsoil.
4. Conclusions

The moderate intensity soil survey and subsequent laboratory analyses of soils in the farmed hillslope situated in the Midnorth of South Australia has allowed the compilation of a database of morphological and physicochemical soil properties. Considered spatially, we have applied these data to compile a map of soil units that approximate soil associations. According to Great Soil Group (Stace et al. 1968), three soil types were identified, and within these types, variants were identified. The soils of the hillslope include: (i) Brown clays, comprising variants “Spalding A” and “B”; Red-brown earths, comprising variants “Spalding C”, “D”, “E”, and “G”; and (iii) Terra rossas/Rendzina soils – or “Spalding F”. Limitations to cultivation have also been described for each of the variants. Such limitations include: erosion hazard, water holding capacity and other physical impediments to crop emergence and root development, salinity, sodicity – and waterlogging from perched watertables, and soil conditions likely to promote the occurrence of soil borne disease.

The key research conclusions include the following:

1. The soils in the survey area occur in a complex and intricate pattern, some of which are salt-affected (saline-sodic).

2. Sodic subsoils together with excess water ponding (watertable perching) in the profiles of the sloping lands could be evidence of an increasing problem to land management, and is in need of monitoring.
References


French RJ, Matheson WE and Clarke AL (1967) Soil and Agriculture of the Northern and Yorke Peninsula Regions of South Australia. Department of Agriculture, South Australia.


Soil and Land Information (2002) Land Resource Information - Northern Agricultural Districts of South Australia. (South Australian Land Information Group,
The Department of Water, Land and Biodiversity Conservation: Adelaide, Australia).


Appendix 1: Survey area profile morphological data

Profile locations in Figure 6.

Summary of Profile data from Tom Cootes Property between Spalding and Jamestown, South Australia

<table>
<thead>
<tr>
<th>Horizon*</th>
<th>Depth range (cm)</th>
<th>Munsell colour notation</th>
<th>Texture*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-14</td>
<td>5YR3/4</td>
<td>LS+</td>
</tr>
<tr>
<td>B1</td>
<td>14-28</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>28-44</td>
<td>2.5YR3/4</td>
<td>CL</td>
</tr>
</tbody>
</table>

Profile ID = 1A; Soil Unit =Gs; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Horizon*</th>
<th>Depth range (cm)</th>
<th>Munsell colour notation</th>
<th>Texture*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-11</td>
<td>5YR3/3</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>11-19</td>
<td>5YR3/3</td>
<td>SC</td>
</tr>
<tr>
<td>B22</td>
<td>19-33</td>
<td>5YR4/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>33-45</td>
<td>5YR4/4</td>
<td>MHC</td>
</tr>
<tr>
<td>C1K</td>
<td>45-60</td>
<td>5Y5/2</td>
<td>ZL</td>
</tr>
<tr>
<td>C2K</td>
<td>60-75</td>
<td>7.5YR5/8</td>
<td>ZL</td>
</tr>
<tr>
<td>C3K</td>
<td>75-100</td>
<td>5Y5/2</td>
<td>ZL</td>
</tr>
</tbody>
</table>

C2 MAYBE SOIL HORIZON: SPJ 1B 9SS

Profile ID = 1B; Soil Unit =Cs; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Horizon*</th>
<th>Depth range (cm)</th>
<th>Munsell colour notation</th>
<th>Texture*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-11</td>
<td>5YR4/8</td>
<td>SCL</td>
</tr>
<tr>
<td>A3</td>
<td>11-28</td>
<td>2.5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>28-48</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>48-90</td>
<td>5YR4/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>90-110</td>
<td>5YR4/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B24n</td>
<td>110-160</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>160-200</td>
<td>5YR4/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>

196-200CM ACCUMULATION OF CARBONATE:
Profile ID = 1D; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-15</td>
<td>5YR4/4 SC</td>
<td>SCL</td>
</tr>
<tr>
<td>A3</td>
<td>15-43</td>
<td>2.5YR3/6 SC</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>43-80</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>80-95</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>2Bsb</td>
<td>95-120</td>
<td>2.5YR3/6 MC</td>
<td></td>
</tr>
<tr>
<td>2Bk</td>
<td>120-200</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
</tbody>
</table>

2B ZONE OF INCREASING CARBONATE:

Profile ID = 1E; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-6</td>
<td>5YR3/4 SCLFS</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A3</td>
<td>6-11</td>
<td>5YR3/3 SCLFS</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B1</td>
<td>11-20</td>
<td>5YR3/3 ZC</td>
<td>ZC</td>
</tr>
<tr>
<td>B21</td>
<td>20-76</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>76-127</td>
<td>5YR3/8 SCL</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>127-200</td>
<td>5YR3/8 LC</td>
<td></td>
</tr>
</tbody>
</table>

SODIC SUBSOIL ?:

Profile ID = 1F; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-6</td>
<td>5YR3/4 ZC</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>6-14</td>
<td>5YR3/3 ZC</td>
<td>ZC</td>
</tr>
<tr>
<td>B21</td>
<td>14-64</td>
<td>5YR3/3 MHC</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>64-95</td>
<td>5YR5/6 MHC</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>95-147</td>
<td>5YR4/8 MHC</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>147-180</td>
<td>2.5YR3/8 LMC</td>
<td></td>
</tr>
<tr>
<td>B25</td>
<td>180-200</td>
<td>5YR6/6 LMC</td>
<td></td>
</tr>
</tbody>
</table>

SODIC SUBSOIL SPJ 1F 9SS

Profile ID = 1G; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-7</td>
<td>5YR3/4 ZC</td>
<td>ZC</td>
</tr>
<tr>
<td>B11</td>
<td>7-11</td>
<td>5YR3/3 ZC</td>
<td>ZC</td>
</tr>
<tr>
<td>B21</td>
<td>11-67</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>67-107</td>
<td>2.5YR4/6 LC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>107-190</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
</tbody>
</table>
Profile ID = 1H; Soil Unit = B; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-5</td>
<td>2.5YR3/4 FSC</td>
</tr>
<tr>
<td>B1</td>
<td>5-9</td>
<td>7.5YR3/3 FSC</td>
</tr>
<tr>
<td>B21</td>
<td>9-73</td>
<td>2.5YR3/4 MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>73-114</td>
<td>5YR4/6 MHC</td>
</tr>
<tr>
<td>D1</td>
<td>114-160</td>
<td>5YR4/6 CLFS</td>
</tr>
<tr>
<td>D2</td>
<td>160-200</td>
<td>5YR4/6 LMC</td>
</tr>
</tbody>
</table>

90-95 & 110-115 HAVE NARROW META GRAVEL LENSES:

Profile ID = 2A; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2sb</td>
<td>0-16</td>
<td>5YR4/4 SCL</td>
</tr>
<tr>
<td>B21</td>
<td>16-50</td>
<td>5YR3/4 SCL</td>
</tr>
<tr>
<td>B22k</td>
<td>50-82</td>
<td>2.5YR3/4 MHC</td>
</tr>
<tr>
<td>2B</td>
<td>82-140</td>
<td>2.5YR3/6 MHC</td>
</tr>
<tr>
<td>3B</td>
<td>140-172</td>
<td>2.5YR3/4 MC</td>
</tr>
<tr>
<td>4Bk</td>
<td>172-190</td>
<td>2.5YR3/6 MHC</td>
</tr>
</tbody>
</table>

Profile ID = 2B; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>A12</td>
<td>0-14</td>
<td>5YR4/4 SCL</td>
</tr>
<tr>
<td>A3sb</td>
<td>14-38</td>
<td>5YR3/4 SCL</td>
</tr>
<tr>
<td>B21</td>
<td>38-53</td>
<td>2.5YR3/6 CLS</td>
</tr>
<tr>
<td>B22k</td>
<td>53-115</td>
<td>2.5YR3/4 MHC</td>
</tr>
<tr>
<td>2Bk</td>
<td>115-158</td>
<td>2.5YR3/6 MHC</td>
</tr>
<tr>
<td>3B</td>
<td>158-180</td>
<td>2.5YR3/4 MHC</td>
</tr>
<tr>
<td>4Bk</td>
<td>180-200</td>
<td>2.5YR3/6 MHC</td>
</tr>
</tbody>
</table>

Profile ID = 2C; Soil Unit = E; Great Soil Group = RBE; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3</td>
<td>0-15</td>
<td>5YR3/2 CLFS</td>
</tr>
<tr>
<td>B1</td>
<td>15-23</td>
<td>2.5YR3/6 CL</td>
</tr>
<tr>
<td>B21</td>
<td>23-65</td>
<td>2.5YR3/2 LMC</td>
</tr>
<tr>
<td>B22k</td>
<td>65-140</td>
<td>2.5YR3/2 MHC</td>
</tr>
<tr>
<td>B23</td>
<td>140-170</td>
<td>2.5YR3/4 MHC</td>
</tr>
<tr>
<td>2B</td>
<td>170-200</td>
<td>2.5YR3/6 MHC</td>
</tr>
</tbody>
</table>

MAYBE OVERBURDEN FROM EROSION OR FILLED:
Profile ID = 2D; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-12</td>
<td>7.5YR4/4</td>
<td>SCL</td>
</tr>
<tr>
<td>A2sp</td>
<td>12-52</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>52-100</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>100-118</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>118-158</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>158-180</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>180-200</td>
<td>5YR4/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

Profile ID = 2E; Soil Unit = Gb; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>LS</td>
</tr>
<tr>
<td>A2sb</td>
<td>10-48</td>
<td>5YR4/2</td>
<td>LFS</td>
</tr>
<tr>
<td>B21</td>
<td>48-88</td>
<td>2.5YR3/2</td>
<td>HC</td>
</tr>
<tr>
<td>B22</td>
<td>88-166</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>166-200</td>
<td>2.5YR3/2</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 2F; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-14</td>
<td>5YR4/2</td>
<td>SL</td>
</tr>
<tr>
<td>A12</td>
<td>14-25</td>
<td>5YR4/6</td>
<td>FSL</td>
</tr>
<tr>
<td>B21</td>
<td>25-52</td>
<td>2.5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>B22</td>
<td>52-110</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>110-183</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>183-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

META ROCK QUARTSITE? AT 52CM 7CM DIAMETER:

Profile ID = 2G; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR4/2</td>
<td>SL</td>
</tr>
<tr>
<td>A12</td>
<td>10-32</td>
<td>2.5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>A3</td>
<td>32-45</td>
<td>2.5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>45-70</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>70-88</td>
<td>2.5YR3/6</td>
<td>MC</td>
</tr>
<tr>
<td>B23k</td>
<td>88-200</td>
<td>2.5YR4/6</td>
<td>MC</td>
</tr>
</tbody>
</table>
Profile ID = 3A; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-12</td>
<td>5YR3/4</td>
<td>FSL</td>
</tr>
<tr>
<td>A1</td>
<td>12-18</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>A3</td>
<td>18-43</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
<tr>
<td>B1</td>
<td>43-62</td>
<td>2.5YR3/6</td>
<td>HC</td>
</tr>
<tr>
<td>B21</td>
<td>62-140</td>
<td>5YR3/6</td>
<td>HC</td>
</tr>
<tr>
<td>B22k</td>
<td>140-200</td>
<td>2.5YR3/6</td>
<td>LMC</td>
</tr>
</tbody>
</table>

APPEARS MORE LIKE A Gn3:

Profile ID = 3B; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR4/4</td>
<td>FSL</td>
</tr>
<tr>
<td>A1</td>
<td>8-28</td>
<td>5YR4/3</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A3</td>
<td>28-44</td>
<td>5YR5/4</td>
<td>CLS</td>
</tr>
<tr>
<td>B21</td>
<td>44-97</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>97-200</td>
<td>2.5YR4/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

Profile ID = 3C; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-13</td>
<td>5YR4/2</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B21</td>
<td>13-56</td>
<td>5YR3/4</td>
<td>LMC</td>
</tr>
<tr>
<td>B22k</td>
<td>56-82</td>
<td>5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>BCK</td>
<td>82-135</td>
<td>5YR5/8</td>
<td>DV</td>
</tr>
<tr>
<td>C</td>
<td>135-200</td>
<td>2.5Y6/3</td>
<td>DV</td>
</tr>
</tbody>
</table>

