WRM (Western Richardson Mountains)

Mineral Exploration Project

Dawson Mining District, Yukon

NTS 116I/09 and 116I/16

Yukon Mineral Exploration Project 20-064

(Focused Regional)

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Summary

The WRM project area lies within the Western Richardson Mountains of northern Yukon about 330 km north-northeast of Dawson and 40 km north-northeast of Eagle Plains. Field work, undertaken during July and August of 2020, was undertaken within NTS map areas 116I/09 and 116I/16 with access by quad and foot from the Dempster Highway. The ground evaluated by the WRM project has seen little or no previous exploration although favourable results have been obtained from properties along strike.

The WRM project benefited from the Yukon Mineral Exploration Program (Project 20-064; Focused Regional).

The WRM project area is underlain by Lower to Middle Devonian, organic-rich, calcareous shales of the upper Road River Group overlain by organic-rich, siliceous shales and cherts of the Canol Formation. Previous mineral exploration efforts within these stata have focused on a widespread, thin, sulphide layer at the contact enriched in nickel, molybdenum, zinc, platinum group elements and gold. Known informally as the NiMo horizon or the hyper-enriched black shale (HEBS) layer it commonly returns potentially economic metal grades over subeconomic widths (typically 1 to 10 cm). This horizon is a secondary exploration target of the WRM project.

The primary target of the WRM project is a sediment hosted vanadium deposit within the organic-rich shales of the upper Road River Group and Canol Formation. Vanadium is not readily accommodated within sulphide minerals and vanadium values within the sulphide-rich NiMo horizon are generally low. Within sedimentary environments vanadium is commonly associated with organic material in black shales that have accumulated in anoxic basins. The target strata of the WRM project area accumulated during the Devonian in the marine Richardson Trough, located off the coast of Laurentia (ancestral North America), under bottom water conditions that were, at times, anoxic. Previous work by industry and government has identified highly elevated concentration of vanadium in both the Road River Group and the Canol Formation within the vicinity of the WRM project area. No drilling has occurred within the WRM project area but nearby holes have intersected up to 0.40% V_2O_5 over 3.67 m in the Road River Group, 0.53% V_2O_5 over 4.19 m across the Road River Group – Canol Formation boundary, and 0.54% V_2O_5 over 1.25 m in the Canol Formation. Importantly, all of these intersections are open above and below (i.e. the core above and below these intervals was not sampled). These are potentially economic vanadium grades.

During 2020 field work was undertaken in three field areas. 160 samples of soil/scree, 21 stream silt and 27 rock samples were collected and 14 quartz claims were staked in two groups. Geological observations were recorded and in two of the field areas changes have been made to the existing geology map with stratigraphic contacts moved by up to 400 m.

Soil and scree samples were collected along six traverses perpendicular to the stratigraphic trend. Very promising vanadium results were encountered near the Road River Group – Canol Formation contact including:

- an average of 2407 ppm V (0.43% V_2O_5) across 150 m (based on 6 sample sites),
- an average of 2864 ppm V (0.51% V_2O_5) across 125 m (based on 5 sample sites), and
- an average of 3504 ppm V (0.63% V_2O_5) across 48 m (based on 2 sample sites).

Stream silt sample results of up to 413 ppm V indicate the potential for vanadium mineralization within the Road River Group several hundred metres east of the Road River Group – Canol Formation contact at a stratigraphic level within the Road River Group not previously recognized as having economic potential.

In the areas of interest outcrop is generally sparse. Exceptions occur along two major branches of Rock River (Sheep Creek), which are deeply incised into the landscape. Rock chip samples of stream bank outcrop sections have returned up to:

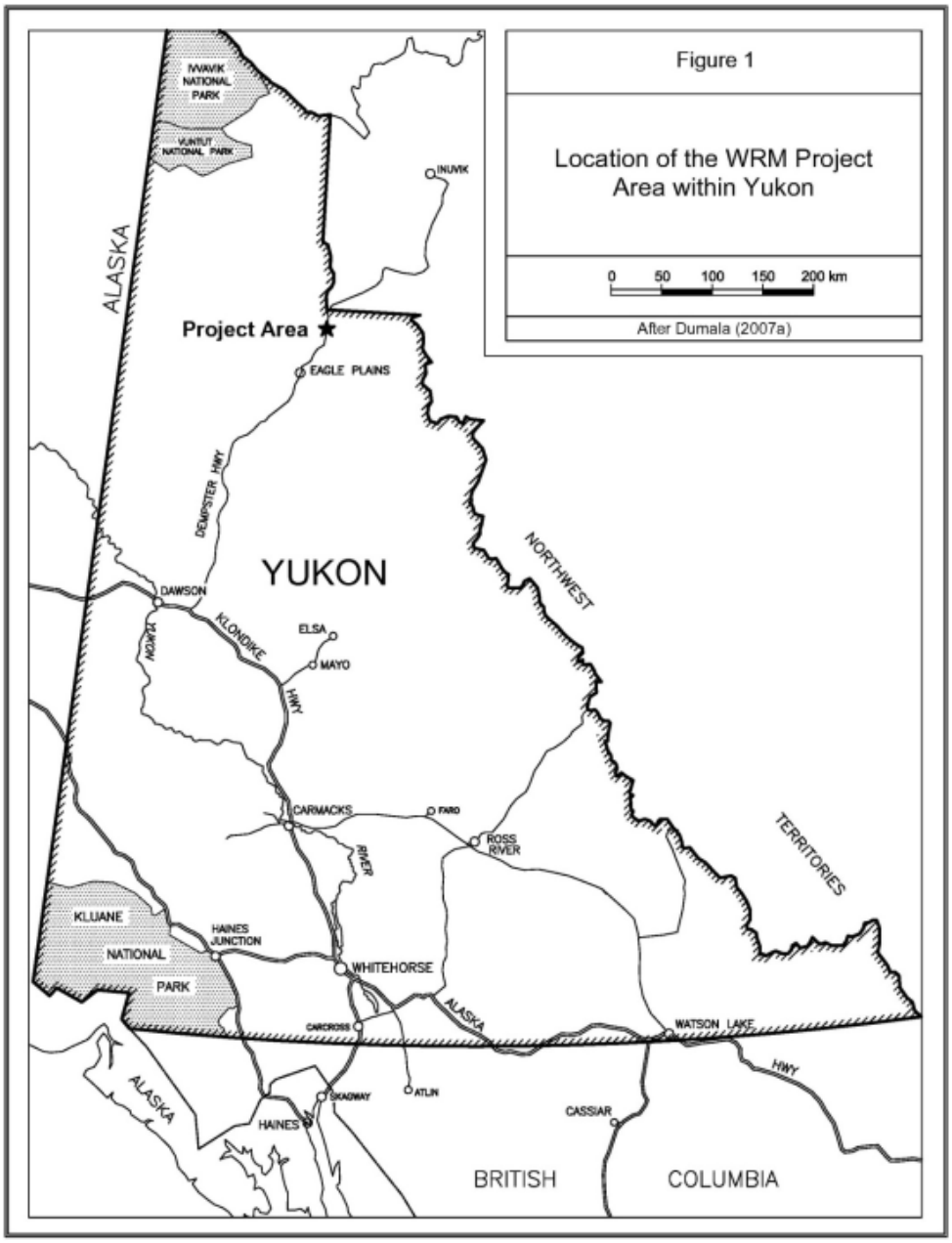
- 0.15% V_2O_5 over 100 m (based on five 50 cm chip samples) from Road River Group calcareous shale, and
- 0.21% V from an isolated 50 cm chip sample of Canol Formation shaly chert.

Anomalous concentrations of vanadium (in all sample types) are commonly accompanied by corresponding nickel, molybdenum and zinc anomalies. Elevated concentration of arsenic, antimony, selenium, silver and uranium values are also tend to be associated with vanadium enrichment.

Recommendations for work in the near term include additional soil/scree sampling traverses, additional stream silt sampling, and additional rock chip sampling and geological mapping. This work is to occur both (i) within the favourable target areas identified by the 2020 program and (ii) over unexplored ground both along strike of the favourable upper Road River Group and Canol Formation strata and deeper within the Road River Group. The grades and widths of the vanadium anomalies outlined by the 2020 soil and scree sampling traverses should warrant a trenching and/or drilling program at some future date.

Location, Access and Land Status

The WRM project area is located in the western Richardson Mountains of northern Yukon and is centred roughly 40 km northeast of Eagle Plains, located on the Dempster Highway, and about 330 km north-northeast of Dawson (Figures 1 and 2). It is located within the Dawson Mining District. Exploration work on the WRM project was conducted in three field areas that occur within a 42 km north-south distance east of the Dempster Highway within NTS map areas 116I/09 and 116I/16. Access to the field areas was gained by quad and foot from the highway.



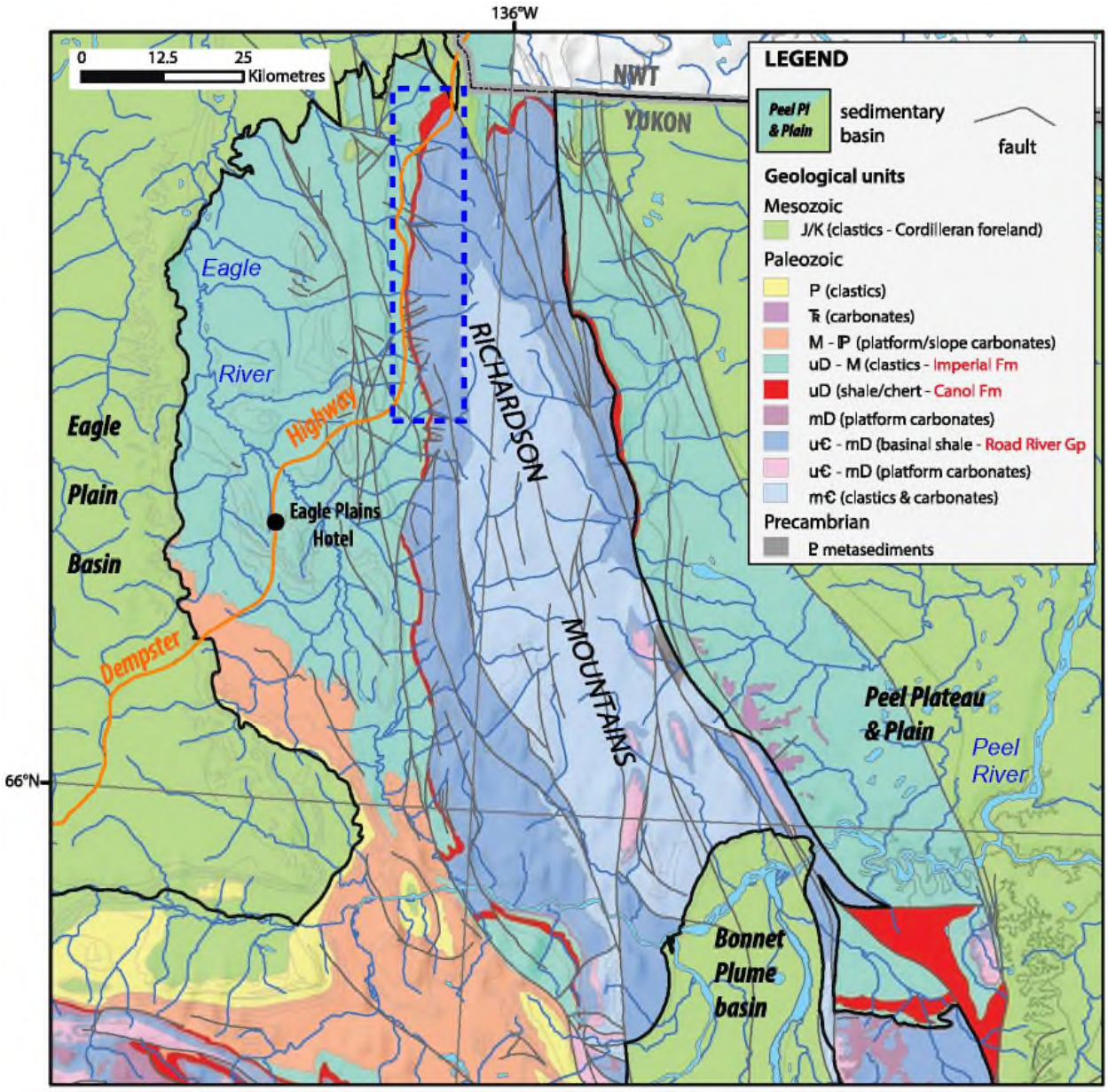


Figure 2. Location of the general WRM project area (dashed blue rectangle) and regional geology. Modified after Fraser and Hutchinson (2017).

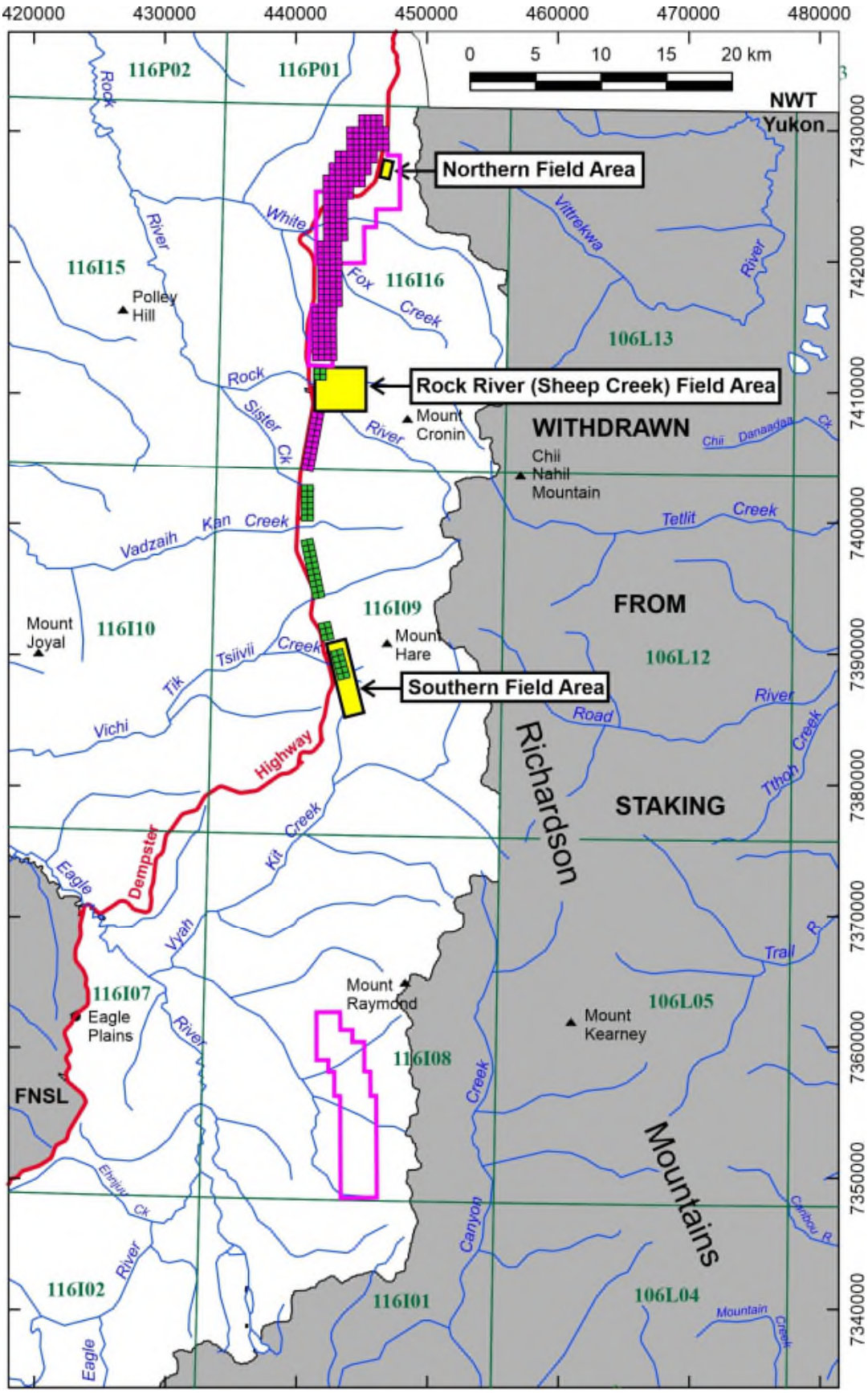


Figure 3. Location of the WRM project 2020 field areas (yellow polygons). Claims existing in March of 2020 shown in magenta and claims staked in July and August of 2020 shown in green. FNSL = First Nation Settlement Land.

Physiography

The WRM project area lies within the foothills on the western flank of the Richardson Mountains. Elevations range from about 600 m to 1100 m above sea level. The area is drained by the Rock River and westerly flowing tributaries of the Rock and Eagle rivers (Figure 3).

“Outcrop is only found along some of the more deeply incised drainages and steeper hillsides. Vegetation consists of stunted spruce, buckbrush, moss and grass (Dumala, 2007a). Ridges, some of which are locally barren of vegetation, have northerly trends reflecting the underlying bedrock stratigraphy.

History

Government Mapping and Geochemical Surveying

The project area was mapped by the Geological Survey of Canada (GSC) at 1:250,000 scale (Norris, 1981) and at 1:125,000 scale (Cecile et al., 1982). The Norris map (Eagle River; NTS map area 116I) was based on geological work undertaken in 1975. Norris also produced GSC Memoir 410, which addresses Devonian stratigraphy (Norris, 1985), and GSC Bulletin 422, which discusses geology, mineral potential and hydrocarbon potential (Norris, 1997).

In 1977 the Geological Survey of Canada released reconnaissance stream sediment geochemical data for parts of NTS map areas 106E, 106L and 116H and 116I that included data for samples from 116I/09 and 116I/16 (Hornbrooke and Lynch, 1977). The average sample density was 1 sample per 13 km^2.

In 2006 the Yukon Geological Survey released a mineral assessment of the Eagle Plain study area, including field work in 1995, 1996 and 2000 (Heon, 2006), that covers the 2020 project area.

> ***Stream sediment geochemistry:*** As part of the mineral assessment of the Eagle Plain study area a regional stream sediment geochemical survey was undertaken by the Geological Survey of Canada in order to complete coverage of the study area. These samples were analyzed for gold plus a 32 element ICP suite. In addition, stream sediment samples from the 1976 survey were reanalyzed for a similar suite of elements (Heon, 2006).
>
> ***Rock geochemistry:*** The Eagle Plain mineral assessment report also includes a considerable amount of rock geochemical data for rock samples collected in 1995, 1996 and 2000 (Heon, 2006).

Industry Exploration

Industry activities of relevance to the 2020 project area include the 2007 exploration programs on the former Fox property (Dumala, 2007a), Sun property (Dumala, 2007b) and Rich property (Dumala, 2007c), and the 2008 program on the Rich property (Gregory, 2008). Dumala (2007b) also references a 2005 soil sampling program by Shawn Ryan. The locations of these former mineral properties are shown in Figure 4 and exploration activities are summarized below.

Fox Property: "In 2007, 5 rock, 291 soil and 61 silt samples were collected on the Fox property …. A total of 425.20 m of diamond drilling was completed in 4 holes. All drill moves were made by helicopter. The 2007 holes tested along the contact between the Canol Formation and Road River Group" (Dumala, 2007a, p. 4).

Sun Property: "Soil samples collected in 2005 from what is now the Sun property by Shawn Ryan returned up to 590 ppm nickel, 620 ppm molybdenum and 6831 ppm zinc" (Dumala, 2007b, p. 4).

"In 2007, 126 soil and 2 silt samples were collected on the Sun property …. A total of 295.66 m of diamond drilling was done in 3 holes to test for NiMo mineralization along the prospective contact (Dumala, 2007b, p. 4).

Rich Property: "In 2007, 15 chip, 3 rock specimen, 625 soil and 66 silt samples were collected for the Rich property.… A helicopter-borne versatile time domain electromagnetic (VTEM) and magnetic survey was conducted over the Rich property in summer 2007 by Geotech Limited of Aurora Ontario…. A total of 2485.98 m of diamond drilling were completed in 25 holes. The 2007 holes tested along the Canol-Road River contact over a strike length of 7 km" (Dumala, 2007c, p. 4-5).

In 2008 a total of 909.21 m of diamond drilling was completed in 2 holes on the Rich property (Gregory, 2008).

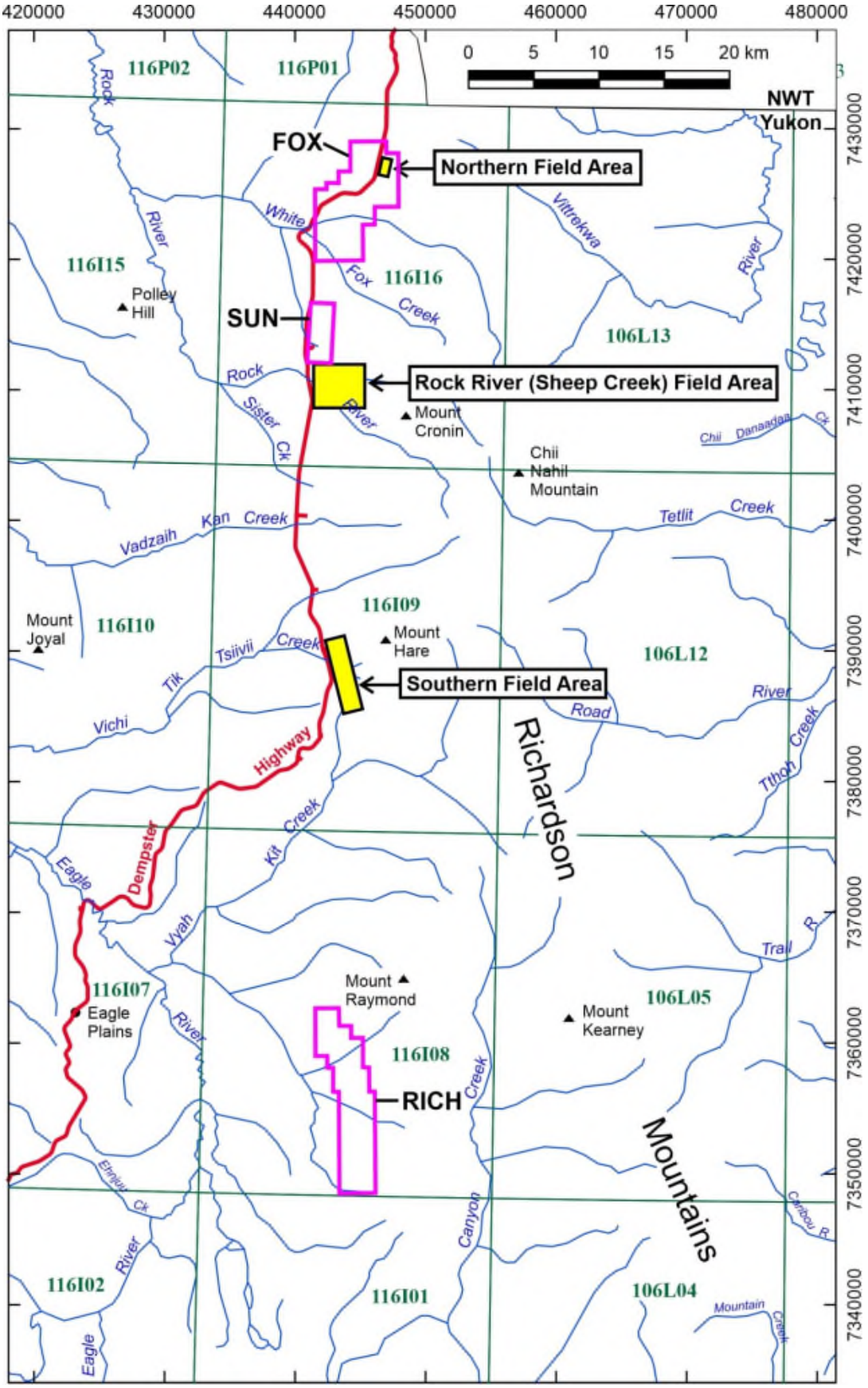


Figure 4. Location former Fox, Sun and Rich mineral properties (magenta outlines). WRM project field areas shown in yellow.

Regional Geology

Regional Setting

The WRM project area lies within Devonian basinal facies strata of Ancestral North America (Figure 5). The area is situated on the western flank of the Richardson Mountains and lies east of the Eagle Plain Basin, west of the Peel Basin and north of the Bonnet Plume Basin (Figure 6; note that these are post-Devonian basins). “Devonian marine sedimentary rocks in north Yukon … were deposited on the northern and western fringes of the Laurentian craton (ancestral North America)…. Two extensive carbonate platforms persisted in present-day northern Yukon and northwestern NWT throughout Early to Middle Devonian time: the Mackenzie Platform … in the east and the Yukon Stable Block … in the west. These carbonate platforms (represented by the Hume and Ogilvie formations …) were separated by the Richardson trough…, a Cambrian to Late Devonian intracratonic depression thought to be connected during the Early to Middle Devonian to the south with Selwyn basin, developed on the western margin of Laurentia, and, in the north, to the Hazen and Rapid troughs that developed on the northern margin of Laurentia…. The trough has been interpreted as a failed continental rift arm or aulacogen ….” (Fraser and Hutchinson, 2017, p. 732-733).

The WRM project area “… lies along the western margin of the Richardson Fault Array, a cluster of north-trending curvilinear, near vertical faults. Episodic reactivation of the Richardson Fault Array in Early and Middle Paleozoic formed a north- to northwest-trending intracratonic depression known as the Richardson Trough (Dumala, 2007a, p. 2). “In the Richardson trough … Lower Cambrian to Middle Devonian strata are assigned to the basinal Road River Group … a thick sequence of limestone, shale, chert, dolostone, and conglomeratic debris flows deposited from the adjacent carbonate platforms …. An extended period of transgression during the Middle to Late Devonian drowned these platforms, depositing deeper water black shales in north Yukon and northwestern NWT as the Canol Formation and in east-central Alaska as the McCann Hill Chert …. These shales are likely time equivalent to the distal Besa River and Muskwa formations in Liard and Horn River basins, and the Duvernary Formation in Alberta …. Beginning in the Late Devonian, black shale deposition was terminated by foreland basin sedimentation sourced from the Ellesmerian orogen in the Canadian Arctic Islands … and which now comprises the Imperial, Ford Lake, and Nation River formations” (Fraser and Hutchinson, 2017, p. 733). “The entire stratigraphic section is folded by a large-scale anticline that plunges to the north. This anticline is called the Richardson Anticlinorium and its axis approximately coincides with the centre of the trough. To the east, the Richardson Trough is bound by the Trevor Fault and to the west, by the Deception Fault” (Dumala, 2007a, p. 2).

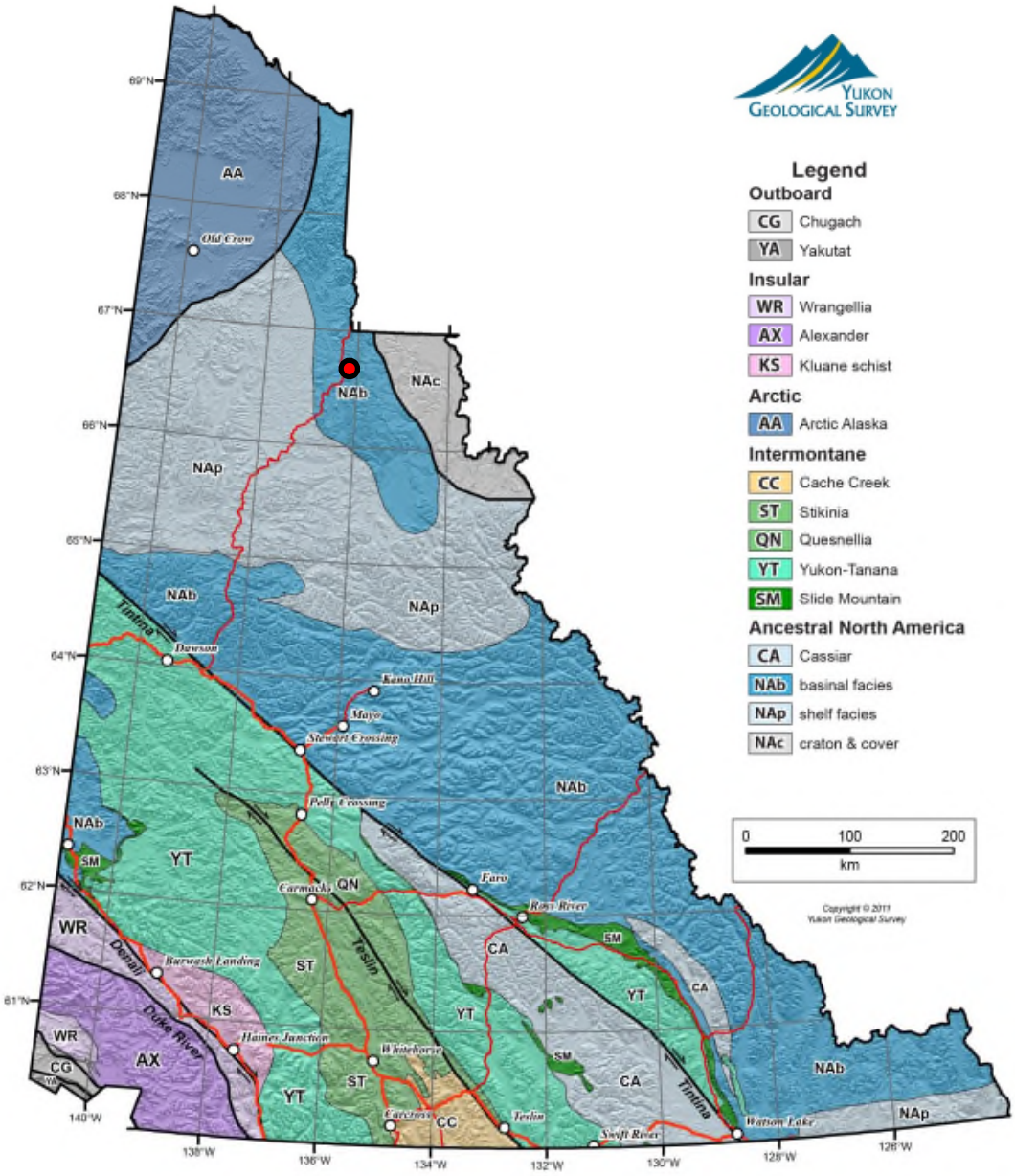


Figure 5. Yukon terrane map (Colpron and Nelson, 2011). The location of the project area is indicated by the red dot.

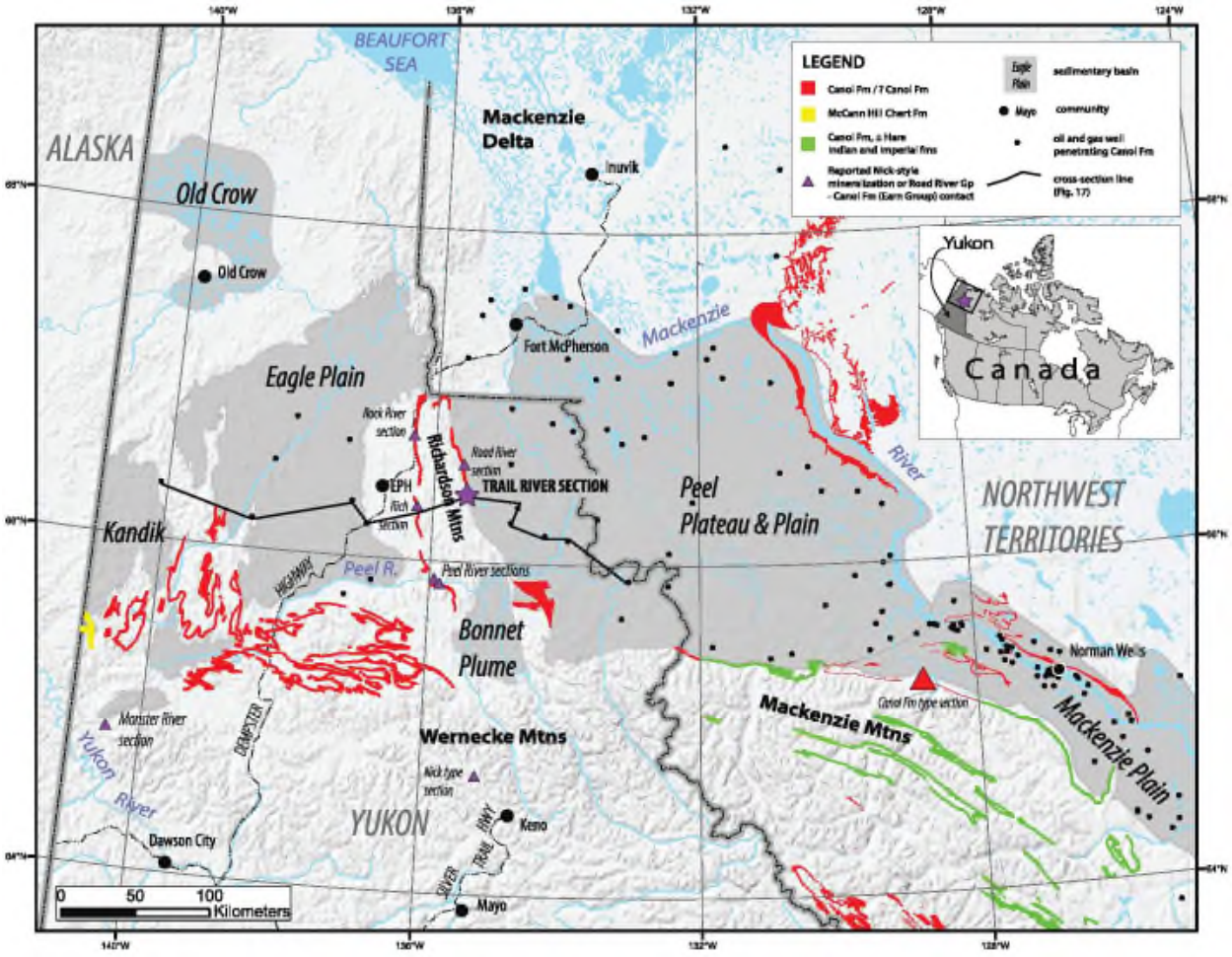


Figure 6. Map of northern Yukon and northwestern Northwest Territories displaying outcrop extent of the Canol Formation and its probable correlatives north of 64°N. From Fraser and Hutchison (2017) after Yukon Geological Survey (2015) and Okulitch and Irwin (2014). Note that the sedimentary basins shown are post-Devonian. The Rich section corresponds to the Moss section of Gadd et al. (2109). The Rock River section on the west side of the Richardson Mountains lies within the 2020 project area. Note: the nickel-molybdenum (NiMo) horizon appears to be faulted out at the Road River section and appears to be not developed at the Trail River and Road River sections (T. Fraser, pers. comm. 2020). EPH = Eagle Plains Hotel.

A map showing Paleozoic paleogeographic elements in part of northeastern Yukon, including the Richardson Trough, is shown in Figure 7. “This tectonic depression has been interpreted as a failed rift … and is bound to the east by the Mackenzie platform and to the west by the Yukon Stable Block, which for much of the early Paleozoic was a stable shelf (… Morrow, 1999). At the time of formation, the Richardson trough was situated near the equator…. The Richardson trough is characterized by >100 m of fine-grained, carbonaceous siliciclastic rocks of the Late Cambrian to Middle Devonian Road River Group (… Morrow 1999). The Canol Formation overlies the Road River Group, and consists of up to approximately 220 m of Middle Devonian to early Late Devonian siliceous, carbonaceous shale (Hutchison and Fraser, 2015). The nature of the contact between the Road River Group and the overlying Canol Formation has been described as both conformable … and unconformable…. At this contact, a discontinuous and thin (1–10 cm thick) Ni-Mo-Zn-PGE-rich HEBS” [hyper-enriched black shale] “layer occurs at many localities throughout northern Yukon…. The Late Devonian Imperial Formation, a deep-water shale interbedded with turbiditic sandstone, overlies the Canol Formation …” (Gadd et al., 2019, p. 164-166).

A west to east diagrammatic illustration of stratigraphic relationships of lower Paleozoic strata within and adjacent to the Road River Group is shown in Figure 8. A Devonian and Carboniferous lithostratigraphy of western Canada extending from near the northern Yukon – Alaska Border to central Alberta is presented in Figure 9.

A west to east stratigraphic section across the Eagle Plain Basin and Richardson Anticlinorium is shown in Figure 10. Cambrian to Devonian strata within the Richardson Anticlinorium were deposited within the Richardson trough. Note the absence of the Oglive Formation (limestone), which results in the Canol Formation lying above the Road River Group, and the thickening of the Canol Formation within the Richardson Anticlinorium.

A subsurface stratigraphic cross-section of lower Paleozoic strata across the Richardson Trough, with gamma and sonic logs, is shown in Figure 11. The diagram illustrates (i) an increase of Canol Formation thickness within the Richardson Trough, (ii) an increase in radioactivity within Canol Formation strata and (iii) that Canol Formation radioactivity is less pronounced in the Richardson Trough well compared to wells through the Yukon Stable Block and the MacKenzie – Peel Shelf.

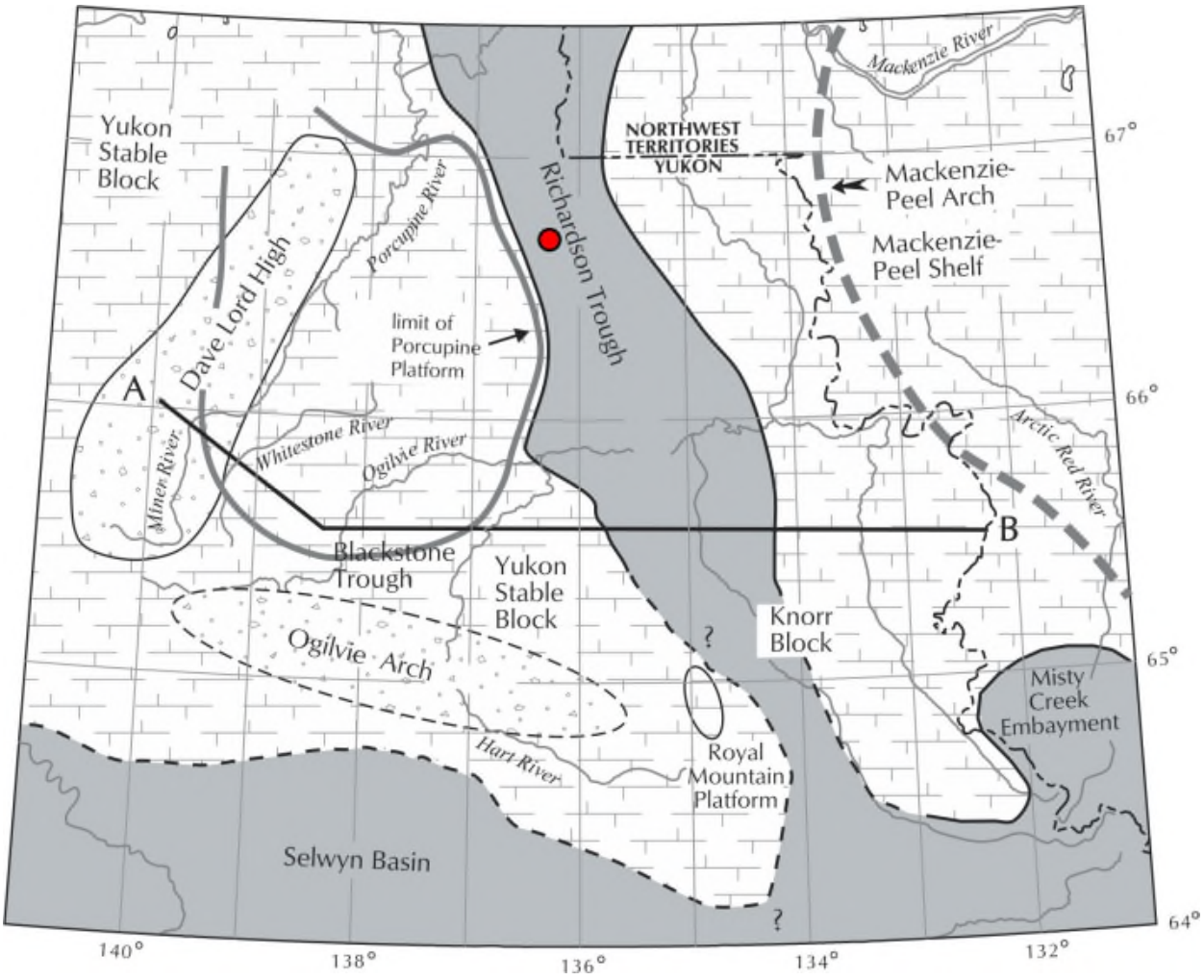


Figure 7. Paleozoic paleogeographic elements in part of northern Yukon including the Richardson Trough (Morrow, 1999; Osadetz et al., 2005). The red dot indicates the project area. Areas of predominantly shallow water carbonate deposition are filled with a modified brick pattern while the shaded regions are predominately regions of basinal shale deposition. The Mackenzie-Peel Shelf is equivalent to the Mackenzie Platform. Devonian and older succession along line A-B are illustrated in Figure 8.

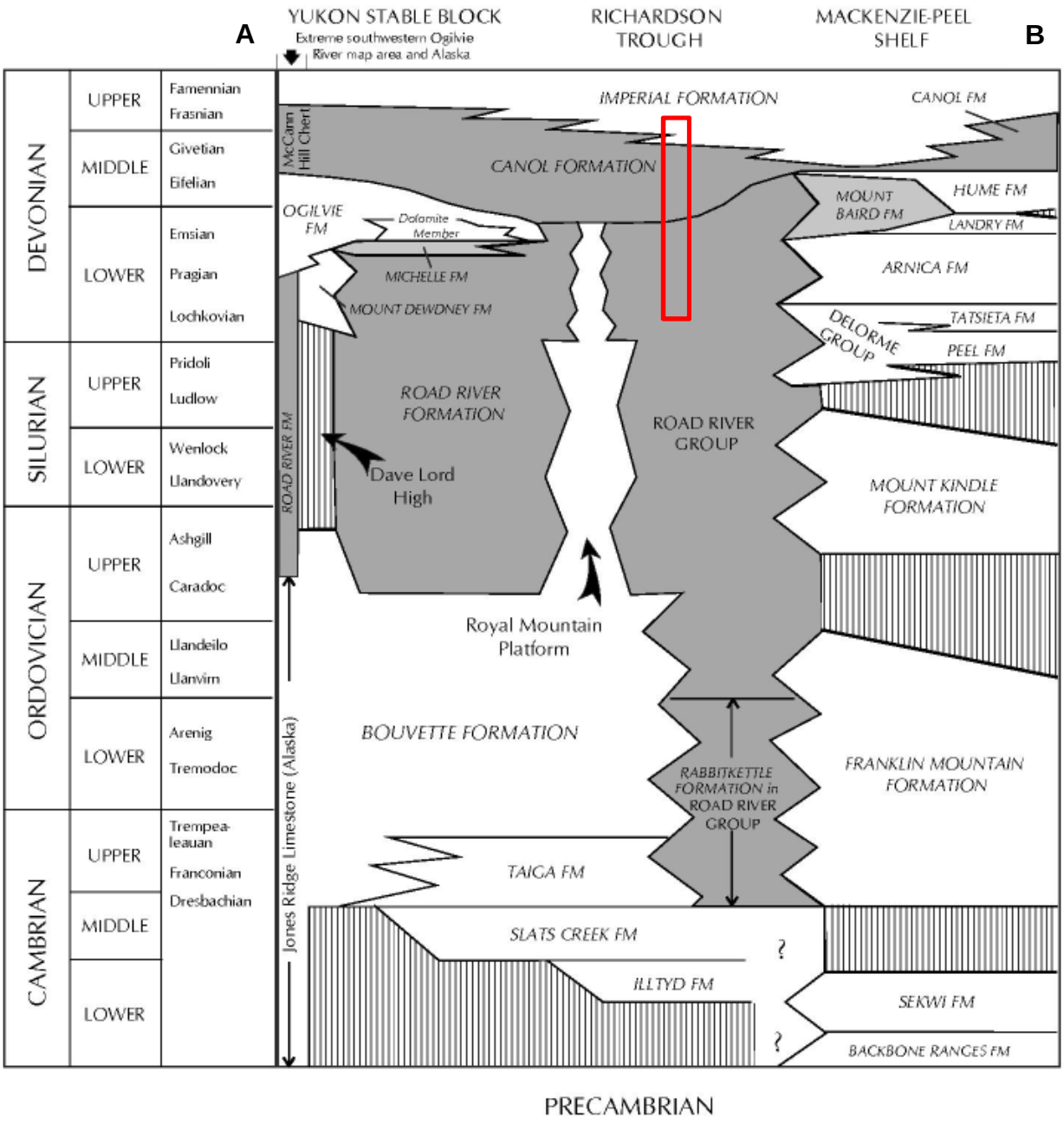


Figure 8. West to east diagrammatic illustration of stratigraphic relationships of lower Paleozoic (Cambrian to Devonian) strata within and adjacent to the Richardson Trough (Morrow, 1999; Osadetz et al, 2005). Location of section (A-B) shown in Figure 7. WRM project area stratigraphy shown with red rectangle.

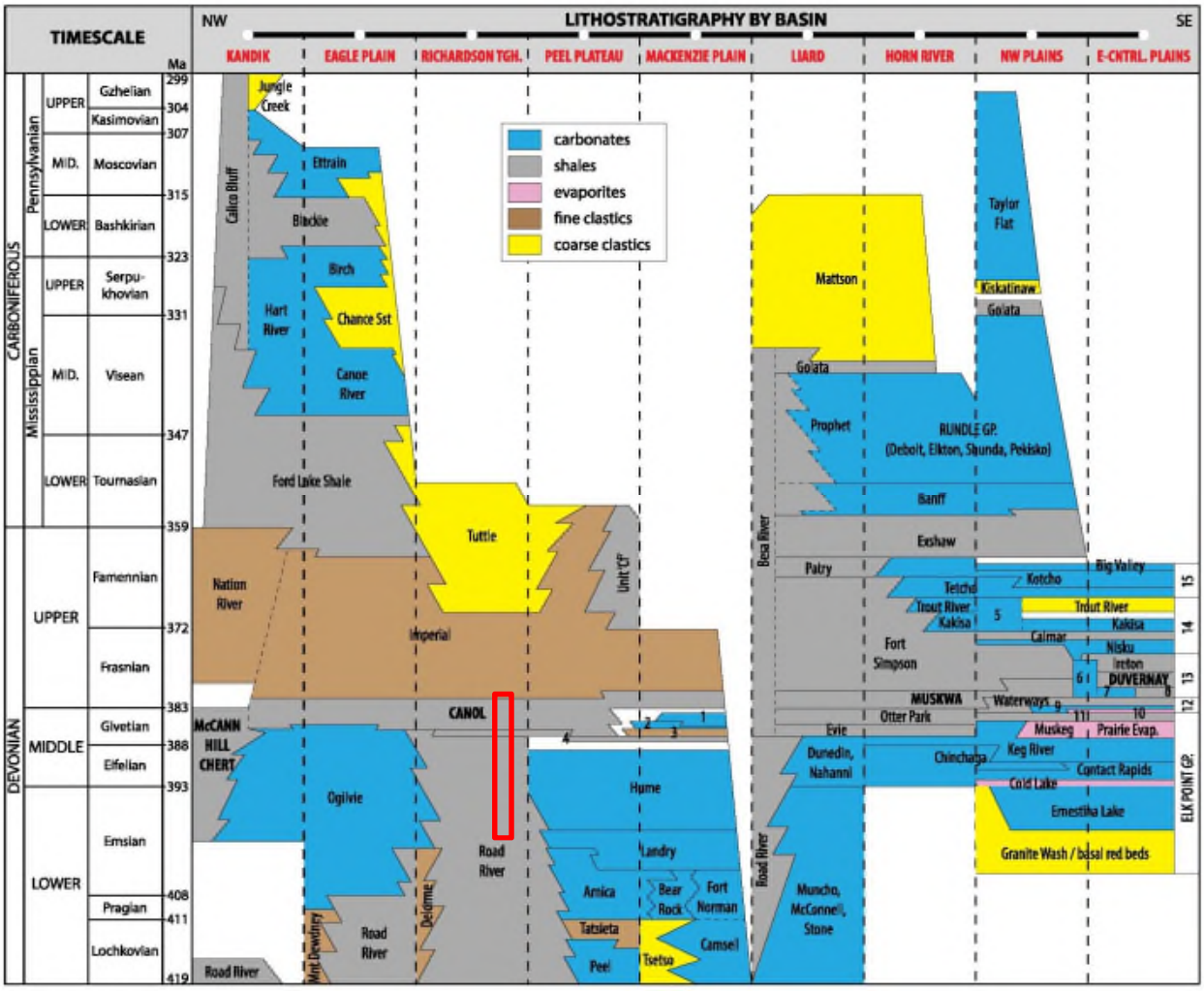


Figure 9. Devonian and Carboniferous lithostratigraphy of western Canada extending from near the northern Yukon – Alaska border (NW) to central Alberta (SE). From Fraser and Hutchinson, 2017). WRM project area stratigraphy shown with red rectangle. Stratigraphy compiled from the following: Yukon Territory (eastern Kandik, Eagle Plain, Richardson trough, Peel Plateau; Pigage 2007); Alaska (western Kandik; Van Kooten et al. 1997); Northwest Territories (Mackenzie Plain; Pyle et al. 2014); British Columbia (Liard and Horn River; Ferri et al. 2013, 2015); NW and E-Central Alberta Plains (Alberta Geological Survey, 2015). Numbered units: (1) Kee Scarp Mb, (2) Ramparts Fm, (3) Hare Indian Fm (incl. Bell Creek Mb), (4) Bluefish Mb, (5) Graminia Fm, (6) Leduc Fm, (7) Cooking Lake Fm, (8) Majeau Lake Fm, (9) Slave Point Fm, (10) Fort Vermilion Fm, (11) Watt Mountain Fm, (12) Beaverhill Lake Gp, (13) Woodbend Gp, (14) Winterburn Gp, (15) Wabamun Gp.

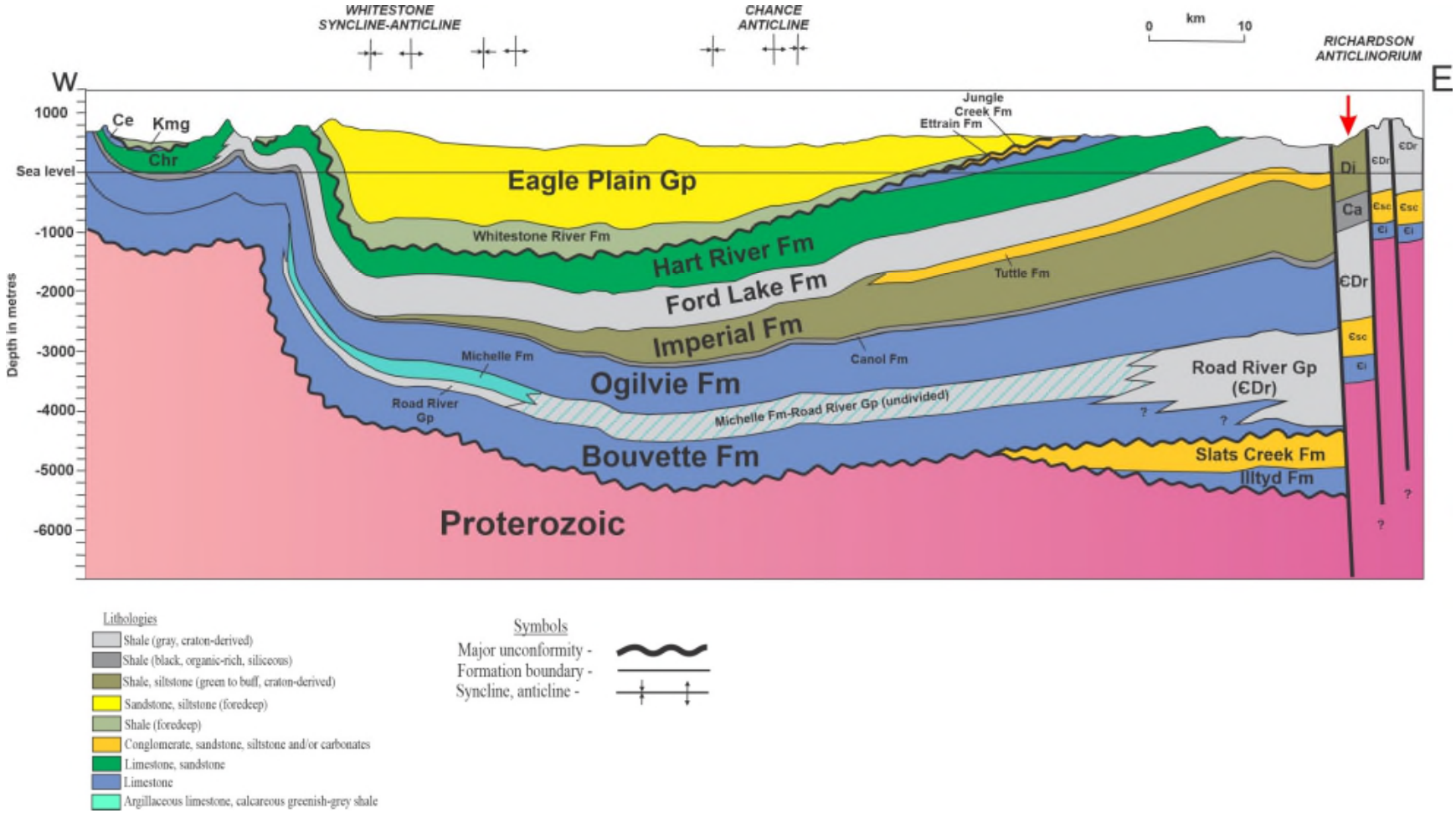


Figure 10. West to east stratigraphic section across the Eagle Plain Basin and Richardson Anticlinorium along 66°07'30" latitude within NTS map areas 116I and 116K (Morrow, 1999; Hannigan, 2014). The part of the section analogous to the project area is indicated by red arrow. Note that within the Richardson Anticlinorium (Cambrian to Devonian Richardson trough) the Oglive Formation (limestone) is absent, which results in the Canol Formation lying above the Road River Group, and the Canol Formation is thicker.

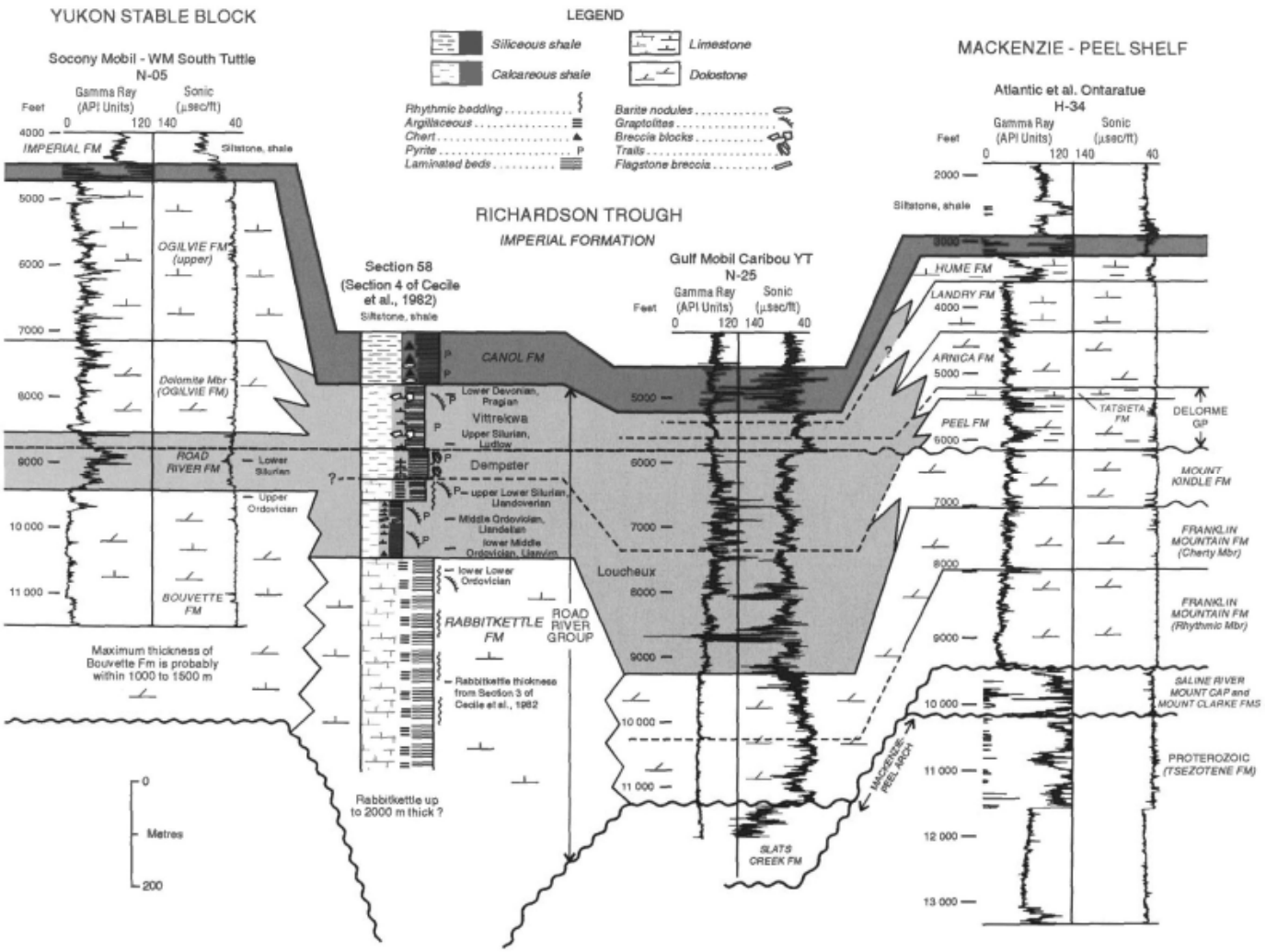


Figure 11. Subsurfacestratigraphic cross-section of lower Paleozoic strata showing the Yukon Stable Block in the west, the Richardson Trough, and the MacKenzie – Peel Shelf in the east (Morrow, 1999). The Sacony Mobile WM South Tuttle well (N-05) is located about 30 km southwest of the WRM project area and the Gulf Mobile Caribou YT (N-25) lies about 70 km southeast of the project area. Note increase in radioactivity (gamma ray log) in Canol Formation but that this increase in radioactivity is less pronounced in the Gulf Mobile Caribou YT well within the Richardson Trough (also note that the gamma ray curve "wraps" where values exceed 120 API units and the scale changes from 0-120 to 120-240 API units and that the vertical scales are in feet).

Richardson Trough Depositional History

Late Cambrian to Early Ordovician: "The oldest formation in the Road River Group is the Rabbitkettle Formation in Richardson Trough and western Selwyn Basin (Late Cambrian to Early Ordovician). It consists of dark grey to black argillaceous lime mudstone rhythmically alternating with silty limestone (Cecile et al., 1982). The formation is equivalent to Franklin Mountain Formation and ranges in thickness between 65 to 2000 m in Richardson Trough" (Hannigan, 2014, p. 12; Figure 8).

Middle Ordovician to Middle Devonian: "Upper Road River strata in Richardson Trough, Selwyn Basin and Misty Creek Embayment range in age from Middle Ordovician to Middle Devonian … making these rocks equivalent to the Mount Kindle to Hume formation platformal successions to the east. Three informal units were recognized by Cecile et al. (1982) in Upper Road River strata in Richardson Trough; Loucheux, Dempster and Vittrekwa. Loucheux strata consist of black, graptolitic silicified shale, limestone, black chert and resedimented carbonate breccia. Dempster Formation rocks contain argillite and argillaceous dolostone, calcareous shale, argillaceous lime mudstone, silty dolostone and granule conglomerate. Vittrekwa Formation strata consist of rusty, black siliceous shale, conglomerate and lime mudstone (Cecile et al., 1982)" (Hannigan, 2014, p. 12; Figures 8 and 11).

"Major transgression signalled the beginning of deposition of the Middle Devonian Hume assemblage …. In Richardson and Blackstone troughs, dark and siliceous basinal facies shales of the Road River Group accumulated …. On Peel Platform, the siliciclastic basin fill consists of a unit of dark bituminous highly radioactive shale called the Bluefish Member of the Hare Indian Formation" (Hannigan, 2014, p. 14).

Late Middle Devonian: "During late Middle Devonian time, sedimentation patterns changed dramatically as turbiditic, chert-rich clastics derived from the north and west flooded the northern Cordillera…. Another change was an abrupt transition from shallow water to much deeper water sedimentation which is marked by deposition of the euxinic black siliceous Upper Devonian Canol shale…. Thicknesses range from 110 to 225 m. The Canol Formation conformably overlies the Road River Group in Richardson and Blackstone troughs and the Ogilvie Formation on the Yukon Stable Block. With the exception of a few isolated carbonate platform remnants from the Porcupine Platform, this 'Lower Fairholme' stratigraphic succession marks the end of carbonate platform deposition across all Lower Paleozoic shelf areas in northern Yukon" (Hannigan, 2014, p. 15; Figures 8 and 9).

Early Upper Devonian: "Early Upper Devonian Imperial deposition consists of siliciclastics dominated by detrital influx from the Ellesmerian Orogeny to the north and east. An Imperial depocentre occurs along the northern periphery of the basin where 2000 m of siliciclastic sediment accumulated during Late Devonian time…. Turbiditic flysch facies dominate beneath Peel Platform" (Hannigan, 2014, p. 15; Figures 8 and 9).

Regional Devonian Stratigraphy

A generalized stratigraphic column of Devonian units in the Richardson trough is presented in Figure 12. This diagram includes schematic stratigraphic sections displaying detailed hyper-enriched black shale (HEBS) sections at four locations in northern Yukon (see Figure 13 for section locations).

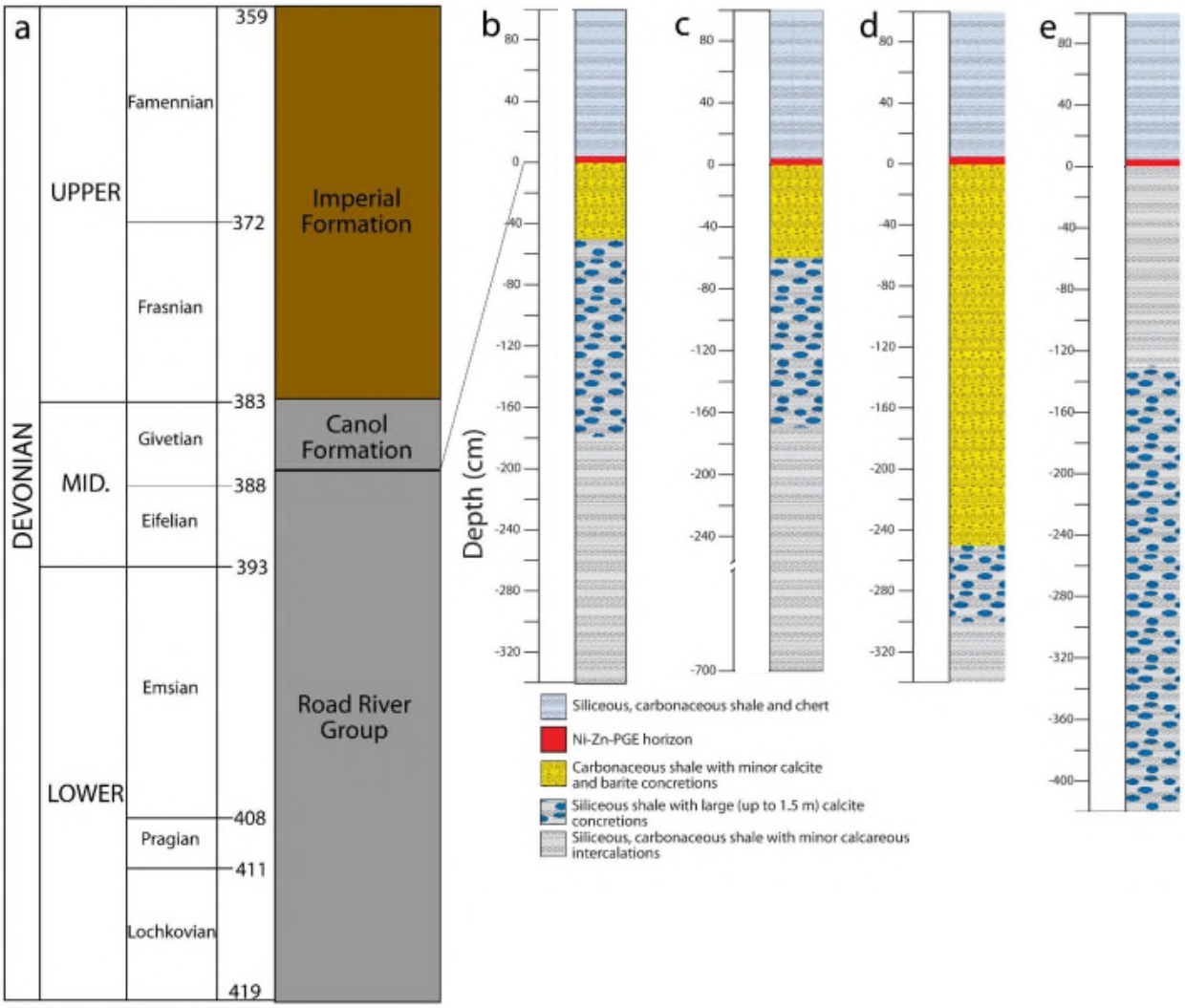


Figure 12. Devonian stratigraphy of Richardson trough in northern Yukon (a) with schematic stratigraphic sections that highlight the HEBS layer at: (b) Moss / Rich (Eagle Plains); (c) Peel River; (d) Monster River; and (e) Nick HEBS localities. From Gadd et al. (2018). Note that depth scales for detailed sections are in centimetres. See Figure 13 for section locations.

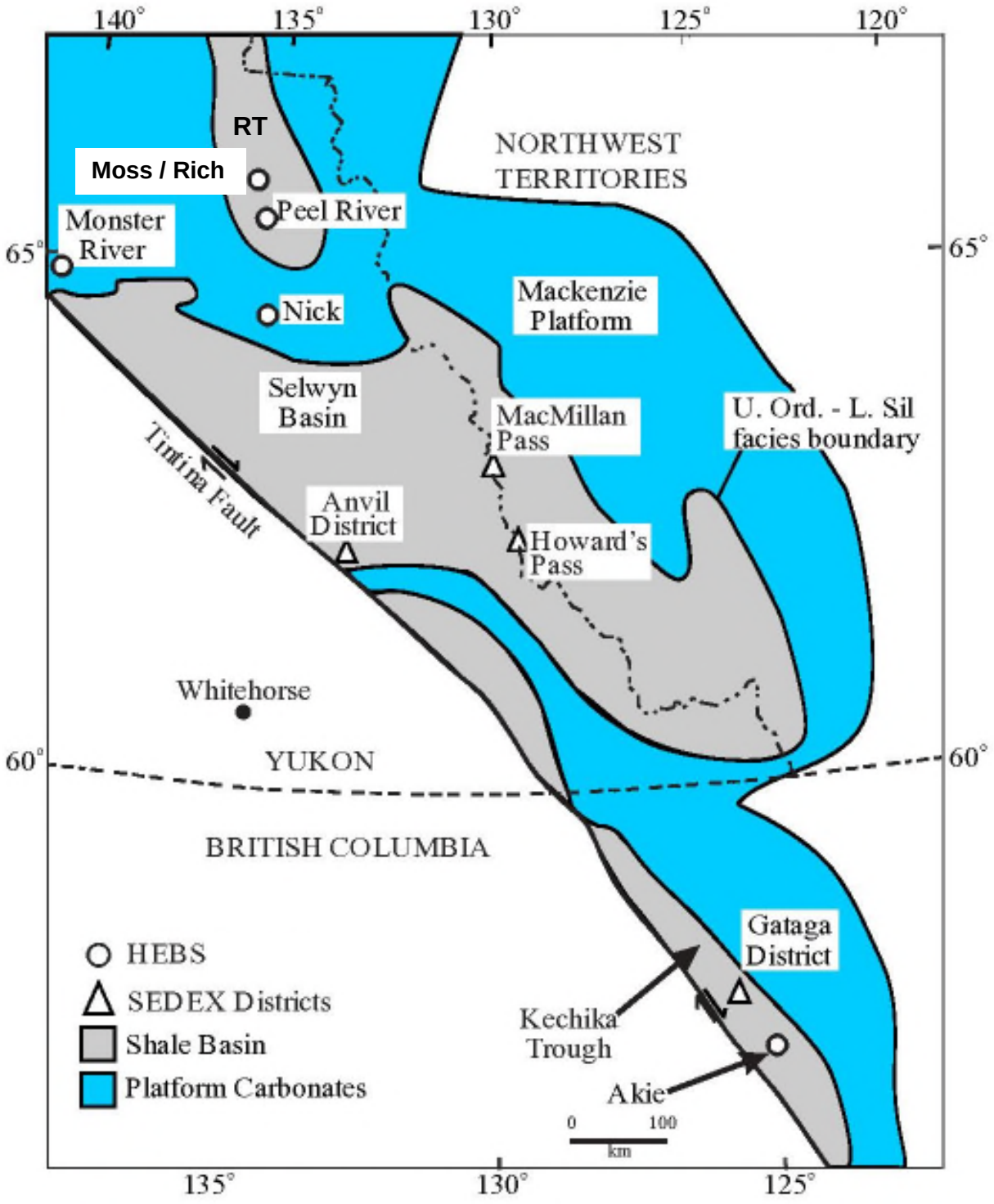


Figure 13. Map of ancestral North American passive continental margin displaying locations of HEBS occurrences and SEDEX districts (Gadd et al., 2018). RT = Richardson Trough. The WRM project areas lies north of the Moss / Rich HEBS occurrence.

