## Table 1: Table of Formations in the Flathead Area Part A: Triasaic to Quaternary

| System/<br>Series |                         | Formation and Thio                                       | Lithology                           |  |  |  |  |  |
|-------------------|-------------------------|--|-------------------------------------|--|--|--|--|--|
| Quatern           | ary                     |  | till, sand and gravel               |  |  |  |  |  |
|                   |                         |  | unconformity                        |  |  |  |  |  |
| Miccene           | St.                     | Eugene Formation (Rocky Mo<br>50 m exposed, total thickn | untain Trench only)<br>ess unknown  | colluvium, fangiomerate, sand, silt and<br>gravel                            |  |  |  |  |
|                   |                         |  | Upper Member                        | conglomerates, sandstones,   |  |  |  |  |
|                   |                         |  | 0-2100m                             | varicoloured mudstones and coal,<br>braccias and megahraccias                |  |  |  |  |
|                   |                         |  |                                     | varicoloured clays, mudstones and  |  |  |  |  |
| ð                 |                         | (Flathead Valley only)                                   | Lower Member                        | shales, sandstones, oil shales,  |  |  |  |  |
| ğ                 |                         | 0-4750m  | argillaceous and tossiliterous      |  |  |  |  |  |
| 0                 |                         |  |                                     | locally conglomerates  |  |  |  |  |
|                   |                         |  | Basal Member                        | pebble and cobble conglomerates and  |  |  |  |  |
|                   |                         |  | 0-140m                              | sandstones   |  |  |  |  |
|                   |                         |  | unconformity                        |  |  |  |  |  |
|                   |                         | Belly River Forma  | continental sandstones, shales, and |  |  |  |  |  |
| retaceous         | _                       | 350+m  |                                     | minor amounts of coal  |  |  |  |  |
|                   | 4                       | Wapiabi Form   | nation                              | dark shale, sitstone, fine sandstone,  |  |  |  |  |
|                   | ŝ                       | Source Form  |                                     | calcaleous shale and intestone   |  |  |  |  |
| ě                 | Ę                       | 100m   | auon                                | marine sandstone, siltstone and shale  |  |  |  |  |
| ŝ                 | Aber                    | Blackstone For   | mation                              | dark shale, fine sandstone, sitstone,  |  |  |  |  |
|                   |                         | 100m   |                                     | limestone and calcareous shale   |  |  |  |  |
|                   |                         |  | unconformity                        |  |  |  |  |  |
|                   |                         | Crowsnest Form   | ation                               | alkaline tuff, volcanic breccia, volcanic                                    |  |  |  |  |
|                   | -                       | 40-100m  |                                     | congiomerate, and trachyte   |  |  |  |  |
|                   | airmore Group 300-2400m | Ma Butte For   | nation                              | sitstones and red mudstones, igneous   |  |  |  |  |
|                   |                         | 120-18/5// (latter is comp<br>Result Miner Formation is  | the Earnie Paris)                   | and quartzite-chert pebble   |  |  |  |  |
|                   |                         | Dearer millear children                                  | i de l'elle destij                  | congiomerate   |  |  |  |  |
| - 12              |                         | Beaver Mines Fr  | ormation                            | grey to green telospathic sanostone  |  |  |  |  |
| 3                 |                         | 280-1875m (latter is combine                             | ed thickness with Ma                | marcon mudstone, ioneous pebble  |  |  |  |  |
| 440               |                         | Butte Formation in the                                   | Femie Basin)                        | conglomerate   |  |  |  |  |
| õ                 |                         |  |                                     | fine quartz-chert sandstone,   |  |  |  |  |