Profile ID = 3D; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>7.5YR3/2</td>
<td>CL</td>
</tr>
<tr>
<td>A31</td>
<td>8-18</td>
<td>5YR3/4</td>
<td>CL</td>
</tr>
<tr>
<td>A32</td>
<td>18-28</td>
<td>5YR4/4</td>
<td>CL+</td>
</tr>
<tr>
<td>B2</td>
<td>28-57</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 3E; Soil Unit = Cs; Great Soil Group = L; Factual Key = Dd3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Horizon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-4</td>
<td>5YR3/2</td>
<td>CL</td>
</tr>
<tr>
<td>BC</td>
<td>4-26</td>
<td>2.5YR3/2</td>
<td>MHC</td>
</tr>
</tbody>
</table>
Profile ID = 3F; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>A11</td>
<td>0-5</td>
<td>5YR2/3</td>
<td>L</td>
<td></td>
</tr>
<tr>
<td>A12</td>
<td>5-10</td>
<td>5YR3/6</td>
<td>ZCL</td>
<td></td>
</tr>
<tr>
<td>A13</td>
<td>10-22</td>
<td>2.5YR3/6</td>
<td>ZCL</td>
<td></td>
</tr>
<tr>
<td>A14</td>
<td>22-34</td>
<td>5YR4/8</td>
<td>ZCL</td>
<td></td>
</tr>
<tr>
<td>A2sb</td>
<td>34-46</td>
<td>5YR4/8</td>
<td>CLFS</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>46-77</td>
<td>2.5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>77-120</td>
<td>2.5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>2Asb</td>
<td>120-130</td>
<td>5YR4/8</td>
<td>CLFS</td>
<td></td>
</tr>
<tr>
<td>2B21</td>
<td>130-167</td>
<td>2.5YR3/4</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>2B22</td>
<td>167-188</td>
<td>2.5YR3/8</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>2B23</td>
<td>188-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 4A; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>5YR3/4</td>
<td>CL</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>9-31</td>
<td>2.5YR3/4</td>
<td>CL+</td>
<td></td>
</tr>
<tr>
<td>B21k</td>
<td>31-77</td>
<td>2.5YR3/4</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>77-190</td>
<td>5YR4/6</td>
<td>MC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>190-200</td>
<td>5YR4/8</td>
<td>MC</td>
<td></td>
</tr>
</tbody>
</table>

CALCILICATE ROCK 70MM AT 110CM:

Profile ID = 4B; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-13</td>
<td>5YR4/3</td>
<td>LS</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>13-23</td>
<td>5YR4/3</td>
<td>LFS</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>23-73</td>
<td>2.5YR3/4</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>73-86</td>
<td>2.5YR3/4</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B3k</td>
<td>86-142</td>
<td>5YR4/6</td>
<td>SC</td>
<td></td>
</tr>
<tr>
<td>2B</td>
<td>142-200</td>
<td>2.5YR3/4</td>
<td>MHC</td>
<td></td>
</tr>
</tbody>
</table>

CALCILICATE AT 163-166CM:
Profile ID = 4C; Soil Unit = Gn; Great Soil Group = No clear equivalent soil class; Factual Key = Dr2.53

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Major Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-8</td>
<td>7.5YR4/2</td>
<td>LFS</td>
</tr>
<tr>
<td>8-15</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>15-28</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>28-100</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>100-200</td>
<td>5YR4/8</td>
<td>LC</td>
</tr>
</tbody>
</table>

Calcillicate coarse fragments at 15-28; 85-90; Sodic?:

Profile ID = 4D; Soil Unit = F; Great Soil Group = No clear equivalent soil class; Factual Key = Um6.41

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Major Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-8</td>
<td>7.5YR3/2</td>
<td>ZCL</td>
</tr>
<tr>
<td>8-20</td>
<td>7.5YR3/2</td>
<td>ZCL+</td>
</tr>
</tbody>
</table>

Profile ID = 5; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Major Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>6-18</td>
<td>5YR3/8</td>
<td>LMC</td>
</tr>
<tr>
<td>18-63</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>63-100</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>100-158</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>158-166</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>2B21</td>
<td>166-178</td>
<td>2.5YR3/6</td>
</tr>
<tr>
<td>2B22</td>
<td>178-246</td>
<td>2.5YR3/6</td>
</tr>
<tr>
<td>2B23</td>
<td>246-253</td>
<td>5YR4/6</td>
</tr>
<tr>
<td>3B21</td>
<td>253-338</td>
<td>5YR4/8</td>
</tr>
<tr>
<td>3B22</td>
<td>338-370</td>
<td>5YR4/6</td>
</tr>
</tbody>
</table>

At 173-178 large calcilicate:

Profile ID = 5A; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Major Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>5YR3/4</td>
<td>CL</td>
</tr>
<tr>
<td>10-22</td>
<td>5YR4/4</td>
<td>CL+</td>
</tr>
<tr>
<td>2B21</td>
<td>22-96</td>
<td>2.5YR3/4</td>
</tr>
<tr>
<td>2B22</td>
<td>96-130</td>
<td>2.5YR3/6</td>
</tr>
<tr>
<td>2B23n</td>
<td>130-173</td>
<td>10R3/6</td>
</tr>
<tr>
<td>2B24k</td>
<td>173-200</td>
<td>2.5YR3/6</td>
</tr>
</tbody>
</table>
Profile ID = 5B; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4 CL</td>
<td></td>
</tr>
<tr>
<td>A2sb</td>
<td>8-25</td>
<td>5YR3/4 CLFS</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>23-77</td>
<td>2.5YR3/3 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>77-125</td>
<td>2.5YR3/3 MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>125-170</td>
<td>5YR5/8 LMC</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 5C; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>5YR4/4 CL</td>
<td></td>
</tr>
<tr>
<td>A2sb</td>
<td>9-30</td>
<td>5YR4/3 LC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>30-55</td>
<td>2.5YR2/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>55-70</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B23k</td>
<td>70-110</td>
<td>5YR4/8 MHC</td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>110-162</td>
<td>10R3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B31</td>
<td>162-167</td>
<td>2.5YR2/4 LMC</td>
<td></td>
</tr>
<tr>
<td>B32</td>
<td>167-200</td>
<td>5YR4/8 LMC</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 5D; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4 SCL</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>10-24</td>
<td>2.5YR3/6 CLS</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>24-39</td>
<td>2.5YR3/6 CLS</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>39-74</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>74-115</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>115-118</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B24n</td>
<td>118-152</td>
<td>10R3/6 MC</td>
<td></td>
</tr>
<tr>
<td>B25k</td>
<td>152-200</td>
<td>2.5YR3/6 LMC</td>
<td></td>
</tr>
</tbody>
</table>

WEAK SPORADIC BLEACHING ON TOP OF B2:
**Profile ID = 5E; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>A31</td>
<td>8-33</td>
<td>5YR3/4</td>
<td>CLS</td>
</tr>
<tr>
<td>A32</td>
<td>33-50</td>
<td>2.5YR3/6</td>
<td>CLS+22</td>
</tr>
<tr>
<td>B21</td>
<td>50-87</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>87-114</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>114-144</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24n</td>
<td>140-160</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>160-200</td>
<td>2.5YR4/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

Weak sporadic bleaching on top of B2:

**Profile ID = 5F; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B11</td>
<td>10-36</td>
<td>5YR3/3</td>
<td>LMC</td>
</tr>
<tr>
<td>B12</td>
<td>36-52</td>
<td>2.5YR3/6</td>
<td>SC</td>
</tr>
<tr>
<td>B21</td>
<td>52-73</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>73-82</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>82-89</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>89-113</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>113-200</td>
<td>2.5YR6/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**Profile ID = 5G; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR4/2</td>
<td>SCL</td>
</tr>
<tr>
<td>A1</td>
<td>8-30</td>
<td>2.5YR4/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>30-43</td>
<td>2.5YR3/4</td>
<td>HC</td>
</tr>
<tr>
<td>B22</td>
<td>43-66</td>
<td>2.5YR4/6</td>
<td>HC</td>
</tr>
<tr>
<td>B23</td>
<td>66-116</td>
<td>2.5YR3/3</td>
<td>HC</td>
</tr>
<tr>
<td>B24</td>
<td>116-141</td>
<td>2.5YR3/3</td>
<td>HC</td>
</tr>
<tr>
<td>B25k</td>
<td>141-175</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>C</td>
<td>175-200</td>
<td>5Y63</td>
<td>LC</td>
</tr>
</tbody>
</table>

Shale gravel at 116-119:
Profile ID = 5H; Soil Unit = B; Great Soil Group = No clear equivalent soil class; Factual Key = Uf6.32

<table>
<thead>
<tr>
<th>Zone</th>
<th>Depth (mm)</th>
<th>Munsell Color</th>
<th>Sig. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0–8</td>
<td>7.5YR3/2</td>
<td>MC</td>
</tr>
<tr>
<td>B21</td>
<td>8–16</td>
<td>10YR2/2</td>
<td>MC</td>
</tr>
<tr>
<td>B22</td>
<td>16–63</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>67–78</td>
<td>5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>BCk</td>
<td>78–98</td>
<td>5YR5/8</td>
<td>MHC</td>
</tr>
<tr>
<td>Ck</td>
<td>98–105</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 6; Soil Unit = Ab; Great Soil Group = No clear equivalent soil class; Factual Key = Uf4.41

<table>
<thead>
<tr>
<th>Zone</th>
<th>Depth (mm)</th>
<th>Munsell Color</th>
<th>Sig. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0–8</td>
<td>5YR4/4</td>
<td>ZC</td>
</tr>
<tr>
<td>A2</td>
<td>8–19</td>
<td>5YR3/8</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>19–66</td>
<td>2.5YR3/5</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>66–85</td>
<td>5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>85–158</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>158–200</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
</tbody>
</table>

Profile ID = 6A; Soil Unit = E; Great Soil Group = No clear equivalent soil class; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Zone</th>
<th>Depth (mm)</th>
<th>Munsell Color</th>
<th>Sig. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0–8</td>
<td>7.5YR3/2</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B21</td>
<td>8–60</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B22</td>
<td>60–78</td>
<td>5YR4/4</td>
<td>CL</td>
</tr>
<tr>
<td>2Bk</td>
<td>78–119</td>
<td>5YR5/4</td>
<td>CL</td>
</tr>
<tr>
<td>2B</td>
<td>119–144</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>3A</td>
<td>144–176</td>
<td>5YR4/8</td>
<td>CS</td>
</tr>
<tr>
<td>3B</td>
<td>176–200</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
</tbody>
</table>

APPEARS TO BE LAYERED SOIL:
### Profile ID = 6B; Soil Unit = F; Great Soil Group = No clear equivalent soil class; Factual Key = Um6.41

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-11</td>
<td>7.5YR3/2</td>
<td>CL</td>
</tr>
<tr>
<td>A1</td>
<td>11-22</td>
<td>7.5YR3/2</td>
<td>CL</td>
</tr>
<tr>
<td>B3k</td>
<td>22-60</td>
<td>7.5YR7/4</td>
<td>SCKL</td>
</tr>
<tr>
<td>C11</td>
<td>60-73</td>
<td>2.5YR4/4</td>
<td>SCKL</td>
</tr>
<tr>
<td>C12</td>
<td>73-100</td>
<td>7.5YR7/6</td>
<td>SCKL</td>
</tr>
</tbody>
</table>

### Profile ID = 6C; Soil Unit = F; Great Soil Group = No clear equivalent soil class; Factual Key = Um6.41

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-12</td>
<td>7.5YR3/2</td>
<td>CL</td>
</tr>
<tr>
<td>A</td>
<td>12-21</td>
<td>7.5YR3/2</td>
<td>CL</td>
</tr>
</tbody>
</table>

CALCAREOUS THROUGHOUT:

### Profile ID = 6D; Soil Unit = E; Great Soil Group = RBE; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>CL</td>
</tr>
<tr>
<td>A1</td>
<td>8-17</td>
<td>2.5YR3/4</td>
<td>CL+</td>
</tr>
<tr>
<td>B21</td>
<td>17-48</td>
<td>2.5YR3/4</td>
<td>LMC</td>
</tr>
<tr>
<td>B22k</td>
<td>48-60</td>
<td>2.5YR3/4</td>
<td></td>
</tr>
</tbody>
</table>

CARBONATE STOPPED PENETRATION (52-60):

### Profile ID = 6E; Soil Unit = E; Great Soil Group = RBE; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>CL</td>
</tr>
<tr>
<td>B1</td>
<td>8-18</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>18-58</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B2k</td>
<td>58-200</td>
<td>5YR4/8</td>
<td>LC</td>
</tr>
</tbody>
</table>
Profile ID = 6F; Soil Unit = Gb; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>SL</td>
</tr>
<tr>
<td>A3</td>
<td>10-31</td>
<td>5YR3/4</td>
<td>CLS</td>
</tr>
<tr>
<td>B21</td>
<td>31-69</td>
<td>5YR3/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>69-110</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>110-140</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24n</td>
<td>140-168</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>168-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

50MM QUARTZITE GRAVEL AT 27-31; WEAK BLEACH ON BOTTOM OF A; 168-200 OF META GRAVELS:

Profile ID = 6G; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>SL</td>
</tr>
<tr>
<td>A12</td>
<td>8-17</td>
<td>5YR5/6</td>
<td>FSL</td>
</tr>
<tr>
<td>A13</td>
<td>17-37</td>
<td>5YR5/6</td>
<td>FSL</td>
</tr>
<tr>
<td>B21</td>
<td>37-52</td>
<td>2.5YR3/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>52-75</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>75-100</td>
<td>5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>100-123</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>123-158</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B26</td>
<td>158-167</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B27k</td>
<td>167-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

