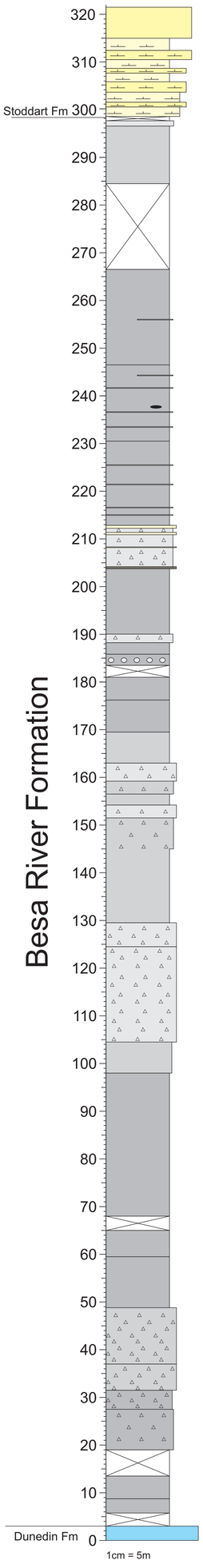


301.4 - 324.5 m: Interbedded grey brown calcareous, fine sandstone (0.5 to 2 m thick) and dark grey shale/siltstone (0.1 to 5 m thick) to about 315 m; above this thick bedded, tan weathering, grey, fine sandstone (~10 m thick).

300.4 - 301.4 m: Tan weathering, dark grey-brown calcareous siltstone to very fine sandstone. Massive bed.

298.4 - 300.4 m: Tan to buff weathering, grey-brown calcareous siltstone with uneven breakage.

296.4 - 297.5 m: Rusty weathering, dark grey to grey siltstone to shale in beds 40 to 70 cm.

284.5 - 296.4 m: Rusty to grey weathering, dark grey shale to siltstone. Crumbly into uneven pieces up to 5 or 7 cm. Poor cleavage present.

246.5 - 266.5 m: Rusty to dark grey weathering, dark grey to black fissile shale with papery partings. Essentially similar to underlying unit, but with very few siliceous and pyritic siltstone ribs.

230.5 - 246.5 m: Dark grey to grey papery to fissile shale. Contains sporadic beds to discontinuous horizons of more resistive siliceous and pyritic (5 to 10%) siltstone up to 20 cm. Also find pyrite nodules up to 10 x 40 cm with bedding wrapping around at 68.5 m.

212.8 - 230.5 m: Rusty to Dark grey or grey weathering, dark grey to black, fissile shale. Typically forms small (<5 cm) sheets but locally is papery. Contains, discontinuous horizons of more competent, siliceous and pyritic siltstone.

203.7 - 212.8 m: Rusty brown weathering, dark grey to black papery shales becomes somewhat more siliceous and contains, distinct, more resistive siliceous siltstone containing disseminated pyrite from 10 to 20 cm thick. Thicker beds higher in unit appear granular with sharp base and gradational top (turbidites?).

190 - 203.7 m: Rusty brown to dark grey weathering, dark grey to black, fissile shales. Forms small, papery pieces on breakage.

188.2 - 190 m: Yellow weathering, dark grey to black, siliceous siltstone, with disseminated pyrite and bitumen?
185.8 - 188.2 m: Rusty to orange weathering, dark grey to black papery shale with thin (1 - 3 cm) siltstone beds in lower part.
183.5 - 185.8 m: Rusty to orange weathering, dark grey to black papery shale containing 5-20 cm colloform nodules with hollow cores, prismatic crystals perpindicular to edges and fetid when broken.

176.2 - 181 m: As in preceding unit, lower 1 m has more uneven partings, but becomes very fissile and papery up section. At 9.5 m, see 1 m section with bedding at 45o to bedding above and below. 6.7 - 6.8 m: discontinuous bed, grey, recrystallized limestone.

169.5 - 176.2 m: Grey to dark grey weathering, dark grey to black, fissile shale. Forms thin plates (0.1 to 0.5 cm) up to 30 cm in size. Contains grey, siliceous? concretions 0.5 to 2 cm thick and up to 20 cm long, forming discontinuous horizons (see top unit below).
163 - 169.5 m: Grey to dark grey weathering, dark grey to black, carbonaceous shale/siltstone. Platy to uneven partings forming 1 - 10 cm pieces. Hints of laminar bedding.

