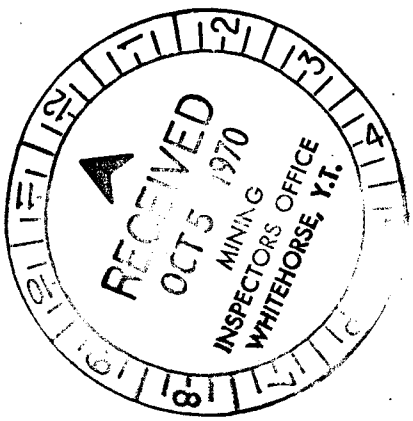
VINA MINERAL CLAIMS GROUP

REPORT ON GEOLOGICAL MAPPING

Whitehrose Mining District
Yukon Territory



Latitude : 62°46'N
Longitude: 139°45'W

N.T.S. 115-J-13

Field work done in the periods
September-October, 1969 and
April 15 - July 4, 1970

This report has been examined by the Geological Evaluation Unit and is recommended to the Commissioner to be considered as representation work in the amount of $13,576.54

Resident Geologist or
Resident Mining Engineer

Considered as representation work under Section 53 (4) Yukon Quartz Mining Act

Commissioner of Yukon Territory

By:

KENNETH M. DAWSON

ATLAS EXPLORATIONS LIMITED
September, 1970

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LIST OF CLAIMS

CLAIMS		GRANT NUMBER	RECORDING DATE
VINA	1-8	Y38361-Y38368	Oct.2, 1969
	9-16	Y38369-Y38376	Oct. 2, 1969
	17-24	Y38377-Y38384	Oct. 2, 1969
	25-32	Y38385-Y38392	Oct. 2, 1969
	33-40	Y38393-Y38400	Oct. 2, 1969
	41-48	T38401-Y38408	Oct. 2, 1969
	49-56	Y38409-Y38416	Oct. 2, 1969
	57-64	Y38417-Y38424	Oct. 2, 1969
	65-72	Y38999-Y39006	Oct. 27,1969
	73-80	Y39007-Y39014	Oct. 27,1969
	81-88	Y39015-Y39022	Oct. 27,1969
	89-96	Y39023-Y39030	Oct. 27,1969
	97-104	Y39031-Y39038	Cct. 27,1969
	105-112	Y39039-Y39046	Oct. 27,1969
	113-120	Y39047-Y39054	Oct. 27,1969
	121-128	Y39055-Y39062	Oct. 27,1969
	129-136	Y39063-Y39070	Oct. 27,1969
	137-144	Y39071-Y39078	Oct. 27,1969
	145-148	Y39079-Y39082	Oct. 27,1969
	149-156	Y50392-Y50399	Feb. 20,1970
	157-164	Y50400-Y50407	Feb. 20,1970
	165-172	Y50408-Y50415	Feb. 20,1970
	173-180	Y50416-Y50423	Feb. 20,1970
	181-188	Y50424-Y50431	Feb. 20,1970
	189-196	Y50432-Y50439	Feb. 20,1970
	197-204	Y50440-Y50447	Feb. 20,1970
	205-212	Y50448-Y50455	Feb. 20,1970
	213-220	Y50456-Y50463	Feb. 20,1970
	221-228	Y50464-Y50471	Feb. 20,1970
	229-236	Y50472-Y50479	Feb. 20,1970
	237-241	Y50480-Y50484	Feb. 20,1970

TELEPHONE 685-4331

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330 MARINE BUILDING
355 BURRARD STREET
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VINA MINERAL CLAIMS GROUP
REPORT ON GEOLOGICAL MAPPING

INTRODUCTION

The Home Creek area was examined by Atlas geologists Kenneth Dawson and Colin Godwin in the course of a reconnaissance of the Dawson Range in July, 1969. In the area, granite stocks were observed that intrude the granodiorite batholith. The granites showed fine-grained, porphyritic and leucocratic phases, miarolitic cavities, and limonitic stains. Granite and granodiorite were intruded by abundant rhyolite, dacite and other porphyry dykes, and also overlain by small rhyolitic flows.