Road River Group

The type section is located near 66°44'N and 135°46'W on a tributary of the Road River, which flows east into the Peel River on the east side of the Richardson Mountains. The base of the type section is faulted but thicknesses estimated nearby vary from 1677 to 2653 m. "Type section consists of a thick succession of alternating dark coloured graptolitic shales, argillaceous limestones and subordinate amounts of chert, dolomite, siltstone, and sandstone. This succession may be divided into a lower limestone and argillaceous limestone member, and an upper recessive shale, argillaceous limestone, shaly argillite, and chert member.… At the type location and throughout most of the Richardson Mountains, the Road River is unconformably overlain by Upper Devonian Canol Formation shale" (Hills et al., 1981).

"The uppermost Road River Group is latest Eifelian and older in age (≥387.7 Ma) and is primarily calcareous and dolomitic shale and mudstone, representing a slope environment below a carbonate platform that experienced cyclical turbidity current deposition" (Fraser and Hutchinson, 2017, p. 731).

Parts of NTS areas 106L and 116I, including the project area, were mapped by Cecile et al. (1982). They describe an unnamed unit immediately below the Canol Formation (i.e. the upper part of the Road River Group) as "graptolitic, black shale and shaly limestone; minor limestone, intraclast conglomerates and breccia. The upper 0-50 m is a white weathering, siliceous shale and chert; measured thicknesses 295 m … and 490 m" (Cecile et al. , 1982). Fraser et al. (2012) also noted that in the western Richardson Mountain the upper 50 m of the Road River Group is white weathering, siliceous shale and chert.

Road River Group – Canol Formation Contact (Hyper-Enriched Black Shale)

A thin (1 to 10 cm thick) Ni-Zn-PGE-rich hyper-enriched black shale (HEBS) layer at the Road River Group – Canol Formation contact is documented in many localities throughout northern Yukon (Figure 12). "The stratigraphy of each of the HEBS deposits is nearly identical. From the base upward …, a typical section comprises: 1) a 2 to 20 m thick carbonaceous shale with 1 to 1.5 m diameter calcareous concretions termed the "limestone ball member". Shale beds drape around concretions, and bedding is preserved within some concretions; 2) an up to 120 cm thick siliceous, carbonaceous shales with centimetre scale barite and calcite nodules; 3) a 1 to 10 cm thick stratabound, stratiform semi-massive Ni-Zn-Fe-sulphide HEBS layer; 4) carbonaceous, siliceous shale to black-cherty shale that is in sharp contact with the underlying HEBS mineralization" (Gadd et al., 2018, p. 194; Figures 12 and 13).

Canol Formation

Cecile et al. (1982) describe the Canol Formation as "whitish-grey weathering, jarositic, siliceous shale; chert, which, in the western map area, contains units of calcareous shale; contains lensoidal to ovoid metre-scale limestone nodules; measured thicknesses 410 m … and 235 m."

"The Canol Formation is confined to the latest Givetian to middle Frasnian stages (383.2–376.7 Ma) and consists of rhythmically bedded, biogenically sourced, siliceous shale and chert that was deposited in an

anoxic (and likely euxinic) to oxic basin that evolved from moderately to strongly hydrographically restricted over time" (Fraser and Hutchinson, 2017, p. 731).

"The Canol Formation and time-equivalent strata represent the northernmost expression of a Devonian maximum sea-level transgression…. It is one of the source formations for the conventional oil reservoirs near Norman Wells, NWT" (Fraser and Hutchinson, 2017, p. 732). "The Canol Formation is confined to the latest Givetian to middle Frasnian stages (383.2–376.7 Ma) and consists of rhythmically bedded, biogenically sourced, siliceous shale and chert that was deposited in an anoxic (and likely euxinic) to oxic basin that evolved from moderately to strongly hydrographically restricted over time" (Fraser and Hutchinson, 2017, p. 731).

Imperial Formation

The Upper Devonian Imperial Formation … is a thick package of siliciclastic strata representing shelf, slope, and basin deposits derived from the Ellesmerian orogeny north of the study area…. In the western Richardson Mountains, the Imperial Formation consists of three lithologically different units: a lower rusty weathering, siliceous siltstone and shale with minor sandstone …, a middle unit dominated by siliceous siltstone, turbiditic sandstone and shale, and an upper portion of light grey weathering, laminated shale and siltstone with thin orange weathering pyritic sandstone beds. The lower portion has been dated in the study area as Frasnian to Famennian…. In the subsurface of Eagle Plain, the Imperial Formation attains a maximum thickness of 1229 m in well intersections" (Fraser et al., 2012, p, 49).

Road River Group and Canol Formation in the Richardson Mountains: Measured Sections

Trail River Section

Trail River Section − Geology

The Trail River section, measured by Fraser and Hutchinson (2017), lies on the west side of the Richardson Anticlinorium about 32 km southeast of the WRM project area. “Four distinct lithostratigraphic units were observed at Trail River that in stratigraphic order are assigned to the Road River Group (17.4 m), Road River – Canol contact zone (2.3 m), Canol Formation (227.3 m), and Imperial Formation (12.0 m)” (Fraser and Hutchinson, 2017; Figures 14a, 14b and 15).

Road River Group (upper part)

“Upper Road River Group strata consist of recessive dolomitic and calcareous shale (fissile) and mudstone (non-fissile), with 10% resistant bioclastic packstone beds and one 15 cm normally graded bed of chert-pebble conglomerate comprising rip-up clasts of chert fining upwards to fine-grained sandstone. Dolomitic and calcareous shale and mudstone are dark grey on fresh surfaces and weather grey-brown, and they are laminated and occur in beds ~2–10 cm thick…. Fine-grained pyrite, both disseminated and laminated, is present. Packstone beds range up to 28 cm in thickness, are medium grey in colour, and exhibit scoured lower and sharp upper contacts, with no obvious grading. Bioclasts include fragmented crinoids, brachiopods, and bivalves. The chert–pebble conglomerate consists of randomly oriented, matrix-supported, subangular, flat, and elongate pebbles (≤5 cm long and ≤2 cm wide) in a sandy matrix, with local dolostone cobbles…. The bed shows moderate to poor sorting and is normally graded. The uppermost 1.5 m of the Road River consists of bed-parallel, microcrystalline dolostone concretions up to 4.5 m long and 1 m thick. Internal planar lamination is preserved, and the concretions are surrounded by differentially compacted carbonates mudstone …. A possible 8 cm long nautiloid long-axis impression was observed in one concretion in addition to several 1 cm rounded cross-sections” (Fraser and Hutchinson, 2017, p. 735-736; Figure 15).

“Road River Group mudstone shows a predominance of dolomite (54%–59%), quartz (19%–35%), and calcite (4%–13%)” (Fraser and Hutchinson, 2017, p. 741).

Canol Formation

“The Canol Formation on Trail River is characterized by rhythmically bedded siliceous shale and chert comprising three lithofacies: siliceous shale, interbedded siliceous shale and chert (with variable

percentages of each greater than 10%), and chert …. All lithofacies are characterized by disseminated and framboidal pyrite and concretionary carbonate and pyrite. The exposure is resistant, forming a canyon in the river valley and is highly fractured, with three dominant joint-sets occurring at high-angles to bedding" (Fraser and Hutchinson, 2017, p. 736-738; Figure 15).

Canol Formation Lithofacies 1: Siliceous Shale:

> Siliceous shale is black on fresh surfaces and weathers dark grey to black and olive grey, often with a distinctive yellow–grey–green weathering residue. The shale is fissile, cleaving into sheets dependent on laminae thickness…. Laminae are planar and contacts are sharp. Two variants of this lithofacies are (i) thicker-bedded units, with beds up to 10 cm thick, which require a hammer to break; and (ii) recessive, finely laminated units, composed of beds up to 3 cm thick that are softer, easy to break with the hand, and locally weather to a soft clay-consistency (also referred to as wafery shale). This lithofacies includes up to 10% chert beds. The high silica content of these shales was indicated in the field by the "broken glass" sound when walking on scree piles. Siliceous shale is more dominant than chert in the upper half of the Canol Formation (above 146 m measured depth)" (Fraser and Hutchinson, 2017, p. 738).

Canol Formation Lithofacies 2: Chert

> Chert is black on fresh surfaces and weathers dark to medium grey to black. Unlike the fissility of the shale, the chert exhibits conchoidal fracture and is very difficult to break with a hammer …. Laminations (millimetre-scale) can be observed on weathered surfaces; however, the chert will only separate along certain bedding planes. Bed thicknesses are commonly 1–10 cm, but they may be as thick as 16 cm. This unit may include up to 10% siliceous shale partings in intervals <5 cm thick. Chert dominates the lower half of the Canol Formation, below 146 m measured depth" (Fraser and Hutchinson, 2017, p. 738).

Canol Formation Lithofacies 3: Interbedded Siliceous Shale and Chert

> This facies comprises interbedded siliceous shale and chert end-members described above, with variations in proportions of each greater than 10%. It is more common in the upper half of the measured section, above 126 m measured depth" (Fraser and Hutchinson, 2017, p. 738).

Analyses of Canol Formation samples "… indicate 92%–100% quartz with lesser muscovite (≤4%), jarosite and pyrite (≤4%), and barite and gypsum (≤1%). The only exception is the very basal Canol Formation sample at 19.7–20.0 m, which contains less quartz than the rest of the formation (79%) and more muscovite (11%) and pyrite (6%)" (Fraser and Hutchinson, 2017, p. 741).

Trail River Section − Geochemistry

Nickel–Molybdenum Suite: The NiMo horizon does not occur at the Trail River section. Maximum values within the 2.3 m thick Road River – Canol transition zone (RCTZ) include 213 ppm Ni, 43 ppm Mo and 403 ppm Zn (Fraser and Hutchinson, 2017). Twelve of the 13 samples from this interval contain only modest S values (1.89% to 6.96% S). However, one near the middle of the RCTZ (sample 14-TF-

001 18.2 m) returned 29.57% S and 38.4% Fe_2O_3 but only 67.7 ppm Ni and 5.7 ppm Mo (Fraser and Hutchinson, 2017).

Vanadium: The maximum vanadium values obtained from the systematic sampling of the Trail River section were 88 ppm V in the upper Road River Group (10 samples), 453 ppm V in the Road River – Canol transition zone (13 samples), 1444 ppm V in the Canol Formation (117 samples), and 266 ppm V in the lower Imperial Formation (7 samples). A plot of V versus stratigraphic height for the Trail River samples is presented in Figure 16 (along with U and Mo). Note the overall enrichment of V in the lower part of the Canol Formation (lithochemozones C and D) particularly over the interval from 58 to 130 m, which has an average of 884 ppm V (0.16% V_2O_5) over 72 m including an average of 1112 ppm V (0.20% V_2O_5) over 14 m from 76 to 90 m (Fraser and Hutchinson, 2017).

Silicon: "The very high SiO_2 composition (average 83%) of the Canol Formation is supported both by facies interpretations (dominance of chert and siliceous shale) and by XRD results where quartz averages 96% …. A biogenic silica source for the Canol Formation is inferred based on a negative correlation between SiO2 versus Zr ….. The biogenic source is likely the hemipelagic production of radiolarian tests and lesser sponge spicules (observed in biostratigraphic samples) that either rained out onto the seafloor or were dissolved in the water column and then reprecipitated as silica cement in the ocean floor" (Fraser and Hutchinson, 2017, p. 751).

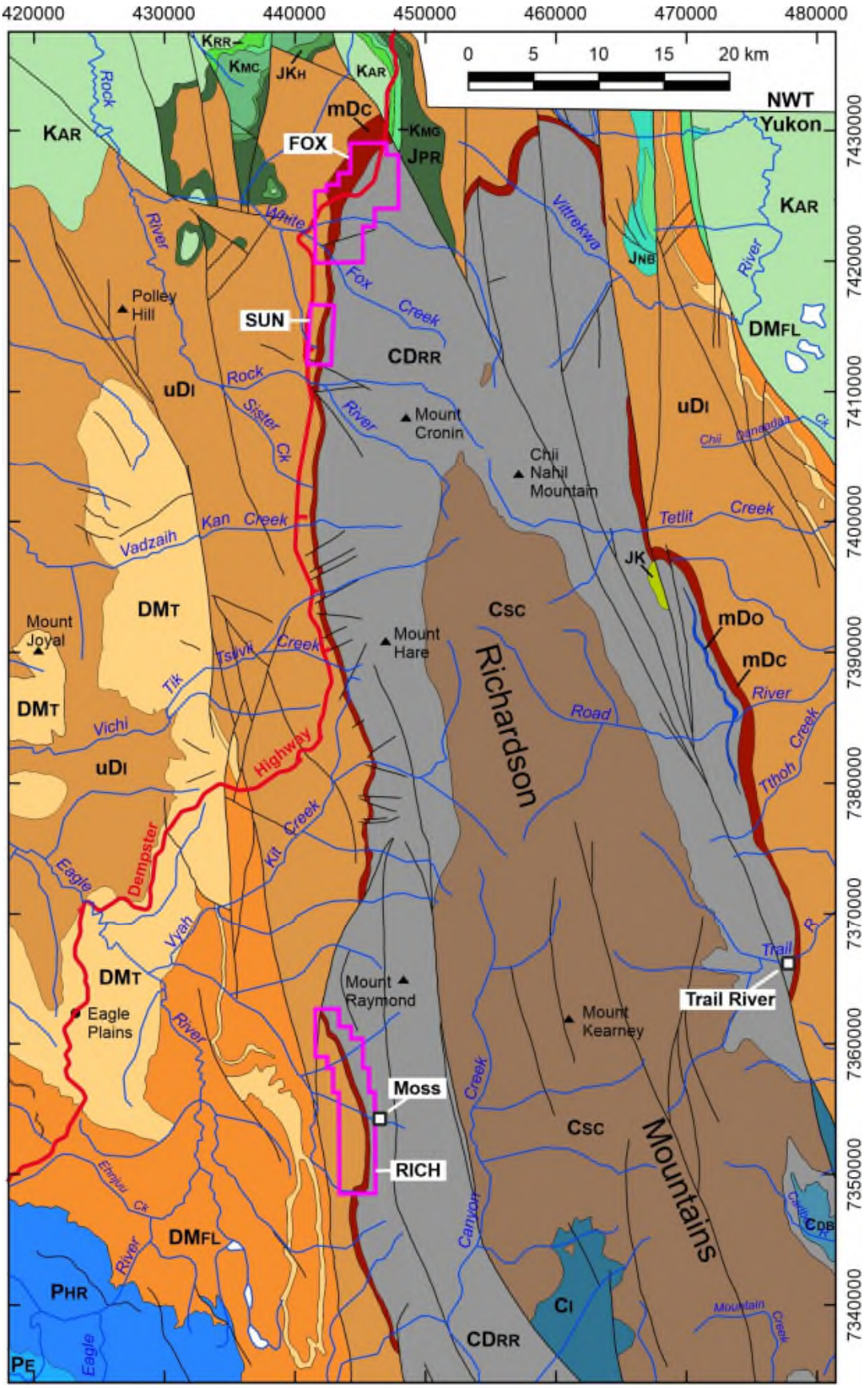


Figure 14a. WRM project area geology map (Cecile et al., 1983; Yukon Geological Survey, 2018) showing locations of measured sections (Trail River, Moss) and former mineral properties (FOX, SUN, RICH). See Figure 14b for legend.

Lower Cretaceous

- KAR — Arctic Red Formation: dark grey to brown or black shale and interbeds of siltstone
- KRR — Rat River Formation: interbedded units of sandstone and shale
- KMG — Mount Goodenough Formation: sandstone, siltstone, shale and local conglomerate
- KMC — Martin Creek Formation: fine-grained quartz arenite

Upper Jurassic – Lower Cretaceous

- JK — Unnamed unit: undivided shale, siltstone, sandstone, minor conglomerate
- JKH — Husky Formation: dark grey shale, siltstone and ironstone

Middle – Upper Jurassic

- JPR — Porcupine River Formation: siltstone and light grey fine to very fine-grained sandstone
- JNB — North Branch Formation: light grey glauconitic conglomeratic sandstone, shale and siltstone

Pennsylvanian

- PE — Ettrain Formation: fossiliferous limestone and glauconitic sandy carbonate
- PHR — Hart River Formation: thinly laminated, cherty spiculite and spicule lime packstone

Upper Devonian – Mississippian

- DMFL — Ford Lake Formation: pyritic shale, siltstone, lesser sandstone, conglomerate and silty limestone
- DMT — Tuttle Formation: chert granule to pebble conglomerate, sandstone, interbedded sandstone and shale

Upper Devonian

- uDI — Imperial Formation: dark grey shale and siltstone, lithic sandstone

Middle Devonian

- mDC — Canol Formation: dark grey to black non-calcareous shale
- mDO — Ogilvie Formation: dark grey and black, fine-grained limestone

Cambrian – Middle Devonian

- CDRR — Road River Group: graptolitic black shale, calcareous shale, shaly limestone, limestone, minor chert
- CDB — Bouvette Formation: grey and buff-weathering dolostone and limestone

Cambrian

- CSC — Slats Creek Formation: turbiditic, quartz sandstone with minor shale and siltstone
- CI — Illtyd Formation: fine crystalline, dark grey limestone

- Outline of former mineral property (quartz claims)
- Measured section

Figure 14b. Geological legend for Figure 14a.

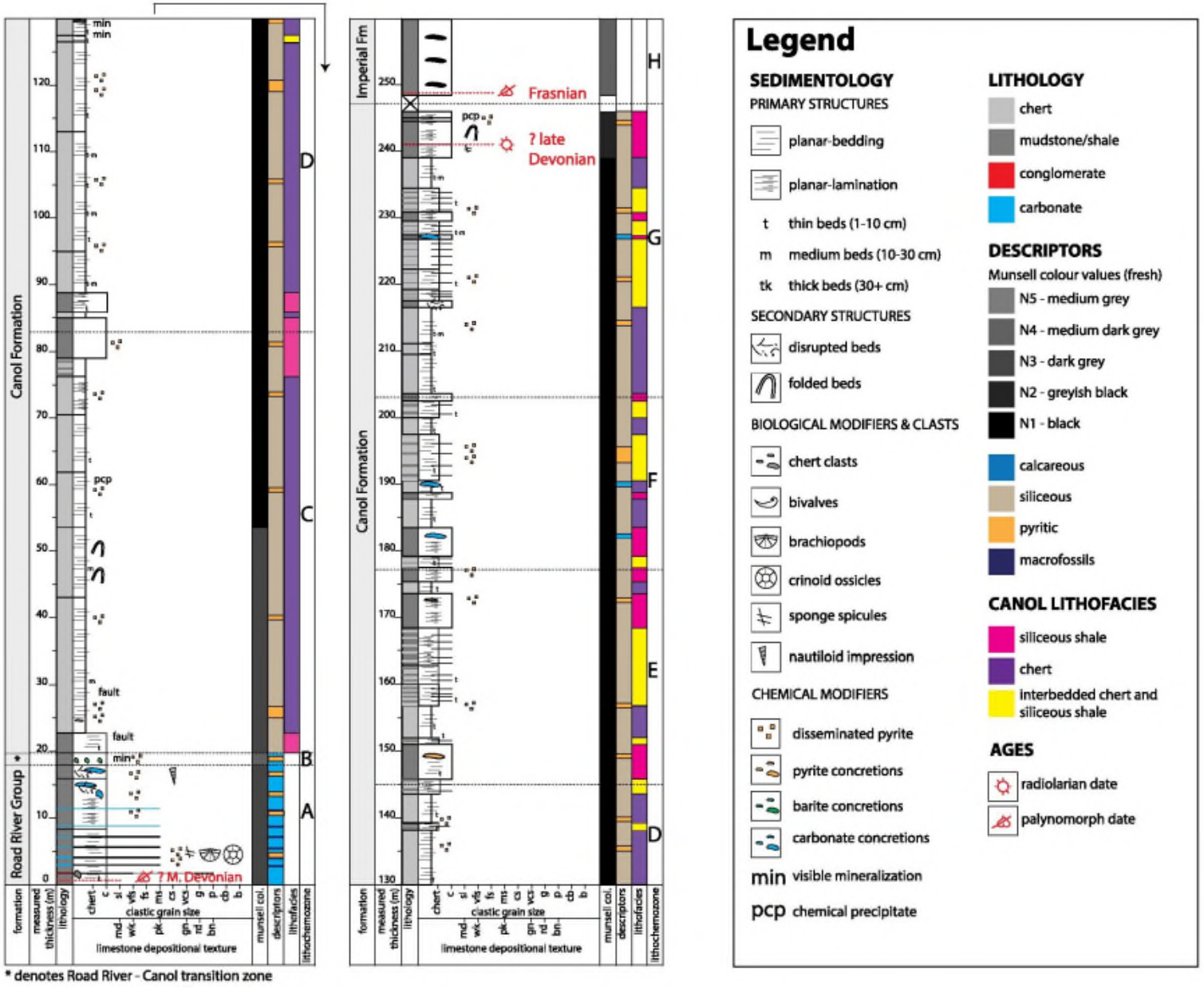


Figure 15. Composite sedimentary and lithofacies log of the Canol Formation measured section Trail River. From Fraser and Hutchinson (2017).

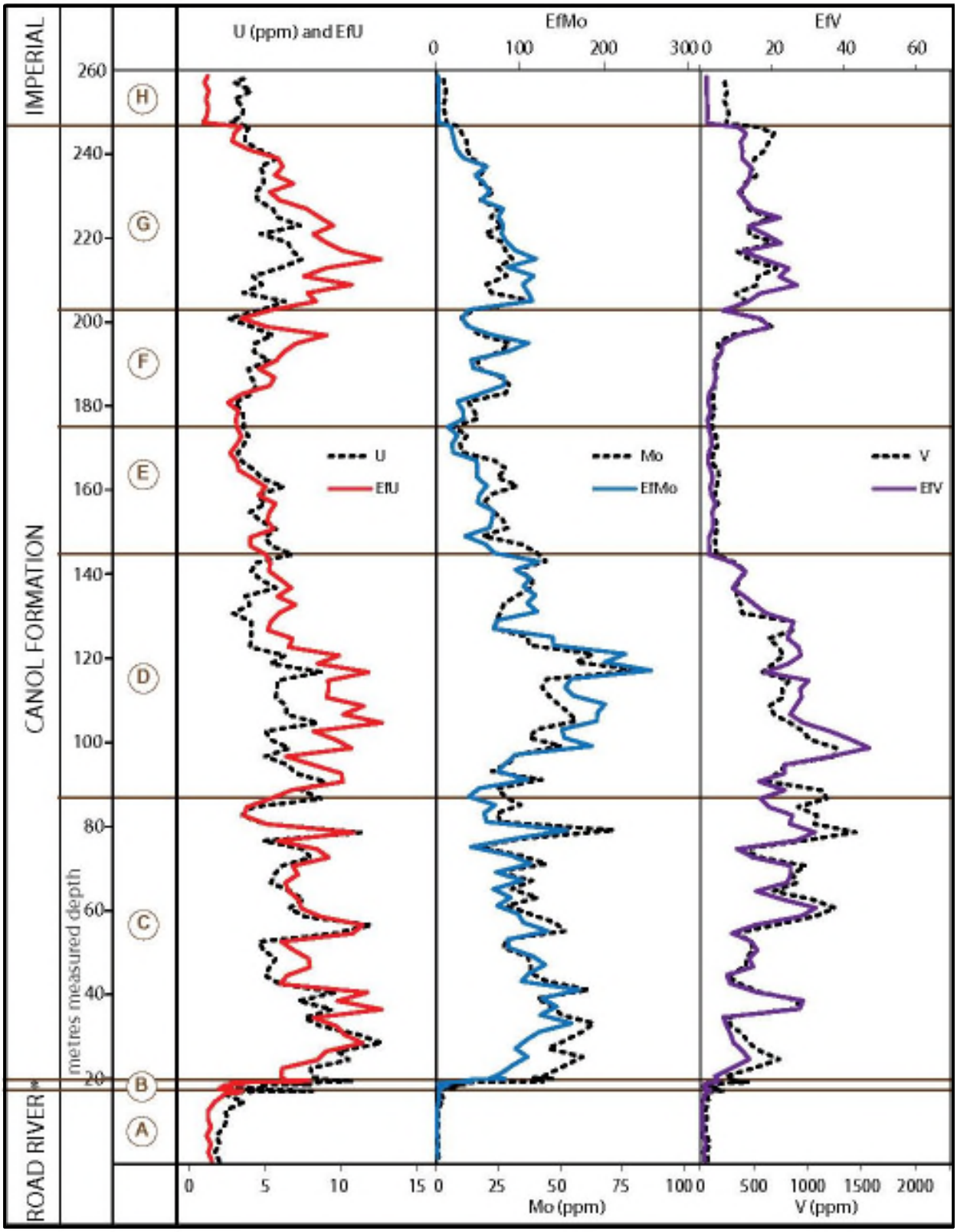


Figure 16. Trail River section U, Mo and V profiles (from Fraser and Hutchinson, 2017). Note that ppm values are displayed by black, dashed lines. See Fraser and Hutchinson (2017) for a definition of "Ef" values.

Moss Section

Moss Section – Geology

The Moss section, which includes a hyper-enriched black shale (HEBS) showing, is located in outcrop at 66°18'13"N, 136°11'36"W (Figures 14a, 14b and 17). This is near the HEBS (NiMo horizon) drill core intersections reported by Dumala (2007c) on the former Rich property (the Nickelrich occurrence (occurrence number 116I 085) of the Yukon Geological Survey) about 27 km south of the WRM project area. The 22 m of exposed strata at the Moss section "… comprises the following (from the base to the top): 1) Carbonaceous and siliceous shale with minor calcareous and pyritic intercalations. The rocks consist of several fining-upward sequences with minor scoured surfaces …. The bottom of the section is not constrained at the Moss showing. 2) Carbonaceous shale (1 to 2 m thick) with 0.5 to 1.5 m diameter elongated calcareous concretions. Shale beds drape around concretions … bedding is preserved within some concretions that conform to surrounding shale laminae. 3) Up to 120 cm thick siliceous, carbonaceous shales with centimetre scale, spheroidal barite and carbonate nodules. 4) A 1 to 4 cm thick stratabound, stratiform semi-massive sulphide HEBS layer…. 5) Carbonaceous, siliceous shale to cherty shale that is in sharp contact with the underlying HEBS mineralization" (Gadd et al., 2019, p. 166). Figure 17 displays the Moss measured section and accompanying photographs.

Moss Section – Geochemistry

Nickel–Molydenum Suite: Five samples from the 1 to 4 cm thick, hyper-enriched black shale (HEBS) layer returned 22.80 to 40.21% Fe_2O_3 (total Fe), 23.7–39.5% S, 3.11–4.10% Ni, 320–1720 ppm Zn, 2863–5500 ppm As, 1760–2460 ppm Se, 2370–2980 ppm Mo, 2060–2410 ppm Hg, 2.07–2.25 ppm Ag, 67–167 ppb Au, 255–368 ppb Pt and 154–228 ppb Pd (Gadd et al., 2019; Gadd pers. comm., 2020).

Vanadium: The HEBS samples returned 5 to 304 ppm V and 12 samples from the lower 1.5 m of the Canol Formation returned 123 to 434 ppm V. Samples from the upper 2.85 m of the Road River Group returned 184 to 1787 ppm V with 8 of the 19 samples containing ≥ 1000 ppm V. The three lowest samples of the Road River Group in the measured section, from 2.05 to 2.85 m below the Road River–Canol contact, average 1367 ppm V (0.24% V_2O_5) over 0.80 m (Gadd et al., 2019; Gadd pers. comm., 2020).

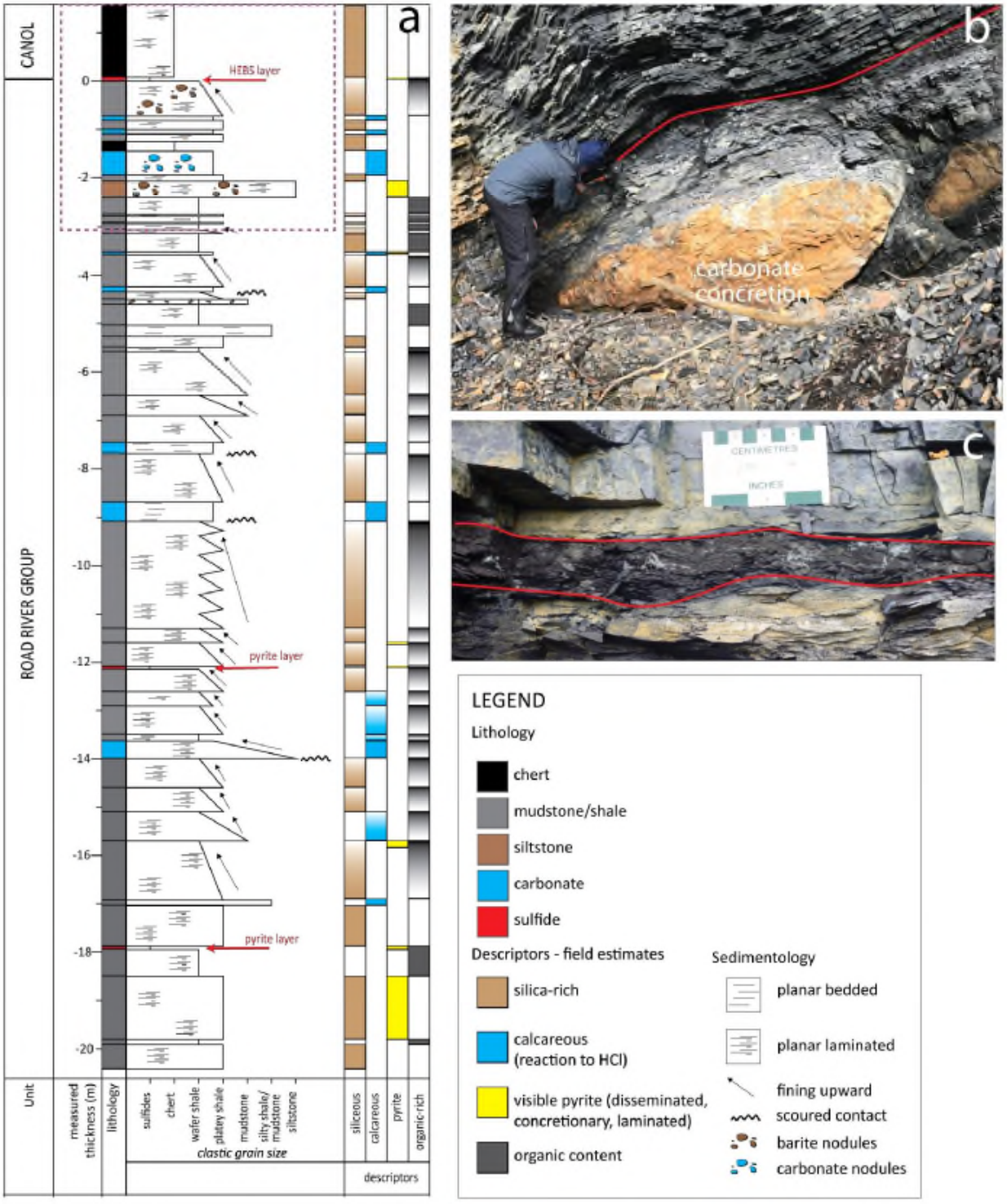


Figure 17. a) Schematic sketch of the stratigraphic succession at the Moss locality showing lithological descriptors and sedimentary features (Gadd et al., 2019). The '0 m' stratigraphic marker defines the HEBS mineralized zone. b) Photograph of the upper portion of the stratigraphic succession at Moss showing a large carbonate concretion and its relationship to the overlying HEBS layer (red line). c) Close-up photograph of the HEBS layer at the Moss showing (outlined by red lines).

Sulphide Hosted Nickel-Molybdenum and Shale Hosted Vanadium in the Western Richardson Mountains: Data from Previous Exploration

Rich Property

Rich Property – Geology

The hyper-enriched black shale (also referred to as the NiMo horizon) was observed in drill core from several holes drilled in 2007 on the former Rich property, about 20 km south of the WRM project area (Dumala, 2007c; Figures 14a and 14b). A generalized stratigraphic column that accompanied the Dumala (2007c) report is presented in Figure 18.

Road River Group

> "The Road River Group comprises calcareous, finely laminar, evenly bedded, black shale that is distinguished from shale belong to the Canol Formation by its vigorous reaction with dilute hydrochloric acid. Distinctive brecciated limestone balls commonly occur within one to three metres of the Canol-Road River contact. Lower in the formation, crinoid stem fragments are often found within limestone beds, which exhibit a grainstone texture. The Road River Group also contains finely laminar, fine-grained sulphides (dominantly pyrite) in bands, lenses and beds and in disseminated form" (Dumala, 2007c, p.7).

NiMo Horizon (Hyper-Enriched Black Shale)

> "The NiMo horizon consists of very fine-grained, bronze-to-gold, sulphide-rich laminae. Individual laminae range in thickness from < 1 mm up to about 2 mm. They are wavy and commonly exhibit a pinch-and-swell texture. Mild to moderate bioturbation and physical disruption of individual laminae is characteristic of the horizon. Out of the 14 holes that intersected the Canol–Road River contact, only four did not intersect visible NiMo mineralization. Two of these four holes (RI07-14A and RI07-14B) had poor recovery in the contact zone. The other two holes (RI07-19 and -20) intersected sulphide mineralization near the predicted intersection of the contact; however, samples collected from these intervals returned only weak to moderate values of NiMo indicator elements. The thickness of the NiMo horizon ranges from approximately 1 cm to 196 cm (RI07-08). Excluding the interval in RI07-08 the individual layers of NiMo mineralization averaged 3.5 cm. The NiMo horizon in hole RI07-08 displays signs of soft sediment deformation, while the sediments above and below the horizon appear undeformed" (Dumala, 2007c, p.7).

Canol Formation

> "The Canol Formation shale is black, non-calcareous, and finely laminar. It is slightly to moderately weathered, fissile and somewhat friable. Barite rich nodules, phosphate rich nodules, cherty layers, micrite and carbonate laminae/beds are also present towards the lower contact. The Canol Formation also exhibits rare to common, thinly bedded, sulphide rich laminae and lenses, as well as uncommon to common, finely laminar, non-fossiliferous, grey to black micritic limestone beds up to several centimetres thick …. Except for their varying carbonate content, the Canol Formation and Road River Group are mineralogically similar." (Dumala, 2007c, p.7).

Rich Property – Rock Geochemistry

Nickel–Molydenum Suite in Outcrop: During 2007, 15 chip samples were collected on the former Rich property from the Road River – Canol contact area along four different canyons. Three samples were collected from the NiMo horizon (C38516, C385617 and C385636) and these samples returned high values for Ni, Mo and other elements (Table 1; Dumala, 2007c). Interestingly, some samples that were not collected from the NiMo horizon returned significantly elevated values of Ni and Mo (e.g. sample C385623: 7410 ppm Ni, 783 ppm Mo and 4500 ppm Zn over 21 cm's and sample C385620: 4350 ppm Ni, 410 ppm Mo, 5340 ppm Zn over 15 cm). Also note the high Au, Pt, Pd and Re values in samples C358624 and C358626 despite their modest Ni and Mo contents (these samples were described as "potential" or "weathered" NiMo horizon).

Sample	Int.	Ni	Mo	Zn	Au	Pt	Pd	Re	Ag	As	Se	Tl
	(cm)	(ppm)	(ppm)	(ppm)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
C385613	3.5	124.5	168.5	38	165	322	214	31.8	2.27	90.7	162	25.80
C385616*	**5**	**4.78%**	**2380**	**6170**	**120**	**315**	**196**	**38.4**	**2.33**	**4310**	**2580**	**257.00**
C385617*	**1.5**	**1.29%**	**2530**	**189**	**356**	**464**	**296**	**49.9**	**4.12**	**4390**	**5990**	**213.00**
C385619	1.5	1010	374	2930	27	33	25	3.700	4.79	891	225	14.50
C385620	15	4350	410	5340	18	33	28	4.210	4.47	876	358	20.30
C385621	14	457	28.6	637	3	10	4	0.641	0.29	38	44	2.14
C385622	9	1585	80.6	2130	4	11	4	0.900	0.74	119	70	4.48
C385623	21	7410	783	4500	21	76	37	7.720	4.81	1520	565	36.10
C385624	1.5	198	112	181	256	449	296	48.8	3.6	56	300	14.90
C385625	28	62.1	161.5	27	7	11	3	0.692	0.82	47.8	92	52.60
C385626	0.5	679	349	193	468	638	391	>50	3.96	131	361	62.70
C385634	7	45.3	41.6	87	<1	<5	1	0.049	0.40	31.3	10	4.81
C385635	30	339	22.3	564	<1	<5	2	0.017	0.25	22.9	10	2.62
C385636*	**8**	**4.16%**	**2690**	**299**	**241**	**470**	**282**	**>50**	**3.23**	**3820**	**4680**	**248.00**
C385637	28	406	116	23	5	5	6	0.737	0.36	157	131	33.70

Table 1. Results of 2007 chip sampling program on the former Rich property (Dumala, 2007c). *Samples C38516, C385617 and C385636 are from the NiMo horizon and samples C385619, C358624 and C358626 were described as "potential" or "weathered" NiMo horizon).

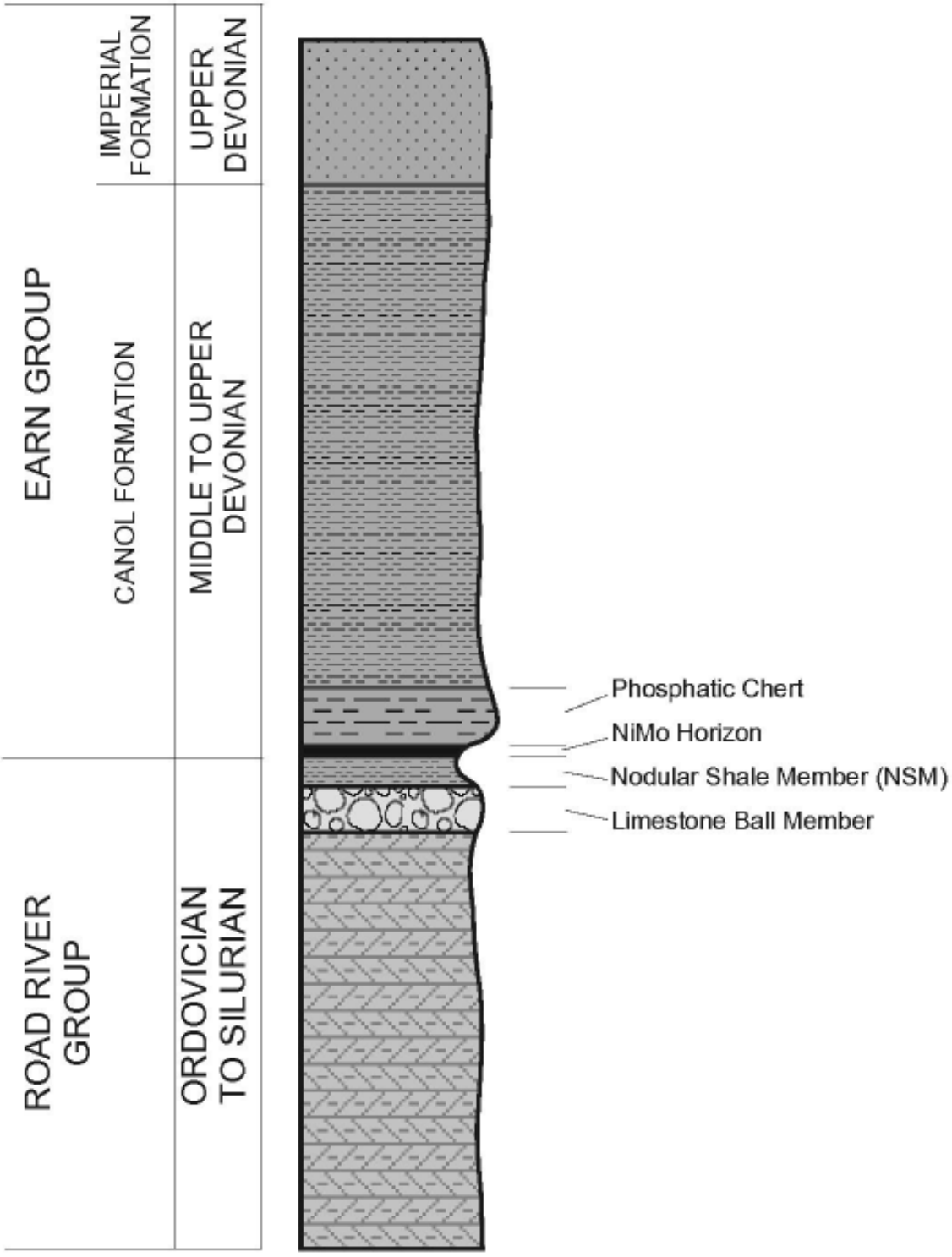


Figure 18. Generalized stratigraphic column from Rich Property 2007 drilling report (Dumala, 2007c).

Vanadium in Outcrop: Three of the 15 outcrop chip samples returned >2000 ppm V: 2540 ppm V in sample C385619; 2600 ppm V in sample C385620 and 2040 ppm V in sample C385625 (Dumala, 2007c; Table 2).

Sample	Int. (cm)	V (ppm)	V2O5 (%)	Description
C385619	1.5	2540	0.45	rusty layer, black to dark grey shale, possible NiMo horizon; 2.66% S, 2.65% Fe, 2930 ppm Zn, 1010 ppm Ni, 374 ppm Mo; 4.79 ppm Ag
C385620	15	2600	0.46	black, very calcareous, sooty shale with botryoidal carbonate encrustation; reacts strongly with HCl; 3.84% S, 2.30% Fe, 5340 ppm Zn, 4350 ppm Ni, 410 ppm Mo, 4.47 ppm Ag
C385625	28	2040	0.36	fissile, black shale with 1 cm x 3 cm chert? nodules; no reaction with HCl; yellow (oxidation products?); weathers light grey; 1.08% S, 1.82% Fe, 27 ppm Zn, 62.1 ppm Ni, 161.5 ppm Mo, 0.82 ppm Ag

Table 2. Vanadium results of >2000 ppm from 2007 chip sampling on the former Rich property (Dumala, 2007c).

Nickel–Molydenum Suite in Drill Core: During 2007, 25 holes were drilled on the former Rich property targeting the NiMo horizon over a strike length of 7 km. Significant assay results for samples from the NiMo horizon are summarized in Table 3. "The NiMo horizon shows an elevated concentrations of nickel, molybdenum, zinc, gold, platinum, palladium, rhenium, arsenic, antimony, cobalt, copper, germanium, indium, phosphorous, selenium, tellurium, thallium and uranium relative to the wallrocks" (Dumala, 2007c, p.8). Samples of wall rock up to 14 m above and 20 m below the NiMo mineralization generally returned low metal values.

Hole	From (m)	To (m)	Int. (m)	Ni (%)	Mo (ppm)	Zn (%)	Au (ppb)	Pt (ppb)	Pd (ppb)	Re (ppm)	Se (ppm)	Ag (ppm)
R107-05	152.56	152.58	0.02	3.90	714	4.25	70	184	156	9.35	1225	1.86
R107-06	52.37	52.38	0.01	3.30	1000	0.38	234	315	412	10.10	NA	NA
R107-06	58.62	58.66	0.04	3.91	1250	2.36	96	196	142	13.00	NA	NA
R107-07	158.64	158.67	0.03	3.60	2500	0.46	97	207	128	29.60	NA	NA
R107-08*	62.22	64.18	1.96	1.31	1189	0.10	46	92	41	9.68	476	0.46
R107-10	65.82	65.88	0.06	2.64	1350	0.59	245	148	109	8.80	NA	NA
R107-12	82.72	82.74	0.02	3.04	1270	0.32	101	186	102	15.95	NA	NA
R107-12	83.12	83.17	0.05	1.78	930	0.98	71	75	75	12.35	NA	NA
R107-15	101.50	101.53	0.03	2.66	2820	0.38	100	174	98	17.35	>1000	1.92
R107-16	91.90	91.91	0.01	4.56	2790	1.05	158	225	152	38.50	>1000	3.85
R107-17	96.74	96.75	0.01	7.04	2460	1.54	89	254	158	38.60	>1000	2.14
R107-18	70.68	70.73	0.05	4.30	1720	0.72	79	194	125	29.60	1265	2.06
R107-19	80.59	80.62	0.03	0.65	237	0.29	17	50	19	3.12	250	0.50
R107-20	74.42	74.51	0.09	0.080	129.5	0.04	17	5	6	0.47	20	0.34

Table 3. Significant diamond drill intersections on former Rich property (Dumala, 2007c). *The values for hole RI07-08 are the weighted averages of 20 samples.

"Individual samples collected from within the 1.96 m thick NiMo horizon in RI07-08 show a considerable variation of metal values. These variations in metal content suggest that this intersection crosses the horizon, instead of running along it. The samples collected near the top and bottom of the interval are more enriched in most elements, implying a possible second pulse of mineralization. The material between these two enriched layers is more diluted with sediments and shows signs of soft sediment deformation" (Dumala, 2007c, p.8). Individual sample results for the NiMo horizon in RI07-08 are summarized in Table 4.

From (m)	To (m)	Int. (cm)	Ni (%)	Mo (ppm)	Zn (%)	Au (ppb)	Pt (ppb)	Pd (ppb)	Re (ppm)	Se (ppm)	Ag (ppm)
62.22	62.22	<1	1.14	766	0.68	331	169	78	1.72	>1000	1.69
62.22	62.29	7	0.47	125.5	0.18	32	58	23	2.11	214	0.32
62.29	62.39	10	1.85	468	0.15	68	129	56	9.20	590	0.74
62.39	62.50	11	2.10	550	0.14	65	152	61	10.15	585	0.76
62.50	62.61	11	1.37	386	0.08	46	113	42	7.81	401	0.42
62.61	62.71	10	1.72	472	0.08	54	122	48	10.50	500	0.52
62.71	62.76	5	1.66	467	0.08	46	114	45	10.25	484	0.51
62.76	62.90	14	0.86	288	0.05	21	45	16	5.76	271	0.29
62.90	63.03	13	0.25	118.5	0.02	14	11	11	2.08	103	0.16
63.03	63.20	17	1.53	398	0.08	37	130	49	10.70	486	0.40
63.20	63.31	11	1.37	434	0.07	70	104	40	11.20	504	0.38
63.31	63.41	10	1.06	511	0.05	75	88	37	9.03	486	0.43
63.41	63.58	17	1.27	377	0.06	61	99	40	11.10	513	0.36
63.58	63.74	16	1.03	324	0.05	50	74	37	9.33	431	0.34
63.74	63.85	11	1.15	270	0.05	33	62	39	12.10	502	0.32
63.85	63.95	10	0.73	187.5	0.04	15	46	25	8.10	328	0.27
63.95	64.00	5	1.89	498	0.13	41	119	72	18.95	899	0.78
64.00	64.08	8	2.85	713	0.25	61	169	105	23.10	>1000	1.14
64.08	64.11	3	1.89	1055	0.99	NA	NA	NA	13.75	960	0.95
64.11	64.18	7	1.12	501	0.25	32	76	37	9.37	539	0.57

Table 4. Results for samples from drill hole RI07-08 NiMo horizon intersection on the former Rich property (Dumala, 2007c).

Vanadium in Drill Core: Hole RI07-18 returned 2030 ppm V (0.36% V_2O_5) from 70.37 to 70.99 m (0.62 m core interval; sample C488361). This sample was collected from finely laminar non-calcareous black shale of the Road River Group immediately below the NiMo horizon. Other analytical values include 5.33% S, 4.93% Fe, 848 ppm Zn, 358 ppm Ni, 100.5 ppm Mo and 0.82 ppm Ag.

Sun Property

Sun Property − Geology

Three diamond drill holes (SN07-01 to SN07-03) were drilled in 1997 on the former Sun property near the WRM project area (Dumala, 2007b; Figure 19). The hyper-enriched black shale (NiMo horizon) was only intersected in hole SN07-03.

"Diamond drilling intersected shales belonging to the Canol Formation and Road River Group in holes SN07-02 and -03, but hole SN07-01 recovered only Road River strata, which put it too deep in section to intersect the NiMo horizon …. Hole SN07-02 intersected the contact area within a heavily weathered interval near surface so that the NiMo horizon may have been leached out" (Dumala, 2007b, p. 5).

Sun Property − Rock Geochemistry

Nickel−Molydenum Suite in Drill Core: "The NiMo intersection from SN07-03 returned 3.01% nickel, 1170 ppm molybdenum, 6300 ppm zinc, 65 ppb gold, 171 ppb platinum, 97 ppb palladium, 19.3 ppm rhenium and 2.5 ppm silver over 1 cm. A sample collected 4.89 m above that sample graded 2570 ppm nickel, 13.75 ppm molybdenum, 8320 ppm zinc and 80.6 ppm uranium over 4 cm" (Dumala, 2007b, p. 5). A summary of Ni, Zn, Mo and V values obtained from drill core from the former Sun and Fox properties is presented in Table 5.

Vanadium in Drill Core

The NiMo horizon intersected in hole SN07-03 returned only 365 ppm V (from 86.64 to 86.65 m). Continuous core samples collected from hanging wall and footwall strata between 77.73 m and 90.15 m returned V values of 114 ppm to 767 ppm V (Dumala, 2007b).

In hole SN07-01, which was drilled entirely within overburden and the Road River Group, continuous core sampling between 62.63 m and 66.30 m (7 samples over a core length of 3.67 m) returned up to 258 ppm Ni, 3490 ppm Zn, 71.1 ppm Mo and 2970 ppm V. The weighted average V value over the 3.67 m core interval is 2267 ppm V (0.40% V_2O_5; Table 6). The core is described as very fine grained, calcareous and carbonaceous shale that is mainly black with some medium and dark grey horizons. Some thin lenses of pyrite were noted as well as a 2 cm thick sulphide horizon from 64.45−64.47 m. From surface to 14.1 m hole SN07-01 was drilled in overburden so the sampled V rich interval (starting at 62.63 m) occurs at least 49 m down hole from the NiMo horizon (Dumala, 2007b). The samples from 62.63 m and 66.30 m are the shallowest samples from the hole. The only other drill core samples from this hole of were

collected between 95.96 and 97.73 m. The lowermost sample (G0870102) returned 1450 ppm V over 0.5 m.

In hole SN07-02 the Road River Group – Canol Formation contact is placed at 33.34 m although the NiMo horizon was not observed. Continuous core sampling from 32.18 m to 37.50 m (7 samples over a core length of 5.32 m) returned maximum values of 396 ppm Ni, 2610 ppm Zn, 93.8 ppm Mo and 3080 ppm V. The weighted average V value over the 5.32 m core interval is 2609 ppm V (0.47% V_2O_5). The drill core is described as fine grained, black to dark grey shale with 2-10 cm thick carbonate horizons. This was the only core sampled from this hole (Dumala, 2007b).

Sun Property − Soil Geochemistry

Six east-west trending soil sampling traverses were completed within the former Sun property in 2007 (Dumala, 2007b). These traverses were between 500 and 700 m long with nominal sample spacing of about 25 m. The location on the southernmost of these soil sample traverses is shown in Figure 19 and profiles of the Ni, Mo, Zn and V values obtained from this traverse are shown in Figure 20. Note that elevated metal values (e.g. >100 ppm Ni, >40 ppm Mo, >500 ppm Zn and >500 ppm V) are common across an east-west distance of about 450 m. The interval between 125 m and 300 m east on the traverse returned an average of 1188 ppm V (0.21% V_2O_5) across 175 m. The geology map presented by Dumala (2007b) indicates that the Road River Group – Canol Formation contact occurs near the centre of this soil sampling traverse.

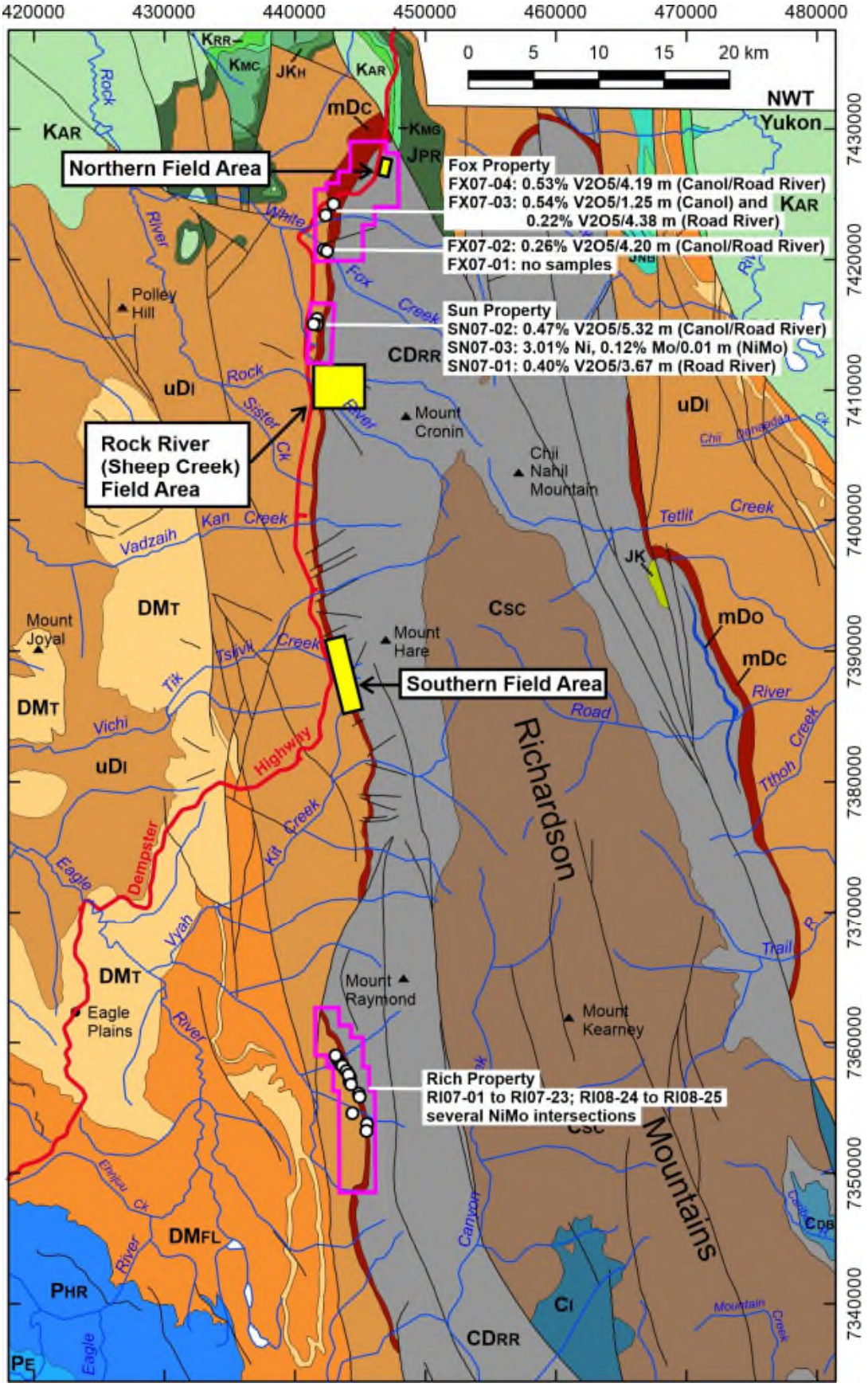


Figure 19. WRM project area geology map showing locations of (i) 2007 and 2008 drill holes (with selected intersection data) and (ii) the southernmost 2007 Sun property soil sampling traverse (yellow star). See Figure 14b for legend.

Property	Hole	Unit	From (m)	To (m)	Sample Interval (m)	Sample	Ni (ppm)	Zn (ppm)	Mo (ppm)	V (ppm)
SUN	SN07-01	Road River	62.63	63.63	1.00	G087001	235	2520	48.40	2500
SUN	SN07-01	Road River	63.63	64.13	0.50	G087002	258	3270	56.90	2970
SUN	SN07-01	Road River	64.13	64.43	0.30	G087003	242	3490	71.10	2790
SUN	SN07-01	Road River	64.43	64.50	0.07	G087004	219	1090	49.80	2130
SUN	SN07-01	Road River	64.50	64.80	0.30	G087005	219	1615	68.30	2100
SUN	SN07-01	Road River	64.80	65.30	0.50	G087006	205	1030	53.80	1960
SUN	SN07-01	Road River	65.30	66.30	1.00	G087007	196	1295	30.30	1740
SUN	SN07-01	Road River	95.96	96.76	0.80	G087009	269	1145	15.60	575
SUN	SN07-01	Road River	96.76	96.93	0.17	G087010	116	661	8.08	267
SUN	SN07-01	Road River	96.93	97.23	0.30	G087011	307	1210	18.15	774
SUN	SN07-01	Road River	97.23	97.73	0.50	G087012	318	1675	58.30	1450
SUN	SN07-02	Canol	32.18	33.34	1.16	G087013	316	2610	75.2	2510
SUN	SN07-02	Road River	33.34	33.84	0.50	G087014	310	1760	73.6	2380
SUN	SN07-02	Road River	33.84	34.34	0.50	G087015	309	1510	57.3	2570
SUN	SN07-02	Road River	34.34	34.50	0.16	G087016	396	1450	93.8	3080
SUN	SN07-02	Road River	34.50	35.00	0.50	G087017	300	1820	91.0	2540
SUN	SN07-02	Road River	35.00	36.00	1.00	G087019	265	1990	78.6	2800
SUN	SN07-02	Road River	36.00	37.50	1.50	G087020	254	2250	76.2	2620
SUN	SN07-03	Canol	77.73	79.23	1.50	G087021	161	355	29.0	210
SUN	SN07-03	Canol	79.23	80.73	1.50	GO87022	156.5	548	225.0	142
SUN	SN07-03	Canol	80.73	81.71	0.98	G087023	109	218	24.9	193
SUN	SN07-03	Canol	81.71	81.75	0.04	G087035	2570	8320	13.8	393
SUN	SN07-03	Canol	81.75	82.25	0.50	G087024	142	326	31.7	303
SUN	SN07-03	Canol	82.25	82.40	0.15	G087025	350	453	72.3	675
SUN	SN07-03	Canol	82.40	82.93	0.53	G087026	248	255	53.1	434
SUN	SN07-03	Canol	82.93	84.43	1.50	G087027	181.5	401	37.5	114
SUN	SN07-03	Canol	84.43	86.14	1.71	G087028	204	463	40.2	267
SUN	SN07-03	Canol	86.14	86.64	0.50	G087030	143	142	40.6	175
SUN	SN07-03	NiMo	86.64	86.65	0.01	G087031	30100	6300	1170	365
SUN	SN07-03	Road River	86.65	87.15	0.50	G087032	87.3	257	24.4	484
SUN	SN07-03	Road River	87.15	88.65	1.50	G087033	125.5	750	22.9	495
SUN	SN07-03	Road River	88.65	90.15	1.50	G087034	114	438	28.8	767
FOX	FX07-01	No Samples								
FOX	FX07-02	Canol	66.30	67.30	1.00	G087036	184.5	39	69.5	1505
FOX	FX07-02	Canol	67.30	68.30	1.00	G087037	366	323	83.9	1629
FOX	FX07-02	RR / Canol	68.30	68.50	0.20	G087038	478	113	75.1	1790
FOX	FX07-02	Road River	68.50	69.50	1.00	G087039	519	2330	67.2	1465
FOX	FX07-02	Road River	69.50	70.50	1.00	G087040	427	1780	36.7	1095

Property	Hole	Unit	From (m)	To (m)	Sample Interval (m)	Sample	Ni (ppm)	Zn (ppm)	Mo (ppm)	V (ppm)
FOX	FX07-03	Canol	79.79	80.29	0.50	G087041	267	3350	79.6	2880
FOX	FX07-03	Canol	80.29	80.54	0.25	G087042	251	3600	70.1	2490
FOX	FX07-03	Canol	80.54	81.04	0.50	G087043	262	5130	83.5	3470
FOX	FX07-03	Road River	114.56	115.56	1.00	G087044	242	1570	40.2	1740
FOX	FX07-03	Road River	115.56	116.56	1.00	G087045	249	1960	57.4	1925
FOX	FX07-03	Road River	116.56	116.84	0.28	G087046	293	1710	39.7	1535
FOX	FX07-03	Road River	116.84	117.84	1.00	G087047	210	1000	26.4	789
FOX	FX07-03	Road River	117.84	118.94	1.10	G087048	187.5	741	10.9	426
FOX	FX07-04	Canol	33.52	34.52	1.00	G087049	251	2820	74.5	2700
FOX	FX07-04	Canol	34.52	35.52	1.00	G087050	260	3030	78.6	2850
FOX	FX07-04	Road River	35.52	35.71	0.19	G087051	224	2860	62.5	2500
FOX	FX07-04	Road River	35.71	36.71	1.00	G087052	282	3750	88.1	3240
FOX	FX07-04	Road River	36.71	37.71	1.00	G087053	271	3470	87.3	3230

Table 5. Ni, Mo, Zn and V data for drill core samples from the former Sun and Fox properties.

Property	Hole	From (m)	To (m)	Unit	Interval (m)	Weighted Average V (ppm)	Weighted Average V2O5 (%)
SUN	SN07-01	62.63	66.30	Road River	3.67	2267	0.40
SUN	SN07-01	96.93	97.73	Road River	0.80	1197	0.21
SUN	SN07-02	32.18	37.50	Canol / Road River	5.32	2609	0.47
FOX	FX07-02	66.30	70.50	Canol / Road River	4.20	1441	0.26
FOX	FX07-03	79.79	81.04	Canol	1.25	3038	0.54
FOX	FX07-03	114.56	118.94	Road River	4.38	1222	0.22
FOX	FX07-04	33.52	37.71	Canol / Road River	4.19	2982	0.53

Table 6. Significant vanadium intervals in drill core from the former Sun and Fox properties.

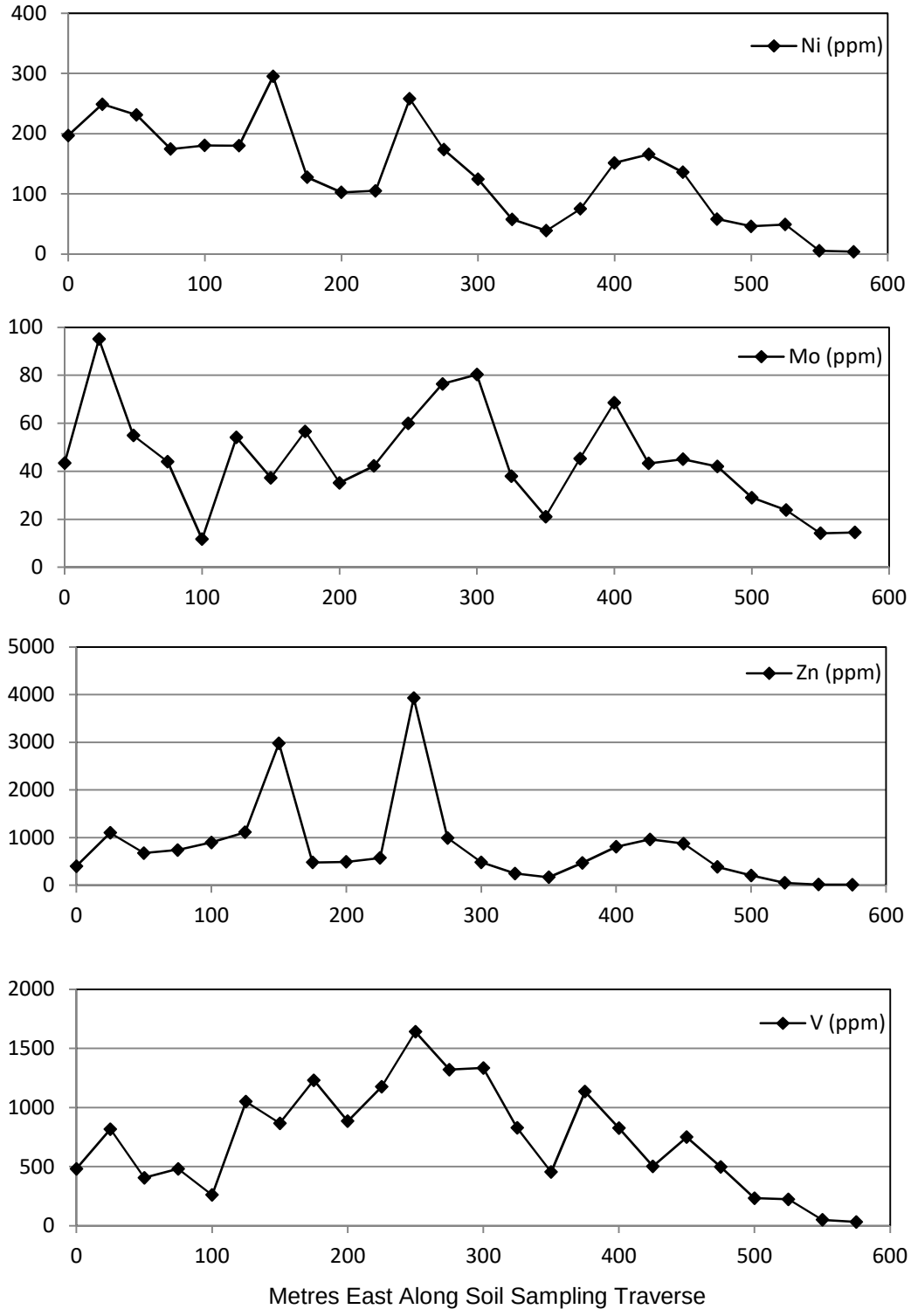


Figure 20. Ni, Mo, Zn and V values along most southerly soil sampling traverse on the former Sun property.

Fox Property

Fox Property – Geology

The former Fox mineral property was located near the northern end of the WRM project area (Figure 14a and 14b). Four drill holes were completed on the former Fox property in 2007 (Figure 19). "Diamond drilling intersected shales belonging to the Canol Formation and the Road River Group in all holes except for FX07-01, which collared directly into Road River Group" (Dumala, 2007a, p. 5).

"In drill core, the Canol Formation shale is black, non-calcareous and finely laminar. It is slightly to moderately weathered, fissile and somewhat friable. The Road River Formation comprised calcareous, finely laminar, black shale that is distinguished from shale belonging to the Canol Formation by its vigorous reaction with dilute hydrochloric acid" (Dumala, 2007a, p. 5).