159.5 - 163 m: Exactly as in 104.5 to 124.5 m and 151.5 to 154.2 m.

154.2 - 156.5 m: As in 129.5 to 145 m. 156.5 - 159.2 m: As in 145 to 151.5 m

151.5 - 154.2 m: Rusty to grey weathering, interbedded, blocky, dark grey to black, carbonaceous and siliceous laminated siltstone in beds 1 - 10 cm separated by thinner (0.1 - 1 cm) more fissile beds. Exacltly like 104.5 - 124.5 m.

129.5 - 151.5 m: Grey weathering, dark grey to black, carbonaceous, crumbly shale to siltstone. Recessive compared to underlying unit. Breaks into 0.5 to 1 cm uneven pieces. Monotonous. Unit becomes a bit more siliceous between 145 and 151.5 m forming 5-10 cm, 0.5 - 1 cm thick plates or partings.

124.5 - 129.5 m: Grey to rusty weathering, dark grey to black, carbonaceous laminated siliceous siltstone forming 0.5 to 2 cm plates. Transitions from underlying unit over 20 cm. 127.5 - 129.5m see blocky siliceous siltstone up to 20 cm with platy beds.

104.5 - 124.5 m: Grey to rusty weathering, dark grey to black, laminated carbonaceous and siliceous siltstone. Forms blocky, siliceous beds 1-10 cm separated by more fissile beds up to 1 cm. Slight fetid odour on breakage. More siliceous than underlying siliceous zone (i.e. 37 to 59 m level. Forms light grey to grey weathering bands. Fissile partings not well developed in a lot of places and simply forms blocky, siliceous blocks. Contact with underlying unit abrupt.

98 - 104.5 m: Grey to tan to orange weathering, dark grey siltstone to shale; uneven partings in places; 0.5 to 2 cm spaing and plates up to 15 cm. Still see some very fissile, shale zones. Unit transitions from underlying unit quite abruptly, over 10 cm.

68 - 98 m: Tan to grey weathering, dark grey to black, carbonaceous, very fissile shale, as in 59.5 - 65 m. Very crumbly and recessive. See orange weathering, calcareous and siliceous 20 cm thick horizon with disseminated pyrite.

59.5 - 65 m: Tan to grey weathering, dark grey to black, carbonaceous, very fissile shale. Breaks into pieces <5 cm. Gradational over 1 m with underlying unit. Recessive, poorly exposed, whereas 36 - 59 m forms a bit of a canyon.

48.8 - 59.5 m: Grey, tan orange or rusty weathering, dark grey to black, carbonaceous fissile to platy shale. Forms sheets up to 20 cm locally. Still several % disseminated pyrite locally. Very finely laminated. Note as siliceous as preceding section.

37 - 48.8 m: As in 31.5 to 37 m, except one finds sections of platy siliceous siltstone up to a few metres thick. Also abundant disseminated pyrite in horizons <1mm and up to 5 or 10% locally. Silstone is quite siliceous and is faintly laminated in association with pyrite.

