

MISCELLANEOUS DATA, STRATIGRAPHIC HOLES:

PARMEENER SUPERGROUP



91-3280.

SNO. 911237

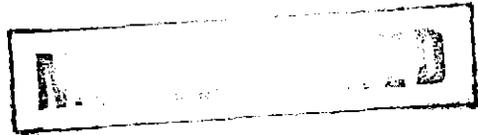
355002 Geology



HAMILTON COLLEGE
Clinton, New York 13323

Records
→ ~~SMF~~
Geoff Benn
Peg Womack
Chris Calver
Mike Clarke

Records - please
enter in
Borehole File
60.4/0



R.S. Bottrill
Department of Mines
P.O. Box 56
Rosny Park
Tasmania 7018
AUSTRALIA

Dear Ralph:

I enclose some data which you may add to the Mines library as an open file. As you can see from our analyses, we are discovering some very interesting trends of TOC within the black mudstone section. We are hoping to use the frequency of TOC abundance to correlate between sections. This would help clarify whether or not the section is expanding into the main trough or whether it "on-laps" onto the margins. Unfortunately our sampling from the Tunbridge and Ross #2 boreholes is not adequate. If it is at all possible, I would like to request additional samples from Tunbridge and Ross #2. If you think this could be arranged please let me know and I will forward a specific sampling plan. I would of course pay for shipping.

FROM ?

I would also like to request site elevations and specific locations for the following boreholes:

1. Ross #1 Quoin ✓
2. Ross #2
3. Bonney's plain
4. Tunbridge
5. Eagle hawk neck
6. Douglas River

SEE'S GRAVITY BULLETIN
CLIVES PAPER

letter written
17/11/89
DN

MINES	
File Ref.	60.4/0
23 OCT 1989	
Doc. Ref.	22/10
Action Officer	SMF
Initials	SMF
GB	gpb
PW	
CC	
MJC	
NOTED BY RJB	
Resubmit to	

Hope things are going well in Tasmania. I hope to return sometime in the next couple of years.

Cheers,

E.W. Domack

E.W. Domack
Assistant Professor of Geology

TCR 91-3280

from Domack
see also letter Dec 88



0001

HAMILTON COLLEGE

Clinton, New York 13323

355003

December 13, 1988

Mr. R. Bottrill
Tasmania Department of Mines
P.O. Box 56
Rosny Park
Tasmania 7018
AUSTRALIA

Dear Ralph:

Enclosed you will find copies of my descriptions for three of the drill cores I worked on last winter. Sorry it took so long to get these back to you but I had to trim them down a bit with respect to detail, etc. Anyway, I hope you find them of use. I want to thank you again, for allowing me to examine and sample the cores. Best wishes for the New Year!

Sincerely yours,

E. W. Domack

c: M. Banks
Geology
Univ. Tasmania

89-3050

MINES	
File Ref. 60. A/O	
-3 JAN 1989	
Doc. Ref.	
Action Officer	Initials
RSB	<i>ED</i>
Resubmit to	Date