Fox Property – Rock Geochemistry

Nickel–Molydenum Suite in Drill Core

"Drill core from FX07-03 and FX07-04 was very hard, almost cherty. The only recognizable differences between the Canol Formation and Road River Group were increases in carbonate content and competency within the Road River. The contact was often gradational, occurring over several metres and was not marked by a sulphide horizon or limestone ball member like other NiMo properties" (Dumala, 2007a, p. 5). A total of 13 samples was taken from these holes returning an average of 250 ppm nickel, 2692 ppm zinc, 61 ppm molybdenum and 2.82 ppm silver" (Dumala, 2007a, p. 5; Table 5).

The NiMo horizon was not observed in hole FX07-02 (no sulphides were observed in any of the core from this hole). "The contact area in FX07-02 exhibits sharper changes in carbonate content, competency and hardness. Five samples were taken from this hole returning an average of 395 ppm nickel, 917 ppm zinc, 66 ppm molybdenum and 1.00 ppm silver" (Dumala, 2007a, p. 5).

Vanadium in Drill Core

Hole FX07-02: The Road River – Canol contact in hole FX07-02 was placed at 68.37 m (NiMo horizon not present). Continuous sampling across the contact between 66.3 and 70.5 m (5 samples over 4.2 m of core) returned maximum values of 519 ppm Ni, 2330 ppm Zn, 83.9 ppm Mo and 1790 ppm V. The weighted average V content over the 4.2 m core interval is 1441 ppm V (0.26% V_2O_5). The Canol Formation is described as moderately hard, black shale. The Road River Group is described as medium to

dark grey shale. No sulphides were observed in any of the core. This is the only interval of core sampling for the hole (Dumala, 2007a; Tables 2 and 6).

Hole FX07-03: The Road River – Canol contact in hole FX07-03 was placed at 113.56 m (the NiMo horizon was not observed). Samples were collected from two intervals of core – from 79.79 to 81.04 m and from 114.56 m to 118.94 m (Dumala, 2007a). Both of these intervals contain anomalous vanadium concentrations.

> Three core samples from the Canol Formation between 79.79 and 81.04 m returned maximum values of 267 ppm Ni, 5130 ppm Zn, 83.5 ppm Mo and 3470 ppm V. The weighted average V content over the 1.25 m core interval is 3038 ppm V (0.54% V_2O_5). The core is described as black, very hard, competent shale with 1-3 cm carbonate horizons spaced every 0.1 to 1.5 m in the core along with 0.25 m interval of carbonate breccia (both rock types contain some pyrite). This interval is 32.5 m above (up hole from) the Road River – Canol contact (i.e. the expected location of the NiMo horizon).
>
> Five core samples from the Road River Group between 114.56 m and 118.94 m returned maximum values of 293 ppm Ni, 1960 ppm Zn, 57.4 ppm Mo and 1925 ppm V. The weighted average V content over the 4.38 m core interval is 1222 ppm V (0.22% V_2O_5). This interval begins 1 metre below the Road River – Canol contact. The core is described as competent, black shale with a 1.2 m interval of light grey nodules.

Hole FX07-04: The Road River – Canol contact in hole FX07-04 was placed at 35.52 m (the NiMo horizon was not observed). Five core sample across the contact from 33.52 m to 37.71 m returned maximum values of 282 ppm Ni, 3750 ppm Zn, 88.1 ppm Mo and 3240 ppm V. The weighted average V content over the 4.19 m core interval is 2982 ppm V (0.53% V_2O_5). The core is described as black shale with thin (~1 mm thick) pyrite beds. This is the only interval of core sampling for the hole (Dumala, 2007a).

Geology and Geochemistry of the WRM Project Area

A geological map showing part of the Western Richardson Mountains including the WRM project area is presented in Figure 18.

The mineral assessment study of the Eagle Plains area by Heon (2006), which covered the area of the WRM project area, included the following stratigraphic unit descriptions.

Upper Road River Group

> "The youngest unit of the Road River, the upper Silurian to lower middle Devonian CDR4 (Norris)/ Sdv (also vittrekwa formation, informal name) (Cecile), consists of recessive carbonaceous graptolitic black shales, interbedded with limestone and white-weathering black chert. Locally, the shale is very poorly lithified (disaggregated) and samples resemble peat. Pyrite nodules and bands are common. Limestone pods or balls occur near the top of the succession. A secondary white crystalline coating, probably gypsum, is common on cliffy exposures in the northern part of the study area" (Heon, 2006, p. 17).

Canol Formation

> "Unconformably overlying the Road River Group, the Canol Formation (Dca/ Dc) consists of rusty-weathering, thin bedded (pyritic) chert, blue-weathering siliceous shale and local limestone pods. The shales and cherts weather with a distinctive yellow iron-rich earthy coating (jarosite?)" (Heon, 2006, p. 17).

> "In the southern part of the study area, the contact between the top of the Road River Group and the Canol Formation is exposed and is characterized by a specific lithologic sequence …. The top of the Road River Group is marked by a limestone concretion-bearing unit within carbonaceous shales. This unit consists of meter-scale limestone balls strung out along one bed. This distinctive horizon is overlain by a 30 to 50 cm thick horizon of highly fractured siliceous shale that contains small, locally pyritic, disc-shaped barite nodules that seem to replace limestone. Immediately overlying this horizon, a thin sulphide-rich horizon is host to Ni-PGE-Au mineralization …. This horizon is in turn overlain by the rusty weathering thin-bedded cherts of the Canol Formation. This same setting has been traced for more than 9 km along strike. Outcrops of this contact have not been found in the northern part of the study area due to its recessive nature" (Heon, p. 17-19).

Structure

> The project area is located on the western limb of the northern Richardson Anticlinorium, which has a generally exhibits a northerly plunge in the area. Strata in the project area have northerly trends and westerly dips. Measurements of bedding in the project area indicate that dips vary from as shallow as 6°W in the northern part of the area, bear the nose of the fold, to as steep as 85°W in the southern project area (Cecile et al., 1982).

Glacial History

The WRM project area lies within unglaciated terrain (Duk-Rodkin, 1999).

Geochemistry

Geological and geochemical data obtained during 2007 and 2008 exploration of the former Fox and Sun properties, which were located near the proposed 2020 project area, are described in previous sections of this report.

The field locations of rock samples obtained during the Eagle Plain area mineral assessment study containing ≥ 400 ppm V and collected near the 2020 project area are shown in Figure 21 and listed in Table 7. Most of the vanadium rich samples, including sample 96DH021D with 0.41% V_2O_5, are from the Road River Group. Note that some of these samples also show enrichment in Ag, As, Ba, Cu, Mo, Ni, Sb, and Zn.

Analytical data for stream sediment samples collected by the Geological Survey of Canada from NTS map areas 116I/09 and 116I/16, which includes the WRM project area, do not include vanadium analyses (Hornbrooke and Lynch, 1977; Heon, 2006).

Total Organic Carbon: Fraser et al. (2012) completed total organic carbon (TOC) analyses on industry drill core from the Fox, Rich and Pe properties (the Pe property is located near the Peel River). "Total organic carbon values for the Canol Formation are 0.3 to 20.1 wt % with most samples containing 2 to 5 wt % TOC. For the Road River Group, TOC values are 1.0 to 19.3 wt % with most less than 5 wt %. The Imperial Formation TOC values are mainly below 1 wt %" (Fraser et al., 2012, p. 45). These high TOC values are important as vanadium is commonly associated with organic matter in marine sediments. The highest TOC values in the Road River Group and the Canol Formation were not associated with the Road River Group – Canol contact.

Joyal Occurrence: A description of the Joyal occurrence (Minfile 116H 071), which occurs in the 2020 project area, is provided by Heon (2006). "A quartz and calcite vein of very coarse grain size contains 1 % interstitial chalcopyrite, malachite and limonite. Sample 95DH-53 returned values of 6810 ppm Cu and 80 ppb Au …. Coarse calcite veins are common in the area but this rare instance of copper mineralization coincides with the rare occurrence of quartz in this vein" (Heon, 2006, p. 16). The Joyal occurrence is not a significant target of the proposed 2020 program.

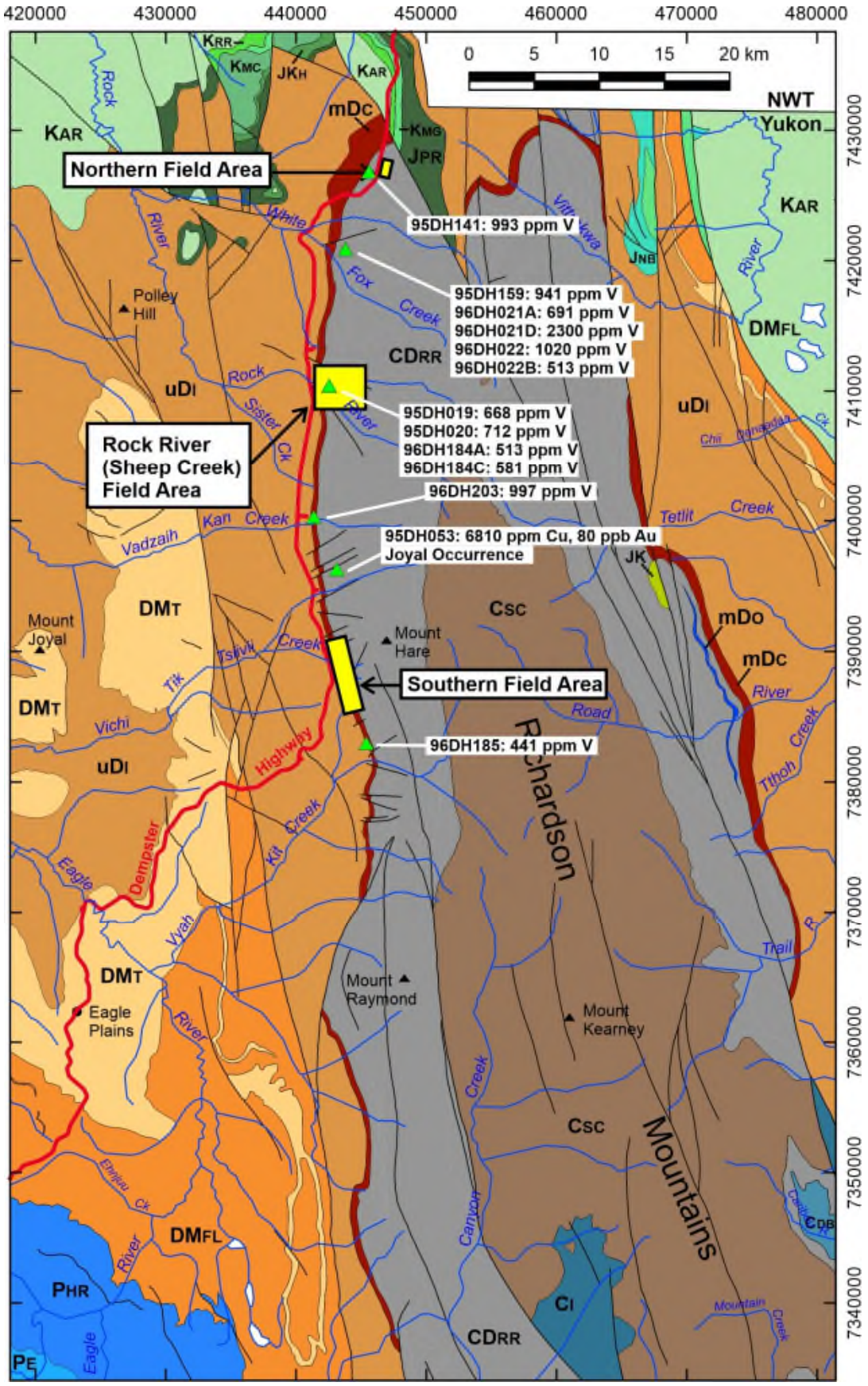


Figure 21. WRM project area geology map (Cecile et al., 1982; Yukon Geological Survey, 2018) showing selected rock sample analytical results from Heon (2006). See Figure 14b for legend.

Sample	East	North	Datum	Unit	Description	Ag (ppm)	As (ppm)	Ba (ppm)	Cu (ppm)	Mo (ppm)	Ni (ppm)	Sb (ppm)	U (ppm)	V (ppm)	V2O5 %	Zn (ppm)
95DH019	442532	7410243	NAD83	Canol? / Road River?	0.5 m chip of fractured shales coated w rusty and white gypsum?	2.4	60	110	124	10	205	8	10	668	0.12	1190
95DH020	442532	7410243	NAD83	Road River?	brecc. shale w lim-gyps-qtz? Coating on fract and lining Fx. tr malach. Float	3.2	86	160	309	25	148	52	<10	712	0.13	832
95DH141	445588	7426650	NAD83	Canol?	platy shales w yellow weathering, chip 0.5 m	0.2	14	490	48	70	95	<2	<10	993	0.18	126
95DH159	443789	7420715	NAD83	Road River	rusty carb grapt sh w 2 thin horizons semi-mass py, chip of 0.3 m	1.6	34	40	116	62	182	6	<10	941	0.17	900
95DH185	445385	7382791	NAD83	Canol	layer of decomposed Rx or soil gouge w/in sil shales, incl crumbly rusty mat	0.8	260	510	301	27	162	14	40	441	0.08	168
96DH021D	443789	7420715	NAD83	Road River	siliceous shales, brown-orange-red weathering, o/c	1.6	40	1020	40	95	77	4	<10	2300	0.41	334
96DH021A	443789	7420715	NAD83	Road River	beige baritic pod? Containing small carb xtals, s/c	0.6	14	6240	22	16	53	<2	<10	691	0.12	400
96DH022	443789	7420715	NAD83	Road River	black carbonaceous graptolitic shales, o/c	0.8	46	1580	123	55	184	2	10	1020	0.18	848
96DH022B	443789	7420715	NAD83	Road River	thin red-rusty horizon, locally punky, beige green, desintigrated sulph, o/c	0.8	68	100	83	99	166	10	<10	513	0.09	556
96DH184A	442532	7410243	NAD83	Road River	flaky black grungy shale, some malach-az? Coating, round vugs? o/c	1.4	78	440	361	29	112	106	<10	513	0.09	1325
96DH184C	442532	7410243	NAD83	Road River	grungy broken up zone in sh w malach-az coating w carb or gypsum veining, o/c	1.8	218	70	939	37	1255	218	<10	581	0.10	2340
96DH203	441353	7400126	NAD83	Road River	chips of beige weathering chert and cherty shale, float	0.8	18	410	43	26	42	8	<10	997	0.18	152

Table 7. List of rock samples with >400 ppm vanadium collected during Eagle Plain area mineral assessment (Heon, 2006).

Review of Global Shale Hosted Vanadium Projects with Calculated Resources

Resource data for several advanced shale-hosted vanadium projects where vanadium is the dominant or only economic component are presented in Table 8. The grade and tonnage values of these deposits, along with cutoff grades, indicate that values of 0.20% V_2O_5 (and possibly lower) in shale are economically significant.

Deposit	Area	Resource Category	Mt	V_2O_5 (%)	Notes and Data Sources	Geology
Gibellini	Nevada	Measured and Indicated	23	0.286	cut-off grade of 0.101% V_2O_5 in oxide zone) and 0.086% V_2O_5 in transition zone	Devonian Woodruff Formation black shale
		Inferred	15	0.175		
Louie Hill	Nevada	Inferred	7.52	0.276	cut-off grade of 0.101% V_2O_5; part of Gibellini Vanadium project	Devonian Woodruff Formation black shale
Bisoni McKay	Nevada	Indicated	11.9	0.390	0.2% V_2O_5 cut-off grade	Devonian Woodruff Formation black shale
		Inferred	7.05	0.420		
Carlin Vanadium	Nevada	Indicated	24.6	0.615	43-101 (2019); 0.3% V_2O_5 cut-off grade	Devonian Woodruff Formation black shale
		Inferred	7.19	0.520		
Viken	Sweden	Indicated	8.9	0.199	also 274 ppm Mo and 156 ppm U	Cambrian black shale (Alum Shale)
		Inferred	214	0.201	also 288 ppm Mo and 155 ppm U	
Julia Creek	Queensland, Australia	Indicated and Inferred	2760	0.300	cut-off grades of 0.20% V_2O_5 for the oil shale and 0.15% V_2O_5 for the coquina units; resources consist of 220 Mt indicated and 2540 Mt inferred; also 201 ppm Cu, 166 ppm Mo, 170 ppm Ni, 1043 ppm Zn and contingent oil resource	black oil shale and coquina of the Cretaceous (Albian) Toolebuc Formation

Table 8. Summary of resource data for shale hosted vanadium projects where vanadium is the dominant or only economic component. Mt = million tonnes (million metric tons). All resource figures are from NI 43-101 reports except for Julia Creek. Sources: Gibellini and Louie Hill – Hanson et al. (2018); Bisoni McKay – Bentzen (2016); Carlin Vanadium – Stryhas (2019); Viken – Puritch et al. (2010); Julia Creek – QEM website [qldem.com.au/project/ accessed 2020-APR-10] and Lewis et al. (2010).

Review of Vanadium in the Western Richardson Mountains (Based on Pre-2020 Work)

Economically significant vanadium results (≥ 0.20% V_2O_5) have been obtained from outcrop and drill core samples collected in the western Richardson Mountains. Note that several of the drill core intersections are open above and below (i.e. no samples were collected from core above or below the vanadium mineralized interval). The data were collected during (i) industry exploration of the NiMo horizon and (ii) government research of the NiMo horizon so most of the available data is for samples collected within a few 10's of metres of the Road River – Canol contact. Shale containing high vanadium content is not necessarily visually distinctive and most of the core from the industry drilling in the western Richardson Mountains was not sampled.

Diamond drilling on the former on the former Sun and Fox properties occurred between 3 and 13 km north of the WRM project Rock River (Sheep Creek) field area; Figure 19). Ni, Zn, Mo and V results for drill core samples collected from the 2007 drilling on the former Sun property (SN holes) and Fox property (FX holes) is listed in Table 5 and a summary of vanadium grades from all of the sampled core intervals is presented in Table 6.

The four best intersections are (i) 0.53% V_2O_5 over 4.19 m in drill hole FX07-04, (ii) 0.47% V_2O_5 over 5.32 m on hole SN07-02, (iii) 0.40% V_2O_5 over 3.67 m in drill hole SN07-01, and (iv) 0.54% V_2O_5 over 1.25 m in drill hole FX07-03. In all of these intersections the mineralized interval is open above and below. Based on core logging:

- The V-rich zone in hole SN07-01 occurs in the Road River Group several 10's of metres below the Road River – Canol contact.
- The V-rich zones in holes SN07-02 and FX07-04 straddle the Road River – Canol contact.
- The V-rich zone in hole FX07-03 occurs in the Canol Formation about 30 m above the Road River – Canol contact.

The only hole that intersected the NiMo horizon during the 2007 drilling on the former Sun and Fox properties, hole SN07-03, returned 3.01% Ni, 0.63% Zn and 1170 ppm Mo across 1 cm (86.64 to 86.65 m). The NiMo horizon returned only 365 ppm V and the strata above and below the NiMo horizon are not particularly enriched V (the maximum V value from contiguous samples between 77.73 m and 90.15 m is 675 ppm).

2020 Exploration Program

Claim Staking

Fourteen quartz claims were staked during the 2020 field program (Table 9 and Figures 22 to 24). All of the claims are registered in the Dawson Mining District to Glen Prior.

Mount Hare Property: This is a group of 10 quartz claims (MH 1 to MH 10 claims) is located east of the Dempster Highway in the upper drainage area of Vichi Tik Tsiivii Creek about 4 km west-southwest of Mount Hare in NTS map area 116I/09.

Sheep Creek Property: This is a group of 4 quartz claims (SC 1 to SC 4) located east of the Dempster Highway and north of Rock River (also known as Sheep Creek) in NTS map area 116I/16.

Property	Claim Name	Tag Number	Recording Date
Mount Hare	MH 1	YF74701	2020-08-28
	MH 2	YF74702	2020-08-28
	MH 3	YF74703	2020-08-28
	MH 4	YF74704	2020-08-28
	MH 5	YF74705	2020-08-28
	MH 6	YF74706	2020-08-28
	MH 7	YF74707	2020-08-28
	MH 8	YF74708	2020-08-28
	MH 9	YF74709	2020-08-28
	MH 10	YF74710	2020-08-28
Sheep Creek	SG 1	YE86007	2020-08-28
	SG 2	YE86008	2020-08-28
	SG 3	YE86009	2020-08-28
	SG 4	YE86010	2020-08-28

Table 9. Claims staked during the 2020 field program.

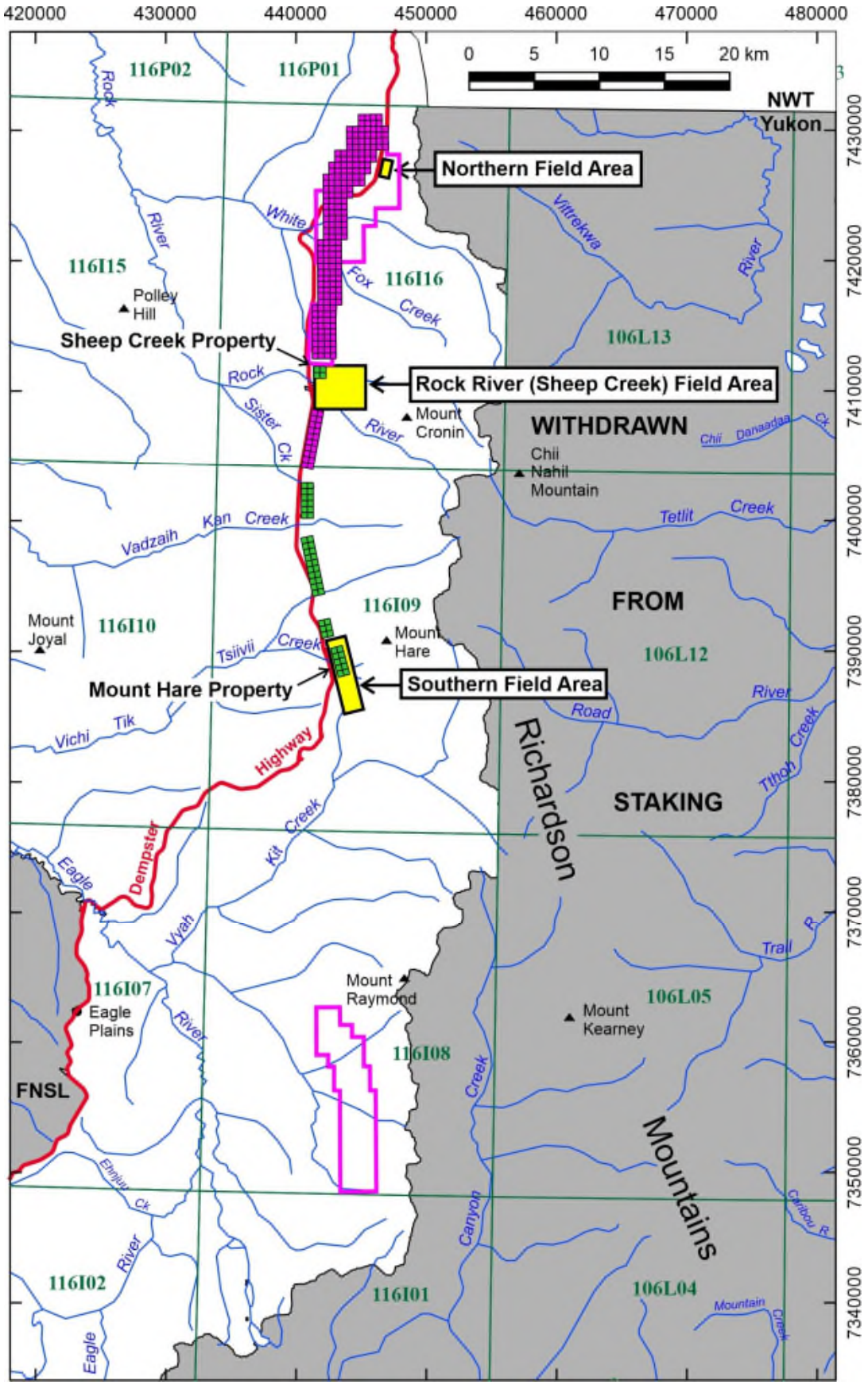


Figure 22. Location of the WRM project 2020 field areas (yellow polygons) and properties (labelled). Claims existing in March of 2020 shown in magenta and claims staked in July and August of 2020 shown in green

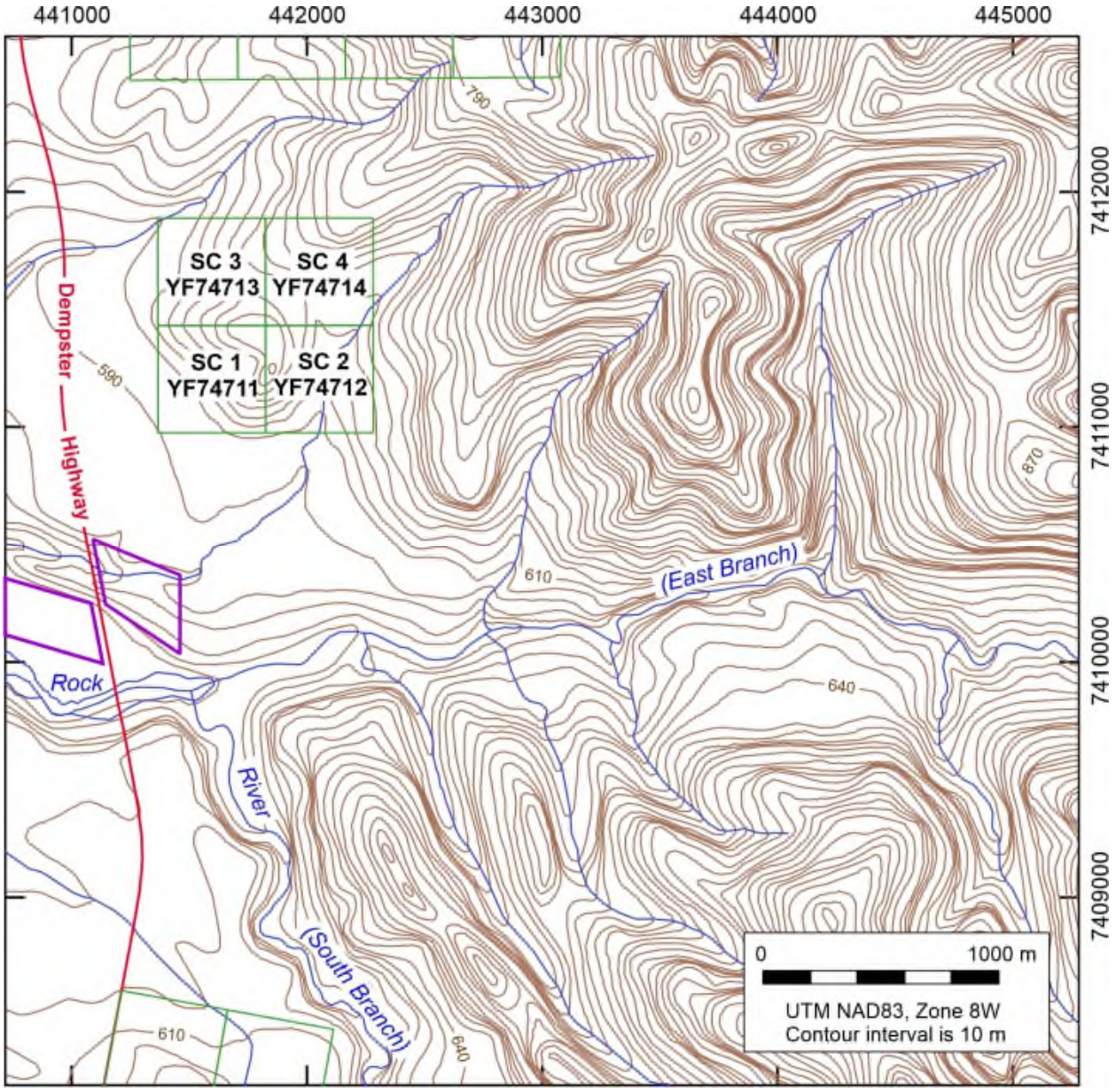


Figure 23. Location of Sheep Creek claim block (quartz claims SC 1 to SC 4). Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

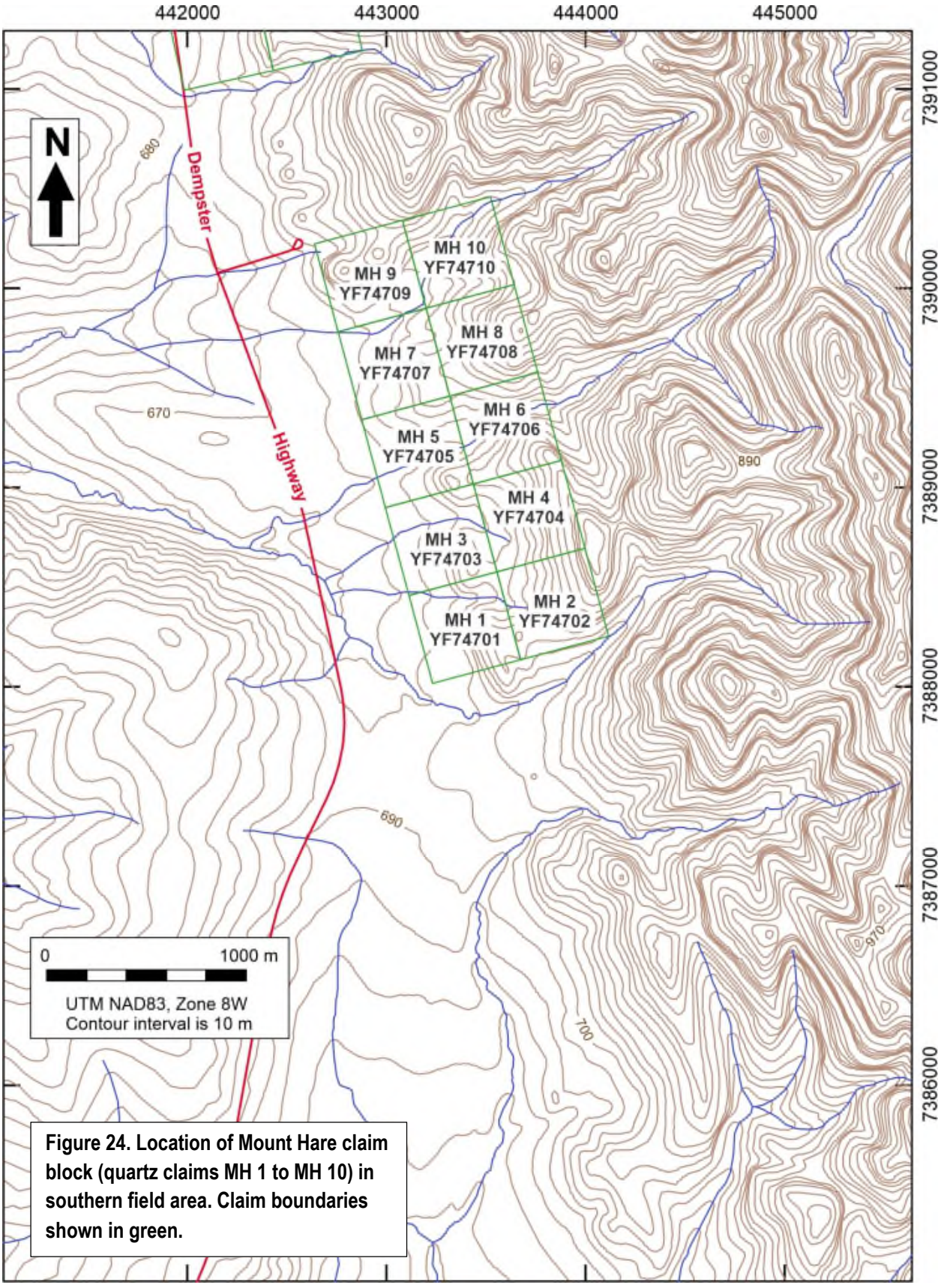


Figure 24. Location of Mount Hare claim block (quartz claims MH 1 to MH 10) in southern field area. Claim boundaries shown in green.

Field Exploration Overview

Exploration field work on the WRM project in 2020 included stream silt sampling (Appendix 1), soil and scree sampling (Appendix 2), rock sampling (Appendix 3), and geological observations (included in Appendix 3).

Exploration work was undertaken in three field areas east of the Dempster Highway within the western foothills of the Richardson Mountains. The field areas span a north-south distance of about 42 km and access was obtained by a combination of truck travel, quad travel and hiking. The Richardson Mountains are generally north trending and streams on the western flank tend to flow in a westerly direction. This drainage tends to create westerly sloping valleys separated by minor ridges or spurs with east-west orientations and ridgelines that, overall, slope relatively gently to the west (Figures 25 and 26).

Stream silt samples were collected from fine grained sediments and/or from moss mats. Samples were collected from several locations within an area of a few metres and, where possible, active (in stream) material was chosen. Large pleated kraft sample bags were filled to maximum capacity to ensure enough silt was obtained for analyses. Sample weights shipped for geochemical analyses varied from 151 g to 533 g (after drying and the removal of small representative sample fractions).

Soil and scree sampling traverse were undertaken along the ridgelines of the east-west trending minor ridges (spurs) to take advantage of the thin overburden. Areas covered in scree are common and samples varied from material that was nearly 100% “fines” (clay to very coarse sand) to nearly 100% scree fragments (rock fragments larger that very coarse sand). Sand-sized material was uncommon and most fine grained material is silty although silty clay, clayey silt, and clay were encountered locally. The organic (Ah horizon) varied from non-existent (scree areas) to a few 10’s of centimetres in thickness. Mineral soil profiles are generally poorly developed with enriched upper-B horizon rarely evident.

Soil and scree samples were collected with a long handled geotul (combined hammer and mattock) or shovel at depths of 15 to 40 cm and placed in a large, pleated kraft sample bag. The bags were filled from 5 to 8 cm above the base and dry sample weights ranged from 121 to 442 g (after the removal of small representative sample fractions). Rock fragments greater that 1 cm across were excluded from the sample material except in rare cases where the scree was unusually coarse and material up to 2 cm across was included (noted in sample description comments). Nominal sample spacing along traverses was 25 m with some variability due the presence of absence of suitable sampling sites. Scree characteristics were included in field notes at sites where a significant component of scree was present. Observations included the degree to which the fragments were calcareous (based on reaction to dilute [10%] HCl) and the percentage of chert fragments.

Canol Formation scree tends to be dominantly composed of small (typically < 5 cm across) fragments of weakly blocky to moderately fissile, non-calcareous, medium grey weathering, dark grey to black siliceous shale with laminae commonly visible on weathered surfaces. Black, black weathering chert fragments typically 1 to 5 cm thick and up to 10+ cm thick (representing original thickness of chert beds

or lenses) are a common minor component of Canol Formation scree but are not ubiquitous (chert locally forms up to 50% of the Canol Formation scree but generally forms <5%).

The Road River Group scree encountered on the 2020 sampling traverses trends to be light to medium grey, light to medium grey weathering, weakly to strongly fissile and moderately to strongly calcareous. Platy scree fragments, which may be >10 cm across, are common.

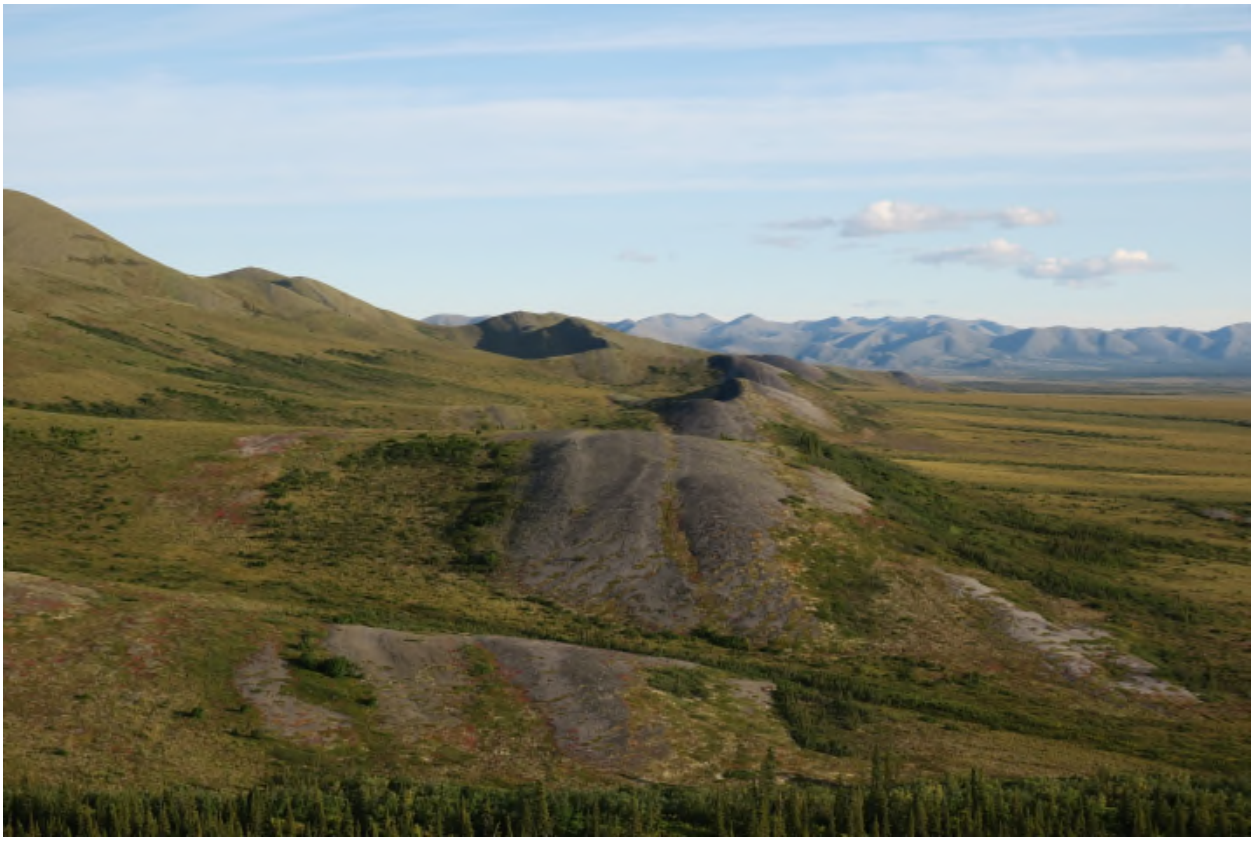


Figure 25. Southerly view of foothills topography of the western Richardson Mountains. The low, dark grey, scree covered hills (knobs) to the west (right) are underlain by the Canol Formation. The steeply sloping hills to east (left) are underlain by the Road River Group. The overall trend of the Richardson Mountains in approximately north-south (parallel to stratigraphy). However, easterly flowing streams dissect the foothills and create minor ridges (spurs) that trend east-west. Soil and scree traverses were undertaken along the ridgelines of the minor ridges. Note that the dark colour of the Canol Formation scree is caused, in part, by black lichen. View to 165° from 442967E, 7390144N (NAD83, Zone 8W).

Figure 26. Easterly view along a minor ridge. This minor ridge is underlain the Canol Formation. The ridges and peaks in the background are underlain by the Road River Group. The scree in the foreground (partly in shadow) is composed of medium grey weathering, non-calcareous shale and black weathering chert of the Canol Formation. Thirty to fifty percent of the surface area of the foreground scree is covered by black lichen, which contributes to the dark colouration. Photo taken near soil/scree sample site RM538. View to 070° from 442807E, 7390084N (NAD83, Zone 8W).

Rock sample RM402 to RM427 were obtained from stream bank outcrops in the Rock River (Sheep Creek) area by collecting continuous rock chips over a width of 50 cm across bedding. Rock sample RM401 was collected from a rock quarry (for road material) in the southern field area and consists of several small pieces of outcrop (non-continuous) collected over a 2 m width across bedding. Two samples were collected at each site: (i) a sample for laboratory analysis and (ii) a representative sample to be retained. Samples submitted for geochemical analyses varied in weight from 0.45 kg to 1.11 kg.

Geological observations (in addition to those made at scree-rich sampling sites) mainly consist of outcrop observations made during sampling traverses. Geological notes, including lithology descriptions and bedding attitudes, are included in Appendix 3.

Location information was obtained using a Garmin GPSMAP 64st instrument. Location units are presented in the UTM NAD83 coordinate system (Zone 8W). Horizontal accuracy, as measured by the instrument, is generally within 3 m. The instrument does not display vertical accuracy but it is much poorer than horizontal accuracy.

Soil, scree samples and silt samples collected in 2020 were shipped to TSL Laboratories Inc. in Saskatoon, Saskatchewan where they underwent four-acid digestion digestion and ICP-MS analyses. Four-acid digestion was chosen in order to obtain near-total values for vanadium.

Rock samples collected in 2020 were shipped to MSALABS in Langley, British Columbia where they underwent whole rock analyses by lithium borate fusion for major oxides and vanadium, carbon and sulphur determinations by the LECO method, and multi-element analyses for base metals, gold, silver and other elements by aqua regia digestion and ICP-AES/MS determination.

Laboratory Methods

TSL Laboratories Inc., Saskatoon

Geochemical analyses of the stream silt sample set and the soil and scree sample set were performed by TSL Laboratories Inc. in Saskatoon, Saskatchewan. The method descriptions provided below were provided by Mark Acres of TSL Laboratories Inc.

Stream Silt Sample Preparation

Samples: RM601 to RM621
Sample Weights: 151 g to 533 g

Samples received at TSL Laboratories were opened, sorted and dried prior to preparation. The samples were sieved to <80 mesh (<180 microns) prior to analysis.

Soil and Scree Sample Preparation

Samples: RM201 to RM300; RM501 to RM560
Sample Weights: 121 g to 442 g

Samples received at TSL Laboratories were opened, sorted and dried prior to preparation. Due to the heterogeneity of this set of samples, from samples composed mainly of silt and clay (soil) to samples composed mainly of small shale fragments (scree), a series of steps were employed to obtain suitable material for analysis.

1. Sieve all samples to <80 mesh (<180 microns).

2. If samples yield greater than 30 g of <80 mesh fraction proceed to analyze sieved <80 mesh fraction.

3. If sieving yields less than 30 g of <80 mesh fraction:

- Set sieved material aside.
- Submit >80 mesh fraction to a weak ring and puck pulverization. For weak pulverization the inner of the two rings is removed (puck and outer ring remain) and the pulverization is limited to 20 to 30 seconds.
- Sieve weakly pulverized material to <80 mesh (<180 microns).
- Combine the original <80 mesh sieved fraction with as much of the weakly pulverized (and sieved) material as needed to create a subsample of approximately 30 g.

4. If the weak pulverization does not produce the desired amount of material proceed to the standard rock crushing and pulverization as follows:

- Crush all of the >80 mesh fraction using a primary jaw crusher to a minimum of 70% passing 10 mesh (1.70 mm) followed by collection of a representative split sample by passing crushed material through a riffler to obtain a 250 gram sub-sample.
- Pulverize material to a minimum 95% passing 150 mesh (106 microns). Both of the rings and the puck are in place and pulverization proceeds for 60 to 90 seconds.
- Combine the <80 mesh sieved fraction with as much of the crushed and pulverized material as needed to create a subsample of approximately 30 g.

5. Record preparation method for each sample. Options are:

- Sieved to <80 mesh only.
- Combination of (a) <80 mesh sieved material and (b) weakly pulverized material.
- Combination of (a) <80 mesh sieved material, (b) weakly pulverized material and (c) crushed and pulverized material (regular pulverization).

A table listing the sample preparation method employed for each soil/scree sample is presented in Appendix 4.

Multi-Element Analysis by Four-Acid Digestion and ICP-MS Determination

Samples (stream silt, soil and scree) underwent four-acid digestion of a 0.25 g aliquot using a combination of hydrochloric acid (HCl), nitric acid (HNO_3), hydrofluoric acid (HF) and perchloric acid ($HClO_4$). This digestion method is commonly referred to as 'near total' because hydrofluoric acid has the ability to dissolves silicate minerals. The resulting solution was analyzed for 46 elements by inductively coupled plasma mass spectrometry (ICP-MS). The four-acid extraction may only partly liberate some elements including Al, Ba, Cr, Sn and Zr depending on sample mineralogy. Some loss of volatile elements such as As and Sb may occur.

Analytical Quality Assurance

Certified reference materials (standards) and blanks were inserted into the sample batches by TSL Laboratories. In addition, several samples were analyzed twice (duplicate pairs). The data obtained on these materials were reviewed by the author and the no significant analytical issues were detected.

MSALABS

Rock sample geochemical analyses were performed at MSALABS of Langley, British Columbia. The method descriptions outlined below were provided by MSALABS.

Rock Sample Preparation (Method Code PRP-910)

Samples:	RM401 to RM427
Sample Weights:	0.45 kg to 1.11 kg

The sample is dried, crushed to 70% passing 2 mm, and then passed through a riffle splitter to obtain a homogenized, representative split of 250 g. This sub-sample is then pulverized with a ring and puck (chrome steel) until 85% is less than 75 microns in size. Aliquot for analyses are taken from this material.

Multi-Element Determination using a Lithium Borate Fusion and ICP-OES Finish: Method Codes WRA-310 and WRA-V

A 0.15 g pulverised subsample is decomposed using lithium borate fusion. During fusion, material is heated in a muffle furnace at 1000° C with lithium borate flux. The fused sample is then cooled and dissolved in dilute nitric acid. The resulting solution is analyzed by inductively coupled plasma-optical emission spectroscopy and the quantified concentrations of the following elements, reported as oxides except for V, is reported (each with a lower detection limit of 0.01%):

SiO2, TiO2, Al2O3, Fe2O3, MnO, MgO, CaO, Na2O, K2O, P2O5, Cr2O3, BaO, SrO, V

Loss on ignition (LOI) at 1000° C and the “Total” (sum of oxides and LOI) are also reported.

Loss on Ignition: Method Code LOI-1000

1 g of pulverised subsample is weighed into a crucible, placed in an oven or furnace at 1000° C for one hour, cooled and then weighed again. The loss on ignition is calculated from the difference in weight.

Determination of Total Carbon and Sulphur: Method Code SPM-512

A pulverised subsample of 0.3 g is weighed into a ceramic crucible and analyzed for total carbon and sulphur using a LECO analyzer. Iron and tungsten accelerators are added to the sample and a stream of oxygen is passed over the sample in the induction furnace. As the sample is heated, carbon dioxide and sulfur dioxide released from the sample are measured by an IR detection system and the total contents of carbon and sulphur are determined. The analytical range is 0.01 to 50% for carbon and 0.01 to 20% for sulphur.

Multi-Element Determination Using an Aqua Regia Digestion and ICP-AES/MS Finish (39 Elements): Method Code IMS-127

The pulverised subsample is weighed (0.5 g) and digested under heat with a hydrochloric acid and nitric acid mixture in a 3:1 ratio (aqua regia). Upon completion of the digestion step, the sample is made up to volume with deionized water. This sample solution is then analyzed by inductively coupled plasma-atomic emission spectroscopy and inductively coupled plasma mass spectrometry. The values for Al, B, Ba, Ca, Cr, Fe, K, Mg, Mn, Na, P, S, Ti and Zn are reported based on ICP-AES data. The remaining elements are typically reported based on ICP-MS data but this may vary depending upon concentration ranges. Note that aqua regia digestion may provide only partial recovery for some elements, including (but not limited to): Al, Ba, Ca, Cr, Hf, K, La, Mg, Na, Nb, P, Sc, Sr, Ta, Ti, Tl, W and Zr.

Analytical Quality Assurance

Certified reference materials (standards) and blanks were inserted into the sample batches by MSALABS. In addition, several samples were analyzed twice (duplicate pairs). The data obtained on these materials were reviewed by the author and the no significant analytical issues were detected.

Geochemical Results

Laboratory geochemical results are presented in Appendix 5 (stream silt samples), Appendix 6 (soil and scree samples) and Appendix 7 (rock samples).

Field Work and Results: Northern Field Area

Two stream silt samples were collected east of the Dempster Highway near 7427000 m north (UTM, NAD83, Zone 8W) with NTS map area 116I/16. The sample sites are 11 to 12 km south of where the highway crosses into the Northwest Territories within the White Fox Creek drainage basin. The samples, from small, westerly flowing streams, were collected to test for mineralization in Road River Group strata to the east. Low numbers were obtained for elements of interest including maximum values of 103 ppm V, 28.8 ppm Ni, 3.9 ppm Mo and 132 ppm Zn (Figure 27).

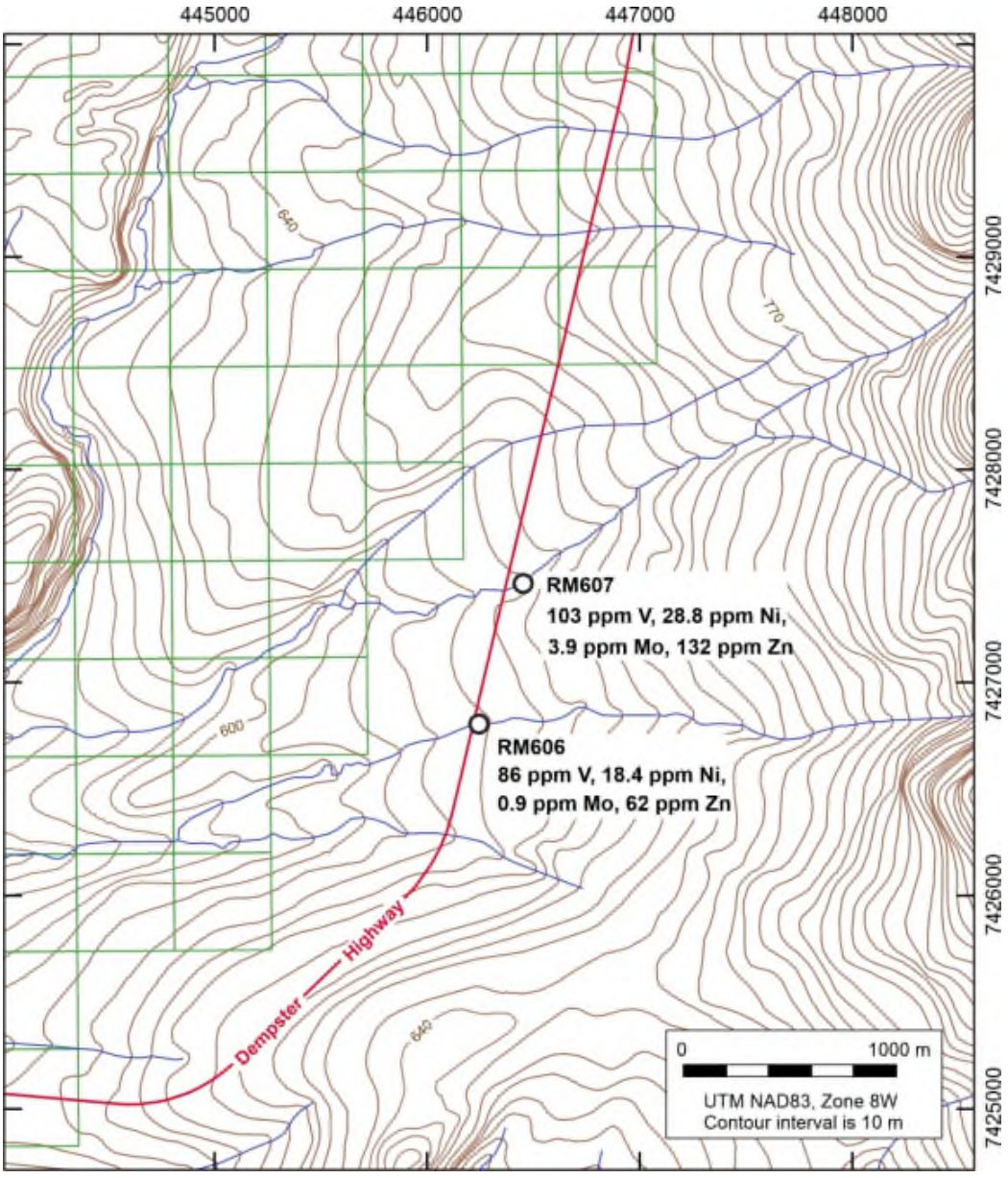


Figure 27. Stream silt sample sites in northern field area showing V, Ni, Mo and Zn results. Claim boundaries shown in green.

Field Work and Results: Rock River (Sheep Creek) Area

The westerly flowing Rock River, as identified on the 1:50000 topographic map, is crossed by the Dempster Highway at about 7410000 m north (UTM, NAD83, Zone 8W) with NTS map area 116I/16. However, a highway sign at this crossing identifies the stream as Sheep Creek. In August of 2020 the stream bed at this location, composed of abundant boulders, was dry with flow occurring underground. At about 325 m upstream from the highway the stream divides into two major branches (east branch and south branch). Both branches are similar in size – the 1:50000 topographic map identifies the south branch as being the upstream continuation of Rock River. Flowing surface water was encountered about 850 m upstream from the highway along the east branch and for a considerable distance upstream from this point the unusual condition existed where surface stream flow increased and the stream became deeper in an upstream direction.

The Sheep Creek Property, a group of 4 quartz claims (SC 1 to SC 4) staked in 2020, is centred about 850 m east of the Dempster Highway and 1400 m north of the east branch of Rock River/Sheep Creek (Figure 23). Based on the geological map of area (Cecile et al., 1982; Yukon Geological Survey, 2018) the claims should contain the Road River Group – Canol Formation contact, which is a favourable stratigraphic location for V-Ni-Mo-Zn mineralization (Figure 28).

Rock Samples and Geology

Twenty-six rock chip samples (50 cm chips across bedding) were collected from outcrops exposed in steep banks along the east and south branches of Rock River (Sheep Creek). At selected locations with extensive shale sections a series of rock chip samples were collected at nominal spacing of 25 m. Government geological mapping (Cecile et al., 1982; Yukon Geological Survey, 2018) shows this to be an area of structural complexity with the Road River Group – Canol Formation contact offset by both earlier, approximately east-west faulting and a later northwest trending fault. Based on this map the area of sampling along the east branch should be in the Road River Group and the sample area along the south branch should be in the Canol Formation (Figure 28).

Field observations and geochemical results indicate that within the rock sampling area only the northern (downstream) part of the south branch lies within the Canol Formation with the rest of the area (at least at stream level) being underlain by Road River Group strata. A northeast trending fault was observed in the western bank of the south branch at 441656E, 7409477N (UTM NAD 83, Zone 8W). Calcareous Road River Group shale occurs to the south of the fault while the non-calcareous Canol Formation occurs to the north. Bending of bedding toward the fault suggests north side down relative displacement (this is consistent with the fault juxtaposition of younger Canol Formation strata (to the north) against older Road River Group strata (to the south). The surface that appears to be the main fault plane has an orientation of 056°/62°N. A revised geology map of this area based on government mapping (Cecile et al., 1982; Yukon Geological Survey, 2018) with modifications based on 2020 field work, is presented in Figure 29 (compare to Figure 28, note difference in scales).

The observed Canol Formation (sample sites RM426 and RM427) consists of shaly chert with a tendency to be cliff forming (Figures 29, 30, 31 and 32). The observed Road River Group consists mainly of calcareous shale (Figures 33 and 34). Interbedded grey limestone (limy shale), black calcareous shale and black chert, in beds that are locally >20 cm thick, were observed along the east branch at sample site RM 405 about 900 m east of the Road River Group – Canol Formation contact (Figure 30 and 35).

Rock SiO_2: The two samples of Canol Formation shaly chert returned 85.30 and 86.78% SiO_2. Road River Group shale samples generally contain between 37 and 70% SiO_2. Higher silica values of 73.37% and 78.33% occur in two samples of Road River Group calcareous shale near the eastern limit of rock sampling along the east branch. Samples RM403 and RM404, which contain subordinate amounts of chert in beds up 8 cm thick, contain 73.37% and 78.33% SiO_2 (Figure 36).

Rock CaO: The CaO values of the two Canol Formation shaly chert samples are only 0.09% and 0.14%. Most of the Road River Group shale samples contain 4% to 13% CaO with a minimum of 0.87% CaO. Two Road River Group samples from the easternmost outcrop sampled on the east branch, described in the field as being composed mainly of calcareous shale/shaly limestone/limestone interbedded with subordinate amounts of chert, returned 20.04 and 27.62% CaO (Figure 37).

Rock V: Thirteen rock chip samples, spaced roughly 20 m apart, were collected from an extensive Road River Group outcrop forming the north bank of the east branch. The five samples from the western part of this sample set contain elevated V values of 0.07% to 0.10% V. These are the most westerly samples collected along the east branch. Based on government mapping (Cecile et al., 1982; Yukon Geological

Survey, 2018) a northerly projection places stratigraphically equivalent Road River Group shales under the eastern part of claim SC2 (Figures 28, 29 and 38).

The northernmost rock chip sample of a series of five collected from a Road River Group outcrop on the west bank of the south branch returned 0.11% V (sample RM423).

Two rock chip samples of Canol Formation shaly chert collected near the confluence of the south and east branches are enriched in vanadium (0.09 and 0.12% V).

Rock Ni: The western 5 of 13 samples from the north bank section of the east branch returned 144 to 254 ppm Ni (Figure 39).

The Canol Formation samples returned low Ni values (8.2 and 8.4 ppm).

Rock Mo: The western 4 of 13 samples from the north bank section of the east branch returned 48 to 104 ppm Mo (Figure 40).

The northernmost rock chip sample of a series of five collected on the west bank of the south branch returned 42.86 ppm Mo (sample RM423).

The Canol Formation samples also have elevated Mo contents (34.85 and 46.15 ppm Mo). The northernmost sample from the southern area of sampling along the south branch yielded 43.86 ppm Mo.

Rock Zn: The western 5 of 13 samples from the north bank section of the east branch returned 280 to 622 ppm Zn (Figure 41).

The two samples of Canol Formation shaly chert yielded 106 and 493 ppm Zn.

The northernmost sample from the southern area of sampling along the south branch returned a result of 578 ppm Zn.

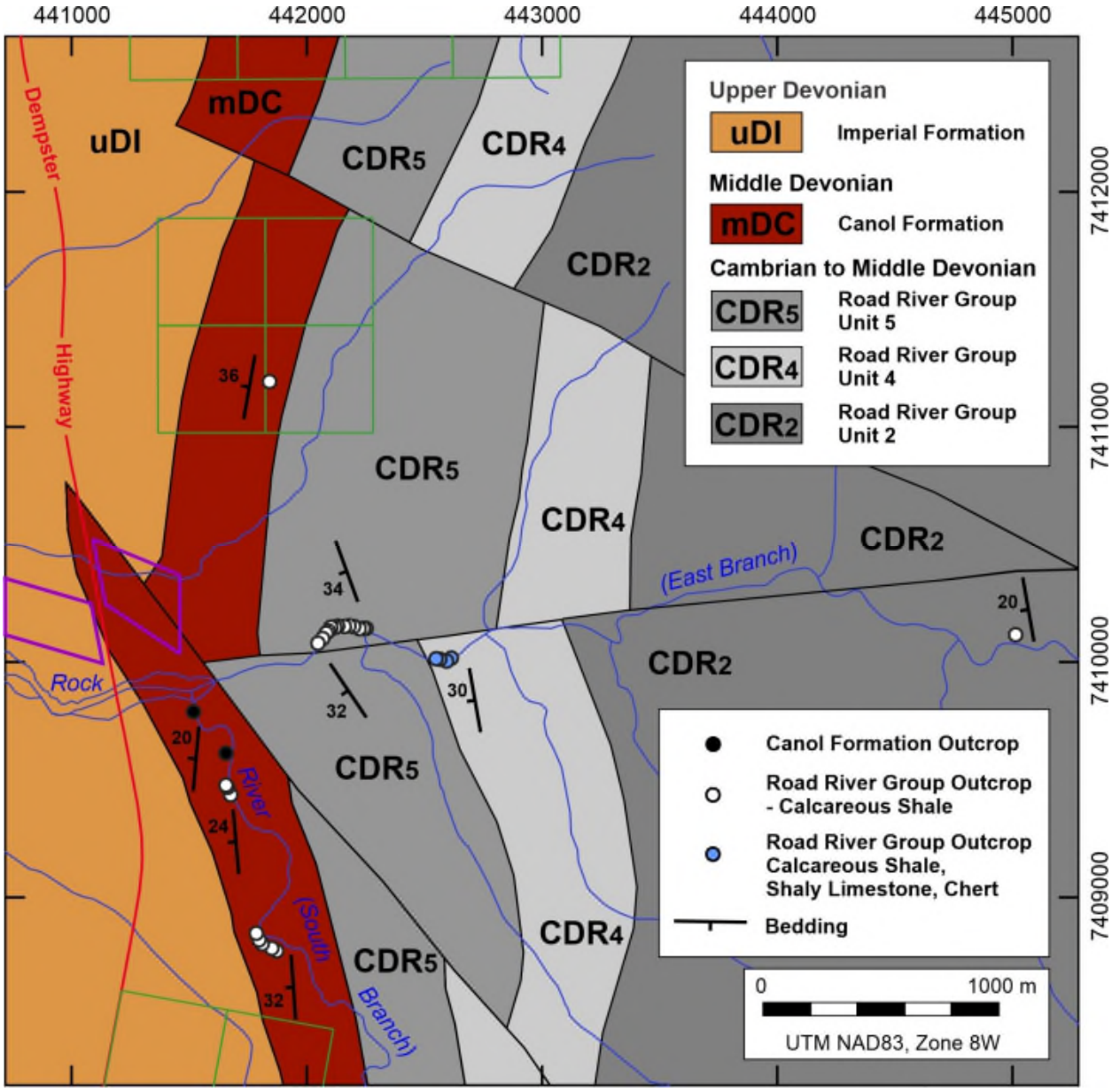


Figure 28. Geology of the Rock River (Sheep Creek) field area (Cecile et al., 1982: Yukon Geological Survey, 2018). The Sheep Creek property consists of the 4 claims shown north of the Rock River. Claim boundaries shown in green. Boundary of First Nation Settlement Lands in purple.

uDl – Imperial Formation: dark grey shale, siltstone, sandstone

mDC – Canol Formation: dark grey to black, non-calcareous shale

CDR5 – Road River Group unit 5: black shale and shaly limestone

CDR4 – Road River Group unit 4: shaly limestone and dolostone, subordinate black, calcareous shale

CDR2 – Road River Group unit 2: shaly limestone, black chert, shale

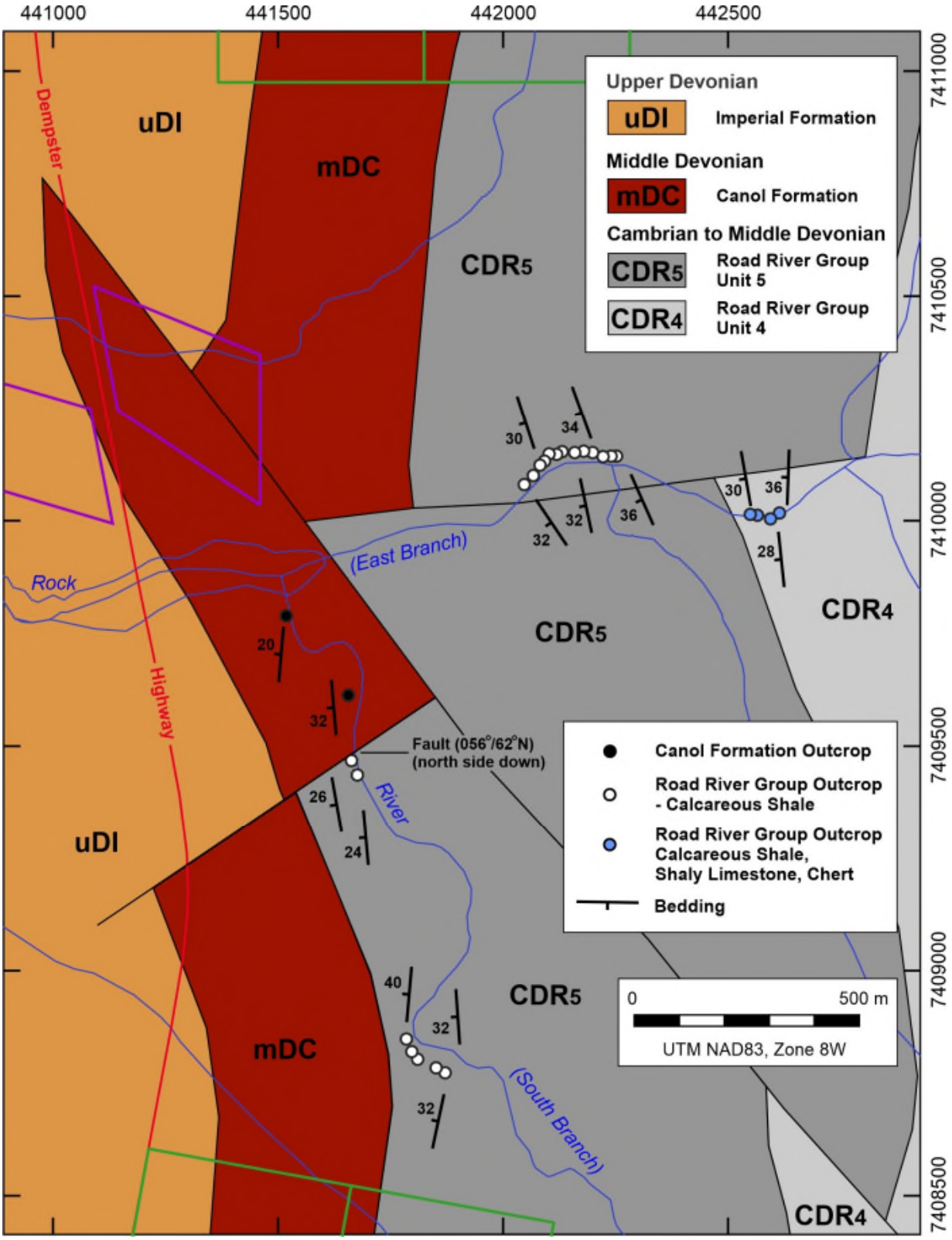


Figure 29. Geology of the southwest part of the Rock River (Sheep Creek) field area (after Cecile et al., 1982) with revisions based on 2020 field work. Boundary of First Nation Settlement Lands in purple.