This favourable geology led to reconnaissance mapping and geochemical sampling of the Home Creek area in the latter part of August, 1969. Encouraging geochemical results led to routine geochemical sampling of the Home Creek area in September and October, 1969. The first block of 148 VINA mineral claims were staked at this time, and 93 VINA mineral claims were staked in February, 1970, bringing the total group to 241 claims.

Three grid areas were located on the basis of reconnaissance mapping and geochemical sampling in 1969. Detailed work on the three VINA grids, including linecutting, geochemical sampling, magnetometer surveys, and geological mapping was done in the period April 15 - July 4, 1970. Geologic mapping and prospecting of the claim area outside the grids and adjacent ground was done by Atlas personnel in the period May - July, 1970.

LOCATION AND ACCESS

The VINA claims are in the Dawson Range in western Yukon, 12 miles northeast of the abandoned settlement of Donjek on the White River. Location of the claim group is given on Location Map, Appendix I. The claims are situated mainly in the headwaters of Home Creek, but also occupy headwaters of Moose Creek, Carlisle Creek and Independence Creek. The claims fall entirely within claim sheet 115-J-13. The claim group is depicted on Key Map, Appendix II.

Access to the claims was attained by helicopter during 1969 and 1970. Men and supplies were flown by fixed-wing aircraft to the Yukon River, Uranus, Polaris and Casino airstrips, and then to the property by helicopter. An access road connecting Uranus and Polaris strips to Casino was used for servicing the airstrips.

REGIONAL GEOLOGY

The VINA claims are located in the western Dawson Range, a northwest-trending belt of mountains 6000 ft. or more high, standing above the undulating surface of the Yukon Plateau. Rocks underlying the claims include Yukon Group metasedimentary rocks in the north, Klotassin granodiorite in the south, Home Granite sills and stocks, and related Tertiary flows and dykes.

Yukon Group gneiss of probable Precambrian age forms the roof pendants and walls of the granitic to granodioritic Klotassin batholith that constitutes the core of the Dawson Range. Large areas of these Cretaceous and older intrusive rocks are covered by intermediate to basic flows of the Early Tertiary Carmacks Volcanics. Tertiary intrusive bodies, including Home granite, occur as small stocks, sills and dykes flanking and intruding the Klotassin batholith. Younger related rhyolitic flows cap the older units in small disconnected patches.

Copper, molybdenum, lead and zinc mineralization is associated mainly with the Tertiary intrusions, and to a lesser degree with Cretaceous intrusives.

Regional geologic data is drawn, in part, from Geological Survey of Canada Preliminary Map 44-34 and Map 340A.

TABLE OF GEOLOGIC FORMATIONS

5

TERTIARY (?)

Buff, pink or brown rhyolite and felsite flows and related porphyry and fine grained granite dykes. Flow and dyke textures may be aphanitic, porphyritic, banded and/or spherulitic.

4

TERTIARY (?)

Basic and ultrabasic dykes: latite and dacite porphyry, diabase, serpentinite.

3

TERTIARY (?)

Home Granite

Fine to medium grained equigranular pink biotite granite, biotite quartz monzonite and alaskite. Commonly porphyritic and/or miarolytic. Minor propylitic alteration. Sills, stocks, plugs and dykes.

2

LATE CRETACEOUS (?)

Klotassin Granodiorite

Medium to coarse grained hypidiomorphic and/or porphyritic grey hornblende (minor biotite) granodiorite, quartz diorite and quartz monzonite. Weak propylitic alteration developed locally. Foliated and gneissic, in part. Related diorite dyke.

1

PRE-CAMBRIAN

Yukon Group

High-grade metamorphic assemblage including granitic and dioritic gneiss, quartz hornblende gneiss, grey to blue quartzite, and amphibolite. Foliation trends northwest to west and dips southward.

