

APPENDIX 1.

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| CULTUS PE | | LEUM N.L. | | AF | PENDIX |
|---------------------|-------|---|--|---|---|
| DEPT. NAT. RES | | CU | UTTINGS DE | ESCRIPT | TION |
| WELL NAME: | | Inbar East-1 | DATE: | 30 May, 1997 | |
| GEOLOGIST: | Da | ave Horner | PAGE: | 1 | |
| Interval (m) | % | Description | ······································ | | |
| For geological repo | ort 5 | | | | |
| 764-770 | 100 | grit quartz sand grains, mod | brown grey to medium grey, derately to very silty, common ce fine mica flakes, soft, mode | n dark green argillac | eous |
| 770-775 | 100 | quartz sand grains, moderat | brown grey to medium grey, tely to very silty, trace dark gr s, soft, moderately dispersive, | reen argillaceous gla | fine to grit uconite, trace |
| 775-780 | 100 | quartz sand grains, moderat | brown grey to medium grey, tely to very silty, trace dark gr s, soft, moderately dispersive, | reen argillaceous gla | |
| 780-785 | 100 | quartz sand grains, moderat | brown grey to medium grey, ely to very silty, common dar flakes, soft, moderately dispe | k green argillaceous | |
| 785-790 | 100 | quartz sand grains, moderat | brown grey to medium grey, ely to very silty, common to a e fine mica flakes, soft, mode | abundant dark green | argillaceous |
| 790-795 | 80 | to subangular, moderately so brown argillaceous and silt | a brown grey, very fine to coar orted, moderate silica cement, matrix, clear to opaque quartz brown lithics, trace green gree y, no oil fluorescence. | , trace to common m z grains often with li | edium to darl ght brown |
| | 20 | quartz sand grains, moderat | brown grey to medium grey, ely to very silty, common to a e fine mica flakes, soft, mode | bundant dark green | argillaceous |
| 795-800 | 30 | subangular, moderately sort brown argillaceous and silt argillaceous staining, trace b | grey, very fine to very coarse, ed, moderate silica cement, tr matrix, clear to opaque quartz prown lithics, trace green gree able, poor inferred porosity, m | ace to common medi z grains often with li en and yellow brown | ium to dark ght brown |
| | 70 | | brown grey, moderately to ve oarse quartz sand grains, trac ibfissile. | | |
| 800-805 | 20 | subangular, moderately sort argillaceous and silt matrix light brown argillaceous stai | grey, very fine to very coarse, ed, moderate silica cement, ab - matrix supported, clear to op ining, trace brown lithics, trac a flakes, friable, poor inferrec | bundant medium to d paque quartz grains ce green green and y | lark brown often with ellow brown |
| | 80 | Claystone: medium to dark dispersed very fine to very co dispersive, non to slightly su | brown grey, moderately to ve oarse quartz sand grains, trac ubfissile. | ery silty, trace to com e mica flakes, soft, v | mon ery |

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| Interval (m) | % | Description | PAGE: | 2 |
|--------------|-------|---|---|-----------------|
| 805-810 | 10 | Sandstone: medium brown grey, very fine to very coarse, dominantly co subangular, moderately sorted, moderate silica cement, abundant mediu argillaceous and silt matrix - matrix supported, clear to opaque quartz g light brown argillaceous staining, trace brown lithics, trace green green clay lithics, trace coarse mica flakes, friable, poor inferred porosity, no | m to dark brow rains often wit and yellow bro | vn :h owi |
| | 90 | Claystone: medium to dark brown grey, moderately to very silty, trace t dispersed very fine to very coarse quartz sand grains, trace brown and g grains, trace mica flakes, soft, very dispersive, non to slightly subfissile. | reen lithics sar | nd |
| 810-815 | 10 | Sandstone: medium brown grey, very fine to very coarse, dominantly co subangular, moderately sorted, moderate silica cement, abundant mediu argillaceous and silt matrix - matrix supported, clear to opaque quartz g light brown argillaceous staining, trace brown lithics, trace green green clay lithics, trace coarse mica flakes, friable, poor inferred porosity, no c | m to dark brov rains often wit and yellow bro | vn h owr |
| | 90 | Claystone: medium to dark brown grey, moderately to very silty, trace t dispersed very fine to very coarse quartz sand grains, trace brown and g grains, trace red volcanic lithics, common very coarse mica flakes, soft, non to slightly subfissile. | reen lithics san | |
| 815-820 | 20 | Sandstone: medium brown, very fine to grit, dominantly coarse, angula very poorly sorted, weak to moderate silica cement, abundant medium to argillaceous and silt matrix - often matrix supported, clear to opaque qui moderate brown clay stain, trace red and brown lithics, rare black carbox friable, very poor inferred porosity, no oil fluorescence. | o dark brown g artz grains wit | rey h |
| | 80 | Claystone: medium to dark brown grey, moderately to very silty, trace to dispersed very fine to very coarse quartz sand grains, trace brown and gr grains, trace red volcanic lithics, common very coarse mica flakes, soft, non to slightly subfissile. | een lithics san | |
| 820-825 | 10 | Sandstone: medium brown, very fine to grit, dominantly coarse, angular very poorly sorted, weak to moderate silica cement, abundant medium to argillaceous and silt matrix - often matrix supported, clear to opaque qua moderate brown clay stain, trace red and brown lithics, rare black carbon friable, very poor inferred porosity, no oil fluorescence. | dark brown g artz grains wit | rey h |
| | 90 | Claystone: medium to dark brown grey, moderately to very silty, trace to dispersed very fine to very coarse quartz sand grains, trace brown and gr grains, trace red volcanic lithics, common very coarse mica flakes, soft, non to slightly subfissile. | een lithics san | |
| 825-830 | 100 | Claystone: dark brown grey, moderately to very silty, trace dispersed very coarse quartz sand grains, common micromica, trace coarse mica flakes, carbonaceous detritus, soft to firm, moderately dispersive, non to slightly | rare black | |
| | Trace | Sandstone: medium brown, very fine to grit, dominantly coarse, angular very poorly sorted, weak to moderate silica cement, abundant medium to argillaceous and silt matrix - often matrix supported, clear to opaque qua moderate brown clay stain, trace red and brown lithics, rare black carbor friable, very poor inferred porosity, no oil fluorescence. | dark brown gr artz grains with | ey 1 |
| 830-835 | 100 | Claystone: medium to dark brown grey, moderately to very silty, rare disvery coarse quartz sand grains, common micromica, trace coarse mica fla carbonaceous detritus, soft to firm, moderately dispersive, non to slightly | akes, rare blac | |
| 835-840 | 10 | Sandstone: light brown grey, very fine to very coarse, dominantly coarse subrounded, moderately sorted, weak silica cement, trace to common wh argillaceous matrix, trace yellow quartz grains, trace yellow and red lithi flakes, trace black carbonaceous detritus, friable, fair inferred porosity, n | ite to light broves, trace mica | |
| | 90 | Claystone: dark brown grey to light yellow brown, trace to common disp grains, trace micromica, trace coarse mica flakes, rare black cabonaceous very dispersive, non to slightly subfissile. | | and |

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| Interval (m) ⁻ | % | Description PAGE | :: 3 | 3 |
|---------------------------|----|---|----------------|-----|
| 840-845 | 10 | Sandstone: light brown grey, very fine to very coarse, dominantly coarse, angular subrounded, moderately sorted, weak silica cement, trace to common white to ligh argillaceous matrix, trace yellow quartz grains, trace yellow and red lithics, trace flakes, trace black carbonaceous detritus, friable, fair inferred porosity, no oil fluor | t brow mica | |
| | 90 | Claystone: medium brown grey, trace to common dispersed quartz sand grains, tr micromica, trace coarse mica flakes, rare black cabonaceous detritus, soft, very dis non to slightly subfissile. | ace persiv | 'e, |
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| CULTUS P | ETRO | LEUM N.L. | | Al | PPENDI |
|--------------------|-------|--|---|---|--|
| | | CU | TTINGS DI | ESCRIPT | FION |
| WELL NAME: | Dı | unbar East-1 | DATE: | 30 May, 1997 | 1 |
| GEOLOGIST: | Da | ave Horner | PAGE: | 1 | |
| Interval (m) | % | Description | | | |
| For geological rep | ort-6 | | | | |
| 845-850 | 80 | Sandstone: light brown grey subrounded, moderately sorte argillaceous matrix, trace yel flakes, trace black carbonaced | d, weak silica cement, trace low quartz grains, trace yell | to common white to ow and red lithics, the | b light brow race mica |
| ······ | 20 | Claystone: medium brown gr micromica, trace coarse mica non to slightly subfissile. | | | |
| 850-855 | 30 | Sandstone: light brown grey, subrounded, moderately sorte argillaceous matrix, trace yell flakes, trace black carbonaced | d, weak silica cement, trace ow quartz grains, trace yell | to common white to ow and red lithics, th | light brow race mica |
| | 70 | Claystone: medium brown gr coarse quartz sand grains in p trace black carbonaceous detr | oart, trace coarse mica flakes | s, tace to common m | |
| 855-860 | 90 | Sandstone: very light brown, subrounded, moderately sorter yellow to brown quartz grains coarse mica flakes, trace black fluorescence. | d, weak silica cement, trace , common yellow green red | white argillaceous n and brown volcanic | natrix, trace lithics, trac |
| | 10 | Claystone: medium brown gr coarse quartz sand grains in p trace black carbonaceous detri | art, trace coarse mica flakes | s, tace to common m | |
| 860-865 | 70 | Sandstone: very light brown, subrounded, moderately sorted abundant medium brown grey grains, common yellow green trace black coaly detritus, frial | l, weak silica cement, trace argillaceous matrix in part, red and brown volcanic lith | white argillaceous n trace yellow to brow ics, trace coarse mic | natrix, vn quartz a flakes, |
| | 30 | Claystone: medium brown gro coarse quartz sand grains in p trace black carbonaceous detri | art, trace coarse mica flakes | , tace to common mi | |
| 865-870 | 90 | Sandstone: very light brown, subrounded, moderately sorted yellow to brown quartz grains, coarse mica flakes, trace black fluorescence. | l, weak silica cement, trace common yellow green red | white argillaceous m and brown volcanic | atrix, trace |
| | 10 | Claystone: medium brown gre coarse quartz sand grains in pa trace black carbonaceous detri | art, trace coarse mica flakes | , tace to common mi | |
| 870-875 | 100 | Sandstone: light brown, very t subrounded, dominantly suban cement, trace weak calcareous yellow to orange quartz grains trace coarse clear mica flakes, | gular to angular, moderatel cement, trace light brown to , common red yellow brown | y to well sorted, wea o white argillaceous green and grey volc | k silica matrix, trac anic lithics |

| Interval (m) % Description | | Description | PAGE: | 2 |
|----------------------------|-------|--|--|---------------|
| 875-880 | 90 | Sandstone: light brown, very fine to coarse, dominantly medium to coa subrounded, dominantly subangular to angular, moderately to well sorte cement, trace weak calcareous cement, trace light brown to white argill yellow to orange quartz grains, common red yellow brown green and gr trace coarse clear mica flakes, trace black coaly detritus, friable, good in | d, weak silica aceous matrix, ey volcanic lit | trac hics, |
| | 10 | Claystone: medium brown grey, moderately to very silty, common disp coarse quartz sand grains in part, trace coarse mica flakes, tace to comm trace black carbonaceous detritus, firm, very dispersive, slightly subfissi | non micromica | |
| 880-885 | 40 | Sandstone: light brown, very fine to coarse, dominantly medium, angu dominantly subangular to angular, moderately to well sorted, weak silic weak calcareous cement, trace light brown to white argillaceous matrix, orange quartz grains, common red yellow brown green and grey volcant coarse clear mica flakes, trace black coaly detritus, friable, good inferred | a cement, trace trace yellow to c lithics, trace | e O |
| | 60 | Claystone: medium brown grey, moderately to very silty, common dispectation of the coarse quartz sand grains in part, trace coarse mica flakes, tace to commetrace black carbonaceous detritus, firm, very dispersive, slightly subfissions and the commetation of t | ion micromica | |
| 885-895 | 100 | Sandstone: light brown, very fine to coarse, dominantly medium to coar subrounded, dominantly subangular to angular, moderately to well sorte cement, trace weak calcareous cement, trace light brown to white argilla yellow to orange quartz grains, common red yellow brown green and gra trace coarse clear mica flakes, trace black coaly detritus, friable, good in | d, weak silica ceous matrix, ey volcanic litl | trac nics, |
| | Trace | Claystone: medium brown grey, moderately to very silty, common disperior coarse quartz sand grains in part, trace coarse mica flakes, tace to commetrace black carbonaceous detritus, firm, very dispersive, slightly subfissi | on micromica | to , |
| 895-915 | NR | No samples due to shaker screen blinding. | <u></u> | |
| 915-925 | 100 | Sandstone: light grey to light brown grey, very fine to very coarse, dom medium, angular to subrounded, dominantly subangular, moderately so cement, trace light brown argillaceous and silt matrix, trace yellow to or trace red brown yellow green and grey volcanic lithics, trace black coaly occasionally with associated pyrite, trace coarse clear and green mica fla inferred porosity, no oil fluorescence. | ted, weak silic ange quartz gi detritus | rains |
| 925-935 | 80 | Sandstone: light grey to light brown grey, very fine to very coarse, dom medium, angular to subrounded, dominantly subangular, moderately sor cement, trace light brown argillaceous and silt matrix, trace yellow to or trace red brown yellow green and grey volcanic lithics, trace black coaly occasionally with associated pyrite, trace coarse clear and green mica fla inferred porosity, no oil fluorescence. | ted, weak silic ange quartz gr detritus | ains |
| | 20 | Claystone: medium brown grey, moderately to very silty, common dispectors quartz sand grains in part, trace coarse mica flakes, tace to commutrace black carbonaceous detritus, firm, very dispersive, slightly subfissi | on micromica | to |
| 935-945 | 100 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine medium, angular to subrounded, dominantly subangular, moderately sorted, weak si cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz trace red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes, friable, inferred porosity, no oil fluorescence. | | ains |
| | Trace | Claystone: medium brown grey, moderately to very silty, common dispectors quartz sand grains in part, trace coarse mica flakes, tace to commutate black carbonaceous detritus, firm, very dispersive, slightly subfissil | on micromica, | to |
| 945-950 | 90 | Sandstone: light grey to light brown grey, very fine to very coarse, domi medium, angular to subrounded, dominantly subangular, moderately sor cement, trace light brown argillaceous and silt matrix, trace yellow to or trace red brown yellow green and grey volcanic lithics, trace black coaly occasionally with associated pyrite, trace coarse clear and green mica fla inferred porosity, no oil fluorescence. | ted, weak silic ange quartz gr detritus | ains |

| Interval (m) | % | Description PAGE: | 3 |
|--------------|-------|--|---|
| | 10 | Claystone: medium brown grey, moderately to very silty, common dispersed very fine to coarse quartz sand grains in part, trace coarse mica flakes, tace to common micromica, trace black carbonaceous detritus, firm, very dispersive, slightly subfissile. | |
| 950-960 | 100 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine to medium, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz grat trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred porosity, no oil fluorescence. | |
| | Trace | Claystone: medium brown grey, moderately to very silty, common dispersed very fine t coarse quartz sand grains in part, trace coarse mica flakes, tace to common micromica, trace black carbonaceous detritus, firm, very dispersive, slightly subfissile. | |
| 960-965 | 30 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine to medium, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz grat trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred porosity, no oil fluorescence. | |
| | 70 | Claystone: medium grey to occasionally medium brown grey, moderately to very silty, occasionally abundant dispersed very fine to rarely coarse quartz sand grains, trace blac coaly detritus occasionally with associated pyrite, trace pyrite, trace to common microm soft, very dispersive and washing from samples, slightly subfissile. | |
| 965-970 | 40 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine to medium, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz gra trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred porosity, no oil fluorescence. | |
| | 60 | Claystone: medium grey to occasionally medium brown grey, moderately to very silty, occasionally abundant dispersed very fine to rarely coarse quartz sand grains, trace black coaly detritus occasionally with associated pyrite, trace pyrite, trace to common micromis soft, very dispersive and washing from samples, slightly subfissile. | |
| 970-975 | 80 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine to medium, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz grat trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred porosity, no oil fluorescence. | |
| | 20 | Claystone: medium grey to occasionally medium brown grey, moderately to very silty, occasionally abundant dispersed very fine to rarely coarse quartz sand grains, trace black coaly detritus occasionally with associated pyrite, trace pyrite, trace to common micromi soft, very dispersive and washing from samples, slightly subfissile. | |
| 975-980 | 90 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine to medium, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz grait trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred porosity, no oil fluorescence. | |
| | 10 | Claystone: medium grey to occasionally medium brown grey, moderately to very silty, occasionally abundant dispersed very fine to rarely coarse quartz sand grains, trace black coaly detritus occasionally with associated pyrite, trace pyrite, trace to common micromis soft, very dispersive and washing from samples, slightly subfissile. | |

| Interval (m) | % | Description PAGE: | 4 |
|--------------|-----|--|-----------------------|
| 980-995 | 100 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine medium, angular to subrounded, dominantly subangular, moderately sorted, weak s cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes friable, fair inferred porosity, no oil fluorescence. | ilica grain |
| 995-1000 | 100 | Sandstone: light grey to light brown grey, very fine to very coarse, dominantly fine medium, angular to subrounded, dominantly subangular, moderately sorted, weak si cement, trace light brown argillaceous and silt matrix, trace yellow to orange quartz trace to common red brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace coarse clear and green mica flakes friable, fair inferred porosity, no oil fluorescence. | lica grair |
| | Tr | Claystone: medium grey, moderately to very silty, occasionally abundant dispersed v fine to medium quartz sand grains, trace black coaly detritus occasionally with asso pyrite, trace pyrite, trace to common micromica, soft, very dispersive and washing fi samples, slightly subfissile. | ciated |
| 1000-1010 | 80 | Sandstone: light grey to light green grey, very fine to coarse, dominantly fine to me angular to subrounded, dominantly subangular, moderately sorted, weak silica ceme trace off white argillaceous and silt matrix, trace yellow to orange quartz grains, tra- brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred poro oil fluorescence. | nt, ce red with |
| | 20 | Claystone: medium grey, moderately to very silty, occasionally abundant dispersed v fine to medium quartz sand grains, trace black coaly detritus occasionally with assoc pyrite, trace pyrite, trace to common micromica, soft, very dispersive and washing fit samples, slightly subfissile. | iated |
| 1010-1020 | 90 | Sandstone: light grey to light green grey, very fine to coarse, dominantly fine to me angular to subrounded, dominantly subangular, moderately sorted, weak silica ceme trace off white argillaceous and silt matrix, trace yellow to orange quartz grains, trace brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred poro oil fluorescence. | nt, ce red with |
| | 10 | Claystone: medium grey, moderately to very silty, occasionally abundant dispersed v fine to medium quartz sand grains, trace black coaly detritus occasionally with assoc pyrite, trace pyrite, trace to common micromica, soft, very dispersive and washing fi samples, slightly subfissile. | iated |
| 1020-1025 | 80 | Sandstone: light grey to light green grey, very fine to coarse, dominantly fine to me angular to subrounded, dominantly subangular, moderately sorted, weak silica ceme trace off white argillaceous and silt matrix, trace yellow to orange quartz grains, trace brown yellow green and grey volcanic lithics, trace black coaly detritus occasionally associated pyrite, trace coarse clear and green mica flakes, friable, fair inferred poro oil fluorescence. | nt, ce red with |
| | 20 | Claystone: medium grey, moderately to very silty, occasionally abundant dispersed v fine to medium quartz sand grains, trace black coaly detritus occasionally with assoc pyrite, trace pyrite, trace to common micromica, soft, very dispersive and washing fr samples, slightly subfissile. | iated |
| 1025-1030 | 90 | Sandstone: light grey, very fine to coarse, dominantly fine to medium, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace of argillaceous and silt matrix, trace yellow to orange quartz grains, trace red brown ye green and grey volcanic lithics, trace black coaly detritus occasionally with associate pyrite, trace coarse clear and green mica flakes, friable, fair inferred porosity, no oil fluorescence. | llow |
| | 10 | Claystone: medium grey, moderately to very silty, occasionally abundant dispersed v fine to medium quartz sand grains, trace black coaly detritus occasionally with assoc pyrite, trace pyrite, trace to common micromica, soft, very dispersive and washing fr samples, slightly subfissile. | iated |

| Interval (m) | % | Description | PAGE: | 5 |
|--------------|-----|--|---|------|
| 1030-1035 | 100 | Sandstone: light grey, very fine to coarse, dominantly fine to mediur subrounded, dominantly subangular, moderately sorted, weak silica co argillaceous and silt matrix, trace yellow to orange quartz grains, trac green and grey volcanic lithics, trace black coaly detritus occasionally pyrite, trace coarse clear and green mica flakes, friable, fair inferred p fluorescence. | ement, trace off e red brown yell with associated | ow |
| 1035-1045 | 70 | Sandstone: light grey, very fine to medium, dominantly fine, angular dominantly subangular, moderately sorted, weak silica cement, trace of and silt matrix, trace yellow to orange quartz grains, rare volcanic lith detritus occasionally with associated pyrite, trace coarse clear and gre friable, fair inferred porosity, no oil fluorescence. | off white argillad | |
| | 30 | Claystone: medium grey, moderately to very silty, occasionally abund fine to medium quartz sand grains, trace black coaly detritus occasion pyrite, trace pyrite, trace to common micromica, soft, very dispersive samples, slightly subfissile. | ally with associa | ited |
| 1045-1050 | 90 | Sandstone: light grey, very fine to coarse, dominantly medium, angu dominantly subangular, moderately sorted, weak silica cement, trace of and silt matrix, rare yellow orange quartz grains, rare volcanic lithics detritus occasionally with associated pyrite, trace coarse clear and gree friable, fair inferred porosity, no oil fluorescence. | off white argillad trace black coa | eous |
| | 10 | Claystone: medium grey, moderately to very silty, occasionally abundation fine to medium quartz sand grains, trace black coaly detritus occasion pyrite, trace pyrite, trace to common micromica, soft, very dispersive a samples, slightly subfissile. | ally with associa | ted |
| 1050-1055 | 30 | Sandstone: light grey, very fine to coarse, dominantly medium, angu dominantly subangular, moderately sorted, weak silica cement, trace of and silt matrix, rare yellow orange quartz grains, rare volcanic lithics, detritus occasionally with associated pyrite, trace coarse clear and gree friable, fair inferred porosity, no oil fluorescence. | ff white argillac trace black coa | eous |
| | 70 | Claystone: medium to dark grey, moderately to very silty, trace black occasionally with associated pyrite, very finely arenaceous in part, trac micromica, soft, very dispersive, slightly subfissile. | | |
| 1055-1060 | 50 | Sandstone: light grey, very fine to coarse, dominantly very fine, angu dominantly subangular, moderately sorted, weak silica cement, abund argillaceous and silt matrix, trace yellow quartz grains, trace volcanic flakes, trace black coaly detritus, friable, very poor to poor visual poro fluorescence. | ant light grey lithics, trace mi | |
| | 50 | Claystone: light to dark grey, very silty, trace black coaly detritus occ associated pyrite, very finely arenaceous - in part grading to silty sand common micromica, soft, very dispersive, slightly subfissile. | asionally with stone, trace to | |
| 1060-1065 | 10 | Sandstone: light grey, very fine to coarse, dominantly very fine, angu dominantly subangular, moderately sorted, weak silica cement, abund argillaceous and silt matrix, trace yellow quartz grains, trace volcanic flakes, trace black coaly detritus, friable, very poor to poor visual poro fluorescence. | ant light grey lithics, trace mi | |
| | 90 | Claystone: light to dark grey, dominantly medium grey, very silty, tra detritus occasionally with associated pyrite, very finely arenaceous in micromica, soft, very dispersive, slightly subfissile. | ce black coaly part, trace to con | nmo |
| 1065-1070 | 50 | Sandstone: light grey, very fine to coarse, dominantly fine, angular to dominantly subangular, moderately sorted, weak silica cement, trace to argillaceous and silt matrix, rare yellow quartz grains, rare volcanic li coaly detritus occasionally with associated pyrite, trace mica flakes, fri inferred porosity, no oil fluorescence. | o abundant light thics, trace blacl | S |