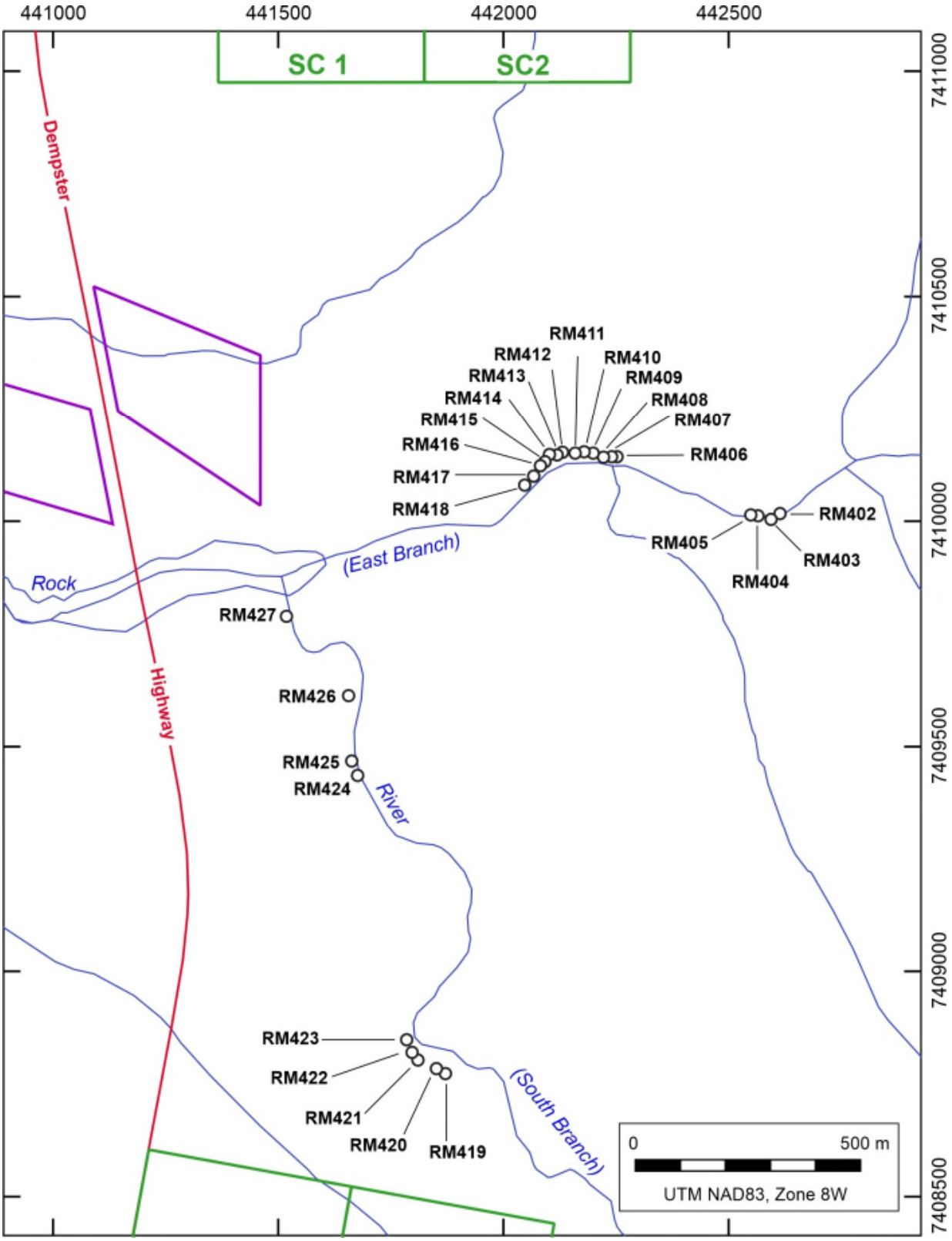


Figure 30. Rock chip sample locations in the Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

Figure 31. Cliff of Canol Formation shaly chert near confluence of the south and east branches of Rock River (Sheep Creek). This cliff lies between sample sites RM426 and RM427. View is to the west from 441675E, 7409660N (UTM, NAD 83, Zone 8W).

Figure 32. Near-vertical exposure of Canol Formation shaly chert (rock chip sample RM427sample site). Hammer handle is about 70 cm long (442273E, 7410117N; UTM, NAD 83, Zone 8W).

Figure 33. Section of Road River Group calcareous shale exposed in north bank of the east branch of Rock River (Sheep Creek). This photo shows part of the section from which the RM406 to RM418 series of rock chip samples was collected. View is to 290° from 442273E, 7410117N (UTM, NAD 83, Zone 8W).

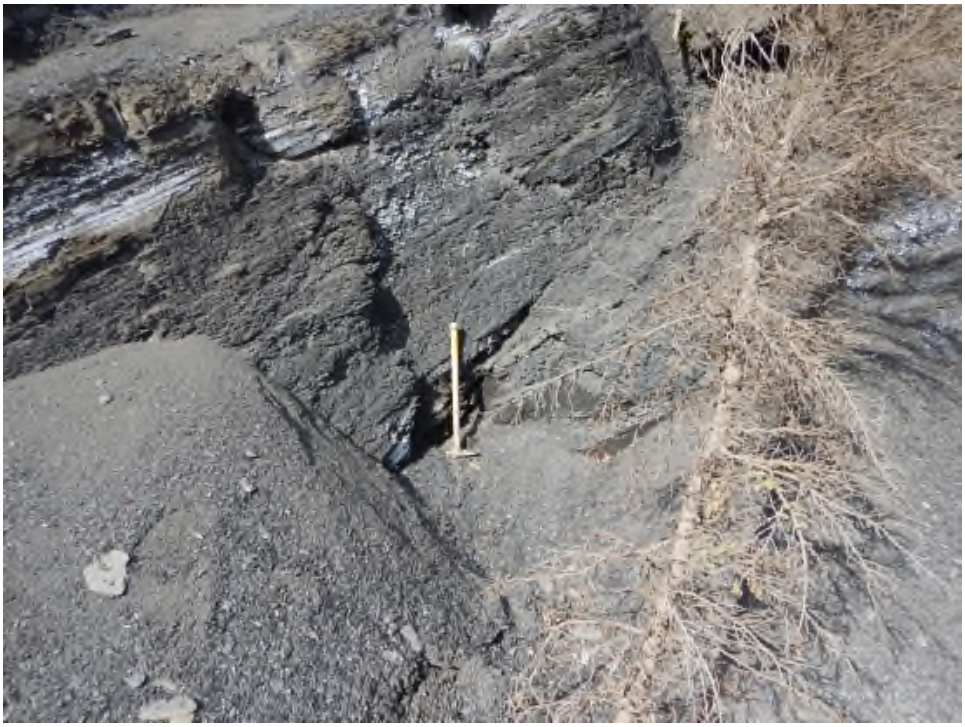


Figure 34. View of rock chip sample site RM410 (calcareous shale of the Road River Group). North bank of east branch of Rock River (Sheep Creek). View to north from 442179E, 7410154N (UTM, NAD 83, Zone 8W). Hammer is about 70 cm long.

Figure 35. Interbedded grey limestone (limy shale), black calcareous shale (e.g.at hammer head) and black chert (e.g. above end of hammer handle) at sample site RM 405 about 900 m east of the Road River Group – Canol Formation contact. View to south from 442549E, 7410014N (UTM, NAD 83, Zone 8W). Hammer handle is about 70 cm long.

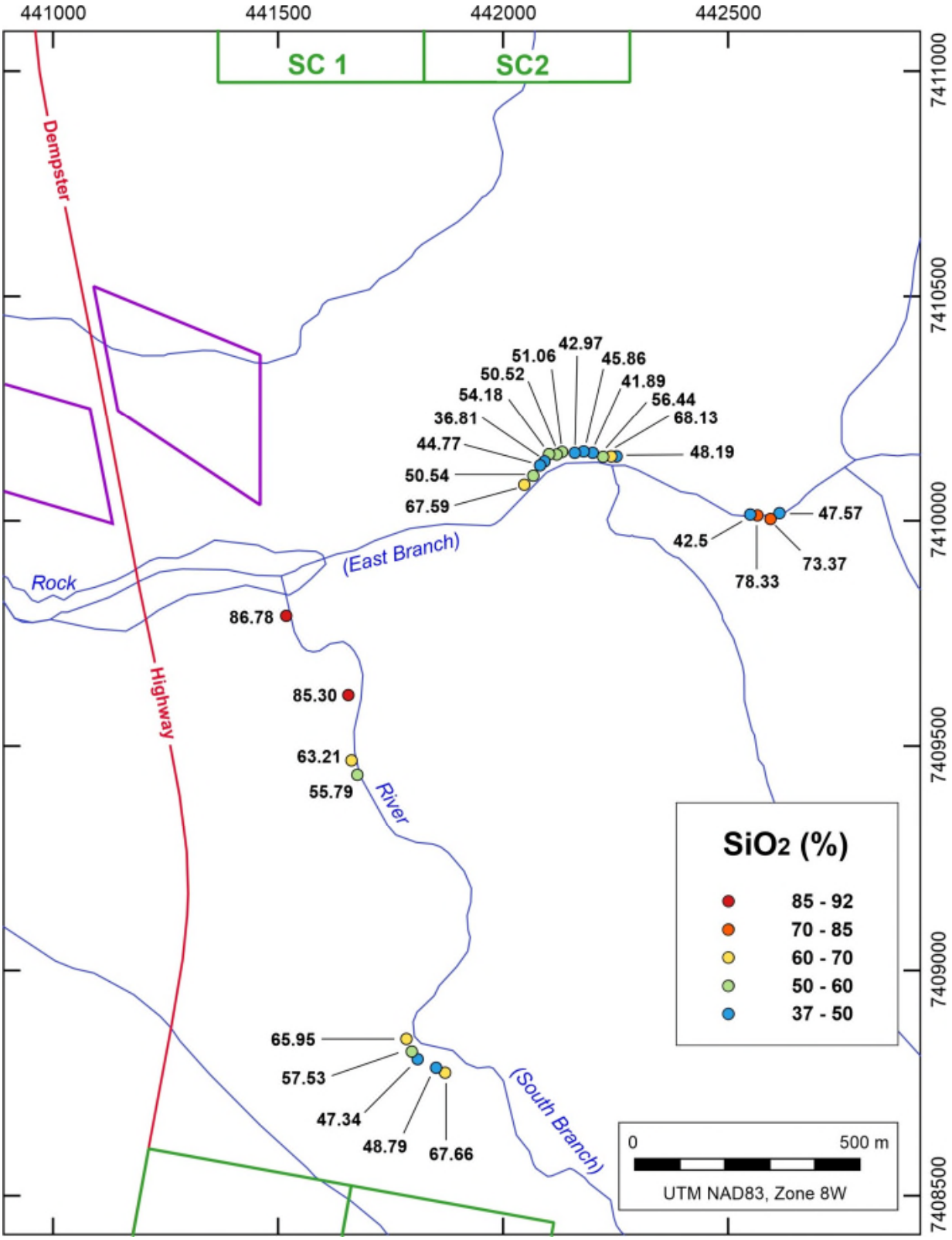


Figure 36. Silica in rock chip samples. Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

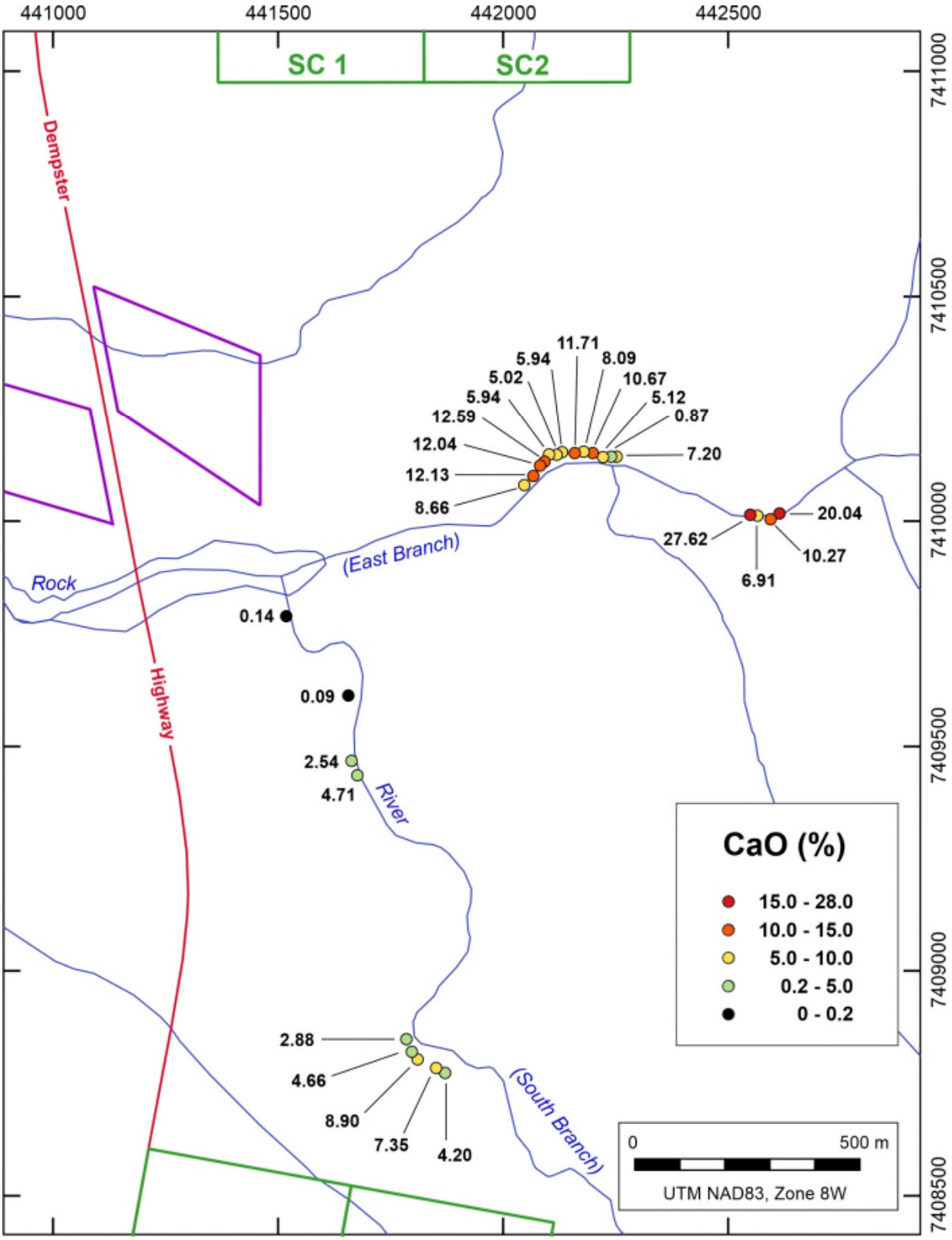


Figure 37. Calcium oxide in rock chip samples. Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

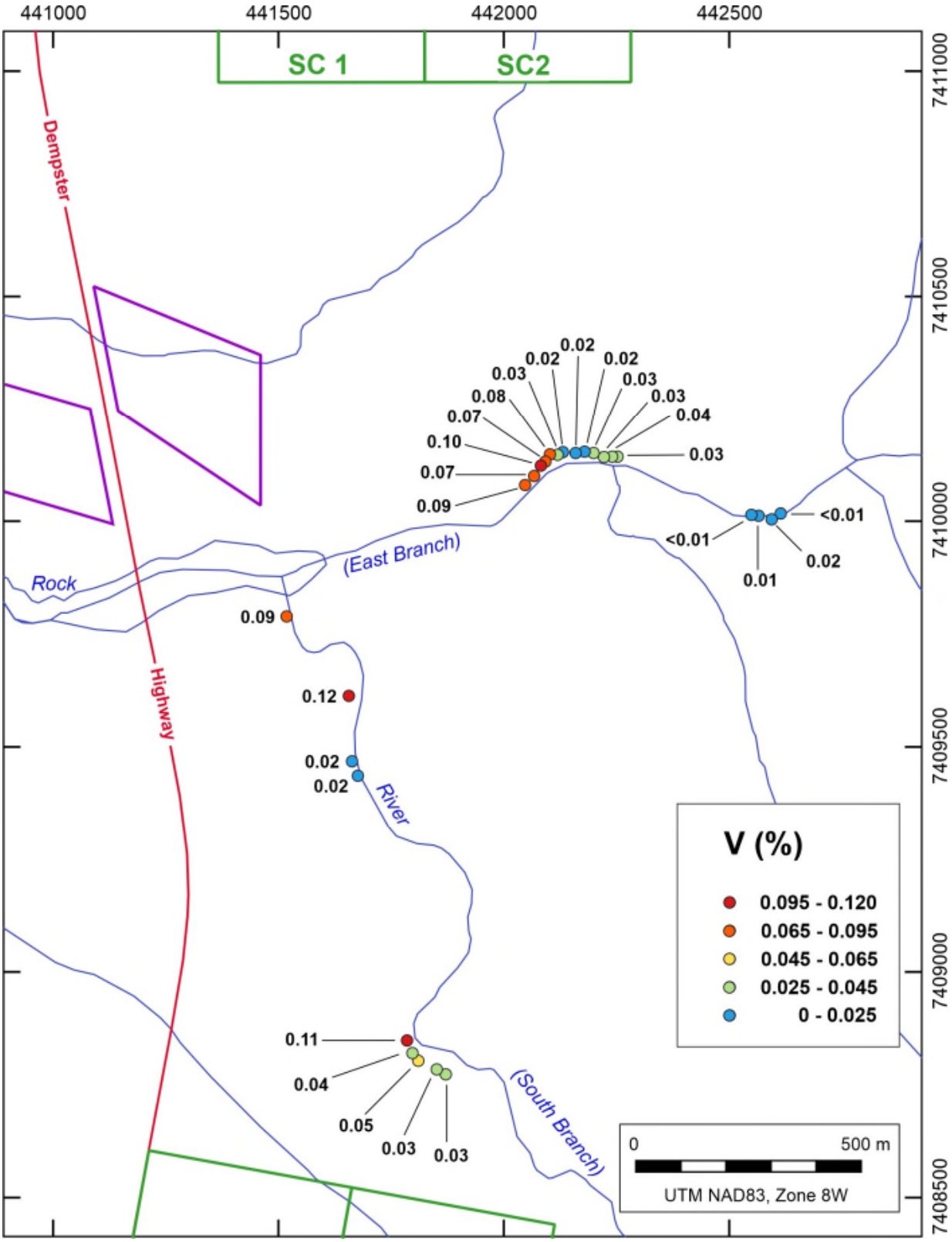


Figure 38. Vanadium in rock chip samples. Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

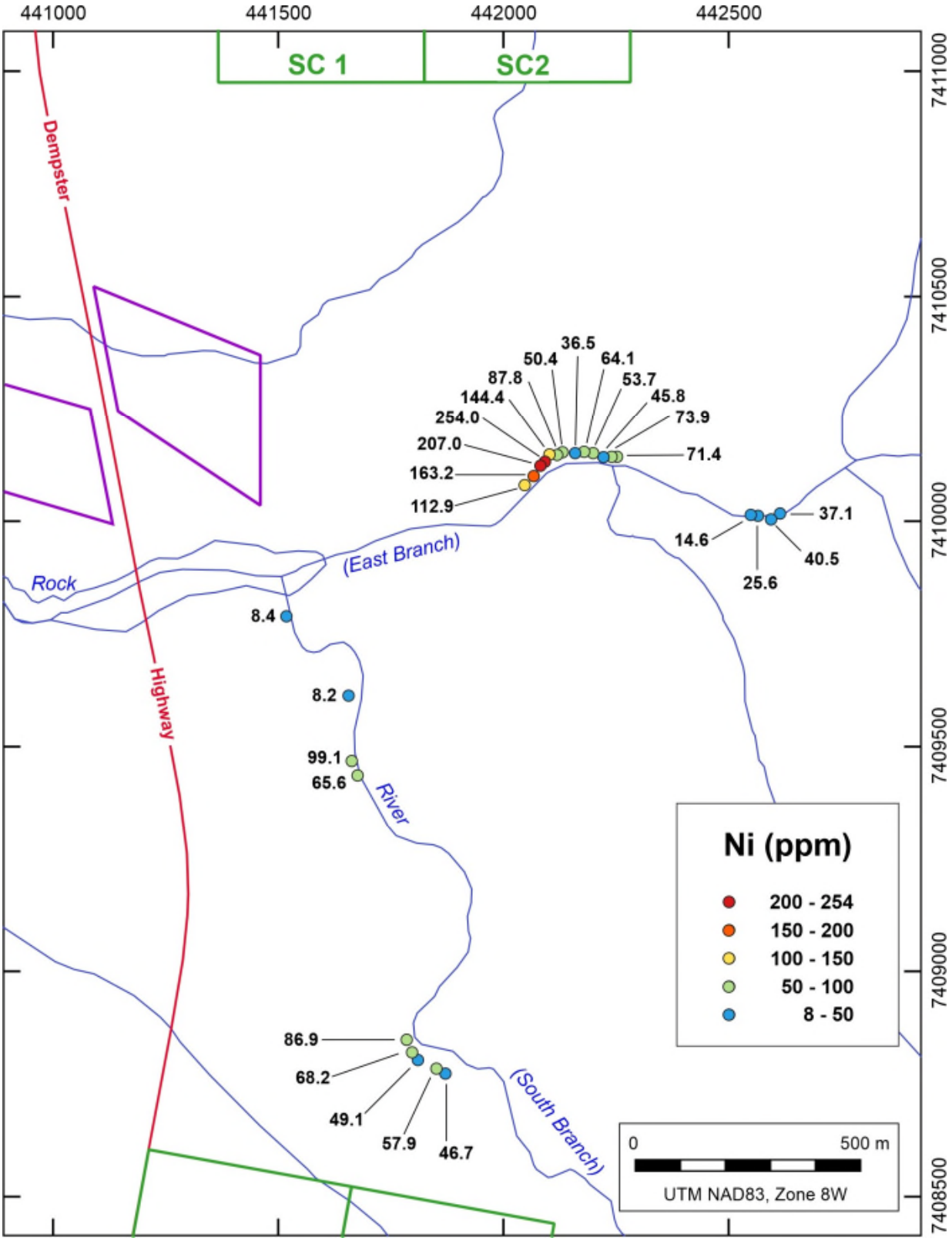


Figure 39. Nickel in rock chip samples. Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

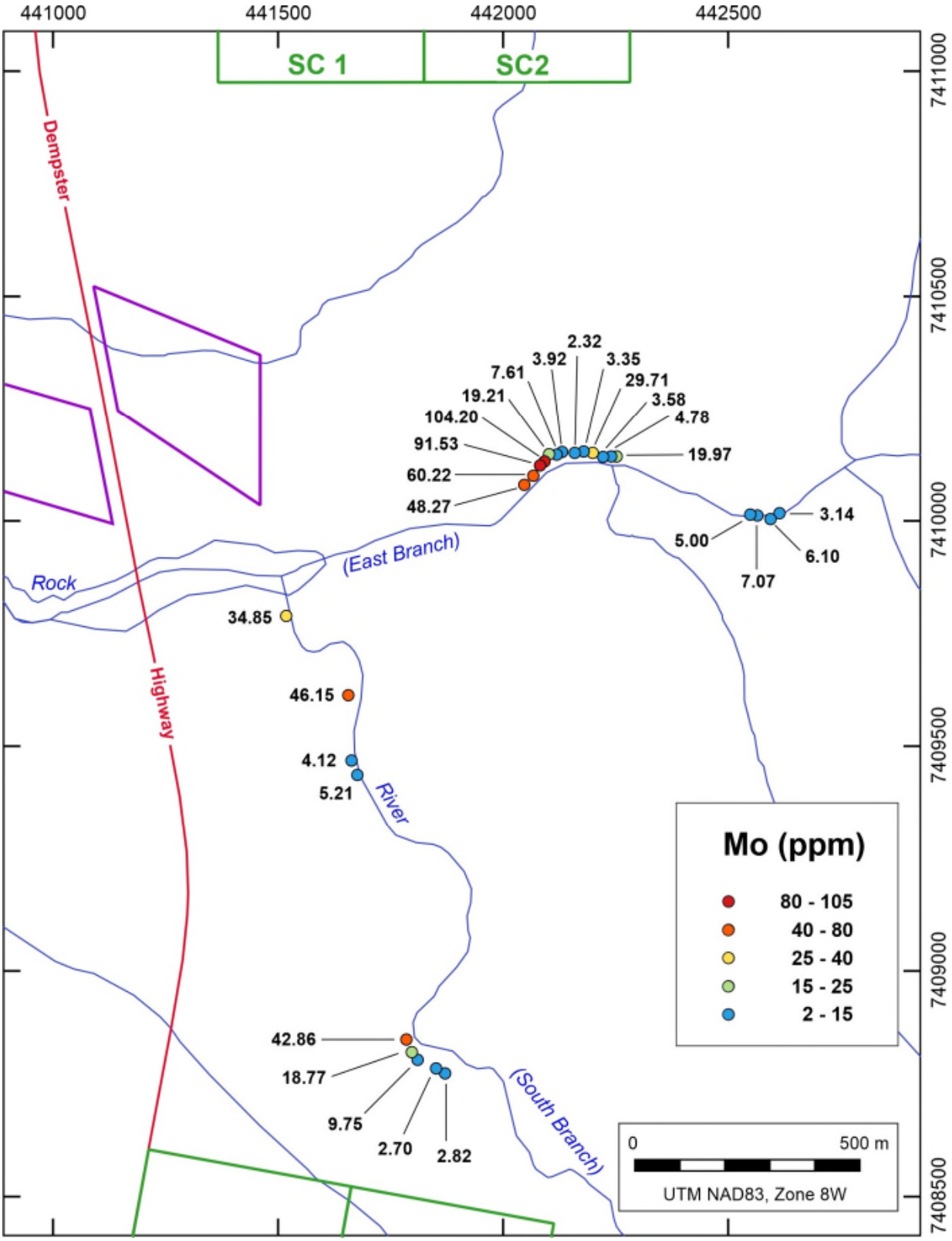


Figure 40. Molybdenum in rock chip samples. Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

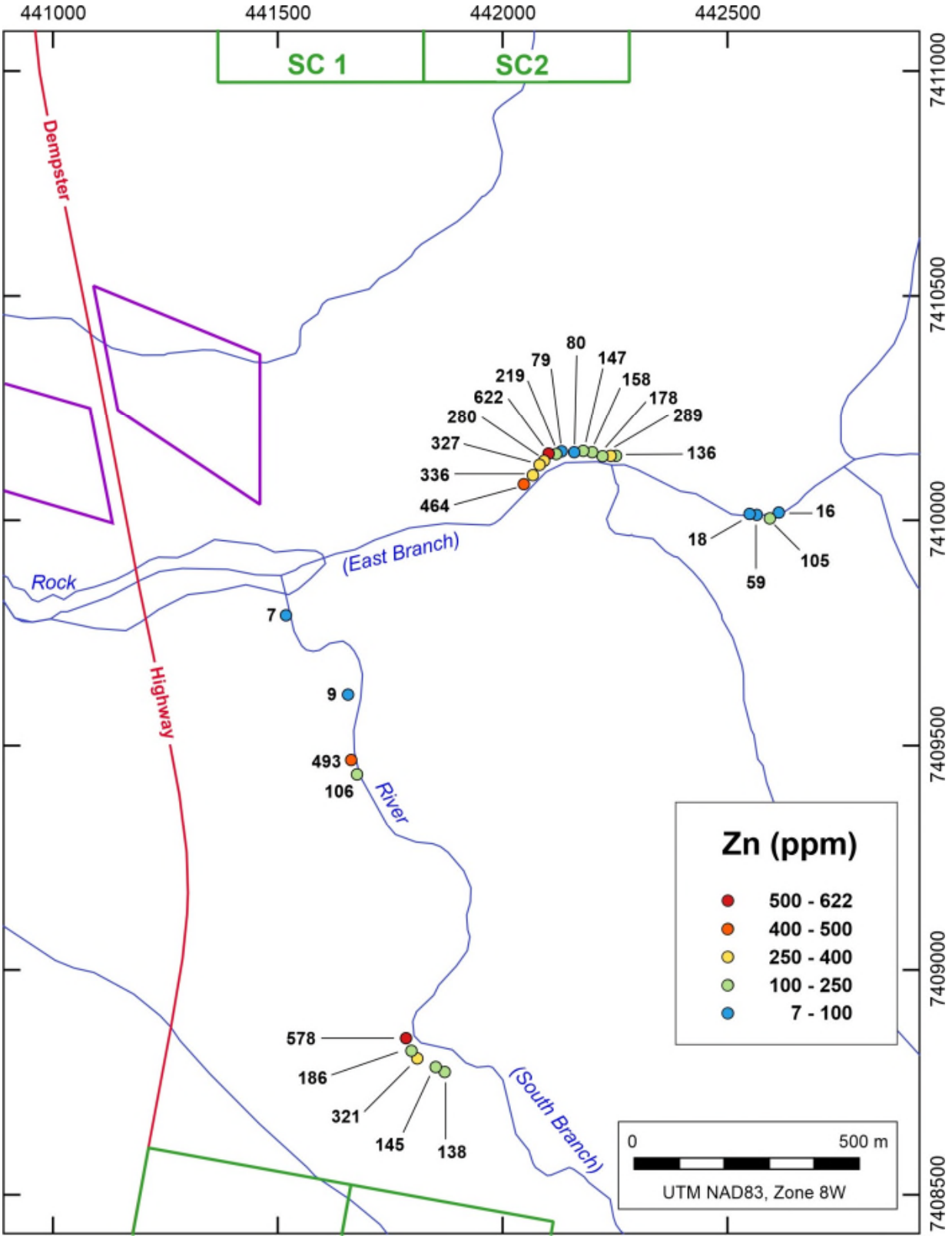


Figure 41. Zinc in rock chip samples. Rock River (Sheep Creek) field area. Claim boundaries shown in green. First Nation Settlement Lands shown with purple boundaries.

Stream Sediment (Silt) Samples

Twelve stream silt samples were collected in the Rock River (Sheep Creek) area: three from the south branch, five from the east branch and four from small tributaries to the east branch (Figure 42). Both the east and south branches are large streams with significant catchment areas and are subjected to very high flow volumes during spring runoff. Their streambeds are composed mainly of boulders and cobbles with very little fine grained material (which makes for poor quality sample sites). The four tributary streams also exhibit evidence of high flow rates during the spring but have much smaller catchment areas (so samples from these stream beds are much more representative of the local area than those from the east and south branches).

Stream Sediment V: The eight samples from the east and south branches contain between 119 and 158 ppm V. Samples from two of the tributary streams about 1 km apart returned elevated values of 363 and 413 ppm V (Figure 43).

Stream Sediment Ni: The eight samples from the east and south branches contain between 16 and 25 ppm Ni. Three tributary streams within a distance of 1.5 km returned values of 41.8 to 58.9 ppm Ni (Figure 44).

Stream Sediment Mo: The eight samples from the east and south branches contain between 1.2 and 4.3 ppm Mo. Samples from two of the tributary streams returned 9.4 and 13.3 ppm Mo (Figure 45).

Stream Sediment Zn: The eight samples from the east and south branches contain between 72 and 186 ppm Zn. Samples from two of the tributary streams returned 581 and 675 ppm Zn (Figure 46).

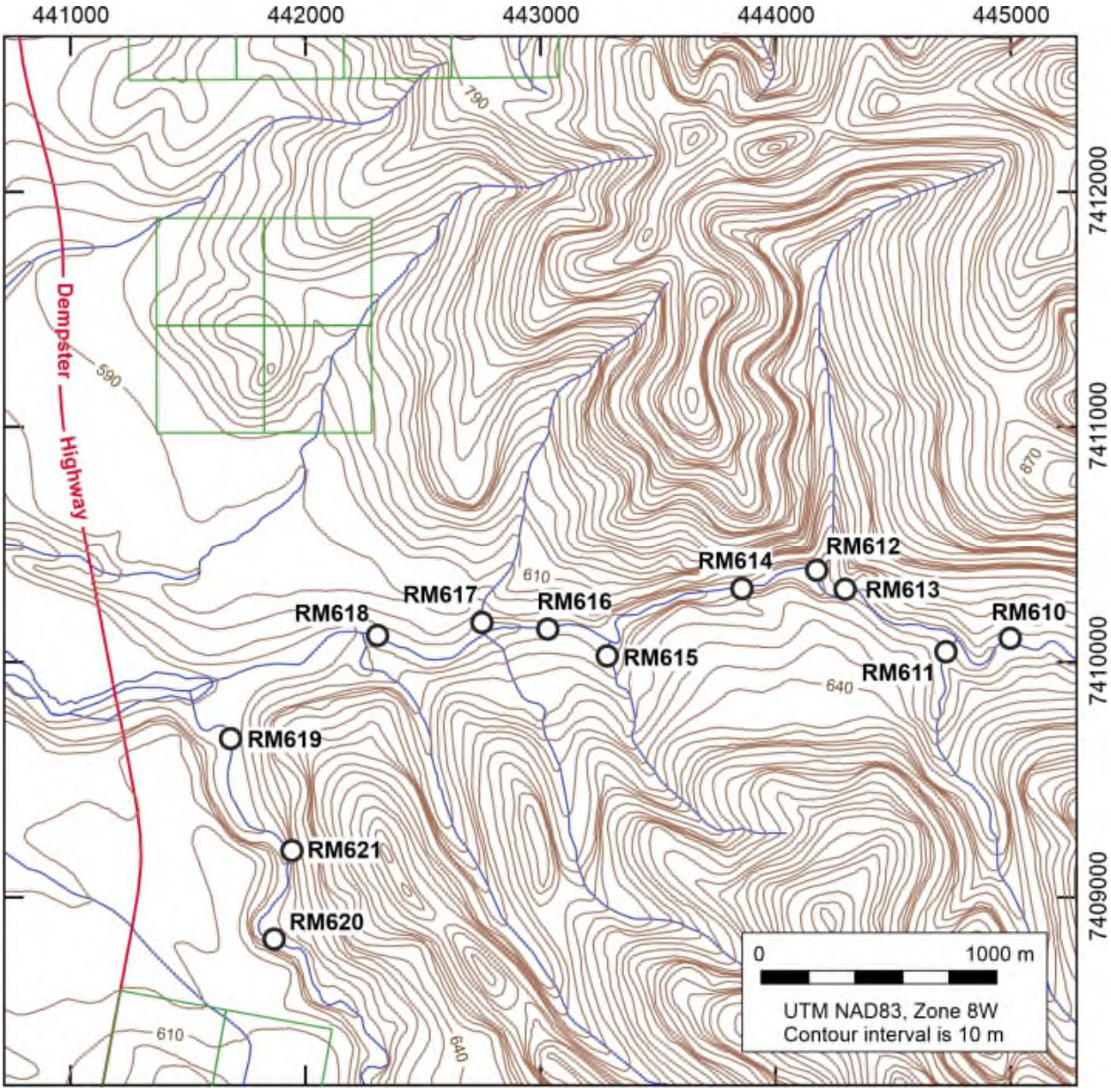


Figure 42. Stream silt sample numbers. Rock River (Sheep Creek) field area.

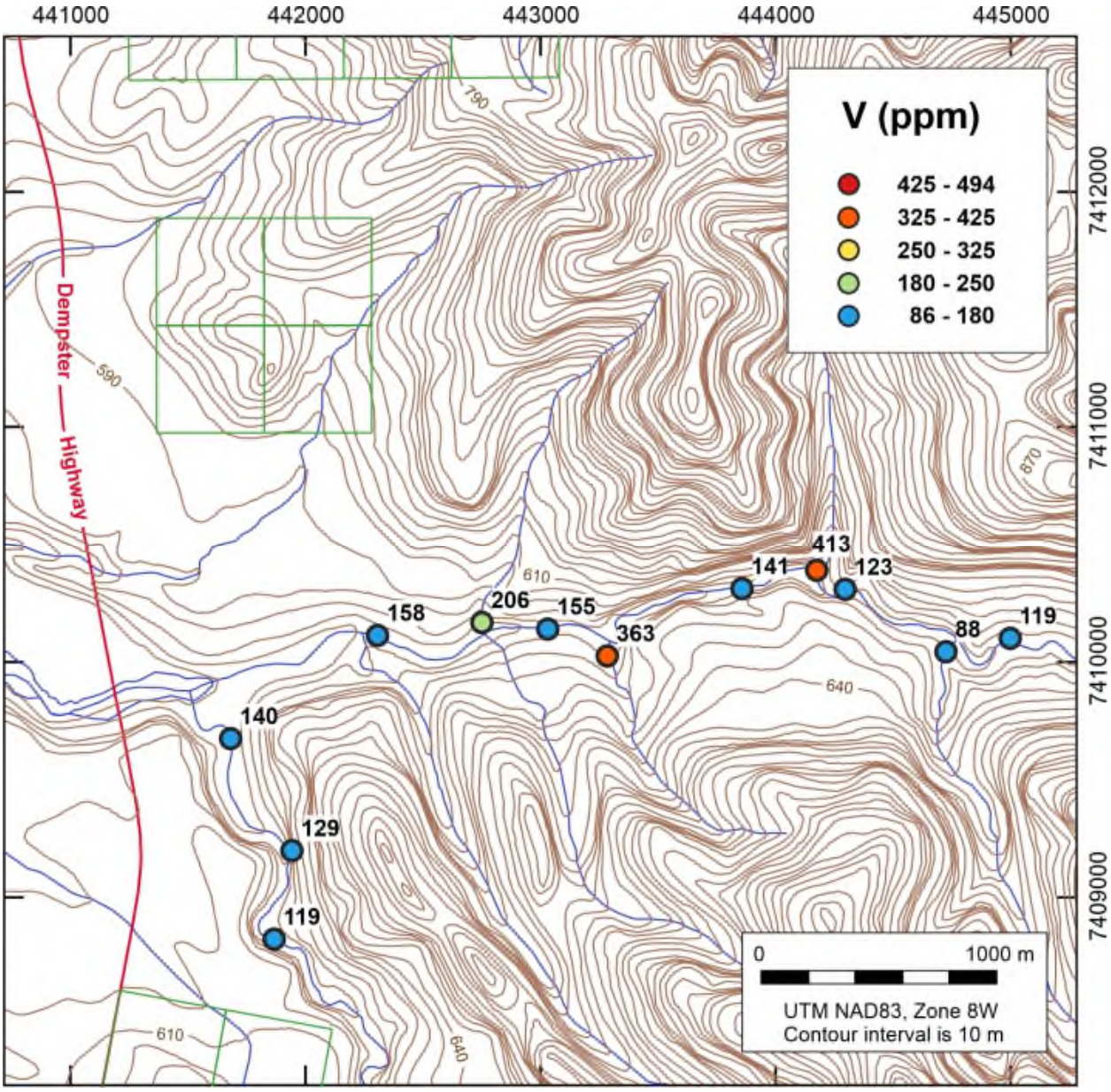


Figure 43. Vanadium in stream silt samples. Rock River (Sheep Creek) field area.

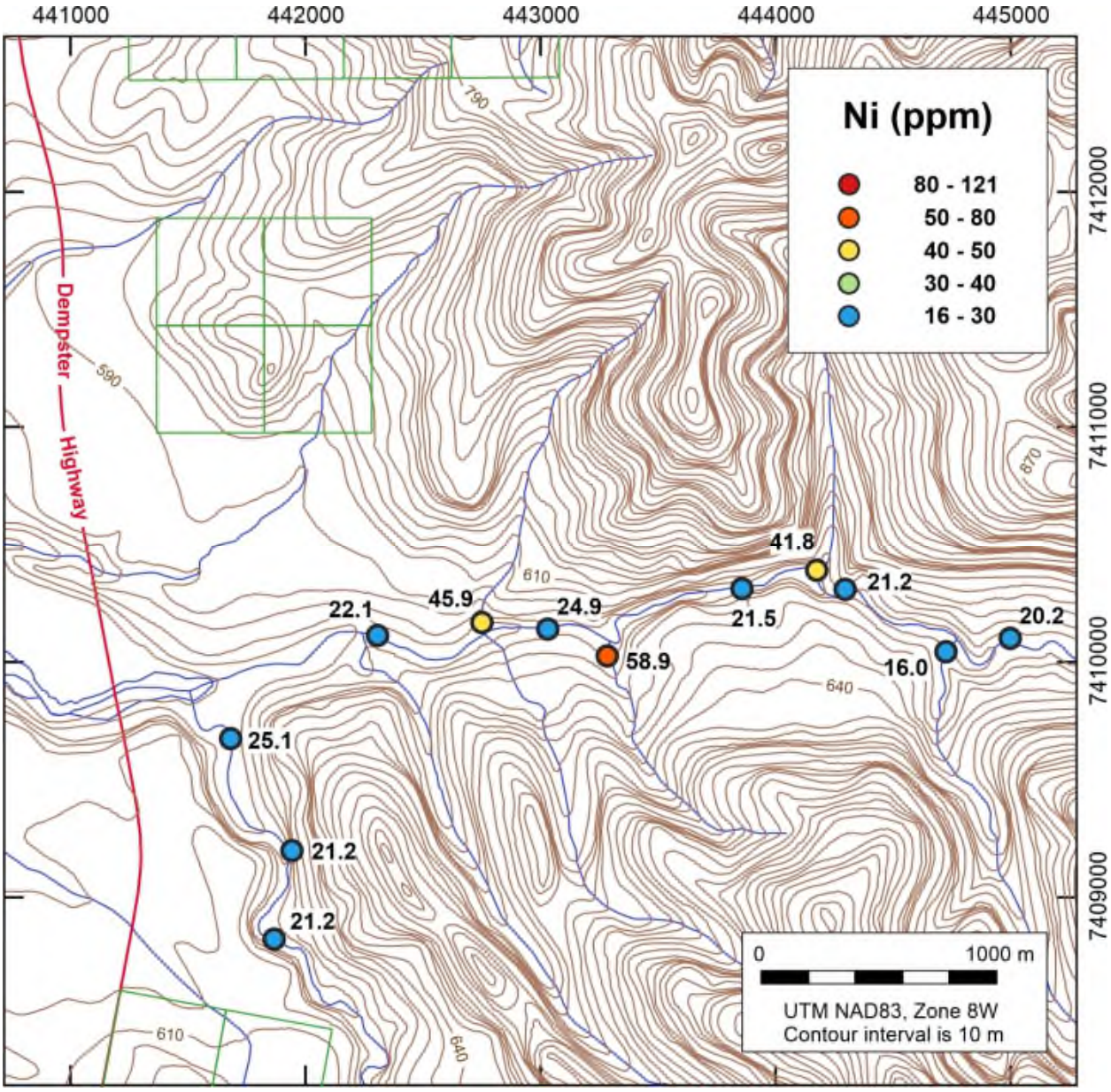


Figure 44. Nickel in stream silt samples. Rock River (Sheep Creek) field area.

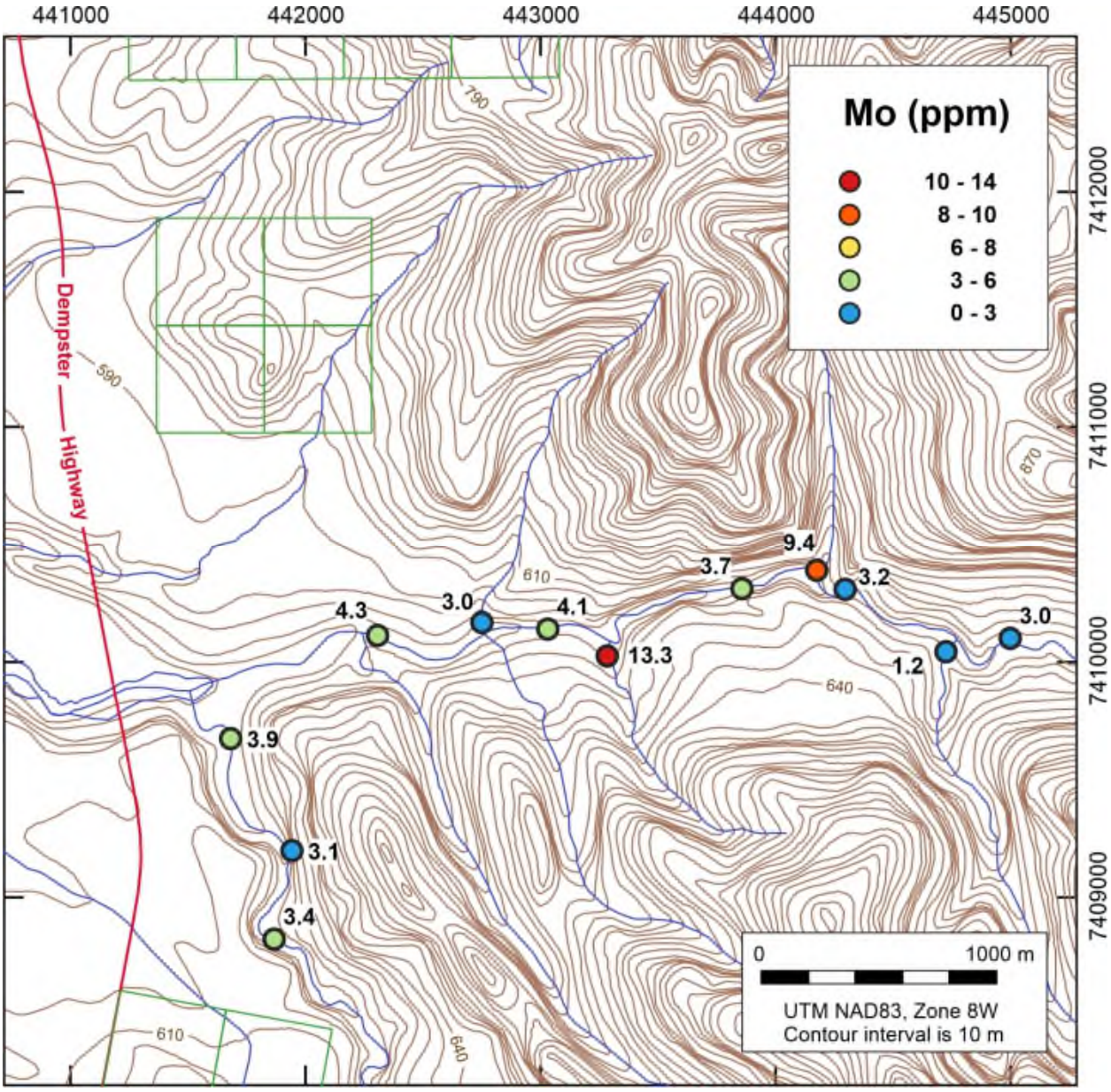


Figure 45. Molybdenum in stream silt samples. Rock River (Sheep Creek) field area.

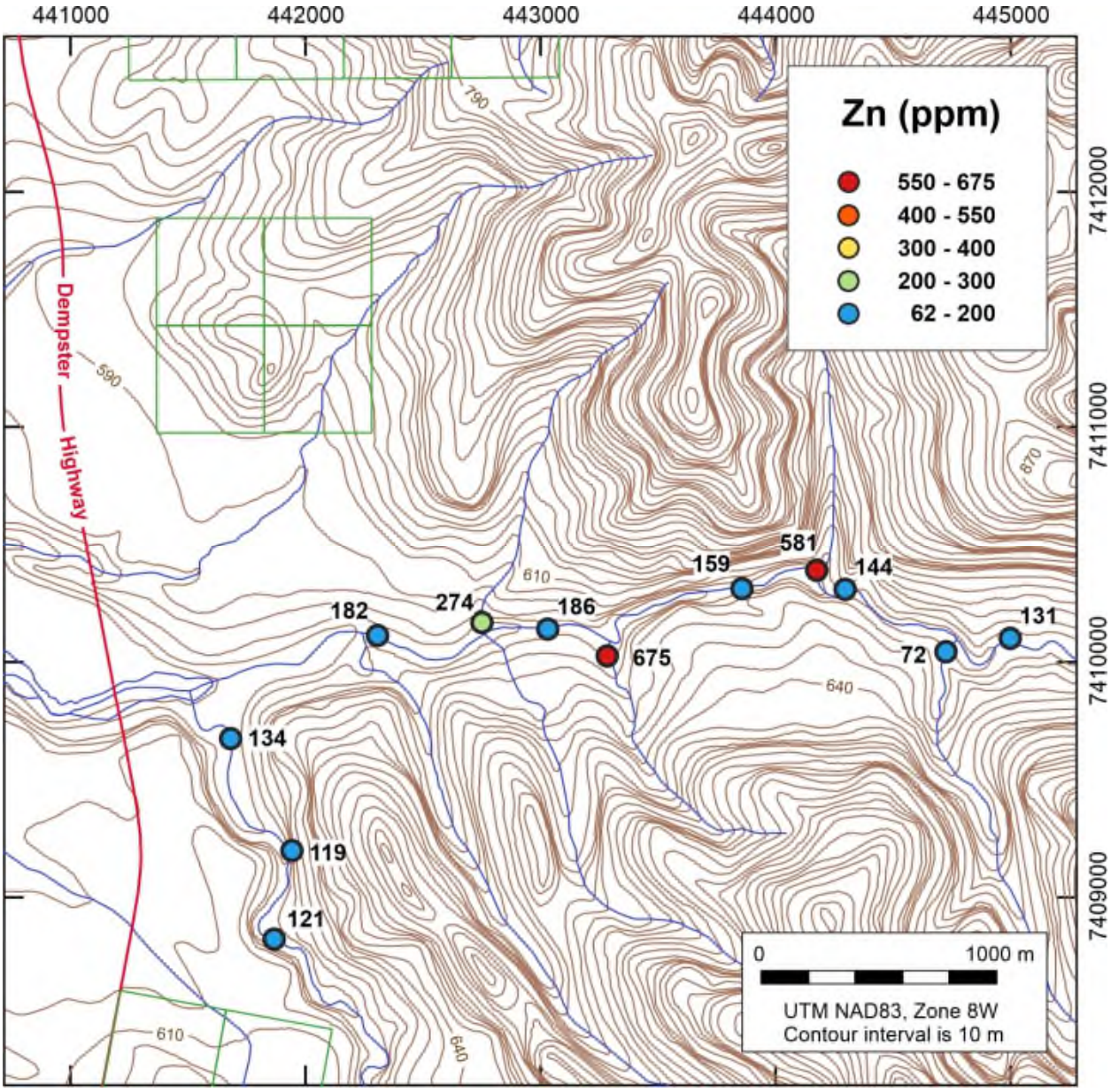


Figure 46. Zinc in stream silt samples. Rock River (Sheep Creek) field area.

Field Work and Results: Southern Field Area

The Mount Hare property, a group of 10 quartz claims (MH 1 to MH 10) staked in 2020, is centred about 900 m east of the Dempster Highway in the upper drainage area of Vichi Tik Tsiivii Creek about 4 km west-southwest of Mount Hare in NTS map area 116I/09 (Figure 24). For ground covered by the Mount Hare property field work in each individual claim area was completed before claims were staked over that ground.

Based on the geological map of area (Cecile et al., 1982; Yukon Geological Survey, 2018) the claim block should be roughly centred on the north-northwest trending Canol Formation (Figure 47). The Road River Group – Canol Formation contact, known to be a favourable target for V-Ni-Mo-Zn mineralization, is mapped to occur at surface within the eastern set of five claims (with a westerly dip below the western part of the property).

Sampling (soil and scree, silt, and rock) extended from about 500 m north of the Mount Hare property boundary southward for about 5.5 km.

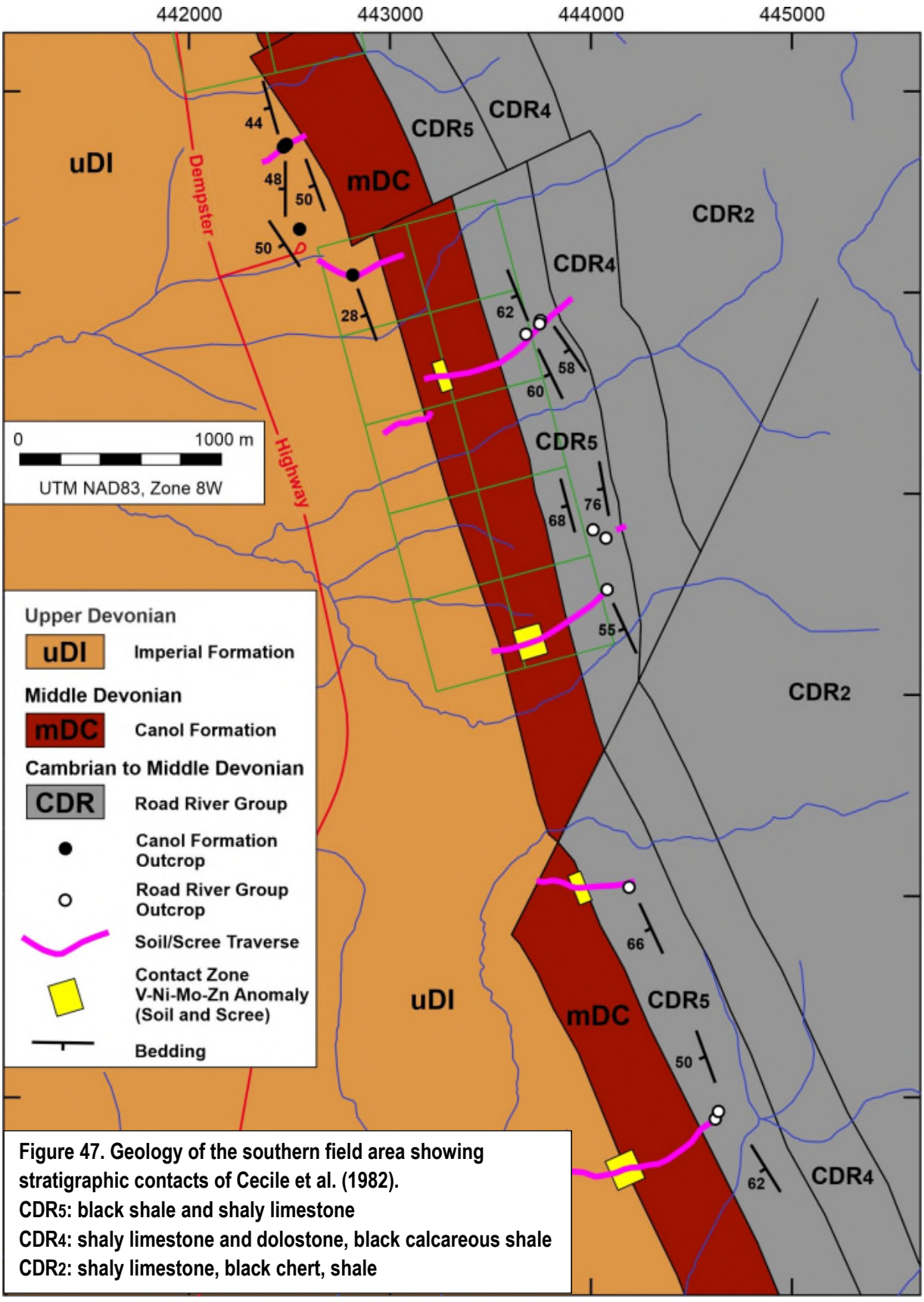


Figure 47. Geology of the southern field area showing stratigraphic contacts of Cecile et al. (1982).
CDR5: black shale and shaly limestone
CDR4: shaly limestone and dolostone, black calcareous shale
CDR2: shaly limestone, black chert, shale

Rock Sample

Only one rock sample was collected from the southern field area (Figures 48 and 49). This sample (RM401) consisted of a series of small, non-continuous rock chips across bedding collected over a 2 m interval from an outcrop exposed in a rock quarry (material used for highway construction). The sample returned 0.05% V, 12.1 ppm Ni, 26.55 ppm Mo, and 45 ppm Zn (moderate V and Mo enrichment). The sample also yielded 91.63% SiO_2 and only 0.04% CaO.

The sample is a hard, siliceous, non-calcareous, black, shaly chert that weathers medium grey. Based on the lithological characteristics and geochemistry it is interpreted that the sampled outcrop is part of the Canol Formation.

Figure 48. View of Canol Formation shaly chert exposed in rock quarry east of Dempster Highway (RM401 sample site). Note minor fold (fold axis plunges 15° toward 320°). Rock hammer handle is about 70 cm long. View to 326° from 442550E, 7390315N 9NAD83, Zone 8W).

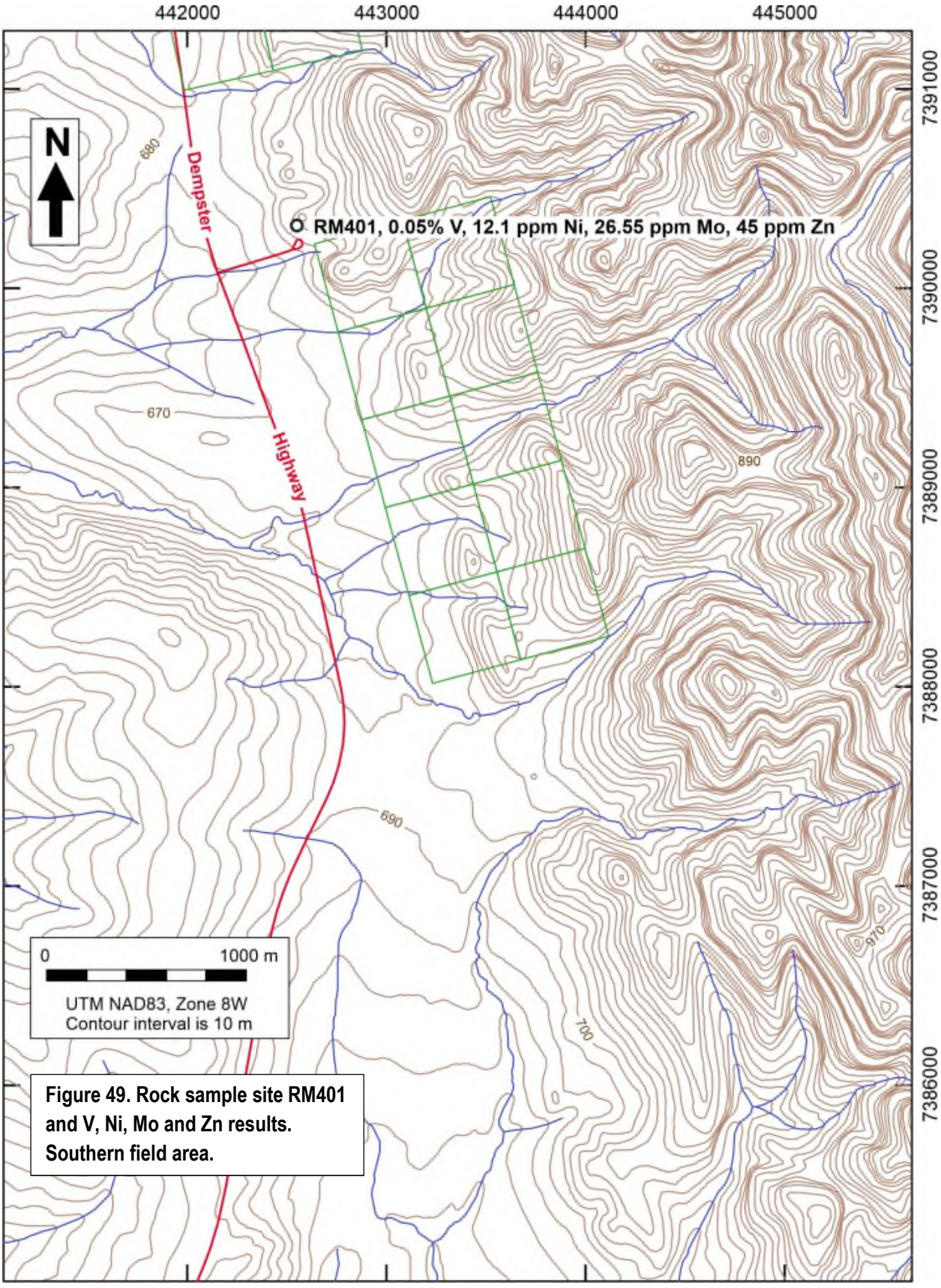


Figure 49. Rock sample site RM401 and V, Ni, Mo and Zn results. Southern field area.

Stream Sediment (Silt) Samples

Seven stream sediment samples were collected from generally westerly flowing streams draining small to modest catchment areas (Figure50).

Stream Sediment V: Stream sediment V values are all elevated with values ranging from 224 to 494 ppm V. The most strongly enriched samples occur in the southern sample area (three samples with 330 to 494 ppm V. The elevated V content of the easternmost sample (RM 601, 274 ppm V) is intriguing as the sample site is within the Road River Group well east of the Canol Formation (Figure 51).

Stream Sediment Ni: The Ni values, with a minimum of 39.1 ppm Ni, are all elevated with the maximum value of 120.2 ppm Ni being strongly elevated (Figure 52).

Stream Sediment Mo: The three samples in the southern area of sampling have significantly elevated Mo contents of 6.4 to 8.6 ppm Mo (Figure 53).

Stream Sediment Zn: All of the stream silt samples from the southern field area have elevated Zn contents ranging from 317 to 608 ppm Zn (Figure 54).

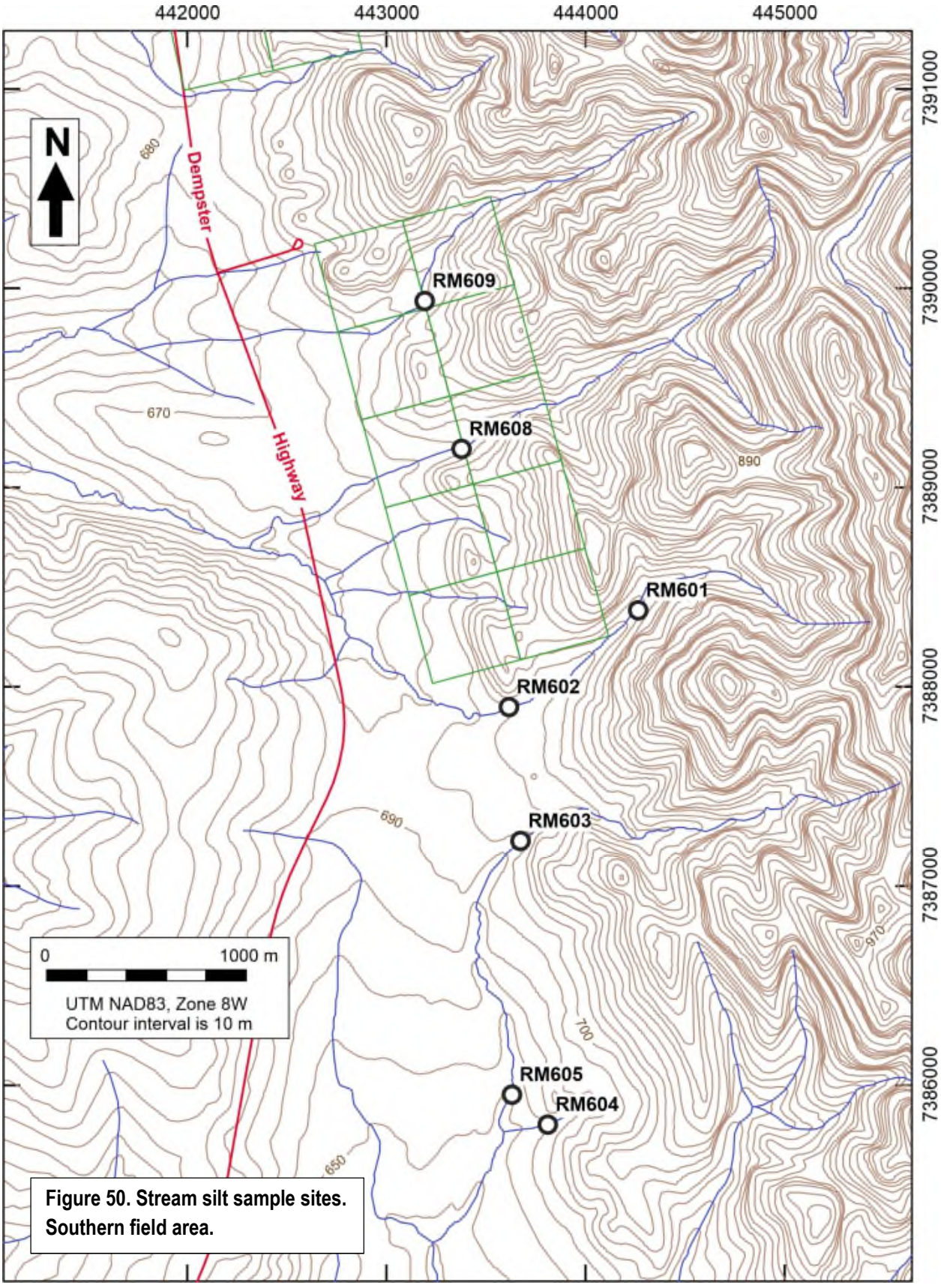


Figure 50. Stream silt sample sites. Southern field area.

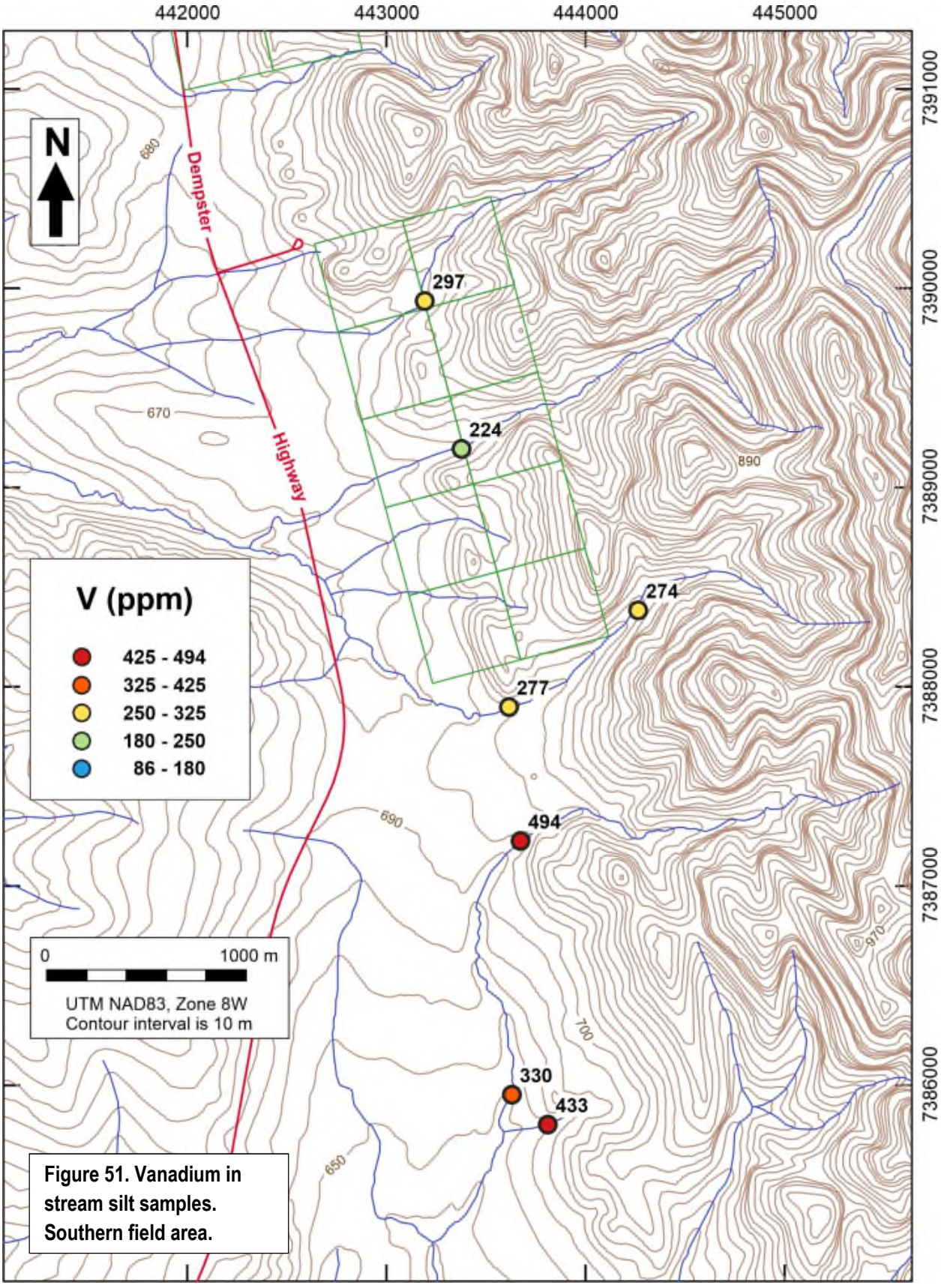


Figure 51. Vanadium in stream silt samples. Southern field area.

