# Central Mineralogical Services

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13th September, 1984

REPORT CMS 84/7/9

| | |
|---|---|
| YOUR REFERENCE: | D.P.O. No. 20743 |
| DATE RECEIVED: | 11th September, 1984 |
| SAMPLE NOS.: | 19 Samples |
| SUBMITTED BY: | D. Berkman |
| WORK REQUESTED: | Petrology |

Copy to:
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H.W. Fander, M. Sc.

# REPORT CMS 84/7/9

## EL 4417 Drill Core Samples

Nineteen drill core samples were received for petrological study; thin-sections were prepared and examined, and are described in the accompanying tables.


### Summary

All the rocks are metasediments, many of them fine-grained and graphitic. The general lithology seems to have been a black shale sequence with occasional intercalated chemical and exhalative units. The abundance of graphite indicates reducing conditions of deposition.

Most of the rocks are low-grade (greenschist facies) schists, consisting of varying proportions of micas, quartz and graphite, with pyrite of syngenetic origin. These represent fine clastic sediments. In addition, there are metamorphosed chemical sediments, including a marble, a pyrite-chlorite rock, a metasomatic rock, and a degraded schist. Only one sample (765/222') may be igneous-related, but is rather featureless and non-diagnostic.

The schists consist of stable mineral assemblages and are thus fairly immune to alteration; some show brecciation and veining, and where more sensitive minerals occur (e.g. 801/166') these may be altered. The chemical metasediments are much more prone to alteration and show the effects of retrograde metamorphism.

One the whole however, there is little evidence for hydrothermal alteration on any significant scale, and no mineralisation was detected; if analyses have revealed any geochemical anomalies, these can perhaps be followed up in detail.



H.W. Fander, M. Sc.

| Sa[redacted] No. | Rock Type - Composition | Fabric | Minor Minerals | Comments |
|---|---|---|---|---|
| 801/ 166' (T.S. 50859) | Altered Pyritic, Graphitic Schist. Dominantly matted-parallel hydromuscovite flakes, thin streaks of argillised feldspar, minor graphite, chlorite. Pyrite lenses; later pyrite, quartz, adularia(?). | Uniform, finely laminated, with occasional coarser lenses; good schistosity. | Some chlorite introduced at postmetamorphic stage. Folded, lenses of coarser quartz, altered feldspar. | Selective argillisation of fel spar, and introduction of new minerals after metamorphism. Formation of cavities (lined with pyrite) due to leaching. |
| 801/ 212' | Graphite-Quartz-Muscovite Schist. Very abundant fine granular graphite, intergrown with thin parallel muscovite flakes; streaks and lenses of granular quartz. Younger chlorite veins. | Schistosity mainly due to micas, as graphite is finely granular. Veins are semi-concordant. | Isolated pyrite cubes. Orientated chlorite flakes in quartz; vein-chlorite is a different variety. | Low-grade regional metamorphism o carbonaceous siltstone. Younger chlorite veins (+ some patches) seem to be replacive. |
| 801/ 441' | Graphite-Quartz-Muscovite Schist. Very abundant fine graphite or subgraphite with embedded small muscovite flakes, quartz grains; isolated irregular pyrite patches. | Very uniform, with only moderate schistosity. Spotty distribution of graphite. | Small authigenic pale tourmaline crystals. Meandering veinlets of pale chlorite. | Similar to 212', but finer-graine and less schistose. Pyrite patche are postmetamorphic, since they contain host rock inclusions. |
| 807/ 205' to 209' | Tourmaline Metaquartzite. Chips all consist of fine quartz and poikiloblastic pale tourmaline (dravite-elbaite), with ultrafine rutile needles; some contain sericite, others microcline. | General preferred orientation, some banding. Fine- to medium-grained. | Traces of fine pyrite and graphite in some chips. Fe-staining. | A series of metaquartzites/feld-spathic metaquartzites, partly sericitised. Pale tourmaline seem to be late- or post-metamorphic. |
| 807/ 262' | Crenulated Graphite-Muscovite Schist. Finely interlayered fine graphite and muscovite, with grains and small lenses of quartz; clusters of pyrite crystals. | Tightly, irregularly crenulated; some brecciation around quartz and pyrite patches. | None detected. | Fairly featureless low-grade metasediment, apparently unaltere pyrite is pre-metamorphic, probab syngenetic. |
| 807/ 343' | Quartz-Chlorite-Sphene Rock. Mainly composed of microgranular quartz and shapeless patches of pale fibrous chlorite, with granular sphene throughout, and siderite crystals. | Vague banding and poorly defined poikilo-blastic textures after ?feldspar, ?hornblende. | Grains, clusters of pyrite. Finely-crystalline apatite. | Origin of rock uncertain, but cou be a thoroughly chloritised quart feldspar-hornblende microgneiss; sphene is secondary. |
| 767/ 165' | Muscovite Metaquartzite. Dominantly micro-granular quartz, with very thin parallel laminations of fine muscovite; a few coarser lenses. Ultrafine graphite throughout. | Good preferred orientation; with more mica, rock would grade into schist. Fine-grained. | Isolated small pyrite grains. Mica weakly Fe-stained. | Low-grade metasediment, featurele and of simple composition. Not susceptible to alteration. Pyrite probably syngenetic. |
| 768/ 25' | Quartz-Mica Schist. Grading from massive, matted-parallel muscovite with minor biotite to a more quartzose rock with muscovite, biotite, microgranular quartz. | Good schistosity on fairly fine scale. Perhaps banded on a coarser scale. | Ultrafine carbonaceous matter in places. Authigenic tourmaline. Goethite veins, adjacent staining. | Low-grade metasediment, originall a shale. Rock is relatively fresh with unaltered biotite. Goethite veins may be oxidised sulphide. |

DRILL CORE SAMPLES

See CRAE Report # 12286 for DD logs

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT RUM JUNGLE CREEK, N.T. — EL. 4417 (AREA 55)

SAMPLE No. 970701 – 970718

D.P.O. No. 20742

DATE July 1984

SHEET No. 4

COLLECTED BY D. Berkman & D. Hossack

ANALYSED BY AMDEL

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; RO: Rock chip; DD: Drill core; RG: Rock grab; DC: Drill cuttings; SL: Soil; SS: Stream sediment