NOTE: NUMBER OF FORMATIONS CORRESPOND TO GEOLOGIC MAP OF VINA CLAIMS APPENDIX III

GEOLOGY OF VINA CLAIMS

A geologic map of VINA claims, based upon mapping by Atlas geologists Kenneth Dawson, Gary Pearse and Donald Hersak, is given in Appendix III. Rock units in the area are given in Table of Geologic Formations, page

Geologic mapping in 1969 was done using 1"= ½ mile claim sheets for base maps. Base map for most 1970 VINA mapping was a 1"= 1000 ft. topographic map, 50-ft. contour interval, prepared for Atlas by Northwest Survey Corp. Ltd. Survey control for detailed mapping was attained by three grids and four base lines. Base lines were chained off, all at Azimuth 180°, and grid lines run with chain and compass at 800 ft. intervals normal to base, and at 400 ft. intervals on the middle grid. A total of 264,700 ft. of line were cut. The grid was established for geochemical and geophysical surveys as well as survey control for mapping.

The geology of the VINA claims is fairly complex, including several intrusive units, two prominent fracture directions, and a Klotassin batholith contact with Yukon Group metasedimentary rocks.

Yukon Group

The basement rocks in the vicinity of VINA claims are an assemblage of high-grade metasedimetary rocks ascribed to the Yukon Group as probable Precambrian age. Yukon Group rocks include granitic and dioritic gneiss, quartz hornblende gneiss, grey to blue quartzite and amphibolite.

Fine-to medium-grained blue-grey hornblende gneiss is the most abundant Yukon Group lithologic unit in VINA area. Hornblende gneiss occupies a northwest-trending inferred contact with Home granite in central VINA claims. Foliation adjacent to the contact strikes northwest to west-northwest, and dips steeply southward.

The northern VINA claims are underlain by quartz-muscovite gneiss intercalated with blue and white quartzite. These resistant rocks form a high, northwest-trending ridge that is apparently structurally controlled by underlying metasediments in which foliation dips steeply southwestward. North of the high ridge, hornblende-rich gneiss is again predominant, with intercalated amphibolite and blue-grey quartzite. Foliation trends more northerly of northwest, with shallow to moderate southwest dips. Two large sills of Home granite intrude the gneiss unit in the north.

Yukon Group rocks including dioritic gneiss and amphibolite crop out along Moose Creek northwest of VINA claims. The contact with Klotassin granodiorite to the southeast is inferred.

Klotassin Intrusions

The southern VINA claims are underlain mainly by Klotassin hornblende granodiorite. Radiometric dating of similar, and presumably related granodiorite near Casino Mine yields an age of about 90 million years, or Late Cretaceous. (C. Godwin, personal communication, 1970). The unit grades locally to quartz diorite and quartz monzonite of similar texture, but granodiorite is the dominant rock type. Granodiorite is medium to coarse-grained, commonly foliated and often gneissic adjacent to contacts. Hornblende, which predominated over biotite, commonly occurs as crudely-aligned phenocrysts 3 to 10 mm. long. Foliation tends to follow both the northwest trend of intrusive contacts with Home granite and the regional northwest grain of Dawson Range rocks.

A large diorite dyke, about 500 ft. wide and exposed for 5000 ft. along strike, intrudes Yukon Group gneiss in the central VINA claims. The medium-grained hypidiomorphic diorite appears to be most closely related to Klotassin intrusions.

Klotassin granodiorite is intruded by a large sill and a small stock of Home granite, numerous small Tertiary dykes, and is overlain by disconnected remnants of a formerly extensive rhyolitic flow.

Home Granite

Three sills and two small stocks of fine to medium-grained pink biotite granite occur within and adjacent to the VINA claims. The unit is assigned the name "Home granite" for the type locality, Home Creek. Radiometric dating of a similar quartz monzonite stock at Casino Mine yields an age of 70-75 million years, or Early Tertiary (Ibid.). The rock unit also includes abundant alaskite and lesser amounts of quartz monzonite. These porphyritic and/or miarolitic rocks are distincly epizonal in contrast to the semi-concordant, mesozonal character of the Klotassin batholith.

A large sill of Home granite occupies the central VINA claims. The sill intrudes a contact between Klotassin granodiorite on the south and Yukon Group gneiss on the north. A narrower sill of similar northwest strike and 15-20° southward dip, underlies the northern VINA claims. A thin wedge of metamorphic rock that overlies the sill on the south is intruded by small dykes of fine-grained Home granite. A third sill of Home granite intrudes Yukon Group metasediments north of VINA claims in parallel

orientation to the above-mentioned sills. The boundaries and extent of this pluton have not been determined. Two small stocks of fine-grained Home granite, each roughly circular and about one-half mile in diameter, occur in the area. One intrudes granodiorite on the southern VINA claims, whereas the other intrudes a granodiorite-quartzite contact just outside the northwestern claim boundary.