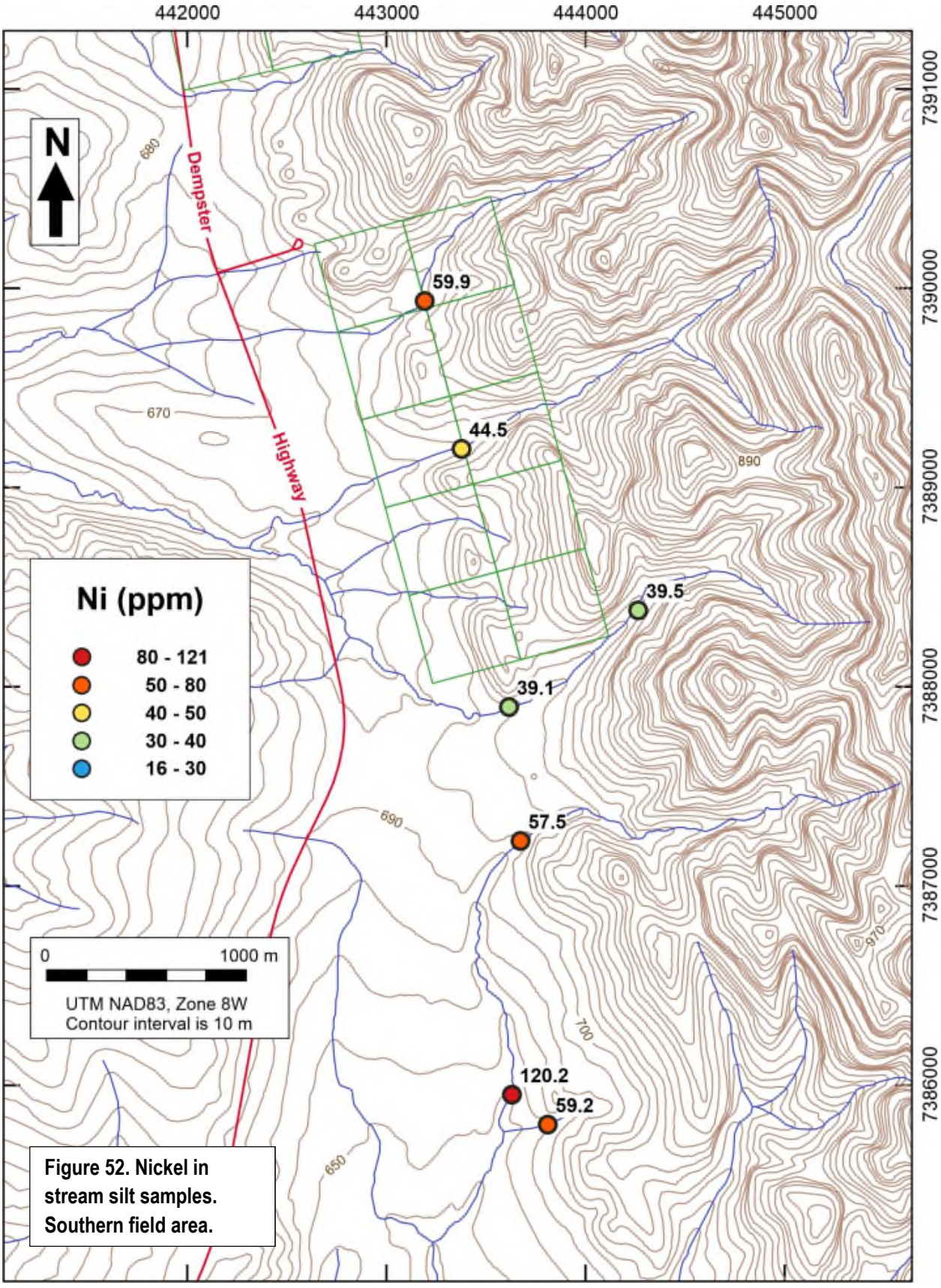


Figure 52. Nickel in stream silt samples. Southern field area.

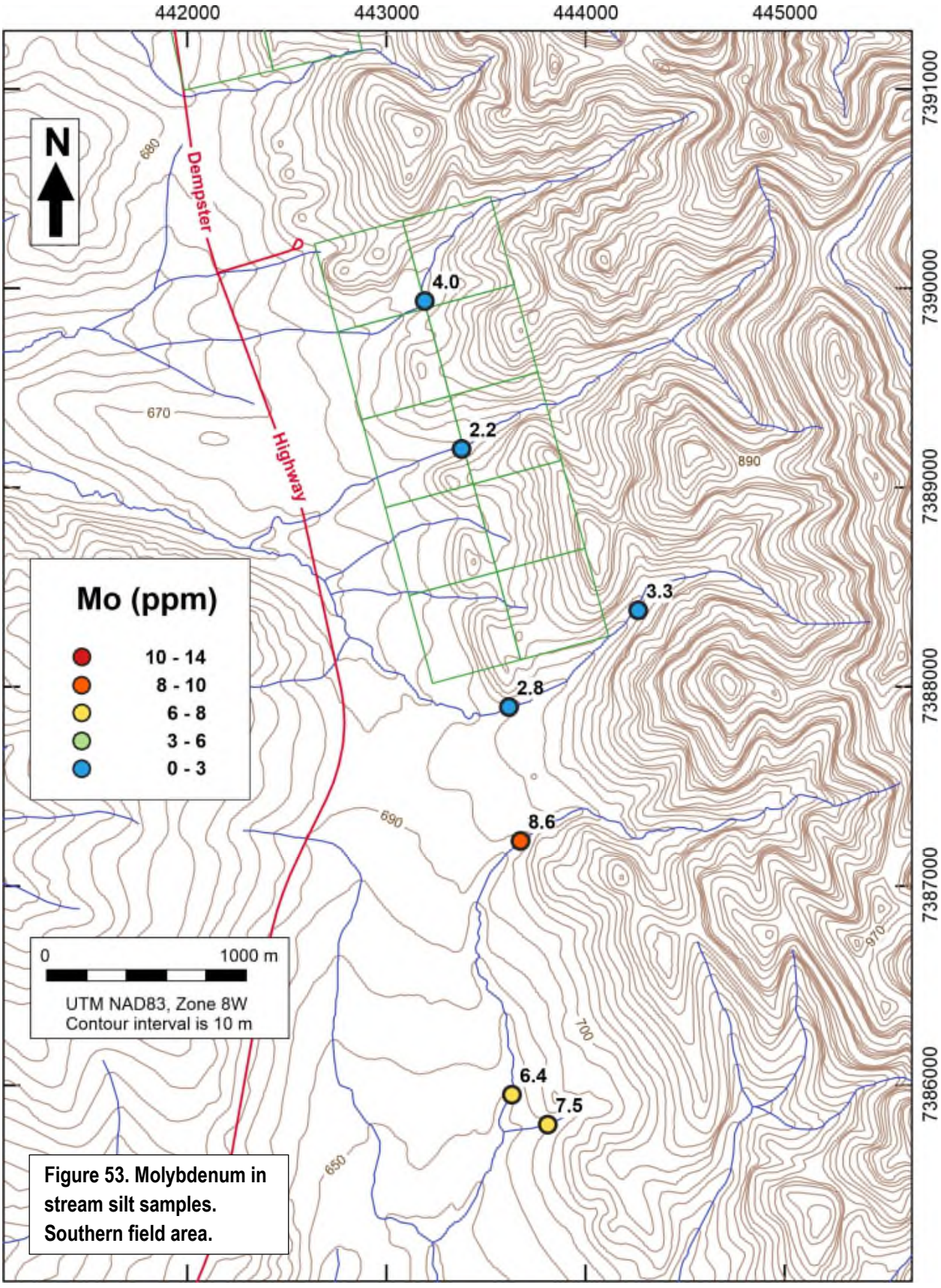


Figure 53. Molybdenum in stream silt samples. Southern field area.

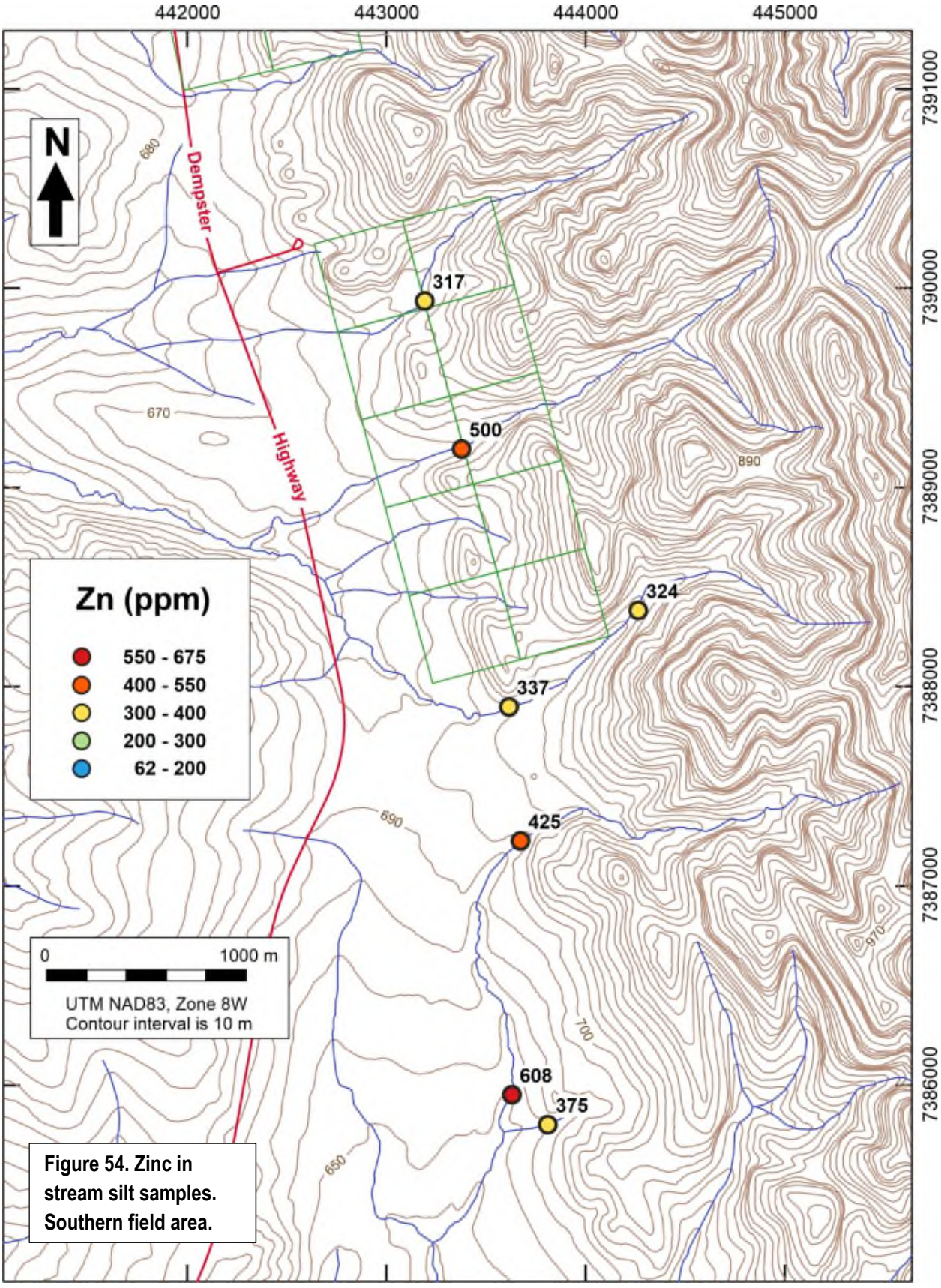


Figure 54. Zinc in stream silt samples. Southern field area.

Soil and Scree Samples

One hundred and sixty soil and scree samples were collected on ridgeline traverses along generally east-west trending minor ridges (spurs) with a nominal sample spacing of 25 m (Figure 55 and 56). The samples were collected from six traverses (some of which have local offsets) with the most northerly and most southerly traverses being about 5.3 km apart.

The six soil and scree sampling traverses are identified by the UTM northing coordinate near the centre of each traverse (listed from north to south below):

- 7390700N (11 samples; RM550–RM560)
- 7390100N (19 samples; RM531–549)
- 7389600N (46 samples; RM285–300, RM501–530, note significant offset in traverse)
- 7388300N (29 samples; RM201–212, RM278–282, RM213–RM222, RM283–284; note significant offset of the two most easterly samples)
- 7387000N (20 samples; RM223–RM242)
- 7385700N (35 samples; RM243-277)r

At sites where scree was plentiful the field observations included the reaction of scree fragments to dilute (10%) HCl (to determine the relative carbonate content) and the percentage of scree fragments composed of chert.

Figure 55. View of typical Canol Formation scree. Scree is composed mainly of light to medium grey weathering, non-calcareous shale and a minor amount of black weathering chert. Patches of dark grey to black scree are mainly due to black lichen. View is to the west from 443960, 7355696 (about 70 m north of soil/scree sample RM257).

Carbonate Content of Scree: The relative carbonate content of scree is depicted in Figure 57. Scree observed within the western part of traverses tends to be non-calcareous whereas scree farther to the east tends to be calcareous. Scree from the two most northerly sampling traverses (7390700N and 7390100 N) is all non-calcareous indicating that these traverses do not extend far enough eastward to encounter calcareous material. Note that the upper part of the Road River Group tends to be calcareous while the Canol Formation tends to be non-calcareous.

Chert Content of Scree: The approximate percentage of scree fragments composed of chert is shown in Figure 58. Sample sites near the western ends of the ridgeline traverses tend to have chert fragments making up part of the scree (although generally in subordinate amounts to non-calcareous shale). Sample sites nearer to the eastern end of the traverses tend to be devoid of chert fragments. For the three southern traverses the eastern limit of chert fragments in scree does not extend as far eastward as the eastern limit of non-calcareous scree (compare Figures 57 and 5). The two northernmost traverses are generally characterized by scree with a chert component. The second most northerly traverse (7390100N) encountered particularly cherty scree with chert locally forming up to 50% of the scree fragments. Scree at the two most easterly sampling sites on the third most northerly traverse (traverse 7389600N, samples RM529 and RM530 near 443895E, 7389965N) contains up to 10% chert. It is interesting to compare this to the Rock River (Sheep Creek) area where the most easterly sampled outcrop contained a significant amount of chert.

Traverse 7385700N – Soil and Scree (V, Ni, Mo, Zn): Six consecutive samples (RM253 to RM258) collected over a distance of 126 m from the west-central part of this most southerly traverse are strongly anomalous in V, Ni, Mo and Zn (Figures 59 to 62).

- V: 1636 to 3939 ppm
- Ni: 156.0 to 366.9 ppm
- Mo: 41.2 to 97.9 ppm
- Zn: 1210 to 6502 ppm

This metal enriched zone lies near the western limit of calcareous shale scree and a small distance east of chert-bearing scree (both features associated with the east to west transition from older Road River Group calcareous shale to younger Canol Formation (non-calcareous shale and chert). For the purposes of this report this zone of extremely anomalous V-Ni-Mo-Zn values is referred to as the contact zone.

The 10 samples to the west of the contact zone and the three samples immediately to the east of the zone also tend to be significantly enriched in metals (up to 938 ppm V, 682.4 ppm Ni, 197.1 ppm Mo and 2466 ppm Zn). Two adjacent samples (RM247 and RM248; 22 m apart) in an area of chert-bearing, non-calcareous scree 130 m west of the contact zone are strongly enriched in Ni-Mo-Zn but contain only moderately amounts of V (315 and 375 ppm V, 313.8 and 682.4 ppm Ni, 58.4 and 197.1 ppm Mo,733 and 2466 ppm Zn).

Traverse 7387000N – Soil and Scree (V, Ni, Mo, Zn): Two adjacent samples (RM231 and RM232; 28 m apart) are strongly enriched in V-Ni-Mo-Zn and are assigned to the contact zone:

- V: 1541 and 1573 ppm
- Ni: 150.5 and 156.0 ppm
- Mo: 50.3 and 77.6 ppm
- Zn: 1161 and 672 ppm Zn

This metal enriched zone lies near the contact between calcareous shale (to the east) and chert-bearing, non-calcareous shale (to the west).

The five most westerly samples collected on this traverse zone contain elevated V (506 to 812 ppm V) and Mo (18.4 to 61.8 ppm Mo) but are not enriched in Ni or Zn.

Traverse 7388300N – Soil and Scree (V, Ni, Mo, Zn): Samples containing highly anomalous V-Ni-Mo-Zn values were collected from the west-central part of this traverse. Five consecutive samples (RM207 to RM211) collected over a distance of 101 m returned the following range of values:

- V: 1741 to 3652 ppm
- Ni: 183.3 to 310.5 ppm
- Mo: 50.7 to 99.1 ppm
- Zn: 1248 to 2571 ppm Zn

The sample immediately to the west (RM206; 25 m away) is also strongly enriched in Ni and Zn (228.6 ppm Ni, 1827 ppm Zn) but less strongly enriched in V and Mo (1211 ppm V and 40.4 ppm Mo).

The five most westerly samples (RM201 to RM205) contain elevated amounts of V (426 to 933), Mo (37.6 to 88.9).

Sample collected east of the contact zone generally have low V, Ni, Mo and Zn contents. This is particularly true for Mo with all samples taken east of the contact zone having betwen1.2 and 7.1 ppm Mo.

The contact zone on this traverse lies west of the calcareous shale to non-calcareous shale transition. However, the location of the transition is poorly constrained on this traverse do to a lack of exposed scree at several sites. The contact zone lies just east of an area where the scree fragments include chert.

Traverse 7389600N – Soil and Scree (V, Ni, Mo, Zn): Two adjacent samples (RM299 and RM300; 24 m apart) collected from the western part of this traverse returned highly anomalous V-Ni-Mo-Zn values (this is believed to be the contact zone):

- V: 3327 and 3681 ppm
- Ni: 531.1 and 304.7 ppm
- Mo: 82.8 and 108.5 ppm
- Zn: 4295 and 3123 ppm

Samples collected for considerable distances to the east (note sample traverse offset) and west generally returned elevated V (most >300 ppm V). Molybdenum values to the east of the contact zone are low (commonly <10 ppm Mo).

The contact zone on this traverse occurs in the area of generally non-calcareous shale (west of calcareous shale) although a gap in data exists to the east of the contact zone due to a scarcity of exposed shale. The contact zone lies within the area where chert fragments occur in the scree.

Traverse 7390100N – Soil and Scree (V, Ni, Mo, Zn): Scree was present at all of the sites along this second most northerly traverse. At all of the sites the scree was non-calcareous and chert was observed at all but one site. At four of the sites chert fragments were estimated to compose 10 to 50% of the scree. Based on these observations it is interpreted that the entire traverse is underlain by the Canol Formation (and that the contact zone lies to east).

An overall enrichment of vanadium and molybdenum is notable along the entire traverse (values typically >500 ppm V and >50 ppm Mo). In contrast, Ni and Zn are only locally enriched.

Two adjacent samples 26 m apart near the centre of the traverse returned 2991 and 2898 ppm V (samples RM541 and RM542). These two samples also returned up to 228.5 ppm Ni, 86.1 ppm Mo and 1559 ppm Zn).

In addition, two adjacent samples near the western end of the traverse returned 1665 and 1826 ppm V along with 259.3 and 105.1 ppm Mo (samples RM533 and RM 534).

Traverse 7390700N – Soil and Scree (V, Ni, Mo, Zn): Scree observed along this northernmost traverse was all non-calcareous and chert was observed at four sites near the centre of the traverse. It is likely that this traverse is underlain by the Canol Formation and did not extend far enough eastward to cross the contact zone

Sample collected along this traverse are generally enriched in V (typically >500 ppm V to a maximum of 3205 ppm V). Elevated values of Ni, Mo and Zn are more isolated.

The best result from the northernmost traverse is 3205 ppm V (sample RM 558). This is accompanied by 184.9 ppm Ni, 83.4 ppm Mo and 1192 ppm Zn.

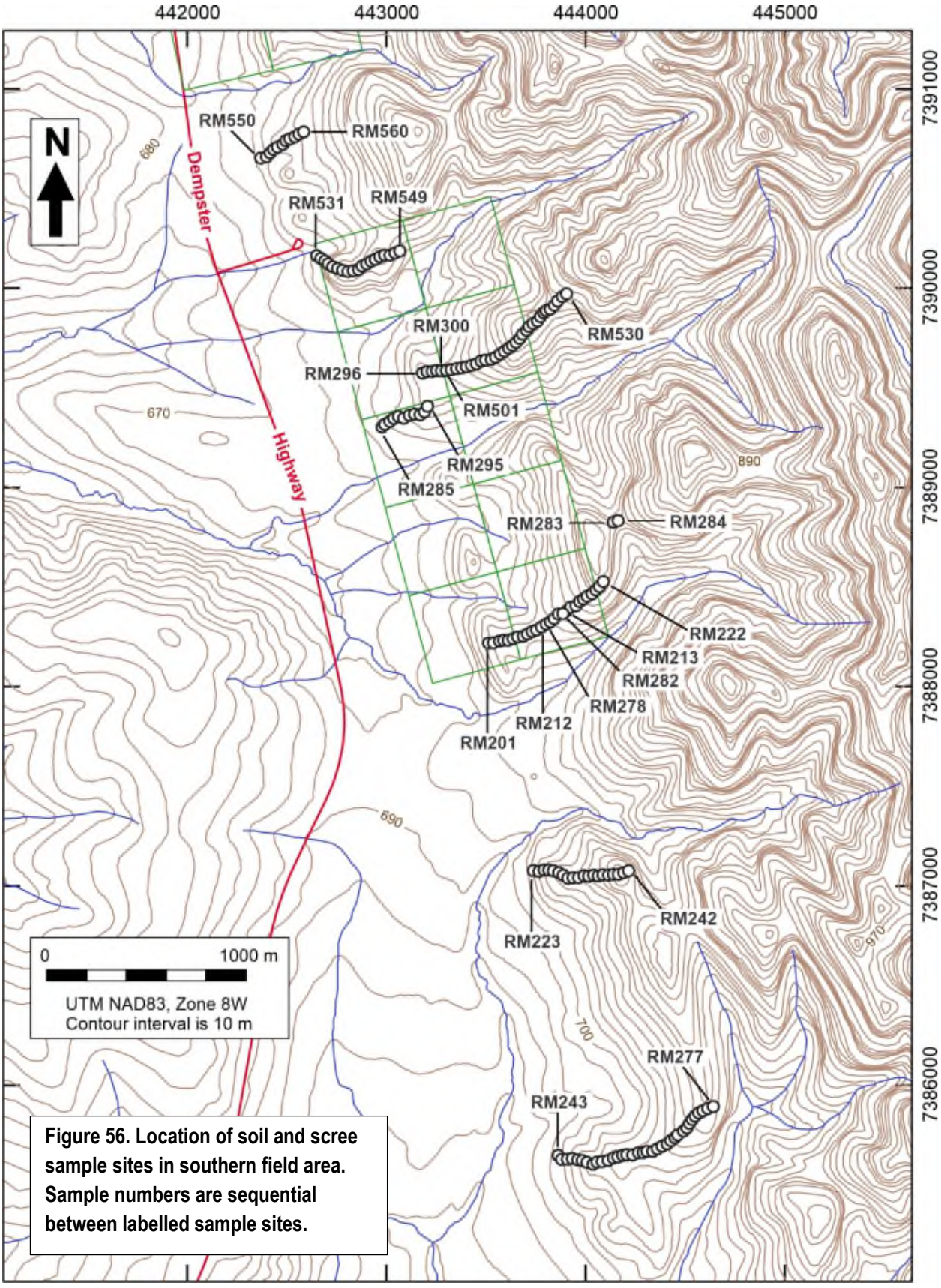


Figure 56. Location of soil and scree sample sites in southern field area. Sample numbers are sequential between labelled sample sites.

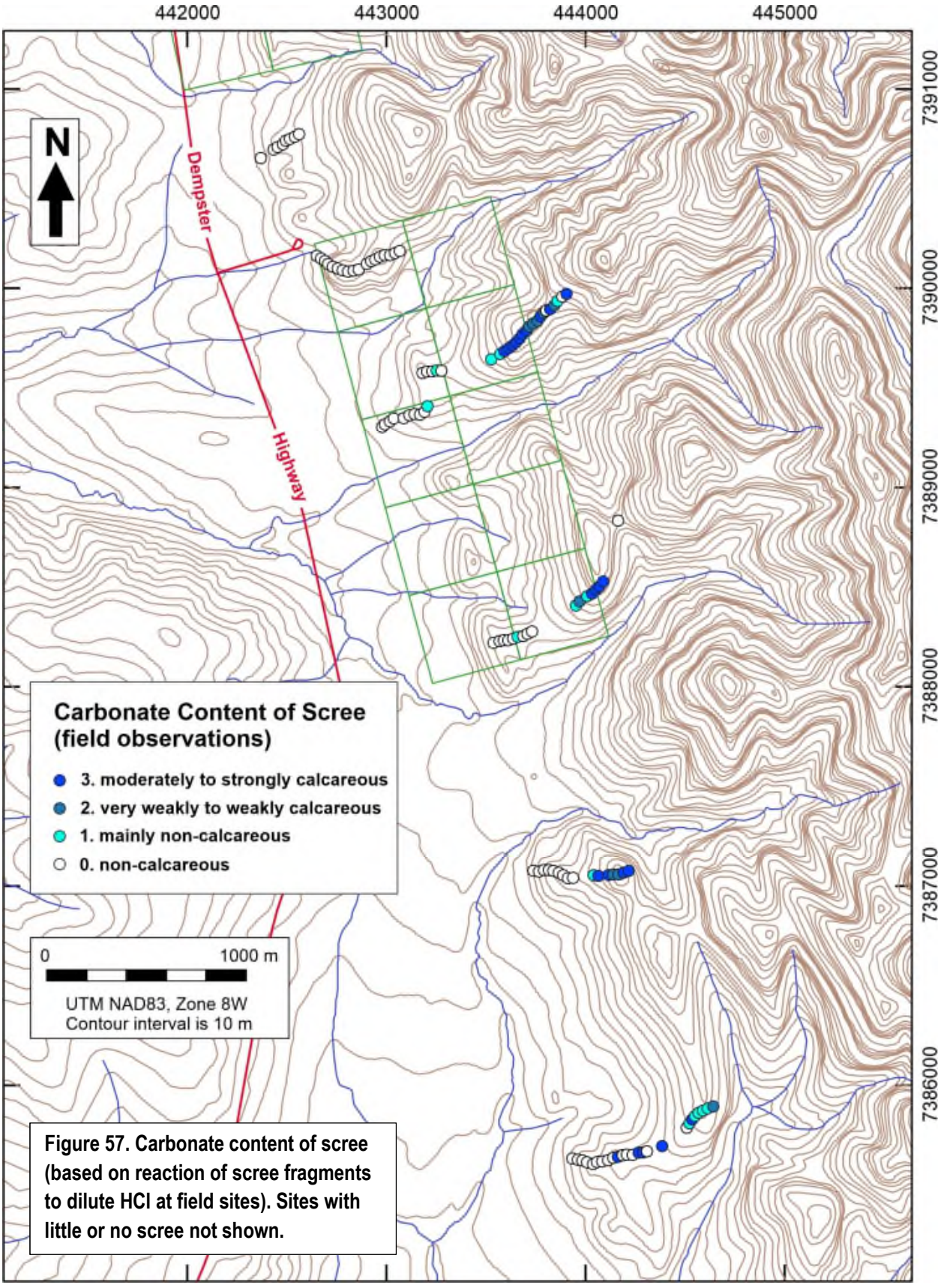


Figure 57. Carbonate content of scree (based on reaction of scree fragments to dilute HCl at field sites). Sites with little or no scree not shown.

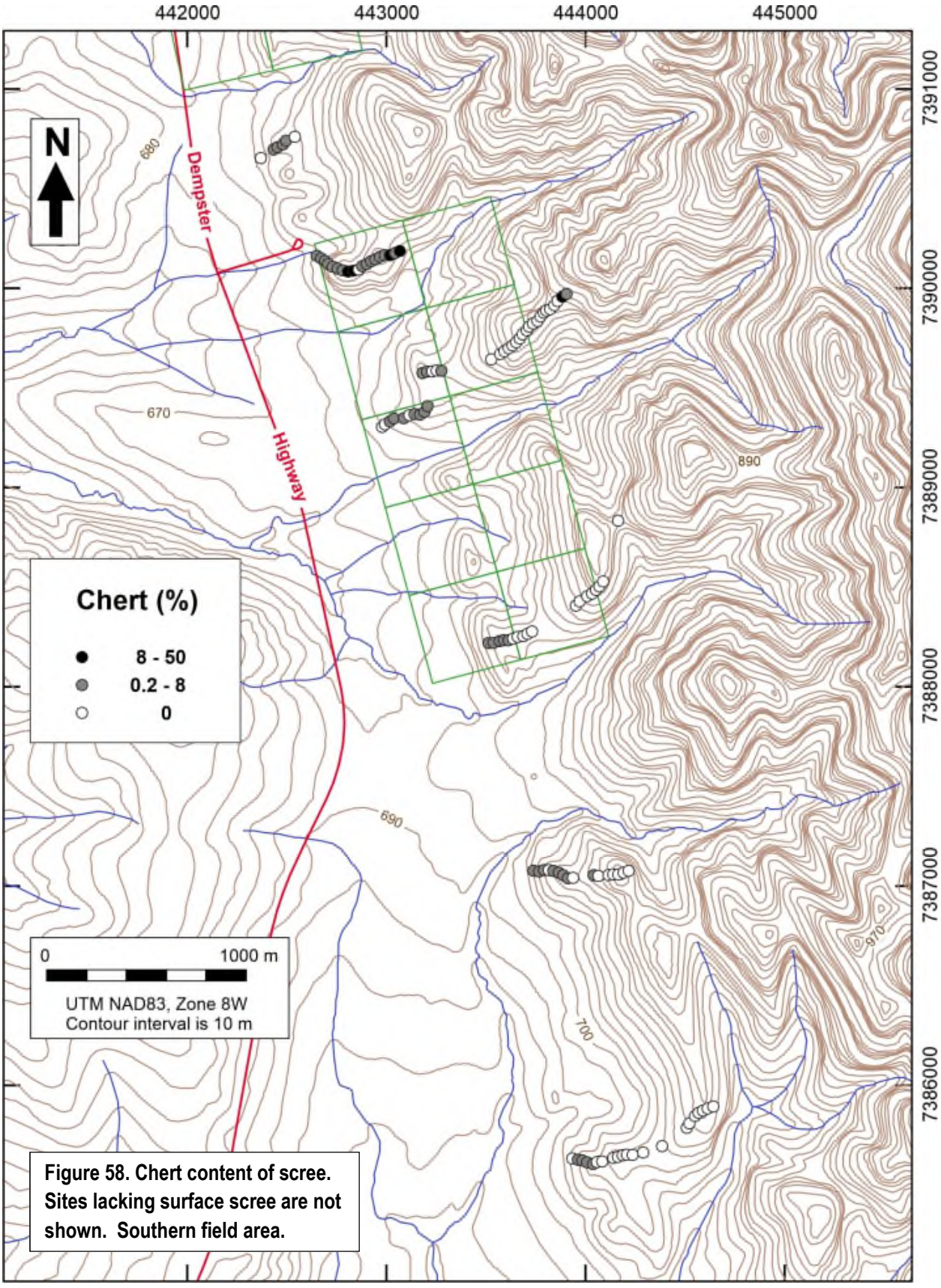


Figure 58. Chert content of scree. Sites lacking surface scree are not shown. Southern field area.

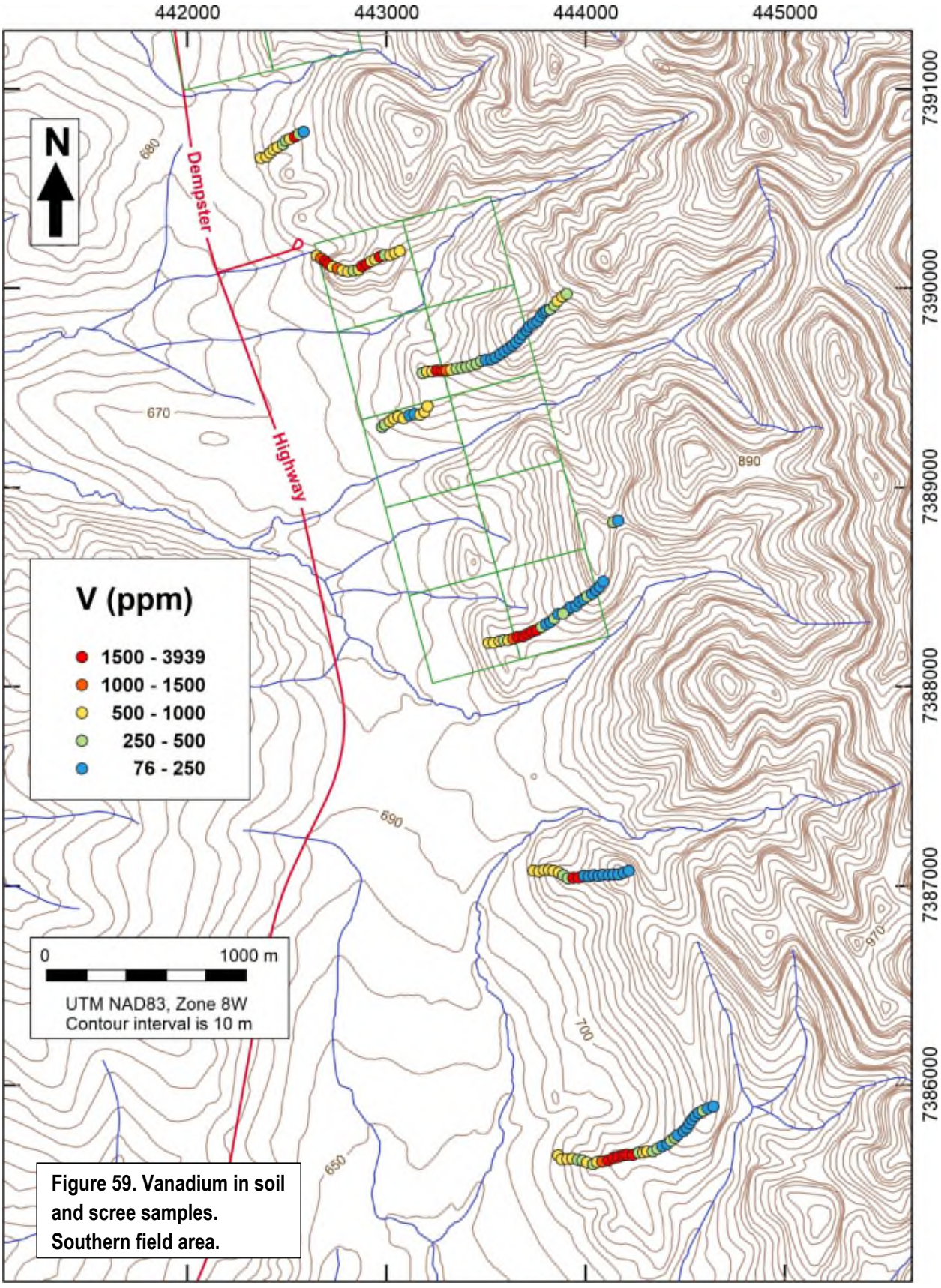


Figure 59. Vanadium in soil and scree samples. Southern field area.

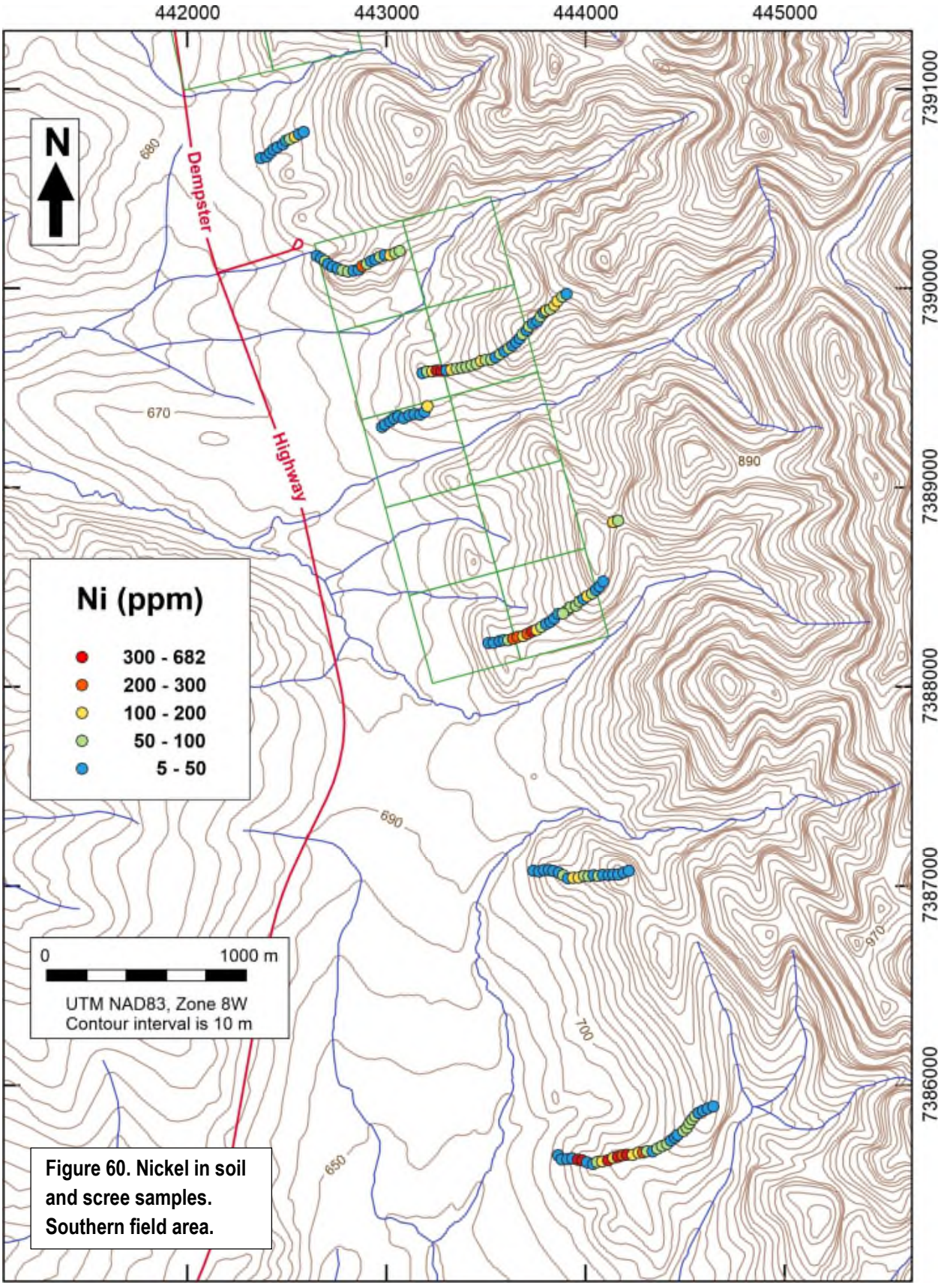


Figure 60. Nickel in soil and scree samples. Southern field area.

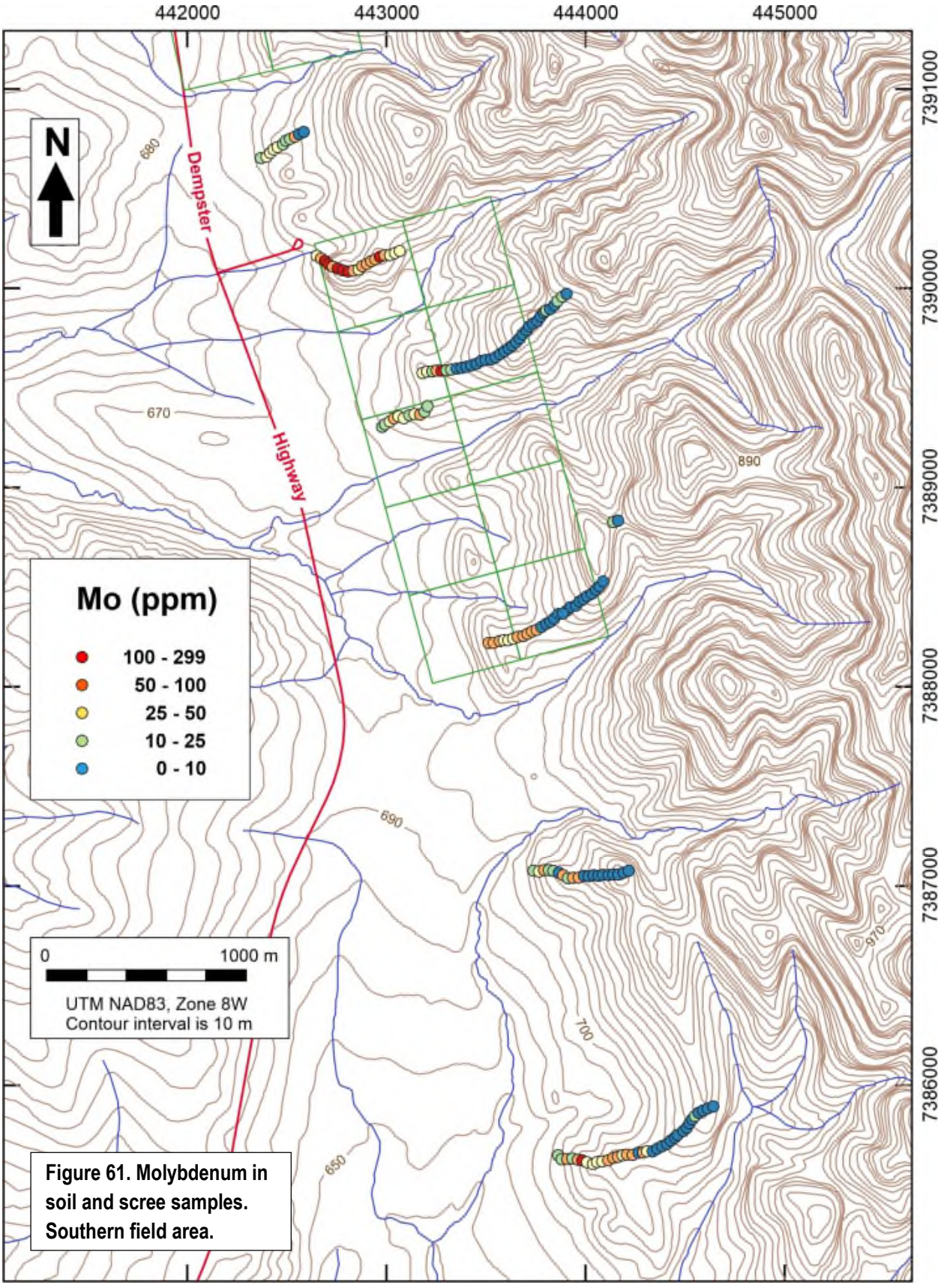


Figure 61. Molybdenum in soil and scree samples. Southern field area.

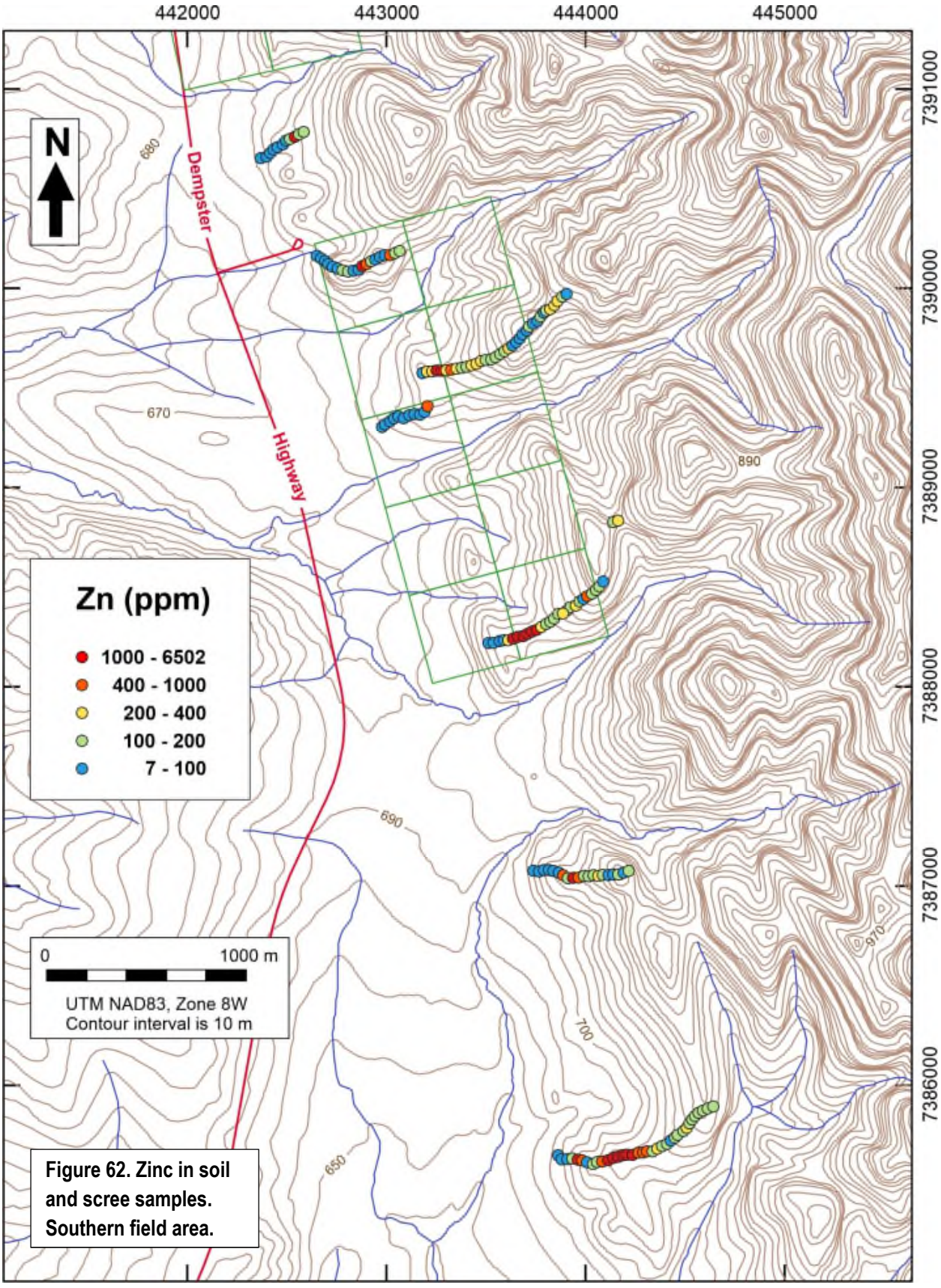


Figure 62. Zinc in soil and scree samples. Southern field area.

Soil and Scree Geochemical Profiles

A series of geochemical profiles representing analytical data obtained from the 7388300N sampling traverse are presented in Figure 63 and 64 (note the logarithmic value scales). Samples collected east of the contact zone in areas underlain by Road River Group strata have relatively low values of all elements shown except for Ba. The 200 m interval immediately east of the contact zone is characterized by Ba values generally in excess of 10000 ppm. Strong enrichment of V within the contact zone (by a factor of >10 relative to Road River values) is matched closely by Ni, Mo, Zn, As, Sb, Se and, to lesser extents, U and Ag. Ba concentrations decrease by an order of magnitude moving westward into the contact zone. The drop off in values west of the contact zone, in an area underlain by Canol Formation, are modest for V, Mo, U whereas Zn and Ni drop to background concentrations.

Field Characteristics of the Metal Enriched Contact Zone

Figures 63 and 64 show where intervals of black soil occur and these correspond closely to the zone of strong metal enrichment (contact zone). The black colour may reflect a higher than average proportion of organic carbon in the underlying shales. Note that the highly enriched samples from the contact zone were collected from both scree dominated and soil dominated sites.

On each of the four sampling traverses that cross the Road River Group – Canol Formation boundary the contact zone of metal enrichment occurs near the western margin of saddle (local ridgeline depression). Samples sites immediately to the east of the contact zone (and locally including the most easterly part of the contact zone) are characterized by soils with higher clay content than elsewhere and almost no scree fragments. The saddles are probably underlain by soft, recessive shale strata that yield significant amounts of clay upon weathering.

The WRM project area occurs in unglaciated terrain so geochemical anomalies in surficial sediment (soil and scree) should not have undergone significant transport. However, the amount of downslope physical movement of soil and scree (creep) and geochemical migration are unknown.

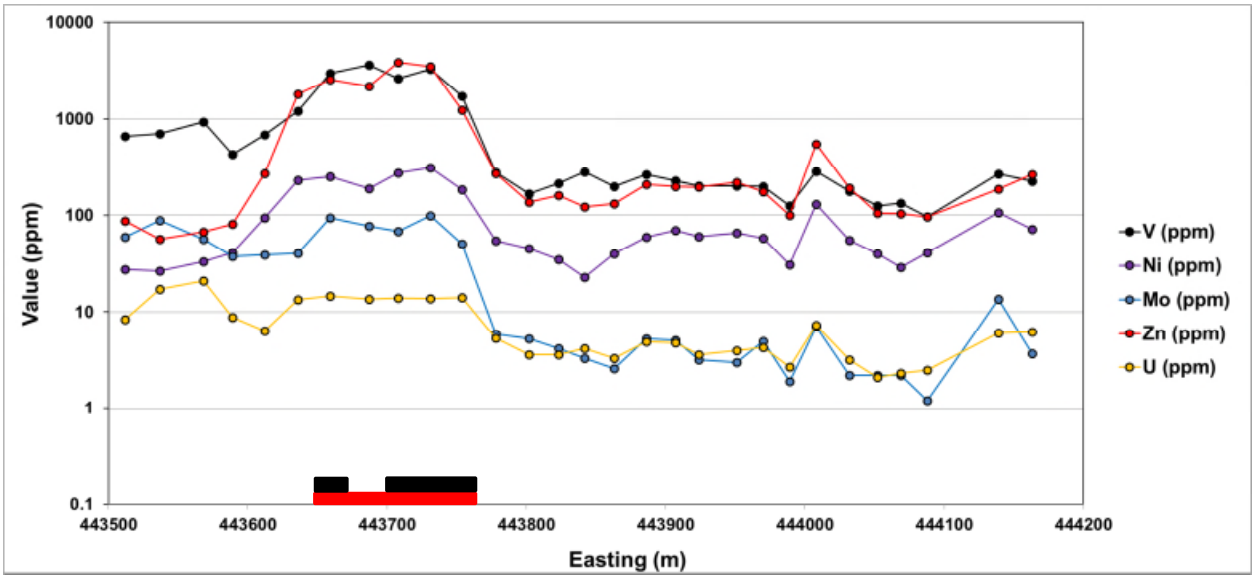


Figure 63. Geochemical profiles for soil and scree sampling traverse 7388300N – V, Ni, Mo and U. The red bar represents the contact zone. The black bars represent intervals of black soil.

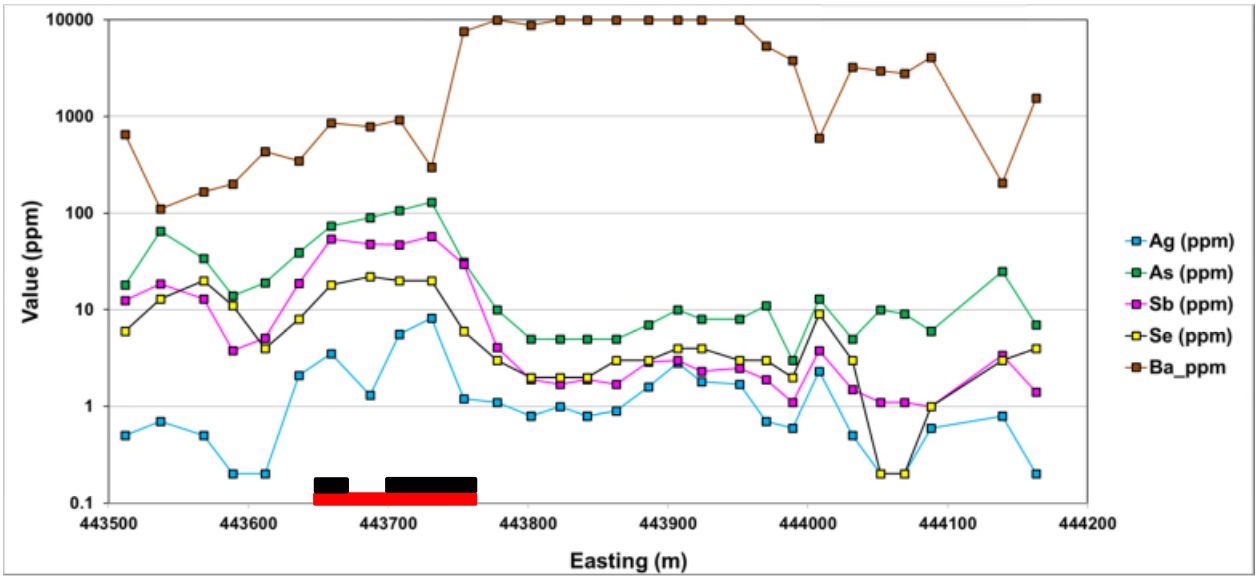


Figure 64. Geochemical profiles for soil and scree sampling traverse 7388300N – Ag, As, Sb, Se and Ba. The red bar represents the contact zone. The black bars represent intervals of black soil.

Geology

Recent workers (e.g. Fraser and Hutchinson, 2017; Gadd et al., 2019; Dumala, 2007c) place the Road River Group – Canol Formation contact at the transition from (i) commonly calcareous shale to (ii) non-calcareous shale and chert (this placement may differ somewhat from that of Cecile et al., 1982, who include an upper 0 to 50 interval of white weathering, siliceous shale and chert in their SDv unit below the Canol Formation). A hyper-enriched black shale (HEBS) layer a few centimetres thick is commonly exists at the contact (also referred to as the NiMo horizon; e.g. Gadd et al., 2019; Dumala, 2007c). This layer is strongly enriched in Ni, Mo and several other elements. In this report the "recent" definition of the Road River Group – Canol Formation contact is used.

Several outcrops were encountered during sampling traverses in the south field area and these were examined and described (Appendix 3). These observations along with descriptions of scree made during traverses and soil/scree geochemical data have been used to reposition geological contacts in the area (Figure 65) from those of Cecile et al, (1982; compare Figure 65 with Figure 47).

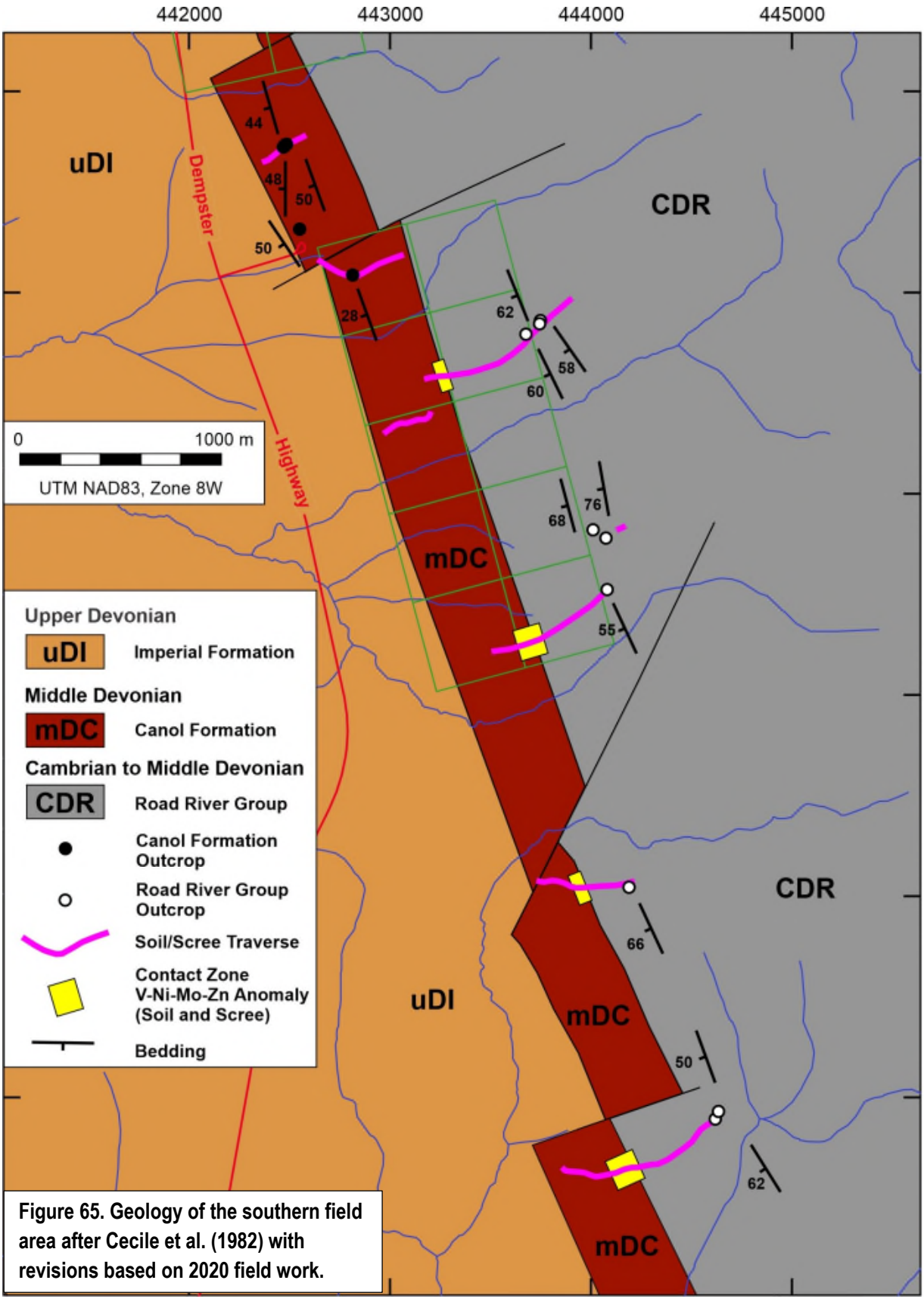


Figure 65. Geology of the southern field area after Cecile et al. (1982) with revisions based on 2020 field work.

Discussion and Recommendations

Note: in the following text grades and widths are discussed. Anomalous values occurring in a single sample (either alone or in a series) are assigned no width. Where anomalous values occur in two or more adjacent samples in a series each sample is assigned a width equal to half the distance to the adjacent sample. For example, in a series of samples spaced 25 m apart two adjacent, anomalous samples are assigned a combined width of 50 m. As the sampling is not continuous (rocks are 50 cm chip samples and soil/scree samples are point samples) the calculated average grades are only roughly indicative of the true average values that would be obtained by continuous sampling.

Rock River (Sheep Creek) Field Area

Geology

Stratigraphic contacts in the southern part of the Rock River (Sheep Creek) field area have been moved up to 400 m west from the locations of Cecile et al. (1982) based on field observations and geochemical results (Figure 29). The strata are offset by a fault located during the 2020 field work in the west bank of the south branch of Rock River (Sheep Creek).

Road River Group Unit CDR2

Geochemical results from the 2020 silt sample program in the Rock River (Sheep Creek) area detected highly anomalous values of V, Ni, No and Zn in two tributaries to the east branch between 4432050E and 444250E (samples RM612 and RM615; Figures 42 to 46).

- RM612: 413 ppm V, 41.8 ppm Ni, 9.4 ppm Mo, 581 ppm Zn
- RM615: 363 ppm V, 58.9 ppm Ni, 13.3 ppm Mo, 675 ppm Zn

These tributary streams are located 1.5 to 2.5 km east of the Road River Group – Canol Formation contact and drain areas of Road River Group unit CDR2, which is composed of shaly limestone, black chert and graptolitic shale (Cecile et al. [unit OS1], Yukon Geological Survey, 2018; Figure 28). The data strongly suggest that V-Ni-Mo-Zn mineralization occurs within unit CDR2. This is an exploration target that has not been investigated as exploration in the area to date has focused on strata at and near the Road River Group – Canol Formation contact.

Recommended follow-up work:

- Additional stream silt sampling of east branch tributaries in the area of Road River Group unit CDR2 including sampling upstream from the two 2020 anomalous sites.
- Soil (± scree) sampling traverses perpendicular to stratigraphy.

- Rock chip sampling of any outcrop that may be encountered.

Road River Group Unit CDR5

Road River Group unit CDR5 (unit SDv of Cecile et al., 1982) is the uppermost unit of the Road River Group and consists mainly of black shale and shaly limestone (Figure 29). In the Rock River (Sheep Creek) area it occurs within 0.5 to 1.5 km east of the Dempster Highway. A 240 m rock chip sampling traverse was undertaken across a Road River Group unit CDR5 outcrop section on the north bank of the east branch of Rock River/Sheep Creek (samples RM406 to RM418). The five most westerly samples from this series show significant metal enrichments with values of up to 0.10% V, 254 ppm Ni, 104 ppm Mo and 622 ppm Zn (samples RM414 to RM418).

- RM414 to RM418: average of 0.08% V (0.15% V_2O_5), 176 ppm Ni, 65 ppm Mo and 406 ppm Zn over 100 m.

These samples were collected from the upper part of the Road River Group unit CDR_5 about 250 m east of the Road River Group – Canol Formation contact based on the mapping of Cecile et al. (1982; Figures 29 and 30). This is the local westward limit of outcrop along the valley floor. However, outcrop was observed to occur farther to the west at higher elevations.

The southern boundary of the SC property lies about 900 m north of the east branch and the metal enriched strata exposed in the stream bank are likely to underlie the eastern part of the claim block (based on the mapping of Cecile et al., 1982 and bedding attitudes measured in 2020; Figures 28 and 29). Outcrop of Canol Formation chert-bearing, non-calcareous shale was observed near the centre of the SC property (Figure 28).

Recommended follow-up work:

- Additional rock chip sampling and geological investigation to the west of the sampled outcrop section (in the direction of the Road River Group – Canol Formation contact).
- Soil (± scree) sampling traverses perpendicular to stratigraphy.
- Addition of claims south of the existing SC property.

The northernmost rock chip sample of a series of five collected from a Road River Group (unit CDR_5) outcrop on the west bank of the south branch returned 0.11% V (0.20% V_2O_5) , 86.9 ppm Ni, 42.86 ppm Mo and 578 ppm Zn (sample RM423; Figures 30 and Figures 38 to 41).

Recommended follow-up work:

- Additional rock sampling upslope (and up stratigraphy) from the 2020 sample locations.

Canol Formation

The two samples of Canol Formation shaly chert, collected near the confluence of the south and east branches, returned up to 0.12% V (0.21% V_2O_5), 46.15 ppm Mo and 493 ppm Zn samples RM426 and RM427; Figures 29, 30 and 38 to 41)

Recommended follow-up work:

- Systematic rock chip sampling of Canol Formation outcrop to determine if there are significant widths of economically viable metal values.

Southern Field Area

Geology

Stratigraphic contacts in the southern field area have been moved up to 350 m west from the locations of Cecile et al. (1982) based on field observations and geochemical results (Figures 47 and 63).

Road River Group Unit CDR2

Stream silt sample RM 601 was collected about 500 m upstream (east) of the Road River Group – Canol Formation contact and was expected to return background values (Figure 50). Instead, it yielded moderately anomalous values of 274 ppm V and 324 ppm Zn (Figures 51 and 54). The sample was collected just downstream of the mapped location of Road River Group CDR_2, which is suspected to be the source of anomalous stream sediment in the Rock River (Sheep Creek) area.

Recommended follow-up work:

- Stream sediment sampling of the westerly flowing streams to the east of the Road River Group – Canol Formation contact.
- Extension of selected soil and scree sampling traverses eastward to investigate metal potential of unit CDR2 strata.
- Geological mapping and rock sampling.

Road River Group – Canol Formation Contact

The four soil and scree sampling traverse that cross the Road River Group - Canol Formation Contact have demonstrate that extremely anomalous concentrations of vanadium and other elements occur at or near this contact over a minimum north-south distance of 4 km (Figures 59 to 63).

- Traverse 7385700N (samples RM253 to RM258): Average of 2407 ppm V (0.43% V_2O_5), 274 ppm Ni, 73 ppm Mo and 2950 ppm Zn across 150 m (based on 6 sample sites).

- Traverse 7387000N (samples RM231 and RM232): Average of 1557 ppm V (0.28% V_2O_5), 153 ppm Ni, 64 ppm Mo and 917 ppm Zn across 50 m (based on 2 sample sites).

- Traverse 7388300N (samples (RM207 to RM211): Average of 2864 ppm V (0.51% V_2O_5), 241 ppm Ni, 78 ppm Mo and 2687 ppm Zn across 125 m (based on 5 sample sites).

- Traverse 7389600N (samples (RM299 and RM300): Average of 3504 ppm V (0.63% V_2O_5), 418 ppm Ni, 96 ppm Mo and 3709 ppm Zn across 48 m (based on 2 sample sites).

Recommended follow-up work:

- Additional staking (primarily to south of Mount Hare property (MH claims).
- Additional soil and scree sampling traverses both within and south of the area of existing coverage.
- Geological mapping and rock sampling (particularly if outcrop near this contact can be located).
- Air photo interpretation (may be able to identify recessive topography associated with contact zone).
-

Canol Formation

In the northern part of the south field area anomalous metal concentrations were returned for soil and scree samples collected within the Canol Formation west of the Road River Group – Canol Formation contact.

- Traverse 7390100N (samples RM541 and RM542): Average of 2945 ppm V (0.53% V_2O_5), 153 ppm Ni, 76 ppm Mo and 1160 ppm Zn across 50 m (based on 2 sample sites). These samples were collected at least 175 m west of the Road River Group - Canol Formation contact.

- Traverse 7390100N (samples RM533 and RM534): Average of 1746 ppm V (0.31% V_2O_5), 43 ppm Ni, 182 ppm Mo and 57 ppm Zn across 40 m. These samples were collected at least 350 m west of the Road River Group – Canol Formation contact.

- Traverse 7390700N: The best result from the northernmost traverse is 3205 ppm V (0.57% V_2O_5; sample RM 558). This is accompanied by 185 ppm Ni, 83 ppm Mo and 1192 ppm Zn.

Recommended follow-up work:

- Additional staking to the north and west of the Mount Hare property (MH claims).
- Additional soil and scree sampling traverses.
- Geological mapping and rock sampling.

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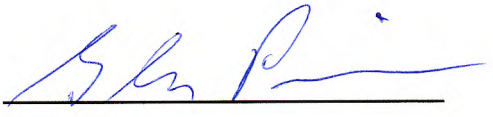
Statement of Qualifications

I, Glen Prior, of 793 Birch Avenue, Sherwood Park, Alberta do hereby declare:

- That I am a self-employed geologist.
- That I am a Professional Geologist registered with the Association of Professional Engineers and Geoscientists of Alberta (Member Number M73587).
- That I graduated from Laurentian University in Sudbury, Ontario, with a B.Sc. (Honours) degree in geology in 1982, from Laurentian University in Sudbury, Ontario, with a M.Sc. degree in geology in 1987 and from Carleton University in Ottawa, Ontario, with a Ph.D. degree in geology in 1996.
- That I practiced my profession full-time from 1986 to 1991 and continuously since 1996 including 5 years with Norwin Geological Ltd. (Vice President), 5 years with Aur Resources Inc. (holding the positions of Senior Project Geologist and Senior Geologist) and 12 years with the Alberta Geological Survey (holding the positions of Geologist, Senior Geologist and Section Leader).