| Interval (m) | -% | Description PAGE: 6 |
|---------------------------------------|----|---|
| | 50 | Claystone: medium to dark grey, dominantly medium grey, very silty, trace black coaly detritus occasionally with associated pyrite, very finely arenaceous in part, trace to commo micromica, soft, very dispersive, slightly subfissile. |
| 1070-1075 | 70 | Sandstone: light grey, very fine to coarse, dominantly fine, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace to abundant light gree argillaceous and silt matrix, rare yellow quartz grains, rare volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace mica flakes, friable, poor to fair inferred porosity, no oil fluorescence. |
| | 30 | Claystone: medium to dark grey, dominantly medium grey, very silty, trace black coaly detritus occasionally with associated pyrite, very finely arenaceous in part, trace to commo micromica, soft, very dispersive, slightly subfissile. |
| 1075-1085 | 20 | Sandstone: light grey, very fine to coarse, dominantly fine, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace to abundant light gre argillaceous and silt matrix, rare yellow quartz grains, rare volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace mica flakes, friable, poor to fair inferred porosity, no oil fluorescence. |
| | 80 | Claystone: light to dark grey, very silty, trace black coaly detritus occasionally with associated pyrite, very finely arenaceous in part, trace to common micromica, soft, very dispersive, slightly subfissile. |
| 1085-1090 | 10 | Sandstone: light grey, very fine to coarse, dominantly fine, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace to abundant light gre argillaceous and silt matrix, rare yellow quartz grains, rare volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace mica flakes, friable, poor to fair inferred porosity, no oil fluorescence. |
| | 90 | Claystone: light to dark grey, very silty grading to siltstone, trace black coaly detritus occasionally with associated pyrite, very finely arenaceous in part, trace to common micromica, soft, very dispersive, slightly subfissile. |
| 1090-1095 | 20 | Sandstone: light grey, very fine to coarse, dominantly fine, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace to abundant light gre argillaceous and silt matrix, rare yellow quartz grains, rare volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace mica flakes, friable, poor to fair inferred porosity, no oil fluorescence. |
| | 80 | Claystone: medium grey, very silty grading to siltstone in part, often very finely arenaceous, trace to common black coaly detritus often with associated pyrite, trace micromica, soft, very dispersive, slightly subfissile. |
| 1095-1100 | 10 | Sandstone: light grey, very fine to coarse, dominantly fine, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, trace to abundant light gre argillaceous and silt matrix, rare yellow quartz grains, rare volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace mica flakes, friable, poor to fair inferred porosity, no oil fluorescence. |
| | 90 | Claystone: medium grey, very silty grading to siltstone in part, often very finely arenaceous, trace to common black coaly detritus often with associated pyrite, trace micromica, soft, very dispersive, slightly subfissile. |
| 1100-1105 | 10 | Sandstone: light grey, very fine to fine, dominantly veryfine, angular to subrounded, dominantly subangular, moderately sorted, weak silica cement, abundant light grey argillaceous and silt matrix, rare yellow quartz grains, rare volcanic lithics, trace black coaly detritus occasionally with associated pyrite, trace mica flakes, friable, very poor inferred porosity, no oil fluorescence. |
| · · · · · · · · · · · · · · · · · · · | 90 | Claystone: light to medium grey, very silty grading to siltstone, often very finely arenaceous grading in part to very fine sandstone, trace black coaly detritus often with |

| CULTUS PE | TRO | | | APPENI | |
|-----------------------|------|---|--|---|--------------|
| | | CU | TTINGS DE | ESCRIPTIO | N |
| WELL NAME: | Du | inbar East-1 | DATE: | 30 May, 1997 | |
| GEOLOGIST: | Da | ve Horner | PAGE: | 1 | |
| Interval (m) | % | Description | | | |
| For geological report | rt-7 | | | | |
| 1105-1110 | 70 | Sandstone: off white to light subrounded, dominantly subar grey argillaceous and silt mat black coaly detritus occasiona inferred porosity, no oil fluore | ngular, moderately sorted, w rix -often matrix supported, lly with associated pyrite, tu | weak silica cement, abundant , rare multicoloured lithics, tr | ace |
| | 30 | Claystone: light to medium g arenaceous grading in part to associated pyrite, trace micror | very fine sandstone, trace b | lack coaly detritus often with | |
| 1110-1115 | 20 | Sandstone: off white to light subrounded, dominantly subar grey argillaceous and silt math black coaly detritus occasiona inferred porosity, no oil fluore trip. | ngular, moderately sorted, v rix -often matrix supported, lly with associated pyrite, tr | weak silica cement, abundant , rare multicoloured lithics, tr race mica flakes, friable, very | ace poo |
| | 80 | Claystone: light to medium g arenaceous grading in part to associated pyrite, trace micror | very fine sandstone, trace b | lack coaly detritus often with | |
| 1115-1120 | 10 | Sandstone: off white to light subrounded, dominantly subar grey argillaceous and silt matu very fine to fine black coaly de no oil fluorescence. | ngular, moderately sorted, write rotten matrix supported, | veak silica cement, abundant rare multicoloured lithics, tra | ace |
| | 90 | Claystone: off white to mediu arenaceous grading in part to detritus and flecks, trace micro | very fine sandstone, trace ve | ery fine black carbonaceous | nel |
| 1120-1125 | 30 | Sandstone: off white to light g very coarse grains, angular to silica cement, abundant light g multicoloured lithics, trace very very poor inferred porosity, no | subrounded, dominantly sub grey argillaceous and silt ma ry fine to fine black coaly de | bangular, moderately sorted, atrix -often matrix supported, | wea , rai |
| | 70 | Claystone: off white to mediu arenaceous grading in part to detritus and flecks, trace micro | very fine sandstone, trace ve | ery fine black carbonaceous | nely |
| 1125-1130 | 50 | Sandstone: off white to light a subrounded, dominantly subar grey argillaceous and silt matr very fine to fine black coaly de no oil fluorescence. | gular, moderately sorted, w ix -often matrix supported, | veak silica cement, abundant i rare multicoloured lithics, tra | ace |
| | | Claystone: off white to mediu arenaceous grading in part to detritus and flecks, trace micro | very fine sandstone, trace ve | ery fine black carbonaceous | nely |

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| Interval (m) | % | Description | PAGE: | 2 |
|--------------|----|--|--|--------------|
| 1130-1135 | 30 | Sandstone: off white to light grey, very fine to medium with common or grains, dominantly very fine, angular to subrounded, poor to moderatel and calcareous cements, abundant white argillaceous matrix - matrix so and green grey volcanic lithics, trace black coaly detritus occasionally pyrite, friable to moderately hard, very poor to occasionally poor visual fluorescence. | y sorted, weak upported, trace with associated | silic red |
| | 70 | Claystone: off white to medium grey, moderately to very silty, abundar sand grains especially where off white - grading in part to very fine san carbonaceous detritus and flecks, trace micromica, soft, very dispersive | dstone, trace b | lack |
| 1135-1140 | 40 | Sandstone: off white to light grey, very fine to medium with common or grains, dominantly medium, angular to subrounded, poor to moderately and calcareous cements, abundant white argillaceous matrix - matrix su and green grey volcanic lithics, trace black coaly detritus occasionally or pyrite, friable to moderately hard, very poor to occasionally fair visual p fluorescence. | sorted, weak s pported, trace with associated | ilica |
| | 60 | Claystone: off white to medium grey, moderately to very silty, abundar sand grains especially where off white - grading in part to very fine san carbonaceous detritus and flecks, trace micromica, soft, very dispersive | dstone, trace b | lack |
| 1140-1145 | 50 | Sandstone: off white to light grey, very fine to medium with common or grains, dominantly medium, angular to subrounded, poor to moderately and calcareous cements, abundant white argillaceous matrix - matrix su and green grey volcanic lithics, trace black coaly detritus occasionally w pyrite, friable to moderately hard, very poor to occasionally fair visual p fluorescence. | sorted, weak s pported, trace with associated | ilica |
| <u> </u> | 50 | Claystone: off white to medium grey, moderately to very silty, abundar sand grains especially where off white - grading in part to very fine san carbonaceous detritus and flecks, trace micromica, soft, very dispersive, | dstone, trace bl | lack |
| 1145-1150 | 40 | Sandstone: off white to light grey, very fine to medium with common or grains, dominantly medium, angular to subrounded, poor to moderately and calcareous cements, abundant white argillaceous matrix - matrix su and green grey volcanic lithics, trace black coaly detritus occasionally w pyrite, friable to moderately hard, very poor to occasionally fair visual p fluorescence. | sorted, weak s pported, trace with associated | ilica |
| | 60 | Claystone: off white to medium grey, moderately to very silty, abundan sand grains especially where off white - grading in part to very fine san carbonaceous detritus and flecks, trace micromica, soft, very dispersive, | dstone, trace bl | ack |
| 1150-1155 | 60 | Sandstone: off white, silt-fine grained, dominantly very fine, angular to moderately sorted, weak to moderate silica cement, abundant white argin matrix supported, trace very fine black carbonaceous detritus, trace volo to moderately hard, very poor visual porosity, no oil fluorescence. | llaceous matrix | x - able |
| | 40 | Claystone: off white to medium grey, moderately to very silty, abundan sand grains especially where off white - grading in part to very fine san carbonaceous detritus and flecks, trace micromica, soft, very dispersive, | dstone, trace bl | ack |
| 1155-1160 | 50 | Sandstone: off white to light grey, silt to very fine to occasionally medi coarse to very coarse grains, dominantly very fine, angular to subrounde moderately sorted, weak silica and calcareous cements, abundant white - matrix supported, trace red and green grey volcanic lithics, trace black occasionally with associated pyrite, friable to moderately hard, very poo poor visual porosity, no oil fluorescence. | ed, poor to argillaceous m c coaly detritus | atri |
| | 50 | Claystone: off white to medium grey, moderately to very silty, abundan sand grains especially where off white - grading in part to very fine san black carbonaceous detritus and flecks, trace micromica, soft, very dispe- subfissile. | istone, commo | rtz n |

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| Interval (m) | % | Description PAGE: 3 |
|--------------|----|---|
| 1160-1165 | 30 | Sandstone: off white to light grey, silt to fine, occasionally medium with common coarse to very coarse grains, dominantly very fine to fine, angular to subrounded, poor to moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - matrix supported, trace red and green grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, friable to moderately hard, very poor to occasionally poor visual porosity, no oil fluorescence. |
| | 70 | Claystone: off white to medium grey, moderately to very silty, abundant dispersed quartz sand grains especially where off white - grading in part to very fine sandstone, common black carbonaceous detritus and flecks, trace micromica, soft, very dispersive, slightly subfissile. |
| 1165-1170 | 40 | Sandstone: off white to light grey, silt to fine, occasionally medium with common coarse t very coarse grains, dominantly very fine to fine, angular to subrounded, poor to moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - matrix supported, trace red and green grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, friable to moderately hard, very poor to occasionally poor visual porosity, no oil fluorescence. |
| | 60 | Claystone: off white to medium grey, moderately to very silty, abundant dispersed quartz sand grains especially where off white - grading in part to very fine sandstone, common black carbonaceous detritus and flecks, trace micromica, soft, very dispersive, slightly subfissile. |
| 1170-1175 | 30 | Sandstone: off white to light grey, silt to fine, occasionally medium with common coarse to very coarse grains, dominantly very fine to fine, angular to subrounded, poor to moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - matrix supported, trace red and green grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, friable to moderately hard, very poor to occasionally poor visual porosity, no oil fluorescence. |
| | 70 | Claystone: off white to medium grey, moderately to very silty, abundant dispersed quartz sand grains especially where off white - grading in part to very fine sandstone, common black carbonaceous detritus and flecks, trace micromica, soft, very dispersive, slightly subfissile. |
| 1175-1180 | 30 | Sandstone: off white to light grey, silt to fine, occasionally medium with common coarse to very coarse grains, dominantly very fine to fine, angular to subrounded, poor to moderately sorted, weak silica and calcareous cements, trace strong medium brown dolomite cement, abundant white argillaceous matrix - matrix supported, trace red and green grey volcanic lithics, trace black coaly detritus occasionally with associated pyrite, friable to moderately hard, very poor to occasionally poor visual porosity, no oil fluorescence. |
| | 70 | Claystone: off white to medium grey, moderately to very silty, abundant dispersed quartz sand grains especially where off white - grading in part to very fine sandstone, common black carbonaceous detritus and flecks, trace micromica, soft, very dispersive, slightly subfissile. |
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| CULTUS PE | ETROI | LEUM N.L. | | - | APPENDIX |
|--------------------------|-------|---|---|--|--|
| | | C | UTTINGS | DESCR | PTION |
| WELL NAME: GEOLOGIST: | | nbar East-1 ve Horner | DATE | F· 1 | , 1997 |
| Interval (m) | % | Description | | | |
| For geology report- | -8 | | | | |
| 1180-1185 | 40 | very coarse grains, domi sorted, weak silica and c abundant white argillace lithics, trace black coaly | light grey, silt to fine, occas nantly very fine to fine, ang alcareous cements, trace str ous matrix - matrix support detritus occasionally with a onally poor visual porosity, | ular to subrounded ong medium brow ted, trace red and g associated pyrite, fi | d, poor to moderately n dolomite cement, green grey volcanic riable to moderately |
| | 60 | sand grains especially w | nedium grey, moderately to here off white - grading in p tus and flecks, trace micron | part to very fine same | ndstone, common |
| 1185-1190 | 30 | very coarse grains, domi sorted, weak silica and c abundant white argillace lithics, trace black coaly | light grey, silt to fine, occas nantly very fine to fine, ang alcareous cements, trace str ous matrix - matrix support detritus occasionally with a onally poor visual porosity, | ular to subrounded ong medium brow red, trace red and g ssociated pyrite, fr | I, poor to moderately n dolomite cement, green grey volcanic iable to moderately |
| | 70 | sand grains especially w | nedium grey, moderately to here off white - grading in p tus and flecks, trace micron | part to very fine sai | ndstone, common |
| 1190-1195 | 20 | angular to subrounded, n calcareous cement, trace matrix - often matrix sup carbonaceous detritus oft | ight grey, very fine to occas noderately sorted, weak to n strong dolomite cement, co ported, trace red and green en with associated pyrite, tr oor to poor inferred porosit | noderate silica cem mmon to abundant grey volcanic lithi ace coarse mica fla | ent, trace weak t white argillaceous ics, trace black akes, friable to |
| | 80 | common black carbonace | nedium grey, moderately to cous detritus and flecks ofte persive, slightly subfissile. | | |
| 1195-1200 | 10 | angular to subrounded, n calcareous cement, trace matrix - often matrix sup carbonaceous detritus oft | ight grey, very fine to occas noderately sorted, weak to n strong dolomite cement, co ported, trace red and green en with associated pyrite, tr oor to poor inferred porosit | noderate silica cem mmon to abundant grey volcanic lithi ace coarse mica fla | ent, trace weak t white argillaceous cs, trace black akes, friable to |
| | 90 | common black carbonace | nedium grey, moderately to ous detritus and flecks ofter persive, slightly subfissile. | | |
| 1200-1205 | 100 | often very finely arenace | nedium grey, light brown gr ous, common black carbona icromica, soft, very dispers | ceous detritus and | flecks often with |

| Interval (m) | % | Description | PAGE: | 2 |
|--------------|-----|--|---|-------------------|
| | Tr | Sandstone: off white to light grey, very fine to occasionally fine, trace angular to subrounded, moderately sorted, weak to moderate silica cem calcareous cement, trace strong dolomite cement, common to abundant matrix - often matrix supported, trace red and green grey volcanic lithic carbonaceous detritus often with associated pyrite, trace coarse mica fla occasionally hard, very poor to poor inferred porosity, no oil fluorescen | ent, trace weak white argillace cs, trace black kes, friable to | |
| 1205-1210 | 80 | Claystone: off white to medium grey, light brown grey in part, moderal often very finely arenaceous, common black carbonaceous detritus and associated pyrite, trace micromica, soft, very dispersive, slightly subfiss | flecks often wit | |
| | 20 | Sandstone: off white to light grey, very fine to occasionally fine, comm coarse grains, angular to subrounded, moderately sorted, weak to moder trace weak calcareous cement, trace strong dolomite cement, common to argillaceous matrix - often matrix supported, trace red and green grey v black carbonaceous detritus often with associated pyrite, trace coarse mi occasionally hard, very poor to poor inferred porosity, no oil fluorescent | ate silica ceme o abundant whi olcanic lithics, ca flakes, friab | nt, te trac |
| 1210-1215 | 100 | Claystone: light brown grey, moderately to very silty often grading to so occasionally very finely arenaceous, trace black carbonaceous flecks and pyrite, trace to common micromica, trace fine to medium brown mica fl moderately to very dispersive, slightly subfissile. | detritus, trace | |
| | Tr | Sandstone: off white, very fine to fine, dominantly very fine, angular to moderately to well sorted, weak silica cement, abundant white argillaced very fine black to dark brown carbonaceous detritus, trace pyrite, trace g friable, no visual porosity, no oil fluorescence. | ous matrix, trac | e |
| • 1215-1220 | 90 | Claystone: light brown grey, moderately to very silty often grading to si occasionally very finely arenaceous, trace black carbonaceous flecks and occasionally common light green glauconitic clay, trace pyrite, trace to c micromica, trace fine to medium brown mica flakes, soft to firm, modera dispersive, slightly subfissile. | detritus, trace common | to |
| | 10 | Sandstone: off white, very fine to fine, dominantly very fine, angular to moderately to well sorted, weak silica cement, abundant white argillaced very fine black to dark brown carbonaceous detritus, trace pyrite, trace g friable, no visual porosity, no oil fluorescence. | us matrix, trac | e |
| 1220-1225 | 80 | Claystone: light brown grey, moderately to very silty often grading to sill occasionally very finely arenaceous, slightly to moderately calcareous, tracarbonaceous flecks and detritus, trace to occasionally common light gree clay, trace pyrite, trace to common micromica, trace fine to medium brows soft to firm, moderately to very dispersive, slightly subfissile. | ace black en glauconitic | |
| | 20 | Sandstone: off white, very fine to fine, dominantly very fine, angular to moderately to well sorted, weak silica cement, moderate calcareous ceme argillaceous matrix occasionally with light green glauconitic staining, trate dark brown carbonaceous detritus, trace pyrite, trace green lithics, fria porosity, no oil fluorescence - common white rock flour in samples along slickensided surfaces - possible fracture/fault zone. | nt, abundant w ace very fine bla ble, no visual | |
| 1230-1240 | 100 | Claystone: off white to light brown grey, moderately to very silty often g occasionally very finely arenaceous, slightly calcareous in part, trace blac flecks and detritus, trace to occasionally common light green glauconitic trace to common micromica, trace fine to medium brown mica flakes, so moderately to very dispersive, slightly subfissile. | k carbonaceous clay, trace pyri | S |
| | Tr | Sandstone: off white, very fine to occasionally fine, angular to subrounde well sorted, weak silica cement, nil to rarely moderate calcareous cement argillaceous matrix occasionally with light green glauconitic staining, tra to dark brown carbonaceous detritus, trace pyrite, trace green lithics, frial porosity, no oil fluorescence. | , abundant whit ce very fine bla | te |

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| Interval (m) | - % | Description | PAGE: | 3 |
|--------------|-----|---|---|--------------|
| 1240-1250 | 100 | Claystone: off white to light brown grey, moderately to dominantly very to siltstone, very finely arenaceous in part grading to silty sandstone, slig part, trace black carbonaceous flecks and detritus, trace green glauconitic trace to common micromica, trace fine to medium brown mica flakes, so moderately to very dispersive, slightly subfissile. | htly calcareo clay, trace p | us in |
| | Tr | Sandstone: off white, silty to very fine to rarely fine, angular to subround well sorted, weak silica cement, nil to rarely moderate calcareous cement argillaceous and silt matrix occasionally with light green glauconitic stai fine black to dark brown carbonaceous detritus, trace pyrite, trace green l visual porosity, no oil fluorescence. | , abundant w ning, trace ve | hite ery |
| 1250-1255 | 90 | Claystone: off white to light brown grey, moderately to dominantly very to siltstone, very finely arenaceous in part grading to silty sandstone, slig part, trace black carbonaceous flecks and detritus, trace green glauconitic trace to common micromica, trace fine to medium brown mica flakes, sol moderately to very dispersive, slightly subfissile. | htly calcareou clay, trace p | us in |
| | 10 | Sandstone: off white, silty to very fine to rarely fine, angular to subround well sorted, weak silica cement, nil to rarely moderate calcareous cement argillaceous and silt matrix occasionally with light green glauconitic stai fine black to dark brown carbonaceous detritus, trace pyrite, trace green I visual porosity, no oil fluorescence. | , abundant wi ning, trace ve | hite ry |
| 1255-1265 | 95 | Claystone: off white to light brown grey, moderately to dominantly very to siltstone, very finely arenaceous in part grading to silty sandstone, slig part, trace black carbonaceous flecks and detritus, trace green glauconitic trace to common micromica, trace fine to medium brown mica flakes, sof moderately to very dispersive, slightly subfissile. | htly calcareou clay, trace p | ıs in |
| | 5 | Sandstone: off white, silty to very fine to rarely fine, angular to subround well sorted, weak silica cement, nil to rarely moderate calcareous cement argillaceous and silt matrix occasionally with light green glauconitic stain fine black to dark brown carbonaceous detritus, trace pyrite, trace green l visual porosity, no oil fluorescence. | abundant whing, trace ve | hite ry |
| 1265-1270 | 80 | Claystone: off white to light brown grey, occasionally light to medium gr dominantly very silty often grading to siltstone, very finely arenaceous in silty sandstone, slightly calcareous in part, trace black carbonaceous fleck trace green glauconitic clay, trace pyrite, trace to common micromica, tra brown mica flakes, soft to firm, moderately to very dispersive, slightly sul | part grading s and detritus ce fine to me | to 5, |
| | 20 | Sandstone: off white to light brown, very fine to occasionally fine, angula moderately sorted, weak silica and calcareous cements, moderate dolomit abundant white argillaceous and silt matrix - matrix supported, trace to c green lithics, trace very fine red brown and black lithics, trace black to m carbonaceous detritus, trace very fine brown and clear mica flakes, friable hard, no visual porosity, no oil fluorescence. | e cement in p ommon very : edium brown | art, fine |
| 1270-1275 | 95 | Claystone: off white to light brown grey, occasionally light to medium gr dominantly very silty often grading to siltstone, very finely arenaceous in silty sandstone, slightly calcareous in part, trace black carbonaceous fleck trace green glauconitic clay, trace pyrite, trace to common micromica, tra brown mica flakes, soft to firm, moderately to very dispersive, slightly sul | part grading s and detritus ce fine to me | to S, |
|) | 5 | Sandstone: off white to light brown, very fine to occasionally fine, angula moderately sorted, weak silica and calcareous cements, moderate dolomit abundant white argillaceous and silt matrix - matrix supported, trace to ca green lithics, trace very fine red brown and black lithics, trace black to ma carbonaceous detritus, trace very fine brown and clear mica flakes, friable hard, no visual porosity, no oil fluorescence. | e cement in p ommon very : edium brown | art, fine |
| 1275-1285 | 100 | Claystone: light to medium brown grey, moderately to very silty grading siltstone, very finely arenaceous in part, slightly calcareous in part, trace l carbonaceous flecks and detritus, rare light green glauconitic clay, trace p micromica, soft, moderately to very dispersive, slightly subfissile. | olack | |