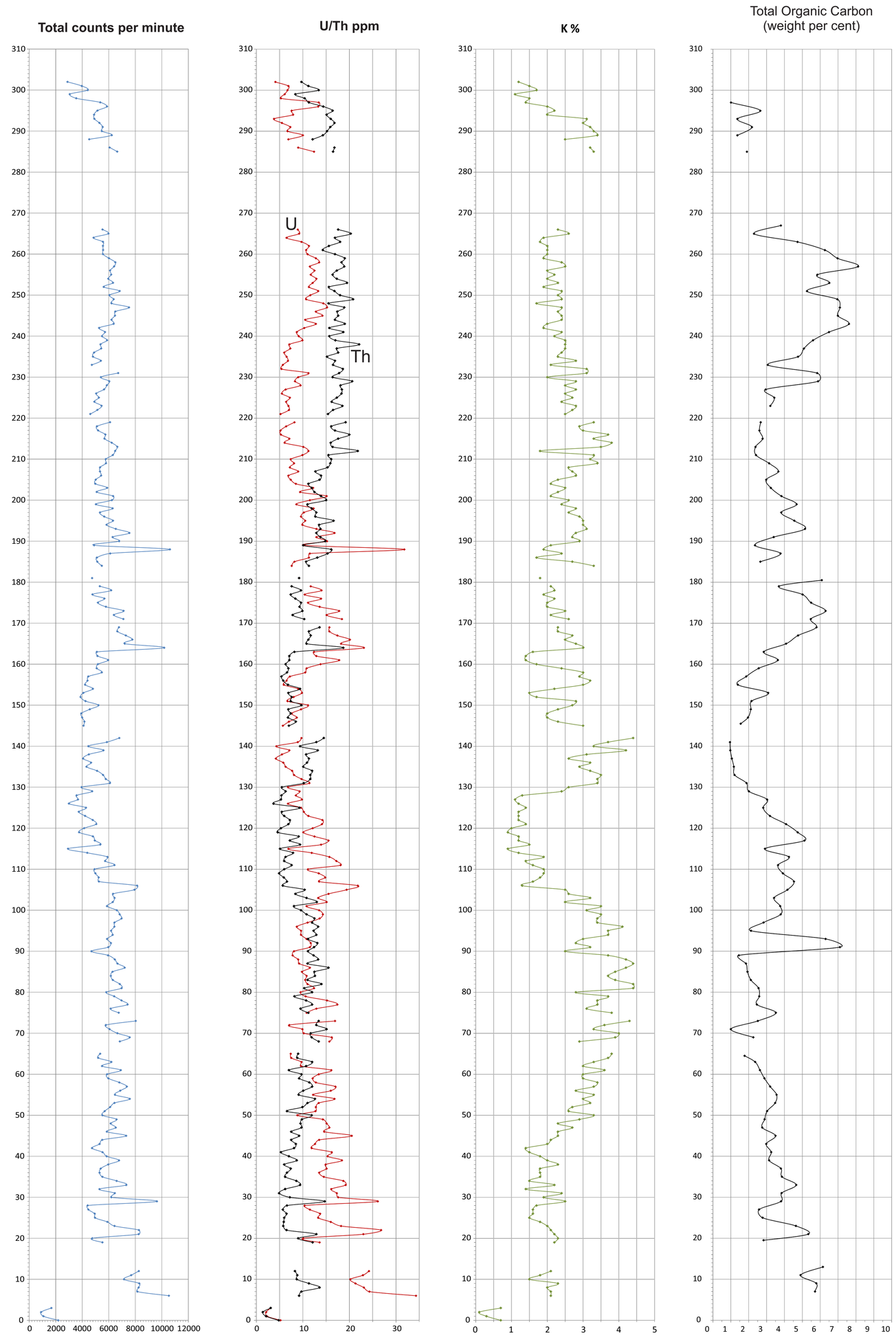
31.5 - 37 m: Interbedded, tan to grey weathering, dark grey to black blocky siliceous siltstone beds 5-20 cm thick separated by thin (<5 cm) fissile shale. See tiny (<1mm) white circular features, < 5% rock (radiolarians?).
27.5 - 31.5 m: Tan to orange or grey weathering, dark grey to black shale. Fissile to platy, still somewhat siliceous but less so than underlying unit.

19 - 27.5 m: Orange-brown to grey weathering, dark grey to black carbonaceous and fissile shale. Similar to underlying sequence in lower 2 m of section, but slightly more siliceous. After 21 m level see 1-15 cm siliceous siltstone beds separated by 1-3 cm fissile shale. Thicker siliceous beds have uneven breakage.

8.75 - 13.5 m: Rusty brown to orange weathering, dark grey to black fissile to platy shale. Not as papery as underlying unit, forming plates or sheets up to 1 cm. Some sections very fissile (<10 cm) and found 10 to 30 cm apart separated by platy material.

5.75 - 8.75 m: Rusty to orange - brown weathering, dark grey to black fissile to papery shale; very crumbly.

0 - 3 m: Poorly bedded, moderately to thickly bedded, grey weathering, dark grey to black lime mudstone. Sparry calcite throughout and fetid on breakage. Uneven bedding. Thoroughly recrystallized (<<0.5 to >2 mm).



- Limestone
- Carbonaceous shale
- Carbonaceous shale, siliceous
- Carbonaceous shale to siltstone, siliceous
- Carbonaceous siltstone to shale
- Carbonaceous and siliceous siltstone to shale
- Siltstone
- Calcareous siltstone
- Calcareous sandstone
- Sandstone
- Barite nodules
- Pyrite nodules

Base of section is: 387019E 6523897N (UTM coordinates are NAD 83, Zone 10)

Fig. A.2.4. Composite Besa River Formation section west of Stone Mountain; lithologic descriptions, gamma ray counts, and uranium, thorium and potassium concentrations.