January 30, 2021

Sherwood Park, Alberta



Glen Prior

Appendix 1

Stream Silt Sample Descriptions

Location Coordinates: UTM Zone 8W, NAD83

Sample	East	North	Elevation (metres)	Flow Direction	Description	Notes	Collection Date
RM601	444264	7388384	743	210°	Black moss mat (below green moss) containing silt. Located within stream along bank. Stream is 1 m wide and 20 cm deep with a fast flow rate.	Vichi Tik Tsiivii Creek headwaters.	2020_08_01
RM602	443615	7387899	702	225°	Black, basal moss mat in stream along bank. Stream is 1 m wide and 30 cm deep with a fast flow rate.	Vichi Tik Tsiivii Creek headwaters.	2020_08_01
RM603	443673	7387227	692	175°	Moss mat. Mainly black material at base of moss mat. Stream is 2 m wide and 30 cm deep with a fast flow rate.	Headwaters of south flowing drainage (S of Vichi Tik Tsiivii Creek headwaters).	2020_08_02
RM604	443810	7385804	656	250°	Approximately 50% moss/grass mat (by volume); 50% dark grey silt (some silt may be from nearby bank). Stream is 0.5 m wide and 10 cm deep with a moderate flow rate.	Headwaters of south flowing drainage (S of Vichi Tik Tsiivii Creek headwaters).	2020_08_03
RM605	443630	7385954	645	245°	Approximately 50% (by volume) moss mat; 50% dark grey silt to coarse sand composed of shale fragments. On small bend. Stream is 1.5 m wide and 20 cm deep with a fast flow rate.	Headwaters of south flowing drainage (S of Vichi Tik Tsiivii Creek headwaters).	2020_08_03
RM606	446243	7426805	648	225°	By volume approximately 50% dark grey silt collected near stream bank and 50% moss mat at stream bank (in stream). Stream is 3 m wide and 30 cm deep with a fast flow rate.	About 25 m upstream from (east of) highway and 11.5 km south along highway from NWT border.	2020_08_06
RM607	446451	7427464	657	22°5	100% moss mat (in stream along banks). Stream is 3 m wide and 30 cm deep with a fast flow rate.	About 75 m upstream from (east of) highway and 11 km south along highway from NWT border.	2020_08_06
RM608	443377	7389194	698	240°	100% mass mat. Black, lower (basal) moss mat in stream collected. Boulders occur in stream but no sand/gravel/pebbles Stream is 2 m wide and 20 cm deep with a fast flow rate.	Vichi Tik Tsiivii Creek headwaters.	2020_08_16
RM609	443192	7389936	705	215°	Stream bed consists mainly of gravel and cobbles. No active stream silt. 100% moss mat consisting of black, lower (basal) material within water along bank. Stream is 1.5 m wide and 25 cm deep with a slow flow rate.	Vichi Tik Tsiivii Creek headwaters.	2020_08_19
RM610	444997	7410101	592	270°	Stream bed is 15 m wide, composed mainly of cobbles and boulders. Main flowing stream is 6 m wide, 30 cm deep with fast flow to 270°. Sample is from side channel at north side of stream bed (1.5 m wide, 10 cm deep, slow flow rate). Dark grey, silt to medium sand.	East branch of Rock River (topo map) or Sheep Creek (highway sign).	2020_08_21
RM611	444724	7410044	596	70°	Intermittent flow along this part of stream (some flow beneath surface). Stream bed has stony bottom (including boulders). Sample by volume is 50% dark grey silt to coarse sand and 50% moss mat (from stream bank). Stream is 1 m wide and 10 cm deep with a slow flow rate.	North flowing tributary to east branch of Rock River / Sheep Creek.	2020_08_21

Sample	East	North	Elevation (metres)	Flow Direction	Description	Notes	Collection Date
RM612	444174	7410390	587	240°	Stony bottom (mainly boulders and cobbles). Sample collected near bank just above present stream flow. Dark grey to black, silt to very fined sand. Stream is 0.75 m wide and 20 cm deep with a fast flow rate.	Southwesterly flowing tributary to east branch of Rock River (Sheep Creek).	2020_08_21
RM613	444295	7410309	584	230°	Stream bed is ~25 m wide with active stream flow across 10 m (fast rate of flow). On bend. Sample collected from several nearby locations slightly above present water level in pockets where fine grained material has collected. Stony base (gravel to boulders). Dark grey, silt to fine sand (90%) and moss mat (10% - by volume).	East branch of Rock River (Sheep Creek).	2020_08_21
RM614	443856	7410312	570	260°	Stream bed is ~25 m wide with main part of active stream occurring across ~8 m and ~20 cm depth (fast flow). Sample collected from small channel at south side of stream bed (2 m wide and 10 cm deep) with slow rate of flow. Dark brown to grey, silt to very fine sand. Collected just above present water level.	East branch Rock River (Sheep Creek).	2020_08_21
RM615	443283	7410026	561	360°	Dry stream bed. Stream bed (bottom) is 1.5 m wide. During spring runoff the flow would be very fast. Stream bed composed mainly of boulders, cobbles and some gravel. By volume: 30% dark grey silt (+ minor amount of sand) and 70% moss mat. Both silt and moss mat would have been within flowing stream during runoff.	North flowing tributary to east branch of Rock River (Sheep Creek).	2020_08_21
RM616	443030	7410140	na	270°	Present stream is ~4 m wide and 40 cm deep. The stream bed (= high water stream width) is ~20 m wide. Sample collected from dry site near centre of stream bed about 30 to 50 cm above present water level from material deposited between boulders and cobbles by residual runoff flow. Dark brownish grey, silt to very fine sand.	East branch Rock River (Sheep Creek).	2020_08_21
RM617	442750	7410168	569	155°	By volume: 50% dark grey, silt to very coarse sand + some small gravel collected within and above (mainly above) present stream. 50% moss mat collected above current stream. All sample material would have been submerged during runoff. Stream is 1 m wide and 10 cm deep with a very fast flow rate.	Southerly flowing tributary to east branch of Rock River (Sheep Creek).	2020_08_21
RM618	442306	7410113	553	265°	Active (present) stream is ~5 m wide and 20 cm deep with fast flow to 265°. Stream bed (stream width during runoff) is ~15 m. Sample collected in dry area of fine grained sediment on north side of present stream from material deposited during runoff (downstream from pile of logs and tree roots). Medium brownish grey, silt to medium sand.	East branch Rock River (Sheep Creek).	2020_08_21

Sample	East	North	Elevation (metres)	Flow Direction	Description	Notes	Collection Date
RM619	441681	7409675	547	360°	Stream bed ~35 m wide of boulders, cobbles and gravel is ~30% covered by shallow water flowing fast to 360° with depths of up to 5 cm. Fine grained material (sampled) located behind boulders in mid-channel. Medium to dark grey silt to medium sand.	South branch Rock River (Sheep Creek).	2020_08_21
RM620	441866	7408823	558	305°	Active (presently flowing) stream is ~5 m wide and 20 cm deep with a fast flow rate. Stony stream bottom (boulders, cobbles and a minor amount of gravel). Flood channel (stream bed) "flats" of boulders, cobbles and a minor amount of gravel is ~50 m wide. A small pool about 10 m long and 2 m wide occurs in centre of the dry stream bed (there is a minor amount of flow into pool indicating connection to underground flow). Fine grained material along the edge of this pool was sampled (both above and below water level). Medium to dark grey, silt to very fine sand.	South branch Rock River (Sheep Creek).	2020_08_23
RM621	441942	7409199	559	335	In this area the presently active (flowing) stream has split into two branches within a stream bed (flood channel) ~30 m wide. Eastern branch (sample location) is about 3 m wide, 10 cm deep, and has a fast to moderate (to locally slow) flow rate. Fine grained material (sampled) deposited in slower areas. Medium to dark grey, silt to fine sand (about 50% above water level and 50% below water level).	South branch Rock River (Sheep Creek).	2020_08_23

Appendix 2

Soil and Scree Sample Descriptions

Location Coordinates: UTM Zone 8W, NAD83

- “LAV” refers to low (ground hugging) alpine vegetation (e.g. mosses, lichens, grasses, shrubs).
- “Fines” is used to indicate clay to very coarse sand. If fine grained organic material is present it is included in the Fines (%) estimate.
- “Fragments” is used to indicate clasts larger than very coarse sand.
- Fragments >1 cm across were removed from the sampled material unless otherwise specified (rarely, fragments up to 2 cm across were included in samples at sites dominated by coarse scree).

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM201	443512	7388220	741	moderate W	major	10 to 30	medium brown-grey	scree	minor	Black shale, weathers medium grey, blocky to weakly fissile. Minor black chert (weathers black).		2020_07_31
RM202	443537	7388221	750	moderate W	minor	10 to 30	medium (brownish) grey	scree	minor	Dark grey to black, blocky to weakly fissile shale, weathers medium grey. Minor black, blocky chert (weathers black). Both rock types are non-calcareous.		2020_07_31
RM203	443568	7388230	758	~ level	very minor	10 to 25	medium (brownish) grey	scree	minor	Dark grey to black, blocky to weakly fissile shale, weathers medium grey. Minor amount of black, blocky chert that weathers black. Both are non-calcareous.		2020_07_31
RM204	443589	7388234	758	very weak to E	minor	10 to 20	medium grey	scree	minor	Black shale, weathers medium grey, blocky to weakly fissile. Minor black, blocky chert (weathers black). Both are non-calcareous.		2020_07_31
RM205	443612	7388234	753	~ level	minor	10 to 20	medium to dark grey	scree	minor	Black shale weathers light to medium grey, moderately fissile. Minor black chert, black weathering, blocky. Both rock types are non-calcareous.		2020_07_31
RM206	443636	7388242	753	very gentle to W	major	10 to 20	dark grey to black	soil	major (clayey silt)	Minor amount of black shale fragments (veneer), weathers light to medium grey, moderately fissile, non-calcareous	About 1 m higher than RM205 site. 1 to 2% fine roots.	2020_07_31
RM207	443659	7388251	756	gentle W	major	20 to 30	black	scree	minor (clayey silt)	Mainly moderately blocky to moderately fissile, dark grey to black shale, moderately grey weathering, non-calcareous. Minor amount of dark to medium grey, somewhat crystalline appearing, shale/limestone, light to medium brown-grey weathering, strong pervasive reaction to dilute HCl.	1 to 2% fine roots.	2020_07_31
RM208	443687	7388255	761	very gentle E	minor	15 to 25	medium grey	scree	minor	Black shale, medium grey weathering, moderately fissile, non-calcareous. No chert noted. Few pieces of (brownish) grey weathering calcareous shale/limestone.		2020_07_31

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM209	443708	7388266	756	moderate E	minor	20 to 30	black	scree	minor	Black, light grey weathering shale, moderately fissile, non-calcareous. No chert noted.		2020_07_31
RM210	443731	7388278	754	gentle E	minor	15 to 25	black	scree	minor	Black shale, weathers light grey, moderately blocky to weakly fissile, non-calcareous. No chert noted.		2020_07_31
RM211	443754	7388286	749	~ level	major	15 to 25	black	soil	major (clayey silt)	Minor amount of small shale fragments.	Bottom of saddle 1 to 2% fine roots.	2020_07_31
RM212	443778	7388301	750	~ level	major	15 to 25	very dark (brownish) grey	soil	98 (clayey silt)	1 to 2% fragments.	Near middle of saddle. Possibly a small percentage of fine organic material in sample. 3 to 5% fine roots.	2020_07_31
RM213	443907	7388384	776	gentle W	major	15 to 25	dark brownish grey	soil	80 (silty)	About 20% shale fragments.	3 to 5% fine roots.	2020_08_01
RM214	443924	7388400	780	gentle W	major	15 to 25	dark brownish grey	soil	90 (silty)	About 10% shale fragments.	3 to 5% fine roots.	2020_08_01
RM215	443951	7388408	786	gentle W	major	15 to 25	medium greyish brown	soil	50 to 70	Medium to dark grey shale, weathers medium grey, weakly to moderately fissile. Most pieces have no HCl reaction but a few have moderate HCl reactions.	3 to 5% fine roots.	2020_08_01
RM216	443970	7388429	798	gentle W	major	15 to 25	medium to dark grey	soil / scree	50	Weakly to moderately fissile, medium to dark grey shale, weathers medium to dark grey. Some pieces have weak to moderate HCl reactions (spotty to pervasive).	1 to 3% fine roots.	2020_08_01
RM217	443989	7388441	803	gentle W	100	20 to 30	dark grey	scree	20 (silty)	No scree on surface.	Silty soil fraction contains up to 50% fine grained, black organic material. 1 to 3% fine roots.	2020_08_01

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM218	444008	7388455	807	gentle W	50	15 to25	medium grey	scree	20	Blocky to weakly fissile, dark grey, dark grey weathering, siliceous shale, non-calcareous (~80%) and weakly to moderately fissile, medium grey, light grey to light brownish grey weathering shale with moderate to strong HCl reaction - pervasive and on bedding planes (~20%).	1 to 3% fine roots.	2020_08_01
RM219	444032	7388468	808	gentle W	75	15 to 25	medium grey	scree	20 (silty)	Weakly to moderately fissile, light to medium grey shale, weathers light to medium grey, weak to strong HCl reaction (bedding planes to pervasive).		2020_08_01
RM220	444052	7388487	813	gentle to moderate W	80	15 to 25	medium brown	scree / soil	30 (silty)	Weakly to moderately fissile, light to medium grey shale, weathers light grey to light brownish grey, weak to strong HCl reaction (pervasive, hairline fractures, bedding planes).	1 to 2 cm Ah over B/C. 1 to 2% fine roots.	2020_08_01
RM221	444069	7388504	820	moderate W	60	15 to 25	medium brown	scree / soil	30 (silty)	Moderately fissile, medium grey shale, weathers light grey to light brownish grey, weak to moderate HCl reaction.	No soil profile. 1 to 2% fine roots.	2020_08_01
RM222	444088	7388529	826	moderate E	50	15 to 25	medium brown	scree	20 (silty)	Moderately fissile, medium grey shale, light brown to light grey weathering, moderate HCl reaction.	Just below outcrop. 1 to 2% fine roots.	2020_08_01
RM223	443738	7387078	712	gentle W	98	15 to 25	dark grey to black	scree	10 to 20 (silty)	Weakly to moderately fissile, black, siliceous shale, weathers light to medium grey, non-calcareous. Very minor amount of black, black weathering, non-calcareous chert.	Minor organic component in soil fraction. 1 to 3% fine roots.	2020_08_02
RM224	443766	7387074	722	gentle to moderate W	90	15 to 25	dark grey to black	scree	10	Weakly to moderately fissile, black, siliceous shale, weathers medium grey, non- calcareous. Very minor amount of black, black weathering chert.		2020_08_02
RM225	443791	7387081	734	moderate W	20	20 to 30	medium greyish brown	scree	10 to 20 (silty)	Weakly to moderately fissile, black, siliceous shale, weathers light (to medium) grey, non-calcareous. Very minor amount of black chert.		2020_08_02
RM226	443815	7387081	742	moderate W	10	20 to 30	medium grey	scree	1 to 5	Weakly fissile, black shale, weathers light to medium grey, non-calcareous. No chert noted.		2020_08_02

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM227	443838	7387077	750	gentle to moderate W	5	15 to 25	medium brown	scree	1 to 5	Weakly blocky to weakly fissile, black, siliceous shale, weathers light grey, non-calcareous. Very minor amount of black chert.		2020_08_02
RM228	443865	7387068	753	~ level	5	15 to 25	medium brown-grey	scree	1 to 5	Weakly blocky to weakly fissile, black shale, weathers light grey, non-calcareous. Minor amount of black chert (tends to be blocky). Scree fragments tend to be small - most <5 cm across.		2020_08_02
RM229	443887	7387055	753	~ level to very gentle east	5	15 to 25	medium brown	scree	5 to 10	Weakly blocky to moderately fissile, black, siliceous shale, weathers light grey, non-calcareous. Very minor amount of black, black weathering chert. Most fragments are <5 cm across.		2020_08_02
RM230	443911	7387040	752	gentle E	40	15 to 25	medium brown	scree	10 to 20 (silty)	Moderately blocky to moderately fissile, black, siliceous shale, weathers light grey, non-calcareous. Manor amount of black, black weathering chert. Most fragments are <5 cm across.		2020_08_02
RM231	443937	7387042	755	~ level	98	15 to 25	black	scree / soil	50 (silty)	Weakly blocky to weakly fissile, black shale, weathers dark grey, non-calcareous.	Near bottom of small saddle. No black lichen. 1 to 3% fine roots.	2020_08_02
RM232	443965	7387043	760	gentle W	100	15 to 25	black	soil	95 to 98 (clayey silt)	Pit: 2 to 5% small shale fragments (<1 cm).	Possible minor organic component. 1 to 3% fine roots.	2020_08_02
RM233	443992	7387052	763	gentle W	100	15 to 25	medium brown	soil	70 to 80 (silty)	Pit: 20 to 30% shale fragments. No fragments exposed on surface.	1 to 3% fine roots.	2020_08_02
RM234	444015	7387050	768	gentle W	100	15 to 25	medium brown	soil	60 to 80 (silty)	Pit: 20 to 40% shale fragments. No fragments exposed on surface.	About 3 cm Ah over B/C. 1 to 3% fine roots.	2020_08_02
RM235	444040	7387055	771	gentle W	98	15 to 25	medium grey	scree	10 to 20	Weakly blocky to weakly fissile, black shale, weathers medium grey, non-calcareous (dominant). Weakly fissile, medium grey shale, weathers light grey, moderately calcareous (subordinate). Very minor amount of black chert.	1 to 3% fine roots.	2020_08_02

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM236	444064	7387052	775	gentle W	60	15 to 25	dark grey	scree / soil	50 (silty)	Surface: About 50% weakly fissile, black shale, weathers medium grey, non-calcareous. About 50% weakly to moderately fissile, medium grey shale, weathers light grey, weak to moderate HCl reactions.	1 to 2 cm Ah over B/C. 1 to 3% fine roots.	2020_08_02
RM237	444087	7387057	779	gentle W	99	15 to 25	medium brown	soil	50 to 70 (silty)	Pit: 30 to 50% shale fragments (very few exposed on surface).	3 cm Ah over mineral soil. 1 to 3% fine roots.	2020_08_02
RM238	444115	7387056	787	moderate W	95	15 to 25	medium brown	scree	10 to 20 (silt)	Surface: Weakly to moderately fissile, light to medium grey shale, weathers light to medium grey, weak to moderate HCl reaction. Shale pieces commonly > 5 cm across.		2020_08_02
RM239	444139	7387059	798	moderate W	75	15 to 25	medium brown	scree	5 to 10	Surface: Moderately fissile, medium grey shale, weathers light to medium grey, very weak to weak HCl reaction. Shale pieces commonly >10 cm across and tend to be platy.		2020_08_02
RM240	444164	7387059	807	moderate W	50	10 to 20	medium brown	scree	5 to 10	Surface: Moderately fissile, medium grey shale, weathers light (to medium) grey, weak HCl reaction - mainly along bedding surfaces. Shale pieces > 10 cm across are common (platy).		2020_08_02
RM241	444191	7387068	804	moderate to steep E	30	15 to 25	medium grey	scree	10 to 20	Surface: Moderately fissile, medium grey shale. Weathers light grey to light brown. Weak to moderate HCl reaction (some pervasive). Fragments > 10 cm across common (platy scree).		2020_08_02
RM242	444216	7387077	798	moderate E	90	15 to 25	medium brown	scree / soil	50 (silty)	Surface: Moderately fissile, medium grey shale, weathers light grey. Weak to moderate HCl reaction. Platy.	1 to 2 cm Ah over mineral soil. 1 to 3% fine roots.	2020_08_02
RM243	443862	7385650	673	gentle W	100	20 to 30	dark grey to black	soil	90 to 95 (silty)	Pit: 5 to 10% shale fragments up to 2 cm across.	Lowermost (western) toe of ridge. No surface scree observed to west. Few stunted spruce nearby. 3 to 5% fine roots.	2020_08_03

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM244	443879	7385630	677	gentle W	98	15 to 25	black	soil	80 to 90 (silty)	Surface: Black, weakly to moderately fissile shale, weathers medium grey.	Few spruce nearby. 1 to 3% fine roots.	2020_08_03
RM245	443908	7385631	683	gentle W	80	15 to 25	dark grey to black	soil	70 to 90 (silty)	Surface: Weakly fissile black shale, weathers medium grey.	0.5 to 2% fine roots.	2020_08_03
RM246	443933	7385634	691	gentle W	50	15 to 25	medium brown	scree	5 to 10	Surface: Moderately blocky to weakly fissile, black, siliceous shale. Non-calcareous. Pieces > 5 cm across uncommon.		2020_08_03
RM247	443961	7385628	699	gentle W	25	20 to 30	dark brownish grey	scree	30 to 40 (silty)	Surface: Moderately blocky to weakly fissile, black, siliceous shale, weathers medium (to light) grey. Non-calcareous. Tend to exhibit weak lamination on weathered surfaces. Minor amount of black, black weathering chert in bands (beds) up to 1 cm thick that do not display lamination.	Nil to minor amount of black lichen. 1 to 2% fine roots.	2020_08_03
RM248	443983	7385624	706	gentle W	5	15 to 25	dark grey	scree	10 to 20 (silty)	Surface: Moderately blocky to weakly fissile, black, siliceous shale, weathers light to medium grey. Finely laminated. Non-calcareous. Most pieces < 5 cm across. Minor amount of black, black weathering chert that is massive to very weakly laminated, in bands (beds) up to 1 cm thick.		2020_08_03
RM249	444007	7385615	713	level	10	15 to 25	dark grey	scree	1 to 5	Surface: Moderately blocky, black, siliceous shale, weathers medium grey, some finely laminated, non-calcareous. Most pieces are < 5 cm across. Minor amount of black, black weathering chert in bands (beds) up to 3 cm thick, appears massive.		2020_08_03
RM250	444037	7385606	710	gentle E	30	15 to 25	dark brownish grey	scree	5 to 10	Surface: Moderately blocky to weakly fissile, black, siliceous shale, weathers medium to light grey, non-calcareous, some finely laminated. Most pieces < 5 cm across. Minor amount of moderately blocky, black, black weathering chert.		2020_08_03

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM251	444057	7385616	710	~ level	80	15 to 25	black	soil	85 to 95 (clayey silt)	Surface: Weakly to moderately fissile, black. , siliceous shale, weathers medium grey, non-calcareous.		2020_08_03
RM252	444083	7385619	715	very gentle W	98	15 to 25	black	soil	85 to 95 (clayey silt)	Surface: Weakly to moderately fissile, black shale, weathers dark grey, non-calcareous. Most pieces are < 3 cm across.	1 to 3% fine roots.	2020_08_03
RM253	444113	7385625	721	very gentle W	100	20 to 30	black	soil	60 to 70 (clayey silt)	Pit: Moderately fissile, black, siliceous, non-calcareous shale, most fragments <3 cm across.	1 to 3% fine roots.	2020_08_03
RM254	444139	7385637	726	gentle W	80	15 to 25	black	soil	50 to 60 (clayey silt)	Surface: Weak to moderately fissile, siliceous, black shale, weathers medium grey, non-calcareous, most pieces <3 cm across.	1 to 3% fine roots.	2020_08_03
RM255	444162	7385642	730	~ level	30	15 to 25	black	scree	10 to 20 (silty)	Surface: Approximately equal mix of (a) black, non-calcareous shale and (b) medium grey, calcareous shale.		2020_08_03
RM256	444186	7385650	728	~ level to very gentle E	30	15 to 25	dark grey	scree	10 to 20 (silty)	Surface: Weakly to moderately blocky, siliceous black shale, weathers medium grey, non-calcareous, most pieces <3 cm across. No calcareous shale observed.		2020_08_03
RM257	444207	7385653	723	gentle E	30	15 to 25	dark grey to black	scree	5 to 10	Surface: Moderately blocky to weakly fissile, dark grey to black shale, weathers light to medium grey, non-calcareous, most pieces <5 cm.		2020_08_03
RM258	444236	7385652	719	gentle E	90	15 to 25	dark grey to black	scree	20 to 30 (silty)	Surface: Weakly to moderately fissile, black shale, weathers medium brown, non-calcareous, most pieces <3 cm.		2020_08_03
RM259	444266	7385663	721	very gentle E	99	15 to 25	black	soil	50 to 70 (clayey silt)	Pit: weakly to moderately blocky, very dark grey shale, moderately to strongly calcareous, most pieces <5 cm.		2020_08_03
RM260	444289	7385664	722	very gentle E	80	15 to 25	black	scree	20 to 40 (silty)	Surface: Weakly blocky to weakly fissile, medium to dark grey shale, weathers light to medium grey, strongly calcareous, most pieces are <3 cm across		2020_08_03

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM261	444308	7385670	722	~ level	100	15 to 25	black	soil	90 to 95 (clayey silt)	Pit: Weakly fissile, black shale, non-calcareous, most pieces <3 cm across.	Saddle. 1 to 3% fine roots.	2020_08_03
RM262	444337	7385670	723	very gentle W	100	20 to 30	dark grey to medium brown	soil	100 (silty)	Pit: No fragments.	Broad saddle. Thin Ah over mineral soil. 3 to 7% fine roots.	2020_08_03
RM263	444360	7385683	725	~ level to very gentle W	99	20 to 30	black	soil	96 to 98 (clayey silt)	Pit: 2 to 4% fragments <1 cm across.	Saddle. Possible organic component in soil. 1 to 3% fine roots.	2020_08_04
RM264	444384	7385696	728	~ level	95	15 to 25	dark grey-brown	soil	60 to 80 (silty)	Surface: Weakly to moderately fissile, medium grey, light brown (tan) weathering, strongly calcareous shale, most pieces < 10 cm across.	Saddle. 1 to 3% fine roots.	2020_08_04
RM265	444409	7385707	728	very gentle W	99	20 to 30	dark grey to black	soil	97-99 (clayey silt)	na		2020_08_04
RM266	444428	7385724	731	very gentle W	100	15 to 25	dark grey	soil	100 (clayey silt)	na	Saddle. 1 to 3 % fine roots.	2020_08_04
RM267	444448	7385739	733	gentle W	100	20 to 30	dark grey	soil	97 to 99 (clayey silt)	na	3 to 5% fine roots.	2020_08_04
RM268	444462	7385752	739	gentle W	100	20 to 30	dark grey	soil	100 (clayey silt)	na	Possibly some organics in soil. 5 to 8% fine roots.	2020_08_04
RM269	444491	7385772	743	gentle W	100	25 to 35	dark brown-grey	soil / scree	40 to 60 (silty)	Pit: Shale fragments <3 cm across.	15 cm Ah over mineral soil. 3 to 5% fine roots.	2020_08_04
RM270	444508	7385788	745	gentle W	95	15 to 25	dark grey	soil	50 to 70 (silty)	Surface: Weakly to moderately fissile, dark grey shale, weathers medium grey, non-calcareous, most pieces <3 cm across.	1 to 3% fine roots.	2020_08_04

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM271	444521	7385810	750	gentle W	90	15 to 25	medium brown	scree	10 to 30	Surface: Weakly to moderately fissile, dark grey shale, weathers medium grey, non-calcareous to very weakly calcareous, most pieces <10 cm across.		2020_08_04
RM272	444535	7385830	749	gentle W	98	15 to 25	dark grey-brown	scree / soil	20-40 (silty)	Fragments from pit are weakly to moderately fissile, medium grey, weakly to moderately calcareous shale.	1 to 3% fine roots.	2020_08_04
RM273	444549	7385847	751	gentle W	98	15 to 25	dark grey to black	scree / soil	20 to 40 (silty)	Pit and surface: shale fragments are <5 cm across, medium to dark grey, weakly to moderately fissile shale, weathers medium (to light) grey, non-calcareous to very weakly calcareous.	1 to 3% fine roots.	2020_08_04
RM274	444567	7385863	755	gentle to moderate W	75	15 to 25	medium brown	scree	10 to 30 (silty)	Weakly to moderately fissile, medium to dark grey shale, weathers medium (to light) grey, nil to weak reaction to dilute HCl (mainly along hairline fractures), some pieces are platy and up to 15 cm across (most <5 cm across).		2020_08_04
RM275	444589	7385874	758	very gentle W	30	15 to 25	medium brown	scree	5 to 10 (silty)	Surface and pit: 1. (majority) Moderately blocky to weakly fissile, black shale, weathers medium grey, non-calcareous. 2. (minority) Moderately fissile, medium grey shale, weathers light grey to light brown, moderately calcareous.		2020_08_04
RM276	444613	7385885	760	very gentle W	40	15 to 25	medium brown	scree	10 to 20 (silty)	Surface: ~75% moderately fissile, dark grey shale, weathers medium grey, non-calcareous ~25% moderately fissile, medium grey shale, weathers light grey to medium brown, moderately calcareous. Fragments >5 cm across (of both types) are common.		2020_08_04
RM277	444641	7385895	760	moderate SE	20	15 to 25	medium brown	scree	10 to 20 (silty)	Surface: Weakly blocky to moderately fissile, dark grey shale, weathers medium grey, weak reaction to dilute HCl (hairline fractures and spotty). Near south end of large outcrop.		2020_08_04

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM278	443802	7388316	759	very gentle W (in saddle)	100	20 to 30	very dark grey to black	soil	99 (silty)	0.5 to 1% small (<2 cm) shale fragments.	Permafrost at 30 cm. Ah from surface to 20 cm. 20 to 30 cm is silty soil with organic material (sample possibly up to 50% organic material). 5 to 8% fine roots.	2020_08_07
RM279	443823	7388327	763	gentle W (in saddle)	100	20 to 30	very dark grey to black	soil	100 (silty)	No fragments.	Permafrost at 30 cm. Ah from surface to 20 cm. Possibly up to 50% organic material in sample. 3 to 5% fine roots.	2020_08_07
RM280	443842	7388343	766	gentle W	100	20 to 30	dark brownish grey	soil	100 (silty clay)	No fragments.	Sample does not seem organic-rich. Ah from surface to about 10 cm. 5 to 8% fine roots.	2020_08_07
RM281	443863	7388366	769	gentle W	100	20 to 30	very dark grey	soil	95-98 (clayey silt)	2 to 5% small shale fragments.	Ah from surface to about 20 cm. 5 to 8% fine roots.	2020_08_07
RM282	443886	7388368	769	gentle W	100	25 to 35	dark grey	soil	95 to 98 (silty clay)	2 to 5% small (<2 cm) shale fragments.	Ah from surface to about 20 cm. 5 to 8% fine roots.	2020_08_07
RM283	444139	7388827	813	gentle E	98	15 to 25	black	soil	90 to 95 (clayey silt)	5 to 10% small shale fragments.	Prominent saddle. 1 cm thick Ah. 1 to 3% fine roots.	2020_08_07
RM284	444163	7388834	814	gentle E	70	15 to 25	very dark grey to black	scree	10 to 30 (silty)	Surface: moderately blocky to weakly fissile, black, siliceous shale, weathers dark grey to black, non-calcareous.		2020_08_07
RM285	442978	7389304	699	gentle W	80	15 to 25	dark grey	soil	90 to 95 (silty clay)	Surface: Moderately fissile, dull black, siliceous shale, weathers medium grey, non-calcareous. Most pieces <5 cm across.	Near west end of ridge. Frost heave. No Ah horizon. 1 to 2% fine roots.	2020_08_09

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM286	442992	7389317	701	gentle W	80	15 to 25	dark grey	soil	95 to 99 (clay)	1 to 5% small shale fragments. Surface: Weakly to moderately fissile, dull black, siliceous shale, weathers medium grey, non-calcareous. Most pieces <5 cm across.	Frost heave. No Ah horizon. 0.5 to 1% fine roots.	2020_08_09
RM287	443017	7389332	708	gentle W	30	20 to 30	medium to dark brownish grey	scree	5 to 15	Surface: Mainly (weakly) to moderately fissile, medium grey to black shale (both colours weather to light grey), siliceous, non-calcareous. 1-2% black, black weathering, blocky chert fragments up to 3 cm thick (i.e. chert beds were up to 3 cm thick).		2020_08_09
RM288	443037	7389347	709	gentle W	30	20 to 30	dark grey	scree	10 to 30 (silt and minor sand)	Surface: Moderately fissile, black, siliceous shale, weathers light to medium grey, non-calcareous. Minor amount (0.1 to 2%) of black chert, weathers black, blocky. Most fragments <5 cm across.	No roots.	2020_08_09
RM289	443060	7389357	709	~ level	100	20 to 30	dark grey to black	soil / scree	40 to 60 (silty)	Pit: 40 to 60% small shale fragments, mainly < 2 cm across.		2020_08_09
RM290	443087	7389348	709	gentle SW	95	20 to 30	dark grey	scree	5 to 10	Surface: Weakly to moderately fissile, black, siliceous shale, weathers light to medium grey, non-calcareous. Most pieces <5 cm across. Minor amount of black, black weathering chert.		2020_08_09
RM291	443115	7389363	712	gentle SW	95	15 to 25	black	soil / scree	40 to 60 (silty)	Pit: 40-60% small shale fragments, most <2 cm across. Surface: Moderately fissile, black, siliceous shale, weathers light to medium grey, non-calcareous, most pieces < 3 cm across.	No Ah. No roots.	2020_08_09
RM292	443141	7389369	720	gentle W	90	25 to 35	dark grey to black	soil /scree	30 to 50 (silty)	Pit: 50-70% small shale fragments (most <2 cm across). Surface: Weakly to moderately fissile, dull black shale, weathers light to medium grey, non-calcareous. Most pieces <5 cm across with a few pieces up to 10 cm across. Minor amount of black, black weathering chert.		2020_08_09

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM293	443169	7389366	722	gentle SW	20	20 to 30	medium brown	scree	1 to 5 (silty)	Surface: Weakly fissile, dull black siliceous shale, weathers light grey, non-calcareous. Fragments commonly up to 10 cm across, some display fine laminae on weathered surfaces. 1 to 2% blocky, black, black weathering chert from beds up to 6 cm thick.		2020_08_09
RM294	443191	7389380	727	gentle SW	20	20 to 30	dark grey	scree	10 to 30 (silty)	Surface: Blocky to moderately fissile, dull black, siliceous shale, weathers light grey, non-calcareous. Most pieces <5 cm across with some pieces up to 10 cm across. 1 to 3% black, black weathering, blocky chert from beds up to 15 cm thick,	Weak to moderate amount of black lichen. 0.5 to 1% fine roots.	2020_08_09
RM295	443206	7389408	730	gentle SW	90	20 to 30	dark grey	scree	10 to 30 (silty)	Surface: 80 to 90% weakly blocky to weakly fissile, dull black, siliceous shale, weathers medium grey, non-calcareous, most pieces <5 cm across. 10 to 20% weakly to moderately fissile, medium grey shale, weathers light grey, weak to strong reaction to dilute HCl, pieces commonly > 5 cm across. Minor amount of blocky, black, black weathering chert.	0.25 to 0.5% fine roots.	2020_08_09
RM296	443181	7389575	737	~ level	5	20 to 30	medium brownish grey	scree	5 to 10	Surface: Mainly weakly to moderately blocky, dull black, siliceous shale, weathers light grey, non-calcareous. Most pieces <5 cm across. Some display fine laminae on weathered surfaces. 3 to 7% very blocky, black, black weathering chert. Some pieces up to 5 cm thick (from beds up to 5 cm thick).	Top of knob on ridge. Brown colouration due to oxidation of fine grained material. Moderate (~ 50%) black lichen coverage. 0 to 1% fine roots.	2020_08_09
RM297	443204	7389582	738	gentle E	5	20 to 30	medium brown	scree	5 to 20	Surface: Moderately blocky to weakly fissile, dull black shale, weathers light grey, non-calcareous, most pieces <3 cm across. Some pieces display laminae on weathered surfaces. 1 to 3% black, black weathering, blocky chert from beds up to 6 cm thick (most pieces <5 cm across).	Medium brown colour from oxidation of fine grained material. Moderate amount of black lichen. No roots.	2020_08_09

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM298	443230	7389583	734	gentle E	70	20 to 30	dark grey to black	soil	80 to 95 (silty)	Pit: 5 to 20% small shale fragments (most <2 cm across). Surface: Moderately fissile, dull black shale, weathers light to medium grey, non-calcareous, most pieces <5 cm across.	No Ah horizon. No black lichen. 0.5 to 1% fine roots.	2020_08_09
RM299	443252	7389587	740	~ level	70	20 to 30	dark grey to black	scree	10 to 30 (silty)	Pit: Most fragments <2 cm across. Surface: ~90% weakly blocky to weakly fissile, dull black shale, weathers medium grey, non-calcareous, most pieces <3 cm across. ~10% weakly fissile, medium grey, light grey weathering shale with moderate to strong reaction to dilute HCl, most pieces <5 cm across.		2020_08_09
RM300	443276	7389586	742	very gentle E	15	15 to 25	black	scree	20 to 40 (silty)	Pit: Most fragments <2 cm across. Surface: Moderately blocky to weakly fissile, dull black shale, weathers medium grey to light grey, non-calcareous, most pieces <3 cm across. Minor amount of black, black weathering, blocky chert, most pieces <5 cm across.	Minor to moderate amount of black lichen. No roots.	2020_08_09
RM501	443301	7389588	739	~ level	100	25 to 35	dark grey	soil	99 (silty clay)	Pit: 0.5 to 1% small shale fragments.	Broad saddle. 3 to 5 cm thick Ah horizon over mineral soil. 3 to 5% fine roots.	2020_08_16
RM502	443325	7389592	741	very gentle W	100	30 to 40	dark grey-brown	soil	99 (clayey-silt)	Pit: 0.5 to 1% small fragments.	2 to 5 cm Ah over mineral soil. Possibly up to 10% black organic material in sample. 1 to 2% fine roots.	2020_08_16
RM503	443352	7389597	744	very gentle W	99.5	30 to 40	dark brownish grey	soil	99 (clayey silt)	Pit: 0.5 to 1% small fragments.	1 to 2% fine roots.	2020_08_16
RM504	443378	7389601	743	gentle W	99.5	30 to 40	dark (brownish) grey	soil	99 (clayey silt)	Pit: 0.5 to 1% small fragments.	3 to 5% fine roots.	2020_08_16
RM505	443402	7389606	748	gentle W	99.5	30 to 40	dark brownish grey	soil	99 (clayey silt)	Pit: 0.25 to 0.5% small fragments.	5 to 7% fine roots.	2020_08_16

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM506	443427	7389613	750	gentle W	99.5	30 to 40	dark (brownish) grey	soil	98 to 99 (clayey silt)	Pit: 1 to 2% small shale fragments.	3 to 5% fine roots.	2020_08_16
RM507	443452	7389621	757	gentle W	100	30 to 40	dark grey	soil	60 to 80 (silty)	Pit: 20 to 40% shale fragments.	10 to 20 cm thick Ah horizon. 3 to 5% fine roots.	2020_08_16
RM508	443475	7389635	761	gentle W	100	35 to 45	dark grey to black	soil	50 to 70 (silty)	Pit: 30 to 50% shale fragments.	1 to 5 cm Ah. 1 to 2% fine roots.	2020_08_16
RM509	443498	7389640	767	gentle W	100	30 to 40	dark grey to black	soil	60 to 70 (silty)	Pit: 30 to 40% shale fragments.	10 to 15 cm Ah. Possibly up to 10% black organic material in sample. 1 to 3% fine roots.	2020_08_16
RM510	443526	7389643	774	gentle to moderate W	99	15 to 25	dark grey	scree	10 to 20 (silty)	Surface: ~80% weakly blocky to moderately fissile, black, siliceous shale, weathers dark grey, non-calcareous, most pieces <5 cm across. ~20% medium grey, moderately fissile shale, weathers light grey, weak reaction to dilute HCl (mainly on hairline fractures).	1 to 2% fine roots.	2020_08_16
RM511	443548	7389654	779	gentle to moderate W	100	25 to 35	dark grey-brown	scree / soil	20 to 30 (silty)	Pit: 70 to 80% shale fragments.	No roots.	2020_08_17
RM512	443571	7389670	789	moderate W	10	20 to 30	medium brown	scree	10 to 30 (silty)	Surface: Mainly black, weakly to moderately fissile, siliceous shale, weathers medium grey, non-calcareous, pieces commonly up to 15 cm across. 2 to 5% weakly to moderately fissile, medium grey shale, weathers light grey, weak HCl reaction (mainly along hairline fractures), pieces commonly up to 20 cm across.	Medium brown colour below 15 cm depth due to oxidation of fine grained material (medium grey above). Very minor amount (<2%) of black lichen. 0.25 to 0.5% fine roots.	2020_08_17

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM513	443592	7389684	798	moderate W	50	15 to 25	medium brown	scree	10 to 20	Surface: 30 to 70% medium grey, weakly to moderately fissile shale, weathers medium to light grey, non-calcareous, pieces commonly up to 15 cm across. 30-70% medium grey, moderately fissile, grey shale, weathers light grey, weak to strong reaction to dilute HCl, pieces commonly up to 20 cm across.		2020_08_17
RM514	443614	7389699	806	moderate W	90	15 to 25	medium brown	scree / (soil)	10 to 30 (silty)	Surface: Similar to RM513	Medium brown colour due to oxidation of fine-grained material. 0.5 to 1% fine roots.	2020_08_17
RM515	443633	7389713	814	moderate W	50	15 to 25	medium brown	scree / (soil)	20 to 40 (silty)	Surface: Medium grey, moderately fissile, shale weathers light to medium grey, weak to moderate reaction to dilute HCl, platy, pieces >20 cm across are common.	Medium brown colour due to oxidation of fine grained material below 15 cm. No roots.	2020_08_17
RM516	443651	7389729	818	moderate W	30	10 to 20	medium brown	scree	5 to 10	Surface: Moderately fissile, medium grey shale, weathers medium grey, weak to moderate reaction to dilute HCl, platy, pieces >20 cm across are common.	Medium brown colour due to oxidation of fine grained material. 0.5 to 1% fine roots.	2020_08_17
RM517	443669	7389748	821	moderate W	40	15 to 25	medium brown	scree / (soil)	20 to 40 (silty)	Surface: Moderately fissile, medium grey shale, weathers light to medium grey to medium brown (limonitic), moderate pervasive reaction to dilute HCl, platy, pieces >15 cm across are common.	Medium brown colour due to oxidation of fine grained material. Upper 10 to 15 cm is dark grey. 0.25 to 0.5% fine roots.	2020_08_17
RM518	443683	7389769	825	gentle W	20	15 to 25	medium brown	scree	5 to 10	Surface: Moderately fissile, medium grey shale, weathers light to medium grey, weak to moderate reaction to dilute HCl (mainly along hairline fractures), platy, pieces >10 cm across are common.	1 to 2% black lichen coverage. No roots.	2020_08_17
RM519	443704	7389789	822	gentle E	90	20 to 30		soil	95-98 (silty)	Pit: 2 to 5% small fragments. Surface: Veneer of surface scree over Ah - medium grey, weakly to moderately fissile shale, weathers medium to light grey, moderate to strong pervasive reaction to dilute HCl, most pieces are <5 cm across.		2020_08_17

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM520	443716	7389808	826	~ level	70	20 to 30	dark grey	scree	10 to 20	Surface: Weakly to moderately fissile, medium grey shale, weathers medium grey, nil to moderate reaction to dilute HCl, most pieces are <10 cm across.	Near east side of small saddle. 0 to 0.25% fine roots.	2020_08_17
RM521	443736	7389823	834	gentle to moderate W	70	20 to 30	medium brown	scree	10 to 30 (silty)	Surface: Moderately fissile, medium grey shale, weathers medium to light grey, nil to moderate reaction to dilute HCl, pieces commonly up to 10 cm across.	0 to 0.25% fine roots.	2020_08_17
RM522	443758	7389836	835	moderate S	5	10 to 20	medium grey	scree	5 to 10	Surface: Weakly blocky to moderately fissile, medium to dark grey shale, weathers medium to light grey, weak reaction to dilute HCl (mainly along hairline fractures), pieces >15 cm across are common.	About 10 m downslope from outcrop. 0 to 0.25% fine roots.	2020_08_17
RM523	443773	7389858	832	moderate E	20	15 to 25	medium brown	scree	5 to 15	Surface: Weakly blocky to weakly fissile, medium grey shale, weathers medium to light grey, weak to moderate reaction to dilute HCl, pieces up to 15 cm across are common.	About 10 m downslope from outcrop. 0 to 0.25% fine roots.	2020_08_17
RM524	443790	7389877	827	moderate E	25	10 to 20	medium brown	scree	10 to 20	Surface: Weakly blocky to weakly fissile, medium grey shale, weathers medium (to light) grey to medium (Fe-oxide) brown, nil to moderate reaction to dilute HCl (brown weathering material is most reactive), pieces up to 10 cm across.	0 to 0.25% fine roots.	2020_08_17
RM525	443802	7389888	821	~ level	50	25 to 35	black	scree	10 to 30 (silty)	Surface and pit: Weakly blocky to moderately fissile, soft, black shale, weathers black, non-calcareous, pieces on surface are mainly <1 cm across (pieces from pit are up to 2 cm across). A surface veneer of fragments similar to those at previous (uphill) sample site (RM524) is common (these are up to 5 cm across).	West side of saddle. 0 to 0.25% fine roots.	2020_08_17
RM526	443822	7389895	822	very gentle W	50	20 to 30	very dark grey to black	scree	10 to 30 (silty)	Surface and pit: Weakly blocky to weakly fissile, dark grey to dark brownish grey to black shale, weathers medium grey, moderately soft, strong pervasive reaction to dilute HCl.	In saddle. 0.25 to 0.5% fine roots.	2020_08_17

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM527	443843	7389915	827	gentle W	50	20 to 30	very dark grey to black	scree	10 to 30	Surface and pit: Moderately blocky to weakly fissile shale with pieces mainly <5 cm across. Varies from (i) moderately soft, brownish grey to medium grey shale with strong pervasive reaction to dilute HCl (25-50%) to (ii) black, hard (siliceous), non-calcareous shale (50 to 75%)	0 to 0.25% fine roots.	2020_08_17
RM528	443859	7389936	832	gentle to moderate W	90	15 to 25	very dark grey	scree	10 to 30	Surface: Moderately blocky to weakly fissile, hard, siliceous, black shale, weathers medium grey, generally no reaction to dilute HCl except for a minor amount of local calcite veins.	0 to 0.25% fine roots.	2020_08_17
RM529	443883	7389958	841	gentle W	95	20 to 30	very dark grey to black	scree / soil	40 to 60 (silty)	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey non-calcareous, most pieces are <5 cm across. 5 to 15% blocky, black, black weathering chert in bands (beds) up to 3 cm wide.	0 to 0.5% fine roots.	2020_08_17
RM530	443904	7389972	848	moderate W	80	25 to 35	dark grey	scree	3 to 8	Medium grey, moderately blocky to weakly fissile shale, weathers medium grey, nil (unusual) to strong, pervasive reaction to dilute HCl. 1 to 5% black, black weathering chert in bands (beds) up to 6 cm thick - some of the chert is fractured and contains white calcite veining.	Base of major scree slope (to east). No black lichen. 0.5 to 1% fine roots.	2020_08_17
RM531	442650	7390163	702	gentle NW	50	15 to 25	dark grey	scree	5 to 10	Surface: Weakly blocky to moderately fissile, siliceous, black shale, weathers dark grey, non-calcareous. Most pieces <5 cm across, some display fine laminae on weathered surfaces. Minor amount (0.5 to 2%) of black, black weathering chert in bands (beds) up to 3.5 cm thick.	Lowermost exposure of scree on slope. No black lichen. 0 to 0.25% fine roots.	2020_08_18

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM532	442671	7390150	706	gentle NW	20	20 to 30	dark brownish grey	scree	5 to 10	Surface: Weakly blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces <5 cm cross, some display laminae on weathered surfaces. A few pieces (0.1 to 1%) have an aphanitic, medium (mustard) yellow coating and a similar material occurs rarely along hairline fractures. Minor amount of black, black-weathering chert up to 5 cm thick.		2020_08_18
RM533	442691	7390137	714	gentle to moderate NW	15	20 to 30	dark grey	scree	5 to 10	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous, most pieces <5 cm across, some display faint laminae on weathered surface. A few pieces (0.1 to 1%) have an aphanitic, medium (mustard) yellow surface coating. Minor amount (0.1 to 1%) of black, black weathering chert.		2020_08_18
RM534	442707	7390122	717	moderate NW	10	20 to 30	black	scree / soil	40 to 60 (silt to sand)	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous. Laminae visible on some weathered surfaces. Most pieces <5 cm across. A few pieces (0.1 to 0.5%) have medium (mustard) yellow, aphanitic surface coating, Minor amount of black, black weathering chert.	1 to 3% black lichen. No roots.	2020_08_18
RM535	442730	7390108	729	moderate NW	20	15 to 25	dark (brownish) grey	scree	10 to 30	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces are <5 cm across, some display laminae on weathered surfaces. 0.5 to 2% black, black weathering chert in bands (beds) up to 5 cm thick. No yellow staining noted.	2 to 5% black lichen. 0 to 0.25% fine roots.	2020_08_18

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM536	442755	7390099	737	moderate NW	10	20 to 30	dark brownish grey	scree	10 to 30	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces <5 cm across, some display laminae on weathered surfaces. Minor amount of black, black-weathering chert up to 4 cm thick. Trace amount of yellow stain.	3 to 5% black lichen. 0 to 0.25% fine roots.	2020_08_18
RM537	442780	7390090	742	gentle to moderate NW	2	15 to 25	medium brown	scree	10 to 30	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous, Most pieces <5 cm across, some display laminae on weathered surfaces. Minor amount of black, black weathering chert. No yellow stain noted.	5 to 10% black lichen (ground coverage) No roots.	2020_08_18
RM538	442807	7390084	749	gentle W	20	15 to 25	medium brown	scree	10 to 20	Surface: 40 to 60% moderately blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces <5 cm across, some display laminae on weathered surfaces. 40-60% very blocky, black, black weathering chert in bands (beds) up to 10 cm thick, pieces are commonly >5 cm across with pieces up to 15 cm across common. No yellow stain noted.	Just west of ridgeline knob. 30 to 50% black lichen (ground coverage) 0 to 0.25% fine roots.	2020_08_18
RM539	442834	7390088	744	moderate E	5	15 to 25	medium grey-brown	scree	10 to 20	Surface: 70-80% medium blocky to weakly fissile, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces are <3 cm across, some display laminae on weathered surfaces. 20-30% black, black weathering chert. Pieces are commonly >5 cm across. Chert bands (beds) are up to 5 cm thick. No yellow stain noted.	East side of ridgeline knob. No roots.	2020_08_18
RM540	442860	7390094	742	~ level	50	20 to 30	dark grey	scree	10 to 30 (silty)	Surface: Moderately to strongly fissile, moderately hard, black shale, weathers light to dark grey, non-calcareous. Most pieces are <5 cm across. No chert noted.	Bottom of saddle. No black lichen. 0 to 0.25% fine roots.	2020_08_18

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM541	442878	7390111	744	gentle W	15	15 to 25	dark grey	scree	10 to 20	Surface: Moderately fissile, dark brownish-grey, moderately hard shale, weathers medium grey, most pieces <3 cm across. Very minor amount (0.1 to 0.3%) of blocky, black, black weathering chert, most pieces <3 cm across.	10 to 30% black lichen (ground coverage). 0.25 to 0.5% fine roots.	2020_08_18
RM542	442901	7390122	749	gentle W	15	20 to 30	dark brown	scree	3 to 8	Surface: Weakly to moderately fissile, medium brownish grey to dark grey, moderately hard shale, weathers medium grey, non-calcareous, most pieces <5 cm across. Minor amount of black, black weathering chert, most pieces <5 cm across	25 to 50% black lichen (ground coverage). 0 to 0.25% fine roots.	2020_08_18
RM543	442923	7390136	756	gentle W	20	20 to 30	medium brown	scree	5 to 10	Surface: Weakly to moderately fissile, dark grey to black, moderately hard to hard (hardness ~5) shale, weathers medium grey, non-calcareous, pieces up to 10 cm common. Produces platy scree. Rare (<0.25%) medium (mustard) yellow surface coating. Minor amount of black, black weathering chert.	5 to 15% black lichen (ground coverage). 0 to 0.25% fine roots.	2020_08_18
RM544	442944	7390145	761	gentle W	20	15 to 25	medium grey	scree	3 to 7	Surface: Weakly blocky to moderately fissile, hard, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces <5 cm across, some display laminae on weathered surfaces. Minor amount of black, black weathering chert. No yellow surface coating noted.	2 to 5% black lichen. 0.25 to 0.5% fine roots.	2020_08_18
RM545	442967	7390158	763	very gentle E	5	20 to 30	dark grey to black	scree	10 to 30	Surface: Moderately blocky to weakly fissile, hard, siliceous, black shale, weathers medium grey, non-calcareous, Most pieces are <5 cm across, some display laminae on weathered surfaces. 2 to 5% blocky, black, black weathering chert, bands (beds) up to 5 cm thick, pieces >5 cm across are common.	Just east of second knob on ridgeline. 10-20% black lichen. No roots.	2020_08_18

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM546	442991	7390166	753	moderate E	5	15 to 25	dark grey to black	scree	10 to 20	Surface: Weakly blocky to weakly fissile, hard, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces <5 cm across, some display laminae on weathered surfaces. A few pieces (0.1 to 0.2%) have mustard yellow surface coating. 5 to 10% very blocky, black, black weathering chert, bands (beds) up to 5 cm thick, pieces >5 cm across are common.	1 to 5% black lichen. No roots.	2020_08_18
RM547	443018	7390166	743	moderate E	20	15 to 25	dark grey	scree	5 to 10	Surface: 70 to 80% weakly blocky to moderately fissile, hard, siliceous, black shale, weathers medium grey, non-calcareous. Most pieces <5 cm across, some display laminae on weathered surfaces. A few pieces (0.1 to 0.2%) have an aphanitic, medium (mustard) yellow surface coating. 20 to 30% blocky, black, black weathering chert, in bands (beds) up to 6 cm thick. Some pieces display interbedded shale and chert with 0.2 to 2 cm beds.		2020_08_18
RM548	443043	7390177	740	gentle E	80	15 to 25	dark grey	scree	5 to 10	Surface: 92 to 98%: Weakly blocky to weakly fissile, hard, siliceous black shale, weathers light to medium grey, non-calcareous. Most pieces <5 cm across, a few pieces (0.1 to 0.2%) have mustard yellow surface stain. 2 to 8%: Black, black weathering chert, blocky, up to 3 cm thick (original bed/band thickness), pieces commonly >5 cm across.	Few stunted spruce in area. No black lichen. 0 to 0.25% fine roots.	2020_08_18

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM549	443067	7390187	735	moderate E	50	20 to 30	dark grey to brown	scree / soil	40 to 60 (silty)	Surface: 85 to 95: Weakly blocky to weakly fissile, hard, siliceous, black shale, weathers light to medium grey, non-calcareous. Most pieces are <5 cm across, some display laminae on weathered surfaces. A few pieces (0.1 to 0.2%) have an aphanitic, medium yellow coating. 5 to 15%: Black, black weathering chert, blocky, up to 7 cm thick (original thickness of bands/beds).	Colour change from dark grey to medium brown at depth of 25 cm - sampled across this boundary. Some alders/willows and stunted spruce nearby. No black lichen. Exposed scree ends ~10 m to east (downslope) followed by area of thick Ah. 0.25 to 0.5% fine roots.	2020_08_18
RM550	442369	7390653	695	~ level	98	15 to 25	dark grey to black	soil / scree	40 to 60 (silty)	Surface: Roughly equal mix of (i) weakly to moderately fissile, hard, siliceous, black shale , weathers medium grey, non-calcareous, most pieces <5 cm across and (ii) weakly to moderately fissile, moderately hard, dark brownish grey shale, weathers medium grey, non-calcareous, most pieces <5 cm across.	Few alders/willows. Frost heave in boggy ground. No Ah horizon. No black lichen. Very wet sample (water flows into pit). 0.25 to 0.5% fine roots.	2020_08_20
RM551	442398	7390660	699	gentle W	100	20 to 30	dark (brownish) grey	soil	60 to 70 (silty)	na	Few alders/willows and stunted spruce nearby. Sample probably contains about 5% dark brown organic material. 15 cm thick Ah horizon. 0.5 to 1% fine roots.	2020_08_20
RM552	442416	7390679	704	gentle W	100	20 to 25	dark brownish grey	scree	5 to 10	na		2020_08_20

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM553	442433	7390696	714	moderate W	50	20 to 30	medium grey	scree	5 to 10	Surface: Moderately blocky to weakly fissile, siliceous, black shale, weathers light to medium grey (all similar colour midway between light and medium grey), non-calcareous. Pieces commonly up to 10 cm across and some display laminae on weathered surfaces. A few pieces (0.1 to 0.2%) have an aphanitic, brownish-yellow surface stain and similar material occurs locally along hairline fractures. 2 to 5% black, black weathering chert, blocky, up to 5 cm thick (width of original bands or beds).	Collected near toe (lower limit) of exposed scree. Buck brush and alders/willows nearby. 1 to 5% black lichen. 0.25 to 0.5% fine roots.	2020_08_20
RM554	442453	7390708	717	gentle W	35	20 to 30	medium greyish brown	scree	1 to 5	Surface: Moderately blocky to moderately fissile, hard, siliceous, black shale, weathers a light shade of medium grey, non-calcareous. Most pieces are <10 cm across, some display laminae on weathered surfaces. 2 to 5% black, black weathering chert, up to 3 cm thick (thickness of original bands or beds).	Buckbrush nearby. 30 to 50% black lichen (surface coverage). Note: abundant black lichen makes it difficult to spot black chert. 0.25 to 0.5% fine roots.	2020_08_20
RM555	442480	7390722	722	gentle SE	15	15 to 25	medium grey	scree	1 to 2	Surface: 92 to 98%: Moderately blocky to weakly fissile, hard, siliceous, black shale, weathers a light shade of medium grey, non-calcareous. Most pieces <10 cm across, some display laminae on weathered surfaces. A few pieces (0.1 to 0.2%) have a medium yellow to brownish-yellow surface stain. 2 to 8% blocky, black, black weathering chert up to 3 cm thick (thickness of original bands or beds), some chert pieces are >10 cm across.	Near top of prominent knob/knoll. 40 to 60% black lichen (ground cover). Very coarse scree - pieces up to 2 cm across included in sample. 0 to 0.25% fine roots.	2020_08_20

Sample	East	North	Elev. (m)	Slope	LAV (%)	Depth (cm)	Sample Colour	Type	Fines (%)	Scree Description	Notes	Collection Date
RM556	442495	7390740	728	gentle E	40	20 to 30	medium grey	scree	1 to 5	Surface: 90 to 95%: Moderately blocky to weakly fissile, hard, siliceous, black shale, weathers a light shade of medium grey, non-calcareous. Most pieces are <10 cm across, some display laminae on weathered surfaces. 5 to 10% black, black to very dark grey weathering chert up to 8 cm thick (thickness of original bands/beds). A few pieces (0.1 to 0.2%) of both shale and chert have a medium yellow coating.	Near base of steep scree slope. 10 to 25% black lichen (ground coverage). No roots.	2020_08_20
RM557	442515	7390749	716	gentle E	98	20 to 30	black	soil	85 to 95 (silty)	Surface: Weakly to moderately fissile, hard, siliceous, black shale, weathers medium grey, non-calcareous. No chert noted (but only small area is free of vegetation).	Buckbrush and stunted spruce nearby. No black lichen. No Ah horizon (frost heave). No roots.	2020_08_20
RM558	442540	7390760	711	~ level	50	20 to 30	black	soil / scree	40 to 60 (silt [mainly] to very coarse sand)	Surface: Weakly to moderately fissile, moderately hard, dark brownish grey to dark grey shale, weathers medium grey, non-calcareous. Most pieces <3 cm across. No chert noted.	Buckbrush and a few stunted spruce nearby. 1 to 2% black lichen (surface coverage). No Ah horizon. No roots.	2020_08_20
RM559	442561	7390773	717	very gentle W	99	25 to 35	dark grey	soil	99 to 99.5 (clayey silt)	Surface (very small area): Weakly to moderately fissile, moderately hard, dark brownish grey to dark grey shale, weathers medium grey, non-calcareous.	Abundant stunted buckbrush and alders/willows nearby. No Ah horizon (frost heave). Possibly a minor amount of organic material in sample. 1 to 3% fine roots.	2020_08_20
RM560	442584	7390784	719	very gentle W	100	30 to 40	dark brownish grey	soil	99.5 to 99.9 (clayey silt)	Pit: 0.1 to 0.5% small fragments.	Few alders/willows nearby. 10 cm Ah horizon. Possibly a minor amount of organic material in sample. 1 to 2% fine roots.	2020_08_20

Appendix 3

Rock Sample Descriptions and Geological Observations

Location Coordinates: UTM Zone 8W, NAD83

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
RM401	442550	7390315	699	rock sample (outcrop)	Grab/chip sample - several small pieces across ~2 m from outcrop on north side of rock quarry (sample collected near middle of exposed rock). Hard, siliceous, black, shaly chert (or cherty shale), weathers medium grey, non-calcareous, minor to moderate amount of medium yellow to medium brownish yellow surface coating (extends over ~10 m of outcrop - possibly jarosite). Bedded with beds 0.1 to 4 cm thick. "Medium scale" open fold exposed. Average bedding is 326°/50°W. Fold axis ~320° with 15°N plunge.	326°/50°W	116I/09.	Canol Formation	2020_08_20
RM402	442614	7410017	558	rock sample (outcrop)	South bank about 2 m from stream. 50 cm chip across bedding. Sample consists of: 65%: Medium grey, moderately hard, very competent calcareous shale/shaly limestone (strong pervasive reaction to dilute HCl), weathers medium grey, contains 0.5 to 2% fine grained disseminated pyrite. Mainly 2 to 10 cm beds with some fissile shale partings 20%: Black, black weathering, very fissile, moderately hard (but crumbly) shale, weakly calcareous - one bed 8 cm thick and several 0.2 to 1 cm partings. 15%: One 8 cm thick, black chert bed, weathers black, contains 2 to 5% white calcite veinlets.	002°/36°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM403	442594	7410004	554	rock sample (outcrop)	South bank. 50 cm chip across bedding. Sample interval is mainly black, black weathering, strongly fissile, very crumbly shale with strong, pervasive reaction to dilute HCl. Includes 15 cm thick, black, black to yellow-brown (limonitic) weathering chert in 0.5 to 2 cm thick beds containing black shale partings. Also includes 8 cm thick, massive, black, black weathering chert bed with abundant white calcite veinlets.	354°/28°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM404	442565	7410012	547	rock sample (outcrop)	South bank. 50 cm chip across bedding. 80%: Black, black weathering, moderately hard shale with 1 mm to 3 cm bedding, moderately competent (thicker beds) to strongly fissile (thinner beds), strong, pervasive reaction to dilute HCl. 20%: Black, black to medium rusty brown weathering chert beds 1 to 4 cm thick. No reaction to dilute HCl except along some calcite veinlets.	354°/35°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
RM405	442549	7410014	551	rock sample (outcrop)	South bank. 50 cm chip across bedding. 10 cm thick, black, black weathering chert (lenses out to west over 2 m distance). No reaction to dilute HCl except for a few calcite veinlets. 7 cm bed of black, black weathering shale, moderately calcareous, strongly fissile, crumbly. Remainder of sample interval (33 cm) is medium to dark grey, medium brownish grey weathering, competent, limy shale/limestone with strong, pervasive reaction to dilute HCl. 10 to 25 cm thick beds. Some minor folding and faulting noted in outcrop. Axes of small, open folds plunge 14° towards 195°.	350°/30°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM406	442252	7410143	553	rock sample (outcrop)	North bank. 50 cm chip across bedding. Black, dark grey weathering, strongly fissile shale, weakly competent to crumbly, nil to moderate reaction to dilute HCl. Sample collected at base of exposed section.	336°/36°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM407	442240	7410143	551	rock sample (outcrop)	North bank. 50 cm chip across bedding. Sample collected near middle of ~5 m thick rusty weathering band. Black, dark grey weathering, moderately hard, strongly fissile, weakly competent shale, non-calcareous. About 50% of interval is covered by medium orange-brown Fe-oxide coating.	330°/30°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM408	442222	7410142	547	rock sample (outcrop)	North bank. 50 cm chip across bedding. Black, dark grey weathering, moderately soft, strongly fissile, weakly competent to crumbly shale. Strong, pervasive reaction to dilute HCl.	345°/30°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM409	442199	7410151	551	rock sample (outcrop)	North bank. 50 cm chip across bedding. Black, dark grey weathering, strongly fissile, moderately soft shale, strong, pervasive reaction to dilute HCl. A minor amount of orange-brown Fe-oxide stain occurs locally.	340°/34°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM410	442179	7410154	551	rock sample (outcrop)	North bank. 50 cm chip across bedding. Dark grey, dark grey weathering, moderately soft, strongly fissile, moderate to strong reaction to dilute HCl (mainly along bedding surfaces).	346°/36°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM411	442159	7410151	550	rock sample (outcrop)	North bank. 50 cm chip across bedding. 80%: Black, dark grey weathering, very fissile, crumbly, soft shale, strong, pervasive reaction to dilute HCl. 20%: Medium grey, weathers medium yellowish brown, competent, weakly fissile, moderately hard shale, strong, pervasive reaction to dilute HCl, 1 to 3% fine grained disseminated pyrite, beds 1 to 4 cm thick.	348°/38°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
RM412	442131	7410153	546	rock sample (outcrop)	North bank. 50 cm chip across bedding. 10% dark grey, dark grey weathering, moderately hard, competent, weakly fissile shale, moderate to strong, pervasive reaction to dilute HCl. 90% black, dark grey weathering, strongly fissile, moderately hard to moderately soft, crumbly shale, moderate to strong, pervasive reaction to dilute HCl. Strike and dip measurements are approximations due to crumbly nature of exposure.	324°/32°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM413	442119	7410147	557	rock sample (outcrop)	North bank about 10 m above stream bed. 50 cm chip across bedding. Black, dark grey weathering, very soft, crumbly shale, weakly blocky to weakly fissile (less weathered material may be more fissile), non-calcareous. No bedding measurement (too crumbly).	na/na	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM414	442102	7410148	545	rock sample (outcrop)	North bank. 50 cm chip across bedding. Dark grey, dark grey weathering, moderately to strongly fissile, moderately soft, weakly crumbly to weakly competent shale, moderate to strong, pervasive reaction to dilute HCl. Too crumbly for strike and dip measurements.	na/na	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM415	442092	7410132	546	rock sample (outcrop)	North bank. 50 cm chip across bedding. Dark grey, dark grey weathering, moderately soft, strongly fissile, weakly competent to weakly crumbly shale with strong, pervasive reaction to dilute HCl.	342°/30°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM416	442082	7410123	555	rock sample (outcrop)	North bank. 50 cm chip across bedding. Black, dark grey to black weathering, moderately soft, weakly blocky to weakly fissile shale with moderate to strong reaction to dilute HCl. Too crumbly (and dangerous - cliff past vertical) for strike and dip measurement.	na/na	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM417	442067	7410100	554	rock sample (outcrop)	North bank. 50 cm chip across bedding. Black, dark grey weathering, moderately soft, weakly blocky to weakly fissile, moderately competent shale with strong, pervasive reaction to dilute HCl. 1 to 3 cm bedding.	325°/30°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22
RM418	442047	7410080	558	rock sample (outcrop)	North bank. West end of section at creek level. 50 cm chip across bedding. Dark grey, dark grey weathering, moderately soft, moderately blocky to weakly fissile, moderately competent shale with beds mainly from 0.5 to 3 cm thick with some thinner bedding in more fissile sections. Strong, pervasive reaction to dilute HCl.	326°/32°W	116I/16. Rock River (Sheep Creek) - east branch.	Road River Group	2020_08_22

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
RM419	441871	7408773	554	rock sample (outcrop)	East end of cliff section on SW bank. 50 cm chip across bedding. Black, dark grey to black weathering, weakly fissile to weakly blocky, moderately competent shale. Appears thinly bedded (2 mm to 2 cm distance between planes of fissility). Moderate to strong, pervasive reaction to dilute HCl.	012°/32°W	116I/16. Rock River (Sheep Creek) - south branch.	Road River Group	2020_08_23
RM420	441851	7408784	560	rock sample (outcrop)	SW bank. 50 cm chip across bedding. Black, dark grey weathering, weakly blocky to weakly fissile, weakly to moderately competent, moderately soft to moderately hard shale, moderate to strong, pervasive reaction to dilute HCl.	008°/35°W	116I/16. Rock River (Sheep Creek) - south branch.	Road River Group	2020_08_23
RM421	441810	7408803	563	rock sample (outcrop)	SW bank. 50 cm chip across bedding. 80 to 90%: Black, dark grey to black weathering, moderately soft, moderately crumbly, weakly to moderately fissile shale. Fissility planes are commonly 1 to 5 mm apart. Moderate to strong, pervasive reaction to dilute HCl. 10 to 20%: Medium grey, light grey weathering, moderately blocky to very weakly fissile, moderately hard, competent shale. Moderate reaction to dilute HCl (pervasive and along hairline fractures). Beds are mainly 0.5 to 4 cm thick.	356°/32°W	116I/16. Rock River (Sheep Creek) - south branch.	Road River Group	2020_08_23
RM422	441797	7408820	556	rock sample (outcrop)	SW bank. 50 cm chip across bedding. Dark grey to black, dark grey weathering, moderately to strongly fissile, moderately crumbly, moderately soft shale, non-calcareous. Fissility planes <1 to 3 mm apart. Minor amount (0.5 to 1%) of orange-brown, very fine grained, non-calcareous crystals along some bedding/fissility planes (possibly Fe-stained gypsum ?).	002°/32°W	116I/16. Rock River (Sheep Creek) - south branch.	Road River Group	2020_08_23
RM423	441785	7408848	563	rock sample (outcrop)	SW bank. 50 cm chip across bedding (northern limit of sampling in this section). Black, dark grey to black weathering, moderately to strongly fissile, soft, moderately crumbly shale with moderate pervasive reaction to dilute HCl. Contains 0.5 to 1% orange-brown (Fe staining?) to white, very fine grained crystals on parting (fissility) planes and fractures (possibly gypsum). Trace to 0.25% aphanitic, medium yellow, powdery material on some parting planes (possibly jarosite).	005°/40°W	116I/16. Rock River (Sheep Creek) - south branch.	Road River Group	2020_08_23
RM424	441676	7409436	548	rock sample (outcrop)	West bank. 50 cm chip across bedding. Dark grey to black, dark grey weathering, weakly blocky to weakly fissile, moderately soft, weakly crumbly shale, nil to strong, pervasive reaction to dilute HCl, 0.5 to 1% white gypsum on surfaces. In nearby outcrop (not included in sample) Medium grey, medium yellow-brown weathering, competent, moderately hard beds with moderate to strong, spotty to pervasive reaction to dilute HCl (limestone beds) - these beds, which form ~10% of section, are mainly 5 to 40 cm thick and contain 2 to 5% very fine grained pyrite (disseminated and in blebs/aggregates).	355°/24°W	116I/16. Rock River (Sheep Creek) - south branch.	Road River Group	2020_08_23