| Interval (m) | % | Description | PAGE: | 4 |
|--------------|-----|---|--|--------------|
| | Tr | Sandstone: off white to medium brown, very fine to occasionally fine, subrounded, moderately sorted, weak silica and calcareous cements, mo cement in part, abundant white argillaceous and silt matrix - matrix su fine green lithics, trace very fine red brown and black lithics, trace blac carbonaceous detritus, trace very fine brown and clear mica flakes, frial hard, no visual porosity, no oil fluorescence. | oderate dolomit pported, trace v k to medium b | /ery row: |
| 1285-1299 | 100 | Claystone: light to dominantly medium brown grey, moderately to very very finely arenaceous, minor very fine sandstone laminations, trace lig trace red brown and grey lithics, trace black carbonaceous flecks and ra trace medium brown dolomite nodules, rare pyrite, trace micromica, so subfissile. | ht green glauce re coaly detritu | onit 1s, |
| 1299-1308 | 100 | Claystone: light to dominantly medium brown grey, moderately to very very finely arenaceous, trace light green glauconite, trace red brown and black carbonaceous flecks and rare coaly detritus, trace medium brown rare pyrite, trace micromica, soft to firm, slightly subfissile. | d grey lithics, t | race |
| | Tr | Sandstone: light to medium brown grey, very fine to fine, subangular to moderately sorted, very strong dolomite cement in part, weak silica cem strong calcareous cement, trace to abundant white argillaceous matrix, glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, fin no visual porosity, no oil fluorescence. | ent, occasional trace light gree | n |
| 1308-1314 | 100 | Claystone: light to dominantly medium brown grey, moderately to very very finely arenaceous with minor very fine sandstone laminations, trac glauconite, trace red brown and grey lithics, trace black carbonaceous fl detritus, trace medium brown dolomite nodules, rare pyrite, trace micro slightly subfissile. | e light green ecks and rare c | oal |
| 1314-1326 | 100 | Claystone: light to dominantly medium brown grey, moderately to very very finely arenaceous, trace light green glauconite, trace red brown and black carbonaceous flecks and rare coaly detritus, trace medium brown or rare pyrite, trace micromica, soft to firm, slightly subfissile. | l grey lithics, ti | race |
| | Tr | Sandstone: light to medium brown grey, very fine to fine, subangular to moderately sorted, very strong dolomite cement in part, weak silica cem strong calcareous cement, trace to abundant white argillaceous matrix, t glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, fr no visual porosity, no oil fluorescence. | ent, occasional race light gree | n |
| 1326-1329 | 95 | Claystone: light to dominantly medium brown grey, moderately to very very finely arenaceous, trace light green glauconite, trace red brown and black carbonaceous flecks and rare coaly detritus, trace medium brown or rare pyrite, trace micromica, soft to firm, slightly subfissile. | grey lithics, tr | ace |
| | 5 | Sandstone: light to medium brown grey, very fine to dominantly fine, su subrounded, poor to moderate sorting, often very strong dolomite cemen cement, occasional strong calcareous cement, trace to abundant white ar trace light green glauconite, trace brown lithics, trace black coaly detribu- friable to very hard, very poor visual porosity, no oil fluorescence. | t, weak silica gillaceous mat | rix, |
| 1329-1332 | 80 | Claystone: light to dominantly medium brown grey, moderately to very very finely arenaceous, trace light green glauconite, trace red brown and black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micro slightly subfissile. | grey lithics, tr | ace |
| | 20 | Sandstone: light to medium brown grey, very fine to dominantly fine, su subrounded, poor to moderate sorting, often very strong dolomite cement cement, occasional strong calcareous cement, trace to abundant white ar trace light green glauconite, trace brown lithics, trace black coaly detritu friable to very hard, very poor visual porosity, no oil fluorescence. | i, weak silica gillaceous matr | ix, |
| 1332-1335 | 90 | Claystone: off white to dominantly medium brown grey, moderately to v occasionally very finely arenaceous, trace light green glauconite, trace re lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrit soft to firm, slightly subfissile. | d brown and g | |

| Interval (m) | % | Description PAGE: |
|--------------|-----|--|
| | 10 | Sandstone: light to medium brown grey, very fine to dominantly fine, subangular to subrounded, poor to moderate sorting, occasionally very strong dolomite cement, weak silica cement, occasional strong calcareous cement, trace to abundant white argillaceous matrix, trace light green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to very hard, very poor visual porosity, no oil fluorescence. |
| 1335-1338 | 80 | Claystone: off white to dominantly medium brown grey, moderately to very silty, abund dispersed very fine to fine quartz grains, trace light green glauconite, trace red brown an grey lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micromica, soft to firm, slightly subfissile. |
| | 20 | Sandstone: light to medium brown grey, very fine to dominantly fine, subangular to subrounded, poor to moderate sorting, trace strong dolomite cement, weak silica cement, occasional strong calcareous cement, abundant white argillaceous matrix - often matrix supported, trace light green glauconite, trace brown lithics, trace black coaly detritus, trapyrite, friable to very hard, very poor visual porosity, no oil fluorescence. |
| 1338-1341 | 90 | Claystone: off white to dominantly medium brown grey, moderately to very silty, abund dispersed very fine to fine quartz grains, trace light green glauconite, trace red brown an grey lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micromica, soft to firm, slightly subfissile. |
| | 10 | Sandstone: light to medium brown grey, very fine to dominantly fine, subangular to subrounded, poor to moderate sorting, often very strong dolomite cement, weak silica cement, occasional strong calcareous cement, trace to abundant white argillaceous matrix trace light green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to very hard, very poor visual porosity, no oil fluorescence. |
| 1341-1344 | 80 | Claystone: off white to dominantly medium brown grey, moderately to very silty, abundad dispersed very fine to fine quartz grains, trace light green glauconite, trace red brown and grey lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micromica, soft to firm, slightly subfissile. |
| | 20 | Sandstone: light to medium brown grey, very fine to dominantly fine, subangular to subrounded, poor to moderate sorting, often very strong dolomite cement, weak silica cement, occasional strong calcareous cement, trace to abundant white argillaceous matrix trace light green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to very hard, very poor visual porosity, no oil fluorescence. |
| 1344-1347 | 95 | Claystone: off white to dominantly medium brown grey, moderately to very silty, abunda dispersed very fine to fine quartz grains, trace light green glauconite, trace red brown and grey lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micromica, soft to firm, slightly subfissile. |
| | 5 | Sandstone: light to medium brown grey, very fine to dominantly fine, subangular to subrounded, poor to moderate sorting, occasional strong dolomite cement, weak silica cement, occasional strong calcareous cement, trace to abundant white argillaceous matrix trace light green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to very hard, very poor visual porosity, no oil fluorescence. |
| 1347-1350 | 90 | Claystone: off white to dominantly medium brown grey, moderately to very silty, abunda dispersed very fine to fine quartz grains, trace light green glauconite, trace red brown and grey lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micromica, soft to firm, slightly subfissile. |
| | 10 | Sandstone: off white to medium brown grey, very fine to dominantly fine, subangular to subrounded, moderately sorted, often strong calcareous cement, weak silica cement, occasional strong dolomite cement, trace to abundant white argillaceous matrix, trace lig green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to ver hard, very poor visual porosity, no oil fluorescence. |
| 1350-1353 | 100 | Claystone: off white to dominantly medium brown grey, moderately to very silty, abunda dispersed very fine to fine quartz grains, trace light green glauconite, trace red brown and grey lithics, trace black carbonaceous flecks and rare coaly detritus, rare pyrite, trace micromica, soft to firm, slightly subfissile. |

| Interval (m) | % | Description PAGE: | 6 |
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| | Tr | Sandstone: off white to medium brown grey, very fine to dominantly fine, subangular to subrounded, moderately sorted, often strong calcareous cement, weak silica cement, occasional strong dolomite cement, trace to abundant white argillaceous matrix, trace ling green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to whard, very poor visual porosity, no oil fluorescence. | ligh |
| 1353-1361 | 100 | Claystone: light to dominantly medium brown grey, moderately to very silty, trace to common dispersed very fine to fine quartz grains, rare light green glauconite, trace finel arenaceous dolomite nodules, trace black carbonaceous flecks and rare coaly detritus, rapyrite, trace micromica, soft to firm, slightly subfissile. | ly are |
| | Tr | Sandstone: off white to medium brown grey, very fine to dominantly fine, subangular t subrounded, moderately sorted, often strong dolomite cement, weak silica cement, occasional strong calcareous cement, trace to abundant white argillaceous matrix, trace light green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friabl very hard, no visual porosity, no oil fluorescence. | ; |
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CUTTINGS DESCRIPTION

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WELL NAME:

GEOLOGIST:

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Dunbar East-1 Dave Horner

DATE:

30 May, 1997

PAGE:

APPENDIX

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| Interval (m) | % | Description |
|--------------|---|-------------|
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For geology report-9

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|-----------|-----|---|
| 1361-1365 | 100 | Claystone: light to dominantly medium brown grey to medium grey, moderately to very silty, trace to common dispersed very fine to fine quartz grains, trace glauconite,trace finely arenaceous dolomite nodules, trace black carbonaceous flecks, rare pyrite, trace micromica, soft to firm, slightly subfissile. |
| | Tr | Sandstone: off white to medium brown grey, very fine to dominantly fine, subangular to subrounded, moderately sorted, often strong dolomite cement, weak silica cement, occasional strong calcareous cement, trace to abundant white argillaceous matrix, trace light green glauconite, trace brown lithics, trace black coaly detritus, trace pyrite, friable to very hard, no visual porosity, no oil fluorescence. |
| 1365-1371 | 100 | Claystone: light to medium brown grey to medium grey, moderately to very silty occasionally grading to siltstone, very fine to finely arenaceous in part, minor dispersed medium to coarse quartz sand grains, trace glauconite, trace dolomite nodules, trace black carbonaceous flecks, trace to common micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1371-1377 | 100 | Claystone: light to medium brown grey to medium grey, moderately to very silty occasionally grading to siltstone, very fine to finely arenaceous in part, minor dispersed medium to coarse quartz sand grains, common glauconite, trace dolomite nodules, trace black carbonaceous flecks, trace to common micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1377-1380 | 100 | Claystone: light to medium brown grey to medium grey, occasionally medium green and glauconitic, moderately to very silty occasionally grading to siltstone, very fine to finely arenaceous in part, minor dispersed medium to coarse quartz sand grains, common glauconite, trace dolomite nodules, trace black carbonaceous flecks, trace to common micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1380-1386 | 95 | Claystone: light to medium brown grey to medium grey, occasionally medium green and glauconitic, moderately to very silty occasionally grading to siltstone, very fine to finely arenaceous in part, minor dispersed medium to coarse quartz sand grains, common glauconite, trace dolomite nodules, trace black carbonaceous flecks, trace to common micromica, soft to firm, moderately dispersive, slightly subfissile. |
| | 5 | Sandstone: off white to very light brown, very fine to fine with occasional medium to coarse grains, subangular to subrounded, poorly sorted, weak silica calcareous and dolomite cements, abundant very light brown argillaceous matrix - matrix supported, common glauconite and light green glauconitic clay matrix, trace brown lithics, friable, no visual porosity, no oil fluorescence. |
| 1386-1389 | 100 | Claystone: light to dark grey, medium brown grey, dominantly medium to dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common dark green glauconite, moderately carbonaceous, common medium brown cryptocrystalline dolomite often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |

| Interval (m) | % | Description PAGE: 2 |
|--------------|-----|--|
| | Tr | Sandstone: off white to very light brown, very fine to fine with occasional medium to coarse grains, subangular to subrounded, poorly sorted, weak silica calcareous and dolomite cements, abundant very light brown argillaceous matrix - matrix supported, common glauconite and light green glauconitic clay matrix, trace brown lithics, friable, r visual porosity, no oil fluorescence. |
| 1389-1398 | 100 | Claystone: light to dark grey, medium brown grey, dominantly medium to dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common dark green glauconite, moderately carbonaceous, common medium brown cryptocrystalline dolomite often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1398-1401 | 100 | Claystone: light to dark grey, medium brown grey, dominantly medium to dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common dark green glauconite, moderately carbonaceous, trace black coal detritus with associated pyrite, common medium brown cryptocrystalline dolomite often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1401-1404 | 100 | Claystone: light to dark grey, medium brown grey, dominantly medium to dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common dark green glauconite, moderately carbonaceous, trace medium brown cryptocrystalline dolomite offu- with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1404-1413 | 100 | Claystone: light to dark grey, medium brown grey, dominantly medium to dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common dark green glauconite, moderately carbonaceous, common medium brown cryptocrystalline dolomite often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1413-1419 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly medium dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common dark green glauconite, moderately carbonaceous, common medium brown cryptocrystalline dolomite often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1419-1425 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly medium dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, common to abundant dark green glauconite, moderately carbonaceous, common medium brown cryptocrystalline dolomite often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1425-1434 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly medium dark grey, moderately silty, common dispersed very fine to occasionally coarse rounded quartz sand grains, trace off white very fine sandstone lamination in part, abundant dark green glauconite, moderately carbonaceous, trace medium brown cryptocrystalline dolomi often with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |
| 1434-1446 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly medium dark grey, moderately silty, trace dispersed very fine to occasionally coarse rounded quart sand grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, trace medium brown cryptocrystalline dolomite ofte with dispersed very fine to fine quartz grains and light green glauconite grains, trace micromica, soft to firm, moderately dispersive, slightly subfissile. |

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| Interval (m) | % | Description | PAGE: | 3 |
|--------------|-----|--|---|----------------|
| 1446-1455 | 100 | Claystone: light to dark grey, common medium to dark brown grey, do dark grey, moderately silty, trace dispersed very fine to occasionally coa sand grains, rare off white very fine sandstone laminations, common da moderately carbonaceous, trace medium brown cryptocrystalline dolomi dispersed very fine to fine quartz grains and light green glauconite grain soft to firm, moderately dispersive, slightly subfissile. | rse rounded qu rk green glauc te often with | iartz onite |
| 1455-1473 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dor dark grey, moderately silty, trace dispersed very fine to occasionally coa sand grains, rare off white very fine sandstone laminations, abundant da glauconite, moderately carbonaceous, trace medium brown cryptocrystal with dispersed very fine to fine quartz grains and light green glauconite pyrite, trace micromica, soft to firm, moderately dispersive, slightly subf | rse rounded qu rk green line dolomite grains, trace | artz |
| 1473-1479 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dor dark grey, moderately silty, rare dispersed very fine to occasionally coars sand grains, rare off white very fine sandstone laminations, abundant da glauconite, moderately carbonaceous, common medium brown cryptocry often with dispersed very fine to fine quartz grains and light green glauco pyrite, trace micromica, soft to firm, moderately dispersive, slightly subf | e rounded qua rk green /stalline dolon onite grains, t | artz nite |
| 1479-1485 | 100 | Claystone: light to dark grey, common medium to dark brown grey, don dark grey, moderately silty, rare dispersed very fine to occasionally coars sand grains, rare off white very fine sandstone laminations, abundant da glauconite, moderately carbonaceous, rare medium brown cryptocrystalli with dispersed very fine to fine quartz grains and light green glauconite pyrite, trace micromica, soft to firm, moderately dispersive, slightly subf | e rounded qua k green ne dolomite of grains, trace | rtz |
| 1485-1488 | 100 | Claystone: light to dark grey, common medium to dark brown grey, don dark grey, moderately silty, rare dispersed very fine to occasionally coars sand grains, rare off white very fine sandstone laminations, abundant da glauconite, moderately carbonaceous, trace white calcilutite, rare mediur cryptocrystalline dolomite often with dispersed very fine to fine quartz gr green glauconite grains, trace pyrite, trace micromica, soft to firm, mode slightly subfissile. | e rounded qua k green n brown ains and light | rtz |
| 1488-1494 | 100 | Claystone: light to dark grey, common medium to dark brown grey, don dark grey, moderately silty, rare dispersed very fine to occasionally coars sand grains, rare off white very fine sandstone laminations, abundant dan glauconite, moderately carbonaceous, slightly calcareous, trace white cal- medium brown cryptocrystalline dolomite often with dispersed very fine grains and light green glauconite grains, trace pyrite, trace micromica, so moderately dispersive, slightly subfissile. | e rounded qua k green cilutite, rare co fine quartz | |
| 1494-1497 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dom dark grey, moderately silty, rare dispersed very fine to occasionally coars sand grains, rare off white very fine sandstone laminations, abundant dar glauconite, moderately carbonaceous, slightly calcareous, common white common medium brown cryptocrystalline dolomite often with dispersed v quartz grains and light green glauconite grains, trace pyrite, trace micror moderately dispersive, slightly subfissile. | e rounded qua k green calcilutite, very fine to fin | rtz e |
| 1497-1500 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dom dark grey, moderately silty, rare dispersed very fine to occasionally coarse sand grains, rare off white very fine sandstone laminations, abundant dar glauconite, moderately carbonaceous, slightly calcareous, common white common medium brown cryptocrystalline dolomite often with dispersed v quartz grains and light green glauconite grains, trace Inoceramus, trace p micromica, soft to firm, moderately dispersive, slightly subfissile. | e rounded quar k green calcilutite, ery fine to fin | rtz |

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| Interval (m) | % | Description PAG | E: | 4 |
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| 1500-1506 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly dark grey, moderately silty, rare dispersed very fine to occasionally coarse rounde sand grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, slightly calcareous, trace white calcilutite, medium brown cryptocrystalline dolomite often with dispersed very fine to fine q grains and light green glauconite grains, trace pyrite, trace micromica, soft to firm moderately dispersive, slightly subfissile. | ed qua trace uartz | |
| 1506-1509 | NR | No sample due to shaker screen blinding. | | |
| 1509-1515 | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly dark grey, moderately silty, rare dispersed very fine to occasionally coarse rounders and grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, slightly calcareous, trace white calcilutite, the medium brown cryptocrystalline dolomite often with dispersed very fine to fine que grains and light green glauconite grains, trace pyrite, trace micromica, soft to firm moderately dispersive, slightly subfissile. | d qua trace uartz | |
| 1515-1518 | Tr | Sandstone: off white to very light brown, very fine to fine, trace medium to coars poor to moderate sorting, angular to subrounded, weak silica cement, trace weak of cement, abundant white to light brown argillaceous matrix - matrix supported, qu with common fine brown to black lithics, trace glauconite, friable, no visual poros fluorescence. | calcar artzos | eous se |
| | 100 | Claystone: light to dark grey, common medium to dark brown grey, dominantly r dark grey, moderately silty, rare dispersed very fine to occasionally coarse rounded sand grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, slightly calcareous, trace white calcilutite, tr medium brown cryptocrystalline dolomite often with dispersed very fine to fine qu grains and light green glauconite grains, trace pyrite, trace micromica, soft to firm moderately dispersive, slightly subfissile. | d quai race iartz | |
| 1518-1521 | 30 | Sandstone: off white to very light brown, very fine to fine, trace medium to coarse poor to moderate sorting, angular to subrounded, weak silica cement, trace weak c cement, abundant white to light brown argillaceous matrix - matrix supported, qua with common fine brown to black lithics, trace glauconite, friable, no visual poros fluorescence. | alcare artzos | e e |
| | 70 | Claystone: light to dark grey, common medium to dark brown grey, dominantly n dark grey, moderately silty, rare dispersed very fine to occasionally coarse rounded sand grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, slightly calcareous, trace white calcilutite, tr medium brown cryptocrystalline dolomite often with dispersed very fine to fine qu grains and light green glauconite grains, trace pyrite, trace micromica, soft to firm moderately dispersive, slightly subfissile. | l quar ace artz | |
| 1521-1524 | 40 | Sandstone: off white to very light brown, very fine to fine with common medium to coarse clear subangular quartz grains, angular to subrounded, very poorly sorted, we silica and trace weak calcareous cements, abundant white argillaceous matrix - ma supported, quartzose with common brown to black lithics, trace glauconite, friable, visual porosity, no oil fluorescence. | veak trix | 7 |
| | 60 | Claystone: light to dark grey, common medium to dark brown grey, dominantly m dark grey, moderately silty, rare dispersed very fine to occasionally coarse rounded sand grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, slightly calcareous, trace white calcilutite, tra medium brown cryptocrystalline dolomite often with dispersed very fine to fine qua grains and light green glauconite grains, trace pyrite, trace micromica, soft to firm, moderately dispersive, slightly subfissile. | quart ace artz | |
| 1524-1530 | 50 | Sandstone: off white to very light brown, very fine to fine with common medium to coarse clear subangular quartz grains, angular to subrounded, very poorly sorted, w silica and trace weak calcareous cements, abundant white argillaceous matrix - mat supported, quartzose with common brown to black lithics, trace glauconite, friable, visual porosity, no oil fluorescence. | /eak trix | |

| Interval (m) | % | Description PAGE: | 5 |
|--------------|----|--|------------|
| | 50 | Claystone: light to dark grey, common medium to dark brown grey, dominantly med dark grey, moderately silty, rare dispersed very fine to occasionally coarse rounded q sand grains, rare off white very fine sandstone laminations, abundant dark green glauconite, moderately carbonaceous, slightly calcareous, trace white calcilutite, trace medium brown cryptocrystalline dolomite often with dispersed very fine to fine quart grains and light green glauconite grains, trace pyrite, trace micromica, soft to firm, moderately dispersive, slightly subfissile. | uartz e |
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| na substanting Santanting Santanting | | CUJ | TINGS DESCRIPTION |
| WELL NAME: | Du | nbar East-1 | DATE: 30 May, 1997 |
| GEOLOGIST: | Da | ve Horner | PAGE: 1 |
| Interval (m) | % | Description | |
| For geology report | -11 | | |
| 1537.5-1539 | 60 | poorly sorted, weak silica ceme | y fine to grit, dominantly coarse, angular to subangular, nt, trace white argillaceous matrix, abundant white rock detritus, rare pyrite, friable, good inferred porosity, no oil |
| | 40 | dark grey, moderately silty, rare sand grains, rare off white very glauconite, moderately carbona medium brown cryptocrystallin | common medium to dark brown grey, dominantly medium e dispersed very fine to occasionally coarse rounded quartz fine sandstone laminations, abundant dark green ceous, slightly calcareous, trace white calcilutite, trace e dolomite often with dispersed very fine to fine quartz te grains, trace pyrite, trace micromica, soft to firm, subfissile - probably cavings. |
| 1539-1542 | 70 | poorly sorted, weak silica ceme | e to grit, dominantly fine to medium, angular to subroundent, trace calcareous cement, trace pyrite cement, trace to gillaceous matrix, trace to common black carbonaceous porosity, no oil fluorescence. |
| | 30 | Claystone: as above - probable | cavings. |
| 1542-1545 | 40 | poorly sorted, weak silica ceme | e to grit, dominantly fine to medium, angular to subroundent, trace calcareous cement, trace pyrite cement, trace to gillaceous matrix, trace to common black carbonaceous porosity, no oil fluorescence. |
| | 40 | grading to siltstone, often very a calcareous in part, trace black c | n grey, occasionally medium brown grey, often very silty finely arenaceous grading to argillaceous sandstone, slight arbonaceous detritus, trace pyrite, trace to common very ltered feldspar grains, trace micromica, soft, very dispersiv |
| | 20 | Claystone: as above - probable | cavings. |
| 1545-1548 | 100 | grading to siltstone, often very to calcareous in part, trace black c | n grey, occasionally medium brown grey, often very silty finely arenaceous grading to argillaceous sandstone, slight arbonaceous detritus, trace pyrite, trace to common very ltered feldspar grains, trace micromica, soft, very dispersiv |
| 1548-1551 | 80 | siltstone, often very finely arena moderately calcareous in part, t cryptocrystalline dolomite, trace | n grey to medium brown grey, often very silty grading to accous grading to argillaceous sandstone, slightly to race black carbonaceous detritus, trace medium brown e pyrite, trace to common very fine to fine off white partial accomica, soft, very dispersive, slightly subfissile. |
| | 10 | sorted, weak silica cement, occa argillaceous matrix, common of brown green grey and black lith | to dominantly fine, angular to subrounded, moderately asional strong dolomite cement, common to abundant whit if white partially altered feldspar grains, trace to common lics, trace to common fine black to dark brown ite, friable to hard, no visual porosity, no oil fluorescence. |