120-123 QUARTZITE GRAVELS; SHALE AT 153-158; 167-200 LAYERS OF IRONSTONE, GRAVEL AND SHALE:

Profile ID = 6H; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>A3</td>
<td>8-14</td>
<td>5YR4/4</td>
<td>CLFS</td>
</tr>
<tr>
<td>B21</td>
<td>14-47</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>47-150</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>150-158</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>158-170</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>170-200</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

ODD QUARTZITE GRAVEL THROUGH B22; 147-157 IRONSTONE AND QUARTZ GRAVELS; WEAK SPORADIC BLEACH:
Soil Patterns along a hill slope in the Belalie Valley, Midnorth Region, South Australia

**Profile ID = 6I; Soil Unit =Gg; Great Soil Group = RBE; Factual Key = Gn3.19**

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Thickness (mm)</th>
<th>Munsell Color</th>
<th>Color</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>SL</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>10-35</td>
<td>5YR4/6</td>
<td>SCL</td>
<td></td>
</tr>
<tr>
<td>B1sb</td>
<td>35-50</td>
<td>5YR4/6</td>
<td>SC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>50-100</td>
<td>2.5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>100-148</td>
<td>2.5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>148-200</td>
<td>2.5YR3/6</td>
<td>LMC</td>
<td></td>
</tr>
</tbody>
</table>

98-100 QUARTZITE 50MM GRAVEL:

**Profile ID = 6J; Soil Unit =G; Great Soil Group = RBE; Factual Key = Dr2.12**

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Thickness (mm)</th>
<th>Munsell Color</th>
<th>Color</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>7.5YR3/4</td>
<td>LFS</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>8-23</td>
<td>5YR3/4</td>
<td>CLFS</td>
<td></td>
</tr>
<tr>
<td>A2sb</td>
<td>23-34</td>
<td>5YR3/6</td>
<td>SCL</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>34-60</td>
<td>5YR3/3</td>
<td>MHC</td>
<td></td>
</tr>
</tbody>
</table>

LARGE QUARTZ GRAVEL - LIME FREE PROFILE:

**Profile ID = 7; Soil Unit =Ab; Great Soil Group = BC; Factual Key = Uf4.41**

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Thickness (mm)</th>
<th>Munsell Color</th>
<th>Color</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR4/4</td>
<td>ZC</td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>8-18</td>
<td>5YR3/6</td>
<td>ZC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>18-85</td>
<td>2.5YR3/4</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>85-128</td>
<td>5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>128-173</td>
<td>2.5YR3/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B24n</td>
<td>173-195</td>
<td>5YR4/8</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B25</td>
<td>195-200</td>
<td>5YR3/6</td>
<td>LC</td>
<td></td>
</tr>
</tbody>
</table>

**Profile ID = 7A; Soil Unit =G; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Horizon</th>
<th>Thickness (mm)</th>
<th>Munsell Color</th>
<th>Color</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR4/6</td>
<td>LFS</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>8-13</td>
<td>5YR4/6</td>
<td>ZL</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>13-20</td>
<td>2.5YR4/6</td>
<td>CL</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>20-73</td>
<td>5YR3/3</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>73-124</td>
<td>5YR4/4</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>124-165</td>
<td>2.5YR4/6</td>
<td>MHC</td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>165-200</td>
<td>5YR4/6</td>
<td>LC</td>
<td></td>
</tr>
</tbody>
</table>
**Profile ID = 7B; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Hue (Munsell)</th>
<th>Value (Munsell)</th>
<th>Chroma (Munsell)</th>
<th>Land Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap1</td>
<td>0-6</td>
<td>5YR 3/6</td>
<td>ZCL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ap2</td>
<td>6-12</td>
<td>5YR 4/4</td>
<td>ZCL+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>12-62</td>
<td>5YR 3/3</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>62-78</td>
<td>5YR 3/6</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2Bk</td>
<td>78-110</td>
<td>5YR 3/4</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B</td>
<td>110-150</td>
<td>5YR 4/4</td>
<td>MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B</td>
<td>150-200</td>
<td>5YR 4/6</td>
<td>MC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Profile ID = 7C; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Hue (Munsell)</th>
<th>Value (Munsell)</th>
<th>Chroma (Munsell)</th>
<th>Land Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR 3/6</td>
<td>ZL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>8-18</td>
<td>5YR 3/4</td>
<td>ZCL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>18-28</td>
<td>2.5YR 3/6</td>
<td>ZCL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>28-71</td>
<td>2.5YR 3/4</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>71-100</td>
<td>2.5YR 3/6</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>100-154</td>
<td>2.5YR 3/6</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>154-185</td>
<td>2.5YR 3/8</td>
<td>MC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CORE STUCK IN TUBE B23 APPROXIMATE DEPTH:**

**Profile ID = 7D; Soil Unit = Cn; Great Soil Group = RBE; Factual Key = Dr2.12**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Hue (Munsell)</th>
<th>Value (Munsell)</th>
<th>Chroma (Munsell)</th>
<th>Land Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR 3/4</td>
<td>SCLFS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>10-24</td>
<td>2.5YR 3/6</td>
<td>CLS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BsB</td>
<td>24-46</td>
<td>2.5YR 3/6</td>
<td>CLS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B21</td>
<td>46-65</td>
<td>2.5YR 2/4</td>
<td>CLS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B22</td>
<td>65-88</td>
<td>2.5YR 3/8</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B23</td>
<td>88-156</td>
<td>2.5YR 3/6</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2B24</td>
<td>156-190</td>
<td>2.5YR 3/6</td>
<td>MHC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LIME FREE:
Profile ID = 7E; Soil Unit = Gn; Great Soil Group = RBE; Factual Key = Dr2.12

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR4/3</td>
<td>LS</td>
</tr>
<tr>
<td>B21</td>
<td>8-25</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>B22</td>
<td>25-43</td>
<td>2.5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>2Asb</td>
<td>43-51</td>
<td>2.5YR4/6</td>
<td>LC</td>
</tr>
<tr>
<td>2B21</td>
<td>51-123</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B22</td>
<td>123-200</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

NO CARBONATE; PHOTO TAKEN OF PLOUGH LAYER:

Profile ID = 7F; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>LS</td>
</tr>
<tr>
<td>A12</td>
<td>10-26</td>
<td>2.5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>A13</td>
<td>26-34</td>
<td>2.5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>34-84</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>84-91</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23n</td>
<td>91-186</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>186-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

ALMOST IDENTICAL TO 7G:

Profile ID = 7G; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/6</td>
<td>LS</td>
</tr>
<tr>
<td>A1</td>
<td>10-31</td>
<td>2.5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>31-70</td>
<td>10R3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>70-110</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>110-150</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24n</td>
<td>150-187</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>187-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

50MM QUARTZITE AT 157; CLOSE TO BLEACH ON TOP OF B:
### Profile ID = 7H; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR5/4</td>
<td>LS</td>
</tr>
<tr>
<td>A3</td>
<td>8-27</td>
<td>5YR4/4</td>
<td>ZL</td>
</tr>
<tr>
<td>B21</td>
<td>27-66</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>66-120</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23n</td>
<td>120-147</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>147-200</td>
<td>5YR5/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**Very weak bleaching on top of B:**

### Profile ID = 7I; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>2.5YR4/4</td>
<td>LS</td>
</tr>
<tr>
<td>A3</td>
<td>8-28</td>
<td>2.5YR4/6</td>
<td>CLFS</td>
</tr>
<tr>
<td>B21</td>
<td>28-56</td>
<td>2.5YR4/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>56-110</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23n</td>
<td>110-150</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>150-200</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**60mm quartzite at 28cm:**

### Profile ID = 7J; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR4/3</td>
<td>SL</td>
</tr>
<tr>
<td>A1</td>
<td>10-34</td>
<td>5YR4/6</td>
<td>FSL</td>
</tr>
<tr>
<td>B21</td>
<td>34-105</td>
<td>10R32</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>105-128</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>128-195</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**95-105 quartz gravels to 60mm:**

### Profile ID = 7K; Soil Unit = E; Great Soil Group = RBE; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/3</td>
<td>CLFS</td>
</tr>
<tr>
<td>B11</td>
<td>8-16</td>
<td>2.5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>B12</td>
<td>16-33</td>
<td>2.5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>33-78</td>
<td>10R3/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>78-145</td>
<td>10R3/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>145-190</td>
<td>10R3/3</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**50mm quartzite gravel at 30cm:**
**Profile ID = 8; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR4/4</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>8-16</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>16-71</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>71-165</td>
<td>5YR3/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>165-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**Profile ID = 8A; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>ZL</td>
</tr>
<tr>
<td>A2sb</td>
<td>8-20</td>
<td>5YR4/6</td>
<td>CL</td>
</tr>
<tr>
<td>B21</td>
<td>20-70</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>70-108</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>108-170</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>170-200</td>
<td>5YR4/8</td>
<td>LC</td>
</tr>
</tbody>
</table>

**Profile ID = 8B; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/6</td>
<td>ZCL+</td>
</tr>
<tr>
<td>B1</td>
<td>8-14</td>
<td>10YR3/8</td>
<td>ZC</td>
</tr>
<tr>
<td>B21</td>
<td>14-62</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>62-81</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>81-95</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B21</td>
<td>95-126</td>
<td>10YR3/1</td>
<td>MHC</td>
</tr>
<tr>
<td>2B22</td>
<td>126-166</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B23k</td>
<td>166-182</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B24</td>
<td>182-200</td>
<td>2.5YR3/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

PIPING BELOW 126CM OF RED MATERIAL:

**Profile ID = 8C; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>7.5YR3/2</td>
<td>LFSY</td>
</tr>
<tr>
<td>A31</td>
<td>8-16</td>
<td>7.5YR3/4</td>
<td>CL+</td>
</tr>
<tr>
<td>A32</td>
<td>16-30</td>
<td>5YR3/6</td>
<td>CL+</td>
</tr>
<tr>
<td>B21</td>
<td>30-84</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>84-100</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>100-163</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>163-190</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
</tbody>
</table>
Profile ID = 8D; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color Code</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-2</td>
<td>2.5YR3/6</td>
<td>LS</td>
</tr>
<tr>
<td>A1</td>
<td>2-13</td>
<td>2.5YR3/4</td>
<td>FSL</td>
</tr>
<tr>
<td>A3</td>
<td>13-39</td>
<td>2.5YR3/4</td>
<td>SCL+</td>
</tr>
<tr>
<td>B21</td>
<td>39-70</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>70-100</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>100-166</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>166-200</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 8E; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color Code</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR4/4</td>
<td>LS</td>
</tr>
<tr>
<td>A31</td>
<td>10-22</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
<tr>
<td>A32</td>
<td>22-29</td>
<td>2.5YR3/6</td>
<td>CLKS</td>
</tr>
<tr>
<td>B21</td>
<td>29-115</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>115-150</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>150-176</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>176-200</td>
<td>2.5YR4/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

CALSILICATE AT 89CM; QUARTZITE AT 150-157CM:

Profile ID = 8F; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color Code</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>5YR3/6</td>
<td>LS</td>
</tr>
<tr>
<td>A3</td>
<td>9-17</td>
<td>2.5YR3/6</td>
<td>SCLKS</td>
</tr>
<tr>
<td>B21</td>
<td>17-51</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>51-100</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

SANDSTONE - QUARTZITE AT 100 PROBABLY GRAVEL:

Profile ID = 8G; Soil Unit = Gb; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color Code</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-7</td>
<td>2.5YR3/6</td>
<td>SL</td>
</tr>
<tr>
<td>A1</td>
<td>7-28</td>
<td>2.5YR3/4</td>
<td>CLS</td>
</tr>
<tr>
<td>A2sb</td>
<td>28-34</td>
<td>2.5YR3/6</td>
<td>SCLKS</td>
</tr>
<tr>
<td>B21</td>
<td>34-53</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>53-76</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>76-134</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>134-165</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>

QUARTZITE GRAVEL AT TOP OF B2:
**Profile ID = 8H; Soil Unit = Cs; Great Soil Group = No clear equivalent soil class; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap 0-3</td>
<td>5YR3/4</td>
<td>SCL-</td>
</tr>
<tr>
<td>B2 3-10</td>
<td>5YR3/4</td>
<td>LC-</td>
</tr>
<tr>
<td>BCk 10-30</td>
<td></td>
<td>LC</td>
</tr>
<tr>
<td>C 30-40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Profile ID = 8I; Soil Unit = B; Great Soil Group = BC; Factual Key = Uf6.31**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap 0-5</td>
<td>5YR3/3</td>
<td>MC</td>
</tr>
<tr>
<td>B1 5-10</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B21 10-24</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22 24-59</td>
<td>2.5YR3/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k 59100</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**QUARTZ GRAVELS 40-44CM:**