| W                 |                         | Gladstone For  | mation                              | sitistone, and green and red mudstone<br>limestone and calcareous mudstone i |  |  |  |  |
| ē                 |                         |  |                                     | upper part   |  |  |  |  |
|                   | -                       | Cadomin For  | nation                              | chert pebble conglomerate and  |  |  |  |  |
|                   |                         | 15-75m   |                                     | sandstone, grey, green, and red  |  |  |  |  |
|                   |                         | upconformity   |                                     |  |  |  |  |  |
|                   | -                       | Elk Format   | ion                                 | sanostone, congiomerate, silstone, thin                                      |  |  |  |  |
|                   | 2                       | 0-275m   | _                                   | coal   |  |  |  |  |
|                   | ő                       | Mist Mountain F  | ormation                            | sitstone, sandstone, mudstone, shale,  |  |  |  |  |
|                   | ŝ.                      |  |                                     |  |  |  |  |  |
| -9                | 8                       | Morrissey For  | mation                              | fine to medium sandstone with  |  |  |  |  |
| 35 P              | ¥                       | 15-40 m  |                                     | conglomeratic beds in the upper part,  |  |  |  |  |
| 3                 | -                       |  |                                     | dark shales sandstone sitistone  |  |  |  |  |
|                   |                         | Fernie Formatio  | limestone, basal coguina and        |  |  |  |  |  |
|                   |                         | 175-400m   | phosphate pebble conglomerate       |  |  |  |  |  |
|                   | _                       |  | unconformity                        |  |  |  |  |  |
| 1                 | 5                       | Whitehorse Fo  | mation                              | sandy dolomite and limestone,  |  |  |  |  |
| 2                 | ay Rive<br>3roup        | 0-6 m  |                                     | calcareous and dolomitic sandstone<br>and siltstone and solution brencia     |  |  |  |  |
| 1as               |                         |  |                                     | dark shale and siltstone, calcareous   |  |  |  |  |
| F.                | 8                       | Suphur Mountain  | Formation                           | and doiomitic siltstone, dolomite and  |  |  |  |  |
|                   |                         | 0-137 m  |                                     | sandstone  |  |  |  |  |
|                   |                         |  | unconformity                        |  |  |  |  |  |

Table 1: Table of Formations in the Flathead Area Part 8: Devonian to Permian

|          |  |                                    |                                    |                                 | - 41   | contornity   |   |  |                                      |
|----------|--|------------------------------------|------------------------------------|---------------------------------|--|--|---|--|--------------------------------------|
| Permian  | Rocky Mountain<br>Supergroup                                   | lishbel<br>Group                   | Johnson Canyon Formation<br>0-30 m |                                 |  |  | phosphatic siltstones, chert, basal<br>chert-phosphate conglomerate       |  |                                      |
|          |  | unconformity                       |                                    |                                 |  |  |   |  |                                      |
| yharia   |  | Lakes<br>Sup<br>2.5m               | Kananaskis Formation<br>0-30m      |                                 |  | silty and sandy dolomite, silstones and<br>chert breccia                 |   |  |                                      |
| Penne    |  | 9-09<br>DUD<br>AUDS                | Misty Formation<br>75-200 m        |                                 |  | sandstone with minor amounts of<br>siltstone and dolomite                |   |  |                                      |
|          |  |                                    |                                    |                                 | 5  | conformity   |   |  |                                      |
