012631

REEF PROJECT
SUMMARY OF 1974 FIELD WORK AND PROPOSED EXPLORATION

N.T.S. 106-B,C,D,E,
N.T.S. 116-A,B,C,F,G,H,J,

DYNASTY EXPLORATIONS LIMITED
By: P.M. Dean April,1975

REEF PROJECT

SUMMARY OF 1974 FIELD WORK

AND PROPOSED EXPLORATION

N.T.S. 106-B,C,D,E,
N.T.S. 116-A,B,C,F,G,H,J

By:

Peter M. Dean

DYNASTY EXPLORATIONS LIMITED

April, 1975

TABLE OF CONTENTS

Key Map

Introduction 1

Summary and Conclusions 2

Geology 3

Rock Units and Mineral Potential 4

Unit 1 4
Unit 2 5
Unit 3 6
Unit 4 7
Unit 5 7

Paleozoic Carbonate Units 8

Geochemistry 10

Detailed Discussion of Work Completed During 1974 Field Season 12

N.T.S. 106-B 12
N.T.S. 106-C 12
N.T.S. 106-D 13
N.T.S. 106-E 16
N.T.S. 116-A 17
N.T.S. 116-B 18
N.T.S. 116-C 20
N.T.S. 116-F 20
N.T.S. 116-G 20
N.T.S. 116-H 23
N.T.S. 116-J 24

Proposed Exploration 25

On Properties 25

Alp Claims 25
Bilbo Claims 25
Coot Claims 25
Didlo Claims 25
EG Claims 25
FC Claims 26
Gig Claims 26
Hot Claims 26
ID Claims 27
Jug Claims 27
Kiwi Claims 27
Lingham Claims 28
Magic Claims 28
Newt Claims 28
OZ Claims 28
Poo Claims 29
Qwak Claims 29
Ralph Claims 30
Sourdough Claims 30
Tart Claims 30

Proposed Exploration
(Continued)

Regional Areas Requiring Further Detailed Work ... 31

Coal Creek Dome 31
Castle Ridge Detail Area 32
Dolores Creek Detail Area 32

New Regional Coverage 33

LIST OF FIGURES

Key Map - 1": 20 mi. Front of Report

Envelope #1

Figure 2 - Summary Map - 106-B - 1"= 4 miles
Figure 3 - Summary Map - 106-C - 1"= 4 miles
Figure 4 - Dolores Creek Detail Area - Geology - 1"= ½ mile
Figure 5 - Dolores Creek Detail Area - Geochem - 1"= ½ mile

Envelope #2

Figure 6 - Summary Map - 106-D - 1"= 4 miles
Figure 7 - Summary Map - 106-E - 1"= 4 miles
Figure 8 - Castle Ridge Detail Area - Geology - 1"= ½ mile
Figure 9 - Castle Ridge Detail Area - Geochem - 1"= ½ mile

Envelope #3

Figure 10 - Summary Map - 116-A - 1"= 4 miles
Figure 11 - Summary Map - 116-B and C - 1"= 4 miles

Envelope #4

Figure 12 - Coal Creek Dome - Geology - 1"= ½ mile
Figure 13 - Coal Creek Dome - Geochem - 1"= ½ mile

Envelope #5

Figure 14 - Summary Map - 116-G and F - 1"= 4 miles
Figure 15 - Summary Map - 116-H - 1"= 4 miles
Figure 16 - Summary Map - 116-J and K - 1"= 4 miles

Envelope #6

Figure 17 - Proposed Regional Coverage Map
(Key Map and additions)

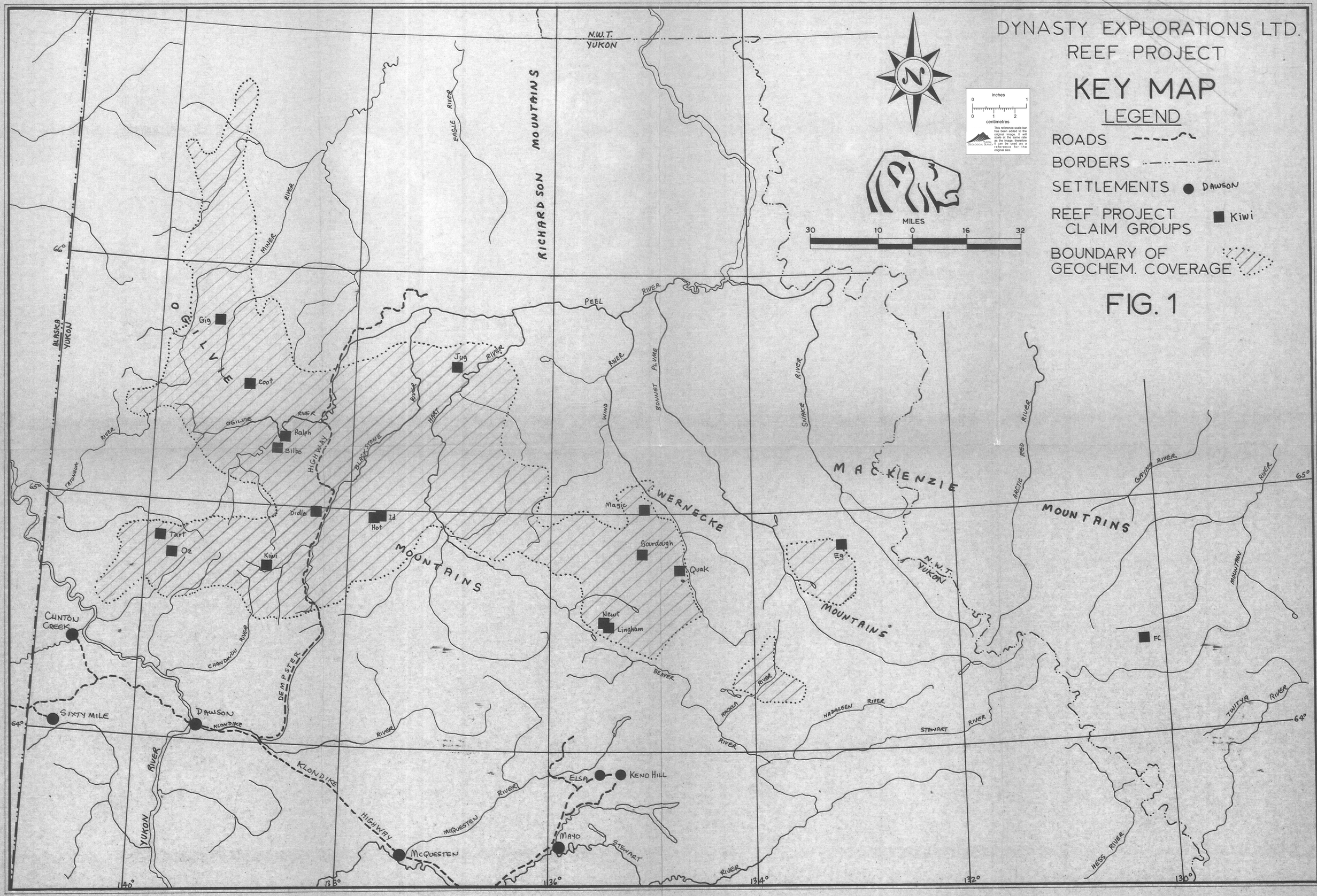

DYNASTY EXPLORATIONS LTD.
REEF PROJECT
KEY MAP
LEGEND
ROADS
BORDERS
SETTLEMENTS
DAWSON
REEF PROJECT CLAIM GROUPS
Kiwi
BOUNDARY OF GEOCHEM. COVERAGE
MILES
30
10
0
16
32
N.W.T.
YUKON
ALASKA
YUKON
RICHARDSON MOUNTAINS
OGILVIE
MACKENZIE
MOUNTAINS
WERNECKE
MOUNTAINS
MOUNTAINS
Gig
Coot
Jug
Ralph
Bilbo
Didlo
Hot
Id
Tart
Oz
Kiwi
Magic
Sourdough
Quak
Newt
Lingham
Eg
FC
CLINTON CREEK
SIXTY MILE
DAWSON
ELSA
KENO HILL
MAYO
McQUESTEN
MINER RIVER
EAGLE RIVER
PEEL RIVER
OGILVIE RIVER
BLACKSTONE RIVER
HART RIVER
WIND RIVER
BONNET PLUME
SNAKE RIVER
ARCTIC RED RIVER
GAYNA RIVER
MOUNTAIN RIVER
TATONDUK RIVER
CHANDINDU RIVER
DEMPSTER HIGHWAY
KLONDIKE RIVER
KLONDIKE HIGHWAY
YUKON RIVER
McQUESTEN RIVER
STEWART RIVER
BEAVER RIVER
RACKLA RIVER
NADALEEN RIVER
TWITYA RIVER
HESS RIVER
66°
65°
64°
140°
138°
136°
134°
132°
130°

FIG. 1

TELEPHONE 685-4331

DYNASTY EXPLORATIONS LIMITED

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

REEF PROJECT
SUMMARY OF 1974 FIELD WORK
AND PROPOSED EXPLORATION

INTRODUCTION

The Reef Project was initiated during the spring of 1974 to explore for base metal deposits in miogeosynclinal carbonates and shales of Paleozoic and older age in the Yukon and Northwest Territories. Compilation and interpretation of geological information indicated that rock units potentially suitable as host rocks for base metal deposits occur in a great arc a hundred miles wide extending from northern B.C., through the Mackenzie Mountains, to the Alaska border north of Dawson City. Field work during 1974 was carried out on the portion of this belt in the Ogilvie and Wernecke Mountains, where favourable strata underly about 12,000 square miles (Figure 1).

The lack of detailed geology, the huge areas to be covered, and the subtle nature of the types of mineralization sought, all combined to dictate a geochemical approach for the initial reconnaissance phase of the project. Stream sediment sampling was completed over a total area of 9,000 square miles during the first three months of the season, and a limited amount more detailed geochemical and geological follow-up was accomplished during the last month.

The field work was carried out by a crew of four men, supported by two Bell 47 helicopters during June and by one helicopter during the balance of the season. The work was conducted from two main base camps, one on the Dempster Highway, 130 miles north of Dawson City, the other on Hart Lake, 72 miles northeast

of Mayo. Field work commenced on the 1st of June and terminated on the 27th of September.

SUMMARY AND CONCLUSIONS

1. Reconnaissance geochemical coverage was completed over 9,000 square miles of sedimentary strata of Proterozoic to Devonian age, at a sampling density of one sample per square mile.

2. Of the numerous showings and geochemical anomalies located by the reconnaissance work, 19 were considered worthy of staking. Further work is recommended for 16 of these claim groups during 1975.

3. The Proterozoic dolomite units,which appear to have the greatest potential as host rocks for significant base metal mineralization, underly about 4,000 square miles in areas directly adjacent to the 1974 Reef Project sampled areas. An additional 8,000 square miles is underlain by these favourable units to the east and south in the Mackenzie Mountains.

4. The 1974 field work was completed within the overall budget of $245,000. The exploration proposed for 1975, which includes work on claim groups, detailed reconnaissance work in selected areas, and new silt sampling coverage over 4,000 square miles, will cost an estimated $500,000.

GEOLOGY

Very little regional geologic mapping was done by the Reef Project during 1974. The Geological Survey maps of the southern half of the project area, at a scale of 1:250,000 were found to give a reliable and entirely adequate picture of the regional geology. That part of the project area north of 65°00' latitude has been mapped at a scale of 1":16 miles, and has been re-plotted by us at a scale of 1:250,000. The best overall reference to the geology of the area is G.S.C. Memoir 364, by L. H. Green, 1972, which discusses the geology on 106-D, 116-A and 116-B and C. The various units which are described in this report can be recognized on the map sheets to the north. The eastern fringe of the project area has been mapped by S. L. Blusson (1974). More Paleozoic units can be recognized in this area and good descriptions of these units are found in Paper 71-22, an earlier publication by Blusson. Other papers which discuss the geology of the area are listed in the Reference Section.

Essentially unmetamorphosed sedimentary units of Proterozoic to Cretaceous age occur in the areas covered by the Reef Project during 1974. A major unconformity at the base of the Lower Cambrian separates complexly folded Proterozoic strata from more gently folded Paleozoic units. Another pronounced angular unconformity separates the Paleozoic units from nearly flat-lying Cretaceous sandstones and siltstones. Intrusive rocks are limited to greenstone sills and dykes of uncertain age which intrude Proterozoic units in the south half of the area. A few stocks of syenite occur on the fringe of the Project Area in the Tombstone Range north of Dawson City. Volcanic flows and tuffaceous sediments occur in Ordovician age strata on the Larsen Creek and Dawson map sheets.

The primary target of the Reef Project was lead-zinc deposits of sedimentary or Mississippi Valley type, in carbonate or shale host rocks. Several significant deposits of this type have been discovered in the area in the past two or three years in carbonate units of Proterozoic, Lower Cambrian, Ordovician and Middle Devonian age. Since it was often not possible to recognize these particular age units in the field, in practise all carbonate units older than Middle Devonian were sampled in the course of the reconnaissance stream sediment geochem.