Copper-molybdenum mineralization in the area either occurs within the Home granite, or within the contact zone of rocks intruded by Home granite.

Tertiary Dykes and Flows

Small acidic dykes, including rhyolite, felsite, fine-grained granite and quartz-feldspar porphyry intrude all rocks in the area except the Tertiary rhyolite flows. The dykes are all grouped as Tertiary, but some aplites that intrude Klotassin granodiorite may be genetically related to the older intrusions, and of Cretaceous age. Fine-grained granite, granite and rhyolite porphyry dykes are most abundant in the northern claims, within gneiss underlain by a Home granite sill at shallow depths.

Intermediate to ultrabasic dykes that intrude most units include dacite and latite porphyry, diabase and serpentinite. The dykes are not abundant, and only one concentration of these dykes was

noted. Several small serpentinite bodies crop out on a hill east of the central claims, where they intrude both gneiss and granodiorite and are capped by rhyolite. A relatively strong, circular aeromagnetic high is centred over the serpentinite dykes.

Buff, pink or brown rhyolite and felsite flows occur throughout the central and southern claim group. Rhyolite exhibits a variety of textures, including spherulitic and banded, porphyritic with small orthoclase phenocrysts and quartz "eyes", and aphanitic. Flows almost invariably occupy the crests of hills and ridges, commonly as discontinuous outcroppings. Larger coherent flows occur in the central and eastern claim group. Flows are often difficult to distinguish from related dykes of similar texture and composition.

Acidic dykes and flows probably represent a terminal phase of early Tertiary magmatic activity. The minor intrusions may be late residual differentiates of the parental granitic magma from which Home granite and related rocks, arose.

Structure

In the vicinity of VINA claims, and also in the vicinity of the VEGAS and ROYALE groups to the east, the northern boundary of the Klotassin batholith is marked by re-entrants and septa of Yukon Group metamorphic rocks. Foliation in the Klotassin

intrusions adjacent to, and even several thousand feet away from the contact, is almost invariably concordant with both the northwest trend of the contact and the parallel grain of the basement rocks. Contacts are generally poorly defined, being either gradational or obscured by overburden. Gneissocity in granodiorite parallel to contacts is often difficult to distinguish from primary gneissic textures in Yukon Group rocks. All the above structures attest to the relatively deep-seated mesozonal origin of the batholith.

Transgressive plutons of Home granite cut the older rocks throughout the Dawson Range. In the VINA area, large sills of Tertiary granite are concordant with the northwest grain but show discordant contacts with granodiorite. Smaller bodies of granite are clearly discordant. Forceful high-level emplacement of these granites is indicated by chilled, porphyritic, discordant contacts, miarolitic cavities, brecciation, alteration and mineralization in contact zones, and related extrusive rocks.

Two prominent fracture directions, northeast and northwest, are developed in the vicinity of the claim group. Most copper and molybdenum geochemical anomalies occur near major fracture intersections in the central claim group. Two molybdenite occurrences are close to a northeasterly fracture. The fracture

sets are parallel and perpendicular to the granite sills, and may represent release of stresses generated by the emplacement of these plutons.

Mineralization and Alteration

Three grid areas were located on the basis of reconnaissance mapping and geochemical sampling results done in the fall of 1969. Silt, soil and water anomalies in molybdenum were detected over most of the claim group. Detailed work on the three grids on VINA claims was done by Peter Dean's crews out of three camps: South Grid (Grid 1), April 15 - May 15; Middle Grid (Grid 1), May 15 - 28; North Grid (Grid 2), June 28 - July 4. Soil samples were taken at 200 ft. intervals, rock chip samples were taken at 800 ft. intervals, magnetometer stations were located at 100 ft. intervals, and detailed mapping was done along grid lines.

The South Grid covers an area underlain predominantly by Klotassin hornblende granodiorite, intruded by a plug of fine-grained Home granite in western part of grid, and also intruded by a large sill of Home granite upslope to the north of the grid. Although no mineralized outcrop or float was discovered in South Grid area, geochemical anomalies are believed to be derived from mineralized contact zones of the younger intrusions, either directly or from float.