|          | Rundle Group   |                                    |                                    |                                 | 7  | odhunter Mbr   |   | siltstone, dolomite an<br>calc. sandstone          |                                      |
| usiddiau |  | Etherington Formation<br>70-170m   |                                    |                                 |  |  | imestones, green and marcon shale,<br>anhydrite, sandstone, and siltstone |  |                                      |
|          |  | ntHead Formation 200-680 m         | Carnan<br>234<br>Opal              |                                 | ion Mbr<br>10 m  | dark-grey<br>weathering  | micritic a<br>limestone<br>amo<br>calcare                                 | nd skeletal<br>with lesser<br>unts of<br>ous shale |                                      |
|          |  |                                    | 200-<br>240 m                      | Marston Mbr<br>18-68 m          |  | skeletal, colific,<br>micritic and arg.<br>limestones and<br>calc. shale | silty dok<br>anhydri<br>amounts o<br>and                                  | omite and<br>te, lesser<br>of limestone<br>shale   |                                      |
| Mise     |  |                                    | Loomis Mbr<br>30 -100 m            |                                 | colitic, crinoidal, and micritic limestone,<br>and fine to medium crystalline dolomite               |  |   |  |                                      |
|          |  | Mou                                | Salter Mbr<br>29-67 m              |                                 | silty and sandy dolomite, anhydrite with<br>crinoidal grainstone and packstone<br>increasing to west |  |   |  |                                      |
|          |  | B                                  |                                    |                                 | Ba   | rl Mbr 11-39 m   | colitic, micritic and crinoidal limestone                                 |  |                                      |
|          |  |                                    |                                    |                                 | Wie  | man Mbr 8-25m  | silty dolomite and anhydrite<br>fine to coarse crinoidal grainstones and  |  |                                      |
|          |  | Livingstone Formation<br>200-400 m |                                    |                                 | on   | packstones, and fine crystalline<br>dolomite.                            |   |  |                                      |
|          |  |                                    | Banff Fo                           | rmation 250                     | -365   | <i>a</i>   | dark cherty limestones and shales   |  |                                      |
|          | <b>—</b>   | _                                  | Exshaw                             | Formation :                     | 2-10   |  | black organic shale, silstone, chert                                      |  |                                      |
|          | Pallser Formation 175-220 m                                    |                                    |                                    |                                 |  | (solution breccia in outcrop)  |   |  |                                      |
|          | Sat  | isenach<br>Fm<br>170 m             | Alexo Formation<br>5-30 m          |                                 |  | siltstone, sandy<br>and silty<br>carbonate                               | silty carb<br>anhydrib<br>breccia i                                       | onate and<br>e (solution<br>n outcrop)             |                                      |
| ~        |  | 11                                 | Arcs N                             | br 0-45 m                       | 8  | Nisku  |   | light gro  | ey coarse                            |
| 5        | Fairtome Group   | //                                 | Gentle Mar 0.40                    |                                 |  | 20.45 m  | \   | doiomite<br>dark grey dolomite                     |                                      |
| 8        |  |                                    |                                    | "ireton"                        | 6  | "Ireton" 0-3m  |   | arg. ca  | rbonate                              |
| Upper Dv |  | Mount H<br>(basi<br>0-15           | iawik Fm<br>inal)<br>i0 m          | Peechee<br>Mbr<br>0-200 m       | Southeak F   | Leduc<br>Formation<br>200 m  | grey<br>argilaceous<br>limestone, part<br>sity                            | light gre<br>dolomite, o<br>anh                    | ey coarse<br>tolomite and<br>ydrite  |