Rock Units and Mineral Potential

Unit 1

Rocks of this unit consist of dull coloured shales, argillites, quartzites and conglomerates. The unit is resistant and weathers into high, ragged ridges with precipitous faces. Jasper and hematite are very common as trace minerals in the unit, and occasionally are present in substantial quantities.

Unit 1 was not one of the major targets of the Reef exploration effort, but the unit seemed to have some characteristics of massive sulphide host rocks and, therefore, it was not entirely ignored. The limited amount of sampling and prospecting that was done in the unit led to the discovery of a number of mineral occurrences of different types, including copper sulphides disseminated in conglomerates and in quartz phyllite, and chalcopyrite in pyrite lenses related to hematite-jasper iron formation. Lead and zinc sulphides were found in quartz veins and in dolomite-calcite-quartz veins in several showings. The presence of sulphide facies of iron formation with related chalcopyrite mineralization lends support to the possibility of finding significant massive sulphide deposits within Unit 1 and more reconnaissance sampling and prospecting is planned for 1975.

Unit 2

The most characteristic lithology of Unit 2 is a buff to orange weathering, fine grained dolomite. Other lithologies include cherty, grey weathering dolomite, dolomitic siltstone, slate, shale, sandstone and limestone. The unit appears to overly Unit 1 conformably. In the Coal Creek Dome area on the Dawson map sheet Unit 2 is broken down into four sub-units which the G.S.C. geologists were not able to recognize on other map sheets. The lowermost unit, overlying Unit 1, is termed Unit 2b, and consists of mainly buff to orange weathering, fine grained dolomite, with lesser amounts of dark coloured shale. Unit 2c typically consists of grey weathering, massive dolomite with cherty, stromatolitic and oolitic sections. This unit is described as overlying Unit 2b conformably, but our observations suggest that the 2b-2c contact is an unconformity. Unit 2d is a buff weathering dolomite conglomerate which outcrops in a restricted area on the west flank of Coal Creek Dome. Unit 2c consists mainly of grey shale, argillite and siltstone, with some dolomite conglomerate and minor buff to orange weathering dolomite.

Several major and numerous minor showings of zinc-lead mineralization were found in Unit 2 in the Coal Creek Dome. The mineralization appears to be stratigraphically controlled, in part at least, and is restricted to two of the sub-units of Unit 2. Some of the sphalerite-galena mineralization within Sub-unit 2b is fine grained and sedimentary in appearance, and is contained within a black shale bed. Immediately adjacent to these sedimentary showings are coarse grained breccia fillings and veins. The OZ and TART claims cover showings in Sub-unit 2b. The showings on and around the KIWI claims are in Sub-unit 2c, and consist entirely of high grade, coarse grained vein and breccia mineralization. All of the sphalerite and most of the galena in these KIWI showings has altered to smithsonite and anglesite. The showings in Sub-unit 2c may be related to faults.

The pattern of showings in Sub-unit 2b suggests that the mineralization may be related to one bed in the lower part of the sub-unit, but the quality of mapping is too poor to confirm this possibility. All of Coal Creek Dome will be thoroughly mapped during 1975 and one of the main objectives of the mapping will be to trace, in detail, the mineralized zones within Sub-unit 2b.

Elsewhere in the Reef Project Area, Unit 2 was not extensively covered during the reconnaissance geochemical survey but enough area was sampled to indicate that its metal-rich character persists to the east. A number of new or previously known showings occur in Unit 2 on map sheets 116-A, 106-D and 106-C, and even equivalent Proterozoic map units as far east as the Front Ranges of the Mackenzie Mountains, near Norman Wells, are characterized by numerous showings, although in this area the showings are predominantly copper rather than lead or zinc. Unit 2 and equivalent strata will be the major target of the reconnaissance silt sampling that is planned for the 1975 season.

Unit 3

Unit 3 includes a wide belt of clastic rocks of uncertain age which outcrop in a band across the southern half of the Dawson, Larsen and Nash Creek map sheets. Rocks of this unit have been informally termed the "Grit Unit" because of their characteristic lithologies of impure quartzite, grit, slate and argillite. This unit is generally in thrust fault contact with the units to the north, and the relationship between it and Units 1 and 2 is not understood. This unit, like Unit 1, contains some important occurrences of iron formation and some limited sampling was carried out to test the possibility of massive sulphide deposits being associated with the iron formation. One silt sample significantly anomalous in lead was discovered adjacent to a gossan within Unit 3, but there was not time during September to prospect it.

Unit 4

Volcanic flows, breccias, agglomerates and tuffs of andesitic composition are included in this unit, which outcrops in an irregular band across the middle of the Dawson map sheet. Much of the unit is unusually rich in calcite, which fills vesicles and makes up as much as 50% of the matrix. Its contact relationships suggest that it may be contemporary, at least in part, with the Ordovician Road River Formation, but it also appears to be interbedded with a part of Unit 2b near Mount Harper, so its age is uncertain.

No mineral occurrences are known in Unit 4, and little area underlain by it was prospected by the Reef Project. There may be some possibility for skarn development where the unit is intruded by stocks or dykes of syenite in the vicinity of the Tombstone Range.

Unit 5

Very distinctive brick red and maroon siltstones, sandstones and conglomerates make up this unit, which outcrops only in a small area of the Wernecke Mountains west of the Wind River. The unit is Lower Cambrian in age and overlies the Proterozoic Unit 1 below it with pronounced angular unconformity. The unit contains some sills or flows of porphyritic volcanic rock. Unit 5 is widely enriched in copper, minor showings occurring commonly in the coarser grained beds. One conglomerate bed 6 inches to 2 feet thick contained from a trace to 0.5 copper over a length of 5000 feet. Showings such as this one suggested that Unit 5 might have some promise as a host rock for sedimentary copper mineralization, so stream sediment sampling was carried out in some of the area underlain by the unit. No copper showings were discovered which warranted staking or further work, but only about half the area underlain by the unit was sampled.

Paleozoic Carbonate Units

Since no detailed geologic work was carried out by the Reef Project, it was seldom possible to distinguish individual age units within the Paleozoio carbonate pile. In general, the eastern fringe of the area covered is characterized by a well developed Cambrian section which is generally missing farther west as a result of pre-Ordovician erosion. Ordovician to Silurian age dolomites (Unit 8) occur widely across the entire area, and grade through facies changes into the Road River Formation to the northeast and southwest. A volcanic and tuffaceous shale unit of Middle to Late Ordovician age occurs in the middle of the Unit 8 strata south of Hart Lake. This unit, which is very fossiliferous, is an important age marker in the limited area in which it occurs. Silurian to Devonian carbonate units occur in the eastern and the northwestern parts of the area, but apparently are lacking on the Dawson map sheet. Limestone predominates over dolomite in units of this age in most of the areas we covered. Shale facies equivalents of the Devonian strata occur on most of the map sheets covered, and the Middle Devonian age carbonate beds are overlain by a shale unit of Upper Devonian to Carboniferous age. Distinctive and interesting formations of Permian age underly large areas in the northern Ogilvie Mountains and outcrop in more restricted parts of the southern Ogilvie and Wernecke Mountains. These Permian rocks, which consist of fossiliferous limestones, shales, sandstones and minor conglomerates, were not prospected by the Reef Project

Showings of lead-zinc minerals have been found in virtually all ages of Paleozoic carbonate formations in the Mackenzie and Ogilvie Mountains, but the most significant types of mineralization have been in formations of Lower Cambrian and Ordovician age. Showings in these age units have typically been strata-bound or stratiform and have tended to indicate better continuity

and size potential than mineral occurrences in formations of other ages, which usually have been veins or small tectonic breccias. Mineral showings on the BILBO, COOT, RALPH, HOT, ID and NEWT-LINGHAM claim groups are all in Ordovician dolomite units. The fluorite-barite-galena-sphalerite showings on the MAGIC claims are in a dolomite bed of Middle Devonian age.

GEOCHEMISTRY

Geochemical samples collected by the Reef Project include stream sediment samples, silt samples from ground water seepages, soil samples and rock samples. Approximately 10,000 samples were collected by the four-man crew during the season. Rock samples were crushed to -80 mesh size, while all other samples were sieved to yield a -80 mesh fraction.

Copper, lead and zinc were extracted from the -80 mesh material by means of a perchloric extraction and the resulting solution was analyzed by atomic absorption methods. All of the analytical work was carried out by Acme Analytical Laboratories at Ross River, Yukon Territory.

The basic reconnaissance stream sediment sampling was carried out by "chopper-hopping", which proved to be an economical way of collecting samples rapidly from very large areas using a very small crew. The method involves a helicopter landing at each sample site, and therefore can only be carried out in areas of sparse tree cover. Both the pilot and the sampler have to be exceptionally hardworking and capable, since landings are being made at a rate of once every five or six minutes during normal sampling, and generally two or more samples are being taken at each landing site. In an average day of sampling, 100 to 150 samples will be collected, representing 100 to 200 square miles of area. This density of sampling is sufficient to detect even quite small mineral occurrences.

The normal next phase of geochemical work consisted of detailed silt and seepage sampling of all tributaries within anomalous drainages, combined in some cases by contour soil sample lines. This geochemical sampling was carried out concurrently with preliminary prospecting to look for any obvious mineralized float or showings. This type of more detailed work was carried out in a number of anomalous drainages throughout the project area.

Grid soil sampling, the next stage in geochemical exploration, was carried out only on the OZ claims. This claim group is located in mountainous terrain where there is little soil development, so samples consisted of mineral soil taken at or near the surface. Much more soil sampling is planned for this and other claim groups during 1975.

No systematic rock geochemical sampling was done during the season. Most samples that were sent in for analysis were ones which were suspected of containing economic minerals of one sort or another, and the purpose of the analysis was simply to confirm the identification of the suspected mineral. This was especially the case with gossanous samples, where oxides of lead and zinc could not be readily distinguished from iron oxides. Rock geochemical sampling may prove to be a useful aid to unravelling the internal stratigraphy of Sub-unit 2b in the Coal Creek Dome area.

The sample sites and values have been plotted on 1": 1 mile scale maps which are not included with this report. The areas covered have been summarized on maps at a scale of 1":4 miles, which are enclosed in folders at the end of the report.

DETAILED DISCUSSION OF WORK COMPLETED DURING 1974 SEASON

N.T.S. 106-B (See Figure 2)

106-B-1 - No work was done on the ALP claims, which have now lapsed.

106-B-8 - Follow-up of 1973 geochemical results led to staking of the FC claim group on a showing of sphalerite and barite in a breccia zone within a dolomite unit of Silurian-Devonian age.

N.T.S. 106-C (See Figure 3)

106-C-4 - 5% silt coverage along northern fringe.

106-C-5 - 60% silt coverage along south and west. Widespread, slightly anomalous lead and zinc values originate within Unit 2 Proterozoic dolomite.

106-C-11 - 50% coverage over north half of sheet. No significant anomalies other than the one related to the showing on the Black Canyon Creek. Most of the claims on the map sheet are fringe staking related to the Cypress and Barrier Reef showings to the south of the map sheet and the Corn Creek showing to the north.

106-C-13 - 20% coverage in southeast corner. A number of important copper and lead-zinc anomalies occur on this map sheet and on 106-C-14. These anomalies originate in Unit 2 Helikian dolomites, Unit 1 shales and Unit 5 Hadryrian grey dolomite. They have not been prospected.

106-C-13 (Cont'd.) - The Lad claims are staked on a lead-zinc showing which has been known for a number of years. Copper showings are known on the north half of the map sheet.

106-C-14 - 60% coverage on the south part of the sheet. Part of the area was sampled during 1973, part during 1974. The EG claims were staked to cover a remarkable pyrite breccia related to a facies change within a Proterozoic dolomite unit. The pyrite breccia contains minor sphalerite but detailed sampling failed to locate economic grades of zinc in the main showing. Lead anomalies elsewhere on the claims have not been investigated.

The POO claims cover significant lead geochemical anomalies across the valley to the southwest of the EG claims. Minor galena-bearing float was found in this area during preliminary prospecting.

Extensive staking in the southeast corner of the map sheet surrounds the Corn Creek lead-zinc showings owned by Barrier Reef.

Several claim groups north of Dolores Creek were staked on copper showings. This area was not covered by the Reef Project.

N.T.S. 106-D (See Figure 6)

106-D-6 - 30% silt coverage in north part of map sheet. Two silver vein properties in this area have been known for years, but much of the anomalous geochem which the Reef Project discovered is not related to

106-D-6 (Cont'd.) - these known showings. No prospecting has been done as yet in these anomalous areas. The known showings are in Unit 2 dolomites close to diorite dyke contacts.

106-D-7 - 10% coverage in southeast corner.
An anomalous creek on the east fringe of the map area proved to drain a contact area between a diorite stock and Proterozoic sediments. Minor chalcopyrite, sphalerite and galena occur along the contact.

The Rackla River Mines property, which is located in this immediate area, consists of lead, zinc and silver bearing mineral zones which have been under investigation for a number of years. The property is currently under option to Cyprus-Anvil.