Douglas River Borehole

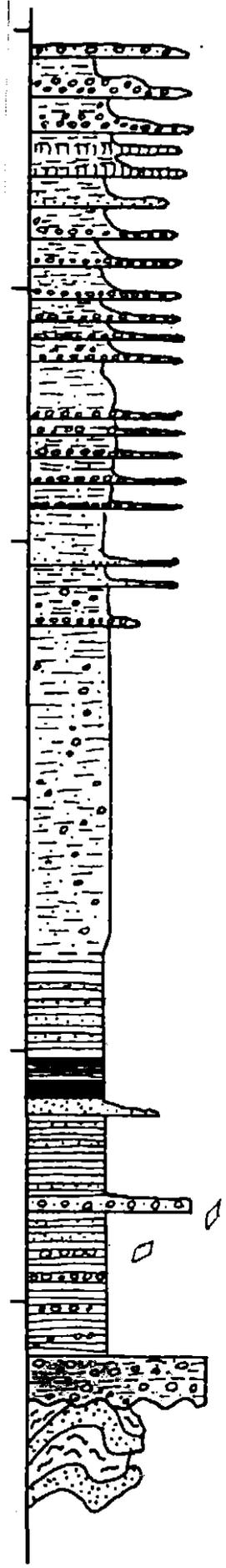
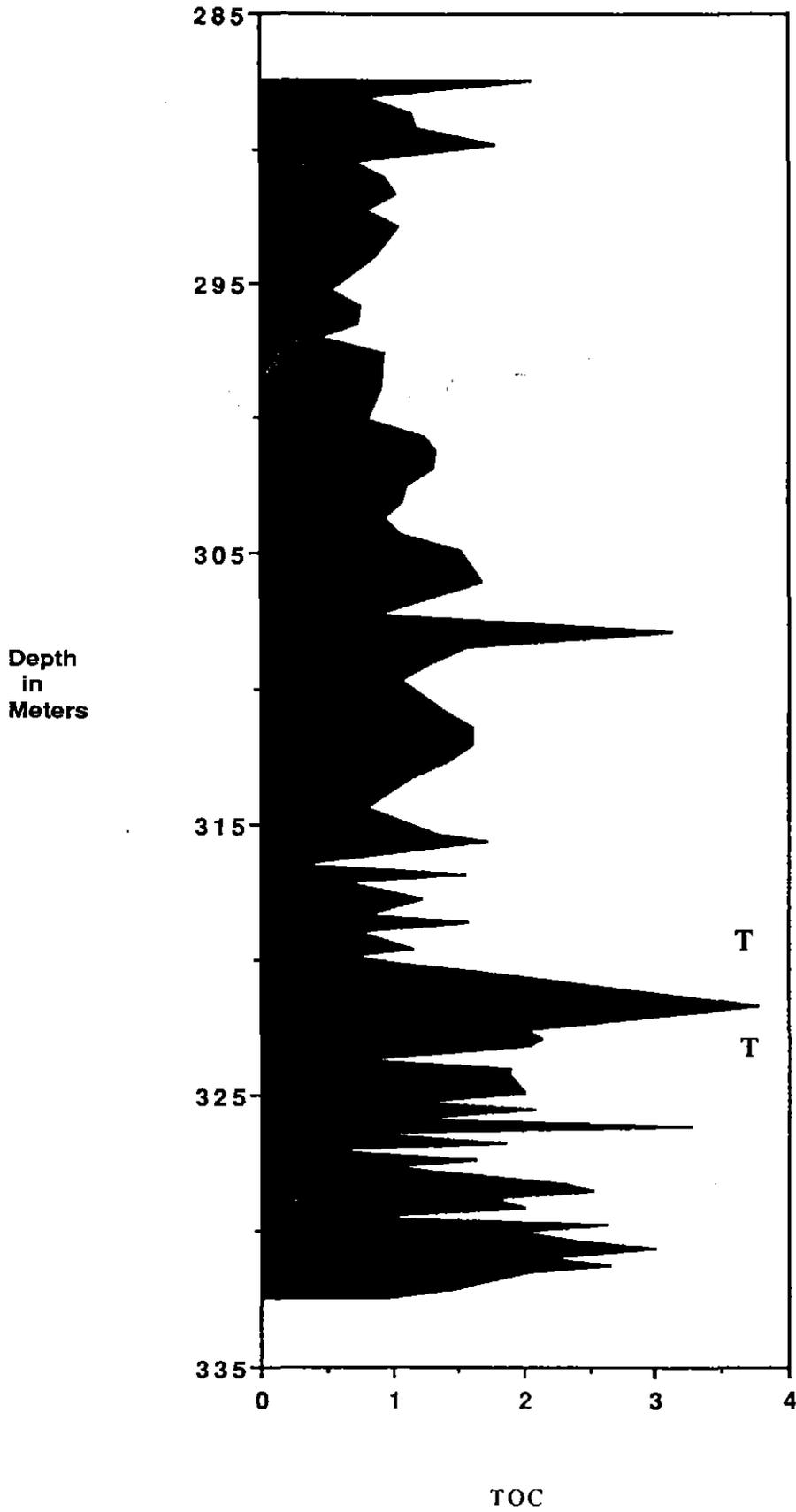


fig 2.