|          |  | Perdrix<br>Formation               |                                    | Borsato<br>Formation<br>15-60 m |  | Cooking Lake<br>Formation<br>50-60 m                                     | dark calc. shale<br>and shaly<br>limestone                                | dark<br>crystalline<br>dolomite                    | limestone,<br>dolomite,<br>anhydrite |
|          |  | Hollebeke Formation<br>120-240 m   |                                    |                                 |  | Beaverhill Lake<br>Group 100 m   | limestone, dolomite, and anhydrite<br>(solution breccia in outcrop)       |  | anhydrite<br>dcrop)                  |
| Middle   | Yabatinda Formation (1-30 m sandy and sity dolomite, dolomitic |                                    |                                    |                                 |  |  |   |  |                                      |
| Devonian | sitstone and sandstone   |                                    |                                    |                                 |  |  |   |  |                                      |
|          | _  |                                    |                                    |                                 | 100  | conformity   |   |  |                                      |

Table 1: Table of Formations in the Flathead Area Part C: Precambrian to Cambrian 

|     |               |                                      | U1  | contornity  |   |   |  |
|-----|---------------|--------------------------------------|---|---|---|---|--|
| ~   |               | Windsor I                            | Mountain Format   | dolomite-mottled limestone and  |   |   |  |
| nan |               |                                      | 0-70 m  | dolomite; calcareous sity dolomite at   |   |   |  |
| £   | _             |                                      | the Freemanne   | base  |   |   |  |
| 3   |               | E                                    | 160,160 m   | base base   |   |   |  |
| 음   | -             | 6                                    | Jordon Shale  | orevish green shale with sandstone  |   |   |  |
| 2   |               | -                                    | 45.90 m   | and limestone   |   |   |  |
| ~   |               | Flathead                             | Santstone 2.45  | quartz sandstone  |   |   |  |
|     |               |                                      | un  | conformity  |   |   |  |
|     |               | Dave die Complian                    |   |   | green and gr  | ey, argilite, dolomitic   |  |
|     |               | 0-1300 m                             |   |   | argilite, sitstor   | e, and sandstone, and   |  |
|     | 11 Supergroup |                                      |   |   | dolomite  |   |  |
|     |               | Phillips Formation 120-200 m         |   |   | red quartz sandstone, sitstone and  |   |  |
|     |               |                                      |   |   | oreen and orev apilite and dolomitic  |   |  |
|     |               |                                      |   | upper member  | arollite, dolomitic sandstone and   |   |  |
|     |               | Gateway P                            | Formation   |   | dolomite  |   |  |
|     |               | 375-715 m                            |   |   | red to grey and green sitstone and  |   |  |
|     |               |                                      |   | argilite  |   |   |  |
|     |               |                                      |   |   | dolomite, yellow, grey, and red   |   |  |
|     |               | St                                   | heopard Formatio  | n   | sandstone and siltstone, light green  |   |  |
|     |               |                                      | 50-275 m  |   | dolomitic sandstone and argilite,   |   |  |
|     |               |                                      |   |   | socary with chionized andesite in the   |   |  |
|     |               | P.                                   | coal Laws 0.150   |   | chioritized andesite  |   |  |
|     |               |                                      | Club Campline   | argillaceous grey limestone and   |   |   |  |
|     |               | Siyen Formation                      |   |   | dolomite, grey, green, and black  |   |  |
|     |               | 330-800 m                            |   |   | argilite, dolomitic sandstone   |   |  |
|     |               | Grinnell Formation                   |   |   | red argine and sitstone and write to  |   |  |