106-D-10 - 90% coverage
This map sheet is characterized by widespread anomalous geochemistry originating in Unit 2 and Unit 8. The strongest lead-zinc anomaly in silts was staked as the QWAK claims, which are located at the north edge of the map sheet. The area enclosed by the QWAK claims has been staked once before on the basis of copper showings.

Copper and cobalt occur in pyrite lenses associated with hematite-magnetite iron formation on a tributary of Bond Creek. One grab sample from this showing assayed 0.76% copper, 3.82% cobalt and 2.94 oz/ton silver, and a chip sample across 10 ft. assayed 0.5% copper. Lenses or veins of barite, some with chalcopyrite disseminations, occur in the near vicinity. These showings appear to be

106-D-10 (Cont'd.) too small to be of interest but iron formation occurs commonly in Unit 1 throughout the area, and copper-bearing sulphide lenses of significant size may occur elsewhere.

106-D-11 - 95% coverage
Sphalerite and galena occur in vein and breccia showings on the NEWT and LINGHAM claims, on the southwest corner of the map sheet. The silver content in the veins is very low, unlike the showings on 106-D-6, a few miles to the southeast. The mineralization on these claims may have been remobilized upward from Unit 2, which shallowly underlies the Paleozoic carbonates on the claims and which is characterized by high metal backgrounds and small showings where it outcrops at the west end of Castle Ridge on 106-D-12.

Quartzites containing abundant bands of pyrite outcrop in the valley bottom to the north and south of the LINGHAM claims. These pyrite-rich rocks contain anomalous amounts of lead and zinc, and may, therefore, be of interest as a possible host for pyritic base metal deposits. These rocks are probably Proterozoic in age but may be younger.

106-D-12 - 20% coverage on east and north fringe of map sheet. Small showings of sphalerite and galena occur in Unit 2 dolomite at west end of Castle Ridge.

106-D-13 - 80% coverage.
Insignificant copper showings occur in Unit 1 and Unit 5 on the map sheet.

106-D-14 - 50% coverage.
The SOURDOUGH claims were staked to cover copper and zinc showings and geochem anomalies. The copper and the zinc occur in separate, unrelated showings within Unit 1, and in both cases the areas of best geochemistry are not related to the known showings.

An old claim group in the southwest corner of the map sheet covers an insignificant copper occurrence in Unit 1.

106-D-15 - 20% coverage on south and western sides of the map sheet.

Zinc lead geochem anomalies occur in Devonian age rocks in the western part of the map sheet. The strata in which the geochem originates are at the same stratigraphic level as the mineralized zones on the MAGIC claims a few miles to the north.

N.T.S. 106-E (See Figure 7)

106-E-2 - A small amount of sampling was carried out in the belt of Cambrian age rocks which hosts the showings on Archer and Cathro's Flunk claims. No new anomalies were discovered.

106-E-3 - 20% coverage
A fluorite-barite-galena-sphalerite bearing bed of Devonian age which was discovered while examining a G.S.C. measured section was staked as the MAGIC claims.

106-E-3 (Cont'd.) Sampling in the Cambrian units close to Archer and Cathro's MST claims has indicated a significant lead geochemical anomaly which does not appear to arise from the area they have staked.

N.T.S. 116-A (See Figure 10)

116-A-12 - 20% coverage in north fringe of map sheet.

116-A-13 - 100% coverage

The HOT and ID claim groups in the north-central part of the map sheet cover high grade showings of galena and sphalerite in which the mineralization is massive and vein-like, yet conformable to bedding over long distances. Some breccia mineralization also occurs. The mineralization occurs in Ordovician age grey dolomite a few hundred feet above the contact with Proterozoic units.

116-A-14 - 25% coverage - most of the map sheet is low and swampy and not suitable for stream silt sampling.

116-A-15 - 40% coverage.

Copper showings are common in Unit 5 conglomerates and in diorite sills and stocks within Unit 1. Some of the showings within Unit 5 look sedimentary.

116-A-16 - 50% coverage.

Copper showings occur in Unit 5, as on 116-A-15. Minor galena occurs in quartz-carbonate veins cutting Unit 1 slates.

N.T.S. 116-B (See Figure 11)

116-B-7 - Minor new coverage in northwest corner.

116-B-9 - 10% coverage.

116-B-10 - 50% coverage.

The KIWI claims on the northern edge of the map sheet cover several showings of massive and breccia lead-zinc mineralization within massive grey dolomite of Proterozoic age.

116-B-11 - 60% coverage.

Minor copper occurs in a skarn near the contact of a syenite stock at the southern edge of the map sheet.

116-B-12 - 50% coverage.

The OZ claims, at the northern border of the map sheet, cover many showings of lead and zinc mineralization in Unit 2 dolomite. Several styles of mineralization are present, including stratiform, sedimentary-appearing sulphides, breccia fillings, and vein fillings. The vein and breccia mineralization may be the product of remobilization of syngenetic sulphides which occur in a black shale bed which crosses the property.

116-B-13 - 60% coverage.

Several sphalerite and galena showings similar to the ones on the OZ claims occur on this map sheet. Dynasty's TART claims cover a strong geochemical anomaly with associated minor sphalerite

float and showings. Hudson Bay own the Og claims, which cover similar breccia lead-zinc showings.

116-B-14 - 80% coverage.

The Kim claims in the southeast corner of the map sheet were staked by Hudson Bay Mining Company to cover a vein-type sphalerite showing in Proterozoic shales. A few small zinc showings occur in Unit 2 dolomites on this map sheet, as on the map sheets to the west and southwest.

Some interesting chalcopyrite mineralization occurs disseminated in a conglomerate bed in Unit 1 in the central part of the map sheet. The mineralization appears to be secondary in origin and may be related to faulting or to diorite dyke intrusion.

116-B-15 - 40% coverage.

The KIWI claims, previously described, occur on the southern fringe of this map sheet. Most of the map area is underlain by Paleozoic shales.

116-B-16 - 60% coverage.

Galena occurs in skarn-like silicified rocks along an unconformity on the DIDLO claims. The mineralization is developed at the contact between Unit 1 shales and Unit 8 Ordovician dolomites.

N.T.S. 116-C (See Figure 11)

116-C-9 - 20% coverage.

The Shell Creek Iron Formation occurs on this map sheet in Unit 3.

116-C-10 - 10% coverage.

The sampling on 116-C-10 and 116-C-9 is concentrated in Unit 3, which was thought to have some potential as a host for massive sulphide deposits. One highly anomalous silt value related to a gossan has not yet been followed up with prospecting.

116-C-16 - 25% coverage in southeast corner.

N.T.S. 116-F (See Figure 14)

116-F-8 - 40% coverage in central part of map sheet.

Balance of map sheet is underlain by Permian and younger units which were not sampled.

116-F-9 - 25% coverage.

N.T.S. 116-G (See Figure 14)

116-G-1 - 100% coverage.

Two barite showings are reported to occur near Mile 101 on the Dempster Highway but they were not located by the Reef crew.

116-G-2 - 80% coverage.

Most of the map sheet is underlain by Paleozoic shale.

116-G-3 - 25% coverage in northeast corner of sheet.

Nothing is known about the "Bear" claims in the northwest corner of the map sheet.

116-G-5 - 10% coverage.

116-G-6 - 50% coverage.

Much of the map sheet is low and swampy and is underlain by shale.

116-G-7 - 50% coverage.

The BILBO claims cover a showing of barite with minor associated galena which occurs in a massive dolomite bed at the base of Road River black shales and cherts. The main showing is estimated to contain 20% barite by volume, as coarsely crystalline fracture fillings. The RALPH claims cover a gossan zone characterized by high values in lead and zinc. No sulphides were found in a trench 3 ft. deep and 20 ft. long on the main gossan zone, but the oxidized material assayed 3% zinc over the 20 ft. length of the trench.

116-G-8 - 60% coverage.

Most of what is not sampled is low, swampy and underlain by shale.

116-G-9 - 5% coverage.

Most of the map area is underlain by rock units younger than Paleozoic.

116-G-10 - 50% coverage.

116-G-11 - 100% coverage.

The COOT claims were staked on showings of galena and sphalerite in silicified dolomite. Subsequent investigation proved that the showings were too low grade to be of interest and the claims will be allowed to lapse when they come due.

116-G-12 - 70% coverage.

116-G-13 - 50% coverage.

116-G-14 - 80% coverage.

The GIG claims cover showings of barite veins with associated galena and float occurrences of dolomite breccia with disseminated galena. Assays indicated that the breccia material is low grade and there are no strong geochemical anomalies associated with the occurrences which would suggest better grades at depth or under overburden, and the claim group will, therefore, be allowed to lapse. The mineralization occurs in a "window" of Tindir Formation rocks, equivalent to Unit 2, which is surrounded on all sides by younger rock units.

116-G-15 - 5% coverage.

Most of the map sheet is underlain by formations of Permian and younger age.

N.T.S. 116-H (See Figure 15)

116-H-1 - 75% coverage.

116-H-2 - 100% coverage.

Two completely dissimilar mineral showings were discovered at the western edge of this map sheet. The first to be found was a thin bed of conglomerate within Unit 5 red sandstones and shales which contains up to 0.5% copper, over a strike length of approximately 5000 ft. This conglomerate bed is about 6 inches to 4 ft. thick and the best copper content occurs in the thinnest portion of the bed. Two miles to the southeast of this showing, sparse yellow sphalerite was found to occur widely through a massive dolomite unit of probable Ordovician age. Neither showing has any economic potential and neither was staked, but the copper showing in particular indicates that significant sedimentary copper mineralization may occur in Unit 5.

116-H-3 - 90% coverage.

116-H-4 - 80% coverage.

116-H-5 - 30% coverage.

Only occasional valleys could be sampled on this map sheet and adjacent ones due to the heavy tree cover.

116-H-6 - 30% coverage.

116-H-7 - 20% coverage.

116-H-10 - 20% coverage.

The four JUG claims were staked to cover lead and zinc rich gossanous seepages which occur near a limestone-shale contact. No meaningful evaluation has yet been done on the claims.

116-H-11 - 60% coverage.

116-H-12 - 50% coverage.

N.T.S. 116-J (See Figure 16)

116-J-3 - 50% coverage.

116-J-4 - 40% coverage.

116-J-5 - 50% coverage.

Brascan has staked a great number of claims on zonc or zinc-lead showings on this map sheet. The Reef Project sampling on and around the Brascan claims did not locate any anomalous silt values.

116-J-6 - 20% coverage.

116-J-11 - 20% coverage.

116-J-14 - 5% coverage.

The heavy tree cover made sampling by chopper-hopping very difficult on most of the map sheets covered on 116-J.

PROPOSED EXPLORATION

(a) On Properties

Alp Claims - allowed to lapse.

Bilbo Claims - Record two years assessment work on key claims. The only meaningful work which can be done is drilling to determine if sulphide zones are associated with the barite mineralization. This cannot be justified on the basis of the very sparse lead mineralization seen on the claims, and therefore no work is recommended for 1975. It is unlikely that the barite alone could ever be mined economically because of the geographical location and the unsuitability of the barite zone for open pit mining.

Coot Claims - Allow to lapse when the claims come due.

Didlo Claims - Record one year's assessment work on key claims. The showing on the Didlo claims has not been looked at in detail and warrants detailed mapping combined with some trenching and clearing of talus. The stream draining the showing is more strongly anomalous than would be expected on the basis of the small amount of mineralized float seen in talus. The location of the claim group within three miles of the Dempster Highway is favourable.

EG Claims - Record five years assessment work. The main pyrite breccia showing did not prove to contain economic grades of zinc mineralization but geochemical anomalies elsewhere on the property warrant follow-up on a low priority basis. This work should consist of more detailed soil sampling, prospecting and possibly hand pitting.

FC Claims - Record one year assessment work. The FC claims cover a sphalerite showing in a barite-rich breccia within Silurian to Devonian age dolomite. Galena float which occurs upstream from the main showing indicates the presence of a second mineral occurrence which has not been located. Later in the field season Serem staked 286 "Red" claims which almost surround the FC claims and cover a large area to the north and east. The source of the above mentioned float is probably upstream from the Red claims. The FC claims warrant detailed examination and sampling of the showing, plus general prospecting. Unfortunately, they are very remote from the balance of the project and thus present a considerable logistical problem. An alternative may be to try to deal them off in some manner to Serem.

Gig Claims - Allow to lapse.

Hot Claims - Record three months, if possible. A number of lead-zinc showings have been found on the Hot claims at one stratigraphic level within a massive dolomite unit of Ordovician age. The main showings have all been characterized by massive mineralization but talus slopes contain oxidized breccia float which has assayed up to 12% zinc. The area requires a great deal of intensive prospecting, coupled with hand trenching and clearing of talus. One problem in the area is that the mineralization is almost completely oxidized to gossanous-appearing material which gives no clue as to its base metal content until assayed. The Hot claims will require either an orthophoto or some type of picket grid for control.

ID Claims - No work to record. The ID claims cover showings similar to those on the Hot claims across the valley. The same types of intensive prospecting and trenching will be required to evaluate the claims.