Fine-grained Home granite is brecciated and silicified at the contacts of the plug, as is the granodiorite host rock. Breccia is intruded by small aplite dykes, but is not mineralized. Rocks elsewhere in the vicinity of South Grid are fresh.

Erratic molybdenum soil anomalies in the order of 10-50 ppm occur over the Home granite plug but molybdenite mineralization was not detected.

The Middle Grid (Grid 1) in central VINA claim group, lies entirely within a large Home granite sill. Molybdenite, pyrite and chalcopyrite are found in small amounts in four localities in the area. The three sulfides occur in hairline quartz veins and as fine fracture-fillings in predominantly unaltered Home granite. West of the Middle Grid, traces of molybdenite and chalcopyrite are found in vuggy granite showing pervasive weak argillic alteration. Pyrite is rare, hence few rocks exhibit limonitic minerals, leaching or supergene alteration. Chalcopyrite and molybdenite, where they occur, are generally preserved in an unoxidized state in float or outcrop.

Inhomogeneous, erratic molybdenum soil geochemical anomalies that are detected on the Middle Grid may be satisfactorily explained by molybdenite vein occurrences of the size and type observed in the area. A molybdenite-chalcopyrite occurrence

in a slide on the Middle Grid has a single molybdenum soil anomaly of 8 ppm about 800 ft. above it that may be the source. Observed Mo geochemical distribution is unlikely to have been caused by disseminated mineralization.

Few copper soil and silt anomalies above the 50 ppm threshold were detected. Copper and molybdenum "highs" correspond quite well, reflecting the nature of the veins. Comparison of copper soil and rock geochemistry shows soils are usually enriched relative to rock, in places by as much as a factor of 4. It is unlikely that copper has been leached from rocks in the area since limonite-jarosite content of rocks is very low, and not pervasive. Very little pyrite occurs in the rocks, but that which does,occurs withfresh molybdenite and chalcopyrite at surface.

Lead and zinc anomalies on the Middle Grid show some correlation with molybdenum anomalies, and with rhyolite float. No related mineralization was found.

The North Grid (Grid 2) includes one of the highest peaks in Dawson Range, and outcrop is abundant. The grid covers a contact between Yukon Group rocks and a sill of Home granite, plus small granite dykes. Yukon Group quartz-feldspar-biotite gneiss along the southern sill contact is rusty, veined by

quartz, and commonly contains disseminated pyrrhotite, pyrite, magnetite and traces of chalcopyrite. No significant concentrations of sulfides were found in the area. Home granite sill and dykes are fresh and unmineralized.

Copper, lead, zinc and molybdenum geochemical anomalies detected in soil sampling the VINA North Grid are believed to reflect disseminated, fine-grained contact mineralization, although no lead, zinc or molybdenum minerals were found.

A sharp ground magnetic high is detected over some small granite dykes cutting quartz-amphibole gneiss. Disseminated pyrrhotite and magnetite occur in gneiss nearby, explaining both the ground magnetic and government aeromagnetic anomalies. One of the copper geochemical anomalies is peripheral to the magnetic anomaly, indicating contact copper mineralization.

CONCLUSIONS

1. The VINA claims are underlain by a complex of metamorphic, intrusive and extrusive rocks. Sills, stocks and dykes of Tertiary granite have intruded a zone of intersecting regional fractures at the contact between a Cretaceous granodioritic batholith and Precambrian gneiss.

2. Small quartz-molybdenite-pyrite-chalcopyrite veins occur sporadically in unaltered and unleached Home granite, near intersections of major fractures. Minor disseminated pyrrhotite-pyrite-magnetite-chalcopyrite mineralization occurs along a contact between a Home granite sill and Yukon Group gneiss. No significant concentrations of sulfides were found.

3. Geochemical sampling confirms previously found anomalies, and reflects the small veins and contact mineralization on the Middle and North Grids, respectively. Additional geochemical sampling is recommended in accompanying "Geochemical Report on the VINA Group".