|     |               | 100-230m                             |   |   | green, grey and minor red arguine,  |   |  |
|     |               | A91                                  | pexunny Formati   | an  | sitstone, and green quartzitic<br>sandstone   |   |  |
| ~   |               |                                      | 230-300 m   |   |   |   |  |
| 5   |               |                                      | Altyn Formation<br>145-375m   |   |   | sandy dolomite,   |  |
| Ê   |               |                                      |   |   |   | doiomitic sandstone,  |  |
| 3   |               |                                      |   |   | a   | dolomite, dolomitic   |  |
| ď   | Ê.            |                                      | -   |   |   | angeme and aligning   |  |
| 1   | Pu            |                                      | Waterton  | Waterton Formation  |   | limestone and   |  |
|     |               |                                      | 25  |   |   | dolomite, thin argilite   |  |
|     |               |                                      |   |   |   |   |  |
|     |               |                                      | Tombstone Mountain Formation  |   |   | deals many manifestation  |  |
|     |               |                                      | Tombstone Mox   | untain Formation  | thin to thick   | dark grey argilaceous   |  |
|     |               |                                      | Tombstone Mox<br>17   | untain Formation<br>Sm  | thin to thick<br>bedded   | dark grey argilaceous<br>and silty limestone<br>and dolomite, and silty   |  |
|     |               |                                      | Tombstone Mox<br>17   | untain Formation<br>Sm  | thin to thick<br>bedded<br>quartzite,   | dark grey argillaceous<br>and silty limestone<br>and dolomite, and silty<br>calcareous argilite   |  |
|     |               | Aldridae                             | Tombstone Mo.<br>17   | intain Formation<br>Sm  | thin to thick<br>bedded<br>quartzite,<br>siltstone and  | dark grey argilaceous<br>and silty limestone<br>and dolomite, and silty<br>calcareous argilite<br>resistant light coloured  |  |
|     |               | Aldridge                             | Tombstone Mox<br>17<br>Haig Brook   | Intain Formation<br>Sm  | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argilite, rusty<br>wastbacing in  | dark grey argilaceous<br>and silty limestone<br>and dolomite, and silty<br>calcareous argilite<br>resistant light coloured<br>to banded dolomite,   |  |
|     |               | Aldridge<br>Formation                | Tombstone Mox<br>17<br>Haig Brook<br>14   | Intain Formation<br>Sm<br>I Formation<br>Sm   | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argiilte, rusty<br>weathering in<br>nart. intrusted   | dark grey argillaceous<br>and silty imestone<br>and dolomite, and silty<br>calcareous argilite<br>resistant light coloured<br>to banded dolomite,<br>imestone and minor   |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14   | Intain Formation<br>Sm<br>Formation<br>Sm   | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argilite, rusty<br>weathering in<br>part; intruded<br>by abundant   | dark grey argillaceous<br>and sity limestone<br>and dolomite, and sity<br>calcareous argilite<br>resistant light coloured<br>to banded dolomite,<br>limestone and minor<br>argilite   |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14   | Intain Formation<br>Sm<br>Formation<br>Sm   | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argilite, rusty<br>weathering in<br>part; intruded<br>by abundant<br>diorite silts                          | dark grey argillaceous<br>and solity limestone<br>and dolomite, and silty<br>calcareous argilite<br>resistant light coloured<br>to banded dolomite,<br>limestone and minor<br>argilite<br>dark calcareous and<br>dolociticareous and  |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10   | Intain Formation<br>Sm<br>R Formation<br>Sm<br>R 1<br>7m  | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argilite, rusty<br>weathering in<br>part; intruded<br>by abundant<br>diorite sills<br>(Moyle                | dark grey argilaceous<br>and sith limestone<br>and dolomite, and sithy<br>calcareous argilite<br>resistant light coloured<br>to banded dolomite,<br>limestone and minor<br>argilite<br>dark calcareous and<br>dolomite argilite and<br>block available  |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10   | Intain Formation<br>Sm<br>Formation<br>Sm<br>It 1<br>7m   | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argiilte, rusty<br>weathering