**Profile ID = 8J; Soil Unit = B; Great Soil Group = BC; Factual Key = Uf6.31**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap 0-5</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>B1 5-18</td>
<td>2.5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B21 18-61</td>
<td>2.5YR2/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22 61-92</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k 92-128</td>
<td>5YR8/8</td>
<td>LMC</td>
</tr>
<tr>
<td>BC 128-143</td>
<td>10YR6/3</td>
<td>LMC</td>
</tr>
<tr>
<td>C 143-200</td>
<td>2.5Y6/2</td>
<td></td>
</tr>
</tbody>
</table>

**50MM QUARTZITE GRAVEL AT 10CM:**

**Profile ID = 9; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap 0-8</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>AB 8-13</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B21 13-72</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k 72-165</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23 165-177</td>
<td>5YR4/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B24 177-200</td>
<td>2.5YR3/6</td>
<td>LMC</td>
</tr>
</tbody>
</table>

**CONCENTRIC EARTHY SECTION AT 170-175:**
**Profile ID = 9A; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Hue (Munsell)</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>7.5YR3/4</td>
<td>ZL</td>
</tr>
<tr>
<td>A3</td>
<td>8-16</td>
<td>5YR3/6</td>
<td>ZCL</td>
</tr>
<tr>
<td>B21</td>
<td>16-78</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>78-120</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>120-167</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>167-190</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>190-200</td>
<td>5YR4/6</td>
<td>LC</td>
</tr>
</tbody>
</table>

**Profile ID = 9B; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Hue (Munsell)</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-6</td>
<td>7.5YR3/2</td>
<td>CL</td>
</tr>
<tr>
<td>B1</td>
<td>6-14</td>
<td>5YR2/3</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>14-42</td>
<td>5YR2/3</td>
<td>LMC</td>
</tr>
<tr>
<td>B22k</td>
<td>45-110</td>
<td>5YR3/6</td>
<td>MC</td>
</tr>
<tr>
<td>2B21</td>
<td>110-137</td>
<td>7.5YR3/3</td>
<td>MC</td>
</tr>
<tr>
<td>2B22</td>
<td>137-176</td>
<td>5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>2B23</td>
<td>176-200</td>
<td>5YR3/6</td>
<td>LC</td>
</tr>
</tbody>
</table>

**VERY SIMILAR TO Gn SOIL:**

**Profile ID = 9C; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Hue (Munsell)</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-6</td>
<td>5YR3/4</td>
<td>ZL</td>
</tr>
<tr>
<td>A3</td>
<td>6-18</td>
<td>5YR3/4</td>
<td>CL+</td>
</tr>
<tr>
<td>B21</td>
<td>18-25</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>25-43</td>
<td>2.5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>43-139</td>
<td>2.5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B24k</td>
<td>139-150</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>150-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**LIME FREE TO 140CM:**
**Profile ID = 9D; Soil Unit = Cn; Great Soil Group = RBE; Factual Key = Dr2.12**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Textural Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/6</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A3/A2</td>
<td>10-23</td>
<td>2.5YR3/6</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B21</td>
<td>23-68</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>68-145</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>145-200</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**LIME FREE:**

**Profile ID = 9E; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Textural Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>2.5YR3/6</td>
<td>LS</td>
</tr>
<tr>
<td>A1</td>
<td>9-30</td>
<td>2.5YR3/6</td>
<td>FSL</td>
</tr>
<tr>
<td>B21</td>
<td>30-74</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>74-144</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>144-185</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**QUARTZITE AT 75-80CM:**

**Profile ID = 9F; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.12**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Textural Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>5YR4/4</td>
<td>SL</td>
</tr>
<tr>
<td>B21</td>
<td>9-22</td>
<td>5YR3/4</td>
<td>SC</td>
</tr>
<tr>
<td>B22</td>
<td>22-35</td>
<td>2.5YR3/4</td>
<td>SC</td>
</tr>
<tr>
<td>B2A</td>
<td>35-52</td>
<td>5YR4/4</td>
<td>SCL</td>
</tr>
<tr>
<td>2B21</td>
<td>52-110</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>2B22</td>
<td>110-145</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B23</td>
<td>145-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**100 QUARTZITE GRAVEL - LIME FREE PROFILE:**

**Profile ID = 9G; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Textural Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>5YR3/4</td>
<td>CLFS</td>
</tr>
<tr>
<td>B1</td>
<td>9-22</td>
<td>2.5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>22-66</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>66-120</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>120-185</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
</tbody>
</table>
Profile ID = 9H; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/3 CLFS</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>8-12</td>
<td>5YR3/3 CLFS+</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>12-34</td>
<td>2.5YR2/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>34-82</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B23k</td>
<td>81-128</td>
<td>2.5YR36 MHC</td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>128-164</td>
<td>2.5YR4/6 LC</td>
<td></td>
</tr>
<tr>
<td>B25</td>
<td>164-200</td>
<td>2.5YR4/6 MHC</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 9I; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-3</td>
<td>2.5YR3/8 CLFS</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>3-9</td>
<td>2.5YR3/6 CLFS</td>
<td></td>
</tr>
<tr>
<td>A3</td>
<td>9-15</td>
<td>2.5YR3/4 SCL</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>15-43</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>43-52</td>
<td>2.5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B23k</td>
<td>52-136</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>136-175</td>
<td>2.5YR3/8 MHC</td>
<td></td>
</tr>
<tr>
<td>B25</td>
<td>175-200</td>
<td>2.5YR3/8 MHC</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 10; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-5</td>
<td>5YR3/4 LC</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>5-13</td>
<td>5YR3/4 MC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>13-62</td>
<td>5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>62-132</td>
<td>5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>132-170</td>
<td>5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>170-200</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
</tbody>
</table>
Profile ID = 10A; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-5</td>
<td>5YR3/4 CL</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>5-12</td>
<td>5YR3/4 LC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>12-64</td>
<td>5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22k</td>
<td>64-119</td>
<td>5YR4/4 MHC</td>
<td></td>
</tr>
<tr>
<td>2B21</td>
<td>119-160</td>
<td>5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>2B22</td>
<td>160-180</td>
<td>5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>2B23</td>
<td>180-200</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
</tbody>
</table>

CALCILICATE IN B22:

Profile ID = 10B; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-6</td>
<td>5YR3/4 CL</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>6-11</td>
<td>5YR3/4 LC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>11-67</td>
<td>5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>67-88</td>
<td>5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B23k</td>
<td>88-116</td>
<td>5YR4/8 MHC</td>
<td></td>
</tr>
<tr>
<td>2B21</td>
<td>116-150</td>
<td>10YR3/1 MHC</td>
<td></td>
</tr>
<tr>
<td>2B22</td>
<td>150-200</td>
<td>2.5YR3/6 MHC</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 10C; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/6 ZC</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>8-15</td>
<td>5YR3/4 ZLC</td>
<td></td>
</tr>
<tr>
<td>B21</td>
<td>15-80</td>
<td>5YR3/4 MHC</td>
<td></td>
</tr>
<tr>
<td>B22</td>
<td>80-130</td>
<td>5YR3/6 MHC</td>
<td></td>
</tr>
<tr>
<td>B23</td>
<td>130-150</td>
<td>5YR4/8 MHC</td>
<td></td>
</tr>
<tr>
<td>B24</td>
<td>150-178</td>
<td>5YR3/6 MC</td>
<td></td>
</tr>
<tr>
<td>B25</td>
<td>178-200</td>
<td>5YR4/8 MC</td>
<td></td>
</tr>
</tbody>
</table>

‘FAINT’ BURIED SOIL APPEARANCE AT 110-120CM:
### Profile ID = 10D; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>A1</td>
<td>8-17</td>
<td>5YR3/3</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B21</td>
<td>17-32</td>
<td>10R3/6</td>
<td>LMC</td>
</tr>
<tr>
<td>B22</td>
<td>32-50</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>50-90</td>
<td>5YR4/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

### Profile ID = 10E; Soil Unit = F; Great Soil Group = No clear equivalent soil class; Factual Key = Um6.41

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A31</td>
<td>8-17</td>
<td>7.5YR3/2</td>
<td>CLFS</td>
</tr>
<tr>
<td>A32</td>
<td>17-30</td>
<td>7.5YR3/2</td>
<td>CLFS</td>
</tr>
<tr>
<td>k</td>
<td>30-50</td>
<td>7.5YR4/4</td>
<td></td>
</tr>
<tr>
<td>C11</td>
<td>50-72</td>
<td>2.5Y7/4</td>
<td>KSL</td>
</tr>
<tr>
<td>C12k</td>
<td>72-78</td>
<td>10YR6/4</td>
<td>KSL</td>
</tr>
<tr>
<td>CB</td>
<td>78-160</td>
<td>2.5Y6/2</td>
<td>KSL</td>
</tr>
</tbody>
</table>

17-30CM CARBONATE RUBBLE LAYER:

### Profile ID = 10F; Soil Unit = Es; Great Soil Group = No clear equivalent soil class; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>ZCL</td>
</tr>
<tr>
<td>B2</td>
<td>8-21</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>BC</td>
<td>21-42</td>
<td>5YR3/6</td>
<td>LC</td>
</tr>
</tbody>
</table>

### Profile ID = 10G; Soil Unit = Cs; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Soil Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-7</td>
<td>5YR3/4</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B1</td>
<td>7-10</td>
<td>5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>B2</td>
<td>10-29</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>BC</td>
<td>29-52</td>
<td>2.5YR3/4</td>
<td></td>
</tr>
</tbody>
</table>
Soil Patterns along a hill slope in the Belalie Valley, Midnorth Region, South Australia

**Profile ID = 10H; Soil Unit = F; Great Soil Group = No clear equivalent soil class; Factual Key = Um6.43**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Colour</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
<tr>
<td>BC</td>
<td>8-10</td>
<td>5YR3/3</td>
<td>CLS</td>
</tr>
<tr>
<td>C</td>
<td>10-20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CARBONATE FREE:**

**Profile ID = 10I; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Colour</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-5</td>
<td>5YR3/6</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A3</td>
<td>5-10</td>
<td>5YR3/6</td>
<td>CLFS</td>
</tr>
<tr>
<td>B11</td>
<td>1030</td>
<td>2.5YR3/4</td>
<td>SC</td>
</tr>
<tr>
<td>B12</td>
<td>30-33</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B21</td>
<td>33-46</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>46-56</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>56-100</td>
<td>2.5YR34</td>
<td>MHC</td>
</tr>
<tr>
<td>B24k</td>
<td>100-156</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>156-200</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**Profile ID = 10J; Soil Unit = B; Great Soil Group = BC; Factual Key = Uf6.31**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Colour</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/3</td>
<td>LMC</td>
</tr>
<tr>
<td>B21</td>
<td>8-31</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>31-42</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>42-93</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>93-168</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25g</td>
<td>168-200</td>
<td>10YR5/3</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**Profile ID = 11; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Colour</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>ZLC</td>
</tr>
<tr>
<td>B1</td>
<td>8-16</td>
<td>5YR4/4</td>
<td>ZMC</td>
</tr>
<tr>
<td>B21</td>
<td>16-68</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>68-190</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>190-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>
Profile ID = 11A; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Munsell Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/3</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>8-23</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>23-60</td>
<td>5YR2/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>60-138</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>138-173</td>
<td>5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>173-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 11B; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Munsell Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>5YR3/3</td>
<td>MC</td>
</tr>
<tr>
<td>B21</td>
<td>9-48</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>48-51</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>51-65</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>65-129</td>
<td>5YR3/4</td>
<td>MC</td>
</tr>
<tr>
<td>B25k</td>
<td>129-157</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B26</td>
<td>157-190</td>
<td>2.5YR3/8</td>
<td>MC</td>
</tr>
</tbody>
</table>

65CM+ MAYBE BURIED SOIL:

Profile ID = 11C; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Munsell Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/3</td>
<td>ZC</td>
</tr>
<tr>
<td>B21</td>
<td>8-30</td>
<td>5YR3/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>30-51</td>
<td>5YR3/3</td>
<td>MC</td>
</tr>
<tr>
<td>2Bk1</td>
<td>51-80</td>
<td>5YR3/4</td>
<td>MC</td>
</tr>
<tr>
<td>2Bk2</td>
<td>80-100</td>
<td>5YR4/4</td>
<td>MC</td>
</tr>
<tr>
<td>2B</td>
<td>100-124</td>
<td>2.5YR4/6</td>
<td>SC</td>
</tr>
<tr>
<td>3B21</td>
<td>124-162</td>
<td>2.5YR3/6</td>
<td>MC</td>
</tr>
<tr>
<td>3B22</td>
<td>162-200</td>
<td>2.5YR38</td>
<td>MC</td>
</tr>
</tbody>
</table>