Jug Claims - Record six months assessment work. The next logical exploration work on the Jug claims should consist of a small soil grid over the source area of the anomalous limonite seeps, followed up by hand pitting on any anomalies detected.

Kiwi Claims - Record nine months assessment work. The Kiwi claims cover several significant showings which warrant further investigation. The showings are mainly talus covered and will require a great deal of hand trenching and clearing of debris before any idea of widths or grades of mineralization can be determined. An orthophoto or picket grid will be required for control, and some useful information can be obtained from soil sampling, in spite of the steep terrain. All the surface showings are strongly oxidized and diamond drilling will ultimately be required to properly evaluate the mineral potential of the claims. The property is well located, only a few miles from the Dempster Highway, and it would be very inexpensive to mobilize a drill onto the claims. The claims are also easily accessible by cat, even during the summer, but the terrain on the claims is too precipitous to be suitable for cat trenching. Drilling of the Kiwi claims should be considered for early in the 1976 season, contingent on the results of prospecting, hand trenching, soil sampling and other surface work to be completed during 1975.

Lingham Claims - No work to record. The Lingham claims require intensive prospecting, coupled with hand clearing, trenching and sampling of showings. Assessment report will have to be submitted during the field season if this work indicates the claims are worth holding.

Magic Claims - No assessment work to record. Soil sampling and prospecting are required on the Magic claims on a low priority basis.

Newt Claims - No assessment work to record. The breccia showing on the Newt claims is fairly restricted in occurrence, and should be investigated with hand trenching. The vein showings are spectacular but very localized and cannot be considered to have any economic potential. Hand trenching, prospecting and a limited amount of soil sampling on picket grids should indicate if the claims are worth keeping. Assessment work will have to be recorded during the season if the claims are to be held for a second year.

OZ Claims - Record six months or eighteen months. Numerous significant showings occur on the OZ claims and a great deal of careful and detailed work, including diamond drilling, will be required to evaluate the mineral potential. An orthophoto at 1"= 1000' scale and a contour map at a scale of 1"= 400' have been made of the entire property, and these will be used in conjunction with a picket-line grid for control. Much of the property will be soil sampled on lines spaced 400 ft. apart, and all of it will be carefully mapped at 1"= 400' scale. An initial drill program of 2500 ft. is recommended as a minimum to test the two main mineral showings on the claims. This footage is based on three

500 ft. holes on the main showing and two 500 ft. holes on the eastern showing. The drill sites on the main showing can be selected based on geologic and geochemical information we have already, so the drilling could begin as early as June 15th. There is a good likelihood that these preliminary drill holes will indicate that much more drilling is required and, therefore, a contingent drilling budget sufficient for an additional several thousand feet of drilling should be considered as a possibility. If more drilling is warranted, it should be done during the 1975 season to avoid the heavy costs of mobilization and demobilization. Useful information may be gained by hand trenching some of the showings and the property as a whole warrants intensive and detailed prospecting.

Poo Claims - No assessment work to record. Careful prospecting should be the only type of exploration work needed to locate the source of the geochemical anomalies on the Poo claims. If showings of potential significance are discovered, then assessment work will have to be recorded during the field season to hold the claims for a second year.

Qwak Claims - No assessment work to record. The silt anomaly on the Qwak claims appears to originate within Unit 2. The only type of work required on the claims is careful prospecting. If significant showings are located, then consideration should be given to staking more claim coverage to the west, since the drainages on that side of the divide are also anomalous. Assessment work will have to be recorded during the field season if the claims are to be held for a second year.

Ralph Claims - Record nine months assessment work. Probably only diamond drilling can give an accurate picture of the showings on the Ralph claims, which appear to be deeply oxidized and are buried in talus and felsenmeer. The gossanous limonite material, which has assayed about 2% zinc, appears to originate in a nearly flat-lying band conformable to bedding and at least 2000 ft. long. The assays of this oxide material may or may not be an accurate indication of primary metal values in the mineralized zone. Hand pitting on the main gossan zone to try to reach sulphides is probably the only meaningful work which can be recommended at this point, since the size and apparent grade of the showing does not justify diamond drilling.

Sourdough Claims - No assessment work to record. Soil sampling on grid lines should be carried out to detail stream sediment anomalies. The copper showing east of the main stream should be re-evaluated and an attempt should be made to obtain a meaningful sample from it for assay.

Tart Claims - No assessment work to record. Grid controlled geologic mapping and extensive soil sampling are required on the Tart claims. This work almost certainly will have to be followed up by diamond drilling late in the 1975 season or early in 1976. The proposed budget allows for 1000 ft. of drilling which could be done on either the Tart or the Kiwi claims. The Tart claims are less precipitous than the OZ and Kiwi claims and hand trenching is not likely to be of use. Cat trenching could be an alternative to diamond drilling but it would be difficult to get a cat in to the property during the summer. Assessment work will have to be filed before October.

(b) Regional Areas Requiring Further Detailed Work

Coal Creek Dome -(Figures 12 and 13)

This oval-shaped area of Proterozoic terrain, centred on 116-B map sheet 40 miles north of Dawson City, is without a doubt the most mineralized belt of rock encountered by the Reef Project. There is more likelihood of an economic mineral occurrence being proven up in this area than in any other part of the Ogilvie Mountains covered during 1974. Six claim groups were staked in the Dome area during 1974 - these include Dynasty's KIWI, OZ and TART claims and Hudson Bay's OG, DEM and KIM claims. Several minor showings and a large belt of anomalous geochemistry occurs in unstaked ground within the Dome.

Work planned for the Dome includes geologic mapping, detailed soil and silt sampling and much more prospecting. The purpose of the mapping will be to determine at what horizon within Sub-unit 2b the main mineralized zones occur, and to trace the sub-outcrops of those favourable strata through areas of overburden cover. Hopefully, this mapping will provide information on the geologic environment of deposition of the mineralization which can be applied outside the Coal Creek Dome to select other regions of similar mineral potential. Geochemical work will be carried out to fill-in gaps in the 1974 silt coverage and to detail silt anomalies with close spaced contour soil and seepage samples. Rock geochemical work may be carried out on certain map units in the Dome to determine if the mineral showings are related to primary metal-rich zones in the sediments which could act as a guide to new mineral occurrences. Intensive prospecting is required in all anomalous areas

and all field personel will be encouraged to use generous quantities of secondary zinc stain, which works very well in this area.

The work on Coal Creek Dome will be carried out by a small crew working out of a camp on the OZ claims and will be done concurrently with the work on the OZ, Tart and Kiwi claim groups. This work will have to be completed during the first two months of the season, since there will be no helicopter available after July 31st.

Castle Ridge Detail Area (Figures 8 and 9)

This area 50 miles north of Mayo is of interest because of silver-bearing veins in Unit 2 dolomites and greenstone dykes, and because of zinc mineralization in veins and breccia zones in Ordovician dolomite. Work planned for the area includes contour soil geochem lines to detail anomalous areas and to cover parts of the ridge not covered by the silt sampling done during 1974, and geologic mapping and prospecting to explain silver and lead-zinc anomalies discovered in 1974. This work will be done concurrently with work on the Newt and Lingham claims.

Dolores Creek Detail Area (Figures 4 and 5)

This area lies south of Dolores Creek and west of the EG claims on Map Sheet 106-C. A number of showings and float occurrences of lead-zinc mineralization occur in the Proterozoic units in the area, and there is one drainage which is strongly anomalous in copper. The area lies within the same belt of rocks which contain the Barrier Reef and Cypress Resources showings further south on 106-C. Work to be done in the area during 1975

will mainly concentrate on following up the known geochemical anomalies with prospecting. Some contour soil and seepage sampling should also be done to complete the reconnaissance geochemical coverage over areas not included in the 1974 silt sampling work.

A number of other individual geochemical anomalies, float occurrences and mineral showings which were found during 1974 require additional investigation during 1975. In most cases only prospecting will be required to determine if potentially significant mineralization is present. These individual scattered anomalies and showings have been mentioned in the detailed discussion of 1974 field work.

(c) New Regional Coverage (Figure 17)

It is essential that new reconnaissance geochemical coverage be included as an important part of the 1975 Reef Exploration Program. Large areas in the Mackenzie Mountains are underlain by Proterozoic and Lower Cambrian strata with excellent mineral potential, and the area is ideally suitable for rapid, inexpensive geochemical prospecting. Undoubtedly many important base metal deposits remain to be discovered in this part of the Yukon and Northwest Territories because few companies have ever carried out regional exploration programs through the area before. Outcrop is abundant in the Mackenzie Mountains and the deposits are not at all subtle; they will be found by the company that gets to them first. A great many companies began to work in the carbonate belt during 1974, and most plan more work for the 1975 season. It is unlikely that any geologically favourable, virgin ground will not have been covered by the end of the 1975 field season. If Dynasty Explorations is to have a share in the mineral wealth of the area, it must carry out a dynamic and

and effective regional sampling program over the balance of the carbonate belt during 1975.

Dynasty has two possible advantages over other companies working in the area. The first is that we have experience over a much wider portion of the belt, from the Sewlyn Project in the southeast, through the Godlin-Bonnet Plume area in the middle, to the Reef Project area in the far west. We have probably seen a greater variety of showings than many other companies and are probably in a better position to evaluate the relative mineral potential of the Proterozoic and Paleozoic Formations. In particular, many companies may not be aware of the presence of syngenetic lead-zinc mineralization in the Helikian. The second big advantage which Dynasty may have over other companies is experience in the use of "chopper-hopping" to obtain very rapid regional silt coverage. Other companies do not appear to have used this technique as extensively or effectively as Dynasty did during 1974. If Dynasty utilizes these advantages to the full during 1975, then we have an excellent chance of acquiring more quality properties.

The proposed budget includes an allowance for reconnaissance silt sampling over about 4000 square miles in areas adjacent to the 1974 work. A dome of Proterozoic age formations similar to Coal Creek Dome surrounds the Hart River Mines property east of the Dempster Highway, and is the highest priority area requiring regional geochemical coverage. Other areas underlain by Proterozoic and Paleozoic carbonate formations will be sampled in the Rackla Range and northern Wernecke Range. There is no provision in this budget for coverage of the balance of the eoonomically important carbonate formations in the Mackenzie Mountains. The rest of the belt can and should be covered during 1975, but an

additional crew of four men, an additional Bell 47 helicopter, and an additional $200,000 budget will be required.

Unmetamorphosed Helikian to Lower Cambrian sedimentary rocks contain many of the most significant mineral deposits on the northern part of the North American continent. Well known mineral deposits in formations of this age include the Sullivan in Southern B.C., possibly Anvil, Redstone Copper, the Coppermine River copper deposits, the Baffin Island lead-zinc deposits, and White Pine copper. Numerous other deposits are known, including many of the new discoveries in the Ogilvie and Mackenzie Mountains. Outcrops of rock units of this age occur in a discontinuous belt which is roughly peripheral to the Canadian Shield, although in many areas the units are missing because of pre-Ordovician erosion, or are covered by younger strata. Areas which are of possible exploration interest for lead-zinc and for sedimentary copper include the following:

(1) Front Ranges of the Mackenzie Mountains.
(2) Melville Hills area of the Northwest Territories.
(3) Coppermine River area of Northwest Territories.
(4) Victoria Island between Prince Albert Sound and Hadley Bay.
(5) Southeastern Yukon east of Frances Lake and west of the Yukon-Northwest Territories border.
(6) Northeastern B.C., east of the Rocky Mountain Trench and west of the Liard River.
(7) Portions of Newfoundland, Novia Scotia and New Brunswick.

All of these areas are characterized by ages and lithologies of Proterozoic strata similar to those of known mineral belts and most of the areas contain showings or other direct evidence of mineral potential.

Respectfully submitted,

Peter M. Dean

April, 1975

REFERENCES

Aitkin, J.D., MacQueen, R.W., and Usher, J.L., 1973: Reconnaissance Studies of Proterozoic and Cambrian Stratigraphy, Lower Mackenzie River Area (Operation Norman), District of Mackenzie; Geol. Surv. Can. Paper 73-9.

Blusson, S.L., 1971: Sekwi Mountain Map-Area, Yukon Territory and District of Mackenzie; Geol. Surv. Can. Paper 71-22.

Gabrielse, H., 1967: Tectonic Evolution of the Northern Canadian Cordillera; Canadian Journal of Earth Sciences, Vol. 4, 1967.

Green, L.H., 1972: Geology of Nash Creek, Larsen Creek and Dawson Creek Map Areas, Yukon Territory; Geol. Surv. Can. Memoir 364.

Norford, B.S., 1963: Reconnaissance of the Ordovician and Silurian Rocks of Northern Yukon Territory; Geol. Surv. Can. Paper 63-39.

Norris, A.W., 1967: Descriptions of Devonian Sections in Northern Yukon Territory and Northwestern District of Mackenzie; Geol. Surv. Can. Paper 66-39.

Norris, A.W., 1968: Reconnaissance Devonian Stratigraphy of Northern Yjkon Territory and Northwestern District of Mackenzie; Geol. Surv. Can. Paper 67-53.