(MT)

Cross 1 QUON


E 554,738 m
N 5,331,162 m
HT. 344 m

Cross 2


E 536,282 m
N 5,327,165 m
HT. 199.8 m

NOTS PLAN


E 550,174 m
N 5,375,100 m
HT. 281 m

BRIDGEO


E 524,510 m
N 5,334,875 m
HT. 411 m

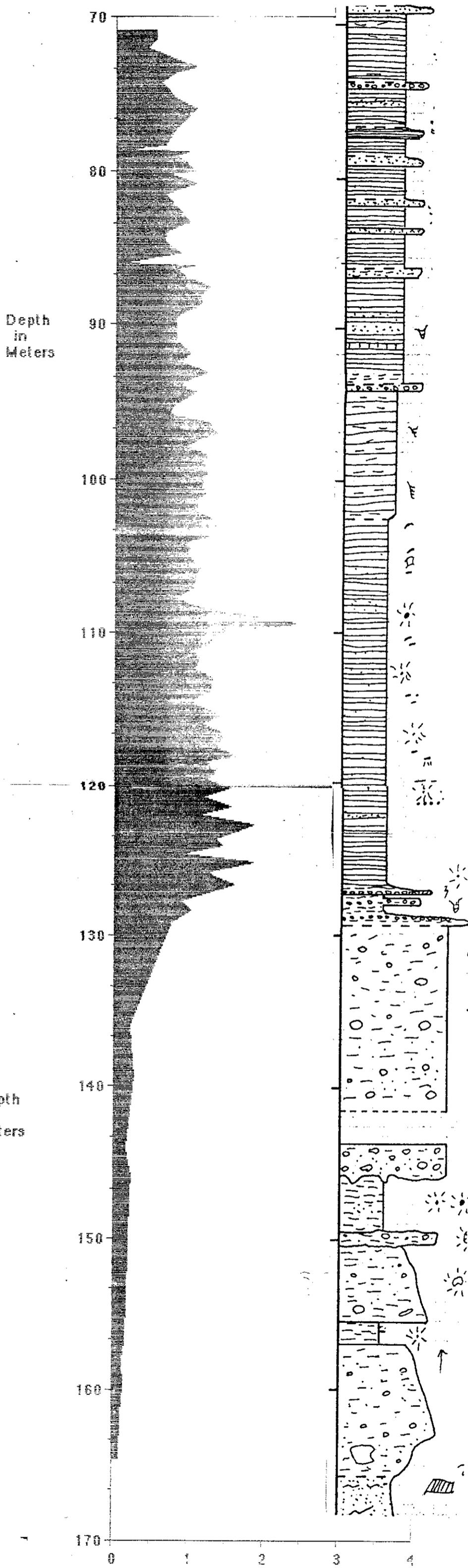
WELLS WAVE NECK


E 576,017 m
N 5,238,151 m
HT. 35.3 m

WELLS RIVER

E 604500 m
N 5373600
HT. ~10m

Approx. NOT SURVEYED
BY G. BENN (HINES
DEPT.)



Depth in Meters

Depth in Meters

TOC

fig 1

91-3280.

Description of Bonney's Plains Core

E. Domack, 1988

Interval described = 878.96 to 454.46
Total thickness described = 225.5 meters

Base of Stockers "Tillite"

- 679.96 - sharp erosive contact
Grey, sandy diamictite. Massive with thin stratified interbeds of swirled diamictite, sandy mudstone, sandy conglomerate and cross-laminated sandstone and flaser bedded sandstone-mudstone. Dropstone structures present in mudstone interbeds. Clast lithologies include granite and meta-sediments which contain striations.
- 851.15 - sharp contact
Grey diamictite, massive.
- 649.15 - gradational contact
Dark grey mudstone. Laminated with very thin interbeds of very fine grained (flaser bedded) sandstone and rare dropstones. Fine pyrite disseminated in mudstone.
- 641.11 - transistional contact
Dark grey, diamictite. Stratified with thin interlaminated mudstone and deformed lenses of mudstone and diamictite. Massive over .5 meter intervals.
- 836.58 - gradational contact
Light grey, poorly sorted muddy sandstone. Contains distinct layers of rounded pebbles and discontinuous layers or deformed lenses of sandy mudstone to muddy sandstone. Sorting increases upwards.
- 833.14 - deformed contact
?undescribed interval?
- 6 ? - contact
Light grey, very thin bedded to horizontal and cross laminated, very fine grained sandstone - silty sandstone. Interlaminated with thin to thick laminations of dark grey - black mudstone. Thin interbeds of poorly sorted muddy sandstone with sharp lower and gradational upper contacts.