CALCILICATE PAN AT 100CM:
Profile ID = 11D; Soil Unit = B; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-6</td>
<td>5YR3/6</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A1</td>
<td>6-12</td>
<td>5YR3/4</td>
<td>SCLFS</td>
</tr>
<tr>
<td>A3</td>
<td>12-40</td>
<td>2.5YR3/8</td>
<td>SCL</td>
</tr>
<tr>
<td>B12</td>
<td>60-80</td>
<td>5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>80-150</td>
<td>10YR3/6</td>
<td>MC</td>
</tr>
<tr>
<td>B22n</td>
<td>150-200</td>
<td>10YR3/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

Profile ID = 11E; Soil Unit = G; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-7</td>
<td>2.5YR3/6</td>
<td>FSL</td>
</tr>
<tr>
<td>A3</td>
<td>7-15</td>
<td>2.5YR3/5</td>
<td>SCL+</td>
</tr>
<tr>
<td>B21</td>
<td>15-60</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>60-133</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>133-148</td>
<td>2.5YR4/8</td>
<td>MHC</td>
</tr>
<tr>
<td>BCk</td>
<td>148-200</td>
<td>2.5YR4/8</td>
<td>LMC</td>
</tr>
</tbody>
</table>

Profile ID = 11F; Soil Unit = B; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color (Munsell)</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap1</td>
<td>0-2</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>Ap2</td>
<td>2-12</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>12-25</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>25-28</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>28-39</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>39-60</td>
<td>2.5YR3/6</td>
<td>MC</td>
</tr>
<tr>
<td>B25k</td>
<td>60-105</td>
<td>2.5YR3/8</td>
<td></td>
</tr>
<tr>
<td>BCk</td>
<td>105-145</td>
<td>5YR4/8</td>
<td></td>
</tr>
</tbody>
</table>
Profile ID = 11G; Soil Unit = E; Great Soil Group = No clear equivalent soil class; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR2/3</td>
<td>CLFS</td>
</tr>
<tr>
<td>B1</td>
<td>8-27</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>27-50</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>50-71</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>71-122</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>122-176</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>176-200</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

50MM QUARTZITE GRAVEL AT 50CM; META GRAVELS AT 127CM:

Profile ID = 12; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/3</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>8-12</td>
<td>5YR3/4</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>12-57</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>57-165</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>165-200</td>
<td>2.5YR3/6</td>
<td>LC</td>
</tr>
</tbody>
</table>

Profile ID = 12A; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-7</td>
<td>5YR3/3</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>7-29</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>19-58</td>
<td>5YR2/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>58-91</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>91-112</td>
<td>5YR4/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>112-145</td>
<td>2.5YR3/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

Profile ID = 12B; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-3</td>
<td>5YR3/4</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>3-24</td>
<td>2.5YR3/4</td>
<td>LMC</td>
</tr>
<tr>
<td>B21</td>
<td>24-57</td>
<td>2.5YR3/4</td>
<td>MC</td>
</tr>
<tr>
<td>B22</td>
<td>57-154</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>154-200</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>

LIME FREE GENERALLY:
Profile ID = 12C; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-7</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B11</td>
<td>7-20</td>
<td>2.5YR3/4</td>
<td>LMC</td>
</tr>
<tr>
<td>B12</td>
<td>20-30</td>
<td>2.5YR3/6</td>
<td>SC</td>
</tr>
<tr>
<td>B21</td>
<td>30-78</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>78-169</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>169-200</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 12D; Soil Unit = E; Great Soil Group = RBE; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-5</td>
<td>5YR3/3</td>
<td>CL+</td>
</tr>
<tr>
<td>AB</td>
<td>5-10</td>
<td>5YR3/3</td>
<td>SC</td>
</tr>
<tr>
<td>B21</td>
<td>10-65</td>
<td>10R3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>65-120</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23k</td>
<td>120-180</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>180-200</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 12E; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap1</td>
<td>0-4</td>
<td>5YR3/4</td>
<td>SCL</td>
</tr>
<tr>
<td>Ap2</td>
<td>4-9</td>
<td>5YR3/3</td>
<td>SCL</td>
</tr>
<tr>
<td>Ap3</td>
<td>9-14</td>
<td>2.5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>14-40</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>40-65</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>65-105</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>105-152</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25k</td>
<td>152-200</td>
<td>2.5YR3/8</td>
<td>LC</td>
</tr>
</tbody>
</table>

Profile ID = 12F; Soil Unit = B; Great Soil Group = BC; Factual Key = Uf6.32

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>ZC</td>
</tr>
<tr>
<td>B21</td>
<td>8-52</td>
<td>2.5YR3/2</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>52-88</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B2</td>
<td>88-138</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
<tr>
<td>2B2k</td>
<td>138-200</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>
Profile ID = 12G; Soil Unit = E; Great Soil Group = BC; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-5</td>
<td>5YR2/3</td>
<td>CL</td>
</tr>
<tr>
<td>B1</td>
<td>5-14</td>
<td>5YR3/3</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>14-39</td>
<td>5YR2/3</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>39-60</td>
<td>5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>60-75</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 13A; Soil Unit = A; Great Soil Group = BC; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>ZC</td>
</tr>
<tr>
<td>B1</td>
<td>10-16</td>
<td>5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>B21</td>
<td>16-78</td>
<td>5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>78-132</td>
<td>5YR4/8</td>
<td>MC</td>
</tr>
<tr>
<td>B23n</td>
<td>132-200</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

BROWN SUBSOIL:

Profile ID = 13B; Soil Unit = E; Great Soil Group = RBE; Factual Key = Gn3.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/4</td>
<td>CLFS</td>
</tr>
<tr>
<td>B11</td>
<td>10-22</td>
<td>2.5YR3/6</td>
<td>LC</td>
</tr>
<tr>
<td>B12</td>
<td>22-55</td>
<td>2.5YR3/6</td>
<td>SC</td>
</tr>
<tr>
<td>B21</td>
<td>55-70</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>70-75</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>75-144</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24k</td>
<td>144-150</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>150-180</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
</tbody>
</table>

Profile ID = 13C; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (mm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-10</td>
<td>5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>A31</td>
<td>10-24</td>
<td>2.5YR3/6</td>
<td>SCLKS</td>
</tr>
<tr>
<td>A32</td>
<td>24-33</td>
<td>2.5YR3/6</td>
<td>SCLKS</td>
</tr>
<tr>
<td>B21</td>
<td>33-77</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>77-165</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>165-200</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
</tbody>
</table>
### Profile ID = 13D; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Depth (cm)</th>
<th>Munsell Color</th>
<th>Dominant Chroma</th>
<th>Texture Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-7</td>
<td>2.5YR38</td>
<td>SCLKS</td>
<td></td>
</tr>
<tr>
<td>A2sb</td>
<td>7-12</td>
<td>2.5YR3/6</td>
<td>SCLFS</td>
</tr>
<tr>
<td>B21</td>
<td>12-48</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B22</td>
<td>48-93</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B23</td>
<td>93-117</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B24</td>
<td>117-165</td>
<td>2.5YR3/8</td>
<td>MHC</td>
</tr>
<tr>
<td>B25</td>
<td>165-176</td>
<td>2.5YR3/8</td>
<td>LMC</td>
</tr>
<tr>
<td>B26k</td>
<td>176-200</td>
<td>5YR5/6</td>
<td>LMC</td>
</tr>
</tbody>
</table>

### Profile ID = 13E; Soil Unit = Bs; Great Soil Group = R; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Depth (cm)</th>
<th>Munsell Color</th>
<th>Dominant Chroma</th>
<th>Texture Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>5YR3/4</td>
<td>LC</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>10-17</td>
<td>7.5YR3/2</td>
<td>LC</td>
</tr>
<tr>
<td>BCk</td>
<td>17-38</td>
<td>7.5YR3/2</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>38-55</td>
<td>2.5Y5/4</td>
<td></td>
</tr>
</tbody>
</table>

### Profile ID = 13F; Soil Unit = Bs; Great Soil Group = R; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Depth (cm)</th>
<th>Munsell Color</th>
<th>Dominant Chroma</th>
<th>Texture Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6</td>
<td>5YR3/4</td>
<td>LC</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>6-12</td>
<td>5YR3/4</td>
<td>LMC</td>
</tr>
<tr>
<td>B2k</td>
<td>12-24</td>
<td>5YR3/3</td>
<td>LMC</td>
</tr>
<tr>
<td>B1</td>
<td>24-38</td>
<td>5YR3/3</td>
<td>LMC</td>
</tr>
<tr>
<td>BCk</td>
<td>38-90</td>
<td>5YR5/6</td>
<td>MC</td>
</tr>
</tbody>
</table>

### Profile ID = 14A; Soil Unit = C; Great Soil Group = RBE; Factual Key = Dr2.13

<table>
<thead>
<tr>
<th>Depth (cm)</th>
<th>Munsell Color</th>
<th>Dominant Chroma</th>
<th>Texture Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-13</td>
<td>5YR3/4</td>
<td>ZCL</td>
<td></td>
</tr>
<tr>
<td>A31</td>
<td>13-25</td>
<td>5YR3/6</td>
<td>KSL</td>
</tr>
<tr>
<td>A32</td>
<td>25-43</td>
<td>5YR4/8</td>
<td>LFSY</td>
</tr>
<tr>
<td>2A</td>
<td>43-54</td>
<td>5YR3/6</td>
<td>SCLKS</td>
</tr>
<tr>
<td>2B1</td>
<td>54-89</td>
<td>2.5YR3/6</td>
<td>SCLFS</td>
</tr>
<tr>
<td>2B21</td>
<td>59-133</td>
<td>10R36</td>
<td>MHC</td>
</tr>
<tr>
<td>2B22k</td>
<td>133-200</td>
<td>10R36</td>
<td>MHC</td>
</tr>
</tbody>
</table>

**Carbonate Only At 133-136cm:**
Profile ID = 14B; Soil Unit = A; Great Soil Group = RBE; Factual Key = Uf/Dr

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-9</td>
<td>2.5YR3/6</td>
<td>SC</td>
</tr>
<tr>
<td>A31</td>
<td>9-20</td>
<td>5YR4/8</td>
<td>SC</td>
</tr>
<tr>
<td>A32</td>
<td>20-36</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
<tr>
<td>2Asb</td>
<td>36-50</td>
<td>2.5YR3/6</td>
<td>SCL</td>
</tr>
<tr>
<td>2B2</td>
<td>50-93</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>2B2</td>
<td>93-143</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>2B2k</td>
<td>143-161</td>
<td>10R3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>90-93CM LARGE QUARTZ GRAVELS:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 14C; Soil Unit = D; Great Soil Group = RBE; Factual Key = Dr2.33

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
<tr>
<td>A2sb</td>
<td>8-23</td>
<td>2.5YR3/6</td>
<td>CLS</td>
</tr>
<tr>
<td>A3</td>
<td>23-60</td>
<td>2.5YR2/4</td>
<td>SCL</td>
</tr>
<tr>
<td>B21</td>
<td>60-79</td>
<td>2.5YR3/6</td>
<td>MHC</td>
</tr>
<tr>
<td>B22k</td>
<td>79-100</td>
<td>5YR4/8</td>
<td>MHC</td>
</tr>
<tr>
<td>70-72CM CALCILICATE:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 14D; Soil Unit = B; Great Soil Group = R; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>5YR3/4</td>
<td>MC</td>
</tr>
<tr>
<td>B2</td>
<td>8-38</td>
<td>2.5YR3/4</td>
<td>MHC</td>
</tr>
<tr>
<td>B2k</td>
<td>38-90</td>
<td>5YR6/4</td>
<td>MHC</td>
</tr>
<tr>
<td>BC</td>
<td>90-100</td>
<td>10YR7/4</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 14E; Soil Unit = B; Great Soil Group = R; Factual Key = Uf6.31

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-8</td>
<td>7.5YR3/2</td>
<td>LC</td>
</tr>
<tr>
<td>B2</td>
<td>8-27</td>
<td>5YR3/4</td>
<td>LMC</td>
</tr>
<tr>
<td>BC1k</td>
<td>27-41</td>
<td>5YR4/8</td>
<td>MHC</td>
</tr>
<tr>
<td>BC2</td>
<td>41-52</td>
<td>2.5Y7/4</td>
<td>MHC</td>
</tr>
<tr>
<td>BC3</td>
<td>52-70</td>
<td>5YR3/6</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>70-75</td>
<td>2.5Y7/4</td>
<td></td>
</tr>
</tbody>
</table>
Profile ID = 14F; Soil Unit = F; Great Soil Group = R; Factual Key = Um6.43
Ap 0-6 5YR32 SCL
A3 6-13 5YR4/4 SCL

Profile ID = 15A; Soil Unit = F; Great Soil Group = R; Factual Key = Um6.24
Ap 0-10 7.5YR3/2 LFS

Profile ID = 15B; Soil Unit = Es; Great Soil Group = R; Factual Key = Gn3.23
Ap 0-11 7.5YR3/2 CL+
B21 11-24 10YR2/3 ZC
B22 24-33 10YR3/3 ZC