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | Metal Content, p.p.m. "PATHFINDER" ELEMENTS ppb Au | Ag | ppb Hg | T Te | Se | Ba | Cu | Pb | Zn | Ni | Co | As | Bi | Sb | Sn | W | U | Th | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | DRILL CORE GRAB SAMPLES & PETROLOGICAL SPECIMENS (these are shown as D.H. No/depth in feet, eg. 801/166). Core ex old TEP core shed at Rum Jungle |
| | 970701 | | | <5 | 1 | x | <0.1 | 0.7 | 140 | 3040 | 2.6% | 1900 | 650 | 3300 | 70 | <1 | <1 | <4 | 24 | 165 | <4 | DD819, 28-47 ft; lens of white clay after blk shale, Cu/Pb |
| | 702 | | | <5 | 1 | x | <0.1 | 2.5 | 215 | 240 | 2600 | 4100 | 1400 | 750 | 115 | 2 | 1 | 4 | <5 | 74 | 6 | " 214-232; lens ser sch, tr Cu/Pb |
| | 970703 | | | <5 | 4 | x | <0.1 | 0.8 | 770 | 6500 | 3140 | 2740 | 4940 | 5000 | 200 | 1 | 4 | 18 | 6 | 38 | 8 | " 382-385'6"; green talcose mylonite |
| | 970704 | | | <5 | <0.5 | x | 0.4 | 1.4 | 325 | 170 | 105 | 125 | 36 | 26 | 70 | 3 | 1 | 4 | 8 | 9 | 24 | DD801, 19-37'; lens sericitic slate |
| | 705 | | | <5 | <0.5 | x | 0.1 | 1.0 | 275 | 66 | 46 | 225 | 36 | 16 | 385 | 1 | <1 | 10 | <5 | 15 | 20 | " 124-140; grey " " |
| | 706 | | | <5 | <0.5 | x | <0.1 | 0.7 | 365 | 33 | 50 | 140 | 20 | 6 | 7 | 2 | 1 | <4 | <5 | 25 | 24 | " 158-170; 801/166; green talc-sericite slate |
| | 707 | | | <5 | <0.5 | x | <0.1 | 2.3 | 220 | 66 | 16 | 130 | 66 | 6 | 7 | 2 | <1 | 4 | <5 | 8 | 18 | " 208-227; 801/212; blk fgn. sch |
| | 970708 | | | <5 | 1.0 | x | 0.2 | 1.6 | 350 | 105 | 20 | 140 | 66 | 16 | 10 | 5 | 2 | <4 | 6 | 10 | 22 | " 430-466; 801/441; blk fgn gf-ser. slate |
| | 970709 | | | <5 | 10 | x | <0.1 | 0.3 | 160 | 1200 | 18% | 350 | 480 | 120 | 450 | <1 | 2 | 10 | 54 | 26 | <4 | DD818, 127-145'; lens clay, +15% Pb ~0.5% Cu |
| | 970710 | | | <5 | <0.5 | x | 0.1 | 0.2 | 405 | 9000 | 3000 | 300 | 3440 | 5600 | 1440 | 11 | 2 | 8 | <5 | 50 | 6 | " 236-253'; slate breccia, ~1% Pb, 0.2% Cu |
| | 970711 | | | <5 | 1 | x | 0.1 | 1.5 | 115 | 185 | 3040 | 48 | 20 | 16 | 62 | 3 | <1 | <4 | <5 | 13 | 10 | DD807A, 30-45'; lens black slate |
| | 712 | | | <5 | <0.5 | x | 0.1 | 1.4 | 80 | 215 | 4340 | 230 | 205 | 76 | 34 | 3 | 2 | <4 | 6 | 15 | <4 | " 98-113; lens creamy talcose slate |
| | 713 | | | <5 | 1 | x | 0.2 | 3.3 | 1520 | 295 | 180 | 70 | 96 | 50 | 7 | 1 | <1 | <4 | 8 | 3 | 12 | " 184-192; lens " " + mylonite |
| | 714 | | | <5 | 1 | x | <0.1 | 1.8 | 1880 | 230 | 350 | 185 | 66 | 36 | 5 | 1 | <1 | 4 | 6 | 9 | 14 | " 205-209; 807/205-209; creamy talcose slate |
| | 715 | | | <5 | <0.5 | 50 | 0.2 | 3.3 | 185 | 35 | 76 | 18 | 40 | 26 | 135 | 4 | <1 | <4 | 6 | 32 | 16 | " 259-263; 807/262; ditto |
| | 970716 | | | <5 | <0.5 | x | 0.1 | 0.7 | 2420 | 100 | 26 | 70 | 145 | 60 | 6 | 5 | <1 | <4 | 6 | 7 | 6 | " 338-361; 807/343; grey silic. chlorite-ser slate |
| | 970717 | | | <5 | <0.5 | x | 0.1 | 3.3 | 300 | 90 | 16 | 23 | 6 | 6 | 28 | 1 | <1 | <4 | 6 | 9 | 14 | DD767, 13-30 ft; lens black graphitic slate |
| | 970718 | | | <5 | 1 | 100 | 0.1 | 5.7 | 66 | 205 | 36 | 45 | 50 | 40 | 32 | 2 | <1 | <4 | <5 | 22 | 4 | " 153-171; 767/165; fg. grey sericitic slate, silicified |
| Average Crust | | | | | | | | | | | | | | | | | | | | | | |
| Anal. Method | | | | | | | | | | | | | | | | | | | | | | |
| Limit of Detection | | | | 5 | 0.5 | 50 | 0.1 | 0.1 | 5 | 2 | 5 | 2 | 5 | 5 | 1 | 1 | 1 | 4 | 5 | 1 | 4 | |

DRILL CORE SAMPLES

See CRAE Report # 12286 for DD logs

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT RUM JUNGLE CREEK, N.T.
EL. 4417 (AREA 55)

SAMPLE No. 970701 – 970718

D.P.O. No. 20742

DATE July 1984

COLLECTED BY D. Berkman & D. Hossack

SHEET No. 5

ANALYSED BY AMDEL

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; RO: Rock chip; DD: Drill core; RG: Rock grab; DC: Drill cuttings; SL: Soil; SS: Stream sediment