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
RM425	441663	7409468	548	rock sample (outcrop)	West bank. 50 cm chip across bedding. Black, dark grey to black weathering, weakly to moderately fissile, moderately soft, moderately crumbly, moderately calcareous shale with trace amount of 0.5% orange-brown (Fe-stained?) to white, fine grained crystals on foliation and fracture surfaces (probably gypsum). In nearby outcrop (not included in sample) there are 5 to 10% moderately hard, competent, medium grey, medium yellow-brown weathering beds 5 to 25 cm thick with moderate spotty to pervasive reaction to dilute HCl and trace amounts of very fine grained, disseminated and fracture controlled pyrite (limestone beds).	350°/26°W	116I/16. Rock River (Sheep Creek) - south branch. The stream is parallel to bedding at this location.	Road River Group	2020_08_23
RM426	441656	7409613	542	rock sample (outcrop)	West bank. 50 cm chip across bedding. Black, medium to light grey weathering, hard, competent, non-calcareous, cherty shale (or shaly chert), bedded with most beds 0.5 to 3 cm thick separated by very narrow (<1 mm) partings of fissile shale. The rock is blocky and not fissile except for partings. Fine laminae are displayed on some weathered surfaces. 5 to 15% of surfaces are covered by medium yellow, aphanitic coating (possibly jarosite). Outcrop tends to be steep with many loose blocks - partly due to near-vertical fractures.	355°/32°W	116I/16. Rock River (Sheep Creek) - south branch.	Canol Formation	2020_08_23
RM427	441518	7409789	541	rock sample (outcrop)	West Bank. 50 cm chip across bedding. Main rock unit is bedded with most beds from 1 to 5 cm thick (rarely to 8 cm thick) with beds separated by <1 mm thick fissile shale partings. The main rock unit is very hard, siliceous, competent, blocky (non-fissile), non-calcareous, black on fresh surfaces and dark grey weathering (although nearly all outcrop surfaces are fresh due to spalling). Some beds are siliceous shale but other beds are very much like chert. 10 to 20% of surface is covered by medium yellow, aphanitic coating (same material also occurs along fractures - possibly jarosite). Overall about 90% shaly chert (grading to chert) and 10% siliceous shale.	005°/20°W	116I/16. Rock River (Sheep Creek) - south branch (near confluence with east branch). Similar to RW426 outcrop but with thicker beds (greater distance between shale partings).	Canol Formation	2020_08_23
na	441841	7411193	665	outcrop	Very small outcrop (~ 2 m x 0.4 m) near top of ridge above steep, east-facing scree/talus slope (one of a few small outcrops along ridge top). Outcrop is bedded at 0.5 to 6 cm thickness. Beds consist of (a) black, black weathering chert, non-calcareous, not laminated, 3 to 6 cm thick and (b) moderately blocky to weakly fissile, competent, moderately hard, dark grey to black, medium to light grey weathering, non-calcareous shale, commonly laminated at <1 mm scale (visible on some weathered surfaces). Laminae due to very slight grain size variations. Overall about 75% shale and 25% chert. Locally very weak, light brown (limonitic) Fe-oxide stain on fractures and surfaces (both rock types).	010°/36°W	116I/16. North of Rock River (Sheep Creek).	Canol Formation	2020_07_30 and 2020_08_24

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
na	444080	7388524	825	outcrop	Large outcrop trending 335 at local peak along ridge, about 25 m x 10 m. Bedding is slightly contorted (~ +/- 5 degrees in strike). Moderately to strongly fissile, medium to dark grey shale, weathers light grey to light brownish grey to medium grey (the more strongly fissile shale tends to weather medium grey). Weak to moderate HCl reaction (pervasive and along bedding planes).	335°/55°W	116I/09.	Road River Group	2020_08_01
na	444189	7387045	811	outcrop	Large outcrop area extending about 100 m at 335 degrees by about 20 m wide that forms knob on ridge crest. Moderately to strongly fissile, medium grey shale, light grey to light brownish grey weathering, weak HCl reaction - mainly along bedding planes and hairline fractures.	335°/66°W	116I/09.	Road River Group	2020_08_02
na	444618	7385893	764	outcrop	Small outcrop. Moderately to strongly fissile, medium grey shale, weathers light to medium grey, non-calcareous to weakly calcareous (HCl reaction mainly along hairline fractures).	328°/62°W	116I/09.	Road River Group	2020_08_04
na	444634	7385931	768	outcrop	Outcrop area is about 50 m (+) long by about 20 m wide with long axis at 340°. Moderately to strongly fissile, medium grey shale, weathers medium to light grey to locally medium brownish-grey, nil to strong (pervasive) reaction to dilute HCl.	340°/50°W	116I/09.	Road River Group	2020_08_04
na	444074	7388780	838	outcrop	Outcrop ~100 m x 10 m with a northerly trend. Moderately to strongly fissile, medium grey shale, weathers light to medium grey, very weak reaction to dilute HCL (along hairline fractures).	350°/76°W	116I/09.	Road River Group	2020_08_07
na	444010	7388821	836	outcrop	Outcrop has northerly trend, extends about 50 m to north and 100 m to south (semi-continuous outcrop). Outcrop area is about 5 to 10 m wide. Moderately to strongly fissile, medium grey shale, weathers light to medium grey, strongly calcareous (pervasive).	345°/68°W	116I/09.	Road River Group	2020_08_07
na	443748	7389861	837	outcrop	Near north end of outcrop trending 325º about 25 m long by 5 m wide that crosses the trend of the ridge. Medium grey, light grey weathering, weakly fissile shale (fissility parallel to bedding), weak reaction to dilute HCl along hairline fractures. A 1 to 3 mm thick, light brown (Fe-oxide) weathering rind occurs on some rock.	325°/58°W	116I/09.	Road River Group	2020_08_17
na	443744	7389845	843	outcrop	Near centre of northerly trending outcrop about 25 m long by 5 m wide at highest point of ridgeline knob. Eastern part of outcrop: Medium grey, light to medium grey weathering, most is bedded at 0.5 to 5 cm scale, nil to very weak reaction to dilute HCl along hairline fractures. Western part of outcrop: Medium grey, weathers medium brown (Fe-oxide), strongly fissile, thinly bedded (0.1 to 1 cm), weak dilute HCl reaction along hairline fractures.	338°/62°W	116I/09.	Road River Group	2020_08_17

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
na	443676	7389793	832	outcrop	Near centre of outcrop about 25 m long by 4 m wide trending northwest at 334º across ridge on ridgeline knob. Moderately to strongly fissile, medium grey shale, weathers light grey, beds 0.2 to 3 cm thick, weak reaction to dilute HCl along hairline fractures.	334°/60°W	116I/09.	Road River Group	2020_08_17
na	442814	7390087	749	outcrop	Small (~1 m x 1 m) outcrop surrounded by rubble at top of ridgeline knob (another similar outcrop occurs about 5 m south). ~25% black, siliceous shale, weathers medium grey, non-calcareous, laminae visible on some weathered surfaces, bedded at 0.2 mm to 2 cm scale. ~75% black, black weathering chert bedded at 2 mm to 5 cm scale. Contacts between shale and chert are sharp	340°/28°W	116I/09.	Canol Formation.	2020_08_18
na	442469	7390723	723	outcrop	Small, poorly exposed, northerly trending outcrop ~4 m long x 0.5 m wide on top of knob/knoll. Bedded with beds 0.5 to 5 cm thick composed of hard, siliceous, black shale (no chert beds noted). Shale weathers medium grey and some weathered surfaces display laminae. Shale is very siliceous (could possibly be described as cherty). An open fold is exposed in outcrop. Bedding near north end of outcrop at 022°/34°W while bedding near centre of outcrop is 360°/48°W (bedding at south end is similar to middle of outcrop but rock is too broken for accurate measurement).	(i) 360°/48°W (ii) 022°/34°W	116I/09.	Canol Formation	2020_08_20
na	442477	7390733	724	outcrop	Small, poorly exposed outcrop about 5 m long x 1.5 m wide. Bedded with shale beds 0.5 to 4 cm thick. Hard, siliceous, black shale, weathers medium grey, non-calcareous, weathered surfaces display fine laminae. Black, black weathering chert occurs in beds from 0.5 to 7 cm thick form 2 to 5% of outcrop. Some chert occurs as lenses (discontinuous). One chert lens varies from 7 cm thick to 0 cm thick (absent) over a distance of 80 cm.	340°/50°W	116I/09.	Canol Formation	2020_08_20
na	442474	7390726	726	scree (carbonate-rich)	A somewhat recessive, linear zone about 3 m wide trending 334° and covered by ground-hugging vegetation occurs midway between the two previous outcrops. To the southeast along this trend is an approximately linear zone of scree trending downslope that is about 3 m wide composed mainly of weakly blocky to weakly fissile, medium greyish brown, moderately hard shale that weathers light brown (tan) and exhibits a strong, pervasive reaction to dilute HCl (i.e. carbonate-rich shale/shaly limestone). Minor coatings of Fe-oxide are common. No black lichen grows within area of carbonate-rich scree. Note: scree observations made on moderate south slope near 442476E, 7390717N.	na/na	116I/09.	na	2020_08_20

Sample	East	North	Elev	Feature	Description	Bedding Attitude	Notes	Unit	Field Date
na	442485	7390737	726	outcrop	Small, poorly exposed outcrop about 1.5 m long x 0.4 m wide on mid-upper part of knob/knoll on steep east slope. 85 to 95%: Black, black weathering chert in beds from 2 to 6 cm thick. 5 to 15%: Black, hard, siliceous shale, weathers a light shade of medium grey, in beds up to 1.5 cm thick. Contacts between chert and shale are sharp. Strike and dip measurements are approximations (due to poor exposure).	344°/44°W	116I/09.	Canol Formation	2020_08_20
na	445013	7410116	589	outcrop	Nearly vertical cliff ~ 40 m high (north side of stream near RM610 sample site). Dark grey, moderately hard shale, strong pervasive reaction to dilute HCl. Bedded with beds mainly 2 to 6 cm thick. Weathers medium grey but medium (brownish) yellow surface stain is common. Bedding is somewhat variable.	350°/20°W	116I/16. Rock River (topo map) / Sheep Creek (highway sign) - east branch.	Road River Group	2020_08_21
na	441656	7409477	545	fault	West bank. Calcareous Road River Group to south and non-calcareous Canol Formation to north. Road River beds bend downward approaching fault while Canol beds bend upward approaching fault (indicating north side down displacement). The surface that appears to be the main fault plane has an orientation of 056°/62°N.	na/na	116I/16. Rock River (Sheep Creek) - south branch.	na	2020_08_23

Appendix 4

Soil and Scree Sample Preparation Method Table

Sample	-80 Mesh Sieving	Light Pulverization After Sieving	Crush & Pulverize After Sieving
RM201		X	
RM202		X	
RM203		X	
RM204		X	
RM205	X		
RM206	X		
RM207		X	
RM208		X	
RM209		X	
RM210	X		
RM211	X		
RM212		X	
RM213	X		
RM214	X		
RM215		X	
RM216		X	
RM217		X	
RM218	X		
RM219		X	
RM220	X		
RM221	X		
RM222	X		
RM223		X	
RM224		X	
RM225	X		
RM226			X
RM227			X
RM228		X	
RM229		X	
RM230		X	
RM231	X		
RM232	X		
RM233	X		
RM234	X		
RM235		X	
RM236	X		
RM237	X		
RM238		X	
RM239		X	
RM240	X		
RM241		X	
RM242	X		
RM243	X		
RM244	X		
RM245	X		
RM246		X	

Sample	-80 Mesh Sieving	Light Pulverization After Sieving	Crush & Pulverize After Sieving
RM247	X		
RM248		X	
RM249		X	
RM250		X	
RM251	X		
RM252	X		
RM253	X		
RM254		X	
RM255		X	
RM256		X	
RM257		X	
RM258		X	
RM259	X		
RM260		X	
RM261	X		
RM262	X		
RM263	X		
RM264	X		
RM265	X		
RM266	X		
RM267	X		
RM268	X		
RM269	X		
RM270	X		
RM271		X	
RM272	X		
RM273	X		
RM274		X	
RM275		X	
RM276		X	
RM277		X	
RM278	X		
RM279	X		
RM280	X		
RM281	X		
RM282	X		
RM283	X		
RM284		X	
RM285	X		
RM286	X		
RM287	X		
RM288	X		
RM289	X		
RM290		X	
RM291	X		
RM292	X		

Sample	-80 Mesh Sieving	Light Pulverization After Sieving	Crush & Pulverize After Sieving
RM293		X	
RM294		X	
RM295		X	
RM296		X	
RM297	X		
RM298	X		
RM299		X	
RM300	X		
RM501	X		
RM502	X		
RM503	X		
RM504	X		
RM505	X		
RM506	X		
RM507	X		
RM508	X		
RM509	X		
RM510		X	
RM511		X	
RM512		X	
RM513		X	
RM514		X	
RM515	X		
RM516		X	
RM517	X		
RM518	X		
RM519	X		
RM520		X	
RM521		X	
RM522		X	
RM523		X	
RM524	X		
RM525	X		
RM526	X		
RM527		X	
RM528		X	
RM529	X		
RM530		X	
RM531		X	
RM532		X	
RM533		X	
RM534		X	
RM535		X	
RM536		X	
RM537	X		
RM538	X		

Sample	-80 Mesh Sieving	Light Pulverization After Sieving	Crush & Pulverize After Sieving
RM539		X	
RM540		X	
RM541		X	
RM542		X	
RM543	X		
RM544		X	
RM545	X		
RM546		X	
RM547		X	
RM548	X		
RM549	X		
RM550	X		
RM551	X		
RM552		X	
RM553		X	
RM554		X	
RM555		X	
RM556		X	
RM557	X		
RM558		X	
RM559	X		
RM560	X		

Appendix 5

Stream Silt Sample Geochemical Data

TSL LABORATORIES
2 - 302 48th Street • Saskatoon, SK • S7K 6A4
P (306) 931-1033 F (306) 242-4717 E info@tsllabs.com

Company:	Mr. Glen Prior	TSL Report:	S58473
Geologist:	G. Prior	Date Received:	Oct 08, 2020
Project:	RM	Date Reported:	Nov 04, 2020
Purchase Order:		Invoice:	78734

Sample Type:	Number	Size Fraction	Sample Preparation
Soil	21	-80 mesh	Dry and sieve
Pulp	0		None

ICP-MS Multiacid Digestion HNO_3-$HClO_4$-HF-HCl

The Multiacid digestion liberates most metals that are not completely dissolved with Aqua Regia. Dissolution may not be complete for Cr and Ba minerals(*). Some loss of Au, As and Sb may occur.(□)

Element Name	Lower Detection Limit	Upper Detection Limit	Element Name	Lower Detection Limit	Upper Detection Limit
Ag	0.1 ppm	200 ppm	Na	0.001 %	10 %
Al *	0.01%	20 %	Nb	0.1 ppm	2000 ppm
As □	1 ppm	10000 ppm	Ni	0.1 ppm	10000 ppm
Au □	0.1 ppm	200 ppm	P	0.001 %	5 %
Ba *	1 ppm	10000 ppm	Pb	0.1 ppm	10000 ppm
Be *	1 ppm	1000 ppm	Rb	0.1 ppm	2000 ppm
Bi	0.1 ppm	4000 ppm	S	0.1 %	10 %
Ca	0.01%	40 %	Sb □	0.1 ppm	4000 ppm
Ce	1 ppm	2000 ppm	Sc	1 ppm	200 ppm
Cd	0.1 ppm	4000 ppm	Sn *	0.1 ppm	2000 ppm
Co	1 ppm	4000 ppm	Sr	1 ppm	10000 ppm
Cr *	0.1 ppm	10000 ppm	Ta *	0.1 ppm	2000 ppm
Cu	0.1 ppm	10000 ppm	Th	0.1 ppm	4000 ppm
Fe *	0.01%	60 %	Ti	0.001 %	10 %
Hf *	0.1 ppm	1000 ppm	U	0.1 ppm	4000 ppm
K	0.01%	10 %	V	1 ppm	10000 ppm
La	0.1 ppm	10000 ppm	W *	0.1 ppm	200 ppm
Li	0.1 ppm	2000 ppm	Y	0.1 ppm	2000 ppm
Mg *	0.01 %	30 %	Zn	1 ppm	10000 ppm
Mn *	1 ppm	50000 ppm	Zr *	0.1 ppm	2000 ppm
Mo	0.1 ppm	4000 ppm			

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project:
Sample: 21 Soil / 0 Pulp

Report No: S58473
Date: November 4, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
RM601	1	3.15	5	<0.1	1127	2	0.2	3.55	4.2	34	5	59	66.4	1.34	1.9	<0.05	1.38	21.9	39.9	2.16	180	3.3	0.147
RM602	1	3.41	4	<0.1	2760	1	0.1	4.07	4	42	4.8	59	68.8	1.23	2	<0.05	1.61	26.3	37.8	2.46	88	2.8	0.199
RM603	0.8	4.35	8	<0.1	3900	1	0.1	1.79	7.3	46	6.7	87	60.9	1.71	2	<0.05	1.95	29	28.9	1.06	167	8.6	0.142
RM604	1.1	4.9	10	<0.1	7412	3	0.2	0.78	5.5	45	5.2	108	62.2	2.48	1.9	<0.05	1.73	26.1	18.2	0.47	112	7.5	0.508
RM605	0.4	5.5	14	<0.1	1055	1	0.2	0.65	20.6	45	38	84	62.9	2.8	2	<0.05	1.64	24.5	37.4	0.68	376	6.4	0.229
RM606	<0.1	2.76	4	<0.1	712	<1	<0.1	0.19	0.9	41	8.1	59	8.8	1.32	1.3	<0.05	0.81	21.8	30.3	0.23	276	0.9	0.218
RM607	0.2	3.38	7	<0.1	440	<1	0.1	0.11	0.2	52	21.2	55	41.2	1.79	1.4	<0.05	1.06	27	39.2	0.28	552	3.9	0.14
RM607 Re	0.1	3.6	8	<0.1	417	1	<0.1	0.12	0.3	52	21.2	58	40.3	1.84	1.5	<0.05	1.04	27	40	0.27	572	3.3	0.138
RM608	1	2.97	14	<0.1	1264	1	<0.1	2.97	12	34	15.8	49	61.6	3.4	1.4	<0.05	1.28	21.4	33.2	1.88	3918	2.2	0.135
RM609	0.9	4.03	5	<0.1	2609	1	0.1	1.88	7.9	41	6.4	81	70.9	1.8	1.4	<0.05	1.56	24.8	20.5	0.86	171	4	0.344
RM610	0.2	3.32	7	<0.1	1063	1	<0.1	11.33	1.3	65	6.7	29	27.6	1.69	1.6	0.06	1.48	34.7	26.4	1.5	196	3	0.263
RM611	0.3	2.26	3	<0.1	709	<1	<0.1	14.39	0.5	26	3.4	31	26.4	0.98	1.4	<0.05	0.92	15	30.1	2.54	117	1.2	0.237
RM612	1.8	3.23	10	<0.1	433	1	<0.1	9.01	6.1	30	5.6	59	89.8	1.51	1.8	<0.05	1.78	17.3	30.9	2.44	112	9.4	0.301
RM613	0.3	3.4	8	<0.1	1224	<1	<0.1	12.13	1.5	58	7.2	39	29.1	1.71	1.6	<0.05	1.46	30.8	32.7	1.72	231	3.2	0.277
RM614	0.4	3.49	7	<0.1	1210	1	0.1	11.36	1.6	61	6.7	37	33.5	1.73	1.6	<0.05	1.49	31.4	30.4	1.71	204	3.7	0.286
RM615	1.9	3.6	14	<0.1	1224	1	<0.1	2.88	5.9	39	7.8	58	109.5	2.12	2	<0.05	1.7	23.7	34.9	1.83	158	13.3	0.21
RM616	0.5	3.42	9	<0.1	1284	1	<0.1	11.92	2	61	7.2	40	35.5	1.77	1.8	0.05	1.49	34.6	33.2	1.82	217	4.1	0.3
RM617	0.8	3.85	6	<0.1	1575	2	0.1	2.87	3	48	8.2	78	64.2	1.95	1.8	<0.05	1.63	27	23.2	1.2	417	3	0.291
RM618	0.4	3.42	9	<0.1	1294	<1	<0.1	11.6	1.7	56	7.6	40	33.8	1.69	1.9	<0.05	1.37	28.1	30.9	1.79	198	4.3	0.29
RM619	0.4	2.82	6	<0.1	2029	<1	<0.1	14.33	1.1	75	6.1	40	34.8	1.54	1.6	<0.05	1.25	41.1	24.5	1.84	192	3.9	0.25
RM620	0.3	2.57	7	<0.1	1288	<1	<0.1	15.18	1.3	61	4.9	37	33.6	1.37	1.5	<0.05	1.14	36.7	25.6	1.79	186	3.4	0.227
RM621	0.4	2.7	6	<0.1	1686	<1	<0.1	14.41	1.2	49	5.1	40	30	1.44	1.5	<0.05	1.25	27	26.6	1.73	183	3.1	0.24
STD OREAS25A-4A	<0.1	8.31	9	<0.1	146	1	0.3	0.3	<0.1	43	8.2	117	33.1	6.38	3.9	0.09	0.49	18.6	35.2	0.31	486	2.7	0.113
STD OREAS45E	0.3	6.26	17	<0.1	264	<1	0.3	0.06	<0.1	28	60	936	751.9	24.59	3	0.09	0.34	6.6	7.2	0.16	546	2.7	0.054
BLK	<0.1	<0.01	<1	<0.1	<1	<1	<0.1	<0.01	<0.1	<1	<0.2	<1	0.2	<0.01	<0.1	<0.05	<0.01	<0.1	<0.1	<0.01	<1	<0.1	<0.001

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project:
Sample: 21 Soil / 0 Pulp

Report No: S58473
Date: November 4, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Sample	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
RM601	7.3	39.5	0.283	11.5	55.8	0.006	<0.1	2.9	5	2	0.9	120	0.5	0.6	6.7	0.179	0.9	6.7	274	0.5	21.2	324	63.5
RM602	7.5	39.1	0.262	13.8	64.4	0.006	0.1	3.8	6	3	1	140	0.5	0.9	7.5	0.192	0.8	6.4	277	0.6	22	337	71.1
RM603	8.8	57.5	0.31	12	86.2	0.016	<0.1	5.7	7	3	1.2	110	0.6	<0.5	7.9	0.247	2.2	7.6	494	0.8	24.7	425	71.4
RM604	8.2	59.2	0.079	17.4	95.5	0.019	<0.1	5.2	10	5	1.7	131	0.5	<0.5	8.6	0.284	1.4	6.7	433	0.8	22.8	375	71.3
RM605	7	120.2	0.101	14.1	79.2	0.013	0.1	3.8	11	4	1.5	115	0.5	<0.5	7.6	0.327	2.1	4.7	330	0.8	16	608	71.3
RM606	6.2	18.4	0.029	10	40.7	<0.005	<0.1	0.5	5	<1	0.9	75	0.4	<0.5	5.8	0.214	<0.5	1.7	86	0.5	8.8	62	48.1
RM607	9.8	28.8	0.051	11.9	51.3	<0.005	<0.1	1.3	6	3	0.9	58	0.5	<0.5	7	0.235	0.8	2.1	103	0.5	12.6	132	52
RM607 Re	9.6	28.2	0.046	11.7	53.5	<0.005	<0.1	1.2	6	2	0.9	59	0.5	<0.5	7.3	0.237	0.8	2.1	109	0.6	13.1	131	55.3
RM608	6.5	44.5	0.219	10.7	49.9	<0.005	0.2	2.9	6	5	0.6	115	0.4	<0.5	5.5	0.155	0.5	4.2	224	0.6	19.6	500	52.3
RM609	6.8	59.9	0.196	12.1	72.7	0.008	<0.1	3.1	8	7	1.2	124	0.4	<0.5	6.7	0.215	0.8	5.2	297	0.6	20.5	317	57.5
RM610	7.4	20.2	0.107	13.3	65.5	0.005	<0.1	1.9	5	1	1	447	0.5	0.8	6.4	0.187	0.6	3.1	119	0.6	13.3	131	57.1
RM611	6.7	16	0.186	7.6	35.7	<0.005	<0.1	0.8	3	1	0.5	457	0.4	1.3	5	0.145	<0.5	3.1	88	0.3	13	72	50.5
RM612	5.2	41.8	0.222	16.3	61.2	0.011	0.2	8.2	5	7	0.6	253	0.3	2	6.3	0.158	0.8	8.6	413	0.5	15.2	581	63
RM613	8.5	21.2	0.119	14.8	71.7	0.006	<0.1	2.1	5	1	1	534	0.5	1.3	7.7	0.192	0.6	3.6	123	0.6	15.5	144	64.3
RM614	8	21.5	0.115	14.8	69.8	<0.005	<0.1	2.3	6	2	1.1	455	0.5	1.7	7.4	0.188	0.6	3.8	141	0.6	15.2	159	62.8
RM615	7	58.9	0.168	16	74.6	0.013	0.2	10.9	7	5	1	102	0.4	0.5	7.1	0.189	1.1	6.5	363	0.5	23.7	675	74.6
RM616	8.2	24.9	0.123	15.8	73	<0.005	<0.1	2.9	5	1	1	503	0.6	<0.5	7.9	0.194	0.7	4.1	155	0.6	16.1	186	66.1
RM617	13	45.9	0.17	18	62	0.006	0.1	2.3	7	2	1	92	0.7	0.8	6.8	0.278	0.8	3.8	206	0.8	20.7	274	67.7
RM618	7.8	22.1	0.132	14.5	69.3	<0.005	<0.1	2.6	5	<1	1.1	481	0.5	3.5	7.6	0.187	0.6	4.1	158	0.6	15.4	182	66.7
RM619	7.6	25.1	0.13	11.7	56	0.007	0.1	1.8	5	<1	0.9	636	0.5	2	6.9	0.173	0.5	4	140	0.7	16.2	134	55.9
RM620	7.5	21.2	0.132	11.2	51.3	0.011	0.1	1.7	5	2	0.9	681	0.5	1.4	5.9	0.165	<0.5	3.6	119	0.6	14.9	121	52.9
RM621	7.6	21.2	0.138	10.8	54.9	0.008	0.1	1.6	4	1	0.9	640	0.5	<0.5	6.2	0.168	<0.5	3.7	129	0.5	15.1	119	53.4
STD OREAS25A-4A	18.7	45.5	0.046	24.7	51.3	<0.005	<0.1	0.6	12	3	4.1	44	1.3	<0.5	15.1	0.907	<0.5	2.9	159	1.8	9.3	43	142.8
STD OREAS45E	6.3	452.3	0.033	20.6	18.4	<0.005	<0.1	1.1	83	3	1.3	17	0.5	<0.5	12.1	0.502	<0.5	2.7	313	1.1	6.6	48	96.9
BLK	<0.1	0.2	<0.001	<0.1	<0.1	<0.005	<0.1	<0.1	<1	1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____

Mark Acres - Quality Assurance

Appendix 6

Soil and Scree Sample Geochemical Data

TSL LABORATORIES
2 - 302 48th Street • Saskatoon, SK • S7K 6A4
P (306) 931-1033 F (306) 242-4717 E info@tsllabs.com

Company:	Mr. Glen Prior	TSL Report:	S58474
Geologist:	G. Prior	Date Received:	Oct 08, 2020
Project:	RM	Date Reported:	Nov 05, 2020
Purchase Order:		Invoice:	78737

Sample Type:	Number	Size Fraction	Sample Preparation
Soil	160	-80 mesh	Dry and sieve
Pulp	0		None

ICP-MS Multiacid Digestion HNO_3-$HClO_4$-HF-HCl

The Multiacid digestion liberates most metals that are not completely dissolved with Aqua Regia. Dissolution may not be complete for Cr and Ba minerals(*). Some loss of Au, As and Sb may occur.(□)

Element Name	Lower Detection Limit	Upper Detection Limit	Element Name	Lower Detection Limit	Upper Detection Limit
Ag	0.1 ppm	200 ppm	Na	0.001 %	10 %
Al *	0.01%	20 %	Nb	0.1 ppm	2000 ppm
As □	1 ppm	10000 ppm	Ni	0.1 ppm	10000 ppm
Au □	0.1 ppm	200 ppm	P	0.001 %	5 %
Ba *	1 ppm	10000 ppm	Pb	0.1 ppm	10000 ppm
Be *	1 ppm	1000 ppm	Rb	0.1 ppm	2000 ppm
Bi	0.1 ppm	4000 ppm	S	0.1 %	10 %
Ca	0.01%	40 %	Sb □	0.1 ppm	4000 ppm
Ce	1 ppm	2000 ppm	Sc	1 ppm	200 ppm
Cd	0.1 ppm	4000 ppm	Sn *	0.1 ppm	2000 ppm
Co	1 ppm	4000 ppm	Sr	1 ppm	10000 ppm
Cr *	0.1 ppm	10000 ppm	Ta *	0.1 ppm	2000 ppm
Cu	0.1 ppm	10000 ppm	Th	0.1 ppm	4000 ppm
Fe *	0.01%	60 %	Ti	0.001 %	10 %
Hf *	0.1 ppm	1000 ppm	U	0.1 ppm	4000 ppm
K	0.01%	10 %	V	1 ppm	10000 ppm
La	0.1 ppm	10000 ppm	W *	0.1 ppm	200 ppm
Li	0.1 ppm	2000 ppm	Y	0.1 ppm	2000 ppm
Mg *	0.01 %	30 %	Zn	1 ppm	10000 ppm
Mn *	1 ppm	50000 ppm	Zr *	0.1 ppm	2000 ppm
Mo	0.1 ppm	4000 ppm			

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
RM201	0.5	3.11	18	<0.1	649	1	0.2	0.14	0.6	36	2.3	89	38	1.78	1.3	<0.05	0.97	23.3	10.3	0.25	56	59.4	0.113
RM202	0.7	2.83	65	<0.1	110	1	0.2	0.1	0.7	32	2.2	138	89.4	2.59	1.3	0.08	0.94	19.2	12.5	0.25	91	88.9	0.142
RM203	0.5	2.43	34	<0.1	166	1	0.2	0.1	0.7	34	1.8	112	103	2	1.3	0.07	0.84	19.9	18	0.2	82	56.8	0.082
RM204	0.2	2.25	14	<0.1	201	<1	0.1	0.06	1.6	39	2.2	143	44.7	1.31	1.1	<0.05	0.77	22.1	7	0.17	52	37.6	0.064
RM205	0.2	3.49	19	<0.1	432	1	0.1	0.1	5.4	37	10.1	52	31.4	2.37	1.8	<0.05	1.19	22.6	6.8	0.28	192	39.2	0.179
RM206	2.1	3.83	39	<0.1	346	2	0.2	0.63	22.6	34	3.4	88	101.8	1.89	1.5	<0.05	1.14	21.8	11	0.32	75	40.4	0.183
RM207	3.5	3.38	73	<0.1	850	2	0.2	0.53	37.8	37	11.2	120	126.9	2.03	1.6	<0.05	1.1	24	12.3	0.33	172	93.8	0.305
RM208	1.3	3.09	89	<0.1	785	2	0.2	0.2	52.4	26	8.7	134	100.4	1.73	1.3	<0.05	0.99	18.3	10.7	0.24	103	77.6	0.138
RM208 Re	1.3	3.08	88	<0.1	1578	2	0.2	0.2	52.3	27	8.7	125	103.6	1.71	1.4	<0.05	0.97	19.4	11	0.24	108	77.7	0.137
RM209	5.6	3.28	107	<0.1	925	2	0.2	0.63	73.2	30	10.1	139	146.8	1.86	1.5	<0.05	1.23	18.8	11.3	0.23	143	67.9	0.139
RM210	8.2	4.72	130	<0.1	298	2	0.3	0.2	36.6	43	8.3	207	164.1	3.51	2.3	0.06	1.59	25.7	23	0.35	91	99.1	0.193
RM211	1.2	5.02	31	<0.1	7557	3	0.2	0.57	17.2	58	6.4	111	104.5	2.37	2.5	<0.05	1.81	33.7	24.1	0.39	118	50.7	0.456
RM212	1.1	6.14	10	<0.1	>10000	3	0.2	0.31	2	50	10.1	125	64.1	3.37	2.3	0.06	2.5	26.8	19.7	0.41	185	5.9	0.469
RM213	2.8	5.83	10	<0.1	>10000	2	0.2	0.21	0.2	45	13	115	73.2	3.97	2	0.06	2.27	26	18.9	0.39	323	5.1	0.606
RM214	1.8	5.38	8	<0.1	>10000	2	0.2	0.22	0.5	45	11.4	104	55	3.64	1.9	0.05	1.84	25	22.3	0.35	281	3.2	0.549
RM215	1.7	6.04	8	<0.1	>10000	2	0.3	0.38	0.5	51	15.6	125	70.4	4.19	2.1	0.06	2.22	27.7	22.7	0.39	391	3	0.659
RM216	0.7	5.43	11	<0.1	5376	2	0.2	0.16	0.5	50	11.5	120	64.7	3.54	2	0.06	2.29	26.8	24.7	0.5	243	5	0.518
RM217	0.6	4.23	3	<0.1	3799	2	0.2	0.27	0.2	39	6.4	88	33.7	2.5	1.5	<0.05	1.8	21	15.9	0.47	116	1.9	0.351
RM218	2.3	5.43	13	<0.1	596	2	0.3	0.09	1.2	56	23.6	148	145.7	5.25	2.4	0.08	1.98	33.3	25.8	0.49	588	7.1	0.41
RM219	0.5	5.83	5	<0.1	3232	2	0.2	0.44	0.2	62	15.7	106	60.4	4.15	2.2	0.06	2.53	33.6	25.9	0.7	387	2.2	0.644
RM220	0.2	5.86	10	<0.1	2946	2	0.3	0.41	0.2	67	14.3	82	25.7	4.44	2	0.06	1.67	27.6	39.6	0.84	501	2.2	0.751
RM221	0.2	5.92	9	<0.1	2785	2	0.3	0.32	0.2	58	12.8	81	27.7	4.11	2.2	0.06	1.89	28.7	37.7	0.78	570	2.2	0.661
RM222	0.6	5.64	6	<0.1	4094	2	0.2	0.71	0.1	71	20.5	66	38.6	4.22	1.9	0.05	1.94	40.8	27	0.85	864	1.2	0.662
RM223	1.4	2.57	9	<0.1	144	<1	<0.1	0.04	0.5	14	0.4	58	30.1	1.24	0.7	<0.05	0.63	9.9	6.4	0.14	13	19.4	0.036
RM224	1	2.24	17	<0.1	211	1	0.1	0.03	0.5	24	0.7	92	41	1.38	1.1	<0.05	0.87	15.7	9.7	0.18	18	46.9	0.049
RM225	0.3	4.33	28	<0.1	1328	1	0.2	0.16	0.3	43	4.2	70	31.4	2.85	2	0.05	1.38	24.4	22.3	0.39	175	61.8	0.356
RM226	0.2	1.92	5	<0.1	1139	1	<0.1	0.02	0.3	17	0.5	50	11.4	0.42	0.6	<0.05	0.69	10.8	5.2	0.14	18	19	0.038
RM227	0.4	2.19	6	<0.1	1384	1	<0.1	0.05	0.3	21	1.9	95	11.8	0.79	0.8	<0.05	0.7	12.8	8.5	0.19	98	18.4	0.1
RM228	0.1	2.82	4	<0.1	788	<1	<0.1	0.11	0.2	18	2.8	63	11.7	1.43	0.7	<0.05	0.55	10.1	9	0.2	143	7	0.121
RM229	0.1	2.64	35	<0.1	268	2	0.1	0.08	3.6	28	6.9	55	54.9	4.04	1.1	<0.05	0.9	16.9	11.3	0.24	145	71	0.138
RM230	0.1	3.48	11	<0.1	2241	1	0.1	0.16	1.2	35	8.5	121	27.7	2.06	1.3	<0.05	1.1	19.2	31.8	0.41	247	12.4	0.323
RM231	4.2	4.63	40	<0.1	1640	2	0.2	0.41	23.2	44	7.3	136	102.3	2.72	2	0.05	1.84	25.7	33.2	0.49	140	50.3	0.186
RM232	1.6	4.42	35	<0.1	6353	3	0.2	0.57	10	50	5.1	94	90.3	2.2	1.9	<0.05	2.17	29.7	45.6	0.41	153	77.6	0.047
RM233	1	6.02	9	<0.1	8557	2	0.3	0.2	0.3	55	16	103	52.8	4.85	2.3	0.07	2.44	26.7	32.6	0.7	422	4.4	0.496
RM234	2.3	5.69	9	<0.1	6508	2	0.3	0.25	0.3	60	15.6	101	50.3	4.16	2.1	0.06	2.25	24.6	33.2	0.67	321	4.1	0.444

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____

Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
RM235	0.7	4.22	3	<0.1	318	1	0.1	0.25	0.6	24	6.8	96	48.5	2.72	1.1	<0.05	1.31	12.7	20.4	0.32	162	2.1	0.12
RM236	1.9	5.09	8	<0.1	873	2	0.2	0.21	0.3	41	11	112	62.8	3.59	2.1	0.05	2.07	21.7	26.5	0.61	279	3.5	0.641
RM237	0.5	6.36	11	<0.1	2368	2	0.3	0.43	0.2	57	14.5	85	24	4.93	2.1	0.06	1.82	28.1	45	0.81	413	2.4	0.74
RM238	0.1	5.78	4	<0.1	5998	2	0.2	0.11	<0.1	46	12	77	31.4	3.62	2.4	0.06	2.61	22.1	28.8	0.84	345	1.1	0.484
RM239	<0.1	5.34	3	<0.1	5335	2	0.2	0.08	<0.1	39	9.7	72	28.2	3.29	2.2	0.05	2.39	19.3	26.8	0.81	236	1	0.426
RM240	0.3	5.96	7	<0.1	4074	2	0.3	0.48	0.1	74	22.5	78	28.9	4	2	0.06	1.9	28.3	35.8	0.86	899	2.4	0.52
RM241	0.3	6.64	2	<0.1	7512	3	0.3	0.6	<0.1	42	14.6	72	33.3	3.47	2.5	0.07	3.55	19	32.5	1.24	288	0.3	0.359
RM242	0.1	5.93	5	<0.1	5952	2	0.3	0.12	<0.1	56	20.4	77	25.7	4.04	2.3	0.07	2.62	20.3	34.5	0.95	781	2.7	0.446
RM243	1.2	2.22	12	<0.1	717	1	0.1	0.04	1.4	21	0.9	66	72	0.92	1.1	<0.05	0.91	14.3	5.6	0.18	17	23.4	0.058
RM244	1.4	2.29	9	<0.1	507	1	<0.1	0.02	1.1	19	0.5	59	86.8	0.85	1	<0.05	0.82	12.9	5	0.16	11	24.2	0.041
RM244 Re	1.3	2.26	9	<0.1	425	1	<0.1	0.02	1.1	19	0.4	59	84.8	0.84	0.9	<0.05	0.81	12.5	4.9	0.16	10	23.4	0.041
RM245	1.5	2.21	26	<0.1	149	1	0.2	0.04	1.1	33	0.5	86	119.2	1.69	1.2	0.06	0.89	21.9	7	0.16	13	51.2	0.039
RM246	0.5	2.44	20	<0.1	1115	1	0.1	0.06	0.8	24	2.4	87	53.7	1.41	0.9	<0.05	0.8	14.9	12	0.23	68	24.2	0.12
RM247	0.4	4.55	28	<0.1	908	3	0.1	3.09	91	29	32.1	49	550.2	4.71	1.1	<0.05	0.65	14.8	18.5	1.92	1751	58.4	0.209
RM248	0.5	3.6	71	<0.1	63	2	0.2	1.08	18.2	18	11	82	460.4	5.69	1.2	0.06	1.22	7.2	10.8	0.39	348	197.1	0.066
RM249	0.3	1.82	14	<0.1	174	1	0.1	0.04	0.7	23	2.1	123	62.5	1.45	0.9	<0.05	0.67	13.3	9.5	0.16	77	45.7	0.06
RM250	0.2	2.45	17	<0.1	464	1	0.1	0.03	0.9	24	2.4	92	41.4	1.58	1	<0.05	0.87	14.1	15.1	0.19	50	39.7	0.057
RM251	0.3	4.06	22	<0.1	2179	2	0.1	0.07	3.9	39	3.5	59	43.6	1.61	1.6	<0.05	1.42	22.8	8.6	0.32	31	37.9	0.072
RM252	0.9	3.38	31	<0.1	1986	2	0.1	0.59	8.5	32	8	72	55.1	1.73	1.3	<0.05	0.96	21	9.7	0.27	161	39.1	0.119
RM253	3.4	3.56	82	<0.1	1313	2	0.2	0.92	34	38	7.1	136	138.3	2.1	1.5	<0.05	0.94	27.4	15.2	0.34	189	75.4	0.247
RM254	1.2	2.3	44	<0.1	2040	1	0.1	1.06	18.7	29	5.5	89	64.6	1.28	1	<0.05	0.7	21.7	8.3	0.18	155	59.3	0.114
RM255	5.5	3.25	106	<0.1	738	2	0.2	4.55	78.9	34	12.1	166	191.3	1.73	1.6	<0.05	1.07	27.4	12.3	0.47	98	94.3	0.041
RM256	6.8	2.48	78	<0.1	151	2	0.2	0.12	34.6	35	17.9	296	134.8	2.01	1.3	<0.05	0.85	24.2	16	0.19	142	41.2	0.046
RM257	9.6	2.74	111	<0.1	352	2	0.2	0.41	93.7	30	7.9	115	178.2	1.52	1.3	<0.05	0.91	23.6	15.9	0.21	80	97.9	0.051
RM258	1.3	3.45	49	<0.1	1673	2	0.2	0.17	24.5	40	9.5	93	99.5	1.92	1.6	<0.05	1.27	24.3	13.6	0.23	114	67.1	0.153
RM259	1.2	2.58	18	<0.1	>10000	<1	0.1	4.42	3.9	27	4.1	121	82.7	1.26	1	<0.05	0.79	17	8.6	2.08	253	9.3	0.233
RM260	0.6	3.79	30	<0.1	8074	2	0.1	5.17	3.7	44	8.6	67	47.9	1.92	1.8	<0.05	1.45	26.4	15.3	2.35	197	62.8	0.347
RM261	0.9	4.85	17	<0.1	>10000	2	0.2	0.44	3.9	40	7.1	113	54.3	2.46	1.9	<0.05	1.8	23.8	20.8	0.31	137	26	0.484
RM262	0.9	4.92	6	<0.1	>10000	2	0.2	0.41	1	44	5.1	103	33.3	2.44	2	<0.05	1.78	24.1	17.4	0.31	215	5.2	0.533
RM263	1.5	5.29	7	<0.1	>10000	2	0.2	0.84	2.5	49	8.7	126	66.3	2.88	2.3	<0.05	2.04	26.2	15.6	0.37	72	5.5	0.512
RM264	0.5	5.67	6	<0.1	>10000	2	0.2	5.74	0.5	46	12.7	86	50.8	3.1	2.2	<0.05	2.29	25	12.4	2.14	237	2.3	0.356
RM265	0.8	6.06	6	<0.1	>10000	2	0.2	0.34	1.3	47	14.6	105	59.9	3.15	2.4	0.06	2.53	23	17.4	0.37	203	3.6	0.623
RM266	0.7	5.17	8	<0.1	>10000	2	0.2	0.27	0.3	40	4	100	29.8	2.63	1.9	<0.05	1.99	22.1	22.9	0.53	113	3.9	0.582
RM267	1.2	5.95	8	<0.1	>10000	3	0.2	0.32	0.3	45	8.2	119	53.8	3.38	2.2	0.06	2.28	24.4	25.5	0.57	141	4.6	0.604
RM268	1	5.59	6	<0.1	>10000	2	0.2	0.41	0.5	44	4.6	108	53.6	2.58	2.1	0.05	2.19	24.5	22.6	0.55	140	2.9	0.566

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____

Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
RM269	2.1	5.71	8	<0.1	>10000	2	0.2	0.5	0.4	48	9.4	108	68.1	3.39	2.1	0.05	2.13	25.6	23.2	0.45	155	3.4	0.567
RM270	2.4	5.69	10	<0.1	>10000	2	0.2	0.34	1	43	10.5	114	68.1	3.24	2.1	0.05	2.32	24.6	16.4	0.33	160	5.1	0.559
RM271	0.4	5.74	6	<0.1	>10000	2	0.2	0.13	0.3	46	12.6	102	49.3	3.43	2.2	0.06	2.64	22	27.2	0.62	232	2.2	0.489
RM272	0.9	5.86	9	<0.1	>10000	2	0.3	0.36	0.3	57	14.1	83	45.4	4.12	2.2	0.05	2.26	28.8	23.8	0.58	347	5	0.579
RM273	1.3	6.41	15	<0.1	>10000	2	0.3	0.53	0.4	65	14.2	83	57.1	4.15	2.5	0.07	2.62	35.3	18.9	0.47	397	12	0.779
RM274	0.3	4.53	5	<0.1	5051	2	0.2	0.16	0.1	37	6.5	110	44.8	2.6	2.1	<0.05	1.99	20.4	21.5	0.46	117	2.3	0.314
RM275	1.1	5.63	10	<0.1	705	3	0.3	0.91	0.7	60	7.6	153	65	3.61	2.2	0.06	2.35	32.2	31.9	0.7	202	3.7	0.206
RM276	0.4	5.7	5	<0.1	4830	3	0.2	0.11	0.1	38	10.1	104	53.7	3.71	2.5	0.07	2.52	18.7	28.2	0.74	173	1.6	0.499
RM277	0.3	5.11	3	<0.1	3150	2	0.2	0.23	<0.1	42	11.1	97	43	3.5	2	0.05	2.26	19	44	1.05	201	0.6	0.159
RM278	0.8	4.07	5	<0.1	8815	2	0.2	1.01	0.8	35	17	76	46	2.62	1.6	<0.05	1.49	19.3	12.2	0.41	680	5.3	0.31
RM279	1	4.59	5	<0.1	>10000	2	0.2	0.8	0.9	37	16.8	88	37.3	2.72	1.8	<0.05	1.73	21.2	15.8	0.51	713	4.2	0.435
RM280	0.8	5.43	5	<0.1	>10000	3	0.2	0.23	0.4	43	5.2	120	42	2.23	2.3	0.05	2.31	24.9	20.8	0.54	88	3.3	0.628
RM280 Re	0.9	5.46	5	<0.1	>10000	3	0.2	0.23	0.4	42	5.3	120	41.8	2.24	2.3	0.05	2.34	24.6	20	0.54	88	3.4	0.643
RM281	0.9	5.24	5	<0.1	>10000	2	0.2	0.55	0.3	39	7.9	100	41.6	3.14	1.9	<0.05	1.97	22.9	17.6	0.49	190	2.6	0.563
RM282	1.6	5.89	7	<0.1	>10000	3	0.2	0.43	0.9	42	8.7	122	64.2	3.14	2.4	0.06	2.45	24	19	0.61	101	5.3	0.635
RM283	0.8	5.6	25	<0.1	206	3	0.4	0.41	1.1	57	16.5	90	70.7	4.26	3	0.08	2.8	28.3	18.5	0.61	649	13.6	0.239
RM284	0.2	4.35	7	<0.1	1549	2	0.2	0.7	0.4	41	7.4	120	71.2	1.72	1.7	<0.05	2.02	28.1	12.4	0.45	59	3.7	0.101
RM285	0.3	7.5	54	<0.1	311	2	0.3	0.01	0.3	31	2.6	122	66.9	3.78	3.3	0.09	2.43	13.1	26.1	0.57	51	12.6	0.193
RM286	0.2	7.18	97	<0.1	92	2	0.3	0.01	0.3	44	1	122	39.2	3.67	3.1	0.09	2.49	18.6	13.6	0.4	19	10.4	0.098
RM287	0.8	3.15	39	<0.1	342	1	0.3	0.04	<0.1	42	1.3	61	16.3	1.9	2.1	<0.05	1.13	23.1	25.1	0.22	40	27.4	0.1
RM288	0.9	3.43	70	<0.1	56	2	0.3	0.02	0.9	40	0.7	70	59	4.19	1.9	0.09	1.46	19.8	17.4	0.2	21	58.3	0.062
RM289	0.8	2.34	49	<0.1	100	1	0.2	0.02	0.4	30	0.6	51	28.8	2.32	1.1	<0.05	0.92	15.7	9	0.15	13	36	0.055
RM290	0.8	2.63	42	<0.1	120	1	0.2	0.06	0.7	29	2.2	59	26.4	2.15	1.3	<0.05	0.92	15.6	11.6	0.2	49	35.4	0.131
RM291	0.3	2.8	41	<0.1	482	2	0.2	0.03	0.2	41	0.4	28	44.7	1.13	1.7	<0.05	1.06	21	8.4	0.18	14	24.5	0.051
RM292	0.3	2.58	25	<0.1	95	2	0.3	0.03	0.9	45	3	38	48	2.22	1.7	<0.05	1.04	20.2	9.4	0.19	108	35.3	0.077
RM293	1.1	2.51	37	<0.1	184	1	0.2	0.02	0.3	30	0.8	72	49.3	1.77	1.1	<0.05	1.01	17.5	8.9	0.19	17	81	0.052
RM294	0.2	2.73	9	<0.1	2032	1	0.1	0.04	0.5	30	2.1	81	28.2	0.95	1.4	<0.05	0.98	17.9	10.9	0.23	34	19	0.12
RM295	2	4.17	17	<0.1	1902	2	0.1	2.81	5.2	55	8.3	102	73.1	2.53	1.7	<0.05	1.44	31.2	26.5	1.08	264	17.3	0.169
RM296	<0.1	1.92	10	<0.1	375	1	0.1	0.04	1	25	2.2	83	19.1	1.01	0.8	<0.05	0.68	15.8	11.5	0.16	93	34.6	0.065
RM297	0.2	4.8	19	<0.1	1185	2	0.2	0.18	1.7	43	9.9	68	33.1	2.87	1.8	<0.05	1.45	23.8	24.4	0.52	236	33.6	0.439
RM298	0.2	4.67	13	<0.1	2152	2	0.1	0.08	4.6	37	6.1	62	39.4	1.72	1.6	<0.05	1.61	22.6	9.4	0.39	64	25	0.1
RM299	4.3	5.41	110	<0.1	896	2	0.2	0.56	64.5	33	33.1	129	132.7	2.96	1.4	<0.05	1.09	24.3	11.5	0.29	403	82.8	0.035
RM300	3.3	3.43	133	<0.1	2102	2	0.3	0.8	51.2	71	13.4	134	137.6	2.42	2.6	<0.05	1.3	56.3	50.4	0.3	155	108.5	0.105
RM501	0.7	4.71	21	<0.1	>10000	2	0.2	0.31	2	41	3.2	122	46.2	2.48	2.1	<0.05	1.88	23.5	21.3	0.39	58	20.8	0.485
RM502	1.4	9.84	20	<0.1	>10000	4	0.3	0.65	4.7	67	18.2	211	95.3	5.29	3.7	0.1	3.87	34.5	33.2	0.74	297	22.7	0.986

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____

Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
RM503	1.9	10.16	14	<0.1	>10000	4	0.4	0.74	2.6	75	12.8	214	122.3	5.55	3.9	0.11	3.91	36.7	33.5	0.83	261	5.5	1.058
RM504	1.3	9.1	10	<0.1	>10000	4	0.3	0.49	1.1	59	7.8	171	74.7	5.42	3.4	0.09	3.59	29.7	34.4	0.92	126	6.2	0.945
RM505	1.9	10.02	10	<0.1	>10000	4	0.4	0.47	1	57	12	189	72.6	4.94	3.9	0.09	3.9	28.1	39.6	1.07	254	5.4	1.014
RM506	3.3	8.63	7	<0.1	>10000	3	0.4	0.64	2.2	64	9.5	172	129.8	4.01	3.2	0.09	3.16	32.4	31.8	0.89	155	5.1	0.816
RM507	3.8	10.86	10	<0.1	>10000	4	0.4	0.81	1.5	68	15.4	216	119.9	5.64	4.1	0.11	4.13	33.6	38.6	1.13	342	8.2	1.029
RM508	4.8	8.58	7	<0.1	>10000	3	0.4	1.7	1.4	87	11	159	151.1	3.98	3.3	0.09	2.94	45.8	30.2	0.98	529	4	0.754
RM509	2.5	4.24	4	<0.1	2699	1	0.2	1.1	0.9	52	7	71	80	2.57	1.5	<0.05	1.13	27.4	16.1	0.51	182	2.4	0.248
RM510	0.7	5.41	8	<0.1	3657	2	0.2	0.29	0.7	49	11.1	111	53	3.4	2.1	0.06	2.3	26.7	20.7	0.52	248	4.8	0.41
RM511	0.6	4.61	5	<0.1	2673	2	0.2	0.2	0.3	38	7	95	40	2.84	1.7	<0.05	1.69	21	20.4	0.48	147	3.1	0.345
RM512	0.6	6.05	9	<0.1	4123	2	0.3	0.32	0.3	51	14.3	92	50.4	4.08	2.3	0.06	2.24	25.8	31.2	0.77	344	2.5	0.563
RM513	0.6	5.74	7	<0.1	1456	2	0.3	0.34	0.1	49	12.8	117	52.3	3.97	2.3	0.06	2.29	25.5	23.6	0.63	413	3.3	0.538
RM514	0.5	6.5	5	<0.1	7983	3	0.2	0.23	0.6	62	21.4	84	38.8	5.42	2.1	0.07	2.54	24.5	35.6	0.87	1326	1.4	0.514
RM515	0.2	6.25	6	<0.1	3468	2	0.3	0.15	<0.1	59	7.9	77	27.3	3.75	2.6	0.06	2.13	29.7	27.3	0.65	219	2.6	0.468
RM516	<0.1	6.12	4	<0.1	5250	2	0.2	0.22	<0.1	53	13	80	30.7	3.98	2.4	0.06	2.55	23.5	32.5	0.94	358	1.1	0.453
RM516 Re	<0.1	6.1	4	<0.1	5345	2	0.2	0.23	<0.1	55	12.7	87	29.8	3.98	2.4	0.06	2.56	24.5	33.5	0.94	363	1.3	0.448
RM517	0.3	5.66	6	<0.1	4557	2	0.3	0.25	0.2	69	15.5	78	31.1	3.92	2.2	0.07	1.98	26.9	32.5	0.78	504	1.9	0.519
RM518	0.2	5.8	9	<0.1	2751	2	0.3	0.23	0.3	49	19.8	109	33.1	5.37	2.3	0.06	2.08	24.3	35.8	0.73	518	5.8	0.566
RM519	0.3	5.56	3	<0.1	4874	2	0.3	9.2	0.1	55	12.8	58	26.1	3.09	2.1	0.07	2.47	32.5	20.1	0.99	933	0.9	0.342
RM519 Re	0.3	5.54	3	<0.1	5012	2	0.3	9.05	0.2	57	11.7	59	26.5	3.06	2.3	0.07	2.43	33.8	20.1	0.97	917	1.1	0.355
RM520	0.1	7.2	14	<0.1	5940	3	0.4	0.13	0.2	37	20.6	91	42.6	5.16	3.3	0.07	3.56	15.7	28.9	1.08	424	4.2	0.269
RM521	0.2	5.65	5	<0.1	3833	3	0.3	0.2	0.2	48	15	73	28.3	4.04	2.5	0.07	2.4	22.9	31.3	0.94	938	1	0.423
RM522	0.3	6.07	3	<0.1	5911	3	0.3	2.02	<0.1	61	17.3	70	34.2	3.88	2.6	0.07	2.62	31	27.9	1.15	1070	0.5	0.312
RM523	0.9	5.51	7	<0.1	4154	2	0.3	0.24	0.1	63	25.3	78	51.7	4.99	2.5	0.06	2.32	30.7	28.7	0.82	1110	1.8	0.424
RM524	1.3	5.43	5	<0.1	2421	2	0.2	0.65	0.1	64	19.3	72	32.2	3.56	2.2	0.05	1.88	30.8	21.9	0.73	2315	1.3	0.739
RM525	0.5	5.29	22	<0.1	1983	2	0.3	0.39	1.1	44	16	85	51	3.52	2.7	0.07	2.69	24.6	16.9	0.6	238	23	0.047
RM526	1.4	3.73	10	<0.1	1248	2	0.2	10.61	1.2	25	8.7	81	57.7	2.22	1.8	<0.05	1.62	17	10.2	0.49	123	9.1	0.038
RM527	1.1	4.41	15	<0.1	1440	3	0.2	2.91	1.2	43	10.1	95	70.6	3.16	2	0.06	2.11	30.3	11.2	0.52	132	8.4	0.035
RM528	0.7	4.05	14	<0.1	2300	3	0.3	1.55	0.8	37	14.5	153	108.1	2.66	1.2	0.06	1.81	25.6	25.5	0.5	93	11.4	0.046
RM529	2	3.34	34	<0.1	87	2	0.2	0.32	1.9	47	6.9	101	64.6	3.94	1.4	0.06	1.51	32.3	21.6	0.39	123	17	0.201
RM530	0.6	1.29	7	<0.1	387	<1	<0.1	6.15	2.5	18	3.1	102	33.3	0.8	<0.1	<0.05	0.65	13	11.5	0.54	96	8.8	0.031
RM531	2.8	3.22	35	<0.1	192	2	0.1	0.19	1.7	43	0.5	101	31.3	1.34	1.1	0.05	0.98	27.7	11.2	0.23	12	49.4	0.041
RM532	3.9	4.2	38	<0.1	209	2	0.2	0.11	0.7	39	1.5	196	132.2	2.51	1.6	0.07	1.32	27	12.9	0.3	34	63	0.05
RM533	1.3	4.09	103	<0.1	98	2	0.2	0.14	1.3	33	0.9	117	117.9	3.26	1.4	0.11	1.07	16.6	24.1	0.26	31	259.3	0.087
RM534	1.2	3.3	64	<0.1	292	1	0.2	0.03	0.5	26	0.6	104	107.5	2.31	1.3	0.06	1.08	16.4	21.4	0.26	20	105.1	0.044
RM535	0.3	2.44	30	<0.1	1329	1	0.1	0.07	0.4	26	1.4	99	34	1.43	1.1	<0.05	0.7	16.2	16.8	0.18	41	57.5	0.082

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
RM536	0.3	3.52	60	<0.1	257	2	0.2	0.1	1.6	36	2	125	64.2	2.55	1.5	0.06	0.95	20.6	19.7	0.26	71	130.4	0.126
RM537	0.2	7.3	71	<0.1	1731	3	0.3	0.36	0.4	61	3.1	83	170.4	6.21	2.2	0.11	1.31	29.9	23.9	0.41	115	299	0.248
RM538	0.5	6.09	68	<0.1	1488	2	0.3	0.26	0.4	54	8	84	74.5	4.49	2.3	0.09	1.34	28.8	39	0.58	240	112.1	0.501
RM539	0.2	2.64	27	<0.1	1017	1	0.1	0.06	0.5	28	2.6	100	51.3	2.15	1.1	<0.05	0.81	16	26.3	0.24	83	69.9	0.105
RM540	0.3	5.66	12	<0.1	175	2	0.2	0.01	1.8	45	2.1	73	110.3	2.15	2.4	0.05	2.12	23.1	10.4	0.44	47	34.5	0.06
RM541	2.2	2.61	46	<0.1	1729	2	0.1	4.7	71.6	24	19.6	129	144.6	1.63	1.2	<0.05	0.79	20.9	8.7	0.28	379	86.1	0.031
RM542	3.2	2.59	101	<0.1	1592	1	0.2	0.17	29.4	35	4.6	128	102.3	1.93	1	<0.05	0.84	27.7	9	0.2	98	66	0.047
RM543	1.2	5.37	51	<0.1	744	1	0.3	0.22	0.9	50	5.8	103	65.5	4.45	2.2	0.07	1.6	27.1	27	0.53	184	76.4	0.455
RM544	4.1	4	29	<0.1	190	2	0.3	0.71	1.4	54	1.3	174	119.5	2.49	1.8	0.1	1.42	36.6	13.2	0.3	47	76.8	0.118
RM545	2.6	3.84	124	<0.1	64	1	0.2	0.14	6.6	34	1.2	98	207.8	3.49	1.7	0.18	1.36	19	24.3	0.3	51	142.7	0.107
RM546	0.3	2.4	50	<0.1	197	1	0.1	0.05	1.5	26	1.4	104	100.5	1.62	1	<0.05	0.89	14.4	15.4	0.18	60	85.1	0.065
RM547	0.3	4.56	27	<0.1	389	2	0.2	0.29	7.2	43	12.2	81	48.8	2.84	1.5	<0.05	1.57	25.1	8.1	0.42	240	43.3	0.099
RM548	0.2	4.11	18	<0.1	1038	1	0.1	0.06	0.7	33	4.4	86	23.8	1.64	1.5	<0.05	1.47	19.2	10.3	0.35	54	40.3	0.117
RM548 Re	0.2	4.11	18	<0.1	1590	1	0.1	0.06	0.7	33	4.5	83	24.5	1.63	1.5	<0.05	1.45	19.5	10.3	0.35	56	40.2	0.113
RM549	0.3	4.99	22	<0.1	1506	2	0.2	0.05	0.5	42	5.1	68	30.9	2.68	1.7	<0.05	1.63	25.6	12.1	0.4	98	44.1	0.146
RM550	1.4	3.17	10	<0.1	1613	1	0.2	0.08	1	33	1.2	72	85.1	0.85	1.5	<0.05	1.11	18.9	11.7	0.25	30	15.4	0.118
RM551	0.7	3.54	16	<0.1	1632	1	0.2	0.14	0.3	36	2.2	72	36.1	1.35	1.4	<0.05	1.05	20.9	9.9	0.29	63	28	0.211
RM552	0.7	3.43	25	<0.1	1370	1	0.2	0.13	0.3	33	2.8	117	21.6	1.84	1.3	<0.05	0.98	18.9	13.5	0.29	110	41.3	0.223
RM553	0.4	2.52	12	<0.1	1573	1	0.1	0.04	0.3	25	2.2	108	24	1.37	1	<0.05	0.72	15.5	11.2	0.21	57	30.3	0.089
RM554	0.2	2.61	7	<0.1	1304	1	0.1	0.07	0.1	32	1.9	149	15.7	0.94	1.2	<0.05	0.88	18.8	11.3	0.21	73	27	0.119
RM555	0.1	1.28	2	<0.1	918	<1	<0.1	0.01	0.1	11	0.6	133	11.7	0.37	0.6	<0.05	0.44	6.6	6	0.09	26	12.2	0.034
RM556	0.2	2.15	9	<0.1	1386	1	0.1	0.03	0.2	25	2	88	17.2	0.91	0.9	<0.05	0.79	15.4	9.9	0.19	62	24.5	0.061
RM557	0.2	4.27	10	<0.1	2426	2	0.1	0.05	2.5	32	3	48	63.9	1.06	1.5	<0.05	1.47	19.1	6.5	0.33	27	25	0.152
RM558	1.3	3.33	62	<0.1	3029	2	0.2	0.36	45.7	43	10.4	112	113.4	1.79	1.5	<0.05	1.24	31.7	11.7	0.27	259	83.4	0.136
RM559	1.2	5.57	11	<0.1	>10000	2	0.2	0.3	2.4	49	6.2	108	46.7	2.77	2.1	0.05	1.94	27.4	20.8	0.43	200	8.8	0.533
RM560	0.9	5.65	6	<0.1	>10000	2	0.2	0.25	0.6	47	5.3	102	36.7	2.94	2.2	<0.05	1.97	25.6	18.8	0.45	91	3.6	0.544
STD OREAS25A-4A	<0.1	8.32	8	<0.1	138	<1	0.3	0.26	<0.1	43	7.3	115	29.4	6.25	3.8	0.08	0.45	19.9	36.4	0.32	460	2.3	0.124
STD OREAS45E	0.3	6.79	15	<0.1	253	<1	0.3	0.07	<0.1	23	58.4	998	787.2	24.66	2.8	0.1	0.34	11.2	6.6	0.16	569	2.3	0.058
STD OREAS25A-4A	<0.1	8.71	9	<0.1	142	<1	0.3	0.26	<0.1	45	7.5	111	30.2	6.3	3.9	0.08	0.46	19.6	37.3	0.31	459	2.3	0.128
STD OREAS45H	0.1	8.15	15	<0.1	335	1	0.2	0.13	<0.1	23	90.9	680	753.5	20.48	3.3	0.1	0.2	12	14.5	0.26	391	1.5	0.09
STD OREAS25A-4A	<0.1	9.16	9	<0.1	145	<1	0.3	0.29	<0.1	48	7.9	111	31.1	6.61	4.2	0.09	0.47	21.9	39.7	0.33	498	2.4	0.131
STD OREAS25A-4A	<0.1	8.53	9	<0.1	140	<1	0.3	0.26	<0.1	41	7.7	119	31.7	6.39	4.2	0.09	0.47	18.1	36.5	0.32	485	2.4	0.132
STD OREAS45E	0.3	6.92	15	<0.1	249	<1	0.3	0.06	<0.1	23	59	1015	762.9	23.84	2.9	0.09	0.33	10.7	6.2	0.16	585	2.3	0.057
STD OREAS25A-4A	<0.1	9.17	9	<0.1	141	<1	0.3	0.28	<0.1	44	7.9	117	31.2	6.44	3.9	0.09	0.47	20.6	35.9	0.33	488	2.4	0.128
STD OREAS45E	0.3	7.05	16	<0.1	256	<1	0.3	0.06	<0.1	24	60.7	1061	795.7	24.8	2.9	0.1	0.34	11	6.1	0.16	601	2.4	0.057

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Ag	Al	As	Au	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	Hf	In	K	La	Li	Mg	Mn	Mo	Na
Sample	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
STD OREAS25A-4A	<0.1	8.56	9	<0.1	140	<1	0.4	0.25	<0.1	42	7.7	119	33.7	6.45	4.1	0.09	0.45	18.9	39.1	0.36	471	2.4	0.133
STD OREAS45E	0.3	6.78	16	<0.1	242	<1	0.3	0.06	<0.1	23	59.6	1016	753.5	23.75	2.9	0.12	0.34	10.9	6.7	0.17	571	2.4	0.055
BLK	<0.1	<0.01	<1	<0.1	2	<1	<0.1	<0.01	<0.1	<1	<0.2	<1	<0.1	<0.01	<0.1	<0.05	<0.01	<0.1	<0.1	<0.01	<1	<0.1	<0.001
BLK	<0.1	<0.01	<1	<0.1	2	<1	<0.1	<0.01	<0.1	<1	<0.2	<1	<0.1	<0.01	<0.1	<0.05	<0.01	<0.1	<0.1	<0.01	<1	<0.1	<0.001
BLK	<0.1	<0.01	<1	<0.1	<1	<1	<0.1	<0.01	<0.1	<1	<0.2	<1	<0.1	<0.01	<0.1	<0.05	<0.01	<0.1	<0.1	<0.01	<1	<0.1	<0.001
BLK	<0.1	<0.01	<1	<0.1	4	<1	<0.1	<0.01	<0.1	<1	<0.2	1	<0.1	<0.01	<0.1	<0.05	<0.01	<0.1	<0.1	<0.01	<1	<0.1	<0.001
BLK	<0.1	<0.01	<1	<0.1	<1	<1	<0.1	<0.01	<0.1	<1	<0.2	<1	<0.1	<0.01	<0.1	<0.05	<0.01	<0.1	<0.1	<0.01	<1	<0.1	<0.001
BLK	<0.1	<0.01	<1	<0.1	<1	<1	<0.1	<0.01	<0.1	<1	<0.2	<1	<0.1	<0.01	<0.1	<0.05	<0.01	<0.1	0.1	<0.01	<1	<0.1	0.001