Profile ID = 15C; Soil Unit = Es; Great Soil Group = R; Factual Key = Gn3.23
Ap 0-9 7.5YR2/2 CL+
B 9-18 10YR2/3 ZC

Profile ID = 15D; Soil Unit = Es; Great Soil Group = R; Factual Key = Gn3.23
Ap 0-8 10YR2/3 CL
B 8-19 10YR3/3 ZC
BCK 19-30 10YR3/3 ZCL

Profile ID = 15E; Soil Unit = Es; Great Soil Group = R; Factual Key = Gn3.23
Ap 0-7 10YR3/3 ZCL
B 7-14 10YR3/3 ZC
BCK 14-22 ZCL

Profile ID = 15F; Soil Unit = F; Great Soil Group = R; Factual Key = Um6.43
Ap 0-7 7.5YR3/2 ZCL
B 7-16 10YR3/3 ZCL
BCK 16-25 ZCL

Profile ID = 15G; Soil Unit = F; Great Soil Group = R; Factual Key = Um6.43
Ap 0-6 10YR3/3 CL
A3 6-17 7.5YR3/4 CL
<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Munsell Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>17-23</td>
<td>7.5YR3/4</td>
<td>CL</td>
</tr>
<tr>
<td>Bk</td>
<td>23-47</td>
<td>10YR6/4</td>
<td></td>
</tr>
<tr>
<td>B3</td>
<td>47-63</td>
<td>10YR5/4</td>
<td></td>
</tr>
</tbody>
</table>

Profile ID = 15H; Soil Unit = Cs; Great Soil Group = RBE; Factual Key = Dr2.52

<table>
<thead>
<tr>
<th>Layer</th>
<th>Depth (cm)</th>
<th>Munsell Color</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap</td>
<td>0-4</td>
<td>7.5YR3/2</td>
<td>LFSY</td>
</tr>
<tr>
<td>B1</td>
<td>4-10</td>
<td>5YR3/8</td>
<td>SCLFS</td>
</tr>
</tbody>
</table>
Appendix 2. Physicochemical data of layers from selected profiles of the Midnorth study area.

Profile locations in Figure 6.

| Profile ID | Depth (cm) | Moisture % | E.C. 15dSm | pH (H2O) | pH (CaCl2) | Cl mg/kg | Total C% | Org. C% | Total N% | CaMol (+)/kg | Mg Mole (+)/kg | NaMol (+)/kg | K Mol (+)/kg | Total | CEC (NH4) | pH of Total Soln. | ESP | CaCO3 % | Clay % | Silk % | Sand % | Fine sand % | Total % |
|------------|------------|------------|------------|----------|------------|----------|---------|--------|---------|-------------|----------------|---------------|-------------|------------|--------|----------------|----------------|--------|----------|------|------|------|----------|------|
| 1B         | 0-9        | 3.87       | 0.15       | 6.6      | 6.5        | 28       | 1.9     | 1.8    | 0.16    | 14.7         | 9.19           | 0.19          | 2.24        | 26     | 26     | 7.0            | 1    | -        |       |      |      |         | 99    |
|            | 20-30      | 4.98       | 0.12       | 6.9      | 6.6        | 29       | 0.9     | 0.9    | -       | 17.3         | 12.8           | 0.40          | 1.37        | 32     | 31     | 7.0            | 1    | -        |       |      |      |         | 99    |
|            | 50-60      | 4.54       | 0.21       | 8.0      | 7.7        | 62       | 0.8     | 0.6    | -       | 14.5         | 12.3           | 0.71          | 1.07        | 29     | 28     | 8.5            | 3    | 1.7      | 32    | 57    | 8    | 1        | 98    |
|            | 100-110    | 3.30       | 0.27       | 8.7      | 8.0        | 73       | 5.0     | 0.2    | -       | 6.09         | 11.8           | 1.79          | 0.99        | 21     | 19     | 8.5            | 9    | 38.0     | 37    | 32    | 16   | 15       | 99    |
|            | 130-140    | 4.10       | 0.35       | 8.9      | 8.3        | 65       | 2.3     | 0.3    | -       | 4.89         | 16.1           | 3.64          | 1.52        | 26     | 24     | 8.5            | 15   | 15.8     | 40    | 39    | 10   | 9        | 98    |
|            | 180-190    | 3.01       | 0.40       | 9.0      | 8.4        | 88       | 0.6     | 0.0    | -       | 3.18         | 11.3           | 4.05          | 1.20        | 20     | 19     | 8.5            | 22   | 4.6      | 37    | 38    | 16   | 7        | 99    |
| 6          | 0-8        | 1.60       | 0.25       | 5.8      | 5.5        | 50       | 2.5     | 2.5    | 0.26    | 5.64         | 2.54           | 0.28          | 1.74        | 10     | 13     | 7.0            | 2    | -        | 15    | 45    | 34   | 3        | 97    |
|            | 8-19       | 1.34       | 0.09       | 5.8      | 5.3        | 57       | 0.6     | 0.6    | -       | 3.61         | 2.13           | 0.35          | 0.69        | 7      | 9      | 7.0            | 4    | -        | 21    | 45    | 33   | 1        | 99    |
|            | 35-45      | 4.84       | 0.14       | 7.9      | 7.1        | 35       | 0.6     | 0.6    | -       | 7.65         | 14.7           | 3.87          | 1.47        | 28     | 28     | 8.5            | 14   | 0.1      | 62    | 26    | 14   | <1       | 101   |
|            | 90-100     | 3.73       | 0.72       | 8.9      | 8.3        | 444      | 0.8     | 0.3    | -       | 5.89         | 11.3           | 5.85          | 1.30        | 24     | 22     | 8.5            | 26   | 3.9      | 39    | 38    | 21   | 2        | 99    |
|            | 140-150    | 3.74       | 0.88       | 8.7      | 8.2        | 701      | 1.0     | 0.2    | -       | 6.68         | 11.1           | 5.22          | 1.22        | 24     | 23     | 8.5            | 23   | 6.4      | 41    | 37    | 16   | 4        | 99    |
|            | 190-200    | 4.20       | 0.87       | 8.6      | 8.2        | 705      | 0.3     | 0.1    | -       | 7.07         | 12.2           | 5.50          | 1.24        | 26     | 25     | 8.5            | 19   | 1.9      | 45    | 45    | 9    | 2        | 100   |
| 1F         | 0-6        | 2.17       | 0.18       | 6.2      | 6.0        | 88       | 2.0     | 2.0    | 0.21    | 10.5         | 3.36           | 0.12          | 2.27        | 16     | 18     | 7.0            | 1    | -        | 19    | 40    | 38   | 3        | 100   |
|            | 6-12       | 2.58       | 0.13       | 6.7      | 6.5        | 29       | 1.6     | 1.6    | 0.17    | 13.1         | 3.76           | 0.17          | 1.57        | 19     | 18     | 7.0            | 1    | -        | 22    | 42    | 34   | 2        | 100   |
|            | 70-80      | 3.06       | 0.18       | 8.4      | 7.9        | 51       | 2.7     | 0.2    | -       | 11.2         | 6.08           | 0.70          | 0.70        | 19     | 18     | 8.5            | 4    | 19.4     | 34    | 31    | 24   | 10       | 99    |
|            | 100-110    | 1.68       | 0.21       | 8.8      | 8.2        | 50       | 0.4     | 0.1    | -       | 4.44         | 5.46           | 1.43          | 0.56        | 12     | 12     | 8.5            | 2.4  | 21       | 13    | 65    | 1    | 100      |
## Exch. Cations

<table>
<thead>
<tr>
<th>Cmol (+)/kg</th>
<th>Ca Cmol (+)/kg</th>
<th>Mg Cmol (+)/kg</th>
<th>Na Cmol (+)/kg</th>
<th>K Cmol (+)/kg</th>
<th>Total C%</th>
<th>Total N %</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Moisture %</th>
<th>Cl mg/kg</th>
<th>pH (Ca(OH)₂)</th>
<th>pH (H₂O)</th>
<th>Total C%</th>
<th>Total N %</th>
<th>C.E.C (NH₄) Soln.</th>
<th>CO₃ as</th>
<th>Sand %</th>
<th>Fine sand %</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.52</td>
<td>9.0</td>
<td>8.3</td>
<td>97</td>
<td>1.3</td>
<td>0.2</td>
<td>-</td>
<td>4.26</td>
<td>8.95</td>
<td>3.25</td>
<td>98</td>
</tr>
<tr>
<td>1.87</td>
<td>8.8</td>
<td>8.2</td>
<td>218</td>
<td>0.2</td>
<td>0.2</td>
<td>-</td>
<td>2.34</td>
<td>6.61</td>
<td>2.53</td>
<td>100</td>
</tr>
<tr>
<td>5.28</td>
<td>7.8</td>
<td>7.6</td>
<td>100</td>
<td>1.6</td>
<td>1.5</td>
<td>0.14</td>
<td>29.2</td>
<td>5.56</td>
<td>0.48</td>
<td>99</td>
</tr>
<tr>
<td>5.15</td>
<td>8.2</td>
<td>7.8</td>
<td>66</td>
<td>1.5</td>
<td>1.2</td>
<td>-</td>
<td>25.3</td>
<td>8.91</td>
<td>1.86</td>
<td>99</td>
</tr>
<tr>
<td>5.82</td>
<td>8.9</td>
<td>8.2</td>
<td>68</td>
<td>1.8</td>
<td>0.4</td>
<td>-</td>
<td>17.8</td>
<td>14.0</td>
<td>5.92</td>
<td>100</td>
</tr>
<tr>
<td>4.73</td>
<td>9.1</td>
<td>8.4</td>
<td>513</td>
<td>2.3</td>
<td>0.1</td>
<td>-</td>
<td>8.57</td>
<td>12.6</td>
<td>9.31</td>
<td>100</td>
</tr>
<tr>
<td>5.23</td>
<td>8.9</td>
<td>8.4</td>
<td>846</td>
<td>1.4</td>
<td>0.3</td>
<td>-</td>
<td>9.68</td>
<td>12.4</td>
<td>10.4</td>
<td>100</td>
</tr>
<tr>
<td>5.38</td>
<td>8.1</td>
<td>7.8</td>
<td>2020</td>
<td>&lt;0.1</td>
<td>&lt;0.1</td>
<td>-</td>
<td>8.39</td>
<td>13.6</td>
<td>12.6</td>
<td>100</td>
</tr>
<tr>
<td>4.59</td>
<td>7.6</td>
<td>7.4</td>
<td>81</td>
<td>2.2</td>
<td>2.1</td>
<td>0.21</td>
<td>28.0</td>
<td>3.13</td>
<td>0.33</td>
<td>100</td>
</tr>
<tr>
<td>6.40</td>
<td>7.6</td>
<td>7.2</td>
<td>38</td>
<td>1.2</td>
<td>1.1</td>
<td>-</td>
<td>25.9</td>
<td>12.9</td>
<td>2.16</td>
<td>100</td>
</tr>
<tr>
<td>5.17</td>
<td>8.5</td>
<td>8.0</td>
<td>64</td>
<td>1.9</td>
<td>0.2</td>
<td>-</td>
<td>15.1</td>
<td>13.8</td>
<td>4.18</td>
<td>100</td>
</tr>
<tr>
<td>3.81</td>
<td>8.8</td>
<td>8.1</td>
<td>134</td>
<td>3.1</td>
<td>0.3</td>
<td>-</td>
<td>10.4</td>
<td>11.4</td>
<td>4.50</td>
<td>99</td>
</tr>
<tr>
<td>1.03</td>
<td>6.0</td>
<td>5.6</td>
<td>30</td>
<td>0.7</td>
<td>0.6</td>
<td>0.06</td>
<td>4.11</td>
<td>1.88</td>
<td>0.35</td>
<td>99</td>
</tr>
<tr>
<td>1.10</td>
<td>6.6</td>
<td>6.6</td>
<td>30</td>
<td>1.5</td>
<td>1.4</td>
<td>0.10</td>
<td>5.51</td>
<td>1.57</td>
<td>0.16</td>
<td>101</td>
</tr>
</tbody>
</table>

Soil Patterns along a hill slope in the Belalie Valley, Midnorth Region, South Australia