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | # INDICATORS BF Metal Content, p.p.m. V | B | % F | Rb | Sr | Ga | Ce | Y | La | HYDROTHERMAL ALTERATION # U | Cu | Pb | Zn | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | DRILL CORE GRAB SAMPLES & PETROLOGICAL SPECIMENS (Heads are shown as D.H. No/depth in feet, eg. 801/166). Core ex old TEP core shed at Rum Jungle |
| | 970701 | * | | <50 | 200 | 0.05 | 38 | 22 | 130 | 580 | <4 | 120 | 165 | 3040 | 2.6% | 1900 | DD819, 28 - 47 ft ; lens of white clay after bluish, Cu/Pb |
| | 702 | | | <50 | 560 | 0.50 | 62 | 54 | 44 | 180 | 18 | 60 | 74 | 240 | 2600 | 4100 | " 214 - 232 ; low ser sch, tr Cu/Pb |
| | 970703 | | | <50 | 440 | 0.31 | 135 | 37 | 30 | 110 | <4 | 80 | 58 | 6500 | 3340 | 2740 | " 382 - 385'6" ; green talcose mylonite |
| | 970704 | | | <50 | 120 | 0.05 | 165 | 20 | 19 | 110 | 28 | 40 | 9 | 170 | 105 | 125 | DD801, 19 - 37' ; lens sericitic slate |
| | 705 | | | <50 | 80 | 0.11 | 140 | 26 | 16 | 100 | 20 | 40 | 15 | 66 | 46 | 225 | " 124 - 140 ; grey " " |
| | 706 | | | <50 | 160 | 0.10 | 160 | 72 | 15 | 140 | 34 | 50 | 25 | 33 | 50 | 140 | " 158 - 170 ; 801/166 ; green talc-sericite slate |
| | 707 | | | 70 | 720 | 0.12 | 115 | 15 | 19 | 110 | 30 | 45 | 8 | 66 | 16 | 130 | " 208 - 227 ; 801/212 ; blk byn. sch |
| | 970708 | | | 160 | 2850 | 0.21 | 105 | 30 | 22 | 110 | 24 | 50 | 10 | 105 | 20 | 140 | " 430 - 466 ; 801/441 ; blk byn gf-ser. slate |
| | 970709 | # | | <50 | 330 | 0.14 | 450 | 42 | 1350 | <15 | <4 | <15 | 26 | 1200 | 18% | 350 | DD818, 127 - 145' ; lens clay, +15% Pb ~0.5% Cu |
| | 970710 | | | 60 | 130 | 0.20 | 21 | 1240 | 12 | 40 | 12 | 30 | 50 | 9000 | 3000 | 300 | " 236 - 253' ; slate breccia, ~10% Pb, 0.2% Cu |
| | 970711 | | | 270 | 2350 | 0.07 | 41 | 84 | 22 | 90 | <4 | 65 | 13 | 185 | 3040 | 48 | DD807A, 30 - 45' ; lens black slate |
| | 712 | | | 190 | 830 | 0.02 | 84 | 38 | 28 | 35 | <4 | 15 | 15 | 215 | 4340 | 230 | " 98 - 113 ; lens creamy talcose slate |
| | 713 | | | <50 | 1750 | x | 76 | 56 | 16 | 45 | 6 | <15 | 3 | 295 | 180 | 70 | " 184 - 192 ; lens " " + mylonite |
| | 714 | | | 80 | 2000 | 0.03 | 125 | 56 | 21 | 100 | 10 | 50 | 9 | 230 | 350 | 185 | " 205 - 209 ; 807/205-209 ; creamy talcose slate |
| | 715 | | | 100 | 450 | 0.03 | 86 | 40 | 25 | 110 | 12 | 35 | 32 | 35 | 76 | 18 | " 259 - 263 ; 807/262 ; ditto |
| | 970716 | | | <50 | 500 | 0.22 | 37 | 84 | 37 | 170 | 28 | 55 | 7 | 100 | 26 | 70 | " 338 - 361 ; 807/343 ; grey silic. chlorite-ser slate |
| | 970717 | | | 250 | 80 | 0.09 | 150 | 12 | 23 | 45 | 22 | 15 | 9 | 90 | 16 | 23 | DD767, 13 - 30 ft ; lens black graphitic slate |
| | 970718 | | | <50 | 110 | x | 31 | 7 | 5 | 55 | 20 | 30 | 22 | 205 | 36 | 45 | " 153 - 171 ; 767/165 ; lt. grey sericitic slate, silicified |
| Average Crust | | | | | | | | | | | | | | | | | * Due to matrix interferences Th, Bi, Ga may be in error |
| Anal. Method | | | | | | | | | | | | | | | | | # " " Th, Bi, Ga, As, Y " " |
| Limit of Detection | | | | 50 | | 0.02 | 2 | 2 | 2 | 15 | 4 | | | | | | |

DRILL CORE SAMPLES

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT RUM JUNGLE CREEK. O.P.O. No. 20742

DATE July 1984

SAMPLE No. 970719 – 970737 COLLECTED BY D. Berkman & D. Hossack

SHEET No. 6

ANALYSED BY AMDEL

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; DD: Drill core; DC: Drill cuttings; RO: Rock chip; RG: Rock grab; SL: Soil; SS: Stream sediment

SILICATE ANALYSES (PERCENT)