in<br>part; intruded<br>by abundant<br>diorite silts<br>(Moyie<br>Intrusions) | dark grey argilaceous<br>and silty imestone<br>and dolomite, and silty<br>calcareous argilite<br>resistant light coloured<br>to banded dolomite,<br>imestone and minor<br>argilite<br>dark calcareous and<br>dolomitic argilite and<br>black argilite<br>argumentibaceous   |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10<br>Un                                     | Intain Formation<br>Sm<br>Commation<br>Sm<br>R 1<br>7m<br>R 2   | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argilite, rusty<br>weathering in<br>part; intruded<br>by abundant<br>diorite sills<br>(Moyle<br>Intrusions) | dark grey argilacoous<br>and sitly immetone<br>and dolomite, and sitly<br>calcaneous angilite<br>resistant light coloured<br>to banded dolomite,<br>ilmestone and minor<br>argilite<br>dark calcaneous and<br>dolomite argilite and<br>black argilite<br>grey argilacoous<br>dolomite and black   |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10<br>Un<br>31                               | Intain Formation<br>Sm<br>Formation<br>Sm<br>It 1<br>7m<br>It 2<br>4m                                 | Bin to thick<br>bedded<br>quartsite,<br>siltstone and<br>argilite, rusty<br>weathering in<br>part, intruded<br>by abundant<br>diorite sills<br>(Moyie<br>Intrusions)  | dark grey anglitacous<br>and sitly imestone<br>and dolomite, and sitly<br>resistant light coloured<br>to banded dolomite,<br>imestone and minor<br>argilite<br>dark calciareous and<br>dolomite argilite and<br>black argilite<br>grey anglitacous<br>dolomite and black<br>argilite  |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10<br>Un<br>31                               | Intain Formation<br>Sm<br>Formation<br>Sm<br>It 1<br>7m<br>It 2<br>4m                                 | thin to thick<br>bedded<br>quartzite,<br>siltstone and<br>argiller, rusty<br>weathering in<br>part, intruded<br>by abundant<br>diorte sills<br>(Moyie<br>Intrusions)  | dark grey argilacoous<br>and sitly imestone<br>and dioimite, and sitly<br>calcareous argilite<br>resistant ight coloured<br>to banded dolomite,<br>imestone and minor<br>argilite<br>dark calcareous and<br>dolomite argilite and<br>black argilite<br>grey argilacoous<br>dolomite and black<br>argilite<br>mer, orgen, ref and  |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10<br>Un<br>31                               | Intain Formation<br>See<br>I Formation<br>See<br>II 1<br>7m<br>II 2<br>4m<br>II 2<br>4m<br>II 2<br>4m | thin to thick<br>bedded<br>quartile,<br>siltstone and<br>argilite, nuty<br>weathering in<br>part, intruded<br>by abundant<br>diorite silts<br>(Moyie<br>Intrusions)   | dark grey argilacoous<br>and sitly imestone<br>and diciomite, and sitly<br>resistant light coloured<br>to banded dolomite,<br>ilmestone and minor<br>argilite<br>dark calcareous and<br>dolomite argilite<br>grey argilacoous<br>dolomite and black<br>argilite<br>grey argilacoous<br>dolomite and black<br>argilite<br>grey, green, red and<br>white fine dolomite        |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10<br>Un<br>31<br>Un<br>21                   | Intain Formation<br>See<br>Formation<br>See<br>It 1<br>7m<br>It 2<br>4m<br>It 3<br>8m                 | thin to thick<br>bedded<br>quartate,<br>siltstone and<br>argille, rusty<br>weathering in<br>part, intruded<br>by abundant<br>Giorte sills<br>(Moyie<br>Intrusions)    | dark grey argilacous<br>and silly imestone<br>and diolomite, and silly<br>calcareous angilite<br>resistant light coloured<br>to banded dolomite,<br>imestone and minor<br>argilite<br>dark calcareous and<br>dolomite angilite<br>grey argitacous<br>dolomite and black<br>argilite<br>angilite<br>angilite<br>frey, green, red and<br>white fine dolomite<br>and limestone |  |
|     |               | Aldridge<br>Formation<br>up to 4200m | Tombstone Mox<br>17<br>Haig Brook<br>14<br>Un<br>10<br>Un<br>10<br>Un<br>21<br>Un<br>21<br>Un | Intain Formation<br>See<br>Commission<br>See<br>It 1<br>7m<br>It 2<br>4m<br>It 3<br>See<br>It 4       | thin to thick<br>bedded<br>quartile,<br>silitone and<br>angilite, nush<br>weathering in<br>part, intruded<br>by abundant<br>diorite silis<br>(Moyie<br>Intrusions)    | dark grey anglitacous<br>and sitily investore<br>and dolomite, and sitily<br>calcianous anglitte<br>resistant light coloured<br>to banded dolomite, anglitte<br>dark calcianeous and<br>black anglitte<br>grey anglitacous<br>dolomite and black<br>anglitte<br>grey, green, red and<br>white fine dolomite<br>and limestone<br>dark anglitacous                            |  |