Norris, D.K., 1973: Structural and Stratigraphic Studies in the Northern Canadian Cordillera; Geol. Surv. Can. Preprint.

Norris, D.K., 1974: Structural Geometry and Geological History of the Northern Canadian Cordillera; Geol Surv. Can. Open File 149.

Norris, D.K., Price, R.A., and Mountjoy, E.W., 1963: Geology Northern Yukon Territory and Northwestern District of Mackenzie; Geol. Surv. Can. Map 10-1963.

Templeman-Kluit, D.J., 1970: Stratigraphy and Structure in Tombstone River - Upper Klondike River Map Areas, Yukon Territory (116/B/7, 8/8); Geol. Surv. Can. Bulletin 180.

Ziegler, P.A., 1969: The Development of Sedimentary Basins in Western and Arctic Canada; Alberta Society of Petroleum Geologists, 1969.

PROPOSED BUDGET - 1975 REEF PROJECT

BUDGET SUMMARY

Acct. No.	Description	Estimated Budget
(1)	Salaries and Wages	$ 87,200
(2)	Staking Costs	10,000
(8)	Diamond Drilling (3500 Ft.)	74,406
(11)	Geochem and Assays	35,000
(12)	Field Equipment	20,000
(13)	Camp Maintenance	30,000
(14)	Fuel	9,558
(15)	Rotary Wing	149,210
(16)	Fixed Wing	14,187
(17)	Misc. Transportation	10,200
		$439,761
	Contingency	20,000
		$459,761
	Say	$460,000
(21)	District Expense @ 5%	23,000
	Approximately	$483,000

BUDGET DETAILS

(1) Salaries and Wages

(Dean)	A.	Project Geologist 12 months x $2000/mo.	24,000	
(Roberts)	B.	Geologist (Coal Creek Dome Mapping) 8 months x $2000/mo.	16,000	
(McLennan)	C.	Geologist (Coal Creek Dome Property Mapping) 8 months x $1500/mo.	12,000	
(Carne)	D.	Geologist (Reccy crew Party Chief) 8 months x $1500/mo.	12,000	
(D. Davis (M. Fretwell)	E.	Sr. Field Assistants (one for reccy sampling and prospecting, one for Coal Creek Dome sampling) 2 men x 3 mos.x $1100/mo.	6,600	
(L. Carne) ( ) ( )	F.	Jr. Field Assistants (Three men for staking, linecutting, trenching, sampling in Coal Creek Dome area, may transfer to reccy crew in August) 3 men x 3 mos. x $100/mo.	9,000	
(M. Maser)	G.	Flunky (Core-splitting, camp set-up, drill site preparation, some sampling) 2 months x $800/month	1,600	
(Anne)	H.	Cook (Reccy crew) 3 months x $800/month	2,400	
( )	I.	Cook (Coal Creek Dome crews including drill crew) 3 months x $1200/month	3,600	$ 87,200

(2) Staking (Estimate) $ 10,000

(8) Drilling Costs (See separate budget)

(11) Geochem and Assays

(a) Phase I - Reconnaissance samples	4,000		
(b) Phase II - Sampling	6,000		
(c) Claim Group Sampling:			
OZ and Tart 2000 each	4,000		
Kiwi, Hot-Id 1000 each	2,000		
Sourdough, Magic, Newt, Lingham, Qwak - 200 each	1,000		
Total Samples	17,000		
17,000 x $2.00 each		34,000	
(d) Assays (not including drill core) Estimate		1,000	$ 35,000

(12) Field Equipment
(Includes disposable items such as pickets, tent frame lumber, etc.) Estimate $ 20,000

(13) Camp Maintenance
20 men x $15/day x 100 days $ 30,000

(14) Fuel

(a) JP-4 - included in contract rate.

(b) 100/130: 590 hrs.x 18 gal/hr. x $0.90/gallon $ 9,558

(15) Rotary Wing

(a) Bell 47 Contracts

(1) Reccy Crew - June 1st to Sept. 20 - average 4.0 hrs. per day.
4.0 x 110 days x $160/hr. (440 hrs.) = $70,400

(2) OZ area Crews - June 1st to July 31 - average 2.5 hrs. per day.
2.5 x 60 days x $160/hr. (150 hrs.) = $24,000 94,400

Total hrs. 590 hrs.
Contract minimum 578 hours.

(b) Jet Ranger (casual rate $290/hr.+ fuel = $315/hr.)

(1) Mobilization of Bell 47 fuel - 30 trips Clinton to OZ = 30 x 80 Mi.rtn ÷ 100 mph = 24 hrs.

(2) Food supply trips - 20 trips x 100 mi. ÷ 100 mph = 20 hrs.

(3) Drill support (see separate budget) = 95 hrs.

(4) OZ camp mobiliz. - 10 hrs. demobilization - 5 hrs. = 15 hrs.

(5) Special support for Reccy or OZ crews - estimate = 20 hrs.

Total 174 hrs.

174 hrs. x $315/hr. $54,810

Total chopper (excluding drill support) $149,210

(16) Fixed Wing - No fixed wing time allotted to OZ area camps.

(a) Fuel Mobilization

40 trips to lakes in reccy areas - average distance from Mayo - 150 mi. return
35 x $1.55/mi. x 150 miles 8,137

(b) Supply trips

20 flights x 150 mi. x $1.35/hr. 4,050

(c) Miscellaneous Flights

Estimate 2,000 $ 14,187

(17) Miscellaneous Transportation

(a) Company truck cost - 4 months x $800/month 3,200

(b) Air fares + meals, taxis, est. Estimate 6,000

(c) Misc. Shipping Charges (Estimate) 1,000 $ 10,200

DRILLING BUDGET
1975 REEF PROJECT

Assumptions - 3500 ft. of drilling, all 500 ft. holes
2500 ft. on OZ, 1000 ft. on TART or KIWI

A.	Contractor Charges to Company	
	1. Mob-Demob. on Highway	$ 1,600
	2. Footage Cost	38,500
	3. Casing Cost	2,400
	4. Field Costs	14,991
B.	Company Costs related to Drilling	
	1. Supplies	1,500
	2. Geochem & Assay Costs	2,400
	3. Fuel for Drill (Cost only, not mobilization)	1,215
	4. Salaries and Wages (included in main budget)	5,500
	5. Camp Costs (included in main budget)	4,500
	6. Helicopter Costs (included in main budget)	30,875
	Total Cost	$105,281
	10% Contingency	10,000
	Total Direct Cost	$115,281
	Portion of Direct Cost not included in main budget	$ 74,406

BUDGET DETAILS

Contractor Charges to Company

1.	Mob-Demob. on highway - $800 each way		1,600
2.	Footage Cost - 3500 ft.x $11/ft.		38,500
3.	Casing Costs (Assume 50 ft. of casing per hole) 50 x 7 holes x $12/ft.		4,200
4.	Field Costs:		
	(a) Labour		
	Mob. Road to OZ 3 days x 4 men x 12 hrs. x $12/hr.	$1,728	
	Moves on OZ 4 moves x 2 days x 4 men x 12 hrs.x $12/hr.	4,608	
	Mob. OZ to TART 3 days x 4 men x 12 hrs. x $12/hr.	1,728	
	Move on TART 2 days x 4 men x 12 hrs. x $12/hr.	1,152	
	Mob. TART to Road 3 days x 4 men x 12 hrs. x $12/hr.	1,728	
		$9,216	
	(b) Miscellaneous - Includes cost of using mud or cement, cost of casing left in hole, etc. etc.		
	Estimate 15% of footage cost 15% of $38,500 =	$5,775	
	Total Field Costs		14,991

Company Costs Related to Drilling

1. Core boxes - 150 x $6 each 960
   Miscellaneous supplies 540 1,500

2. Geochemical and Assay Costs

   (a) All of core geochemed at 5 ft. intervals -
   700 samples x $2.00 1,400

   (b) 25% of core assayed at 10 ft. intervals
   100 samples x $10.00 1,000 2,400

3. Fuel (Cost only, not mobilization)

   Estimate 45 days at 1 drum/day
   45 drums x 45 gal. x $0.60/gal. 1,215

4. Salaries and Wages (included in main budget)

   (a) Geologist - 3 months x $1300/month 3,900

   (b) Flunky - 2 months x $800/month 1,600 4,500

5. Camp Costs - (included in main budget)

   Approximately $20/man/day x 5 men x 45 days 4,500

6. Helicopter Costs (included in main budget)

   Weight of equipment, drill + pumps, tools, rods, etc. 16,000 lbs.

   Weight of camp, people and misc. 4,000 lbs.

   (a) Ferry Time - 1.5 hrs. for every move plus 4 extra flights
   1.5 x 12 flights = 18 hrs.

   (b) Assume 2.5 hrs. for moves on properties
   2.5 hrs. x 5 moves = 12.5 hrs.

   (c) Mobilization Road to OZ (40 miles)
   40 mi. x 2 x 20 trips ÷ 90 mph= 18 hrs.

   (d) Move OZ to TART
   10 mi. x 2 x 20 trips ÷ 90 mph= 4.5 hrs.

   (e) Move TART to Road
   50 mi. x 2 x 20 trips ÷ 90 mph= 22.5 hrs.

   (f) Mob. of Fuel - 45 drums ÷ 2 per trip = 23 trips
   18 trips to OZ = 18 x 40 mi. x 2 ÷ 100 mph = 14.5 hrs.
   5 trips to TART = 5 x 50 mi. x 2 ÷ 100 mph= 5 hrs.

   Total Helicopter Support = 95 hrs.

   95 hrs. x $325/hr. = $30,875

106B-13 | 106B-14 | 106B-15 | 106B-16

106B-12 | 106B-11 | 106B-10 | 106B-9

106B-5 | 106B-6 | 106B-7 | 106B-8

106B-4 | 106B-3 | 106B-2 | 106B-1

MACKENZIE MOUNTAINS

SELWYN MOUNTAINS

NORTHWEST TERRITORIES

YUKON TERRITORY

DISTRICT OF MACKENZIE

Red River

Arctic Red River

Plume Lake

Bonnet Lake

Stewart River

South Nahanni River

Mountain River

Gayna River

ECON PbZn

RIS

DOR

JIM

NIC

FC Zn

CONE

ALP

Pb

Zn

65°00'N

7210000m N.

0

9

45'

8

7

6

30'

5

4

3

15'

2

7110000m N.

64°00'

132°00'

360000m E.

45'

30'

15'

131°00'

45'

30'

15'

130°00'