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | $SiO_2$ | $Al_2O_3$ | $Na_2O$ | $K_2O$ | CaO | MgO | Total Fe as $Fe_2O_3$ | MnO | $P_2O_5$ | $TiO_2$ | $CO_3$ | % $SO_3$ | C | L.O.I. | % Total | ppm U | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 970719 | | | 65.9 | 14.7 | 0.13 | 4.40 | 0.02 | 1.00 | 7.35 | 0.66 | 0.17 | 0.34 | 0.02 | <0.02 | 0.53 | 4.20 | 98.9 | 9 | DD768, 20-40'; 768/25; wos grey ser. slate |
| | 720 | | | 66.9 | 14.7 | 0.14 | 4.52 | 0.26 | 3.06 | 6.00 | 0.08 | 0.17 | 0.40 | 0.15 | 0.54 | 0.82 | 4.14 | 100.4 | 8 | " 337-354; 768/345; grey sericitic slate |
| | 970721 | | | 53.6 | 15.6 | 0.10 | 5.05 | 0.12 | 3.42 | 7.90 | 0.03 | 0.10 | 0.65 | 0.04 | 7.55 | 7.30 | 13.1 | 99.7 | 21 | " 483-500; 768/492; fpy. blk graph. sch |
| | 970722 | | | 72.6 | 11.5 | 0.11 | 2.82 | 0.03 | 1.39 | 4.22 | 0.04 | 0.04 | 0.31 | 0.01 | <0.02 | 0.45 | 6.55 | 99.6 | 4 | DD765, 11-27, wos grey sandy slate |
| | 723 | | | 73.6 | 16.0 | 0.07 | 4.82 | 0.07 | 0.62 | 0.95 | 0.01 | 0.06 | 0.21 | 0.01 | 1.0 | 0.06 | 3.44 | 99.8 | 13 | " 213-229; 765/222; grey qf-ser schist |
| | 970724 | | | 67.0 | 15.2 | 0.31 | 5.25 | 0.22 | 2.58 | 4.50 | 0.06 | 0.09 | 0.30 | 0.03 | 0.65 | 0.58 | 3.40 | 98.9 | 9 | " 404-421; 765/416; grey fpy. ser slate |
| | 970725 | | | 18.4 | 5.0 | 0.02 | 1.29 | 19.7 | 17.0 | 5.65 | 0.07 | 0.42 | 1.94 | 24.9 | 4.67 | 0.04 | 2.51 | 94.6* | 10 | DD692, 183-203; 692/191; calcite-bio.-chl. sch, pyritic |
| | 726 | | | 50.6 | 13.6 | 0.37 | 2.98 | 6.95 | 5.45 | 10.1 | 0.12 | 1.55 | 3.12 | 0.38 | 3.66 | 0.06 | 4.64 | 99.5 | 16 | " 111-123; 692/118; fpy-chlo-qf-talc sch |
| | 970727 | | | 44.6 | 18.9 | 0.12 | 6.20 | 2.98 | 1.46 | 9.25 | 0.07 | 2.42 | 4.30 | 0.06 | 0.27 | 0.22 | 9.30 | 99.6 | 52 | " 36-56; bxn dusky wos slate |
| | 970728 | --- | | 32.6 | 13.3 | 0.03 | 0.14 | 0.84 | 22.8 | 9.80 | 0.01 | 0.55 | 4.36 | 0.08 | 10.1 | 0.06 | 14.8 | 99.2 | 32 | DD713, 375-397; 713/284; fpy qf-bio-ser slate |
| | 729 | | | 25.3 | 13.5 | 0.17 | 0.11 | 1.79 | 21.4 | 11.7 | 0.01 | 1.15 | 4.76 | 0.02 | 18.1 | 0.04 | 18.1 | 98.0 | 44 | " 258-275, highly pyritic " |
| | 730 | | | 15.7 | 7.75 | 0.06 | 0.14 | 0.78 | 14.5 | 32.6 | 0.03 | 0.50 | 4.44 | 6.99 | 54.3 | 0.03 | 24.3 | 100.8 | 66 | " 205-223; 713/218; fpy qf-ser-mylonk, tourmaline |
| | 731 | | | 78.1 | 12.5 | 0.07 | 3.54 | 0.05 | 1.15 | 1.03 | x | 0.05 | 0.63 | 0.07 | 0.28 | 0.13 | 2.98 | 100.1 | 12 | " 124-139, wos green talcose slate |
| | 970732 | | | 56.3 | 17.1 | 0.08 | 4.14 | 0.03 | 1.12 | 9.75 | x | 0.05 | 0.64 | 0.07 | 0.06 | 5.90 | 10.9 | 100.1 | 10 | " 5-22, wos black carbonac. slate |
| | 970733 | | | 41.3 | 30.4 | 0.08 | 0.30 | 0.19 | 8.15 | 3.08 | x | 0.16 | 1.22 | 0.04 | 0.06 | 0.26 | 14.4 | 99.3 | 78 | DD745, 219-223; bxn talcose mudstone |
| | 734 | | | 63.7 | 17.3 | 0.12 | 5.80 | 0.04 | 1.56 | 2.12 | x | 0.08 | 0.76 | 0.03 | 0.14 | 5.15 | 8.05 | 99.5 | 30 | " 138-156; 745/152; grey ser. slate |
| | 970735 | | | 66.9 | 18.2 | 0.21 | 4.88 | 0.18 | 2.10 | 1.61 | x | 0.07 | 0.73 | 0.24 | 0.85 | 2.12 | 6.15 | 101.0 | 58 | " 120-135; 745/133; grey fpy. ser slate |
| | 970736 | | | 58.0 | 18.4 | 0.05 | 3.98 | 0.13 | 1.52 | 8.15 | 0.01 | 0.12 | 0.99 | 0.28 | 0.05 | 0.32 | 8.15 | 99.5 | 3 | DD752, 157-176; talcose q blk slate |
| | 970737 | | | 63.3 | 12.8 | 0.08 | 3.90 | x | 0.94 | 3.36 | x | 0.02 | 0.52 | 0.07 | 5.25 | 8.35 | 15.8 | 100.7 | 17 | " 429-446; 752/436; fpy grey sericitic slate, quartz veined |
| Average Crust | | | | | | | | | | | | | | | | | | | | * High S |
| Anal. Method | | | | | | | | | | | | | | | | | | | | |
| Limit of Detection | | | | | | | | 0.01 | | | 0.01 | | | 0.01 | 0.02 | 0.02 | | | | |

DRILL CORE SAMPLES

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT RUM JUNGLE CREEK

D.P.O. No. 20742

DATE July 1984

SAMPLE No. 970719 - 970737

COLLECTED BY D. Berkman & D. Hossack

SHEET No. 7

ANALYSED BY AMDEL

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; DD: Drill core; DC: Drill cuttings; RO: Rock chip; RG: Rock grab; SL: Soil; SS: Stream sediment