53
<table>
<thead>
<tr>
<th>Profile ID</th>
<th>Depth (cm)</th>
<th>Moisture %</th>
<th>E.C. 15 dS/m</th>
<th>pH (H2O)</th>
<th>pH (CaCl2)</th>
<th>Cl mg/kg</th>
<th>C%</th>
<th>Total C%</th>
<th>Ca Clm/kg</th>
<th>Mg Cmol</th>
<th>Na Clm/kg</th>
<th>K Clm/kg</th>
<th>Total C.E.C (NH4) Soln.</th>
<th>pH of Total C.E.C</th>
<th>ESP</th>
<th>CaCO3 %</th>
<th>Clay %</th>
<th>Silt %</th>
<th>Sand %</th>
<th>Fine sand %</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-20</td>
<td>0.06</td>
<td>0.06</td>
<td>6.0</td>
<td>5.6</td>
<td>22</td>
<td>0.7</td>
<td>0.7</td>
<td>-</td>
<td>3.43</td>
<td>1.57</td>
<td>0.19</td>
<td>0.47</td>
<td>6              6</td>
<td>7.0</td>
<td>3</td>
<td>-</td>
<td>19</td>
<td>21</td>
<td>45</td>
<td>14</td>
<td>99</td>
</tr>
<tr>
<td>30-40</td>
<td>0.05</td>
<td>6.3</td>
<td>5.9</td>
<td>24</td>
<td>0.4</td>
<td>0.4</td>
<td>-</td>
<td>2.34</td>
<td>2.38</td>
<td>0.24</td>
<td>0.35</td>
<td>5</td>
<td>6              7.0</td>
<td>4</td>
<td>-</td>
<td>19</td>
<td>20</td>
<td>47</td>
<td>14</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>55-65</td>
<td>0.08</td>
<td>7.6</td>
<td>6.8</td>
<td>32</td>
<td>0.4</td>
<td>0.4</td>
<td>-</td>
<td>5.62</td>
<td>10.7</td>
<td>2.30</td>
<td>1.25</td>
<td>20</td>
<td>24             8.5</td>
<td>10</td>
<td>&lt;0.1</td>
<td>50</td>
<td>15</td>
<td>29</td>
<td>5</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>80-90</td>
<td>0.20</td>
<td>8.5</td>
<td>8.2</td>
<td>63</td>
<td>0.4</td>
<td>0.3</td>
<td>-</td>
<td>3.01</td>
<td>5.40</td>
<td>1.59</td>
<td>0.59</td>
<td>11</td>
<td>11             8.5</td>
<td>15</td>
<td>1.3</td>
<td>21</td>
<td>29</td>
<td>41</td>
<td>9</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>140-150</td>
<td>0.36</td>
<td>8.6</td>
<td>8.2</td>
<td>178</td>
<td>0.2</td>
<td>0.1</td>
<td>-</td>
<td>5.95</td>
<td>14.4</td>
<td>4.86</td>
<td>1.41</td>
<td>27</td>
<td>26             8.5</td>
<td>19</td>
<td>0.9</td>
<td>47</td>
<td>21</td>
<td>27</td>
<td>4</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>180-190</td>
<td>0.34</td>
<td>8.3</td>
<td>7.9</td>
<td>281</td>
<td>0.1</td>
<td>0.1</td>
<td>-</td>
<td>5.10</td>
<td>12.2</td>
<td>4.51</td>
<td>1.53</td>
<td>23</td>
<td>23             8.5</td>
<td>20</td>
<td>0.1</td>
<td>46</td>
<td>18</td>
<td>27</td>
<td>7</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>1B</td>
<td>0.19</td>
<td>7.5</td>
<td>7.4</td>
<td>31</td>
<td>1.8</td>
<td>1.7</td>
<td>0.16</td>
<td>13.0</td>
<td>1.66</td>
<td>0.08</td>
<td>1.79</td>
<td>17</td>
<td>18             8.5</td>
<td>0</td>
<td>0.4</td>
<td>17</td>
<td>29</td>
<td>44</td>
<td>10</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>0.09</td>
<td>7.5</td>
<td>7.4</td>
<td>22</td>
<td>1.0</td>
<td>0.9</td>
<td>-</td>
<td>17.5</td>
<td>2.43</td>
<td>0.13</td>
<td>1.31</td>
<td>21</td>
<td>22             8.5</td>
<td>1</td>
<td>0.1</td>
<td>31</td>
<td>29</td>
<td>35</td>
<td>7</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>25-30</td>
<td>0.10</td>
<td>7.4</td>
<td>7.3</td>
<td>44</td>
<td>0.8</td>
<td>0.8</td>
<td>-</td>
<td>17.9</td>
<td>2.70</td>
<td>0.14</td>
<td>1.20</td>
<td>22</td>
<td>22             8.5</td>
<td>1</td>
<td>0.1</td>
<td>34</td>
<td>27</td>
<td>34</td>
<td>6</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>50-60</td>
<td>0.10</td>
<td>8.4</td>
<td>8.0</td>
<td>33</td>
<td>4.0</td>
<td>0.3</td>
<td>-</td>
<td>4.14</td>
<td>0.74</td>
<td>0.12</td>
<td>0.13</td>
<td>5</td>
<td>4              8.5</td>
<td>3</td>
<td>30.4</td>
<td>11</td>
<td>25</td>
<td>61</td>
<td>4</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>60-70</td>
<td>0.14</td>
<td>8.2</td>
<td>7.9</td>
<td>49</td>
<td>4.1</td>
<td>0.2</td>
<td>-</td>
<td>10.9</td>
<td>3.03</td>
<td>0.28</td>
<td>0.40</td>
<td>15</td>
<td>8              8.5</td>
<td>4</td>
<td>31.6</td>
<td>25</td>
<td>30</td>
<td>37</td>
<td>8</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>90-100</td>
<td>0.10</td>
<td>8.5</td>
<td>8.1</td>
<td>38</td>
<td>3.6</td>
<td>0.4</td>
<td>-</td>
<td>3.66</td>
<td>1.39</td>
<td>0.15</td>
<td>0.14</td>
<td>5</td>
<td>4              8.5</td>
<td>4</td>
<td>26.8</td>
<td>5</td>
<td>17</td>
<td>57</td>
<td>20</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>13D</td>
<td>0.10</td>
<td>6.8</td>
<td>6.7</td>
<td>25</td>
<td>0.9</td>
<td>0.9</td>
<td>0.10</td>
<td>6.29</td>
<td>1.07</td>
<td>0.16</td>
<td>0.96</td>
<td>8</td>
<td>7              7.0</td>
<td>2</td>
<td>-</td>
<td>11</td>
<td>18</td>
<td>53</td>
<td>18</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>30-40</td>
<td>0.43</td>
<td>8.3</td>
<td>7.8</td>
<td>164</td>
<td>0.7</td>
<td>0.7</td>
<td>-</td>
<td>7.14</td>
<td>15.9</td>
<td>8.36</td>
<td>2.92</td>
<td>34</td>
<td>31             8.5</td>
<td>27</td>
<td>0.1</td>
<td>70</td>
<td>11</td>
<td>17</td>
<td>3</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>90-100</td>
<td>0.46</td>
<td>8.6</td>
<td>8.3</td>
<td>1550</td>
<td>0.4</td>
<td>0.1</td>
<td>-</td>
<td>4.08</td>
<td>13.4</td>
<td>8.60</td>
<td>1.23</td>
<td>27</td>
<td>24             8.5</td>
<td>36</td>
<td>2.6</td>
<td>52</td>
<td>15</td>
<td>25</td>
<td>7</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>140-150</td>
<td>0.68</td>
<td>8.7</td>
<td>8.2</td>
<td>1840</td>
<td>2.8</td>
<td>&lt;0.1</td>
<td>-</td>
<td>3.65</td>
<td>8.94</td>
<td>5.97</td>
<td>0.89</td>
<td>19</td>
<td>16             8.5</td>
<td>36</td>
<td>22.1</td>
<td>43</td>
<td>22</td>
<td>28</td>
<td>8</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>185-195</td>
<td>0.22</td>
<td>8.8</td>
<td>8.2</td>
<td>1420</td>
<td>3.6</td>
<td>0.2</td>
<td>-</td>
<td>3.35</td>
<td>7.72</td>
<td>4.95</td>
<td>0.96</td>
<td>17</td>
<td>14             8.5</td>
<td>34</td>
<td>28.1</td>
<td>36</td>
<td>27</td>
<td>25</td>
<td>13</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>8A</td>
<td>0.26</td>
<td>6.4</td>
<td>6.3</td>
<td>42</td>
<td>1.6</td>
<td>1.6</td>
<td>0.19</td>
<td>7.79</td>
<td>1.99</td>
<td>0.20</td>
<td>1.03</td>
<td>11</td>
<td>11             7.0</td>
<td>2</td>
<td>-</td>
<td>11</td>
<td>38</td>
<td>46</td>
<td>3</td>
<td>98</td>
<td></td>
</tr>
<tr>
<td>10-20</td>
<td>0.07</td>
<td>6.5</td>
<td>6.2</td>
<td>29</td>
<td>0.5</td>
<td>0.5</td>
<td>-</td>
<td>4.58</td>
<td>2.53</td>
<td>0.35</td>
<td>0.44</td>
<td>8</td>
<td>8              7.0</td>
<td>4</td>
<td>-</td>
<td>22</td>
<td>43</td>
<td>34</td>
<td>1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>35-45</td>
<td>0.15</td>
<td>7.7</td>
<td>6.9</td>
<td>34</td>
<td>0.6</td>
<td>0.6</td>
<td>-</td>
<td>5.80</td>
<td>11.8</td>
<td>4.15</td>
<td>1.30</td>
<td>23</td>
<td>24             8.5</td>
<td>17</td>
<td>&lt;0.1</td>
<td>53</td>
<td>27</td>
<td>19</td>
<td>1</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Profile ID</td>
<td>Depth (cm)</td>
<td>Moisture %</td>
<td>E.C. 15dSm</td>
<td>pH (H₂O)</td>
<td>pH (CaCl₂)</td>
<td>Cm(g/kg)</td>
<td>Total C%</td>
<td>Org. C %</td>
<td>Total N%</td>
<td>Ca Cmol (+)/kg</td>
<td>Mg Cmol (+)/kg</td>
<td>K Cmol (+)/kg</td>
<td>Na Cmol (+)/kg</td>
<td>K Cmol (+)/kg</td>
<td>Total CEC (NH₄)</td>
<td>pH of Total Soln</td>
<td>CaCO₃ as %</td>
<td>Clay %</td>
<td>Silty %</td>
<td>Sandy %</td>
<td>Fine sand %</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td>----------</td>
<td>------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>----------------</td>
<td>----------------</td>
<td>--------------</td>
<td>----------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>85-95</td>
<td>3.47</td>
<td>0.61</td>
<td>9.0</td>
<td>8.4</td>
<td>415</td>
<td>1.1</td>
<td>0.1</td>
<td>-</td>
<td>4.64</td>
<td>10.5</td>
<td>4.99</td>
<td>1.24</td>
<td>21</td>
<td>19</td>
<td>8.5</td>
<td>26</td>
<td>8.1</td>
<td>36</td>
<td>35</td>
<td>22</td>
<td>9</td>
</tr>
<tr>
<td>130-140</td>
<td>3.03</td>
<td>0.72</td>
<td>8.8</td>
<td>8.4</td>
<td>653</td>
<td>0.8</td>
<td>0.7</td>
<td>-</td>
<td>4.17</td>
<td>8.80</td>
<td>4.51</td>
<td>1.08</td>
<td>19</td>
<td>18</td>
<td>8.5</td>
<td>25</td>
<td>0.9</td>
<td>35</td>
<td>34</td>
<td>30</td>
<td>4</td>
</tr>
<tr>
<td>160-170</td>
<td>2.16</td>
<td>0.63</td>
<td>8.8</td>
<td>8.4</td>
<td>629</td>
<td>0.8</td>
<td>0.6</td>
<td>-</td>
<td>3.48</td>
<td>7.85</td>
<td>3.38</td>
<td>0.85</td>
<td>16</td>
<td>14</td>
<td>8.5</td>
<td>23</td>
<td>1.6</td>
<td>26</td>
<td>37</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td>190-200</td>
<td>2.05</td>
<td>0.49</td>
<td>8.9</td>
<td>8.4</td>
<td>367</td>
<td>0.5</td>
<td>0.2</td>
<td>-</td>
<td>3.43</td>
<td>6.90</td>
<td>2.88</td>
<td>0.71</td>
<td>14</td>
<td>13</td>
<td>8.5</td>
<td>23</td>
<td>2.3</td>
<td>25</td>
<td>19</td>
<td>44</td>
<td>12</td>
</tr>
<tr>
<td>5C</td>
<td>1.24</td>
<td>0.37</td>
<td>6.2</td>
<td>6.2</td>
<td>47</td>
<td>1.2</td>
<td>1.1</td>
<td>0.15</td>
<td>5.88</td>
<td>1.41</td>
<td>0.12</td>
<td>1.11</td>
<td>9</td>
<td>9</td>
<td>7.0</td>
<td>1</td>
<td>-</td>
<td>13</td>
<td>25</td>
<td>48</td>
<td>16</td>
</tr>
<tr>