inches

0 1

0 1 2

centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

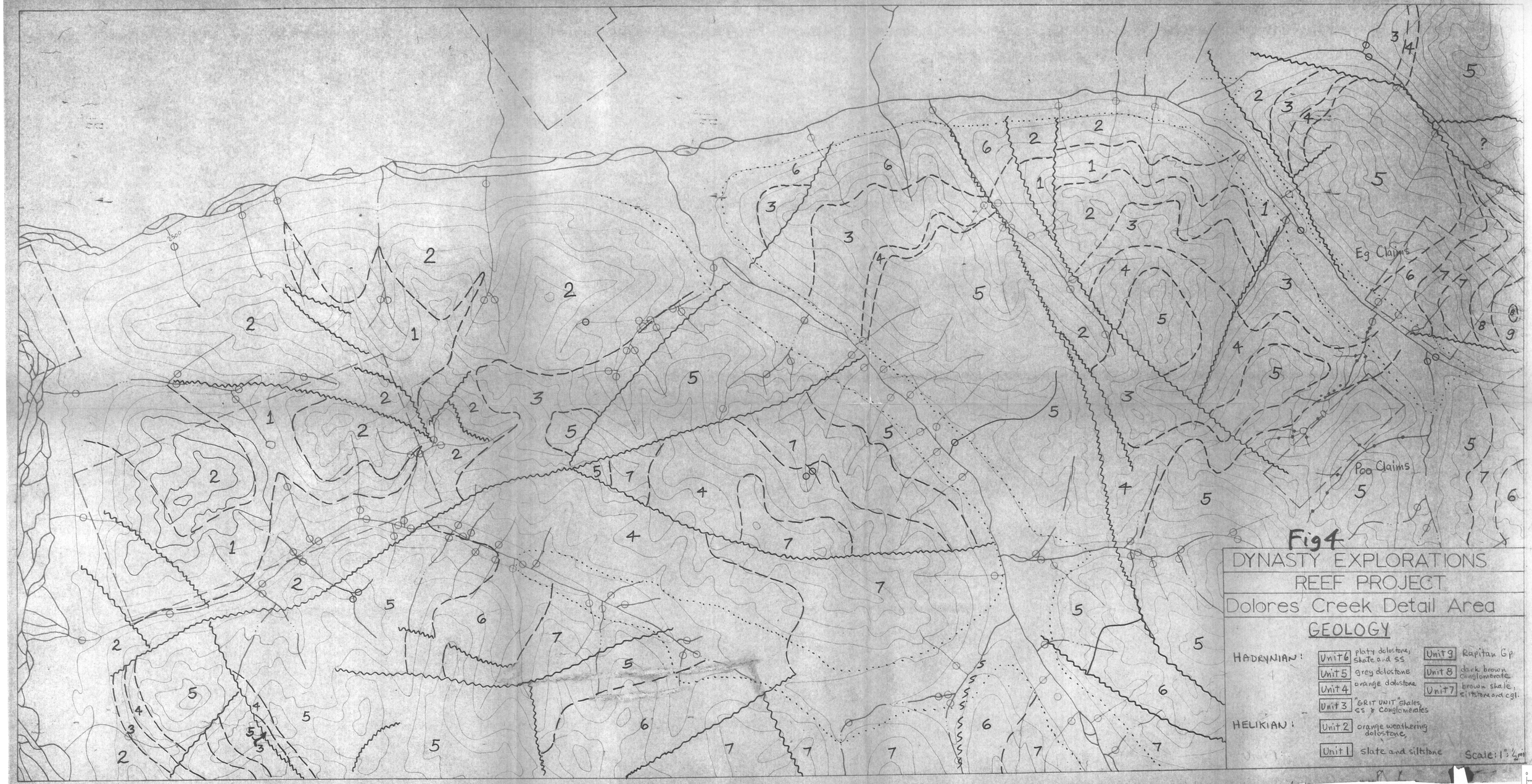
Fig 2

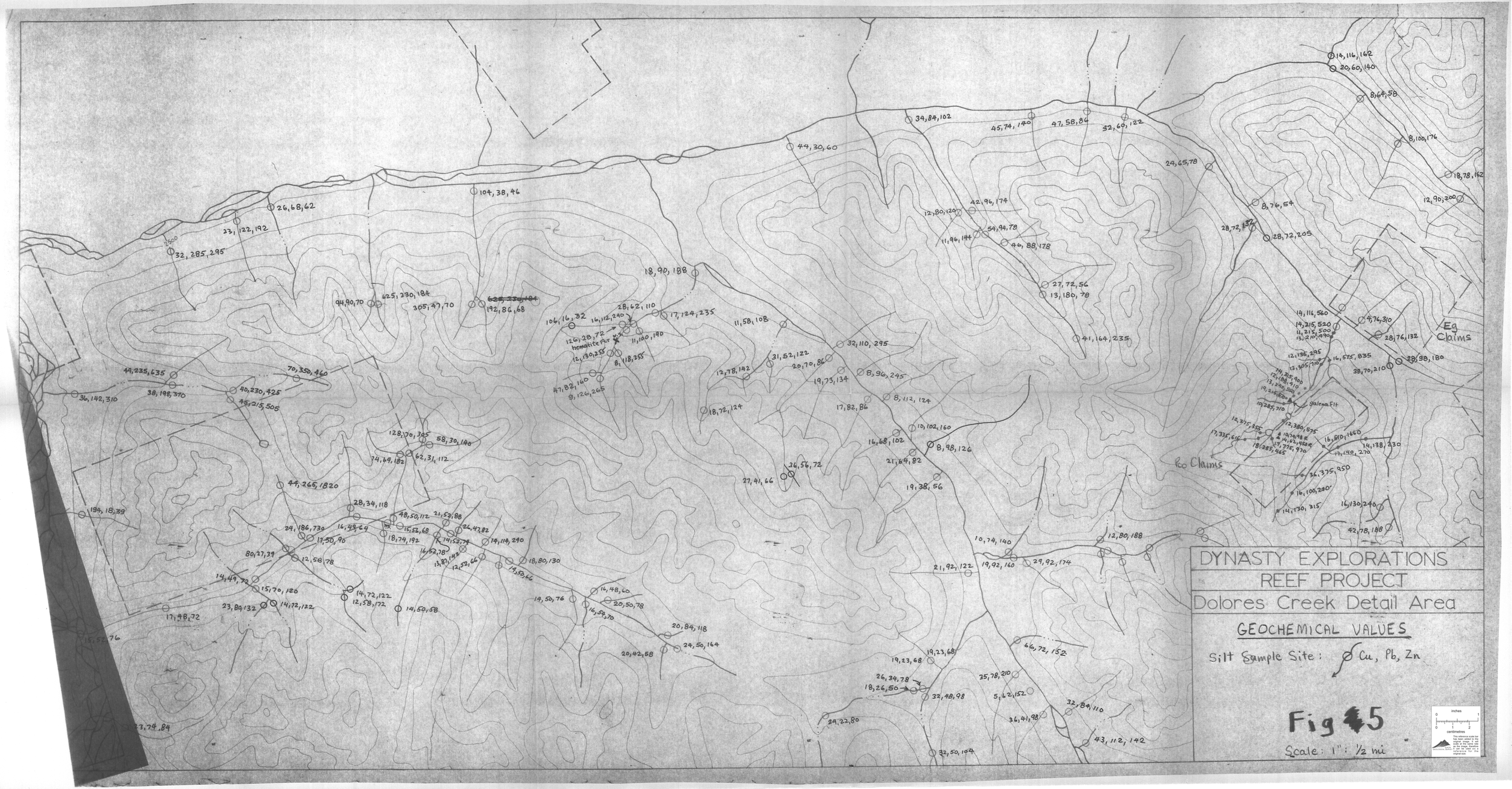
BONNET PLUME LAKE 106B

inches
0 1
0 1 2
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
YUKON GEOLOGICAL SURVEY

Cu,Co
SLAB
FAIR
STAR
MAC, etc.
Cu,Co
Cu
DAN
SUN, ORE etc.
STAR
Cu
Cu
Cu
Cu
BOO
LAD
Pb
ex Pb Flt
DTG
Pb Flt
9a
Pbo
EG
Zn
Mount Foster
Pb, Zn
BACKBONE RANGE (MACKENZIE MOUNTAINS)
DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES
YUKON TERRITORY
CAB
106C-13
106C-14
106C-15
106C-16
DIANE
PEA
PEEL
RIVER
BP
WEERNECKE
ICP
PING etc.
Pb
WX
CW, etc
RANGE
DJ
RIO
North
MIP
RAM
DHC
HP
R
MN
open
PUP
Algae Mountain
Pass Mountain
Mackla Pass
Glacier
Mount MacDonald
Glacier
Goz Pass
Zn, Pb
Zn
Zn, Pb
Zn, Pb
106C-12
106C-11
106C-10
106C-9
MACKENZIE MOUNTAINS (SELWYN MOUNTAINS)
RANGE
Bonnet Plume Pass
Rusty Mountain
106C-5
106C-6
106C-7
106C-8
NADALEEN
Nadaleen Mountain
Mount Mervyn
Mount Farrell
Mount Stenbsatten
HESS MOUNTAINS
(SELWYN MOUNTAINS)
TASIN RANGE
106C-4
106C-3
106C-2
106C-1
65°00'
45'
30'
15'
64°00'
134°00'
45'
30'
15
133°00'
45'
30'
15'
132°

Fig 3
NADALEEN RIVER 106C


Eg Claims
Poo Claims
Fig 4
DYNASTY EXPLORATIONS
REEF PROJECT
Dolores Creek Detail Area
GEOLOGY
HADRYNIAN:
Unit 6 platy dolostone, shale and ss
Unit 5 grey dolostone
Unit 4 orange dolostone
Unit 3 "GRIT UNIT" shales, ss & conglomerates
HELIKIAN:
Unit 2 orange weathering dolostone,
Unit 1 slate and siltstone
Unit 9 Rapitan Gp
Unit 8 dark brown conglomerate
Unit 7 brown shale, siltstone and cgl.
Scale: 1" = ½ mi


DYNASTY EXPLORATIONS
REEF PROJECT
Dolores Creek Detail Area
GEOCHEMICAL VALUES
Silt Sample Site: Cu, Pb, Zn
Fig 5
Scale: 1" : ½ mi
Eg Claims
Fo Claims
Galena Flt
Hematite Flt
inches
centimetres


106D-13
106D-14
106D-15
106D-16
106D-12
106D-11
106D-10
106D-9
106D-5
106D-6
106D-7
106D-8
106D-4
106D-3
106D-2
106D-1
65°00'
45'
30'
15'
64°00'
136°00'
45'
30'
15'
135°00'
45'
30'
15'
OGILVIE MOUNTAINS
EAGLE RIDGE
MACKENZIE MOUNTAINS
RANGE
Bear River
Wind River
Nash Creek
Beaver River
Eagle Creek
Pyllce Creek
McLean Creek
Williams Creek
Clark Lakes
Scrugdale Lakes
Mount Fitzgerald
Mount Braine
Mount Williams
Mount Good
Mount Cameron
Mount Patterson
Mount Westphal
Haggart Dome
Lynx Dome
Grey Hill
Zahn Hill
Steamboat Mountain
McClusky L.
Hunt Lake
Ethnet Lake
Eagle Lake
Steamboth Lake
Rathleen Lakes
Gillespie Lake
SLAB/PIT
Cu,Pb
Cu
PAR
JOE
QUAK
SID
JULIA
Pb,Zn,Cu
NEWT
Pb,Zn
LINGAM
SKOOKUM,etc
Ag,Pb,Cu
LIN
MARGARET LEASE
JIT,etc. LEASE
Ag,Pb,Cu
Pb,Cu
Pb,Zn
DAGO CON, BUB
Ag
Ag,Pb,Zn
Ag,Pb
Cu,Zn
Ag,Pb
Pb,Sb
PAN,etc.
Au
Potato Hills
W
LYNX
Pb,Sb
GWAHIR
W
Ag,Pb,Zn
PESO,etc
Ag,Pb,Zn
JAY
Ag,Pb,Zn
ERIN
KERR, etc.
SOURDOUGH
Zn
Cu
Pb
Ag
DAVIDSON
PATTERSON
inches
0 1
0 1 2
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
YUKON GEOLOGICAL SURVEY
Fig 6
NASH CREEK 106 D

inches
0 1
0 1 2
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

RICHARDSON MOUNTAINS

PEEL RIVER

PEEL Creek

PEEL River Basin

LAKE CREEK

TREVOR RANGE

BONNET PLUME

PLUME Creek

Hungry Creek

Deception Lake

Beaver Creek

Cedar Lake

Cedar Creek

Lloyd Creek

MOUNT DESLAURIERS

MOUNT DESCRIPTION

Chappie Lake

Cabin

Cabin

Margaret Lake

Cabin

WEDNESDAY CREEK

WEDNESDAY RANGE

MAGIC MOUNTAIN

RAD

WINDY

MST

PLZ

ZN

FLUNK

MOUNTAINS

KEY

106E-13

106E-14

106E-15

106E-16

106E-12

106E-11

106E-10

106E-9

106E-5

106E-6

106E-7

106E-8

106E-4

106E-3

106E-2

106E-1

66°00'

45'

30'

15'

65°00'

136°00'

45'

30'

15'

135°00'

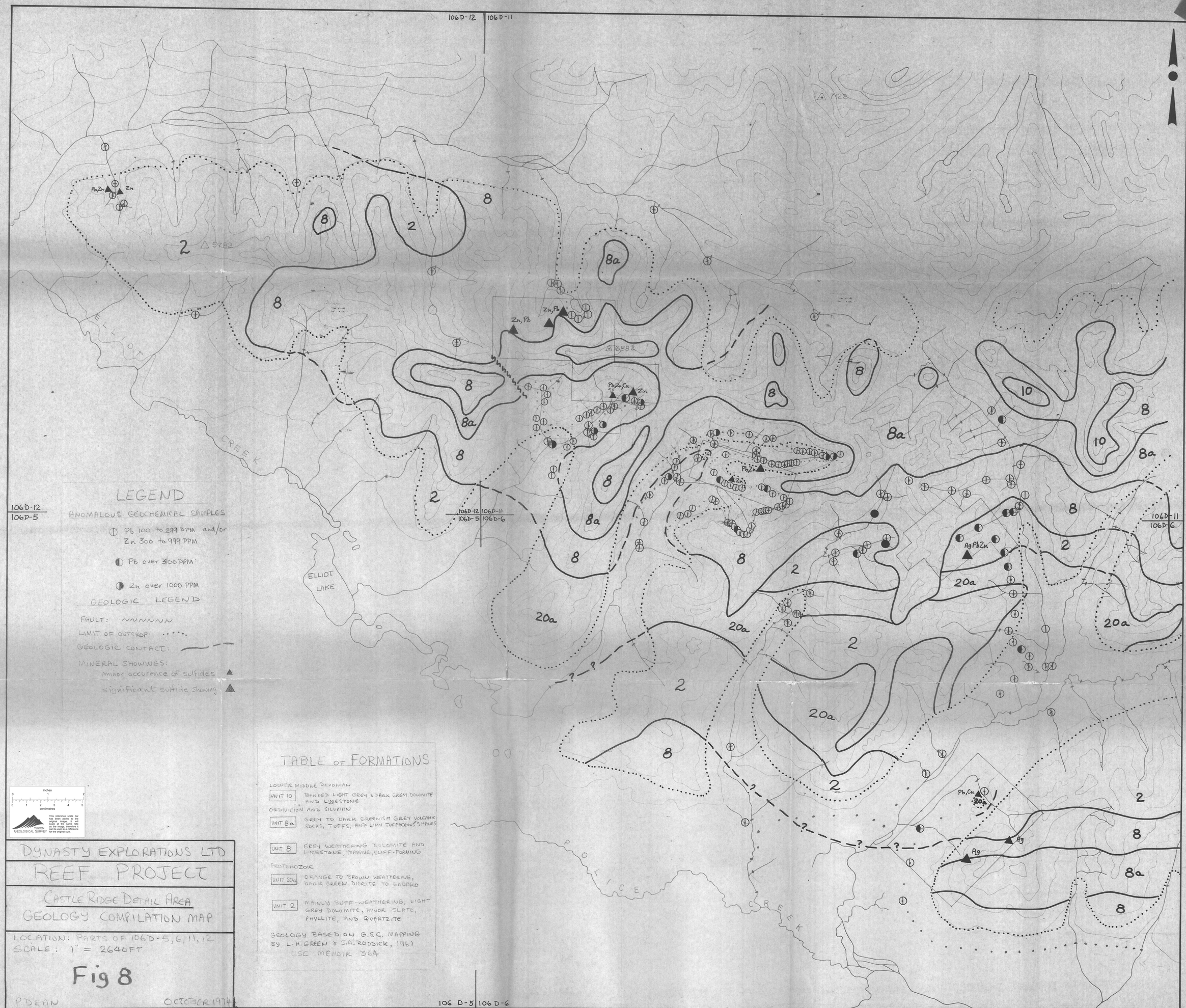
45'