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| Interval (m) | % | Description PAGE: | : 2 |
|--------------|-----|---|-------------------|
| | 10 | Sandstone: light grey, very fine to grit, dominantly fine to medium, angular to subr poorly sorted, weak silica cement, trace calcareous cement, trace pyrite cement, trace occasionally common white argillaceous matrix, trace to common black carbonaceo detritus, friable, good inferred porosity, no oil fluorescence - possible cavings. | e to |
| 1551-1554 | 100 | Claystone: off white to medium grey to medium brown grey, often very silty gradin siltstone, often very finely arenaceous grading to argillaceous sandstone, slightly to moderately calcareous in part, trace black carbonaceous detritus, trace medium brow cryptocrystalline dolomite, trace pyrite, trace to common very fine to fine off white altered feldspar grains, trace micromica, soft, very dispersive, slightly subfissile. | vn |
| | Tr | Sandstone: off white, very fine to dominantly fine, angular to subrounded, moderate sorted, weak silica cement, occasional strong dolomite cement, common to abundan argillaceous matrix, common off white partially altered feldspar grains, trace to com brown green grey and black lithics, trace to common fine black to dark brown carbonaceous detritus, trace pyrite, friable to hard, no visual porosity, no oil fluoresc | t white umon |
| 1554-1557 | 60 | Sandstone: light grey, very fine to very coarse, dominantly fine, angular to subround poorly sorted, strong silica cement in part, trace strong dolomite cement, common to abundant white argillaceous matrix, trace partially altered feldspar grains, common carbonaceous detritus, friable to hard, poor visual porosity, fair inferred porosity, no fluorescence. |) black |
| | 40 | Claystone: off white to medium grey to medium brown grey, often very silty grading siltstone, often very finely arenaceous grading to argillaceous sandstone, slightly to moderately calcareous in part, trace black carbonaceous detritus, trace medium brow cryptocrystalline dolomite, trace pyrite, trace to common very fine to fine off white p altered feldspar grains, trace micromica, soft, very dispersive, slightly subfissile. | 'n |
| 1557-1560 | 80 | Sandstone: light grey, very fine to very coarse, dominantly fine, angular to subround poorly sorted, strong silica cement in part, trace strong dolomite cement, common to abundant white argillaceous matrix, trace partially altered feldspar grains, common carbonaceous detritus, friable to hard, poor visual porosity, fair inferred porosity, no fluorescence. |) black |
| | 20 | Claystone: off white to medium grey to medium brown grey, often very silty grading siltstone, often very finely arenaceous grading to argillaceous sandstone, slightly to moderately calcareous in part, trace black carbonaceous detritus, trace medium brow cryptocrystalline dolomite, trace pyrite, trace to common very fine to fine off white p altered feldspar grains, trace micromica, soft, very dispersive, slightly subfissile. | 'n |
| 1560-1566 | 50 | Claystone: off white to medium grey to medium brown grey, often very silty grading siltstone, often very finely arenaceous grading to argillaceous sandstone, common ve partially altered feldspar grains, common medium brown to black carbonaceous fleck detritus, slightly calcareous in part, trace micromica, firm, moderately dispersive, slig subfissile. | ry fine cs and |
| | 50 | Sandstone: off white to very light brown grey, very fine, angular to subrounded, moderately sorted, weak silica and occasional weak calcareous cement, abundant whi argillaceous and silt matrix - matrix supported, abundant very fine to fine partially al feldspar grains, common black to medium brown carbonaceous detritus and flecks, fr no visual porosity, no oil fluorescence. | ltered |
| 1566-1569 | 40 | Claystone: off white to medium grey to medium brown grey, often very silty grading siltstone, often very finely arenaceous grading to argillaceous sandstone, common ver partially altered feldspar grains, common medium brown to black carbonaceous fleck detritus, slightly calcareous in part, trace micromica, firm, moderately dispersive, slig subfissile. | ry fine s and |
| | 60 | Sandstone: off white to very light brown grey, very fine, angular to subrounded, moderately sorted, weak silica and occasional weak calcareous cement, abundant whi argillaceous matrix - matrix supported, abundant very fine to fine partially altered fel grains, common black to medium brown carbonaceous detritus and flecks, friable, no porosity, no oil fluorescence. | dspar |

| Interval (m) | % | Description | PAGE: | 3 |
|--------------|----|--|---|----------------|
| 1569-1572 | 30 | Claystone: off white to medium grey to medium brown grey, often very siltstone, often very finely arenaceous grading to argillaceous sandsto partially altered feldspar grains, common medium brown to black car detritus, slightly calcareous in part, trace micromica, firm, moderately subfissile. | ne, common very bonaceous flecks | y fin s and |
| | 70 | Sandstone: off white to very light brown grey, very fine, angular to su moderately sorted, weak silica and occasional weak calcareous cemen argillaceous matrix - matrix supported, abundant very fine to fine par grains, common black to medium brown carbonaceous detritus and fla porosity, no oil fluorescence. | t, abundant whit tially altered feld | Ispai |
| 1572-1575 | 70 | Claystone: off white to dominantly medium brown grey, slightly to m very fine off white partially altered feldspar grains, trace to common flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. | | |
| | 30 | Sandstone: off white to very light brown grey, very fine, angular to su moderately sorted, weak silica and occasional weak calcareous cemen argillaceous matrix - matrix supported, abundant very fine to fine par grains, common black to medium brown carbonaceous detritus and fle porosity, no oil fluorescence. | t, abundant whit tially altered feld | lspar |
| 1575-1581 | 80 | Claystone: off white to dominantly medium brown grey, slightly to m very fine off white partially altered feldspar grains, trace to common b flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. | | |
| | 20 | Sandstone: off white to very light brown grey, very fine, angular to su moderately sorted, weak silica and occasional weak calcareous cemen argillaceous matrix - matrix supported, abundant very fine to fine par- grains, common black to medium brown carbonaceous detritus and fle porosity, no oil fluorescence. | t, abundant white tially altered feld | lspar |
| 1581-1587 | 70 | Sandstone: off white, very fine to fine, occasional medium grains, an moderately sorted, weak silica cement, trace weak calcareous cement, argillaceous matrix - often matrix supported, trace red green and black white partially altered feldspar grains, trace fine black coaly detritus, poor visual porosity, no oil fluorescence. | abundant white k lithics, trace of | f |
| | 30 | Claystone: off white to dominantly medium brown grey, slightly to m very fine off white partially altered feldspar grains, trace to common b flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. | | |
| 1587-1590 | 80 | Sandstone: off white, very fine to fine, occasional medium grains, angular to moderately sorted, weak silica cement, trace weak calcareous cement, abundar argillaceous matrix - often matrix supported, trace red green and black lithics, white partially altered feldspar grains, trace fine black coaly detritus, rare pyri poor visual porosity, no oil fluorescence. | | f |
| | 20 | Claystone: off white to dominantly medium brown grey, slightly to m very fine off white partially altered feldspar grains, trace to common b flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. | | |
| 1590-1593 | 80 | Sandstone: off white, very fine to fine, common medium to very coars subrounded, moderately sorted, weak silica cement, trace weak calcard abundant white argillaceous matrix - often matrix supported, trace rec lithics, trace off white partially altered feldspar grains, trace fine black pyrite, friable, poor visual porosity, no oil fluorescence. | eous cement, I green and black | ç |
| | 20 | Claystone: off white to dominantly medium brown grey, slightly to m very fine off white partially altered feldspar grains, trace to common b flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. | oderately silty, ti lack carbonaceo | race us |
| 1593-1596 | 90 | Sandstone: off white, very fine to fine, common medium to very coars subrounded, moderately sorted, weak silica cement, trace weak calcard abundant white argillaceous matrix - often matrix supported, common lithics, trace off white partially altered feldspar grains, trace fine black pyrite, friable, poor visual porosity, no oil fluorescence. | eous cement, red green and b | lack |

| Interval (m) | % | Description PAGE: 4 |
|--------------|----|--|
| | 10 | Claystone: off white to dominantly medium brown grey, slightly to moderately silty, trac very fine off white partially altered feldspar grains, trace to common black carbonaceous flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. |
| 1596-1598.5 | 70 | Sandstone: off white, very fine to fine, trace medium to very coarse grains, angular to subrounded, moderately sorted, weak silica cement, trace weak calcareous cement, abundant white argillaceous matrix - often matrix supported, common red green and blac lithics, common off white partially altered feldspar grains, trace fine black coaly detritus, rare pyrite, friable, poor visual porosity, no oil fluorescence. |
| | 30 | Claystone: off white to dominantly medium brown grey, minor light green grey, slightly moderately silty, trace very fine off white partially altered feldspar grains, trace to commo black carbonaceous flecks, trace pyrite, firm, moderately dispersive, slightly subfissile. |
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| CULTUS PETROLEUM | N.L. |
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CUTTINGS DESCRIPTION

WELL NAME:

Dunbar East-1

DATE:

30 May, 1997

GEOLOGIST: Dave Horner

PAGE:

1

APPENDIX

| Interval (m) | % | Description | | |
|--------------|---|-------------|------|------|
| | | | | |

For geology report-12

| 1598.5-1599 | 50 | Claystone: off white to light green grey, slightly silty in part, common dispersed very fine lithic, quartz and partially altered feldspar grains in part, trace micromica, trace black coaly laminae, soft, subfissile. |
|-------------|----|---|
| | 30 | Claystone: as above - probably cavings. |
| | 20 | Sandstone: light green grey, very fine to fine, occasional medium grains, subangular to subrounded, moderately sorted, weak to moderate calcareous cement, common to abundant green brown red and black lithics, common partially altered feldspar grains, rare carbonaceous material, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 1599-1602 | 80 | Sandstone: light green grey, very fine to fine, occasional medium grains, subangular to subrounded, moderately sorted, weak to moderate calcareous cement, common to abundant green brown red and black lithics, common partially altered feldspar grains, rare carbonaceous material, friable to moderately hard, no visual porosity, no oil fluorescence. |
| | 20 | Claystone: off white to light green grey, slightly silty in part, trace dispersed very fine lithic, quartz and partially altered feldspar grains in part, trace micromica, trace black coaly laminae, soft, subfissile. |
| 1602-1605 | 70 | Sandstone: light green grey, very fine to occasionally coarse, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate calcareous cement, common to abundant green brown red and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| | 30 | Claystone: off white to light green grey, slightly silty in part, trace dispersed very fine lithic, quartz and partially altered feldspar grains in part, trace micromica, trace black coaly laminae, soft, subfissile. |
| 1605-1611 | 80 | Sandstone: light green grey, very fine to occasionally coarse, dominantly fine, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| | 20 | Claystone: off white to light green grey, slightly to occasionally moderately silty, trace fine lithic, quartz and partially altered feldspar grains in part, trace micromica, trace black coaly laminae, trace coarse brown mica flakes, soft, subfissile. |
| 1611-1614 | 70 | Sandstone: light green grey, very fine to occasionally coarse, dominantly fine, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| | 30 | Claystone: off white to light green grey, slightly to occasionally moderately silty, trace fine lithic, quartz and partially altered feldspar grains in part, trace micromica, trace black coaly laminae, trace coarse brown mica flakes, soft, subfissile. |

| Interval (m) | % | Description PAGE: | 2 |
|-----------------|----|--|-----------|
| 1614-1617 | 80 | Sandstone: light green grey, very fine to occasionally coarse, dominantly fine, subangu to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable to moderate hard, no visual porosity, no oil fluorescence. | |
| | 20 | Claystone: off white to light green grey, slightly to occasionally moderately silty, trace lithic, quartz and partially altered feldspar grains in part, trace micromica, trace black coaly laminae, trace coarse brown mica flakes, soft, subfissile. | fine |
| 1617-1620 | 50 | Sandstone: off white to light green grey, very fine to fine, occasional medium grains,, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red and black lithics, common partially altered feldspar grains, carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable to moderate hard, no visual porosity, no oil fluorescence. | n rare |
| | 50 | Claystone: off white to light green grey, medium brown, slightly to occasionally moderately silty, trace fine lithic, quartz and partially altered feldspar grains in part, transmicromica, trace black coaly laminae, trace coarse brown mica flakes, soft, subfissile. | ace |
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| CULTUS PI | ETROI | LEUM N.L. | | APPENDIX |
|--------------------|--------|---|---|--|
| | | CU | ITINGS DE | ESCRIPTION |
| WELL NAME: | Du | nbar East-1 | DATE: | 30 May, 1997 |
| GEOLOGIST: | Da | ve Horner | PAGE: | 1 |
| Interval (m) | % | Description | | |
| For geological rep | ort-13 | | | |
| 1620-1626 | 90 | | Illy altered feldspar grains | lty, trace fine multicoloured lithio in part, trace micromica, trace and sticky, slightly subfissile. |
| | 10 | to subrounded, moderately sor common brown red grey and b carbonaceous material, trace c grains in sample, no visual poi | ted, weak calcareous cemer black lithics, common partia oarse brown mica flakes, tr rosity, no oil fluorescence. fine multicoloured lithics is trace micromica, trace blac | ally altered feldspar grains, rare race pyrite, friable with loose Claystone: light blue grey to ligh in part, trace quartz and partially |
| 1626-1629 | 95 | Claystone: light blue grey to l part, trace quartz and partially coaly matter, trace coarse brow | altered feldspar grains in p | ty, trace multicoloured lithics in part, trace micromica, trace black |
| | 5 | cement, abundant green lithics partially altered feldspar grain | bangular to subrounded, m s, common brown red grey a s, rare carbonaceous materi | noderately sorted, weak calcareou and black lithics, common |
| 1629-1635 | 90 | Claystone: light blue grey to lipart, trace quartz and partially coaly matter, trace coarse brow | altered feldspar grains in p | ty, trace multicoloured lithics in part, trace micromica, trace black |
| | 10 | cement, abundant green lithics partially altered feldspar grain | bangular to subrounded, m c, common brown red grey a s, rare carbonaceous materi | oderately sorted, weak calcareou and black lithics, common |
| 1635-1641 | 95 | | altered feldspar grains in p | ty, trace multicoloured lithics in part, trace micromica, trace black |
| | 5 | cement, abundant green lithics partially altered feldspar grain | bangular to subrounded, m , common brown red grey a s, rare carbonaceous materi | oderately sorted, weak calcareou and black lithics, common |
| 1641-1647 | 90 | | altered feldspar grains in p | ty, trace multicoloured lithics in part, trace micromica, trace black |

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| Interval (m) | % | Description | PAGE: | 2 |
|--------------|-----|--|---|--------------|
| | 10 | Sandstone: off white to light green grey, mottled, very fine to occasiona dominantly fine to medium, subangular to subrounded, moderately sorte cement, abundant green lithics, common brown red grey and black lithic partially altered feldspar grains, rare carbonaceous material, trace coarse flakes, trace pyrite, friable but with only loose grains in sample, very poor no oil fluorescence. | d, weak calca s, common brown mica | |
| 1647-1650 | 95 | Claystone: light blue grey to light green grey, slightly silty, trace multic part, trace quartz and partially altered feldspar grains in part, trace micr coaly matter, trace coarse brown mica flakes, soft, sticky. | | |
| | 5 | Sandstone: off white to light green grey, mottled, very fine to occasional dominantly fine to medium, subangular to subrounded, moderately sorter cement, abundant green lithics, common brown red grey and black lithic partially altered feldspar grains, rare carbonaceous material, trace coarse flakes, trace pyrite, friable but with only loose grains in sample, very poor no oil fluorescence. | l, weak calca s, common brown mica | |
| 1650-1656 | 90 | Claystone: light blue grey to light green grey, medium brown in part, sli multicoloured lithics in part, trace quartz and partially altered feldspar g micromica, trace black coaly matter, trace coarse brown mica flakes, soft | rains in part, | ace trace |
| | 10 | Sandstone: off white to light green grey, mottled, very fine to occasional dominantly fine to medium, subangular to subrounded, moderately sorted cement, abundant green lithics, common brown red grey and black lithic partially altered feldspar grains, rare carbonaceous material, trace coarse flakes, trace pyrite, friable but with only loose grains in sample, very poor no oil fluorescence. | l, weak calca s, common brown mica | |
| 1656-1659 | 95 | Claystone: light blue grey to light green grey, slightly silty, trace multice part, trace quartz and partially altered feldspar grains in part, trace micro coaly matter, trace coarse brown mica flakes, soft, sticky. | | |
| | 5 | Sandstone: off white to light green grey, mottled, very fine to occasional dominantly fine to medium, subangular to subrounded, moderately sorted cement, abundant green lithics, common brown red grey and black lithic partially altered feldspar grains, rare carbonaceous material, trace coarse flakes, trace pyrite, friable but with only loose grains in sample, very poor no oil fluorescence. | l, weak calcai s, common brown mica | |
| 1659-1665 | 90 | Claystone: light blue grey to light green grey, medium brown in part, sli multicoloured lithics in part, trace quartz and partially altered feldspar g micromica, trace black coaly matter, trace coarse brown mica flakes, soft | rains in part, | ace trac |
| | 10 | Sandstone: off white to light green grey, mottled, very fine to occasional dominantly fine to medium, subangular to subrounded, moderately sorted cement, abundant green lithics, common brown red grey and black lithic partially altered feldspar grains, rare carbonaceous material, trace coarse flakes, trace pyrite, friable but with only loose grains in sample, very poo no oil fluorescence. | l, weak calcai s, common brown mica | |
| 1665-1668 | 100 | Claystone: light blue grey to light green grey, trace medium brown, sligh multicoloured lithics in part, trace quartz and partially altered feldspar gr micromica, trace black coaly matter, trace coarse brown mica flakes, soft | ains in part, | e trace |
| | Tr | Sandstone: off white to light green grey, mottled, very fine to occasional dominantly fine to medium, subangular to subrounded, moderately sorted cement, abundant green lithics, common brown red grey and black lithic partially altered feldspar grains, rare carbonaceous material, trace coarse flakes, trace pyrite, friable but with only loose grains in sample, very poo no oil fluorescence. | l, weak calcar s, common brown mica | |
| 1668-1674 | 100 | Claystone: light blue grey to light green grey, common medium brown, s multicoloured lithics in part, trace quartz and partially altered feldspar gr micromica, trace black coaly matter, trace coarse brown mica flakes, soft | ains in part, | trace |

| Interval (m) | % | Description PAGE: 3 |
|--------------|-----|---|
| | Tr | Sandstone: off white to light green grey, mottled, very fine to occasionally coarse, dominantly fine to medium, subangular to subrounded, moderately sorted, weak calcareou cement, abundant green lithics, common brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable but with only loose grains in sample, very poor inferred porosit no oil fluorescence. |
| 1674-1680 | 100 | Claystone: light to medium brown, light blue grey to light green grey, slightly silty, trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black coaly matter, trace coarse brown mica flakes, soft, sticky. |
| | Tr | Sandstone: off white to light green grey, mottled, very fine to occasionally coarse, dominantly fine to medium, subangular to subrounded, moderately sorted, weak calcareou cement, abundant green lithics, common brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable but with only loose grains in sample, very poor inferred porosit no oil fluorescence. |
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| CULTUS PE | TROI | LEUM N.L. | APPENDI | | | |
|--------------------------|-------|---------------------------------------|-----------------------------------|---|----------|--|
| | | CU | JTTINGS DE | ESCRIPTION | [| |
| WELL NAME: GEOLOGIST: | | nbar East-1 ve Horner | DATE: PAGE: | 30 May, 1997 1 | | |
| Interval (m) | % | Description | | | | |
| For geological report | rt-14 | · · · · · · · · · · · · · · · · · · · | | | _ | |
| 1680-1683 | 100 | | t, trace quartz and partially all | ht green grey, slightly silty, trac tered feldspar grains in part, tra | | |
| 1 400 1 404 | 100 | | hunne licht blue men te lich | ht anoon anov alightly silty tra | - | |

APPENDIX

y, slightly silty, trace ar grains in part, trace Claystone: light to medium brown, light blue grey to light green grey, slightly silty, trace 1683-1686 100 multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black coaly matter, soft, sticky. Tr Sandstone: off white to light green grey, mottled, very fine to occasionally coarse, dominantly fine to medium, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable but with only loose grains in sample, very poor inferred porosity, no oil fluorescence. Claystone: light to medium brown, light blue grey to light green grey, slightly silty, trace 1686-1689 100 multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black coaly matter, soft, sticky. Claystone: light to medium brown, light blue grey to light green grey, slightly silty, trace 80 1689-1692 multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black carbonaceous matter, soft, sticky. Sandstone: off white to light green grey, very fine to dominantly fine, occasional medium 20 grains, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable but with only loose grains in sample, very poor inferred porosity, no oil fluorescence. 90 Claystone: light blue grey to light green grey, light to medium brown, slightly silty, trace 1692-1695 multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black carbonaceous matter, soft, sticky. 10 Sandstone: off white to light green grey, very fine to dominantly fine, occasional medium grains, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable but with only loose grains in sample, very poor inferred porosity, no oil fluorescence. Claystone: off white to light grey to light green grey, light to medium brown, slightly silty, 100 1695-1698 trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black carbonaceous matter, soft, sticky. Sandstone: off white to light green grey, very fine to dominantly fine, occasional medium Tr grains, subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, common brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable, no visual porosity, no oil fluorescence. Claystone: off white to light grey to light green grey, light to medium brown, slightly silty, 90 1698-1701

trace micromica, trace black carbonaceous matter, soft, sticky.

trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part,

| Interval (m) | % | Description | PAGE: | 2 | |
|--------------|----|--|----------------------------------|-------------|--|
| | 10 | Sandstone: off white to light green grey, very fine to dominantly fine, r subangular to subrounded, moderately sorted, weak calcareous cement, lithics, trace brown red grey and black lithics, common partially altered rare carbonaceous material, trace pyrite, friable, no visual porosity, no c | abundant greei feldspar grain | n s, | |
| 1701-1704 | 80 | Claystone: off white to light grey to light green grey, light to medium brown, slightly si trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in p trace micromica, trace black carbonaceous matter, soft, sticky. | | | |
| | 20 | Sandstone: off white to light green grey, very fine to dominantly fine, rare medium grain subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable, no visual porosity, no oil fluorescence. | | | |
| 1704-1710 | 70 | Claystone: off white to light grey to light green grey, light to medium brown, slightly s trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in p trace micromica, trace black carbonaceous matter, soft, sticky. | | silt par | |
| | 30 | Sandstone: off white to light green grey, very fine to dominantly fine, rare medium grai subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable, no visual porosity, no oil fluorescence. | | ı s, | |
| 1710-1716 | 80 | Claystone: off white to light grey to light green grey, light to medium brown, slightly sil trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part trace micromica, trace black carbonaceous matter, soft, sticky. | | silt par | |
| | 20 | Sandstone: off white to light green grey, very fine to dominantly fine, rare medium grai subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace pyrite, friable,, no visual porosity, no oil fluorescence. | | ı s, | |
| 1716-1722 | 90 | Claystone: off white to light grey to light green grey, light to medium brown, slightly s trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in p trace micromica, trace black carbonaceous matter, soft, sticky. | | silt pai | |
| | 10 | Sandstone: off white to light green grey, very fine to dominantly fine, rare medium grain subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable, no visual porosity, no oil fluorescence. | | | |
| 1722-1725 | 90 | Claystone: off white to light grey to light green grey, light to medium brown, slightly strace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part race micromica, common black coaly matter, trace pyrite, soft, sticky. | | silt par | |
| | 10 | Sandstone: off white to light green grey, very fine to dominantly fine, rare medium grain subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes,trace pyrite, friable, no visual porosity, no oil fluorescence. | | 1 5, | |
| 1725-1731 | 90 | Claystone: off white to light grey to light green grey, light to medium brown, slightly s trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in p trace micromica, common black coaly matter, trace pyrite, soft, sticky. | | silt par | |
| | 10 | Sandstone: off white to light green grey, very fine to dominantly fine, rare medium grain subangular to subrounded, moderately sorted, weak calcareous cement, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable, no visual porosity, no oil fluorescence. | | | |
| 1731-1734 | 95 | Claystone: off white to light grey to light green grey, light to medium be trace multicoloured lithics in part, trace quartz and partially altered feld trace micromica, trace black carbonaceous matter, trace pyrite, soft, stick | spar grains in p | silt par | |

| Interval (m) | % | Description PAG | PAGE: 3 | | |
|--------------|-----|--|------------------|---------------|--|
| | 5 | Sandstone: off white to light green grey, very fine to dominantly fine, rare mediu subangular to subrounded, moderately sorted, weak calcareous cement, abundant lithics, trace brown red grey and black lithics, common partially altered feldspar rare carbonaceous material, trace coarse brown mica flakes,trace pyrite, friable,, r porosity, no oil fluorescence. | greei grain | n s, | |
| 1734-1743 | 100 | Claystone: off white to light grey to light green grey, light to medium brown, slig trace multicoloured lithics in part, trace quartz and partially altered feldspar grain trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. | | | |
| | Tr | Sandstone: off white to light green grey, very fine to dominantly fine, rare medius subangular to subrounded, moderately sorted, weak calcareous cement, abundant lithics, trace brown red grey and black lithics, common partially altered feldspar rare carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable,, r porosity, no oil fluorescence. | greei grain | 1 S, | |
| 1743-1746 | 90 | Claystone: off white to light grey to light green grey, light to medium brown, slig trace multicoloured lithics in part, trace quartz and partially altered feldspar grain trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. | | | |
| | 10 | Sandstone: off white to light green grey, very fine to dominantly medium, subang subrounded, moderately sorted, weak calcareous cement, abundant white argillace matrix, abundant green lithics, trace brown red grey and black lithics, common pa altered feldspar grains, trace carbonaceous material, trace coarse brown mica flat pyrite, friable, very poor visual porosity, no oil fluorescence. | eous artial | ly | |
| 1746-1749 | 50 | Claystone: off white to light grey to light green grey, light to medium brown, slig trace multicoloured lithics in part, trace quartz and partially altered feldspar grain trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. | | | |
| | 50 | Sandstone: off white to light green grey, very fine to dominantly medium, suban subrounded, moderately sorted, weak calcareous cement, abundant white argillac matrix, abundant green lithics, trace brown red grey and black lithics, common p altered feldspar grains, trace carbonaceous material, trace coarse brown mica fla pyrite, friable, very poor visual porosity, no oil fluorescence. | | | |
| 1749-1752 | 40 | Claystone: off white to light grey to light green grey, light to medium brown, slig trace multicoloured lithics in part, trace quartz and partially altered feldspar grain trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. | htly is in j | silty part | |
| | 60 | Sandstone: off white to light green grey, very fine to dominantly medium, suban subrounded, moderately sorted, weak calcareous cement, abundant white argillac matrix, abundant green lithics, trace brown red grey and black lithics, common p altered feldspar grains, trace carbonaceous material, trace coarse brown mica fla pyrite, friable, very poor visual porosity, no oil fluorescence. | | | |
| 1752-1755 | 30 | Claystone: off white to light grey to light green grey, light to medium brown, slig trace multicoloured lithics in part, trace quartz and partially altered feldspar grain trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. | htly is in j | silty part | |
| | 70 | Sandstone: off white to light green grey, very fine to dominantly medium, subang subrounded, moderately sorted, weak calcareous cement, abundant white argillace matrix, abundant green lithics, trace brown red grey and black lithics, common pa altered feldspar grains, trace carbonaceous material, trace coarse brown mica flak pyrite, friable, very poor visual porosity, no oil fluorescence. | ous artial | ly | |
| 1755-1761 | 40 | Claystone: off white to light grey to light green grey, light to medium brown, slig trace multicoloured lithics in part, trace quartz and partially altered feldspar grain trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. | htly : s in j | silty part | |
| | 60 | Sandstone: off white to light green grey, very fine to dominantly medium, subang subrounded, moderately sorted, weak calcareous cement, abundant white argillace matrix, abundant green lithics, trace brown red grey and black lithics, common pa altered feldspar grains, trace carbonaceous material, trace coarse brown mica flak pyrite, friable, very poor visual porosity, no oil fluorescence. | ous rtial | ly | |

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| Interval (m) | % | Description PAGE: 4 |
|--------------|----|--|
| 1761-1764 | 30 | Claystone: off white to light grey to light green grey, light to medium brown, slightly silty trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. |
| | 70 | Sandstone: off white to light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, weak calcareous cement, abundant white argillaceous matrix, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, trace carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable, very poor visual porosity, no oil fluorescence. |
| 1764-1773 | 50 | Claystone: off white to light grey to light green grey, light to medium brown, slightly silty trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. |
| | 50 | Sandstone: off white to light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, weak calcareous cement, abundant white argillaceous matrix, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, trace carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable, very poor visual porosity, no oil fluorescence. |
| 1773-1776 | 60 | Claystone: off white to light grey to light green grey, light to medium brown, slightly silty trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. |
| | 40 | Sandstone: off white to light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, weak calcareous cement, abundant white argillaceous matrix, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, trace carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable, very poor visual porosity, no oil fluorescence. |
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CULTUS PETROLEUM N.L.

APPENDIX

CUTTINGS DESCRIPTION

WELL NAME: Dunbar East-1

Dave Horner

PAGE:

DATE:

30 May, 1997

1

Interval (m) % Description

For geological report-15

GEOLOGIST:

| 1776-1779 | 50 | Claystone: off white to light grey to light green grey, light to medium brown, slightly silty, trace multicoloured lithics in part, trace quartz and partially altered feldspar grains in part, trace micromica, trace black carbonaceous matter, trace pyrite, soft, sticky. |
|-----------|----|--|
| | 50 | Sandstone: off white to light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, weak calcareous cement, abundant white argillaceous matrix, abundant green lithics, trace brown red grey and black lithics, common partially altered feldspar grains, trace carbonaceous material, trace coarse brown mica flakes, trace pyrite, friable, very poor visual porosity, no oil fluorescence. |
| 1779-1782 | 30 | Claystone: off white to medium grey, light green grey, light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 70 | Sandstone: off white to light green grey, very fine to medium, dominantly fine to medium, moderately sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1782-1785 | 40 | Claystone: off white to medium grey, light green grey, light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 60 | Sandstone: off white to light green grey, very fine to medium, dominantly fine to medium, moderately sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1785-1791 | 30 | Claystone: off white to medium grey, light green grey, light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 70 | Sandstone: off white to light green grey, very fine to medium, dominantly fine to medium, moderately sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1791-1794 | 60 | Claystone: off white to medium grey, light green grey, light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |

| Interval (m) | % | Description PAGE: 2 |
|--------------|----|---|
| | 40 | Sandstone: off white to light green grey, very fine to medium, dominantly fine, moderatel sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1794-1797 | 70 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceou detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 30 | Sandstone: off white to light green grey, very fine to medium, dominantly fine, moderatel sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1797-1806 | 80 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceou detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 20 | Sandstone: off white to light green grey, very fine to medium, dominantly fine, moderatel sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1806-1809 | 60 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceou detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 40 | Sandstone: off white to light green grey, very fine to medium, dominantly fine, moderatel sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1809-1812 | 40 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 60 | Sandstone: off white to light green grey, very fine to medium, dominantly fine to medium moderately sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |
| 1812-1815 | 50 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 50 | Sandstone: off white to light green grey, very fine to medium, dominantly fine to medium moderately sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. |

| Interval (m) | val (m) % Description | | | |
|--------------|-----------------------|---|--|--|
| 1815-1821 | 60 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | | |
| | 40 | Sandstone: off white to light green grey, very fine to medium, dominantly fine to medium moderately sorted, subangular to subrounded, trace weak calcareous cement, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | | |
| 1821-1827 | 90 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | | |
| | 10 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly fin to medium, moderately sorted, subangular to subrounded, weak calcareous cement in part, common to abundant white argillaceous matrix - in part matrix supported, abundant greer lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | | |
| 1827-1830 | 100 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, common black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | | |
| | Tr | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly fin to medium, moderately sorted, subangular to subrounded, weak calcareous cement in part, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | | |
| 1830-1833 | 90 | Claystone: off white to medium grey, light green grey, often very light to medium brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | | |
| | 10 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly fir to medium, moderately sorted, subangular to subrounded, weak calcareous cement in part, common to abundant white argillaceous matrix - in part matrix supported, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | | |
| 1833-1836 | 80 | Claystone: off white to medium grey, light green grey, often very light to medium brown, dominantly off white to light brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | | |
| | 20 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly fin to medium, moderately sorted, subangular to subrounded, weak calcareous cement in part, common to abundant white argillaceous matrix - in part matrix supported and grading to arenaceous claystone, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | | |
| 1836-1842 | 70 | Claystone: off white to medium grey, light green grey, often very light to medium brown, dominantly off white to light brown, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | | |

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| Interval (m) | % | Description PAGE: | 4 |
|--------------|----|---|--------------------------|
| | 30 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly to medium, moderately sorted, subangular to subrounded, weak calcareous cement in part common to abundant white argillaceous matrix - in part matrix supported and grading arenaceous claystone, abundant green lithics, trace to common brown red grey and blac lithics, common off white partially altered feldspar grains, trace coarse brown mica flak rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no fluorescence. | art, to k kces, |
| 1842-1845 | 50 | Claystone: off white to medium grey, light green grey, often very light to medium brow dominantly off white to light brown, slightly to occasionally moderately silty, occasional very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | ally |
| | 50 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly to medium, moderately sorted, subangular to subrounded, weak calcareous and silica cement, common to abundant white argillaceous matrix - in part matrix supported and grading to arenaceous claystone, abundant green lithics, trace to common brown red gree and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | ey 1 |
| 1845-1851 | 30 | Claystone: off white to medium grey, light green grey, often very light to medium brow dominantly off white to light brown, slightly to occasionally moderately silty, occasiona very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | lly |
| | 70 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly to medium, moderately sorted, subangular to subrounded, weak calcareous and silica cement, common to abundant white argillaceous matrix - in part matrix supported and grading to arenaceous claystone, abundant green lithics, trace to common brown red gree and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | ey I |
| 1851-1854 | 50 | Claystone: off white to medium grey, light green grey, very light to medium brown, dominantly off white to light brown, slightly to occasionally moderately silty, occasional very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | |
| | 50 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly to medium, moderately sorted, subangular to subrounded, weak calcareous and silica cement, common to abundant white argillaceous matrix - in part matrix supported and grading to arenaceous claystone, abundant green lithics, trace to common brown red gre and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | ÿ |
| 1854-1857 | 70 | Claystone: off white to medium grey, light green grey, very light to medium brown, dominantly off white to light brown, slightly to occasionally moderately silty, occasional very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | |
| | 30 | Sandstone: off white to light green grey to light grey, very fine to medium, dominantly for medium, moderately sorted, subangular to subrounded, weak calcareous and silica cement, common to abundant white argillaceous matrix - in part matrix supported and grading to arenaceous claystone, abundant green lithics, trace to common brown red grey and black lithics, common off white partially altered feldspar grains, trace coarse brown mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very poor visual porosity, no oil fluorescence. | y |

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| Interval (m) | % | % Description | | | |
|--------------|----|---|---|----------|--|
| 1857-1860 | 80 | Claystone: off white to light grey, light green grey, often very light brown, of white to light brown, slightly to occasionally moderately silty, occasionally w finely arenaceous with multicoloured lithics, partially altered feldspar and qu trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky subfissile. | ery finely very finely | to | |
| | 20 | Sandstone: off white to light green grey to light grey, very fine to medium, of to medium, moderately sorted, subangular to subrounded, weak calcareous an cement, common to abundant white argillaceous matrix - in part matrix supp grading to arenaceous claystone, abundant green lithics, trace to common bro and black lithics, common off white partially altered feldspar grains, trace co mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very porosity, no oil fluorescence. | nd silica ported and own red g parse brow | rey | |
| 1860-1863 | 90 | Claystone: off white to light brown, light green grey, light grey, slightly to o moderately silty, occasionally very finely to finely arenaceous with multicolo partially altered feldspar and quartz grains, trace black carbonaceous detritus micromica, rare pyrite, firm to sticky, slightly subfissile. | ured lithic | | |
| | 10 | Sandstone: off white to light green grey to light grey, very fine to medium, d to medium, moderately sorted, subangular to subrounded, weak calcareous ar cement, common to abundant white argillaceous matrix - in part matrix supp grading to arenaceous claystone, abundant green lithics, trace to common bro and black lithics, common off white partially altered feldspar grains, trace co mica flakes, rare black carbonaceous detritus, rare pyrite, friable, nil to very p porosity, no oil fluorescence. | nd silica ported and pwn red gr parse brow | rey n | |
| 1863-1866 | 40 | Claystone: off white to light brown, light green grey, light grey, slightly to o moderately silty, occasionally very finely to finely arenaceous with multicolor partially altered feldspar and quartz grains, trace black carbonaceous detritus micromica, rare pyrite, firm to sticky, slightly subfissile. | ured lithic | | |
| | 60 | Sandstone: light to medium green grey, very fine to medium, occasional coal dominantly medium, subangular to subrounded, moderately sorted, weak silic calcareous cements, common white argillaceous matrix, abundant green lithic partially altered feldspar grains, trace orange brown and black lithics, trace b carbonaceous detritus, trace pyrite, trace brown mica flakes, friable, abundant in sample, very poor to poor visual porosity, no oil fluorescence. | ca and cs and lack | | |
| 1866-1869 | 30 | Claystone: off white to light brown, light green grey, light grey, slightly to or moderately silty, occasionally very finely to finely arenaceous with multicolor partially altered feldspar and quartz grains, trace black carbonaceous detritus micromica, rare pyrite, firm to sticky, slightly subfissile. | ured lithic | | |
| | 70 | Sandstone: light to medium green grey, very fine to medium, occasional coar dominantly medium, subangular to subrounded, moderately sorted, weak silic calcareous cements, common white argillaceous matrix, abundant green lithic partially altered feldspar grains, trace orange brown and black lithics, trace b carbonaceous detritus, trace pyrite, trace brown mica flakes, friable, abundant in sample, very poor to poor visual porosity, no oil fluorescence. | ca and cs and lack | | |
| 1869-1872 | 50 | Claystone: off white to light brown, light green grey, light grey, slightly to or moderately silty, occasionally very finely to finely arenaceous with multicolou partially altered feldspar and quartz grains, trace black carbonaceous detritus, micromica, rare pyrite, firm to sticky, slightly subfissile. | ured lithic | y s, | |
| | 50 | Sandstone: light to medium green grey, very fine to medium, occasional coar dominantly medium, subangular to subrounded, moderately sorted, weak silic calcareous cements, common white argillaceous matrix, abundant green lithic partially altered feldspar grains, trace orange brown and black lithics, trace bl carbonaceous detritus, trace pyrite, trace brown mica flakes, friable, abundant in sample, very poor to poor visual porosity, no oil fluorescence. | ca and cs and lack | | |
| 1872-1875 | 40 | Claystone: off white to light brown, light green grey, light grey, slightly to or moderately silty, occasionally very finely to finely arenaceous with multicolou partially altered feldspar and quartz grains, trace black carbonaceous detritus, micromica, rare pyrite, firm to sticky, slightly subfissile. | ured lithics | | |

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| Interval (m) | % | Description PAGE: | 6 |
|--------------|----|---|----|
| | 60 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous ceme trace to dominantly common white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. | |
| 1875-1878 | 20 | Claystone: off white to light brown, light green grey, light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | |
| | 80 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous ceme trace to dominantly common white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. | |
| 1878-1881 | 10 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaced with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | |
| | 90 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous ceme trace to dominantly common white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. | |
| 1881-1884 | 40 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaced with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | ou |
| | 60 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous ceme trace to dominantly common white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. | |
| 1884-1887 | 30 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaced with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | ou |
| | 70 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous ceme trace to dominantly common white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. | |
| 1887-1890 | 50 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceo with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. | ou |
| | 50 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous cemer trace to dominantly common white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. | |

| Interval (m) | % | Description PAGE: 7 |
|--------------|----|---|
| 1890-1893 | 60 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 40 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous cemer abundant white argillaceous matrix, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, oil fluorescence. |
| 1893-1896 | 70 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 30 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous cemer abundant white argillaceous matrix - often matrix supported, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. |
| 1896-1899 | 80 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 20 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous cemen abundant white argillaceous matrix - often matrix supported, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. |
| 1899-1902 | 50 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 50 | Sandstone: medium green grey, very fine to coarse, dominantly medium to coarse, medium, subangular to subrounded, moderately sorted, weak silica and calcareous cemen abundant white argillaceous matrix - often matrix supported, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. |
| 1902-1914 | 80 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 20 | Sandstone: medium green grey, very fine to medium, occasional coarse grains, dominant fine to medium, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, abundant loose grains in sample, very poor to fair visual porosity, poor inferred porosity, no oil fluorescence. |
| 1914-1920 | 90 | Claystone: off white to light brown, light green grey, light grey, dominantly very light grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |

| Interval (m) | % | Description | PAGE: | 8 |
|--------------|----|--|---|---------------|
| | 10 | Sandstone: medium green grey, very fine to medium, occasional coarse fine to medium, subangular to subrounded, moderately sorted, weak sili cements, abundant white argillaceous matrix - often matrix supported, a lithics and partially altered feldspar grains, trace orange brown and blac pyrite, trace brown mica flakes, friable, abundant loose grains in sample visual porosity, poor inferred porosity, no oil fluorescence. | ca and calcare abundant green ck lithics, trace | ous n e |
| 1920-1926 | 80 | Claystone: off white to light brown, light green grey, light grey, domine brown, slightly to occasionally moderately silty, occasionally very finely arenaceous with multicoloured lithics, partially altered feldspar and qua black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, | to finely rtz grains, trac | ce |
| | 20 | Sandstone: medium green grey, very fine to medium, occasional coarse fine to medium, subangular to subrounded, moderately sorted, weak silic cements, abundant white argillaceous matrix - often matrix supported, a lithics and partially altered feldspar grains, trace orange brown and blac pyrite, trace brown mica flakes, friable, abundant loose grains in sample visual porosity, poor inferred porosity, no oil fluorescence. | ca and calcare bundant greer k lithics, trace | ous 1 |
| 1926-1932 | 70 | Claystone: off white to light brown, light green grey, light grey, domina brown, slightly to occasionally moderately silty, occasionally very finely arenaceous with multicoloured lithics, partially altered feldspar and qua black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, | to finely rtz grains, trac | æ |
| | 30 | Sandstone: medium green grey, very fine to medium, occasional coarse fine to medium, subangular to subrounded, moderately sorted, weak silic cements, abundant white argillaceous matrix - often matrix supported, a lithics and partially altered feldspar grains, trace orange brown and blac pyrite, trace brown mica flakes, friable, abundant loose grains in sample visual porosity, poor inferred porosity, no oil fluorescence. | ca and calcared bundant green k lithics, trace | ous |
| | | Continued on report 15A. | | |

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| CULTUS PE | TRO | LEUM N.L. | | | | AP | PENDL |
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| | | С | UTTING | S DE | SCI | RIPT | ION |
| WELL NAME: | Dı | Inbar East-1 | C | DATE: | 30 M | ay, 1997 | |
| GEOLOGIST: | Da | ve Horner | P | PAGE: | 1 | | |
| Interval (m) | % | Description | · · · · · · · · · · · · · · · · · · · | | | | |
| Continuation for re | port-15 | | | | | | |
| 1932-1938 | 80 | Claystone: off white to li brown, slightly to occasio arenaceous with multicole black carbonaceous detrit | onally moderately silty oured lithics, partially | , occasiona altered fel | lly very f dspar and | inely to fin l quartz gr | ely ains, trace |
| | 20 | Sandstone: off white to n dominantly fine, subangu cements, abundant white lithics and partially altere pyrite, trace brown mica f fluorescence. | lar to subrounded, mo argillaceous matrix - d feldspar grains, trac | oderately so often matri ce orange b | rted, wea x support rown and | k silica an ed, abunda black lith | d calcareous ant green ics, trace |
| 1938-1944 | 90 | Claystone: off white to li grey, slightly to occasiona with multicoloured lithics carbonaceous detritus, tra | ally moderately silty, or a silty of a silty | occasionally lspar and q | very fin uartz grai | ely to finel ns, trace b | y arenaceou lack |
| | 10 | Sandstone: off white to n dominantly fine, subangu cements, abundant white lithics and partially altere pyrite, trace brown mica f fluorescence. | lar to subrounded, mo argillaceous matrix - o d feldspar grains, trac | derately so often matri ce orange b | rted, wea x support rown and | k silica and ed, abunda black lithi | d calcareous int green ics, trace |
| 1944-1953 | 100 | Claystone: off white to lig grey, slightly to occasiona with multicoloured lithics carbonaceous detritus, tra | Illy moderately silty, c , partially altered feld | ccasionally spar and qu | very find artz grai | ely to finel ns, trace b | y arenaceous lack |
| | Tr | Sandstone: off white to m dominantly fine, subangul cements, abundant white a lithics and partially altere pyrite, trace brown mica f fluorescence. | lar to subrounded, mo argillaceous matrix - o d feldspar grains, trac | derately so often matrix e orange bi | rted, weal x support rown and | k silica and ed, abunda black lithi | l calcareous nt green cs, trace |
| 1953-1965 | 90 | Claystone: off white to lig grey, slightly to occasiona with multicoloured lithics carbonaceous detritus, trans | lly moderately silty, o , partially altered feld | ccasionally spar and qu | very fine artz grai | ely to finely ns, trace b | y arenaceous lack |
| | 10 | Sandstone: off white to m dominantly fine, subangul cements, abundant white a lithics and partially altered pyrite, trace brown mica f fluorescence. | ar to subrounded, mo argillaceous matrix - c d feldspar grains, trac | derately some often matrix e orange br | rted, weal c supporter own and | c silica and ed, abunda black lithi | l calcareous nt green cs, trace |
| 1965-1971 | 80 | Claystone: off white to lig grey, slightly to occasiona with multicoloured lithics carbonaceous detritus, trac | lly moderately silty, o , partially altered feld | ccasionally spar and qu | very fine artz grai | ly to finely ns, trace bl | / arenaceous ack |