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | Metal Contents, p.p.m. "PATHFINDER" ELEMENTS Au (ppb) | Ag | Hg (ppb) | Te | Se | Ba | Cu | Pb | Zn | Ni | Co | As | Bi | Sb | Sn | W | U | Th | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 970719 | | | <5 | 1 | 100 | <0.1 | 0.5 | 980 | 66 | 30 | 135 | 40 | 46 | 10 | <1 | <1 | <4 | <5 | 9 | 30 | DD768, 20-40'; 768/25; wos grey ser. slate |
| | 720 | | | <5 | <0.5 | x | <0.1 | 0.6 | 435 | 80 | 16 | 90 | 36 | 20 | 7 | 1 | 2 | 4 | <5 | 8 | 20 | " 337-354; 768/345; grey sericitic slate |
| | 970721 | | | <5 | <0.5 | x | <0.1 | 2.2 | 245 | 80 | 16 | 40 | 60 | 40 | 40 | 2 | <1 | 8 | | 21 | 24 | " 483-500; 768/492; fg. blk graph. sch |
| | 970722 | | | <5 | <0.5 | x | <0.1 | 0.2 | 430 | 33 | 26 | 56 | 10 | 6 | 7 | 1 | <1 | <4 | 8 | 4 | 16 | DD765, 11-27, wos grey sandy slate |
| | 723 | | | <5 | <0.5 | x | <0.1 | 0.7 | 140 | 20 | 16 | 5 | 6 | 6 | 2 | 1 | 1 | 8 | | 13 | 54 | " 213-229; 765/222; grey qf-ser schist |
| | 970724 | | | <5 | <0.5 | x | 0.2 | 0.8 | 830 | 76 | 40 | 145 | 20 | 10 | 10 | 4 | <1 | 4 | <5 | 9 | 26 | " 404-421; 765/416; grey fg. ser slate |
| | 970725 | | | <5 | <0.5 | x | <0.1 | 0.4 | 225 | 43 | 10 | 30 | 105 | 30 | 13 | 2 | 1 | <4 | <5 | 10 | 6 | DD692, 183-203; 692/191; calcit-bio-chl. sch, pyritic |
| | 726 | | | <5 | <0.5 | x | <0.1 | 0.3 | 990 | 43 | 16 | 550 | 60 | 36 | 4 | 2 | <1 | <4 | 10 | 16 | 10 | " 111-123; 692/118; fg-chlo-qf-talc sch |
| | 970727 | | | <5 | <0.5 | x | <0.1 | 1.4 | 1600 | 110 | 36 | 100 | 130 | 66 | 4 | 1 | 1 | 38 | <5 | 52 | 12 | " 36-56; brn dusky wos slate |
| | 970728 | | | <5 | <0.5 | x | <0.1 | 0.6 | <5 | 20 | 10 | 23 | 495 | 70 | 4 | 3 | <1 | 12 | <5 | 32 | 8 | DD713, 375-397; 713/384; fg qf-bio-ser slate |
| | 729 | | | <5 | 1 | x | 0.2 | 1.9 | <5 | 20 | 16 | 18 | 285 | 135 | 13 | 6 | <1 | 6 | 34 | 44 | 8 | " 258-275, highly pyritic " |
| | 730 | | | <5 | 1 | 250 | 0.3 | 6.2 | 16 | 700 | 20 | 28 | 750 | 395 | 280 | 11 | 1 | 10 | <5 | 66 | 8 | " 205-223; 713/218; fg qf-ser. mylonite, tourmaline |
| | 731 | | | <5 | <0.5 | x | <0.1 | 0.3 | 92 | 15 | <5 | 5 | 16 | 6 | 4 | 2 | <1 | <4 | <5 | 12 | 10 | " 124-139, wos green talcose slate |
| | 970732 | | | <5 | <0.5 | x | 0.5 | 0.5 | 140 | 25 | 16 | 8 | 26 | 6 | 22 | 4 | 2 | 6 | 6 | 10 | 16 | " 5-22, wos black carbonac. slate |
| | 970733 | | | <5 | <0.5 | x | <0.1 | <0.1 | 225 | 105 | 10 | 96 | 205 | 50 | 6 | 1 | <1 | 12 | 6 | 78 | 30 | DD745, 219-223; brn talcose mudstone |
| | 734 | | | <5 | <0.5 | x | 0.2 | 1.8 | 135 | 28 | 6 | 10 | 16 | 10 | 7 | 4 | <1 | <4 | 6 | 30 | 22 | " 138-156; 745/152; grey ser. slate |
| | 970735 | | | <5 | 1 | x | 0.2 | 3.4 | 76 | 220 | 6 | 13 | 70 | 125 | 6 | 2 | <1 | <4 | 6 | 58 | 24 | " 120-135; 745/133; grey fgr. ser slate |
| | 970736 | | | <5 | <0.5 | x | <0.1 | <0.1 | 14 | 20 | 6 | 45 | 60 | 26 | 1 | 1 | <1 | <4 | <5 | 3 | 12 | DD752, 157-176; talcose blk slate |
| | 970737 | | | <5 | <0.5 | x | 0.2 | 1.9 | 440 | 56 | 16 | 48 | 40 | 16 | 25 | 1 | <1 | 8 | 6 | 17 | 18 | " 429-446; 752/436; fg grey sericitic slate, quartz veined |
| Average Crust | | | | | | | | | | | | | | | | | | | | | | |
| Anal. Method | | | | | | | | | | | | | | | | | | | | | | |
| Limit of Detection | | | | 5 | 0.5 | 50 | 0.1 | 0.1 | 5 | 2 | 5 | 2 | 5 | 5 | | | | | | | | |

DRILL CORE SAMPLES

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT Rum Jungle Creek.

D.P.O. No. 20742

DATE July 1984

SAMPLE No. 970719 - 970737

COLLECTED BY D. Berkman & D. Hossack

SHEET No. 8

ANALYSED BY ANDEL

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; DD: Drill core; DC: Drill cuttings; RO: Rock chip; RG: Rock grab; SL: Soil; SS: Stream sediment

"INDICATORS OF Metal Contmt., p.p.m. HYDROTHERMAL ALTERATION"

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | V | B | % F | Rb | Sr | Ga | Ce | Y | La | U | Cu | Pb | Zn | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 970719 | | | <50 | 80 | 0·08 | 190 | 24 | 21 | 140 | 32 | 55 | 9 | 66 | 30 | 135 | DD768, 20-40'; 768/25; wrs grey ser. slate |
| | 720 | | | <50 | 140 | 0·08 | 165 | 14 | 15 | 85 | 24 | 40 | 8 | 80 | 16 | 90 | " 337-354; 768/345; grey sericitic slate |
| | 970721 | | | 190 | 130 | 0·17 | 175 | 19 | 21 | 85 | 20 | 35 | 21 | 80 | 16 | 40 | " 483-500; 768/492; by. blk graph. sch |
| | 970722 | | | <50 | 40 | 0·09 | 145 | 28 | 16 | 100 | 20 | 50 | 4 | 33 | 26 | 56 | DD765, 11-27, wrs grey. sandy slate |
| | 723 | | | <50 | 90 | 0·06 | 290 | 13 | 17 | 160 | 46 | 65 | 13 | 20 | 16 | 5 | " 213-229; 765/222; grey qz-ser schist |
| | 970724 | | | <50 | 45 | 0·11 | 190 | 31 | 21 | 65 | 18 | 40 | 9 | 76 | 40 | 145 | " 404-421; 765/416; grey by. ser slate |
| | 970725 | | | <50 | 30 | 0·21 | 28 | 76 | 9 | 60 | 14 | 20 | 10 | 43 | 10 | 30 | DD692, 183-203; 692/191; calcit-bio.-chl. sch, pyritic |
| | 726 | | | <50 | 200 | 0·25 | 70 | 115 | 32 | 210 | 40 | 90 | 16 | 43 | 16 | 550 | " 111-123; 692/118; by-chlo-qz-talc sch |
| | 970727 | | | <50 | 120 | 0·22 | 140 | 160 | 46 | 290 | 60 | 120 | 52 | 110 | 36 | 100 | " 36-56; banded grey wrs slate |
| | 970728 | --- | | <50 | 400 | 0·54 | <2 | 8 | 38 | 130 | 34 | 55 | 32 | 20 | 10 | 23 | DD713, 375-397; 713/84; by qz-bio-ser slate |
| | 729 | | | <50 | 2400 | 0·54 | <2 | 33 | 33 | 190 | 28 | 70 | 44 | 20 | 16 | 18 | " 258-275, highly pyritic " |
| | 730 | | | <50 | 270 | 0·24 | 7 | 15 | 27 | 60 | 30 | 25 | 66 | 700 | 20 | 28 | " 205-223; 713/218; by qz-ser-mylonite, tourmalin |
| | 731 | | | <50 | 145 | 0·04 | 100 | 21 | 17 | 85 | 40 | 55 | 12 | 15 | <5 | 5 | " 124-139, wrs green talcose slate |
| | 970732 | | | 210 | 105 | 0·11 | 125 | 16 | 22 | 65 | 24 | 40 | 10 | 25 | 16 | 8 | " 5-22, wrs black carbonac. slate |
| | 970733 | | | <50 | 1120 | 0·16 | <2 | 125 | 48 | 140 | 150 | 65 | 78 | 105 | 10 | 96 | DD745, 219-223; brn talcose mudstone |
| | 734 | | | 440 | 550 | 0·11 | 180 | 24 | 27 | 80 | 46 | 40 | 30 | 28 | 6 | 10 | " 138-156; 745/152; grey ser. slate |
| | 970735 | | | 460 | 2450 | 0·12 | 140 | 45 | 26 | 160 | 38 | 95 | 58 | 220 | 6 | 13 | " 120-135; 745/133; grey bpr. ser slate |
| | 970736 | | | 190 | 280 | 0·08 | 120 | 3 | 23 | 40 | 14 | 15 | 3 | 20 | 6 | 45 | DD752, 157-176; talcose & blk slate |
| | 970737 | | | 150 | 75 | 0·08 | 115 | 17 | 19 | 95 | 20 | 45 | 17 | 56 | 16 | 48 | " 429-446; 752/436; by grey sericitic slate, quartz veined |
| Average Crust | | | | | | | | | | | | | | | | | |
| Anal. Method | | | | | | | | | | | | | | | | | |
| Limit of Detection | | | | 50 | | 0·02 | 2 | 2 | 2 | 15 | 4 | | | | | | |