<td>20-30</td>
<td>1.37</td>
<td>0.10</td>
<td>6.8</td>
<td>6.5</td>
<td>23</td>
<td>0.4</td>
<td>0.4</td>
<td>-</td>
<td>5.27</td>
<td>2.40</td>
<td>0.57</td>
<td>0.62</td>
<td>9</td>
<td>8</td>
<td>7.0</td>
<td>7</td>
<td>-</td>
<td>17</td>
<td>31</td>
<td>40</td>
<td>12</td>
</tr>
<tr>
<td>35-45</td>
<td>3.92</td>
<td>0.21</td>
<td>7.6</td>
<td>6.9</td>
<td>59</td>
<td>0.7</td>
<td>0.7</td>
<td>-</td>
<td>6.42</td>
<td>7.54</td>
<td>4.05</td>
<td>1.98</td>
<td>20</td>
<td>23</td>
<td>8.5</td>
<td>18</td>
<td>0.1</td>
<td>46</td>
<td>23</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>90-100</td>
<td>2.87</td>
<td>0.89</td>
<td>9.0</td>
<td>8.3</td>
<td>827</td>
<td>1.7</td>
<td>0.1</td>
<td>-</td>
<td>5.02</td>
<td>4.76</td>
<td>5.83</td>
<td>1.75</td>
<td>17</td>
<td>23</td>
<td>8.5</td>
<td>26</td>
<td>12.8</td>
<td>29</td>
<td>36</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>150-160</td>
<td>2.36</td>
<td>0.74</td>
<td>9.1</td>
<td>8.3</td>
<td>664</td>
<td>2.4</td>
<td>0.1</td>
<td>-</td>
<td>4.87</td>
<td>5.97</td>
<td>4.61</td>
<td>1.11</td>
<td>17</td>
<td>17</td>
<td>8.5</td>
<td>30</td>
<td>18.2</td>
<td>33</td>
<td>19</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>185-200</td>
<td>1.95</td>
<td>0.61</td>
<td>9.2</td>
<td>8.2</td>
<td>490</td>
<td>2.8</td>
<td>0.1</td>
<td>-</td>
<td>4.24</td>
<td>5.01</td>
<td>3.71</td>
<td>0.94</td>
<td>14</td>
<td>13</td>
<td>8.5</td>
<td>29</td>
<td>22.1</td>
<td>29</td>
<td>26</td>
<td>32</td>
<td>15</td>
</tr>
<tr>
<td>6E</td>
<td>2.21</td>
<td>0.18</td>
<td>6.8</td>
<td>6.6</td>
<td>44</td>
<td>2.0</td>
<td>2.0</td>
<td>0.22</td>
<td>13.6</td>
<td>2.95</td>
<td>0.22</td>
<td>2.01</td>
<td>19</td>
<td>16</td>
<td>7.0</td>
<td>1</td>
<td>-</td>
<td>17</td>
<td>29</td>
<td>43</td>
<td>13</td>
</tr>
<tr>
<td>8-18</td>
<td>2.31</td>
<td>0.09</td>
<td>6.8</td>
<td>6.6</td>
<td>43</td>
<td>1.1</td>
<td>1.0</td>
<td>-</td>
<td>13.4</td>
<td>3.21</td>
<td>0.22</td>
<td>1.98</td>
<td>19</td>
<td>16</td>
<td>7.0</td>
<td>1</td>
<td>-</td>
<td>24</td>
<td>28</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>35-45</td>
<td>3.14</td>
<td>0.06</td>
<td>7.4</td>
<td>6.9</td>
<td>24</td>
<td>0.5</td>
<td>0.5</td>
<td>-</td>
<td>15.7</td>
<td>4.56</td>
<td>0.66</td>
<td>1.55</td>
<td>22</td>
<td>17</td>
<td>7.0</td>
<td>4</td>
<td>&lt;0.1</td>
<td>30</td>
<td>29</td>
<td>34</td>
<td>8</td>
</tr>
<tr>
<td>110-120</td>
<td>2.66</td>
<td>0.61</td>
<td>9.4</td>
<td>8.5</td>
<td>198</td>
<td>1.6</td>
<td>0.1</td>
<td>-</td>
<td>3.87</td>
<td>5.39</td>
<td>6.68</td>
<td>1.80</td>
<td>18</td>
<td>15</td>
<td>8.5</td>
<td>44</td>
<td>12.2</td>
<td>26</td>
<td>36</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>190-200</td>
<td>2.85</td>
<td>0.71</td>
<td>9.2</td>
<td>8.5</td>
<td>462</td>
<td>0.9</td>
<td>0.2</td>
<td>-</td>
<td>5.06</td>
<td>5.73</td>
<td>6.21</td>
<td>1.73</td>
<td>19</td>
<td>17</td>
<td>8.5</td>
<td>37</td>
<td>5.4</td>
<td>26</td>
<td>37</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>10F</td>
<td>2.20</td>
<td>0.22</td>
<td>7.8</td>
<td>7.6</td>
<td>72</td>
<td>2.5</td>
<td>2.0</td>
<td>0.22</td>
<td>15.3</td>
<td>1.32</td>
<td>0.14</td>
<td>0.59</td>
<td>17</td>
<td>18</td>
<td>8.5</td>
<td>1</td>
<td>3.9</td>
<td>13</td>
<td>26</td>
<td>47</td>
<td>16</td>
</tr>
<tr>
<td>10-20</td>
<td>2.49</td>
<td>0.15</td>
<td>8.1</td>
<td>7.8</td>
<td>31</td>
<td>1.4</td>
<td>1.1</td>
<td>-</td>
<td>18.5</td>
<td>1.40</td>
<td>0.24</td>
<td>0.37</td>
<td>21</td>
<td>19</td>
<td>8.5</td>
<td>1</td>
<td>2.6</td>
<td>20</td>
<td>23</td>
<td>43</td>
<td>14</td>
</tr>
<tr>
<td>30-40</td>
<td>1.96</td>
<td>0.20</td>
<td>8.3</td>
<td>7.9</td>
<td>54</td>
<td>5.8</td>
<td>0.8</td>
<td>-</td>
<td>12.2</td>
<td>1.92</td>
<td>0.37</td>
<td>0.26</td>
<td>15</td>
<td>12</td>
<td>8.5</td>
<td>3</td>
<td>40.5</td>
<td>31</td>
<td>24</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>80-90</td>
<td>1.74</td>
<td>0.30</td>
<td>9.1</td>
<td>8.0</td>
<td>72</td>
<td>5.6</td>
<td>0.2</td>
<td>-</td>
<td>4.56</td>
<td>3.69</td>
<td>2.09</td>
<td>0.33</td>
<td>11</td>
<td>9</td>
<td>8.5</td>
<td>24</td>
<td>44.4</td>
<td>33</td>
<td>28</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>6B</td>
<td>2.44</td>
<td>0.17</td>
<td>8.0</td>
<td>7.7</td>
<td>44</td>
<td>2.5</td>
<td>2.1</td>
<td>0.23</td>
<td>17.7</td>
<td>1.80</td>
<td>0.17</td>
<td>0.59</td>
<td>20</td>
<td>20</td>
<td>8.5</td>
<td>1</td>
<td>2.9</td>
<td>14</td>
<td>29</td>
<td>47</td>
<td>11</td>
</tr>
<tr>
<td>Profile ID</td>
<td>Depth (cm)</td>
<td>Moisture %</td>
<td>E.C. 1:5 dS/m</td>
<td>pH (H2O)</td>
<td>pH (CaCl2)</td>
<td>Cl mg/kg</td>
<td>Total C%</td>
<td>Total N %</td>
<td>Mg Cmol (+)/kg</td>
<td>Na Cmol (+)/kg</td>
<td>CaCO3 as CO3</td>
<td>Silt %</td>
<td>Sand %</td>
<td>Fine sand %</td>
<td>Total %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>------------</td>
<td>---------------</td>
<td>---------</td>
<td>-----------</td>
<td>----------</td>
<td>---------</td>
<td>---------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------------</td>
<td>--------</td>
<td>--------</td>
<td>------------</td>
<td>---------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15G</td>
<td>0-6</td>
<td>1.79</td>
<td>0.21</td>
<td>8.1</td>
<td>7.8</td>
<td>76</td>
<td>3.0</td>
<td>2.3</td>
<td>0.32</td>
<td>13.0</td>
<td>1.92</td>
<td>0.42</td>
<td>0.62</td>
<td>0.16</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6-17</td>
<td>1.53</td>
<td>0.24</td>
<td>8.2</td>
<td>7.9</td>
<td>183</td>
<td>2.3</td>
<td>1.5</td>
<td>0.22</td>
<td>11.2</td>
<td>1.81</td>
<td>0.35</td>
<td>0.48</td>
<td>0.14</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>35-40</td>
<td>0.90</td>
<td>0.93</td>
<td>8.8</td>
<td>8.1</td>
<td>1230</td>
<td>4.7</td>
<td>0.7</td>
<td>-</td>
<td>3.41</td>
<td>2.12</td>
<td>1.77</td>
<td>0.07</td>
<td>0.07</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7F</td>
<td>0-10</td>
<td>0.95</td>
<td>0.11</td>
<td>5.9</td>
<td>5.4</td>
<td>48</td>
<td>0.8</td>
<td>0.7</td>
<td>0.07</td>
<td>3.89</td>
<td>1.46</td>
<td>0.31</td>
<td>0.36</td>
<td>0.8</td>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15-25</td>
<td>1.34</td>
<td>0.06</td>
<td>6.7</td>
<td>5.9</td>
<td>26</td>
<td>0.4</td>
<td>0.4</td>
<td>-</td>
<td>4.86</td>
<td>2.57</td>
<td>0.57</td>
<td>0.35</td>
<td>0.12</td>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25-34</td>
<td>1.00</td>
<td>0.06</td>
<td>7.1</td>
<td>6.3</td>
<td>24</td>
<td>0.2</td>
<td>0.2</td>
<td>-</td>
<td>2.81</td>
<td>2.28</td>
<td>0.61</td>
<td>1.02</td>
<td>0.7</td>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50-60</td>
<td>4.12</td>
<td>0.12</td>
<td>8.1</td>
<td>7.1</td>
<td>46</td>
<td>0.5</td>
<td>0.5</td>
<td>-</td>
<td>5.16</td>
<td>10.7</td>
<td>4.86</td>
<td>1.20</td>
<td>0.22</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>110-120</td>
<td>3.92</td>
<td>0.42</td>
<td>9.1</td>
<td>8.5</td>
<td>145</td>
<td>0.5</td>
<td>0.2</td>
<td>-</td>
<td>4.90</td>
<td>1.10</td>
<td>6.29</td>
<td>1.10</td>
<td>0.21</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>185-195</td>
<td>4.46</td>
<td>0.65</td>
<td>9.1</td>
<td>8.4</td>
<td>376</td>
<td>0.3</td>
<td>0.1</td>
<td>-</td>
<td>5.05</td>
<td>1.50</td>
<td>8.40</td>
<td>1.50</td>
<td>0.16</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4B</td>
<td>0-10</td>
<td>1.51</td>
<td>0.64</td>
<td>6.6</td>
<td>6.5</td>
<td>42</td>
<td>1.8</td>
<td>1.8</td>
<td>0.21</td>
<td>11.1</td>
<td>1.52</td>
<td>0.23</td>
<td>1.52</td>
<td>0.14</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>25-35</td>
<td>3.10</td>
<td>0.06</td>
<td>7.1</td>
<td>6.6</td>
<td>24</td>
<td>0.5</td>
<td>0.5</td>
<td>-</td>
<td>13.2</td>
<td>1.83</td>
<td>0.29</td>
<td>1.83</td>
<td>0.17</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>90-100</td>
<td>1.87</td>
<td>0.15</td>
<td>8.4</td>
<td>8.1</td>
<td>57</td>
<td>1.5</td>
<td>0.2</td>
<td>-</td>
<td>5.17</td>
<td>2.71</td>
<td>0.30</td>
<td>2.71</td>
<td>0.11</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>190-200</td>
<td>3.88</td>
<td>0.22</td>
<td>8.8</td>
<td>8.3</td>
<td>32</td>
<td>0.2</td>
<td>0.1</td>
<td>-</td>
<td>4.42</td>
<td>1.16</td>
<td>2.25</td>
<td>1.16</td>
<td>0.4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2E</td>
<td>0-10</td>
<td>1.07</td>
<td>0.06</td>
<td>6.0</td>
<td>5.6</td>
<td>23</td>
<td>1.2</td>
<td>1.2</td>
<td>0.08</td>
<td>4.97</td>
<td>1.58</td>
<td>0.23</td>
<td>1.68</td>
<td>0.8</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>70-80</td>
<td>1.98</td>
<td>0.07</td>
<td>7.5</td>
<td>6.6</td>
<td>27</td>
<td>0.3</td>
<td>0.3</td>
<td>-</td>
<td>4.46</td>
<td>0.46</td>
<td>1.89</td>
<td>0.46</td>
<td>0.7</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>190-200</td>
<td>3.74</td>
<td>0.45</td>
<td>9.2</td>
<td>8.4</td>
<td>135</td>
<td>1.3</td>
<td>0.1</td>
<td>-</td>
<td>5.02</td>
<td>2.45</td>
<td>6.32</td>
<td>2.45</td>
<td>0.16</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>