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| Interval (m) | % | Description PAGE: 2 |
|--------------|-----|--|
| | 20 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abunda green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 1971-1977 | 100 | Claystone: off white to light brown, light green grey, light grey, dominantly light browni grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | Tr | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundar green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 1977-1983 | 90 | Claystone: off white to light brown, light green grey, light grey, dominantly light brown grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 10 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundar green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 1983-1986 | 95 | Claystone: off white to light brown, light green grey, light grey, dominantly light brown grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 5 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abunda green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 1986-1992 | 80 | Claystone: off white to light brown, light green grey, light grey, dominantly light browni grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 20 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abunda green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 1992-2004 | 90 | Claystone: off white to light brown, light green grey, light grey, dominantly light browni grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 10 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abunda green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2004-2010 | 95 | Claystone: off white to light brown, light green grey, light grey, dominantly light browni grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |

| Interval (m) | % | Description PAGE: 3 |
|--------------|-----|---|
| | 5 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundan green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2010-2016 | 85 | Claystone: off white to light brown, light green grey, light grey, dominantly light browning grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 15 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundant green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2016-2019 | 60 | Claystone: off white to light brown, light green grey, light grey, dominantly light browning grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 40 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundar green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2019-2025 | 80 | Claystone: off white to light brown, light green grey, light grey, dominantly light browning rey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 20 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundang green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2025-2031 | 100 | Claystone: off white to light brown, light green grey, light grey, dominantly light browning grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| 2031-2043 | 100 | Claystone: off white to light brown, light green grey, light grey, dominantly light browning grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceou with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | Tr | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundang green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2043-2067 | 90 | Claystone: off white to light brown, light green grey, light to medium grey, dominantly light brownish grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 10 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundang green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |

| Interval (m) | % | Description PAGE: 4 |
|--------------|-----|--|
| 2067-2070 | 100 | Claystone: off white to light brown, light green grey, light grey, dominantly light brownis grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | Tr | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundar green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
| 2070-2088 | 90 | Claystone: off white to light brown, light green grey, light grey, dominantly light brownis grey, slightly to occasionally moderately silty, occasionally very finely to finely arenaceous with multicoloured lithics, partially altered feldspar and quartz grains, trace black carbonaceous detritus, trace micromica, rare pyrite, firm to sticky, slightly subfissile. |
| | 10 | Sandstone: off white to medium green grey, dominantly light greenish grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak silica and calcareous cements, abundant white argillaceous matrix - often matrix supported, abundar green lithics and partially altered feldspar grains, trace orange brown and black lithics, trace pyrite, trace brown mica flakes, friable, very poor visual porosity, no oil fluorescence |
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| CULTUS PE | TRO | | NGS DE | SCRI | appendi PTION |
|---------------------|--------|---|---|--|---|
| WELL NAME: | Du | Inbar East-1 | DATE: | 30 May, | ······································ |
| GEOLOGIST: | Da | ve Horner | PAGE: | 1 | |
| Interval (m) | % | Description | | | |
| For geological repo | ort-16 | | | | |
| 2088-2094 | 100 | Claystone: off white to light brown gr grey, slightly to occasionally very silty quartz and lithics grains in part, trace firm to sticky, subfissile. | , trace dispersed ve | ery fine to fine | altered feldspar |
| | Tr | Sandstone: off white to medium green subangular to subrounded, moderately to dominantly abundant white argillac white partially altered feldspar grains, coarse brown mica flakes, trace black poor visual porosity, no oil fluorescent | sorted, weak silica eous matrix, abund trace orange brown carbonaceous detrit | and calcareou ant green lith n grey and bla | us cements, comm ics, common off ck lithics, trace |
| 2094-2100 | | | | | altered feldspar |
| | 10 | Sandstone: off white to medium greer subangular to subrounded, moderately to dominantly abundant white argillac white partially altered feldspar grains, coarse brown mica flakes, trace black poor visual porosity, no oil fluorescence | sorted, weak silica eous matrix, abund trace orange brown carbonaceous detrit | and calcareou ant green lithing grey and bla | is cements, commi ics, common off ck lithics, trace |
| 2100-2106 | 80 | Claystone: off white to light brown gr grey, slightly to occasionally very silty quartz and lithics grains in part, trace firm to sticky, subfissile. | , trace dispersed ve | ry fine to fine | altered feldspar |
| | 20 | Sandstone: off white to medium green subangular to subrounded, moderately to dominantly abundant white argillac white partially altered feldspar grains, coarse brown mica flakes, trace black o poor visual porosity, no oil fluorescence | sorted, weak silica eous matrix, abund trace orange browr carbonaceous detrit | and calcareou ant green lithi grey and blac | is cements, comme cs, common off ck lithics, trace |
| 2106-2109 | 70 | Claystone: off white to light brown gr grey, slightly to occasionally very silty quartz and lithics grains in part, trace firm to sticky, subfissile. | , trace dispersed ve | ry fine to fine | altered feldspar |
| | 30 | Sandstone: off white to medium green subangular to subrounded, moderately to dominantly abundant white argillace white partially altered feldspar grains, coarse brown mica flakes, trace black of poor visual porosity, no oil fluorescence | sorted, weak silica cous matrix, abunda trace orange brown carbonaceous detrit | and calcareou ant green lithi grey and blac | s cements, commo cs, common off ck lithics, trace |
| 2109-2015 | 70 | Claystone: off white to light brown gro grey, slightly to occasionally very silty, quartz and lithics grains in part, trace firm to sticky, subfissile. | trace dispersed ver | ry fine to fine | altered feldspar |

| Interval (m) | % | Description PAGE: | 2 |
|--------------|-----|--|-------|
| | 30 | Sandstone: off white to medium green, very fine to occasionally medium, dominantly f subangular to subrounded, moderately sorted, weak silica and calcareous cements, comu to dominantly abundant white argillaceous matrix, abundant green lithics, common off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black carbonaceous detritus, rare pyrite, friable, nil to v poor visual porosity, no oil fluorescence. | mon |
| 2015-2121 | 100 | Claystone: light to medium green grey, light brown grey, slightly to often very silty, occasionally very finely arenaceous, trace to common very fine partially altered feldspar grains in part, trace brown to black carbonaceous flecks, trace micromica, firm, subfissi | |
| | Tr | Sandstone: off white to medium green, very fine to occasionally medium, dominantly fisubangular to subrounded, moderately sorted, weak silica and calcareous cements, comm to dominantly abundant white argillaceous matrix, abundant green lithics, common off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friabl no visual porosity, no oil fluorescence. | mon |
| 2121-2124 | 100 | Claystone: light to medium green grey, light brown grey, slightly to often very silty, occasionally very finely arenaceous, trace to common very fine partially altered feldspar grains in part, trace brown to black carbonaceous flecks, trace micromica, firm, subfissi | |
| 2124-2136 | 100 | Claystone: light to dominantly medium green grey, light to medium brown grey, slight often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to black carbonaceous flec trace micromica, firm, subfissile. | n |
| | Tr | Sandstone: off white to medium green, very fine to occasionally medium, dominantly fis subangular to subrounded, moderately sorted, weak silica and calcareous cements, comm to dominantly abundant white argillaceous matrix, abundant green lithics, common off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable no visual porosity, no oil fluorescence. | mon |
| 2136-2142 | 90 | Claystone: light to dominantly medium green grey, light to medium brown grey, slight often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to black carbonaceous flec trace micromica, firm, subfissile. | n |
| | 10 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominan fine, subangular to subrounded, moderately sorted, moderate silica and calcareous ceme common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. | ents, |
| 2142-2145 | 80 | Claystone: light to dominantly medium green grey, light to medium brown grey, slightl often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to black carbonaceous flec trace micromica, firm, subfissile. | n |
| | 20 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominan fine, subangular to subrounded, moderately sorted, moderate silica and calcareous ceme common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. | ents, |
| 2145-2148 | 70 | Claystone: light to dominantly medium green grey, light to medium brown grey, slightl often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to black carbonaceous flec trace micromica, firm, subfissile. | n |

| Interval (m) | % | Description PAGE: 3 |
|--------------|----|---|
| | 30 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominantle fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cemen common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2148-2151 | 50 | Claystone: light to dominantly medium green grey, light to medium brown grey, slightly often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to black carbonaceous fleck trace micromica, firm, subfissile. |
| | 50 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cement common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2151-2160 | 70 | Claystone: light to dominantly medium green grey, light to medium brown grey, medium grey, slightly to often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to blac carbonaceous flecks, trace micromica, firm to moderately hard, subfissile. |
| | 30 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominantle fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cement common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2160-2166 | 90 | Claystone: light to dominantly medium green grey, light to medium brown grey, medium grey, slightly to often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to bla carbonaceous flecks, trace micromica, firm to moderately hard, subfissile. |
| | 10 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominantl fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cemen common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2166-2169 | 40 | Claystone: light to dominantly medium green grey, light to medium brown grey, medium grey, slightly to often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to blac carbonaceous flecks, trace micromica, firm to moderately hard, subfissile. |
| | 60 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominantle fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cemen common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2169-2175 | 70 | Claystone: light to dominantly medium green grey, light to medium brown grey, medium grey, slightly to often very silty in part grading to siltstone, occasionally very finely arenaceous, common very fine partially altered feldspar grains in part, trace brown to blac carbonaceous flecks, trace micromica, firm to moderately hard, subfissile. |
| | 30 | Sandstone: off white to light greenish grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cement common to dominantly abundant white argillaceous matrix, common green lithics, abundant off white partially altered feldspar grains, trace orange brown grey and black lithics, trace coarse brown mica flakes, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, no visual porosity, no oil fluorescence. |

| CULTUS PE | TROI | | CUTTING | S DF | | PPENDIX FION |
|---------------------|------------|--|--|--|--|---|
| | | | | | | |
| WELL NAME: | Du | nbar East-1 | i | DATE: | 30 May, 199 | 7 |
| GEOLOGIST: | Da | ve Horner | | PAGE: | 1 | |
| Interval (m) | % | Description | | | | |
| For geological repo | ort-19 - 1 | No cuttings descriptions | for reports 17 & 18 due | to rig break | down - no new fo | ormation drilled |
| 2175-2178 | 70 | Claystone: light to me grey, slightly to often v arenaceous, common v carbonaceous flecks, tr | ery silty in part grading ery fine partially altered | g to siltstone d feldspar gi | e, occasionally ver rains in part, trace | y finely |
| | 30 | Sandstone: off white to dominantly fine, suban calcareous cements, co green lithics, abundant and black lithics,trace moderately hard, very | gular to subrounded, m mmon to dominantly al off white partially alte black to brown carbona | oderately so oundant whi red feldspar | rted, moderate sil te argillaceous ma grains, trace oran | ica and atrix, common ge brown grey |
| | Fluor | The sandstone has trac giving a very dull milk | | | e yellowish white | fluorescence |
| 2178-2181 | 40 | Claystone: light to me grey, slightly to often v arenaceous, common v carbonaceous flecks, tr | ery silty in part grading ery fine partially altered | g to siltstone d feldspar gr | e, occasionally ver rains in part, trace | y finely |
| | 60 | Sandstone: off white to dominantly fine, suban calcareous cements, co green lithics, abundant and black lithics,trace moderately hard, very | gular to subrounded, m mmon to dominantly at off white partially alter black to brown carbona | oderately so oundant whi red feldspar | rted, moderate sil te argillaceous ma grains, trace oran | ica and atrix, common ge brown grey |
| | Fluor | The sandstone has trac fluorescence giving a v | e dull to rarely moderat ery dull to dull milky w | ely bright pi hite crush c | inpoint very pale yout, trace residue. | ellowish white |
| 2181-2184 | 20 | Claystone: light to me grey, slightly to often v arenaceous, common v carbonaceous flecks, tra | ery silty in part grading ery fine partially altered | g to siltstone 1 feldspar gr | , occasionally ver ains in part, trace | y finely |
| | 80 | Sandstone: off white to dominantly fine, suban calcareous cements, co green lithics, abundant and black lithics,trace l moderately hard, very p | gular to subrounded, m mmon to dominantly at off white partially alter black to brown carbona | oderately so oundant whit red feldspar | rted, moderate sil te argillaceous ma grains, trace oran | ica and atrix, common ge brown grey |
| | Fluor | The sandstone has 5% fluorescence giving a v | dull to rarely moderate ery dull to dull milky w | ly bright pin hite crush c | point very pale ye ut, trace residue. | llowish white |
| 2184-2187 | 70 | Claystone: light to me grey, slightly to often v arenaceous, common v carbonaceous flecks, tra | ery silty in part grading ery fine partially altered | g to siltstone I feldspar gr | , occasionally ver ains in part, trace | y finely |

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| | Interval (m) | % | Description | PAGE: | 2 |
|---|--------------|-------|--|---|--------|
| | | 30 | Sandstone: off white to light grey to light greenish grey, very fine to oc dominantly fine, subangular to subrounded, moderately sorted, moderate calcareous cements, common to dominantly abundant white argillaceou green lithics, abundant off white partially altered feldspar grains, trace and black lithics,trace black to brown carbonaceous detritus, rare pyrite moderately hard, very poor visual porosity, no oil fluorescence. | e silica and s matrix, com prange brown | mon |
| | 2187-2190 | 80 | Claystone: off white to medium brown grey, light to medium green grey grey, slightly to often very silty, occasionally very finely to finely arenae fine partially altered feldspar grains in part, trace brown to black carbor micromica, firm to moderately hard, subfissile. | eous, common | n very |
| | | 20 | Sandstone: off white to light grey to light greenish grey, very fine to oc dominantly fine, subangular to subrounded, moderately sorted, moderate calcareous cements, common to dominantly abundant white argillaceous green lithics, abundant off white partially altered feldspar grains, trace of and black lithics, trace black to brown carbonaceous detritus, rare pyrite, moderately hard, very poor visual porosity, no oil fluorescence. | e silica and s matrix, comp orange brown | mon |
| | 2190-2196 | 90 | Claystone: off white to medium brown grey, light to medium green grey grey, slightly to often very silty, occasionally very finely to finely arenace fine partially altered feldspar grains in part, trace brown to black carbon micromica, firm to moderately hard, subfissile. | eous, commor | n very |
| | | 10 | Sandstone: off white to light grey to light greenish grey, very fine to do subangular to subrounded, moderately sorted, moderate silica and calcar common to dominantly abundant white argillaceous matrix, common gr abundant off white partially altered feldspar grains, trace orange brown lithics, trace black to brown carbonaceous detritus, rare pyrite, friable to very poor visual porosity, no oil fluorescence. | eous cements, een lithics, grey and black | , c |
|) | 2196-2199 | 100 | Claystone: off white to medium brown grey, light to medium green grey grey, slightly to often very silty, occasionally very finely to finely arenac fine partially altered feldspar grains in part, trace brown to black carbon micromica, firm to moderately hard, subfissile. | eous, common | n very |
| | | Tr | Sandstone: off white to light grey to light greenish grey, very fine to dot subangular to subrounded, moderately sorted, moderate silica and calcar common to dominantly abundant white argillaceous matrix, common gra abundant off white partially altered feldspar grains, trace orange brown lithics, trace black to brown carbonaceous detritus, rare pyrite, friable to very poor visual porosity, no oil fluorescence. | eous cements, een lithics, grey and black | c |
| | 2199-2202 | 70 | Claystone: off white to medium brown grey, light to medium green grey grey, slightly to often very silty, occasionally very finely to finely arenacc fine partially altered feldspar grains in part, trace brown to black carbon micromica, firm to moderately hard, subfissile. | eous, common | very |
| | | 30 | Sandstone: off white to light grey to light greenish grey, very fine to me fine, subangular to subrounded, moderately sorted, moderate silica ceme calcareous cement, common to dominantly abundant white argillaceous a green lithics, abundant off white partially altered feldspar grains, trace o and black lithics, trace black to brown carbonaceous detritus, rare pyrite, moderately hard, very poor visual porosity. | nt, strong matrix, comme range brown g | on |
| ſ | | Fluor | The sandstone has 5% dull to rarely moderately bright pinpoint very pale fluorescence giving a very dull to dull milky white crush cut, trace residu | e yellowish wh | nite |
| | 2202-2205 | 70 | Claystone: off white to medium brown grey, light to medium green grey grey, slightly to often very silty, occasionally very finely to finely arenace fine partially altered feldspar grains in part, trace brown to black carbona micromica, firm to moderately hard, subfissile. | , light to medi ous, common | very |

| Interval (m) | % | Description PAGE: | 3 |
|--------------|-------|--|----------------|
| | 30 | Sandstone: off white to light grey to light greenish grey, very fine to medium, domi fine, subangular to subrounded, moderately sorted, moderate silica cement, strong calcareous cement, common to dominantly abundant white argillaceous matrix, con green lithics, abundant off white partially altered feldspar grains, trace orange brow and black lithics,trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity, no oil fluorescence. | ımon |
| 2205-2208 | 80 | Claystone: off white to medium brown grey, light to medium green grey, light to m grey, slightly to often very silty, occasionally very finely to finely arenaceous, comm fine partially altered feldspar grains in part, trace brown to black carbonaceous fleck micromica, firm to moderately hard, subfissile. | on ve |
| | 20 | Sandstone: off white to light grey to light greenish grey, very fine to medium, domi fine, subangular to subrounded, moderately sorted, moderate silica cement, strong calcareous cement, common to dominantly abundant white argillaceous matrix, com green lithics, abundant off white partially altered feldspar grains, trace orange brown and black lithics,trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity, no oil fluorescence. | mon |
| 2208-2211 | 70 | Claystone: off white to medium brown grey, light to medium green grey, light to medium grey, slightly to often very silty, occasionally very finely to finely arenaceous, commo fine partially altered feldspar grains in part, trace brown to black carbonaceous fleck micromica, firm to moderately hard, subfissile. | on ve |
| | 30 | Sandstone: off white to light grey to light greenish grey, very fine to medium, domin fine, subangular to subrounded, moderately sorted, moderate silica cement, strong calcareous cement, common to dominantly abundant white argillaceous matrix, comm green lithics, abundant off white partially altered feldspar grains, trace orange brown and black lithics,trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity, no oil fluorescence. | mon |
| 2211-2217 | 60 | Claystone: off white to medium brown grey, light to medium green grey, light to me grey, slightly to often very silty, occasionally very finely to finely arenaceous, commo fine partially altered feldspar grains in part, trace brown to black carbonaceous flecks micromica, firm to moderately hard, subfissile. | n ver |
| | 40 | Sandstone: off white to light grey to light greenish grey, very fine to medium, domin fine, subangular to subrounded, moderately sorted, moderate silica cement, strong calcareous cement, common to dominantly abundant white argillaceous matrix, comr green lithics, abundant off white partially altered feldspar grains, trace orange brown and black lithics,trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity. | non |
| | Fluor | The sandstone has trace dull pinpoint very pale yellowish white fluorescence giving a dull milky white crush cut, trace residue. | very |
| 2217-2220 | 40 | Claystone: off white to medium brown grey, light to medium green grey, light to medium grey, slightly to often very silty, occasionally very finely to finely arenaceous, common fine partially altered feldspar grains in part, trace brown to black carbonaceous flecks, micromica, firm to moderately hard, subfissile. | n ver |
| | 60 | Sandstone: off white to light grey to light greenish grey, very fine to medium, domination fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cert common to abundant white argillaceous matrix, abundant very fine to occasionally moder white partially altered feldspar grains, common green lithics, trace orange brown as and black lithics, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity. | nents ediun |
| | Fluor | The sandstone has 5% dull to rarely moderately bright pinpoint very pale yellowish w fluorescence giving a very dull to dull milky white crush cut, trace residue. | hite |
| 2220-2223 | 70 | Claystone: off white to medium brown grey, light to medium green grey, light to med grey, slightly to often very silty, occasionally very finely to finely arenaceous, common fine partially altered feldspar grains in part, trace brown to black carbonaceous flecks, micromica, firm to moderately hard, subfissile. | ı very |

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| Interval (m) | % | Description PAGE: 4 |
|--------------|----|--|
| | 30 | Sandstone: off white to light grey to light greenish grey, very fine to medium, dominant fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cemer common to abundant white argillaceous matrix, abundant very fine to occasionally medi off white partially altered feldspar grains, common green lithics, trace orange brown gre and black lithics, trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity, no oil fluorescence. |
| 2223-2232 | 80 | Claystone: off white to medium brown grey, light to medium green grey, light to mediu grey, slightly to often very silty, occasionally very finely to finely arenaceous, common v fine partially altered feldspar grains in part, trace brown to black carbonaceous flecks, tr micromica, firm to moderately hard, subfissile. |
| | 20 | Sandstone: off white to light grey to light greenish grey, very fine to medium, dominant fine, subangular to subrounded, moderately sorted, moderate silica and calcareous cemer common to abundant white argillaceous matrix, abundant very fine to occasionally medi off white partially altered feldspar grains, common green lithics, trace orange brown gre and black lithics,trace black to brown carbonaceous detritus, rare pyrite, friable to moderately hard, very poor visual porosity, no oil fluorescence. |
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(AJ/GFE:F53)

| CULTUS PI | ETRO | LEUM N.L. | | | | APP | ENDIX |
|--------------------------|--------|---|---|--|--|--|--|
| | | 0 | CUTTING | S DE | ESCRI | PTI | ON |
| WELL NAME: GEOLOGIST: | | unbar East-1 ave Horner | | DATE: PAGE: | 30 May, 1 1 | 997 | |
| Interval (m) | % | Description | | | | | |
| For geological repo | ort-20 | | | | | | |
| 2232-2235 | 90 | Claystone: off white to grey, slightly to often ve fine partially altered felo micromica, firm to mod | ery silty, occasionally dspar grains in part, th | very finely t race brown t | o finely arenace | eous, cor | nmon very |
| | 10 | Sandstone: off white to fine, subangular to subro common to abundant wh off white partially altere and black lithics, trace bl moderately hard, very po | ounded, moderately so hite argillaceous matri d feldspar grains, com lack to brown carbona | orted, moder ix, abundant nmon green aceous detrit | ate silica and ca very fine to occ lithics, trace or us, rare pyrite, t | alcareou casional ange bro | s cements, ly medium own grey |
| 2235-2238 | 80 | Claystone: off white to a grey, slightly to often ve fine partially altered feld micromica, firm to mode | ry silty, occasionally v Ispar grains in part, tr | very finely to ace brown to | o finely arenace | ous, con | nmon very |
| | 20 | Sandstone: off white to dominantly fine, subang to occasionallly strong ca common to abundant wh feldspar grains, common black to brown carbonac very poor visual porosity | ular to subrounded, m alcareous cement, don uite argillaceous matri. a grey lithics, trace gre eous detritus, trace fin | oderately so ninantly mo x, common een brown o he brown mi | orted, moderate derate calcareou to abundant par range and black | silica ce 1s cemen tially al tithics, | ment, nil nt, tered trace fine |
| 2238-2241 | 60 | Claystone: off white to r medium greenish grey, s dispersed quartz and lith moderately to dominantly flecks and detritus, trace | lightly to very silty, or ic sand grains - in par y non calcareous, trace | ccasionally a rt grading to e to common | abundant very f very fine to fin n brown to blac | ine to fin le sandst k carbor | ne tone, naceous |
| | 40 | Sandstone: off white to l dominantly fine, subangu to occasionallly strong ca common to abundant whi feldspar grains, common black to brown carbonace very poor visual porosity, | alar to subrounded, mo alcareous cement, dom ite argillaceous matrix grey lithics, trace gre cous detritus, trace fin | oderately some ninantly moderately some solution to the solution of the soluti | rted, moderate s derate calcareou o abundant par ange and black | silica cen is cemen tially alt lithics, | ment, nil nt, ered trace fine |
| 2241-2244 | 30 | Claystone: off white to n medium greenish grey, sl dispersed quartz and lithi moderately to dominantly flecks and detritus, trace | lightly to very silty, oc ic sand grains - in par y non calcareous, trace | ccasionally a t grading to e to commor | bundant very fi very fine to fin brown to black | ne to fin e sandst c carbon | ne one, aceous |
| | 70 | Sandstone: off white to li dominantly medium, suba nil to occasionallly strong common to abundant whi feldspar grains, common black to brown carbonace very poor visual porosity, | angular to subrounded g calcareous cement, d te argillaceous matrix grey lithics, trace gree ous detritus, trace fine | l, moderately lominantly r c, common to en brown or | y sorted, moder noderate calcar o abundant part ange and black | ate silica eous cen ially alte lithics, t | a cement, nent, ered trace fine |

| Interval (m) | % | Description PAGE: 2 |
|--------------|----|---|
| 2244-2247 | 20 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, slightly to very silty, occasionally abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 80 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly medium, subangular to subrounded, moderately sorted, moderate silica cemer nil to occasionally strong calcareous cement, dominantly moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fir black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil t very poor visual porosity, no oil fluorescence. |
| 2247-2250 | 40 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, slightly to very silty, occasionally abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 60 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly medium, subangular to subrounded, moderately sorted, moderate silica cemer nil to occasionallly strong calcareous cement, dominantly moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fir black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil t very poor visual porosity, no oil fluorescence. |
| 2250-2253 | 60 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, slightly to very silty, occasionally abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 40 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate silica cement, nil to occasionally strong calcareous cement, dominantly moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. |
| 2253-2259 | 60 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, slightly to very silty, occasional abundant very fine to fine disperse quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 40 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate silica cement, nil to occasionallly strong calcareous cement, dominantly moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. |
| 2259-2262 | 90 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, slightly to very silty, occasional abundant very fine to fine disperse quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |

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| | Interval (m) | % | Description | PAGE: | 3 | | |
|---|--------------|----|--|--|--|--|--|
| B | | 10 | dominantly fine to medium, subangular to subrounded, moderately sort cement, nil to occasionallly strong calcareous cement, dominantly mode cement, common to abundant white argillaceous matrix, common to abu altered feldspar grains, common grey lithics, trace green brown orange | off white to light grey, occasionally light green grey, very fine to medium, fine to medium, subangular to subrounded, moderately sorted, moderate silica to occasionallly strong calcareous cement, dominantly moderate calcareous mmon to abundant white argillaceous matrix, common to abundant partially spar grains, common grey lithics, trace green brown orange and black lithics, lack to brown carbonaceous detritus, trace fine brown mica flakes, moderately very poor visual porosity, no oil fluorescence. | | | |
| | 2262-2265 | 80 | Claystone: off white to medium grey, light to medium brown grey, occa medium greenish grey, slightly to very silty, occasional abundant very f quartz and lithic sand grains - in part grading to very fine to fine sandst dominantly non calcareous, trace to common brown to black carbonaced detritus, trace to common micromica, firm, moderately dispersive, subfi | ine to fine disp one, moderate ous flecks and | bersed | | |
| | | 20 | Sandstone: off white to light grey, occasionally light green grey, very fidominantly fine to medium, subangular to subrounded, moderately sorted cement, nil to occasionally strong calcareous cement, dominantly mode cement, common to abundant white argillaceous matrix, common to abundant white argillaceous matrix, common to abundant trace fine black to brown carbonaceous detritus, trace fine brown mica f hard, nil to very poor visual porosity, no oil fluorescence. | ed, moderate si rate calcareous indant partiall and black lithi | ilica s y cs, | | |
| | 2265-2271 | 50 | Claystone: off white to medium grey, light to medium brown grey, occa medium greenish grey, dominantly medium grey, slightly to very silty, overy fine to fine dispersed quartz and lithic sand grains - in part grading sandstone, moderately to dominantly non calcareous, trace to common b carbonaceous flecks and detritus, trace to common micromica, firm, mo subfissile. | occasional abur to very fine to rown to black | ndant o fine | | |
| | | 50 | Sandstone: off white to light grey, occasionally light green grey, very fi dominantly medium, subangular to subrounded, moderately sorted, mod nil to occasionallly strong calcareous cement, dominantly moderate calc common to abundant white argillaceous matrix, common to abundant pa feldspar grains, common grey lithics, trace green brown orange and blac black to brown carbonaceous detritus, trace fine brown mica flakes, mod very poor visual porosity, no oil fluorescence. | erate silica cer areous cement artially altered k lithics, trace | nent, , e fine | | |
| | 2271-2274 | 80 | Claystone: off white to medium grey, light to medium brown grey, occa medium greenish grey, dominantly medium grey, slightly to very silty, o very fine to fine dispersed quartz and lithic sand grains - in part grading sandstone, moderately to dominantly non calcareous, trace to common b carbonaceous flecks and detritus, trace to common micromica, firm, mod subfissile. | ccasional abur to very fine to rown to black | ndant o fine | | |
| | | 20 | Sandstone: off white to light grey, occasionally light green grey, very firmedium, dominantly fine, subangular to subrounded, moderately sorted, cement, nil to occasionallly strong calcareous cement, dominantly mode cement, common to abundant white argillaceous matrix, common to abundant altered feldspar grains, common grey lithics, trace green brown orange a trace fine black to brown carbonaceous detritus, trace fine brown mica fl hard, nil to very poor visual porosity, no oil fluorescence. | moderate silic rate calcareous ndant partially and black lithic | ca 5 7 5 5 5 5 5 5 | | |
| | 2274-2280 | 90 | Claystone: off white to medium grey, light to medium brown grey, occa medium greenish grey, dominantly medium grey, slightly to very silty, o very fine to fine dispersed quartz and lithic sand grains - in part grading sandstone, moderately to dominantly non calcareous, trace to common b carbonaceous flecks and detritus, trace to common micromica, firm, mod subfissile. | ccasional abur to very fine to rown to black | ndant fine | | |
| B | | 10 | Sandstone: off white to light grey, occasionally light green grey, very fin medium, dominantly fine, subangular to subrounded, moderately sorted, cement, nil to occasionallly strong calcareous cement, dominantly moder cement, common to abundant white argillaceous matrix, common to abu altered feldspar grains, common grey lithics, trace green brown orange a trace fine black to brown carbonaceous detritus, trace fine brown mica fil hard, nil to very poor visual porosity, no oil fluorescence. | moderate silic rate calcareous ndant partially nd black lithic | a ; v ;s, | | |

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| Interval (m) | % | Description PAGE: 4 |
|--------------|----|--|
| 2280-2283 | 80 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, slightly to very silty, occasional abundan very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 20 | Sandstone: off white to light grey, occasionally light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, nil to occasionally moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. |
| 2283-2286 | 70 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, dark grey and very carbonaceous in part, slightly to very silty, occasional abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 30 | Sandstone: off white to light grey, occasionally light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, nil to occasionally moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. |
| 2286-2289 | 40 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, dark grey and very carbonaceous in part, slightly to very silty, occasional abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 60 | Sandstone: off white to light grey, occasionally light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, strong silica cement, nil to occasionally trace calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. |
| 2289-2292 | 30 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, slightly to very silty, occasional abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 70 | Sandstone: off white to light grey, occasionally light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, strong silica cement, nil to occasionallly trace calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. |
| 2292-2295 | 20 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, slightly to very silty, occasional abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |

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| Interval (m) | % | Description | PAGE: | 5 |
|--------------|----|--|---|------------|
| | 80 | Sandstone: off white to light grey, occasionally light green grey, very fine dominantly fine to medium, subangular to subrounded, moderately sorted, cement, nil to occasionallly trace calcareous cement, common to abundant argillaceous matrix, common to abundant partially altered feldspar grains, lithics, trace green brown orange and black lithics, trace fine black to brow detritus, trace fine brown mica flakes, moderately hard, nil to very poor vis oil fluorescence. | strong silica white common gro n carbonace | ey |
| 2295-2298 | 30 | Claystone: off white to medium grey, light to medium brown grey, occasio medium greenish grey, dominantly medium grey, slightly to very silty, occavery fine to fine dispersed quartz and lithic sand grains - in part grading to sandstone, moderately to dominantly non calcareous, trace to common brow carbonaceous flecks and detritus, trace to common micromica, firm, moder subfissile. | sional abun very fine to vn to black | daı fin |
| | 70 | Sandstone: off white to light grey, occasionally light green grey, very fine t dominantly medium, subangular to subrounded, moderately sorted, strong s to occasionally moderate calcareous cement, common to abundant white ar matrix, common to abundant partially altered feldspar grains, common grey green brown orange and black lithics, common black to brown carbonaceous fine brown mica flakes, moderately hard, nil to very poor visual porosity, no fluorescence. | ilica cement gillaceous lithics, trac s detritus, tr | e |
| 2298-2304 | 20 | Claystone: off white to medium grey, light to medium brown grey, occasion medium greenish grey, dominantly medium grey, slightly to very silty, occasion very fine to fine dispersed quartz and lithic sand grains - in part grading to sandstone, moderately to dominantly non calcareous, trace to common brow carbonaceous flecks and detritus, trace to common micromica, firm, modera subfissile. | sional abund very fine to n to black | lar fin |
| | 80 | Sandstone: off white to light grey, occasionally light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, moderate moderate calcareous cement, common to abundant white argillaceous matrix abundant partially altered feldspar grains, common grey lithics, trace green and black lithics, trace fine black to brown carbonaceous detritus, trace fine flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. | e silica cema , common t brown orang | o ze |
| 2304-2307 | 40 | Claystone: off white to medium grey, light to medium brown grey, occasion medium greenish grey, dominantly medium grey, slightly to very silty, occas very fine to fine dispersed quartz and lithic sand grains - in part grading to v sandstone, moderately to dominantly non calcareous, trace to common brown carbonaceous flecks and detritus, trace to common micromica, firm, moderat subfissile. | ional abund ery fine to f i to black | ine |
| | 60 | Sandstone: off white to light grey, occasionally light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, moderate moderate calcareous cement, common to abundant white argillaceous matrix abundant partially altered feldspar grains, common grey lithics, trace green b and black lithics, trace fine black to brown carbonaceous detritus, trace fine b flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. | silica ceme , common to rown orang |) |
| 2307-2310 | | Claystone: off white to medium grey, light to medium brown grey, occasional medium greenish grey, dominantly medium grey, slightly to very silty, occasional very fine to fine dispersed quartz and lithic sand grains - in part grading to very sandstone, moderately to dominantly non calcareous, trace to common brown carbonaceous flecks and detritus, trace to common micromica, firm, moderate subfissile. | onal abunda ery fine to fi to black | ne |
| | | Sandstone: off white to light grey, occasionally light green grey, very fine to dominantly medium, subangular to subrounded, moderately sorted, moderate moderate calcareous cement, common to abundant white argillaceous matrix, abundant partially altered feldspar grains, common grey lithics, trace green b and black lithics, trace fine black to brown carbonaceous detritus, trace fine b flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. | silica cemen common to rown orange | |

| Interval (m) | % | Description PAGE: | 6 |
|--------------|----|--|-----------------|
| 2310-2313 | 50 | Claystone: off white to medium grey, light to medium brown grey, occasionally light t medium greenish grey, dominantly medium grey, slightly to very silty, occasional abur very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately disper- subfissile. | ndant o fine |
| | 50 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate sil cement, weak calcareous cement, common to abundant white argillaceous matrix, commo to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. | mon |
| 2313-2316 | 40 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, slightly to very silty, occasional abun very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispers subfissile. | idant fine |
| | 60 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly fine to medium, subangular to subrounded, moderately sorted, moderate sili cement, moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, trace fi brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence | ine |
| 2316-2319 | 70 | Claystone: off white to medium grey, light to medium brown grey, occasionally light to medium greenish grey, dominantly medium grey, slightly to very silty, occasional abund very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine to sandstone, moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersis subfissile. | dant fine |
| | 30 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, to occasionally moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, tr fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. | e |
| 2319-2322 | 80 | Claystone: off white to medium grey, light to medium brown grey, light to medium gree grey, dominantly medium green grey, slightly to very silty, occasional abundant very fin fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandstor moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. | ie to ne, |
| | 20 | Sandstone: off white to light grey, occasionally light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, r to occasionally moderate calcareous cement, common to abundant white argillaceous matrix, common to abundant partially altered feldspar grains, common grey lithics, trace green brown orange and black lithics, trace fine black to brown carbonaceous detritus, tra- fine brown mica flakes, moderately hard, nil to very poor visual porosity, no oil fluorescence. | e |
| 2322-2325 | 70 | Claystone: off white to medium grey, light to medium brown grey, light to medium gree grey, dominantly medium green grey, slightly to very silty, occasional abundant very fine fine dispersed quartz and lithic sand grains - in part grading to very fine to fine sandston moderately to dominantly non calcareous, trace to common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. | e to ne, |

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| Interval (m) | % | Description | PAGE: | 7 |
|--------------|-----|---|---|--------------------|
| | 30 | Sandstone: off white to light grey, occasionally light green grey, very dominantly fine, subangular to subrounded, moderately sorted, moder to weak calcareous cement, common to abundant white argillaceous r abundant partially altered feldspar grains, common grey lithics, trace and black lithics, trace fine black to brown carbonaceous detritus, trace flakes, moderately hard, nil to very poor visual porosity, no oil fluores | rate silica cement natrix, common t green brown ora ce fine brown mic | , ni o nge |
| 2325-2331 | 40 | Claystone: off white to medium grey, light to medium brown grey, ligrey, dominantly medium green grey, slightly to very silty, occasional fine dispersed quartz and lithic sand grains - in part grading to very f moderately to dominantly non calcareous, trace to common brown to flecks and detritus, trace to common micromica, firm, moderately dispersed to the second | l abundant very fi ine to fine sandst black carbonaceo | ne one us |
| | 60 | Sandstone: off white to light grey, occasionally light green grey, very dominantly fine, subangular to subrounded, moderately sorted, moder to weak calcareous cement, common to abundant white argillaceous n abundant partially altered feldspar grains, common red and grey lithic orange and black lithics, common fine black to brown carbonaceous d brown mica flakes, moderately hard, nil to very poor visual porosity, n | ate silica cement, natrix, common to cs, trace green bro etritus, trace fine | o own |
| 2331-2334 | 20 | Claystone: off white to medium grey, light to medium brown grey, lig grey, dominantly medium green grey, slightly to very silty, occasional fine dispersed quartz and lithic sand grains - in part grading to very fi moderately to dominantly non calcareous, trace to common brown to b flecks and detritus, trace to common micromica, firm, moderately disp | abundant very fine to fine sandsto black carbonaceou | ne (one, 15 |
| | 80 | Sandstone: off white to light grey, occasionally light green grey, very fine, subangular to subrounded, moderately sorted, moderate silica cer calcareous cement, common to abundant white argillaceous matrix, cc partially altered feldspar grains, common red and grey lithics, trace gr and black lithics, common fine black to brown carbonaceous detritus, flakes, moderately hard, nil to very poor visual porosity, no oil fluores | nent, nil to weak ommon to abunda reen brown orang trace fine brown | nt e |
| 2334-2337 | 20 | Claystone: off white to medium grey, light to medium brown grey, lig grey, dominantly medium green grey, slightly to very silty, occasional fine dispersed quartz and lithic sand grains - in part grading to very fi moderately to dominantly non calcareous, trace to common brown to b flecks and detritus, trace to common micromica, firm, moderately disp | abundant very fin ne to fine sandsto plack carbonaceou | ne t ne, is |
| | 80 | Sandstone: off white to light green grey, very fine to occasionally meet fine, subangular to subrounded, moderately sorted, moderate silica cen calcareous cement, common to abundant white argillaceous matrix, ab altered feldspar grains, common grey and green lithics, trace red brow trace fine to medium brown mica flakes, trace to common black to occ carbonaceous detritus, friable to moderately hard, nil to very poor visu fluorescence. | nent, trace weak undant partially n and black lithic asionally brown | s, |
| 2337-2344 | 100 | Sandstone: off white to medium green, very fine to medium, dominan subangular to subrounded, moderately sorted, moderate silica cement, calcareous cement, common to abundant white to medium green argill abundant partially altered feldspar grains, common grey and green lith and black lithics, trace fine to medium brown mica flakes, trace to com occasionally brown carbonaceous detritus, friable to moderately hard, n visual porosity, no oil fluorescence. | trace weak aceous matrix, ics, trace red bro- umon black to | wn |
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CULTUS PETROLEUM N.L.

Dunbar East-1

Dave Horner

APPENDIX

CUTTINGS DESCRIPTION

WELL NAME: GEOLOGIST:

*

DATE:

30 May, 1997

PAGE:

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| 2344-2346 | 60 | Claystone: off white to medium green grey, light to medium brown grey, dominantly light to medium brown grey, slightly to very silty, occasional abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine sandstone, non to slightly calcareous, common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. Abundant cavings from Belfast Mudstone after DST-1. |
|-----------|----|--|
| | 40 | Sandstone: off white to light brown grey to light green, very fine to occasionally medium, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, trace weak calcareous cement, common to abundant white argillaceous matrix, abundant partially altered feldspar grains, common grey and green lithics, trace red brown and black lithics, trace fine to medium brown mica flakes, common black to occasionally brown carbonaceous detritus, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2346-2349 | 50 | Claystone: off white to medium green grey, light to medium brown grey, dominantly light to medium brown grey, slightly to very silty, occasional abundant very fine to fine dispersed quartz and lithic sand grains - in part grading to very fine sandstone, non to slightly calcareous, common brown to black carbonaceous flecks and detritus, trace to common micromica, firm, moderately dispersive, subfissile. |
| | 50 | Sandstone: off white to light brown grey to light green, very fine to occasionally medium, dominantly very fine, subangular to subrounded, moderately sorted, moderate silica cement, trace weak calcareous cement, common to abundant white argillaceous matrix, abundant partially altered feldspar grains, common grey and green lithics, trace red brown and black lithics, trace fine to medium brown mica flakes, common black to occasionally brown carbonaceous detritus, friable to moderately hard, no visual porosity, no oil fluorescence. |
| 2349-2352 | 60 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 40 | Sandstone: light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, common yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2352-2355 | 50 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |

| Interval (m) | % | Description PAGE: - |
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| | 50 | Sandstone: light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, comm yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2355-2361 | 60 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 40 | Sandstone: light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, commy yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2361-2364 | 70 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 30 | Sandstone: light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, commo yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2364-2370 | 50 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 50 | Sandstone: light green grey, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, commo yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2370-2379 | 70 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 30 | Sandstone: light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics common yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2379-2391 | 80 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |

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| Interval (m) | % | Description PAGE: 3 |
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| | 20 | Sandstone: light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, common yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2391-2400 | 70 | Claystone: off white to medium green grey, dominantly light green grey, moderately to very silty, abundant dispersed very fine to occasionally medium quartz and lithic sand grains often grading to argillaceous sandstone, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 30 | Sandstone: light green grey, very fine to occasionally medium, dominantly fine, subangular to subrounded, moderately sorted, weak to moderate silica cement, trace weak calcareous cement, rare moderate calcareous cement, abundant light green argillaceous matrix - matrix supported, abundant off white partially altered feldspars and green lithics, common yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2400-2406 | 70 | Claystone: off white to medium green grey, dominantly light green grey, light to medium brown, moderately to very silty, common dispersed very fine to occasionally medium quar and lithic sand grains, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 30 | Sandstone: light green grey, occasionally medium green, occasionally light brown, very fine to medium, dominantly medium, subangular to subrounded, moderately sorted, moderate silica cement, weak to moderate calcareous cement, common to abundant off white to light green argillaceous matrix, abundant off white partially altered feldspars and green lithics, common yellow-orange-red-brown-black lithics, trace pink to red translucen garnet, trace to common black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2406-2412 | 80 | Claystone: off white to medium green grey, dominantly light green grey, light to medium brown, moderately to very silty, abundant dispersed very fine to fine quartz and lithic sand grains, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile |
| | 20 | Sandstone: light green grey, occasionally light brown, very fine to medium, dominantly fine, subangular to subrounded, moderately sorted, moderate silica cement, weak to moderate calcareous cement, common to abundant off white to light green argillaceous matrix, abundant off white partially altered feldspars and green lithics, common yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace to common blac carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2412-2418 | 90 | Claystone: off white to medium green grey, light to medium brown, dominantly light brown, moderately to very silty, trace to common dispersed very fine to occasionally medium quartz and lithic sand grains, trace black carbonaceous detritus, trace micromica, firm, very dispersive, subfissile. |
| | 10 | Sandstone: light green grey, occasionally light brown, very fine to medium, dominantly very fine to fine, subangular to subrounded, moderately sorted, moderate silica cement, weak to moderate calcareous cement, common to abundant off white to light green argillaceous matrix, abundant off white partially altered feldspars and green lithics, common yellow-orange-red-brown-black lithics, trace pink to red translucent garnet, trace to common black carbonaceous detritus, trace brown mica flakes, friable, no visual porosity, no oil fluorescence. |
| 2418-2419 TD | 90 | Claystone: off white to medium green grey, light to medium brown, medium grey, dominantly light brown, moderately to very silty, trace to common dispersed very fine to occasionally medium quartz and lithic sand grains, trace black carbonaceous detritus, trac micromica, firm, very dispersive, subfissile. |

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| | 10 | Sandstone: light green grey, occasionally light brown, very fine to medium, don fine to medium, subangular to subrounded, moderately sorted, moderate silica ce weak to moderate calcareous cement, common to abundant off white to light gree argillaceous matrix, abundant off white partially altered feldspars and green lith common yellow-orange-red-brown-black lithics, trace pink to red translucent gas to common black carbonaceous detritus, trace brown mica flakes, friable, no visu porosity, no oil fluorescence. | ment en cs, net, t | , |
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PART - 2

DRILLING

1.0 Drilling Engineering

| 1.1 | General | Inform | nation | |
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Operator Personnel on Site

Drilling Contractor Drilling Fluids Cementing Directional Drilling Mud Logging Coring & Testing Wireline Logging Drilling Supervisor Engineer/Night Supervisor Geologist

Oil Drilling and Exploration Pty Ltd (O.D.&E.) Rig #30 Independent Drilling Fluid Services Pty Ltd Halliburton Halliburton Australian DST BPB Logging

1.2 Drilling Summary

Dunbar East-1 was spudded at 12:00 hrs on 26th March 1996 in PPL-1 Onshore Otway Basin with O.D. & E. Rig #30. The well was drilled vertically to 1620m TVD and directionally to a total measured depth of 2419m RT. The Waarre and Heathfield objectives were found to be uncommercial, the well was subsequently plugged and abandoned and the rig released on 21st April 1996.

<u>12¼" Hole</u>

A $12\frac{1}{4}$ " Tricone Bit was used with Gel Spud Mud to drill the surface hole to 764m. The Port Campbell Limestone was intersected trouble free. After the Gellibrand Marl was penetrated, considerable time was lost cleaning out mud rings due to insufficient dilution of the drilling fluid. The marl was highly dispersive causing excess viscosity and subsequent blocking of the flowline, possum belly and conductor. At casing point, a wiper trip was run with minimal drag. $9^{5}/8"$ surface casing was run and landed at 755m, and cemented with 500 sx lead slurry and 150 sx tail slurry. Casing was successfully tested to 3000 psi. The annulus dropped requiring a cement top up job. The BOP's were nippled up and pressure tested prior to drilling out.

8¹/₂" Production Hole

An 8¹/₂" Rock Bit was used to drill out the float collar, cement, float shoe and 3m of new formation. A formation integrity test was conducted with 9.0 ppg drilling fluid to 13.5 ppg equivalent.

Drilling continued with a packed hole assembly and 1% KCl Polymer drilling fluid. Tight hole was experienced during connections across Paaratte sands, probably due to filter cake build up. High torque was experienced and the bit was subsequently pulled at 1110m.

Drilled ahead to 1529m in the Waarre Fm where samples were circulated. Drilled to 1537m and the bit was pulled due to slow rate of penetration. Tight hole was experienced across the Belfast, Nullawarre and Skull Creek Formations. The caliper log showed the hole to be in or near gauge with the Belfast 9-10 in. average diameter.

While running in the hole with a new bit the drawworks broke down resulting in 23½ hours downtime. Drilling subsequently continued to 1560m and a wiper trip was run prior to DST#1. The

test was postponed and wireline logs were run as follows; MSFL-DLL-GR-CAL Evaluation of logs resulted in the cancellation of any further evaluation of the Waarre Fm.

An MWD directional drilling assembly was run with a PDC bit, but due to poor hydraulics the bit was pulled balled up. A tricone bit was run with MWD and built angle to 22 deg. by 1910m. At 1958m a wiper trip was run with the hole in good condition. Drilling continued with a combination of sliding and rotating to drop angle back to vertical. See Halliburton Report for full details of directional surveys.

A bit trip was carried out at 2176m due to hours on the bit. 50k lbs overpull was experienced in the build section at 1897, 1755 and 1613-1504m. While running in the hole with a new bit and MWD, the drawworks again broke down with the bit at 2150m. The main shaft was found to have failed resulting in 62 hours lost time.

Drilling continued dropping angle until the Heathfield was intersected. By 2344m hole angle was brought back to approximately 8 deg and a wiper trip was run prior to DST#1 as follows:

DST #1 Heathfield 2324-2344 Conventional off bottom test NFTS, GTS RTSTM Well dead after 20 mins flow period P* 3313 psi, Formation Pressure 8.4 ppg EMW

After the test, drilling continued with a slick assembly and Dynadrill PDM to 2419m MD total depth. Hole conditions were good during a wiper trip to 1600m. Wireline logs were subsequently run as follows:

Logging Run #1 MLL-DLL-BHC-SP-GR-CAL #2 DRHO-NPHI-RHOB-GR-CAL #3 RFT-GR #4 Check Shot Survey

After logging ran in hole open ended to set plug #1; 1550-1490m. Tagged plug #1 with 15,000 lbs at 1491m. Pulled out of the hole to 750m and conducted an injectivity test to 970 psi at 2 bpm, resulting in a leak off pressure of 16.7 ppg equivalent. The injectivity test was run to measure the feasibility of using the Paaratte Sandstone for disposal of drilling fluid from future wells. Ran plug #2 785-725m and displaced inhibitive mud into the surface casing. Tagged plug #2 at 729m and laid down remaining drill pipe.