| Sam[redacted] No. | Rock Type - Composition | Fabric | Minor Minerals | Comments |
|---|---|---|---|---|
| 768/ 345' | Micaceous Metaquartzite. Scattered coarser subangular quartz grains in a finer quartzose mass with small parallel muscovite and biotite flakes, fine carbonaceous matter. | Semi-schistose; micas are discontinuous. Fine/medium-grained. Relict clastic textures. | Crosscutting quartz-chlorite veinlets. Detrital apatite, tourmaline. Scattered oxidised pyrite. | Greenschist facies metasediment, originally a sandy siltstone. Postmetamorphic quartz-chlorite veinlets. Fresh rock. |
| 768/ 492' | Graphite-Muscovite Schist. Abundant fine graphite intergrown with matted-parallel fine muscovite; thin streaks of microgranular quartz with minor chlorite. | Fine schistosity. Rock is deformed, folded, brecciated, and veined. | Pyrite patches and lenses. Later quartz veins, conformable and crosscutting. | Rock shows both plastic and britt deformation. Quartz appears to be the only introduced mineral. Pyrite is of syngenetic origin. |
| 765/ 416' | Quartz-Mica Schist. Mainly microgranular quartz, with evenly dispersed thin, short flakes of muscovite and brownish-green biotite. Ultrafine carbonaceous pigmentation. | Very uniform, with good preferred orientation. Not foliated or banded. Fine-grained. | Scattered small groups of fine pyrite crystals. Crosscutting quartz veinlets. | Composition verges on micaceous metaquartzite. Greenschist facies metamorphism of siltstone. Pyrite originally syngenetic? |
| 765/ 222' | Quartz-Muscovite Rock. Relatively large polygonal grains of quartz, crowded with small rosettes of muscovite. Scattered small pyrite crystals. | Average grainsize (of quartz) = 1 mm. Uniform structureless rock; no relict textures. | Small apatite grains and zircon crystals. Quartz veins. | Thought to be a type of greisen or similar granite-related rock, but rather featureless. Field relations may help. |
| 692/ 191' | Phlogopite Marble. Bands and streaks, lenses of fibrous carbonate (?dolomite), subparallel phlogopite flakes, clear granular ?replacive calcite throughout. Conspicuous rutile. | Good preferred orientation. Fibrous textures are inherited from replaced ?tremolite. | Veins and poikiloblastic patches of pyrite. Granular quartz in places. | Evidence suggests that rock was originally tremolitic, but now retrograded. Pyrite and calcite introduced. Unusually abundant rutile. |
| 692/ 118' | Actinolite-Muscovite Rock. Mainly composed of matted and subradiating needles of pale actinolite, with interstitial muscovite/ hydromuscovite; fine pyrite throughout. | Vague banding, but essentially unstructured, without relict features. | Fine black oxide opaques. Clusters of small biotite flakes. | A type of calc-silicate assembla of metasomatic origin, suggestin proximity to an intrusive. |
| 713/ 384' | Degraded Mica Schist. Dominantly composed of matted-parallel, pale Mg-chlorite, with patches of chloritised ?amphibole. Abundant cloudy rutile, and thin bands of apatite crystals. | Good compositional banding. Schistosity diminished through alteration. | Minor quartz, granular pyrite scattered through rock. Trace elbaite (Na-tourmaline). | Original rock probably a phlogop tremolite schist, derived from a chemical, possibly exhalative sediment ($P_2O_5$, $TiO_2$). |
| 713/ 218' | Pyrite-Chlorite Rock. Composed almost entirely of granular to euhedral pyrite crystals and aggregates, and relatively coarse, pale Mg-chlorite. | Structureless on this scale; chlorite is randomly orientated. | Fine cloudy rutile throughout. Small siderite rhombs. Trace apatite. | Problematical origin, but may be related to 384' in being of chemical sedimentary derivation. |

| Sample No. | Rock Type - Composition | Fabric | Minor Minerals | Comments |
|---|---|---|---|---|
| 745/ 152' | Graphite-Sericite Schist. Composed of abundant fine graphite and small parallel sericite flakes, with minor quartz in places. Cut by substantial, compact goethite veins. | Fine schistosity, not well-developed, because components very fine-grained. Faint banding. | Networks of quartz veinlest cut by younger goethite veins. | Low-grade metamorphism of strongly carbonaceous, fine argillaceous sediment. Goethite veins are devoid of diagnostic boxworks. |
| 745/ 133' | Quartz-Muscovite-Graphite Schist. Generally thin, crenulated laminae of fine matted-parallel muscovite with graphite, and granular quartz bands and lenses. | Good schistosity, distinct banding or foliation, fine folding, plastic deformation. | Isolated small crystals of elbaite. Fine leucoxene aggregates. | Featureless low-grade metasediment, originally a laminated carbonaceous siltstone. No evidence of alteration, mineralisation. |
| 752/ +36' (T.S. 50877) | Quartz-Muscovite-Graphite Schist. Mainly graphite-muscovite intergrowths, with thin quartzose partings, grading into more quartzose rock. Massive pyrite. | Finely, tightly crenulated in places; more competent quartz-pyrite is brecciated. | Networks of fine carbonate veinlets filling fractures in pyrite. | Similar to previous rock, showing varying response to competent and incompetent components to tectonism. Introduced carbonate. |

[redacted] "MINERALISED SAMPLE" [redacted]

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT Rum Jungle Creek / Area 55, EL 4417, N.T.