823.44 - gradational contact

Interstratified very fine to medium grained silty sandstone and laminated to very thinly laminated, dark grey, mudstone. Bioturbated intervals are erosively truncated by laminated, dark, mudstone and very fine grained sandstone which pass upward into massively bioturbated, light grey, silty sandstone. Occasional pebble horizons and rare fossil bivalve fragments.

815.44 - gradational contact

Medium to fine grained sandstone interbedded with laminated dark grey silty mudstone and very fine grained sandstone. Sandstones contain swirled clasts of dark grey mudstone, are moderate to poorly sorted. Lower contacts of sandstone are sharp and appear loaded into underlying mudstones. Ill-defined bioturbation occurs throughout. Occasional pebble horizons. Sandstones coarsen upwards in a transitional manner.

607.41 - sharp (?) contact

Stratified very coarse sandstone, sandy conglomerate and sandy diamictite. Clasts are subrounded to very well rounded and include red-purple quartzite.

603.4 - sharp contact

Thinly bedded, medium - coarse grained sandstone, laminated mudstone and sandy conglomerate. Sandstone contains distinct soft-sediment clasts of poorly sorted sandstone.

Top of Stockers "Tillite"/Base of Quamby Mudstone

602.03 - sharp contact

Interlaminated very fine grained sandstone and dark grey to black mudstone. Abundant flame structures and soft sediment loading of sandstone into mudstone. Contains very thin interbeds of poorly sorted sandstone throughout.

599.39 - gradational contact

Interlaminated dark grey to black mudstone and silty fine grained sandstone. Abundant flame structures and loading of sandstone into mudstone. Subhorizontal burrows 2-3 mm across are infilled with sandstone. Occasionally thicker sandstone interbeds (1-10 cm thick) contain granules and small pebbles and are intensely bioturbated.

0097

- 591.31 - gradational contact
 Interlaminated black mudstone and light grey, very fine grained sandstone. Mudstone predominates in this interval and is very thinly to thickly laminated, whereas sandstone is subordinate, thinly bedded to thickly laminated and is intensely bioturbated. Load and flame structures of sandstone into mudstone are common throughout. Rare interbeds of poorly sorted granule rich sandstone are present.
- 583.32 - sharp contact
 Interbedded poorly sorted muddy sandstone (verges on sandy diamictite) and interlaminated black mudstone and silty, very fine grained sandstone. Interbedding consists of sharp lower contacts (loaded or down-mixed) of poorly sorted muddy sandstone which then pass gradationally upwards into mudstone-sandstone section. Cycles are approximately 0.5 to 1.0 m thick. Poorly sorted muddy sandstones contain swirled stratification, isolated soft sediment clasts of mudstone and sandstone, water escape or large vertical burrows, and occasional pebble concentrations. Black mudstones and silty sandstones are laminated to cross-laminated, contain soft sediment convolution, drop-clots of granules and coarse sand. Massive bioturbation of mudstones and subordinate sandstones predominate upwards.
- 560.60 - gradational contact
 Dark grey to black silty mudstone. Massive to laminated. Contains thin interbeds of poorly sorted muddy sandstone and sandy mudstone which contain swirled soft sediment clasts and crude stratification. Non-pebbly to very sparsely pebbly. Small but distinct black lenses abundant at 545.99 to 545.55. Thin, black carbonaceous shale at 540.12 to 540.06.
- 537.48 - gradational contact
 Black carbonaceous (lignite) shale.
- 536.65 - sharp contact
 Grey, fine grained muddy sandstone overlain by very fine grained sandstone and silty mudstone. Coarse sand and granules concentrated along lower contact.

0000

534.40 - sharp contact

Dark grey to black silty mudstone. Mudstone contains granule rich layer (15 cm) at base, swirled stratification of darker mudstone, and even horizontal parting.