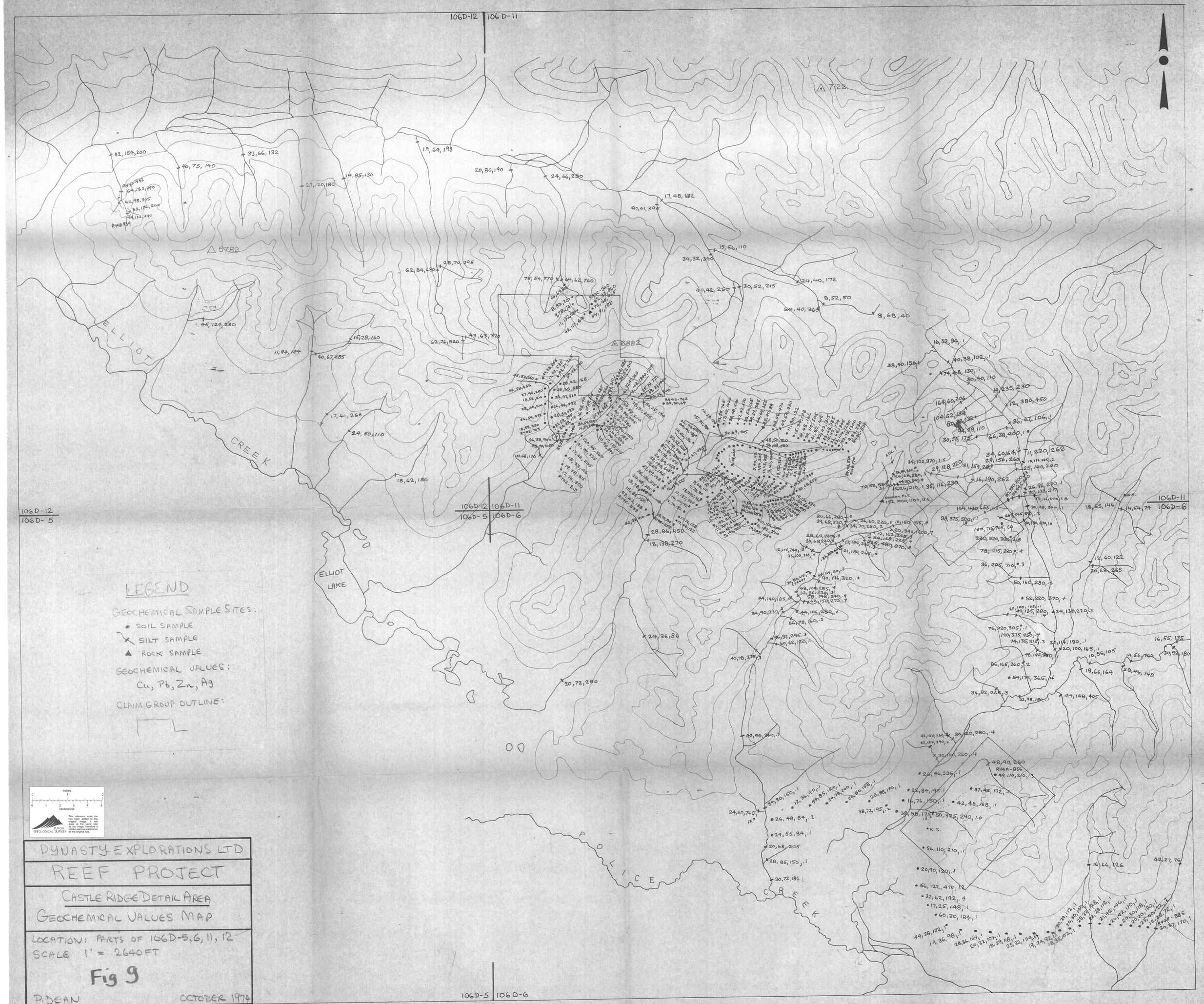
30'

134°

Fig 7

WIND RIVER 106E


106D-12
106D-11
106D-5
106D-6
ELLIOT CREEK
ELLIOT LAKE
POLICE CREEK
LEGEND
ANOMALOUS GEOCHEMICAL SAMPLES
Pb 100 to 299 PPM and/or Zn 300 to 999 PPM
Pb over 300 PPM
Zn over 1000 PPM
GEOLOGIC LEGEND
FAULT:
LIMIT OF OUTCROP:
GEOLOGIC CONTACT:
MINERAL SHOWINGS:
minor occurence of sulfides
significant sulfide showing
TABLE OF FORMATIONS
LOWER MIDDLE DEVONIAN
UNIT 10 BANDED LIGHT GREY & DARK GREY DOLOMITE AND LIMESTONE
ORDIVICIAN AND SILURIAN
UNIT 8a GREY TO DARK GREENISH GREY VOLCANIC ROCKS, TUFFS, AND LIMY TUFFACEOUS SHALES
UNIT 8 GREY WEATHERING DOLOMITE AND LIMESTONE, MASSIVE, CLIFF-FORMING
PROTEROZOIC
UNIT 20a ORANGE TO BROWN WEATHERING, DARK GREEN DIORITE TO GABBRO
UNIT 2 MAINLY BUFF-WEATHERING, LIGHT GREY DOLOMITE, MINOR SLATE, PHYLLITE, AND QUARTZITE
GEOLOGY BASED ON G.S.C. MAPPING BY L.H. GREEN & J.A. RODDICK, 1961
GSC MEMOIR 364
DYNASTY EXPLORATIONS LTD
REEF PROJECT
CASTLE RIDGE DETAIL AREA
GEOLOGY COMPILATION MAP
LOCATION: PARTS OF 106D-5, 6, 11, 12
SCALE: 1" = 2640FT
Fig 8
P. DEAN
OCTOBER 1974


106D-12
106D-11
106D-5
106D-6
ELLIOT CREEK
ELLIOT LAKE
POLICE CREEK
LEGEND
GEOCHEMICAL SAMPLE SITES:
SOIL SAMPLE
SILT SAMPLE
ROCK SAMPLE
GEOCHEMICAL VALUES:
Cu, Pb, Zn, Ag
CLAIM GROUP OUTLINE:
DYNASTY EXPLORATIONS LTD
REEF PROJECT
CASTLE RIDGE DETAIL AREA
GEOCHEMICAL VALUES MAP
LOCATION: PARTS OF 106D-5, 6, 11, 12
SCALE 1" = 2640 FT
Fig 9
P. DEAN
OCTOBER 1974

inches
0 1
0 1 2
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

65°00'

116A-13 | 116A-14 | 116A-15 | 116A-16

45'

116A-12 | 116A-11 | 116A-10 | 116A-9

30'

116A-5 | 116A-6 | 116A-7 | 116A-8

15'

64°00'