D.P.O. No. 20742 & 21320

DATE July 84

SAMPLE Nos. _____

COLLECTED BY D. Berkman

SHEET No. _____

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; DD: Drill core; DC: Drill cuttings; RO: Rock chip; RG: Rock grab; SL: Soil; SS: Stream sediment

ANALYSED BY Analabs (21320); Amdel (20742)

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | Metal Content, p.p.m. U | Th | Ag | Te | Se | Ba | Ni | Co | As | Bi | Y | La | Ce | | | Cu | Pb | Zn | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dpo | | | | | | | | | | | | | | | | | | | | | | |
| 21320 | 968584 | | DD | 1250 | 15 | 1·5 | < | × | 40 | 640 | 135 | 7 | × | | 90 | 95 | | | 355 | 10 | 110 | DD581, Area 55 west, 85-91'; v. soft blue bio. sch |
| " | 968585 | | DD | 540 | 5 | 1 | × | × | 230 | 1300 | 195 | 10 | 10 | | 100 | 80 | | | 185 | 30 | 795 | 582 " " 83-89'; deeply wx grn chl. sch |
| " | 968588 | | DD | 25 | × | 0·5 | × | × | 20 | 195 | 65 | 8 | 10 | | × | × | | | 150 | 30 | 30 | " " " 146-150'; dolomite breccia |
| " | 968586 | | DD | 810 | 7 | 0·5 | < | < | 20 | 470 | 100 | 25 | × | | 75 | 110 | | | 140 | 190 | 175 | DD696, 154-156'; deeply wx. grn y talcose sch |
| " | 968587 | | DD | 80 | 20 | × | × | × | 730 | 180 | 65 | 8 | × | | 90 | 130 | | | 70 | 40 | 75 | " 133-135'; blue mica sch. |
| " | 968580 | | DD | 730 | 15 | 2 | < | 7 | 20 | 600 | 360 | 230 | 10 | | 65 | 55 | | | 685 | 115 | 200 | DD713; 168'-170'; soft dk brn clay y breccia, pyritic |
| 20742 | 970730 | | DD | 66 | 8 | 1 | 0·3 | 6·2 | 16 | 750 | 395 | 280 | 11 | 30 | 25 | 60 | | | 700 | 20 | 28 | " 205-223'; pyr. gy-ser. mylonite, tourmaline |
| " | 970731 | | DD | 12 | 10 | <0·5 | <0·1 | 0·3 | 92 | 16 | 6 | 4 | 2 | 40 | 55 | 85 | | | 15 | <5 | 5 | " 124-139'; wx grn talcose slate |
| 21320 | 968582 | | DD | 430 | 15 | × | × | × | × | 505 | 175 | 7 | × | | 40 | 40 | | | 15 | 45 | 195 | DD723; 97-99', soft grey sandy shale |
| " | 968581 | | DD | 130 | 20 | × | × | 30 | 45 | 215 | 115 | 10 | 20 | | 25 | × | | | 70 | 65 | 50 | DD727; 65-67'; bleached blk shale, highly fr'd |
| 20742 | 970733 | | DD | 78 | 30 | <0·5 | <0·1 | <0·1 | 225 | 205 | 50 | 6 | 1 | 150 | 65 | 140 | | | 105 | 10 | 96 | DD745; 219-223'; brown talcose mudstone |
| " | 970734 | | DD | 30 | 22 | <0·5 | 0·2 | 1·8 | 135 | 16 | 10 | 7 | 4 | 46 | 40 | 80 | | | 28 | 6 | 10 | " 138-156'; grey ser. slate |
| " | 970701 | | DD | 165 | <4 | 1 | <0·1 | 0·7 | 140 | 650 | 3300 | 70 | <1 | <4 | 120 | 580 | | | 3040 | 2·6% | 4900 | DD819; 28-47'; brn y wh. clay after blk sh, Cu/Pb |
| " | 970702 | | DD | 74 | 6 | 1 | <0·1 | 2·5 | 215 | 1460 | 750 | 115 | 2 | 18 | 60 | 180 | | | 240 | 2600 | 4100 | " 214-232'; wx ser. sch; fr Cu/Pb |
| " | 970703 | | DD | 58 | 8 | 4 | <0·1 | 0·8 | 770 | 4940 | 5000 | 200 | 1 | 24 | 50 | 110 | | | 6500 | 3340 | 2740 | " 382-385'6"; grn. talcose mylonite |
| " | 970709 | | DD | 26 | <4 | 10 | <0·1 | 0·3 | 160 | 480 | 120 | 450 | <1 | <4 | <15 | <15 | | | 1200 | 18% | 350 | DD818; 127-145'; brn clay, ~15% Pb, ~0.5% Cu |
| | 970710 | | DD | 50 | 6 | <0·5 | 0·1 | 0·2 | 405 | 3440 | 5000 | 1440 | 11 | 12 | 30 | 40 | | | 9000 | 3000 | 300 | " 236-253'; slate breccia, ~1% Pb, 0·2% Cu |
| Average Crust | | | | | | | | | | | | | | | | | | | | | | |
| Anal. Method | | | | XRF | XRF | AAS | E2 | XRF | B1 | C1 | C1 | B1 | B1 | B1 | B1 | B1 | | | C1 | C1 | C1 | |
| Limit of Detection | | | | 3 | 4 | 0·5 | 3/0.1 | 5/0.1 | 20/10 | 5 | 5 | 2 | 10/1 | 4 | 10 | 30 | | | 5 | 5 | 5 | |

DRILL CORE SAMPLES

See CRAE Report # 12286 for DD logs

# C.R.A. EXPLORATION PTY. LIMITED

GEOCHEMICAL SAMPLING LEDGER

PROJECT RUM JUNGLE CREEK, N.T.
EL 4417 (AREA 55)

D.P.O. No. 20742
DATE July 1984
SAMPLE Nos. 970701 – 970718
COLLECTED BY D. Berkman & D. Hossack
SHEET No. 3
ANALYSED BY AMDEL