532.81 - sharp erosive contact

White, coarse to medium grained sandstone. Sandstones are characterized by homogeneous, coarse grained bases (.3 to .7 m thick) which pass upwards into interlaminated mudstone and sandstone that are truncated by another coarse sandstone unit. Black mudstone rip-ups present within basal portion of sandstone beds.

520.89 - gradational contact

Light grey muddy sandstone - siltstone and interlaminated black mudstone and siltstone. Muddy sandstone is massively bioturbated with scattered coarse sand grains and small quartz pebbles. Mudstone and siltstone contain load structures and nearly rhythmic laminations.

517.57 - transitional contact

Interbedded, poorly sorted sandy mudstone (muddy sandstone) and black mudstone. Interbeds are .5 to 1.0 m thick and are characterized by sharp lower contacts of sandy mudstone which pass upwards into dark mudstone. Pebbles and granules are common within sandy mudstone, especially near the base of units. Soft sediment clasts of mudstone, fine pyrite, and bioturbation also common within sandy mudstone. Calcite fracture fill at 512.79.

510.49 - transitional contact

Interbedded silty to very fine grained sandstone and dark grey to black mudstone. Sandstone is massively bioturbated, contains occasional pebbles, coarse sand to granules. Beds are .3 to 1 m thick and are disrupted by calcite filled fractures. In-situ bryozoan (fenestral) layers at 495.5 to 495.0.

470.73 - transitional contact

Very poorly sorted sandy siltstone. Massively bioturbated, abundant pebble concentrations, minor interbeds of dark grey to black mudstone.

0009

482.82 - transitional contact

454.48

Interbedded very poorly sorted muddy sandstone and black mudstone. Sandstone is pebble rich and contains abundant bivalves and brachiopods. First bryozoan rich mudstone at 459.

Top Quamby/Base of Golden Valley

Description of Tunbridge Core

E. Domack, 1988

Interval described: 914.75 to 434.3

Total thickness described = 480.45

Depth Contacts Lithology

914.75 -

Black graphite, quartz schist. Tightly folded.

Base of Stockers "Tillite"

905.51- sharp contact

Dark grey to black pebbly mudstone which varies to dark grey very fine grained sandstone and diamictite. Contains fine scale cross-lamination and very thick lamination of siltstone and claystone. Soft sediment deformation, s-folds and convolutions abundant in upper portions.

900.24 - sharp contact

Grey, massive diamictite with very thin interbeds of siltstone-claystone rhythmites, some of which are highly deformed and sheared while others remain horizontal.

891.23 - transitional contact

Dark grey mudstone and white very fine grained sandstone. Laminae appear rhythmic and sandstones are loaded into mudstone.

885.17 - transitional contact

Interbedded grey diamictite, minor conglomerate, and siltstone-mudstone
Diamictite is massive and predominates above 867.17 m. Siltstone-mudstone is rhythmically laminated.

851.08 - gradational contact

Massive dark grey diamictite and minor light-grey very fine grained sandstone. Sheared zones of siltstone and very fine grained sandstone. Interval of friable (faulted) diamictite with slickensides and fractures between 838.03 to 834.85.

836.21 - sharp contact

Interbedded medium to fine grained sandstone and grey diamictite. Sandstones are deformed and intermixed with the diamictite in subvertical layers.

834.25 - sharp contact

Dark grey massive diamictite. Contains deformed intervals of sandstone and granule conglomerate, especially between 829.08 - 829.48 and 808.75 - 807.25. Fractured and friable diamictite with slickensided surfaces between 819.8 - 818.79. Clasts are of diverse lithologies are striated and angular to subrounded.

802.46 - sharp contact

Interstratified siltstone, very fine grained sandstone and granule rich sandstone. Bedding is disturbed with sheared zones and normal and reverse offset microfaults.

801.00 - sharp contact

Light grey, well sorted lithic sandstone. Inversely graded from fine to medium grained with black mudstone intraclasts near base.

800.45 - gradational contact

Interbedded dark grey diamictite, light grey lithic sandstone, and siltstone. Diamictite is friable and stratified. Sandstone and siltstone interbeds are deformed with microfaults and rotated laminations.