Laid down the kelly, swivel, nippled down the BOP's and released the rig on the 21st April 1996.

1.3 Drilling Fluid Summary

<u>12¹/4" Surface Hole</u>

A bentonite water based mud was used to drill the surface hole. 20 ppb gel spud mud was flocculated with lime to drill through the Port Campbell Limestone without problem. However upon entering the Gellibrand Marl, a highly dispersive formation, excess viscosity and subsequent down time was experienced due to mud rings. Insufficient dilution was the primary cause of excessive viscosities. In future wells, the hole should be displaced to water prior to intersecting the Marl, then allow the fluid to mud up with native clays and prehydrated gel while drilling to casing point.

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<u>81/2" Hole</u>

A 1% KCl Polymer fluid was used to successfully drill the 8½" production hole to total depth. PHPA at a minimum 0.5 ppb and 1% KCl provided the necessary inhibition. The lower KCl content was successful in stabilising the hole and minimising cost. It also provided a considerable salinity contrast between formation water and filtrate thereby improving log analysis.

With the use of linear motion shakers, mud weight was kept to a minimum with no problems. Yield point was maintained above 15 lbs/100 sqft with Drispac and PHPA for good hole cleaning. Some tight hole was evident due to filter cake across Paaratte sands however regular wiper and bit trips eliminated further problems. In the Belfast Mudstone, PHPA was quickly absorbed together with a rise in rheology due to the increase in reactive clay drilled solids. Increased chemical consumption was required to maintain stable mud properties.

Generally the drilling fluid performed well, as minimal hole related time was lost. The caliper log showed the hole to be in good condition with all formation evaluation attempted being successful.

This drilling fluid is recommended for future wells of this type in the area. The final mud cost was approximately \$30k resulting in a cost of \$12.40 per metre.

For an in depth discussion of the drilling fluid refer to the appendix.

1.4 Wellbore Pressure Summary

The Dunbar East - 1 well was drilled to a total depth of 2419m MD with no evidence of any overpressure. Mud weights used were in the range of 8.4 - 9.3 ppg with no kicks or major losses experienced.

Offset information has shown mud weight increases were necessary in the past due to overpressure in the Belfast Mudstone. This was not necessary at Dunbar East -1 as the mudstone was penetrated with 9.1 ppg without problems. The caliper log and cuttings description show no evidence of overpressure.

All pore pressures were assumed to be water gradient (8.34 ppg) or less and this was verified by drilling and evaluation data.

A formation integrity test was done below the surface casing shoe at 755m RT, with an equivalent mud weight of 13.5 ppg. An injectivity test was done prior to plugging and abandoning the well, with a subsequent leak off strength of 16.7 ppg below the shoe.

LOT, FIT and Pore Pressure Graphs are attached overleaf.

1.5 Recommendations

Offset wells have traditionally had problems as follows:

- Muds rings in surface hole
- Tight hole on the first 8¹/₂" bit trip across sands and shales
- Differential sticking across sands
- Failure to get logs to bottom at total depth.

The Gellibrand Marl was drilled with a gel mud which was not diluted adequately. Considerable time was subsequently lost due to mud rings. In future wells it is imperative that in order to optimize penetration rates, the marl must be drilled with a flocculated water system. Thereafter the system can be mudded up with gel additions. Expensive additives such as PAC or polyacrylamide are not necessary.

Tight hole on offset wells was possibly due to a combination of filter cake build up on sands, reactive clays, and doglegs due to pendulum assemblies. A good quality filter cake is required and can be best achieved with regular prehydrated gel additions.

The strategy at Dunbar East - 1 was to use packed hole assemblies throughout the vertical drilling section to eliminate doglegs, as shown on the BHA Summary. This was successful in reducing tight hole considerably, as well as providing good hole conditions for evaluation. All evaluation attempted was successful.

High torque was experienced in the $8\frac{1}{2}$ " top hole section with three stabilizers. This may have been due to the BHA in interbedded formations and/or lack of rotary power. An SCR problem was rectified on a subsequent well which improved the performance of the rotary, suggesting a cause of the problems at Dunbar East - 1. Nevertheless, due to the abrasive nature of the Dilwyn and Paaratte sands, it is recommended that future packed hole assemblies use roller reamers in place of stabilizers.

The drilling fluid density was kept as low as possible throughout to avoid differential sticking, with no problems encountered. Various drilling fluids were used in offset wells with varying degrees of success. A 1% KCl Polymer was used with good results, as it was thought that high KCl concentrations may be "drying out" the clays.

Bit hydraulics were optimized with flow rates over 400 gpm in $8\frac{1}{2}$ " hole. This provided good penetration rates and hole cleaning, with no adverse effects on hole conditions as seen by the caliper log. Bit performance is best shown in the Bit Summary.

1.6 Time Analysis

| 1.6.1 | Time Breakdown Database Activity Report |
|--------|---|
| 1.6.2 | Time Breakdown by Class / Operation Codes |
| 1.6.3 | Trouble Time Summary |
| 1.6.4 | Trouble Time Recommendations |
| 1.6.5 | Benchmark Analysis - Otway Basin |
| 1.6.6 | Total Depth versus Days Plot |
| 1.6.7 | ROP (on bottom) m/hr Plot |
| 1.6.8 | \$/m versus m/day Plot |
| 1.6.9 | Tripping hours |
| 1.6.10 | Logging Hours |
| 1.6.11 | Casing Cementing Hours |
| 1.6.12 | Nipple Up / Down Hours |
| 1.6.13 | Discussion and Recommendations |

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APPENDIX 2.

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(refer attachment to WCR)

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APPENDIX 3.

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DUNBAR EAST-1

LOG EVALUATION REPORT

BASIN OIL N.L.

APPENDIX-3 Dunbar East-1 Well Completion Report

DUNBAR EAST-1

LOG EVALUATION REPORT

-Conclusions

The main results arising after drilling Dunbar East-1 well are:

- 1. The Waarre Formation primary objective is water wet as indicated by RFT pressure data, log evaluation (Figures 1,2 and 3) and mud gas readings (Enclosure 1).
- 2. The Heathfield Sansdstone secondary objectice is tight as indicated by DST-1 results, log data and cutting descriptions (Figures 4 and 5).
- 3. Intra Eumeralla sandstones displayed gas shows of up to 4% total gas C1 to C5 with minor fluorescence in parts. However, cuttings descriptions, log data and RFT pressures indicated that they are tight or likely to produce at non commercial rates. At nearby Vaughan-1, equivalent sandstone flowed at a modest 100 MCFD. Cuttings descriptions suggested these sands to be of higher reservoir quality than those encountered at Dunbar East-1.

2- Discussion

Waarre Formation

The Waarre Formation was encountered between 1509.5 and 1595.5 mkb. Top porosity was encountered at 1517.5 mkb. The formation is 86 m thick and subunits A, B and C can be easily correlated with Dunbar-1 well nearby (Enclosure 2). Gas readings through the Waarre remained low averaging 1% total gas in the sands. Nearby gas wells recorded total gas of over 10% in this unit. Log evaluation indicates a water wet reservoir with minor residual gas saturations in Unit A. The RFT pressure plot confirms the log data. Two water trends were identified separated by an intervening claystone unit (Unit B).

Heathfiled Sandstone

The Heathfield Sandstone was intersected at 2329 mkb (app 2300 m TVD). It consisted of massive sandstone, fine to medium grained, predominantly subangular, with abundant argillaceous matrix, calcareous and silica cement, abundant feldspars, lithics and some mica and displayed very poor to tight visual porosity. Gas readings in this unit remained low at the top, but increased to more than 3% at around 2334 mkb. A Drill Stem Test was conducted over the interval 2323-2344 mkb recovering RHM and indicating tight formation (Figure 4). A well corrlation indicates that Dunbar East-1 intersected a sequence equivalent to the first of two massive sandstones encountered at Port Campbell-4.

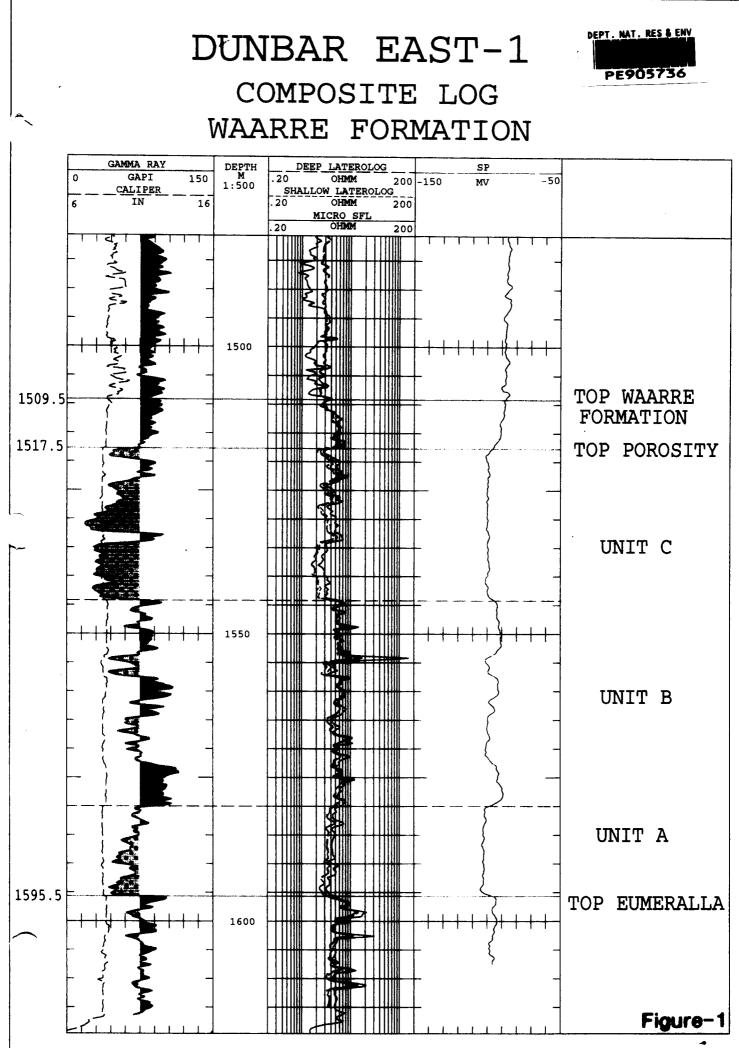
Intra Eumeralla

Between 1865 mkb and 2050 mkb and also between 2175 and 2300 mkb. Several sand packages displayed gas peaks consisting of C1 to C4 with traces of C5 in parts. The shallower interval displays better reservoir quality and can be correlated to intervals which flowed gas at Vaughan-1 and gas and oil at Port Campbell-4. At Dunbar East-1 the sandstones appeared to be tight from examination of cuttings samples. This was confirmed by the RFT pressure survey. Nevertheless, the sandstone at 1865 to 1895 mkb displays low travel times of 90 us/ft suggesting high porosity. Plots of porosity vs permeability indicate that a minimum of 19% porosity is required to achieve 1 mD pereability. The intra-Eumeralla unit at 1865mkb appears to satisfy this requirement, but the RFT tool failed to record any pressure.

This is an enclosure indicator page. The enclosure PE905736 is enclosed within the container PE900837 at this location in this document.

| The enclosure PE90 | 5736 has the following characteristics: |
|---|---|
| ITEM_BARCODE = | PE905736 |
| CONTAINER_BARCODE = | PE900837 |
| NAME = | Composite Log of Waarre Formation |
| BASIN = | OTWAY BASIN |
| PERMIT = | PP/L1 |
| TYPE = | WELL |
| SUBTYPE = | COMPOSITE_LOG |
| DESCRIPTION = | Composite Log of Waarre Formation(|
| | figure 1 of appendix 3 from WCR vol. 2) |
| | for Dunbar East-1 |
| REMARKS = | |
| $DATE_CREATED =$ | |
| | |
| DATE_RECEIVED = | |
| DATE_RECEIVED = W_NO = | W1150 |
| W_NO = | W1150 DUNBAR EAST-1 |
| W_NO = | |
| W_NO = WELL_NAME = CONTRACTOR = | |
| W_NO = WELL_NAME = CONTRACTOR = CLIENT_OP_CO = | DUNBAR EAST-1 |

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This is an enclosure indicator page. The enclosure PE905737 is enclosed within the container PE900837 at this location in this document.

The enclosure PE905737 has the following characteristics: ITEM_BARCODE = PE905737 CONTAINER_BARCODE = PE900837 NAME = Log Evaluation for Waarre Formation BASIN = OTWAY BASIN PERMIT = PP/L1TYPE = WELLSUBTYPE = WELL_LOG DESCRIPTION = Log Evaluation of Waarre Formation(figure 2 of appendix 3 from WCR vol. 2) for Dunbar East-1 REMARKS = DATE_CREATED = DATE_RECEIVED = $W_NO = W1150$ WELL_NAME = DUNBAR EAST-1 CONTRACTOR =CLIENT_OP_CO = CULTUS PETROLEUM NL. (Inserted by DNRE - Vic Govt Mines Dept)

DUNBAR EAST-1 LOG EVALUATION WAARRE FORMATION

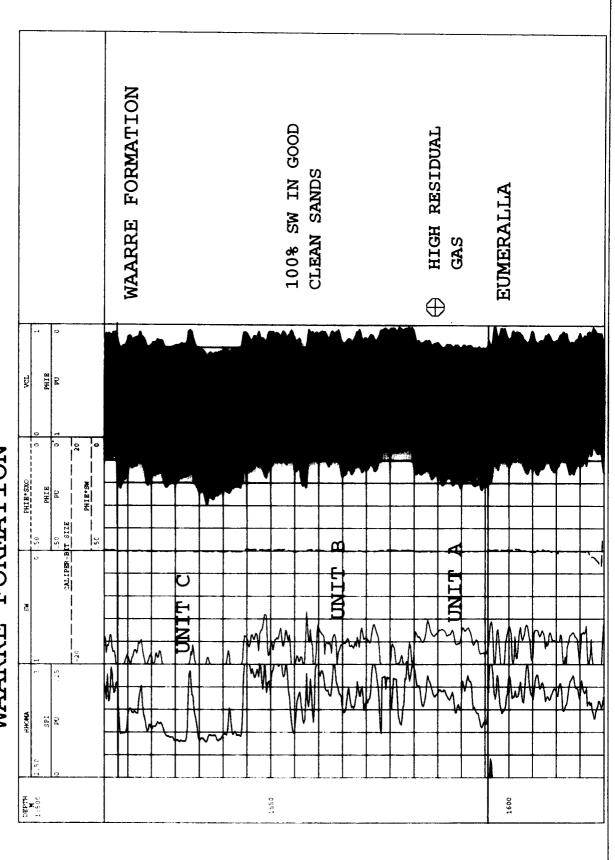


Figure-2

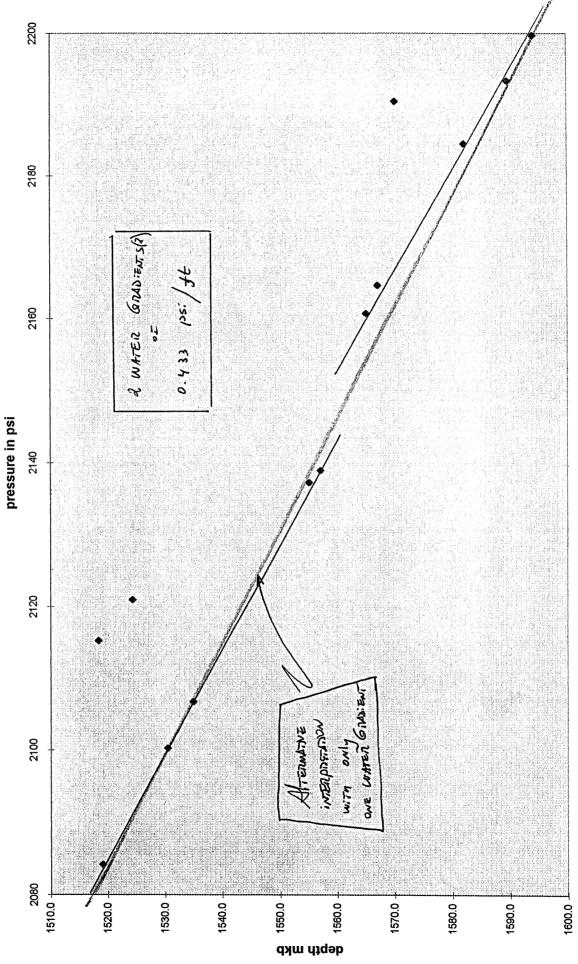
DEPT. NAT. RES & ENV

PE905737



DUNBAR EAST-1 RFT PRESSURE PLOT

FORMATION シバチチン



This is an enclosure indicator page. The enclosure PE905738 is enclosed within the container PE900837 at this location in this document.

| The enclosure PE90 | 5738 has the following characteristics: |
|---------------------|---|
| ITEM_BARCODE = | PE905738 |
| CONTAINER_BARCODE = | PE900837 |
| NAME = | Composite Log Display of Haethfeild |
| | Sandstone |
| BASIN = | OTWAY BASIN |
| PERMIT = | PP/L1 |
| TYPE = | WELL |
| SUBTYPE = | COMPOSITE_LOG |
| DESCRIPTION = | Composite Log Display of Heathfeild |
| | Sandstone (figure 4 of appendix 3 from |
| | WCR vol. 2) for Dunbar East-1 |
| REMARKS = | |
| DATE_CREATED = | |
| DATE_RECEIVED = | |
| W_NO = | W1150 |
| WELL_NAME = | DUNBAR EAST-1 |
| CONTRACTOR = | |
| CLIENT_OP_CO = | CULTUS PETROLEUM NL. |
| | |
| (Inserted by DNRE - | Vic Govt Mines Dept) |

DUNBAR EAST-1 COMPOSITE LOG DISPLAY HEATHFIELD SANDSTONE

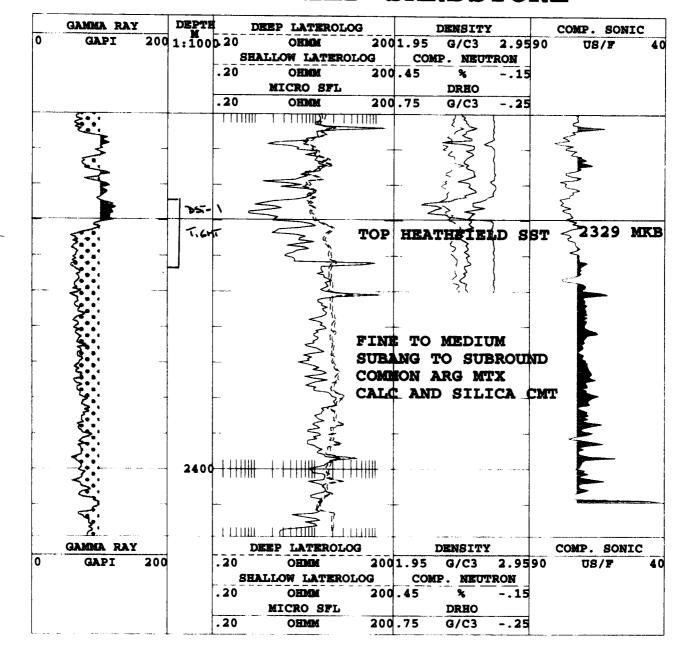


Figure-4

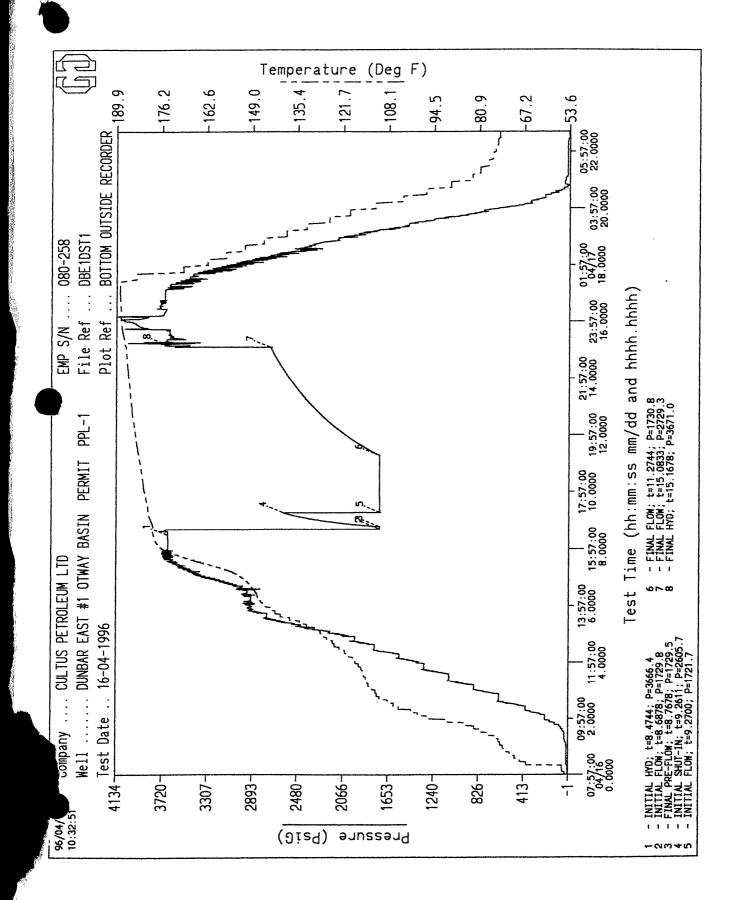


Figure-5

This is an enclosure indicator page. The enclosure PE604076 is enclosed within the container PE900837 at this location in this document.

| The enclosure PE60 | 4076 has the following characteristics: |
|---------------------|---|
| ITEM_BARCODE = | PE604076 |
| CONTAINER_BARCODE = | PE900837 |
| NAME = | Composite Log |
| BASIN = | OTWAY BASIN |
| PERMIT = | PP/L1 |
| TYPE = | WELL |
| SUBTYPE = | COMPOSITE_LOG |
| DESCRIPTION = | Well Composite Log (enclosure 1 from |
| | appendix 3 of WCR vol.2Log Evaluation |
| | Report) for Dunbar East-1 |
| REMARKS = | |
| DATE_CREATED = | |
| DATE_RECEIVED = | |
| W_NO = | W1150 |
| WELL_NAME = | DUNBAR EAST-1 |
| CONTRACTOR = | |
| CLIENT_OP_CO = | CULTUS PETROLEUM NL. |
| (Inserted by DNRE - | Vic Govt Mines Dept) |

This is an enclosure indicator page. The enclosure PE905735 is enclosed within the container PE900837 at this location in this document.

| The enclosure PE90 | 5735 has the following characteristics: |
|---------------------|---|
| ITEM_BARCODE = | PE905735 |
| CONTAINER_BARCODE = | PE900837 |
| NAME = | Cross Section |
| BASIN = | OTWAY BASIN |
| PERMIT = | PP/L1 |
| TYPE = | WELL |
| SUBTYPE = | CROSS_SECTION |
| DESCRIPTION = | Well Cross Section through Dunbar-1 and |
| | Dunbar East-1 (enclosure 2 from |
| | appendix 3 of WCR vol. 2Log |
| | Evaluation Report) for Dunbar East-1 |
| REMARKS = | written comments included |
| DATE_CREATED = | |
| DATE_RECEIVED = | |
| W_NO = | W1150 |
| WELL_NAME = | DUNBAR EAST-1 |
| CONTRACTOR = | |
| CLIENT_OP_CO = | |
| | |
| (Inserted by DNRE - | Vic Govt Mines Dept) |

DRILLING FIGURES

MISSING

To be forwarded when available.