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element Sample	Nb ppm	Ni ppm	P %	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
RM201	7.1	27.7	0.035	13.8	59.3	0.012	0.2	12.5	7	6	1.4	68	0.4	<0.5	5.2	0.223	4.9	8.4	659	1	10.8	87	53.9
RM202	6.8	26.6	0.081	13.2	53.1	0.021	0.5	18.6	8	13	1.3	126	0.4	<0.5	4.9	0.189	10.8	17.2	703	0.9	19.8	57	57.8
RM203	6.4	33.1	0.106	12.3	48.7	0.015	0.4	13	6	20	1.1	292	0.4	<0.5	4.2	0.184	6.2	20.9	933	0.7	19.2	67	56.1
RM204	4.4	40.9	0.028	10.3	42.3	0.072	0.3	3.8	5	11	1.2	112	0.4	<0.5	7	0.117	4.7	8.8	426	0.4	7.8	81	42.3
RM205	6.7	94.1	0.033	9.2	67.4	0.007	0.2	5.1	7	4	1.3	97	0.4	<0.5	6.2	0.221	3.3	6.4	687	0.7	15.3	270	68.2
RM206	5.6	228.6	0.068	11.4	68.6	0.014	0.2	18.8	10	8	1.1	114	0.4	<0.5	5.3	0.178	7.7	13.4	1211	0.7	33	1827	61.8
RM207	5.2	249.9	0.047	17.4	58.3	0.026	0.1	54	10	18	1.1	101	0.3	<0.5	5.7	0.187	6.8	14.6	2977	0.8	38.7	2571	65.3
RM208	4.3	187.8	0.055	21.5	58	0.011	<0.1	47.8	8	22	1.2	61	0.3	<0.5	4.1	0.157	5.2	13.7	3652	0.9	40.7	2204	55.8
RM208 Re	4.4	188.2	0.057	21.5	58.6	0.011	0.1	49.6	8	22	1.2	60	0.3	<0.5	4.1	0.162	5.2	13.5	3794	0.9	40.7	2242	55.9
RM209	4.9	272.1	0.208	17.9	69.2	0.016	<0.1	47.1	8	20	1.2	112	0.3	<0.5	4.6	0.165	3.5	14	2641	0.8	38.3	3899	69.6
RM210	7.5	310.5	0.102	32.4	100.4	<0.005	0.3	57.3	13	20	1.7	66	0.5	<0.5	7.5	0.243	13.4	13.8	3308	1.2	30.6	3514	94.1
RM211	15.1	183.3	0.116	13.2	100.1	<0.005	<0.1	29.5	10	6	1.7	329	0.8	<0.5	7.9	0.273	2.4	14.1	1741	0.9	35.2	1248	103.6
RM212	10.8	54.3	0.073	14.1	129.8	<0.005	<0.1	4.1	12	3	2	84	0.7	<0.5	8.3	0.317	1	5.4	278	0.9	26	269	87.5
RM213	7.8	69.7	0.066	24.5	110.3	<0.005	<0.1	3	12	4	1.7	152	0.5	<0.5	8.1	0.262	0.8	4.8	228	0.8	22.7	199	77.8
RM214	7.3	60.5	0.103	21.9	91	<0.005	<0.1	2.3	10	4	1.5	113	0.5	<0.5	7.6	0.238	0.7	3.6	200	0.7	17.6	195	70.3
RM215	9.8	65.6	0.213	22.8	103.2	<0.005	<0.1	2.5	11	3	1.7	145	0.6	<0.5	8.2	0.29	0.8	4	200	0.9	21.5	219	78.9
RM216	9.1	57.9	0.088	22	108	<0.005	<0.1	1.9	10	3	1.7	87	0.6	<0.5	8.1	0.285	0.7	4.3	197	0.9	21.8	175	76.2
RM217	6.3	31	0.138	11	94.2	<0.005	<0.1	1.1	8	2	1.4	57	0.4	<0.5	5.9	0.21	<0.5	2.7	126	0.7	15.3	100	57.2
RM218	8.9	129.8	0.139	33.7	102	<0.005	0.2	3.8	12	9	1.7	169	0.6	<0.5	9	0.269	0.8	7.3	283	0.8	41.7	545	95.3
RM219	9.2	55.4	0.201	20.1	109.9	<0.005	<0.1	1.5	12	3	1.9	95	0.6	<0.5	8.4	0.324	0.7	3.2	177	1	28.2	191	83.3
RM220	9.7	40.1	0.058	22.8	84.1	<0.005	<0.1	1.1	11	<1	1.6	108	0.6	<0.5	8.2	0.371	0.6	2.1	126	1	13.1	105	75.9
RM221	10.2	29.1	0.077	20	105.3	<0.005	<0.1	1.1	11	<1	1.8	92	0.7	<0.5	8.2	0.373	0.7	2.3	133	1.2	13.6	104	80
RM222	7.7	41.2	0.061	21.8	101.1	<0.005	<0.1	1	13	1	1.5	98	0.5	<0.5	8.9	0.272	0.6	2.5	96	0.8	36.5	97	69.9
RM223	2.9	13.4	0.062	7.5	34.1	0.014	0.4	11.1	3	8	0.6	97	0.2	<0.5	2.3	0.095	1.9	8.4	753	0.4	8.2	15	28.2
RM224	5	18.7	0.044	10.4	49.4	0.026	0.4	11.2	5	9	1	80	0.3	<0.5	3.6	0.148	3.7	10.5	748	0.7	10.5	26	44.6
RM225	9.6	19	0.053	14.3	80.7	<0.005	0.1	12.1	8	6	1.7	102	0.6	<0.5	6.7	0.327	4.4	5.9	506	1.1	10.8	74	77.8
RM226	2.7	17.4	0.018	4.8	37.7	0.024	0.2	4.2	3	5	0.6	56	0.2	<0.5	2.1	0.088	1.4	4.7	752	0.4	8.9	13	24.8
RM227	3.7	19.9	0.02	6.7	41	0.023	0.1	8.8	4	3	0.7	43	0.2	<0.5	2.8	0.123	1.6	4.1	812	0.5	9.3	31	34
RM228	3.3	17.8	0.021	5.1	30.3	0.009	0.1	1.4	3	<1	0.6	30	0.2	<0.5	2.5	0.108	0.9	2.6	534	0.4	6.5	38	27.2
RM229	4.5	86.2	0.065	10	45.6	0.019	0.3	10.4	9	4	0.8	76	0.3	<0.5	3.9	0.148	4.6	10.7	383	0.7	16.4	983	44.7
RM230	6.1	44.8	0.029	10.7	58.2	0.031	0.1	2.6	7	3	1.1	77	0.4	<0.5	5.4	0.204	1.7	3.8	301	0.6	12.8	146	50.4
RM231	8.6	156	0.087	18.5	96.7	0.013	<0.1	19.2	11	9	1.6	128	0.5	<0.5	7.5	0.248	5.6	10.1	1573	0.9	31.8	1161	84.6
RM232	9.2	150.5	0.077	14.9	100.4	0.016	<0.1	25.6	9	5	1.5	105	0.5	<0.5	7.4	0.24	3.7	14	1541	0.9	33.2	672	84.3
RM233	10.3	63.4	0.079	23	131.1	<0.005	<0.1	1.6	13	2	1.9	75	0.6	<0.5	9.3	0.334	0.9	3.3	145	1	21.6	147	86.1
RM234	9.5	61.3	0.07	24.5	114.5	<0.005	<0.1	1.7	10	2	1.7	76	0.6	<0.5	8.1	0.314	0.8	3.5	161	1	20.2	147	80.7

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____

Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Sample	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
RM235	4.8	39	0.102	14.6	59	<0.005	0.1	1.7	6	2	1	60	0.3	<0.5	4.1	0.145	<0.5	3.2	241	0.4	14.5	160	44.4
RM236	9.2	59.4	0.121	22.7	100.1	<0.005	0.1	1.9	10	4	1.7	94	0.6	<0.5	7.9	0.31	0.7	3.5	209	0.9	16.5	203	78.9
RM237	10.3	40.8	0.058	24	98.4	<0.005	<0.1	1.2	11	<1	1.8	110	0.7	<0.5	8.2	0.367	0.7	2.3	140	1.1	13	102	76.3
RM238	9.8	29.2	0.04	14.1	131	<0.005	<0.1	0.8	11	<1	2.2	46	0.6	<0.5	8	0.346	0.7	2.2	110	1.2	12	94	87.9
RM239	8.7	27	0.033	10.6	113.4	<0.005	<0.1	0.6	10	<1	2	40	0.6	<0.5	7.2	0.312	0.6	2	99	1.1	9.8	78	81.3
RM240	8.2	41.2	0.107	26	102.1	<0.005	<0.1	1	12	<1	1.6	80	0.5	<0.5	8.9	0.293	0.7	2.3	104	0.9	18.8	102	73.7
RM241	9.6	46.6	0.022	13.7	130.3	<0.005	<0.1	0.6	12	<1	2.4	45	0.6	<0.5	7.2	0.344	0.8	1.7	103	1.3	15.6	82	90.9
RM242	9.1	40.3	0.047	21.8	130	<0.005	<0.1	0.9	11	<1	2.1	40	0.6	<0.5	7.6	0.323	0.8	2.3	112	1.1	14.3	105	85.2
RM243	4.9	16.1	0.036	9.4	52.6	0.01	0.2	13.3	5	6	0.7	60	0.3	<0.5	3.6	0.142	3.3	9.9	799	0.6	9.5	44	42.7
RM244	4.3	12.4	0.029	7.3	47.1	0.012	0.3	13.3	5	6	0.6	56	0.3	<0.5	3.2	0.12	3.2	9.2	938	0.6	9.5	26	37.3
RM244 Re	4.2	12.2	0.029	7.2	46.2	0.011	0.3	12.8	5	6	0.6	54	0.3	<0.5	3.1	0.118	3	8.9	904	0.6	9.5	26	37.2
RM245	5.7	13.9	0.094	12.6	50.8	0.011	0.5	19.9	6	13	0.9	306	0.4	<0.5	4.6	0.157	7.5	15.4	617	0.9	20.5	39	50.5
RM246	4.4	31.4	0.035	9.8	48.1	0.01	0.2	10.2	5	6	0.9	86	0.3	<0.5	3.4	0.147	2.7	6.4	881	0.6	10.3	119	39.6
RM247	4.3	682.4	0.138	10.4	38.7	<0.005	0.3	10.4	10	5	0.8	291	0.3	<0.5	3.9	0.142	4.1	13.9	315	0.6	57.7	2466	51
RM248	4.6	313.8	0.08	14.5	52.1	0.011	1.7	7	9	13	1.3	193	0.3	<0.5	3	0.131	22.6	14.3	375	1	26.8	733	53.4
RM249	3.7	32.4	0.05	9.6	38.2	0.016	0.3	6.2	5	7	0.7	83	0.2	<0.5	3	0.115	6	6.2	765	0.4	12.5	66	38.6
RM250	4.4	43.9	0.028	8.7	49.8	0.023	0.3	4.3	5	5	0.9	64	0.3	<0.5	3.3	0.133	4.1	6.7	457	0.5	9.3	137	41.7
RM251	6.6	56.6	0.041	9.5	81.9	0.021	0.2	5.4	9	3	1.4	76	0.4	<0.5	5.9	0.226	3.7	12	715	0.8	17.2	150	61.3
RM252	4.8	129.8	0.051	9.6	63.2	0.019	<0.1	11.8	8	5	0.9	65	0.3	<0.5	4.7	0.161	5.2	8.2	1072	0.6	23	707	52.4
RM253	5.8	347.8	0.127	16.2	54	0.016	0.1	45.1	12	16	0.9	113	0.3	<0.5	5.5	0.185	8.9	15.4	1636	0.7	52.5	2406	69.1
RM254	3.3	156	0.056	10.9	40.2	0.019	0.1	28.7	6	10	0.7	68	0.2	<0.5	3.2	0.111	4.1	9.5	1942	0.5	30.6	1243	42.2
RM255	4.6	366.9	0.037	20.5	62.6	0.022	<0.1	81.7	9	27	1.2	251	0.3	<0.5	4.7	0.171	6.8	15.4	3939	1	54.6	6502	64.8
RM256	3.5	265.2	0.051	17.4	47.7	0.04	0.3	32.9	10	20	0.9	58	0.2	<0.5	3.4	0.119	3.6	13.8	1806	0.7	65	1505	55.9
RM257	3.8	312.1	0.061	21.3	55.3	0.022	0.1	64.6	8	15	1.1	145	0.2	<0.5	3.8	0.128	5.6	18.1	2948	0.8	37.9	4836	55.4
RM258	5.8	193.5	0.075	14.9	74	0.007	<0.1	26.6	9	12	1.1	82	0.3	<0.5	5.5	0.185	3.7	12.6	2173	0.8	34.8	1210	66.3
RM259	3.8	122.1	0.148	6.2	42.7	<0.005	<0.1	6.8	6	5	0.8	970	0.2	<0.5	3.5	0.109	1.3	6.1	280	0.4	25.3	524	46.3
RM260	10	254.2	0.051	9.9	77.7	<0.005	<0.1	7.8	7	4	1.4	491	0.5	<0.5	5.6	0.189	4.2	14	904	0.8	31	405	71.1
RM261	9.7	75.5	0.088	11.2	103.7	<0.005	<0.1	13.1	9	3	1.6	279	0.6	<0.5	6.9	0.263	1.4	6.6	885	0.9	23.4	488	79.1
RM262	10	26	0.065	11.9	101.6	<0.005	<0.1	3.4	9	2	1.6	81	0.6	<0.5	7.4	0.265	0.8	5.3	317	0.8	21.4	164	75.1
RM263	11.5	84.1	0.077	12.2	109.1	0.005	<0.1	3.9	11	4	1.7	206	0.7	<0.5	7.9	0.284	0.8	5.7	270	0.8	27.5	278	86.8
RM264	8.6	59.7	0.058	13.6	114.1	<0.005	<0.1	1.1	11	2	1.8	322	0.6	<0.5	8.8	0.279	0.7	2.9	105	0.8	24.3	131	77.1
RM265	10	66.7	0.055	12.5	127.9	<0.005	<0.1	2.9	12	2	1.8	101	0.6	<0.5	8.7	0.321	0.9	3.6	186	0.9	23.3	199	86.3
RM266	8.9	21.3	0.047	16.5	109.5	<0.005	<0.1	1.9	9	2	1.9	75	0.5	<0.5	6.6	0.298	0.8	3.8	258	0.9	13.6	97	74.1
RM267	9	42.4	0.067	19.3	125	<0.005	<0.1	2.2	11	3	2	87	0.6	<0.5	7.6	0.296	0.8	4.1	269	0.9	19.8	165	80.7
RM268	8.6	30.8	0.061	17.1	115.4	<0.005	<0.1	1.7	11	3	1.8	93	0.6	<0.5	7.4	0.283	0.7	4	235	0.9	20.4	112	75.8

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____

Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Sample	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
RM269	8.1	58.9	0.093	20.6	109.3	<0.005	<0.1	2.4	11	4	1.7	144	0.5	<0.5	8	0.266	0.8	4.2	207	0.8	21.8	191	75.4
RM270	7.5	74.6	0.109	19.4	110.8	<0.005	<0.1	3.3	13	4	1.7	160	0.5	<0.5	8	0.252	0.8	4.4	246	0.8	22	243	75.7
RM271	9.9	53.2	0.084	14.1	125.9	<0.005	<0.1	1.3	10	2	2	73	0.6	<0.5	7.5	0.318	0.7	3.1	167	1	17.9	143	81.7
RM272	8.8	55.3	0.079	18.6	115.1	<0.005	<0.1	1.4	11	2	1.6	100	0.6	<0.5	8.3	0.303	0.8	3.3	126	0.9	21.8	144	79.3
RM273	10.8	69.7	0.132	22	117.6	<0.005	<0.1	1.7	12	2	1.8	133	0.7	<0.5	9.1	0.339	1.2	5.2	138	1.1	28.9	175	92.3
RM274	8.7	35.2	0.115	14	99.6	<0.005	<0.1	1.4	8	2	1.9	50	0.6	<0.5	6.7	0.287	0.6	3.5	186	1	13.9	115	73.8
RM275	9.2	48.4	0.532	20.9	108.8	0.007	0.2	2.2	11	5	1.9	148	0.6	<0.5	8.7	0.298	0.7	7.1	317	1	32.6	147	83.4
RM276	10.7	38.9	0.072	18.3	119.6	<0.005	<0.1	1.5	11	2	2.3	55	0.7	<0.5	7.8	0.37	0.7	3	181	1.2	12.6	115	90.9
RM277	7.8	37.4	0.128	14.1	82.3	<0.005	<0.1	0.8	10	1	1.8	91	0.5	<0.5	6.5	0.268	0.6	2.4	94	0.9	17.7	105	74.3
RM278	6.3	45.1	0.109	11.7	78.7	<0.005	<0.1	1.9	8	2	1.3	107	0.4	<0.5	5.8	0.2	0.6	3.6	166	0.7	20.7	137	55.4
RM279	7	34.8	0.092	14.9	93.2	<0.005	<0.1	1.7	8	2	1.5	105	0.5	<0.5	6.4	0.235	0.7	3.6	214	0.8	16.1	160	62.7
RM280	10.2	23	0.053	18.6	116.8	<0.005	<0.1	1.9	9	2	2.1	76	0.7	<0.5	7.5	0.325	0.8	4.2	279	1.1	16.4	122	83.8
RM280 Re	10.4	23.7	0.053	17.8	120.1	<0.005	<0.1	1.9	9	2	2.1	77	0.6	<0.5	7.5	0.327	0.7	4.1	271	1	16.8	121	84.9
RM281	8.1	40	0.066	16.2	103.3	<0.005	<0.1	1.7	9	3	1.7	101	0.5	<0.5	7	0.263	0.6	3.3	198	0.9	14.9	131	71.2
RM282	9.7	59.8	0.067	18.6	118.2	0.006	<0.1	2.9	12	3	2.1	114	0.6	<0.5	8	0.323	0.8	4.9	262	1	19.7	207	88.8
RM283	10.3	106.9	0.065	23.3	120.7	<0.005	0.5	3.4	12	3	1.9	84	0.7	<0.5	8.5	0.363	1.2	6.1	268	1.5	26.3	187	111.2
RM284	4.9	71.3	0.323	10.8	86.2	<0.005	<0.1	1.4	9	4	1.3	36	0.2	<0.5	7.3	0.222	0.5	6.2	223	0.7	31.3	262	69
RM285	11.2	19.9	0.06	23.7	124.7	0.01	0.5	4.7	16	5	2.5	100	0.8	<0.5	6.6	0.486	4.4	4.5	349	1.3	7.9	53	117.9
RM286	11.9	15.2	0.057	20.3	137.5	0.013	0.9	3.2	18	4	2.3	105	0.8	<0.5	7.8	0.508	3.9	4.4	310	1.3	10.1	30	114.1
RM287	9.6	10.6	0.039	17.9	71.5	<0.005	0.2	10.6	6	7	1.4	53	0.6	<0.5	6.6	0.348	9	5.6	539	1.3	8.7	32	73.9
RM288	7.8	8.1	0.084	29	84.1	<0.005	1.3	21.6	10	26	1.6	137	0.5	<0.5	7	0.29	15.7	12.6	670	1.2	13.9	18	66.8
RM289	4.3	9.2	0.051	11.7	54.2	0.025	0.6	8.1	7	8	1	66	0.3	<0.5	4.5	0.152	7	7.8	578	0.8	10.2	16	42.7
RM290	5	22.7	0.046	14.7	55.4	0.015	0.4	10.8	5	15	0.9	71	0.3	<0.5	4.9	0.172	7.5	6.1	625	0.8	10.4	48	46.9
RM291	8	5.2	0.025	12.8	58.9	0.011	0.2	2.2	5	7	1.2	65	0.5	<0.5	5.6	0.251	3.2	7.6	159	0.9	9.8	14	60.5
RM292	8	7.6	0.033	18	55.5	<0.005	0.6	2.6	7	3	1.2	58	0.5	<0.5	6.4	0.235	3.7	8	168	1.1	16.3	31	63.8
RM293	5.3	21.3	0.038	15.3	60.4	0.023	0.4	11.7	5	10	1.2	87	0.3	<0.5	4.6	0.185	5.1	7.3	971	0.8	9	50	51.3
RM294	7.1	26.6	0.017	7.9	59.2	0.008	<0.1	4.3	5	2	1.2	33	0.4	<0.5	4.5	0.224	1.7	3.8	574	0.8	8.3	90	56
RM295	6.9	104.2	0.147	14.5	69	0.007	<0.1	10.3	9	4	1.1	127	0.4	<0.5	7.3	0.185	2	5.3	549	0.7	29.9	457	63.5
RM296	4	29.3	0.024	7.3	38.9	0.016	0.2	2	4	3	0.7	43	0.2	<0.5	2.9	0.12	1.7	6.3	296	0.5	11.6	57	36.5
RM297	9.1	77.8	0.032	14.5	81.3	<0.005	0.1	7.4	9	5	1.6	86	0.6	<0.5	6.8	0.303	4.3	5.2	611	1	13	226	70
RM298	7.3	116.3	0.034	9.8	95	0.018	0.2	6.4	9	4	1.6	98	0.5	<0.5	5.8	0.247	3.7	7.3	904	0.8	18.1	329	55.8
RM299	3.8	531.1	0.109	19.9	61.9	0.028	0.1	48.4	11	31	1.1	189	0.3	<0.5	4.8	0.134	6.3	37.7	3327	0.8	100.3	4295	57.6
RM300	9.1	304.7	0.278	27	66.3	0.023	<0.1	80.1	10	24	1.4	219	0.5	<0.5	9	0.299	3.1	20.2	3681	1.3	77.9	3123	107.6
RM501	10.7	34.2	0.086	14.4	105.1	<0.005	<0.1	11.3	7	2	1.9	273	0.7	<0.5	7.3	0.295	1.6	7.5	1118	1.1	18.7	229	82.4
RM502	17.2	108.8	0.144	22.8	191.2	0.009	<0.1	10	17	3	3.5	272	1.1	<0.5	10.3	0.506	2.2	10.9	894	1.6	34	500	141.5

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS

Multiacid Digestion

Element	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Sample	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
RM503	17.9	94	0.135	28	172.2	0.006	<0.1	5.2	21	5	3.5	190	1.2	<0.5	12.4	0.54	1.6	8.5	398	1.5	40	291	149.6
RM504	14.2	58.2	0.117	26	170.3	<0.005	<0.1	2.9	17	3	3.2	145	0.9	<0.5	9.6	0.483	1.3	6.6	385	1.5	23.5	168	130.2
RM505	15.9	60.2	0.092	30.5	178.2	0.005	<0.1	3.1	18	3	3.5	141	1	<0.5	9.9	0.532	1.5	7.3	445	1.7	22.7	183	142.3
RM506	12.9	94.2	0.135	32.4	155.7	0.007	<0.1	2.7	20	4	2.9	153	0.8	<0.5	10.5	0.44	1.3	7.1	401	1.9	32.3	227	122.3
RM507	15.6	95	0.133	36.8	172.9	0.005	<0.1	4.2	22	5	3.6	194	1	<0.5	12	0.538	1.5	8.3	496	1.6	32.6	280	153.1
RM508	11.7	105.2	0.213	31.8	139.7	<0.005	<0.1	2.5	22	6	2.5	238	0.8	<0.5	12.9	0.397	1.1	8	330	1.3	54.3	201	120.2
RM509	5.6	54.9	0.16	17	68.7	<0.005	<0.1	1.2	12	3	1.2	141	0.4	<0.5	7.1	0.182	0.6	3.8	115	0.6	35.8	149	53.5
RM510	9.3	58.1	0.159	19.8	119.8	<0.005	<0.1	1.9	10	3	1.9	79	0.6	<0.5	7.9	0.288	0.7	4.3	223	1	23.9	197	77.9
RM511	7	37.9	0.089	52.3	94.9	<0.005	<0.1	1.4	9	2	1.6	58	0.5	<0.5	6.3	0.237	0.6	2.8	146	0.8	14	134	62.1
RM512	9.6	55.1	0.119	18.7	112.5	<0.005	<0.1	1.6	11	2	2.1	88	0.6	<0.5	8.1	0.34	0.7	3.1	197	1.4	18.5	157	82.1
RM513	8.8	47.3	0.212	25.5	130.5	<0.005	0.1	1.9	11	4	2	89	0.6	<0.5	7.7	0.315	0.8	3.7	232	1	19.5	158	83
RM514	8.7	57	0.092	19.9	117	<0.005	<0.1	1.1	11	<1	2	59	0.6	<0.5	7.8	0.309	0.7	2.3	119	1	20.3	210	74.2
RM515	11.2	24.7	0.043	12.5	151.6	<0.005	<0.1	1.2	11	<1	2.2	54	0.7	<0.5	8.6	0.398	0.9	2.4	129	1.3	11.8	80	94.3
RM516	9.7	35.6	0.093	12.9	129.3	<0.005	<0.1	0.8	11	<1	2.3	48	0.6	<0.5	7.5	0.348	0.7	2	111	1.2	15.7	97	85.9
RM516 Re	9.6	36.6	0.092	13	130.4	<0.005	<0.1	0.8	11	<1	2.2	48	0.6	<0.5	7.7	0.345	0.7	2.1	109	1.2	16.3	95	86.4
RM517	9.2	37.4	0.053	17.8	103	<0.005	<0.1	1.1	11	<1	2.2	65	0.6	<0.5	9.2	0.333	0.8	2.4	116	1.3	17.8	99	80.5
RM518	9.6	57.1	0.063	30.4	116.2	<0.005	0.2	1.3	10	1	2.1	77	0.6	<0.5	8.2	0.338	1	2.4	112	1.1	10.8	98	78.8
RM519	8.3	34.8	0.041	13.1	127.6	<0.005	<0.1	0.6	10	<1	1.8	289	0.5	1.2	8.8	0.279	0.6	1.9	76	1.2	25.5	67	72.5
RM519 Re	8.2	35.8	0.041	13.3	128.7	<0.005	<0.1	0.7	10	<1	1.7	298	0.6	1.2	9.1	0.291	0.6	1.9	77	1.1	25.6	68	74.6
RM520	11.7	79.3	0.036	35.7	145.8	<0.005	<0.1	1.3	13	1	2.6	38	0.8	<0.5	8	0.424	1.1	3	116	1.6	13	175	117.6
RM521	9.4	34.5	0.043	15.9	116.6	<0.005	<0.1	0.9	10	<1	2.3	43	0.7	<0.5	8.4	0.348	0.8	2.2	106	1.4	11.5	92	85.3
RM522	8.8	38.6	0.045	19	102.1	<0.005	<0.1	0.8	12	<1	2.3	72	0.6	<0.5	9.5	0.32	0.7	2	85	1.2	27.2	87	87.3
RM523	8.9	62.3	0.063	28.4	105.3	<0.005	<0.1	1.5	12	2	1.8	141	0.6	<0.5	9.1	0.326	0.8	2.8	100	1.2	29.7	123	87.5
RM524	9.1	47	0.047	17.5	91.1	<0.005	<0.1	0.9	12	1	1.5	102	0.6	<0.5	9	0.32	0.5	2.1	98	1.1	27.2	89	79.7
RM525	9.1	103.5	0.052	20.9	117.1	0.009	<0.1	4.6	12	4	1.8	66	0.6	<0.5	7.6	0.321	1.8	7.3	198	1.2	22.4	159	100.8
RM526	5.6	98	0.188	15.1	78.2	<0.005	<0.1	2.5	7	4	1.2	199	0.4	<0.5	6.2	0.191	0.7	6.3	328	0.6	21.4	225	66.8
RM527	6.2	115.6	0.477	21.9	94.7	0.005	<0.1	3.4	10	7	1.4	76	0.4	<0.5	7.1	0.231	0.7	6.9	457	0.7	32.1	228	75.1
RM528	1.9	123.1	0.605	20.6	78.9	0.006	<0.1	1.6	10	3	0.7	53	<0.1	<0.5	6.9	0.13	0.6	9.6	558	0.4	30.8	396	53.5
RM529	6.2	83	0.162	34.1	56.4	<0.005	0.7	5.1	8	4	1.1	90	0.4	<0.5	6	0.186	0.9	5.8	578	0.8	22.2	165	53.8
RM530	1.6	39.4	0.221	8.2	20.5	<0.005	<0.1	2.2	3	2	0.4	102	<0.1	<0.5	1.6	0.069	<0.5	2.9	310	0.3	14.3	91	7.6
RM531	4.7	30.3	0.387	14.1	55.2	0.03	0.4	34.8	8	22	1.2	1085	0.2	<0.5	4.4	0.148	5	28.1	946	0.7	21.7	75	46.5
RM532	7.3	31.1	0.214	16.6	80.2	0.038	0.5	35.4	9	13	1.4	561	0.4	<0.5	4.8	0.188	7.9	24.1	1008	0.9	25.4	62	66.1
RM533	6	54.5	0.303	16.9	60.7	0.062	0.7	58.6	9	18	1.6	891	0.4	<0.5	6.3	0.162	14.7	36	1665	1.5	29.4	75	62
RM534	5.8	32.3	0.087	12.2	65.9	0.03	0.3	42	7	23	1.5	162	0.4	<0.5	4.8	0.186	7.1	20	1826	0.9	15.7	38	55.1
RM535	5.2	27.5	0.081	11.1	46	0.013	0.1	12.8	5	5	0.9	207	0.3	<0.5	3.5	0.159	4	12.8	710	0.7	11.7	60	44.4

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS
Multiacid Digestion

Element	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Sample	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
RM536	7.3	49.2	0.157	14.9	56.1	0.015	0.2	20.8	9	18	1.3	286	0.4	<0.5	6	0.205	10.5	24.4	1076	1	23.7	91	61
RM537	10.3	90.7	0.609	24.3	76.6	<0.005	0.2	14.5	16	17	1.8	1050	0.6	<0.5	8.7	0.285	11.9	89.9	664	1.4	74	200	93.5
RM538	10.5	78.3	0.131	19.8	69.9	<0.005	0.1	21.1	11	12	1.5	320	0.7	<0.5	8.5	0.324	8	11.3	567	1.1	29.6	106	89.3
RM539	5.2	35.5	0.036	9.1	46.4	0.026	0.2	5.6	6	10	0.9	71	0.3	<0.5	3.9	0.152	3.9	6.6	357	0.6	12.8	58	46.6
RM540	9.6	30.6	0.04	13.4	120.5	0.022	0.4	3.9	10	4	2.1	71	0.6	<0.5	7.1	0.332	4.2	8	791	1.1	12.2	91	85.1
RM541	3.4	228.5	0.09	13.6	52.8	0.029	0.1	41.6	9	53	0.8	133	0.2	<0.5	3.3	0.116	4.6	12.1	2991	0.6	48.5	1559	59.6
RM542	3.3	77.1	0.116	23.1	52.2	0.042	<0.1	60.4	7	37	0.9	63	0.2	<0.5	3.5	0.115	4.8	12	2898	0.7	37.5	760	44.1
RM543	10.6	47.1	0.068	20.5	96	<0.005	0.4	26.4	11	21	1.9	144	0.7	<0.5	7.9	0.364	5.5	7.3	853	1.3	13.3	117	82.3
RM544	8.8	24.5	0.489	22.8	80.8	0.02	0.6	28.4	11	30	1.8	324	0.5	<0.5	7.3	0.241	6.9	21.3	998	1.2	41.5	48	77
RM545	8.1	52.9	0.194	26.5	77.4	0.009	0.9	47.1	12	54	1.8	848	0.5	0.6	7	0.24	15.4	30.5	1794	1.2	29.7	98	69.5
RM546	4.5	40.9	0.081	9.7	43.6	0.019	0.3	9.2	7	12	0.8	211	0.3	<0.5	3.5	0.129	6.5	17.9	463	0.7	15.7	57	45
RM547	6.5	177.2	0.037	12.3	88.4	0.019	0.2	9.8	10	6	1.5	97	0.4	<0.5	6.4	0.213	4.3	5.9	809	0.8	27.9	605	58.3
RM548	7.3	66	0.032	8.9	92.5	0.009	0.1	6.1	7	4	1.6	62	0.5	<0.5	5.1	0.239	4.3	4.9	717	0.8	9.8	171	58.9
RM548 Re	7.2	64.6	0.031	9	90.6	0.009	0.2	6	7	4	1.5	62	0.4	<0.5	5.1	0.235	4.3	4.8	747	0.8	9.6	167	56.8
RM549	8.2	52	0.031	13.6	103	0.008	0.2	7.9	9	6	1.8	74	0.5	<0.5	6.5	0.264	4.7	5.4	829	0.9	14.5	182	65.2
RM550	6.6	14.4	0.052	12.2	62.8	0.009	0.1	11.2	9	5	1.1	96	0.4	<0.5	5.2	0.199	3.8	11.9	683	0.8	11.6	46	56.8
RM551	7.1	18	0.054	12.2	66.4	<0.005	<0.1	13.6	7	4	1.3	79	0.4	<0.5	5.2	0.222	4.4	10.5	777	1	12.4	48	57
RM552	6.9	23.5	0.033	11.9	65.9	0.012	0.1	15.5	7	6	1.2	79	0.4	<0.5	4.6	0.231	4.6	7.4	893	0.8	10.3	55	50.9
RM553	4.6	36.2	0.036	10.5	46.1	0.012	0.1	7.8	5	5	0.8	64	0.3	<0.5	3.5	0.141	4.2	7.6	540	0.6	12.4	96	40
RM554	6.3	28.7	0.026	7.6	59.9	0.025	0.1	3.6	5	2	1.1	62	0.4	<0.5	4.1	0.206	3.7	6.6	542	0.8	10.4	37	49.8
RM555	2.3	30.1	0.01	4.8	24.4	0.028	0.1	1.6	3	2	0.4	25	0.1	<0.5	1.5	0.067	1.1	4.5	451	0.3	5.6	7	25.2
RM556	4.1	29.7	0.026	8.2	44	0.032	0.2	2.9	5	5	0.7	48	0.2	<0.5	3	0.113	2.1	5.3	433	0.5	10	75	39.5
RM557	6.4	53.2	0.02	7.6	81.8	0.034	0.1	4.1	8	5	1.4	78	0.4	<0.5	5	0.221	3.6	8.5	998	0.7	15.3	148	56.7
RM558	4.9	184.9	0.077	16.6	64.3	0.031	<0.1	40.6	9	16	1	75	0.3	<0.5	5.3	0.17	3.7	13.9	3205	0.8	38.7	1192	61.1
RM559	9.5	38.3	0.081	14.3	114.9	0.006	<0.1	4.9	9	4	1.9	101	0.6	<0.5	7.9	0.293	1.1	5.5	456	0.9	20.5	170	79.3
RM560	9.3	27.1	0.066	15.3	114.1	<0.005	<0.1	2	10	3	1.8	81	0.6	<0.5	8	0.297	0.8	4.6	223	1	17.1	108	78.8
STD OREAS25A-4A	17.9	44.6	0.045	23	55.6	<0.005	<0.1	0.5	13	2	3.4	43	1.3	<0.5	14.1	0.859	<0.5	2.5	152	1.6	9.1	40	145.7
STD OREAS45E	6.1	467.9	0.034	17.8	21.5	<0.005	<0.1	1	92	3	1.2	16	0.5	<0.5	12.6	0.523	<0.5	2.3	324	0.9	7.8	44	96.8
STD OREAS25A-4A	18.3	44.5	0.046	23.6	55.6	<0.005	<0.1	0.6	13	2	3.5	43	1.3	<0.5	14.2	0.835	<0.5	2.6	155	1.7	9.2	40	147.2
STD OREAS45H	13.8	433.4	0.023	12	22.7	<0.005	<0.1	0.6	57	2	1.9	27	0.9	<0.5	7	0.831	<0.5	1.5	270	0.8	9.6	38	123.2
STD OREAS25A-4A	19.8	45.9	0.048	24.4	58.4	<0.005	<0.1	0.6	13	3	3.8	44	1.4	<0.5	15.2	0.933	<0.5	2.7	160	1.8	10	43	154.3
STD OREAS25A-4A	19.3	47.1	0.048	24.3	51.6	<0.005	<0.1	0.6	12	3	3.7	42	1.4	<0.5	13.7	0.921	<0.5	2.6	161	2	9	42	153.1
STD OREAS45E	6.4	476.4	0.033	18.7	21	<0.005	<0.1	1	90	3	1.2	16	0.5	<0.5	12.8	0.527	<0.5	2.3	322	1	7.8	44	97.6
STD OREAS25A-4A	19.4	46.6	0.047	24.2	57.5	<0.005	<0.1	0.6	13	3	3.6	45	1.3	<0.5	14.1	0.899	<0.5	2.6	155	1.9	9.7	43	151.9
STD OREAS45E	6.4	492.4	0.033	19	21.8	<0.005	<0.1	1	95	3	1.2	16	0.5	<0.5	13.2	0.515	<0.5	2.4	336	1	8	45	98.9

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

TSL LABORATORIES INC.

Mr. Glen Prior
Attention: G. Prior
Project: RM
Sample: 160 Soil / 0 Pulp

2 - 302 48th Street East, Saskatoon, Saskatchewan, S7K 6A4
Tel: (306) 931-1033 Fax: (306) 242-4717

Report No: S58474
Date: November 5, 2020

MULTIELEMENT ICP-MS ANALYSIS
Multiacid Digestion

Element	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
Sample	ppm	ppm	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
STD OREAS25A-4A	19.6	46.1	0.049	24.4	53	<0.005	<0.1	0.6	11	3	3.9	41	1.4	<0.5	14.9	0.894	<0.5	2.8	152	1.8	9	44	151.9
STD OREAS45E	6.1	466.2	0.033	18.2	21.3	<0.005	<0.1	1	93	2	1.1	16	0.6	<0.5	13.2	0.526	<0.5	2.4	319	1.1	7.5	46	94.7
BLK	<0.1	<0.1	<0.001	0.1	<0.1	<0.005	<0.1	<0.1	<1	<1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1
BLK	<0.1	0.1	<0.001	<0.1	<0.1	<0.005	<0.1	<0.1	<1	<1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1
BLK	<0.1	<0.1	<0.001	<0.1	<0.1	<0.005	<0.1	<0.1	<1	<1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1
BLK	<0.1	0.1	<0.001	<0.1	<0.1	<0.005	<0.1	<0.1	<1	<1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1
BLK	<0.1	<0.1	<0.001	<0.1	<0.1	<0.005	<0.1	<0.1	<1	<1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1
BLK	<0.1	0.1	<0.001	<0.1	<0.1	<0.005	<0.1	<0.1	<1	<1	<0.1	<1	<0.1	<0.5	<0.1	<0.001	<0.5	<0.1	<1	<0.1	<0.1	<1	<0.1

A 0.25 g sample is digested with HClO4, HNO3, HCl, HF and diluted to 10 ml with D.I. H2O.

Signed: _____
Mark Acres - Quality Assurance

Appendix 7

Rock Sample Geochemical Data

MSALABS
Unit 1, 20120 102nd Avenue
Langley, BC V1M 4B4
Phone: +1-604-888-0875

To: **Glen Prior**
793 Birch Avenue
Sherwood Park, Alberta, T8A 1X2
Canada

TEST REPORT:	**YVR2010789**

Project Name:	RM
Job Received Date:	15-Oct-2020
Job Report Date:	22-Dec-2020
Number of Samples:	27
Report Version:	Final

COMMENTS:

Test results reported relate to the tested samples only on an "as received" basis. Unless otherwise stated above, sufficient sample was received for the methods requested and all samples were received in acceptable condition. Analytical results in unsigned reports marked "provisional" are subject to change, pending final QC review and approval. The customer has not provided any information than can affect the validity of the test results. Please refer to MSALABS' Schedule of Services and Fees for our complete Terms and Conditions. Preliminary results are applicable when a portion of samples in a job is 100% completed and reported or 1 of a number of methods on the same job have been completed 100%. Results cannot change, but additional results or results for additional methods can be added.

SAMPLE PREPARATION	
METHOD CODE	DESCRIPTION
PRP-910	Dry, Crush to 70% passing 2mm, Split 250g, Pulverize to 85% passing 75µm

ANALYTICAL METHODS	
METHOD CODE	DESCRIPTION
WRA-311	WRA-310 + C&S
WRA-3V	V, 0.15g, Lithium Borate Fusion, ICP-OES
IMS-127	Multi-Element (39 elements), 0.5g, 3:1 Aqua Regia, ICP-AES/MS, Ultra Trace Level

Signature:

Yvette Hsi, BSc.
Laboratory Manager
MSALABS

MSALABS
Unit 1, 20120 102nd Avenue
Langley, BC V1M 4B4
Phone: +1-604-888-0875

To: **Glen Prior**
793 Birch Avenue
Sherwood Park, Alberta, T8A 1X2
Canada

TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
Job Report Date: 22-Dec-2020
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	WRA-311 TC % 0.01	WRA-311 TS % 0.01	WRA-311 Al_2O_3 % 0.01	WRA-311 BaO % 0.01	WRA-311 CaO % 0.01	WRA-311 Cr_2O_3 % 0.01	WRA-311 Fe_2O_3 % 0.01	WRA-311 K_2O % 0.01	WRA-311 MgO % 0.01
Granite Blank	QC-P-BK	--		0.05	0.02	14.80	0.09	2.34	<0.01	2.90	1.99	0.90
Granite Blank	QC-P-BK	--		0.06	0.02	14.43	0.09	2.33	0.01	2.86	2.01	0.85
RM401	Rock	0.74		2.11	0.20	3.05	0.25	0.04	<0.01	0.73	0.62	0.17
RM402	Rock	0.69		4.64	2.14	3.52	0.19	20.04	<0.01	3.37	1.87	1.54
RM403	Rock	0.68		3.53	0.39	2.87	0.08	10.27	0.01	1.44	1.19	0.51
RM404	Rock	0.59		2.38	0.50	1.87	0.07	6.91	0.01	1.19	0.83	1.28
RM405	Rock	1.09		7.34	0.10	1.09	0.05	27.62	<0.01	0.65	0.41	1.91
RM406	Rock	0.71		3.91	1.99	11.82	0.59	7.20	0.01	7.53	3.05	2.92
RM407	Rock	0.66		2.50	0.32	12.30	0.61	0.87	0.02	4.19	3.08	1.28
RM408	Rock	0.49		4.50	1.46	9.70	0.63	5.12	0.01	2.36	2.34	3.82
RM409	Rock	0.72		6.87	2.09	7.76	1.01	10.67	<0.01	5.52	1.90	5.09
RM410	Rock	0.70		4.94	1.86	11.39	0.82	8.09	0.01	4.73	2.92	4.14
RM411	Rock	1.04		4.20	2.01	10.09	1.66	11.71	0.01	5.48	2.51	6.68
RM412	Rock	0.62		3.00	2.20	13.79	1.62	5.94	0.01	5.40	3.47	4.03
RM413	Rock	0.99		4.00	2.21	12.67	3.98	5.02	0.02	4.24	3.07	2.03
RM414	Rock	0.45		6.78	1.30	9.72	2.17	5.94	0.02	2.82	2.37	2.46
RM415	Rock	0.70		11.00	1.33	8.84	3.02	12.59	0.01	2.67	2.14	5.07
RM416	Rock	0.71		10.80	1.09	6.47	1.56	12.04	<0.01	2.15	1.58	4.28
RM417	Rock	0.84		10.30	1.35	4.51	1.06	12.13	<0.01	1.37	1.10	3.10
RM418	Rock	0.70		7.08	0.82	2.92	0.78	8.66	<0.01	1.04	0.68	1.13
RM419	Rock	0.50		3.78	0.35	9.94	1.82	4.20	0.02	2.35	2.53	1.73
RM420	Rock	0.49		4.31	0.34	13.33	2.92	7.35	0.02	4.71	3.63	4.42
RM421	Rock	0.68		4.73	1.13	11.40	0.99	8.90	0.01	4.89	2.92	4.82
RM422	Rock	0.52		3.36	1.03	12.90	1.00	4.66	0.01	4.10	3.30	2.57
RM423	Rock	1.11		5.53	0.91	10.99	0.75	2.88	0.01	3.34	2.69	1.64

***Please refer to the cover page for comments regarding this test report. ***

MSALABS
Unit 1, 20120 102nd Avenue
Langley, BC V1M 4B4
Phone: +1-604-888-0875

To: **Glen Prior**
793 Birch Avenue
Sherwood Park, Alberta, T8A 1X2
Canada

TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
Job Report Date: 22-Dec-2020
Report Version: Final

Sample ID	Sample Type	PWE-100 Rec. Wt. kg 0.01	Method Analyte Units LOR	WRA-311 TC % 0.01	WRA-311 TS % 0.01	WRA-311 Al_2O_3 % 0.01	WRA-311 BaO % 0.01	WRA-311 CaO % 0.01	WRA-311 Cr_2O_3 % 0.01	WRA-311 Fe_2O_3 % 0.01	WRA-311 K_2O % 0.01	WRA-311 MgO % 0.01
RM424	Rock	0.82		2.48	2.30	13.39	2.18	4.71	0.02	4.46	3.34	3.29
RM425	Rock	0.85		1.96	1.40	12.28	2.77	2.54	0.02	3.46	3.05	1.81
RM426	Rock	0.71		4.61	0.46	3.84	0.22	0.09	<0.01	0.72	0.86	0.24
RM427	Rock	0.92		4.24	0.38	3.24	0.20	0.14	<0.01	0.53	0.68	0.21
RM427PD	QC-PD	--		4.31	0.39	3.11	0.19	0.15	<0.01	0.53	0.66	0.21
DUP RM424												
DUP RM402						3.54	0.19	20.24	<0.01	3.28	1.80	1.74
DUP RM416												
DUP RM406				3.94	1.96							
STD BLANK												
STD BLANK						<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
STD BLANK												
STD BLANK				<0.01	<0.01							
STD OREAS 601												
STD OREAS 24b						15.12	0.08	1.44	0.02	6.33	3.34	2.75
STD SRM 694												
STD GS310-7				4.10	11.30							

***Please refer to the cover page for comments regarding this test report. ***

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Sherwood Park, Alberta, T8A 1X2
Canada

TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
Job Report Date: 22-Dec-2020
Report Version: Final

Sample ID	WRA-311 MnO % 0.01	WRA-311 Na_2O % 0.01	WRA-311 P_2O_5 % 0.01	WRA-311 SiO_2 % 0.01	WRA-311 SrO % 0.01	WRA-311 TiO_2 % 0.01	WRA-311 LOI % 0.01	WRA-311 Total %	WRA-3V V % 0.01	IMS-127 Ag ppm 0.05	IMS-127 Al % 0.01	IMS-127 As ppm 0.2
Granite Blank	0.08	4.94	0.08	71.49	0.02	0.33	1.38	101.34	<0.01	0.10	0.87	4.6
Granite Blank	0.08	4.86	0.08	70.77	0.02	0.32	1.31	100.02	<0.01	0.08	0.85	4.0
RM401	<0.01	0.02	0.05	91.63	<0.01	0.10	4.67	101.32	0.05	0.26	0.20	14.5
RM402	0.06	0.04	0.11	47.57	0.01	0.44	15.40	94.16	<0.01	0.21	0.26	4.5
RM403	<0.01	0.03	3.22	73.37	0.01	0.14	7.97	101.09	0.02	0.47	0.50	7.8
RM404	<0.01	0.03	3.07	78.33	<0.01	0.08	5.69	99.36	0.01	0.43	0.29	6.2
RM405	0.01	0.01	0.06	42.50	0.02	0.05	25.10	99.48	<0.01	0.20	0.10	2.9
RM406	0.04	0.51	0.15	48.19	0.03	0.56	15.47	98.07	0.03	1.17	0.48	13.2
RM407	0.02	0.70	0.08	68.13	<0.01	0.58	8.60	100.46	0.04	1.12	0.47	6.7
RM408	0.02	0.53	0.30	56.44	0.02	0.45	15.54	97.29	0.03	0.64	0.45	4.3
RM409	0.05	0.42	0.10	41.89	0.05	0.37	22.17	96.99	0.03	0.63	0.36	20.5
RM410	0.03	0.47	0.26	45.86	0.03	0.54	17.68	96.97	0.02	0.46	0.62	16.5
RM411	0.05	0.54	0.04	42.97	0.05	0.49	16.70	98.98	0.02	0.45	0.37	4.0
RM412	0.04	0.61	0.10	51.06	0.03	0.67	11.68	98.44	0.02	0.51	0.56	8.2
RM413	0.03	0.64	0.22	50.52	0.03	0.66	13.40	96.54	0.03	0.58	1.13	15.9
RM414	0.03	0.46	1.01	54.18	0.04	0.50	16.56	98.27	0.08	0.99	1.05	17.9
RM415	0.02	0.29	0.07	36.81	0.09	0.42	25.79	97.83	0.07	0.55	0.78	31.5
RM416	0.02	0.22	0.16	44.77	0.07	0.33	23.60	97.25	0.10	0.44	0.64	24.7
RM417	0.01	0.10	0.17	50.54	0.08	0.23	21.54	95.94	0.07	0.39	0.46	26.4
RM418	<0.01	0.05	0.13	67.59	0.07	0.13	15.76	98.95	0.09	0.34	0.35	18.9
RM419	0.02	0.60	0.26	67.66	0.02	0.45	9.44	101.02	0.03	0.64	0.71	5.3
RM420	0.05	0.67	0.10	48.79	0.03	0.65	14.98	101.66	0.03	1.60	0.89	8.2
RM421	0.04	0.66	0.06	47.34	0.04	0.52	15.67	98.25	0.05	1.11	0.55	7.3
RM422	0.03	0.50	0.11	57.53	0.02	0.60	11.26	98.59	0.04	0.91	0.62	11.6
RM423	0.02	0.64	0.11	65.95	0.02	0.53	12.14	101.72	0.11	0.91	0.52	12.8

***Please refer to the cover page for comments regarding this test report. ***

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To: **Glen Prior**
793 Birch Avenue
Sherwood Park, Alberta, T8A 1X2
Canada

TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
Job Report Date: 22-Dec-2020
Report Version: Final

Sample ID	WRA-311 MnO % 0.01	WRA-311 Na_2O % 0.01	WRA-311 P_2O_5 % 0.01	WRA-311 SiO_2 % 0.01	WRA-311 SrO % 0.01	WRA-311 TiO_2 % 0.01	WRA-311 LOI % 0.01	WRA-311 Total %	WRA-3V V % 0.01	IMS-127 Ag ppm 0.05	IMS-127 Al % 0.01	IMS-127 As ppm 0.2
RM424	0.02	0.69	0.13	55.79	0.03	0.67	9.80	98.51	0.02	0.52	0.46	13.2
RM425	0.02	0.64	0.14	63.21	0.02	0.63	7.89	98.47	0.02	0.82	0.45	10.1
RM426	<0.01	0.04	<0.01	85.30	<0.01	0.17	8.01	99.49	0.12	0.54	0.23	6.4
RM427	<0.01	0.02	<0.01	86.78	<0.01	0.13	6.84	98.77	0.09	0.45	0.20	7.3
RM427PD	<0.01	0.02	<0.01	86.74	<0.01	0.12	7.09	98.82	0.09	0.46	0.20	7.6
DUP RM424										0.52	0.51	13.6
DUP RM402	0.06	0.08	0.11	46.25	0.02	0.45	15.35	93.10				
DUP RM416									0.10			
DUP RM406												
STD BLANK										<0.05	<0.01	<0.2
STD BLANK	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01						
STD BLANK									<0.01			
STD BLANK												
STD OREAS 601										48.48	0.83	298.0
STD OREAS 24b	0.06	1.13	0.15	65.20	0.01	0.78	2.42	98.82				
STD SRM 694									0.17			
STD GS310-7												

***Please refer to the cover page for comments regarding this test report. ***

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Job Report Date: 22-Dec-2020
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Sample ID	IMS-127 Au ppm 0.001	IMS-127 B ppm 10	IMS-127 Ba ppm 10	IMS-127 Bi ppm 0.05	IMS-127 Ca % 0.01	IMS-127 Cd ppm 0.05	IMS-127 Co ppm 0.1	IMS-127 Cr ppm 1	IMS-127 Cu ppm 0.2	IMS-127 Fe % 0.01	IMS-127 Ga ppm 0.1	IMS-127 Hg ppm 0.01
Granite Blank	0.006	<10	55	0.13	0.58	0.06	3.1	17	4.2	1.70	3.9	<0.01
Granite Blank	0.001	<10	67	<0.05	0.60	0.10	3.1	20	3.0	1.70	4.0	<0.01
RM401	<0.001	<10	1237	0.09	0.04	0.29	0.1	22	28.1	0.46	1.4	0.03
RM402	<0.001	<10	164	0.06	13.18	0.05	9.3	27	23.9	2.40	1.4	0.07
RM403	<0.001	15	213	0.13	6.93	0.36	2.6	55	32.7	1.00	2.6	0.09
RM404	<0.001	11	176	0.07	4.86	0.13	1.8	57	22.8	0.85	1.9	0.09
RM405	<0.001	<10	218	<0.05	17.95	0.17	1.5	23	7.7	0.48	0.5	0.04
RM406	<0.001	18	138	0.20	4.82	1.37	12.4	17	56.3	4.89	1.7	0.17
RM407	<0.001	11	968	0.26	0.64	2.15	10.2	19	79.1	2.62	1.5	0.11
RM408	<0.001	18	340	0.20	3.61	1.07	7.8	21	39.7	1.42	1.7	0.06
RM409	<0.001	16	125	0.16	7.35	1.72	9.2	17	33.9	3.87	1.4	0.21
RM410	<0.001	18	213	0.19	5.50	0.59	10.2	27	50.4	3.16	2.1	0.24
RM411	<0.001	13	123	0.16	7.28	0.46	9.3	22	35.0	3.65	1.5	0.10
RM412	<0.001	18	106	0.21	4.00	0.32	12.1	27	41.6	3.55	2.4	0.18
RM413	<0.001	12	120	0.19	3.55	1.52	11.8	47	61.4	2.90	4.2	0.31
RM414	<0.001	30	173	0.14	4.14	5.58	10.6	94	70.6	1.91	6.6	0.25
RM415	<0.001	18	309	0.13	8.17	3.16	10.5	35	42.1	1.77	4.1	0.29
RM416	<0.001	17	629	0.14	8.28	4.70	7.4	37	44.1	1.49	3.8	0.20
RM417	<0.001	11	331	0.09	8.32	4.95	5.0	38	53.7	0.97	2.7	0.13
RM418	<0.001	<10	793	0.07	6.10	6.42	2.2	34	49.2	0.73	2.7	0.18
RM419	<0.001	19	3170	0.20	2.95	0.75	7.6	29	66.1	1.37	2.7	0.10
RM420	<0.001	14	5161	0.22	4.87	0.90	14.0	27	41.5	2.90	2.6	0.12
RM421	<0.001	21	305	0.20	6.57	2.79	10.0	20	44.8	3.10	2.5	0.13
RM422	<0.001	22	456	0.24	3.54	1.84	12.9	16	41.3	2.48	2.4	0.16
RM423	<0.001	19	674	0.21	2.14	4.68	9.6	17	69.8	1.96	2.1	0.14

***Please refer to the cover page for comments regarding this test report. ***

MSALABS
Unit 1, 20120 102nd Avenue
Langley, BC V1M 4B4
Phone: +1-604-888-0875

To: **Glen Prior**
793 Birch Avenue
Sherwood Park, Alberta, T8A 1X2
Canada

TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
Job Report Date: 22-Dec-2020
Report Version: Final

Sample ID	IMS-127 Au ppm 0.001	IMS-127 B ppm 10	IMS-127 Ba ppm 10	IMS-127 Bi ppm 0.05	IMS-127 Ca % 0.01	IMS-127 Cd ppm 0.05	IMS-127 Co ppm 0.1	IMS-127 Cr ppm 1	IMS-127 Cu ppm 0.2	IMS-127 Fe % 0.01	IMS-127 Ga ppm 0.1	IMS-127 Hg ppm 0.01
RM424	<0.001	14	137	0.20	3.44	0.43	11.8	33	46.2	2.84	2.4	0.20
RM425	<0.001	13	265	0.21	1.96	2.48	13.7	33	57.0	2.30	2.4	0.16
RM426	<0.001	<10	881	0.10	0.08	1.33	0.1	16	7.4	0.45	0.9	0.11
RM427	<0.001	<10	771	0.08	0.11	0.11	0.1	20	9.8	0.32	0.9	0.07
RM427PD	<0.001	<10	732	0.09	0.13	0.10	0.2	20	8.7	0.33	0.9	0.08
DUP RM424	<0.001	16	132	0.20	3.56	0.43	12.1	35	47.4	2.95	2.7	0.20
DUP RM402												
DUP RM416												
DUP RM406												
STD BLANK	<0.001	<10	<10	<0.05	<0.01	<0.05	<0.1	<1	<0.2	<0.01	<0.1	<0.01
STD BLANK												
STD BLANK												
STD BLANK												
STD OREAS 601	0.737	<10	238	21.68	1.06	7.61	4.7	44	990.9	2.19	4.7	0.30
STD OREAS 24b												
STD SRM 694												
STD GS310-7												

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TEST REPORT: YVR2010789

Project Name: RM
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	IMS-127 K	IMS-127 La	IMS-127 Mg	IMS-127 Mn	IMS-127 Mo	IMS-127 Na	IMS-127 Ni	IMS-127 P	IMS-127 Pb	IMS-127 Re	IMS-127 S	IMS-127 Sb
	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
Sample ID	0.01	0.5	0.01	5	0.05	0.01	0.1	10	0.2	0.005	0.01	0.05
Granite Blank	0.09	5.7	0.46	477	3.17	0.09	1.3	398	7.6	<0.005	0.03	0.08
Granite Blank	0.09	6.0	0.44	455	3.62	0.09	1.4	393	25.4	<0.005	0.02	0.82
RM401	0.09	1.2	0.01	15	26.55	0.11	12.1	219	5.4	0.045	0.11	5.05
RM402	0.10	20.5	0.73	430	3.14	0.03	37.1	537	19.5	<0.005	2.13	0.83
RM403	0.28	14.1	0.21	58	6.10	0.03	40.5	>10000	7.2	0.008	0.35	1.09
RM404	0.16	15.0	0.72	65	7.07	0.03	25.6	>10000	14.7	0.006	0.45	1.51
RM405	0.06	5.1	1.04	115	5.00	0.03	14.6	354	3.5	<0.005	0.09	0.42
RM406	0.26	10.1	1.29	225	19.97	0.02	71.4	675	23.2	0.009	2.03	3.39
RM407	0.25	9.8	0.35	146	4.78	0.10	73.9	391	12.4	0.014	0.34	2.49
RM408	0.23	6.6	2.04	129	3.58	0.05	45.8	1370	8.5	0.012	1.48	1.08
RM409	0.19	7.0	2.95	305	29.71	0.02	53.7	492	19.7	0.007	2.09	5.09
RM410	0.27	7.3	2.22	200	3.35	0.03	64.1	1226	11.1	0.006	1.86	1.31
RM411	0.18	11.1	3.18	321	2.32	0.03	36.5	144	7.5	0.006	1.94	0.68
RM412	0.27	7.6	2.07	218	3.92	0.02	50.4	489	9.7	0.008	2.17	0.73
RM413	0.39	7.0	0.99	166	7.61	0.03	87.8	1037	8.3	0.016	1.80	5.39
RM414	0.38	14.7	1.33	177	19.21	0.03	144.4	4699	7.9	0.029	1.05	5.43
RM415	0.25	12.5	2.52	138	104.20	0.05	254.0	292	9.5	0.078	0.82	5.82
RM416	0.21	12.5	2.16	124	91.53	0.07	207.0	745	9.2	0.047	0.68	4.08
RM417	0.15	23.0	1.58	93	60.22	0.04	163.2	823	6.3	0.044	0.96	3.39
RM418	0.12	15.1	0.61	53	48.27	0.08	112.9	670	5.7	0.071	0.52	3.26
RM419	0.30	14.5	0.78	99	2.82	0.29	46.7	1201	9.2	0.012	0.32	0.96
RM420	0.39	21.3	2.38	362	2.70	0.48	57.9	421	14.8	0.012	0.27	1.20
RM421	0.27	11.9	2.69	243	9.75	0.04	49.1	317	15.0	0.015	1.18	3.23
RM422	0.30	9.3	1.11	158	18.77	0.05	68.2	510	22.2	0.018	1.06	4.47
RM423	0.24	7.2	0.61	118	42.86	0.07	86.9	518	16.2	0.062	0.91	5.42

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Canada

TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
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	IMS-127 K	IMS-127 La	IMS-127 Mg	IMS-127 Mn	IMS-127 Mo	IMS-127 Na	IMS-127 Ni	IMS-127 P	IMS-127 Pb	IMS-127 Re	IMS-127 S	IMS-127 Sb
	%	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm
Sample ID	0.01	0.5	0.01	5	0.05	0.01	0.1	10	0.2	0.005	0.01	0.05
RM424	0.22	6.5	1.63	143	5.21	0.03	65.6	577	9.0	0.011	2.21	3.35
RM425	0.20	7.1	0.80	130	4.12	0.04	99.1	652	7.5	0.007	1.34	2.99
RM426	0.15	1.3	0.02	8	46.15	0.09	8.2	59	7.8	0.034	0.27	4.06
RM427	0.10	0.8	0.03	11	34.85	0.07	8.4	37	4.5	0.044	0.21	4.37
RM427PD	0.10	0.8	0.03	11	35.88	0.07	8.5	40	4.6	0.044	0.21	4.33
DUP RM424	0.24	6.8	1.71	148	5.42	0.03	67.4	597	8.8	0.011	2.29	3.49
DUP RM402												
DUP RM416												
DUP RM406												
STD BLANK	<0.01	<0.5	<0.01	<5	<0.05	<0.01	<0.1	<10	<0.2	<0.005	<0.01	<0.05
STD BLANK												
STD BLANK												
STD BLANK												
STD OREAS 601	0.25	20.9	0.20	444	3.72	0.09	23.7	351	273.4	<0.005	1.01	21.36
STD OREAS 24b												
STD SRM 694												
STD GS310-7												

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TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
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Sample ID	IMS-127 Sc ppm 0.1	IMS-127 Se ppm 0.2	IMS-127 Sr ppm 0.5	IMS-127 Te ppm 0.05	IMS-127 Th ppm 0.2	IMS-127 Ti % 0.005	IMS-127 Tl ppm 0.05	IMS-127 U ppm 0.05	IMS-127 V ppm 1	IMS-127 W ppm 0.05	IMS-127 Y ppm 0.5	IMS-127 Zn ppm 2
Granite Blank	2.8	<0.2	20.0	<0.05	2.3	0.087	<0.05	0.43	24	0.11	8.7	28
Granite Blank	3.0	<0.2	21.3	<0.05	2.3	0.088	<0.05	0.45	24	0.11	9.0	38
RM401	1.9	5.1	57.4	<0.05	0.8	<0.005	1.04	4.34	129	0.18	2.8	45
RM402	4.4	1.0	134.5	<0.05	1.1	<0.005	0.07	0.24	14	0.11	14.0	16
RM403	2.6	3.6	100.6	<0.05	1.4	<0.005	0.10	3.73	114	0.23	19.3	105
RM404	2.0	2.8	63.9	0.09	0.8	<0.005	0.08	1.92	53	0.17	19.3	59
RM405	1.6	0.7	178.9	<0.05	0.6	<0.005	0.09	0.75	14	0.12	5.7	18
RM406	6.0	6.8	225.3	<0.05	4.9	<0.005	0.27	3.57	66	0.08	19.2	136
RM407	5.4	7.7	47.0	<0.05	5.6	<0.005	0.16	2.58	48	<0.05	9.5	289
RM408	5.1	4.5	193.7	0.06	4.6	<0.005	0.08	3.16	48	0.05	15.7	178
RM409	5.2	4.1	409.7	0.09	3.5	<0.005	0.32	8.59	103	0.11	17.2	158
RM410	7.5	3.2	272.0	<0.05	5.2	<0.005	0.27	2.26	33	0.06	24.8	147
RM411	7.2	2.1	409.2	<0.05	4.5	<0.005	0.19	1.49	34	0.06	19.9	80
RM412	8.3	2.3	209.5	<0.05	6.6	<0.005	0.30	1.66	27	0.12	18.0	79
RM413	7.9	13.6	190.2	0.07	5.0	<0.005	0.68	4.23	84	0.12	12.9	219
RM414	6.4	14.4	294.4	0.06	4.7	0.008	0.34	7.71	516	0.19	25.9	622
RM415	6.2	9.9	724.3	<0.05	5.4	0.006	1.90	28.29	320	0.30	30.7	280
RM416	5.3	7.8	595.7	<0.05	4.1	<0.005	1.43	27.14	544	0.25	29.1	327
RM417	4.5	7.0	727.0	0.09	3.2	<0.005	1.09	20.68	412	0.29	24.4	336
RM418	3.3	8.1	612.5	<0.05	2.2	<0.005	1.15	11.49	612	0.26	19.4	464
RM419	5.0	4.9	119.8	<0.05	4.5	<0.005	0.10	2.64	61	0.10	14.6	138
RM420	8.6	4.0	251.1	0.07	6.5	<0.005	0.14	2.02	64	0.06	22.5	145
RM421	7.3	5.1	413.7	0.05	5.9	<0.005	0.27	2.17	92	0.07	20.8	321
RM422	7.0	4.2	214.5	0.07	7.3	<0.005	0.50	3.71	73	0.07	13.6	186
RM423	5.1	8.0	144.1	<0.05	5.1	<0.005	0.35	7.87	202	0.08	12.6	578

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TEST REPORT: YVR2010789

Project Name: RM
Job Received Date: 15-Oct-2020
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Sample ID	IMS-127 Sc ppm 0.1	IMS-127 Se ppm 0.2	IMS-127 Sr ppm 0.5	IMS-127 Te ppm 0.05	IMS-127 Th ppm 0.2	IMS-127 Ti % 0.005	IMS-127 Tl ppm 0.05	IMS-127 U ppm 0.05	IMS-127 V ppm 1	IMS-127 W ppm 0.05	IMS-127 Y ppm 0.5	IMS-127 Zn ppm 2
RM424	8.0	3.8	221.0	<0.05	6.5	<0.005	0.48	1.51	37	0.14	9.4	106
RM425	6.2	5.0	126.2	0.12	6.3	<0.005	0.32	2.53	36	0.11	19.7	493
RM426	0.8	7.5	34.6	0.06	1.1	<0.005	1.07	2.76	253	0.21	1.8	9
RM427	0.9	8.1	21.7	0.08	0.7	<0.005	1.10	2.82	186	0.28	1.4	7
RM427PD	0.9	8.5	22.8	0.08	0.7	<0.005	1.17	2.97	188	0.18	1.4	6
DUP RM424	8.1	3.7	230.1	<0.05	6.8	<0.005	0.49	1.51	41	0.20	9.8	109
DUP RM402												
DUP RM416												
DUP RM406												
STD BLANK	<0.1	<0.2	<0.5	<0.05	<0.2	<0.005	<0.05	<0.05	<1	<0.05	<0.5	<2
STD BLANK												
STD BLANK												
STD BLANK												
STD OREAS 601	1.8	12.7	35.6	15.07	6.3	0.012	0.70	1.87	10	1.14	5.9	1268
STD OREAS 24b												
STD SRM 694												
STD GS310-7												

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