799.64 - transitional contact

Interlaminated black mudstone, grey siltstone and very fine grained sandstone. Laminations are subhorizontal, occur in rhythmic couplets, contain rare small dropstones, and are offset by normal microfaults. Some loading of coarser textures into mudstone. Overall unit fines upward.

798.64 - deformed contact

Dark grey diamictite. Primarily massive to crudely stratified with dark mudstone at 795.18 - 794.98. Thin stratified paraconglomerate with coarse-tail, normal grading at 773.37 - 773.14. Slickensides present along subvertical surfaces just above lower contact yet diamictite breaks along even horizontal surfaces in rest of unit. Clasts are subrounded and striated. Isolated fossil fragments (bivalves), with pyrite coatings, first occur at 790. and 789.15.

771.67 - transitional contact

Interbedded sandy conglomerate, sandstone and dark grey diamictite. Thick sandstone at 770.6 - 770.06 appears to be amalgamated and fines upwards in composite manner. Sandstone is internally stratified with very thin, discontinuous black mudstone layers and pebble concentrations. Clasts are well rounded and lithologically diverse.

769.61 - sharp contact

Dark grey diamictite. Primarily massive with thin interbeds of granule paraconglomerate (742.25 - 742.00) and thin discontinuous sandstones near base of unit. Some vertical stratification (fluid escape (?) pipes) at 735.60 - 735.00. Clasts, including boulders, are striated and faceted. Isolated bivalve fragment at 755.20.

Top of Stockers "Tillite"

Base of Quamby Mudstone

706.54 - sharp, non-erosive contact

Olive grey to black mudstone and silty mudstone. Grades from finely laminated mudstone, at base, upwards into massive and burrowed silty mudstone, above. Occasional very thin (cm) intervals of poorly sorted sand, especially in lower 10 m of unit.

Core breaks along very even horizontal surfaces. Glendonite blades and rosettes are abundant starting at 680.32 and are cyclic in distribution. Pyrite is found as finely deseminated grains and as coarse replacements of subhorizontal burrows and glendonites. Dropstone clasts are very sparse ($< 1/m$) but are very well rounded. Contains foraminifera and small black lenses which are concentrated in discontinuous zones.

Dispersed spheroids (altered Tasmanites ?) are abundant from 556.99 - 556.0.

551.30 - sharp intrusive contact

Dark grey to black silty mudstone and veins of light green dolerite. Fracture fills of dolomite cut through dolerite intervals. Alteration of mudstone occurs along contacts with dolerite.

547.60 - sharp intrusive contact

Dark grey silty mudstone and very fine grained, white to light grey, silty sandstone. Mudstone is massive with abundant black lenses and grades into cross-laminated sandstone. Other structure include convolutions, due to loading, and vertical

stratification (burrows or water escape pipes).

546.11 - gradational contact

Light grey to olive grey siltstone, and sandy siltstone. Siltstones appear massive and contain rather abundant small black lenses in discontinuous concentrations. Sandy siltstones are intensely bioturbated with remnants of original cross-laminations preserved. Glendonites are present but are all very small (< 2cm) and less abundant than in underlying mudstone. Small (1 mm) light brown spherules (altered Tasmanites ?) concentrated between 534.90 - 534.60. Transition from siltstone to sandy siltstone is gradational at around 524.9.

Two thin pebble layers at 500.40 and 498.50 are associated with a poorly sorted, sandy matrix and bivalve fossils. Abundant foraminifera and ostracods (?) at 495.80 and in-situ, thickly ribbed, brachiopod at 492.37.

490.33 - sharp intrusive contact

Olive green finely crystalline dolerite.

489.85 - sharp intrusive contact

Grey to light grey silty sandstone and fine grained sandy siltstone. Intensely bioturbated with occasional very thin laminated and cross-laminated intervals. Very thin intervals contain very small bivalves, foraminifera and scattered pebbles. Thin to very thin interbeds of muddy sandstone (starting at 469.5) are poorly sorted and commonly have sharp lower contacts with pebble and fossil concentrations. Small glendonite at 484.85 & 484.95. Dropstone structure at 474.95. Abundant bryozoan rich mudstones start at 450.97 contain both stenopera &

fenestral forms.