116A-4 | 116A-3 | 116A-2 | 116A-1

138°00' | 45' | 30' | 15' | 137°00' | 45' | 30' | 15' | 136°

OGILVIE MOUNTAINS

WERNECKE MOUNTAINS

SELWYN MOUNTAINS

HOT

ID

Cu

Cu Pb Flt

CuPbZn

HART CLMS, etc

CuZn

Cu, Pb

limit of former staking

MATT

JEM, etc

Cu, Pb

Mike

GOLD

RN

SYENITE RANGE

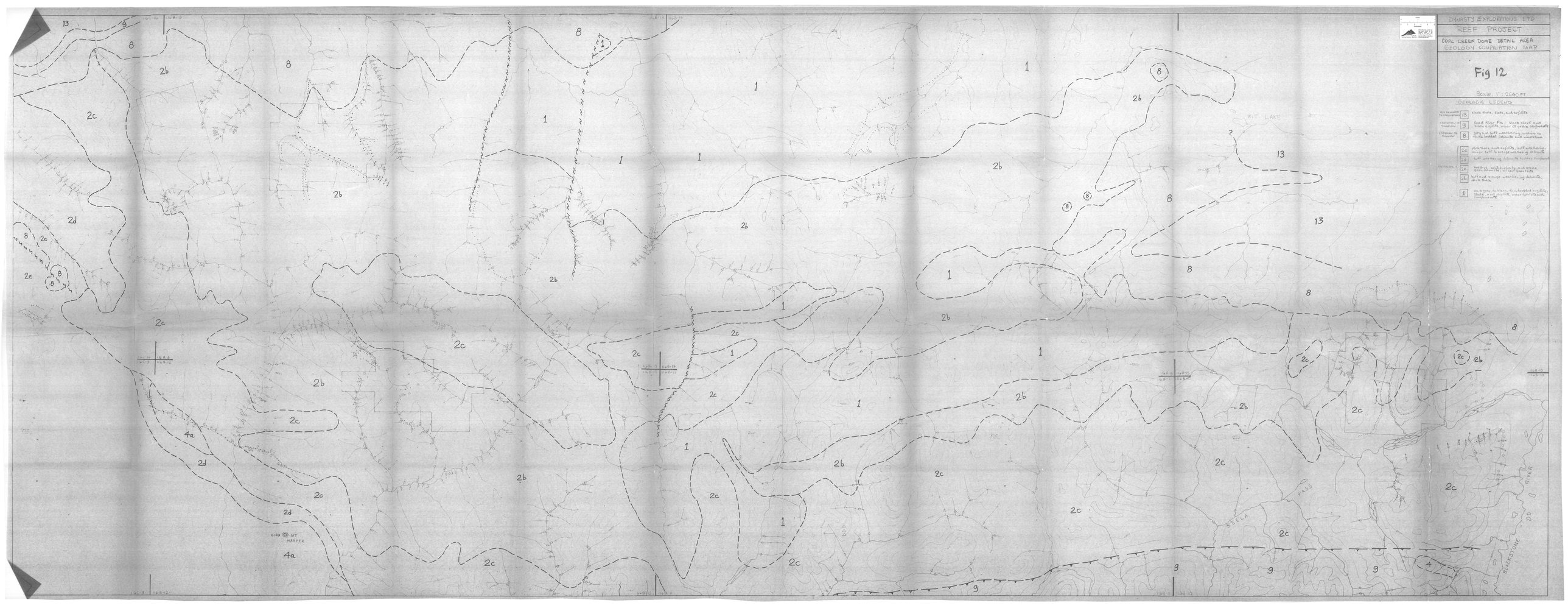
LARSEN CREEK 116 A

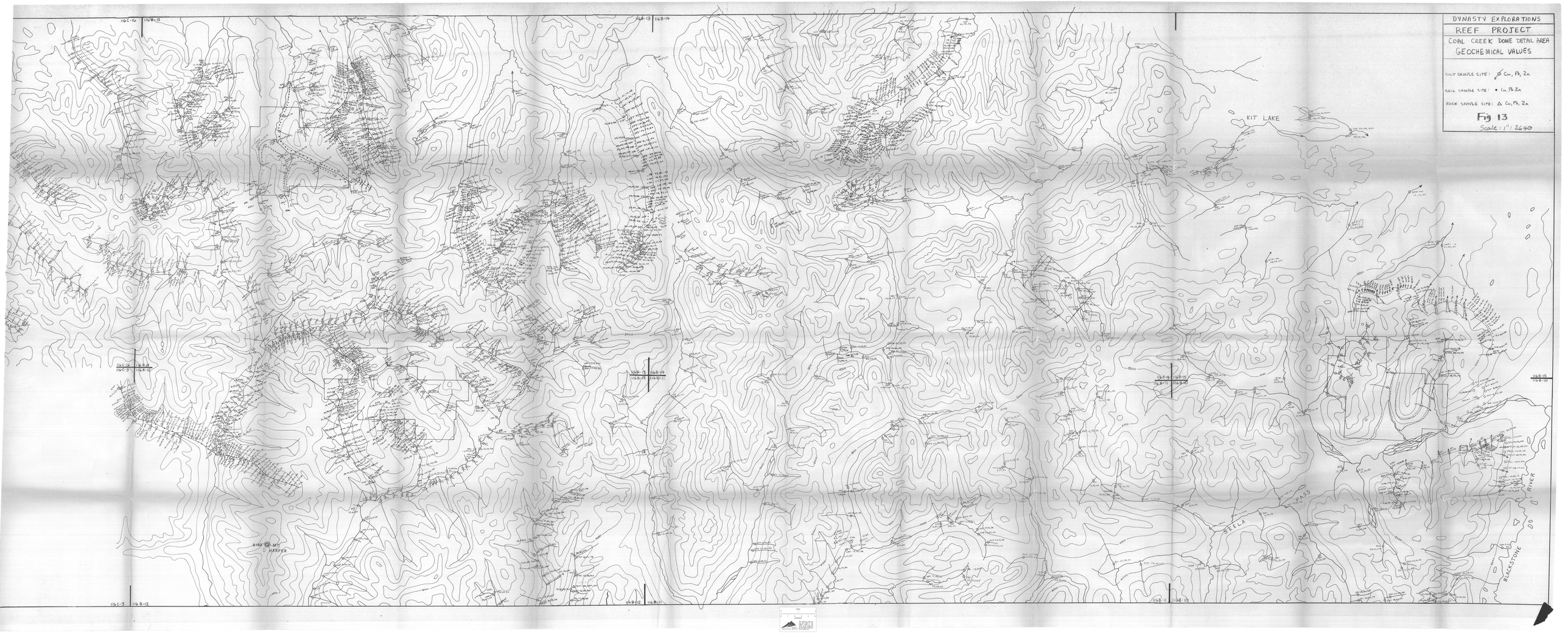
Fig 10

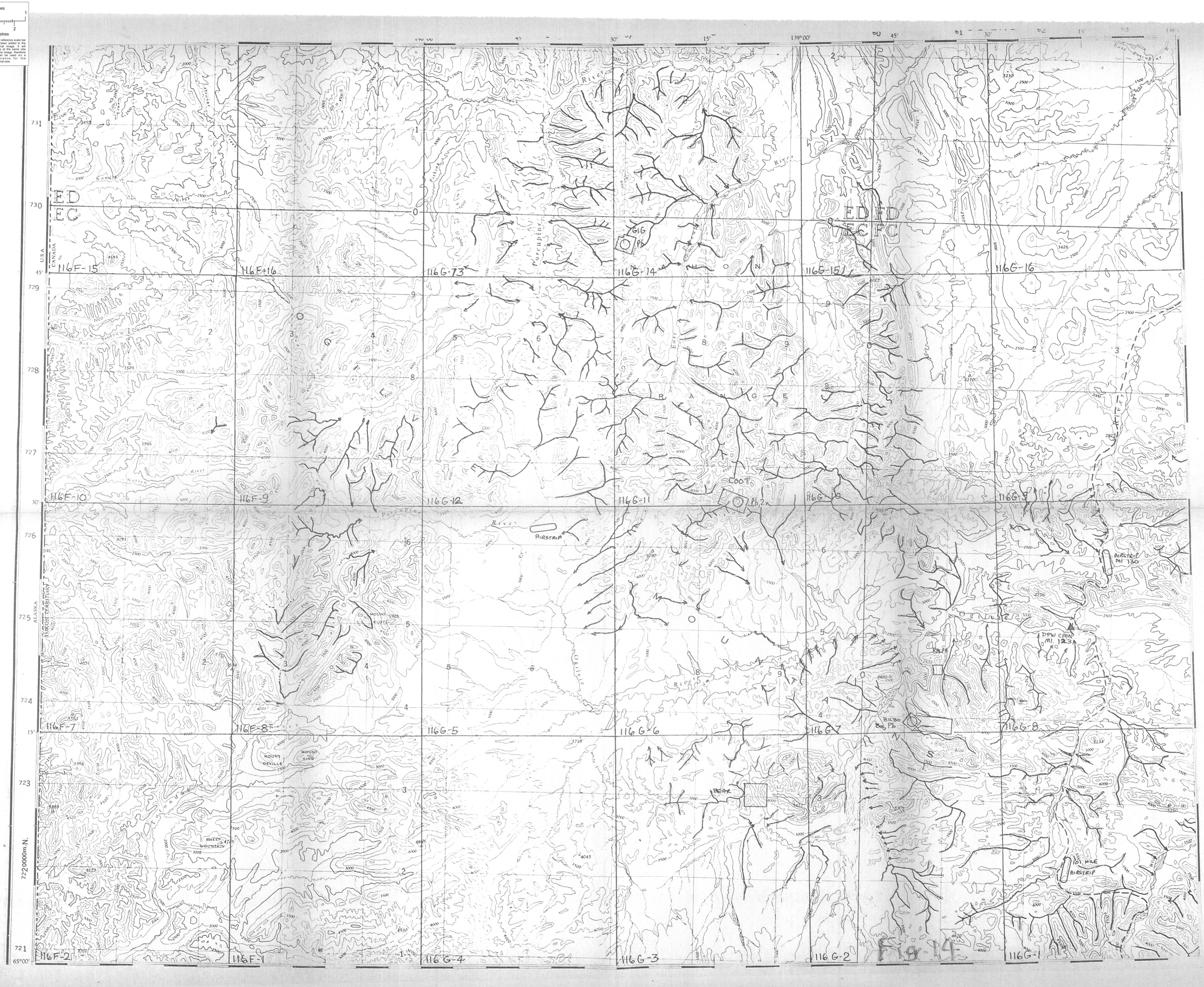
inches
0 1
0 1 2
centimetres
This reference scale bar has been added to the original image. It will scale at the same ratio as the image, therefore it can be used as a reference for the original size.
CANADA CENTRE FOR MAPPING GEOLOGICAL SURVEY

Fig 11

DAWSON: 116 B & C


DYNASTY EXPLORATIONS LTD.
REEF PROJECT
COAL CREEK DOME DETAIL AREA
GEOLOGY COMPILATION MAP
Fig 12
Scale: 1" : 2640 FT
GEOLOGIC LEGEND
13 black shale, slate, and argillite
9 lead Rier Fm.; black chert and black argillite, minor ct pebble conglomerate
8 gray and buff weathering, medium to dark bedded dolomite and limestone
2e dark shale and argillite, buff weathering, minor buff to orange weathering dolomite
2d buff weathering dolomite boulder conglomerate
2c massive, white, cherty and dense gray dolomite, minor quartzite
2b buff and orange weathering dolomite, dark shale
1 dark gray to black, thin bedded argillite, slate, and argillite, minor quartzite and conglomerate
KIT LAKE
SEELA PASS
BLACKSTONE RIVER
MT HARPER


DYNASTY EXPLORATIONS
REEF PROJECT
COAL CREEK DOME DETAIL AREA
GEOCHEMICAL VALUES
SILT SAMPLE SITE: Cu, Pb, Zn
SOIL SAMPLE SITE: Cu, Pb, Zn
ROCK SAMPLE SITE: Cu, Pb, Zn
Fig 13
Scale: 1": 2640
KIT LAKE
SEELA PASS
BLACKSTONE RIVER
HARPER



inches
centimetres
This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.
GEOLOGICAL SURVEY
ED
EC
116F-15
116F-16
116G-13
116G-14
116G-15
116G-16
116F-10
116F-9
116G-12
116G-11
116G-10
116G-9
116F-7
116F-8
116G-5
116G-6
116G-7
116G-8
116F-2
116F-1
116G-4
116G-3
116G-2
116G-1
Porcupine River
AIRSTRIP
MOUNT KLOTZ
MOUNT DEVILLE
MOUNT KING
SHEEP MOUNTAIN
BEAR
BILBO
DPW CAMP MI. 123
AIRSTRIP MI 130
101 MILE AIRSTRIP
ALASKA
YUKON TERRITORY
CANADA
U.S.A.
7220000m.N.
65°00'
139°00'

Fig 14

HART RIVER 116H

138°00' 45' 30' 15' 137°00' 45' 30' 136°

66°00'

45'

30'

15'

116H-13 116H-14 116H-15 116H-16

116H-12 116H-11 116H-10 116H-9

116H-5 116H-6 116H-7 116H-8

116H-4 116H-3 116H-2 116H-1

O G I L V I E R I V E R

P E E L R I V E R

Hungery Lake

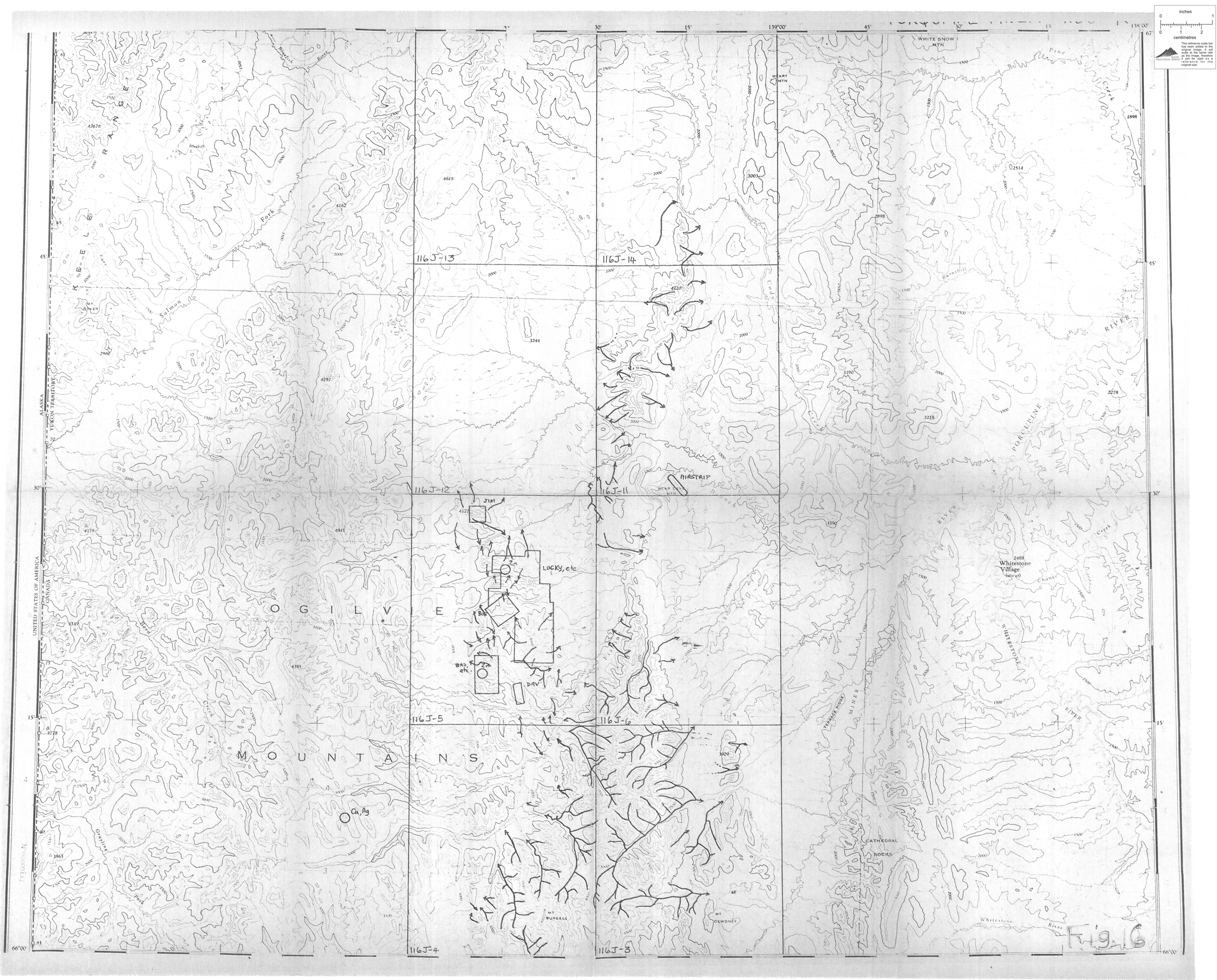
JUG

Fig 15

inches
0 1
0 1 2
centimetres

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY



116J-13
116J-14
116J-12
116J-11
116J-5
116J-6
116J-4
116J-3
JIM
LUCKY, etc.
BAD, etc.
DAV
Cu, Ag
AIRSTRIP
OGILVIE
MOUNTAINS
KEELE RANGE
WHITE SNOW MTN
HEART MTN
Whitestone Village
CATHEDRAL ROCKS
MT BURGESS
MT DEWDNEY
ALASKA
YUKON TERRITORY
UNITED STATES OF AMERICA
CANADA
PORCUPINE RIVER
WHITESTONE RIVER
MINER
TERRACE RIDGE
Salmon Fork
Pine Creek
Burnthill Creek
Chance Creek
Grayling Fork
139°00'
138°00'
66°00'

Fig. 16