* ABBREVIATIONS: (SAMPLE TYPE) PP: Prepared pulp; DD: Drill core; DC: Drill cuttings; RO: Rock chip; RG: Rock grab; SL: Soil; SS: Stream sediment

| Grid Co-ordinates | Sample Number | Sample Width | Sample Type * | SILICATE ANALYSES $SiO_2$ | $Al_2O_3$ | $Na_2O$ | $K_2O$ | $CaO$ | $MgO$ | Tot. Fe as $Fe_2O_3$ | $MnO$ | $P_2O_5$ | $TiO_3$ | % $CO_2$ | % $SO_3$ | % C | % L.O.I. | % TOTAL | ppm U | Geological Observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | DRILL CORE GRAB SAMPLES & PETROLOGICAL SPECIMENS (these are shown as D.H. No / depth in feet, eg. 801/166). Core ex old TEP core shed at Rum Jungle |
| | 970701 | | | 36.3 | 18.2 | 0.04 | 0.37 | 0.06 | 0.21 | 24.6 | 0.26 | 1.42 | 6.40 | 0.10 | 0.26 | 0.04 | 11.5 | 99.4 | 165 | DD819, 28 – 47 ft ; lens of white clay after blk shale, Cu/Pb |
| | 702 | | | 39.1 | 14.8 | 0.05 | 3.20 | 3.10 | 8.45 | 10.3 | 0.14 | 2.32 | 4.82 | 0.05 | 0.44 | 0.06 | 12.2 | 98.5 | 74 | " 214 – 232 ; lens ser sch, Cu Zn/Pb |
| | 970703 | | | 40.0 | 11.6 | 0.10 | 2.00 | 2.16 | 13.5 | 9.75 | 0.03 | 1.04 | 3.20 | 0.06 | 10.9 | 0.43 | 13.3 | 96.7* | 58 | " 382 – 385'6" ; green talcose mylonite |
| | 970704 | | | 71.2 | 14.6 | 0.14 | 3.98 | 0.03 | 0.70 | 4.76 | 0.02 | 0.04 | 0.40 | 0.01 | 0.03 | 0.62 | 4.10 | 100.0 | 9 | DD801, 19 – 37' ; lens sericitic slate |
| | 705 | | | 65.2 | 14.1 | 0.06 | 4.06 | 0.18 | 3.46 | 6.15 | 0.09 | 0.11 | 0.40 | 0.31 | 3.05 | 0.68 | 6.35 | 100.2 | 15 | " 124 – 140 ; grey " " |
| | 706 | | | 68.1 | 14.1 | 0.09 | 5.15 | 0.24 | 2.66 | 3.38 | 0.03 | 0.13 | 0.34 | 0.03 | 3.00 | 0.57 | 5.60 | 99.8 | 25 | " 158 – 170 ; 801/166 ; green talc-sericite slate |
| | 707 | | | 67.0 | 11.1 | 0.10 | 2.90 | 0.13 | 2.76 | 6.70 | 0.02 | 0.06 | 0.44 | 0.01 | 5.80 | 4.60 | 9.20 | 100.4 | 8 | " 208 – 227 ; 801/212 ; blk byn. sch |
| | 970708 | | | 59.0 | 15.0 | 0.26 | 4.08 | 0.23 | 2.90 | 4.68 | 0.02 | 0.05 | 0.60 | 0.01 | 6.85 | 4.80 | 12.3 | 99.1 | 10 | " 430 – 466 ; 801/441 ; blk byn gf-ser. slate |
| | 970709 | | | 33.5 | 14.4 | 0.03 | 1.93 | 0.07 | 3.74 | 2.18 | 0.01 | 1.66 | 5.00 | 2.45 | 0.04 | x | 10.0 | 72.5# | 26 | DD818, 127 – 145' ; lens clay +15% Pb ~0.5% Cu |
| | 970710 | | | 42.0 | 13.0 | 0.06 | 0.73 | 3.58 | 4.10 | 15.3 | 0.56 | 2.68 | 0.45 | 7.50 | 0.33 | 0.29 | 15.5 | 98.0 | 50 | " 236 – 253' ; slate breccia ~10% Pb 0.2% Cu |
| | 970711 | | | 65.9 | 12.7 | 0.20 | 1.39 | 0.18 | 1.20 | 6.10 | 0.02 | 0.20 | 0.58 | 0.04 | 0.14 | 6.40 | 10.3 | 98.8 | 13 | DD807A, 30 – 45' ; lens black slate |
| | 712 | | | 55.8 | 18.7 | 0.06 | 3.10 | 0.10 | 0.69 | 9.20 | 0.02 | 0.05 | 1.09 | 0.01 | 9.70 | 1.14 | 11.2 | 100.0 | 15 | " 98 – 113 ; lens creamy talcose slate |
| | 713 | | | 60.9 | 12.7 | 0.18 | 3.16 | 0.24 | 1.21 | 9.75 | x | 0.04 | 0.45 | 0.04 | 17.6 | 1.06 | 9.70 | 98.3 | 3 | " 184 – 192 ; lens " " mylonite |
| | 714 | | | 63.1 | 16.7 | 0.29 | 6.95 | 0.17 | 1.00 | 5.55 | 0.01 | 0.04 | 0.70 | 0.15 | 2.5 | 0.59 | 4.74 | 99.3 | 9 | " 205 – 209 ; 807/205-209 ; creamy talcose slate |
| | 715 | | | 54.3 | 19.7 | 0.05 | 6.20 | 0.03 | 0.87 | 7.45 | x | 0.06 | 0.91 | 0.03 | 13.2 | 2.60 | 10.8 | 100.4 | 32 | " 259 – 263 ; 807/262 ; ditto |
| | 970716 | | | 36.6 | 12.2 | 0.08 | 1.52 | 5.75 | 10.2 | 17.2 | 0.25 | 1.14 | 4.74 | 0.51 | 14.4 | 0.04 | 9.45 | 99.1 | 7 | " 338 – 361 ; 807/343 ; grey silic. chlorite-ser slate |
| | 970717 | | | 57.9 | 16.1 | 0.06 | 3.92 | 0.04 | 0.97 | 8.60 | x | 0.06 | 0.66 | 0.04 | 0.09 | 6.80 | 12.2 | 100.5 | 14 | DD767, 13 – 30 ft ; lens black graphitic slate |
| | 970718 | | | 86.4 | 4.88 | 0.05 | 1.52 | 0.03 | 0.44 | 3.22 | < | 0.08 | 0.20 | 0.09 | 3.34 | 0.72 | 3.20 | 100.0 | 4 | " 153 – 171 ; 767/165 ; lt. grey sericitic slate, silicified |
| Average Crust | | | | | | | | | | | | | | | | | | | | * High S |
| Anal. Method | | | | | | | | | | | | | | | | | | | | # High Pb |
| Limit of Detection | | | | | | | | | | 0.01 | | | | 0.02 | 0.02 | | | | | |