Top of Quamby Mudstone

Base of Golden Valley

449.00 - gradational contact

434.30

Interbedded very fine grained silty sandstone (sandy siltstone), very thin, bryozoan mudstone and poorly sorted, muddy sandstone. Scattered pebbles and fossil (bivalve) fragments throughout. Structures range from intensely bioturbated, laminated to cross-laminated.

- 0019
- 502.9 - gradational contact
Pebbly mudstone grades vertically into laminated (rhythmite) sandstone, siltstone-claystone. Sands are normally graded, thin to very thinly laminated. Dropstone structures and pebble layers are present.
- 502.75 - intrusive contact
Olive grey, dolerite.
- 481.62 - intrusive contact
Olive green rhythmite with thin beds of internally laminated very fine grained sandstone and siltstone (?). Normal microfaults.
- 481.38 - sharp, non-erosive contact
Olive grey, mud-rich diamictite. Massive except for pebble-free interval, 15 cm thick in lower meter of unit.
- 478.2 - sharp, non-erosive contact
Mudstone rhythmite overlain by very fine grained laminated sandstone. Sandstone is deformed.
- 478.00 - intrusive contact
Olive grey dolerite
- 477.86 - intrusive contact
Olive grey diamictite, massive and breaks along even horizontal surfaces. Clasts below 467 are generally less than 4 cm in size and frequently contain rims of pyrite followed by calcite. Contains one thin (1m) interbed of laminated to cross-laminated mudstone with dropstones and abundant pyrite. Some fracture fills of white (gypsum ?) mineral. Abundant large clasts above 467 some with facets and striations. Ill-defined stratification and clast poor intervals above 430.0. Grey color predominates above 442.95.

Top of Stocker's "Tillite"

Base of Quamby Mudstone

- 426.47 - sharp non-erosive contact
Dark grey to black pebbly mudstone and mudstone. Contains dispersed granules and coarse sand with distinct layers of pebbles in lowermost 2 m. Above 424.8 mudstone lacks coarser textures except for thin layers of pebbles. Mudstone is finely laminated with rare, tiny horizontal burrows, dispersed and replacement pyrite. Breaks along even horizontal surfaces. First glendonite at 415.8 occur somewhat cyclically above 409.26. One dropstone at 418.7, non-pebbly above 418.7. Small black lenses starting at 360.0.

0017

362.75 - gradational contact

Dark grey silty mudstone. Very similar to underlying unit. Abundant glendonites and pyrite. Unit is somewhat more massive with less distinct laminations. Small bivalve at 347.6 and one dropstone at 339.87. First abundant black lenses at 334.0, occur sporadically above. Core breaks along even horizontal surfaces. Occasional pebbles above 331. High angle fractures at 298.8 and above.

290.15 - sharp contact

Buff to light grey skeletal wackestone (carbonate). Unit is highly porous with somewhat deformed lower contact in underlying mudstone. Fossils include, brachiopods, bivalves, and bryozoan.

289.18 - sharp contact

Dark grey, silty mudstone. Internal structures appear massive to finely laminated. Abundant fine and burrow-replacement pyrite. Burrows include horizontal and small subvertical traces. Small glendonites and black lenses throughout. From 291.5-291.35 calcareous mudstone, or concretion. One bivalve at 275.75. First pebble and fossil debris layer at 266.93.

Top (?) of Quamby Mudstone

Base (?) of Golden Valley

266.05 - transitional contact

Interbedded, grey to olive silty mudstone poorly sorted sandy (pebbly), mudstone and siltstone. Units are abundantly fossiliferous especially within calcareous concretions. Distinct pebble and poorly sorted sandy intervals common. Stratification varies from intensely bioturbated to finely cross-laminated, within very fine grained silty sandstone intervals. Common black lenses somewhat larger than underlying units. Fossils include in-situ bryozoan, brachiopods and bivalves. Some dropstone structures. Bedding variation includes sharp lower contacts of poorly sorted sandy siltstone and muddy sandstone with underlying mudstone. Concentrations of fossil and pebble fragments are found at the base of units within bioturbated and massive intervals which pass upwards into cross-laminated intervals.

226.25 (end of description)