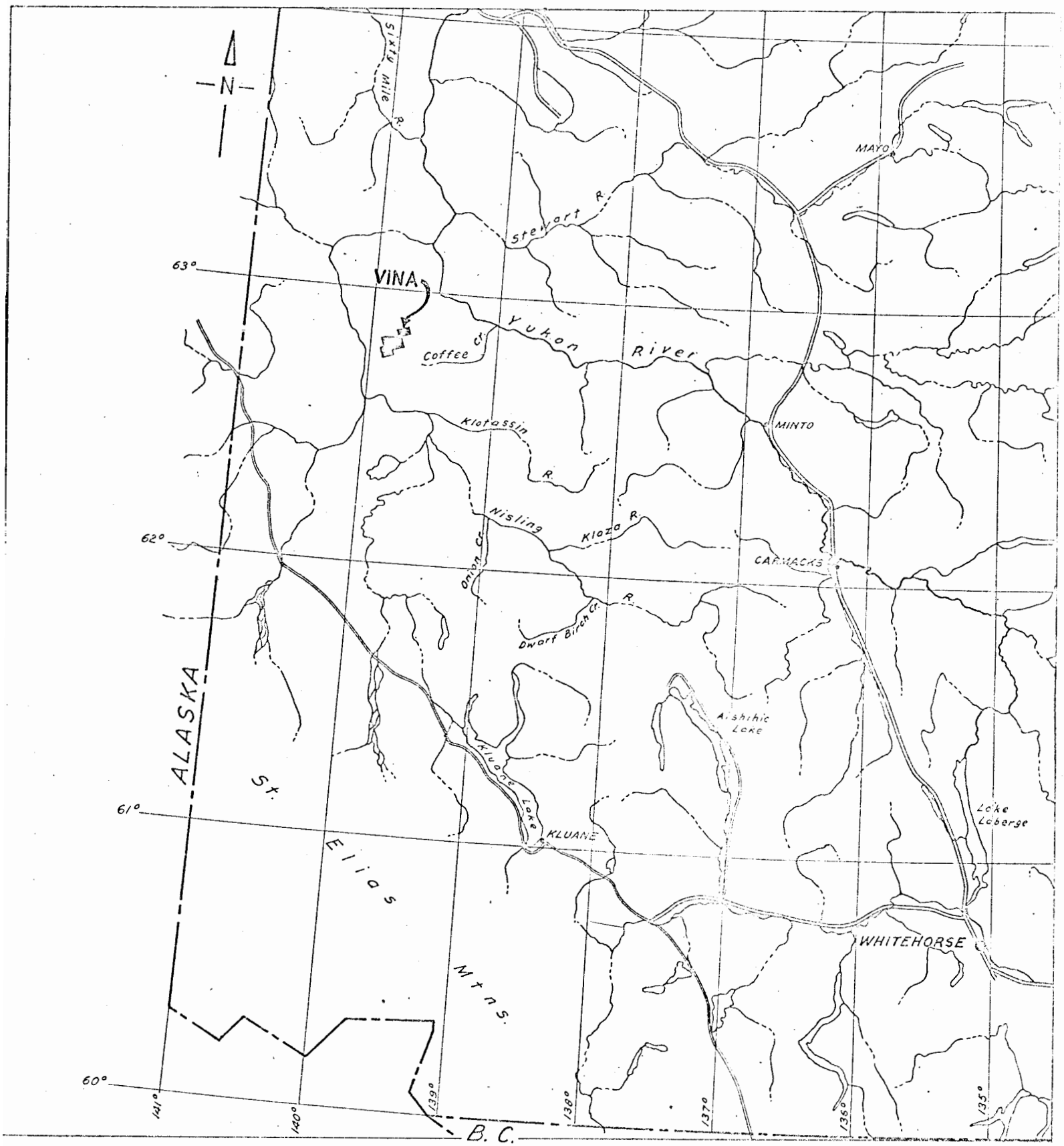
4. On the basis of the geological mapping and the geochemical and geophysical surveys, additional mapping and soil sampling should be done over the Home granite plug on the South Grid, and additional soil sampling should be undertaken south of Cu - Mo anomalies on the Middle Grid.

Respectfully submitted,

Kenneth M. Dawson,
Geologist

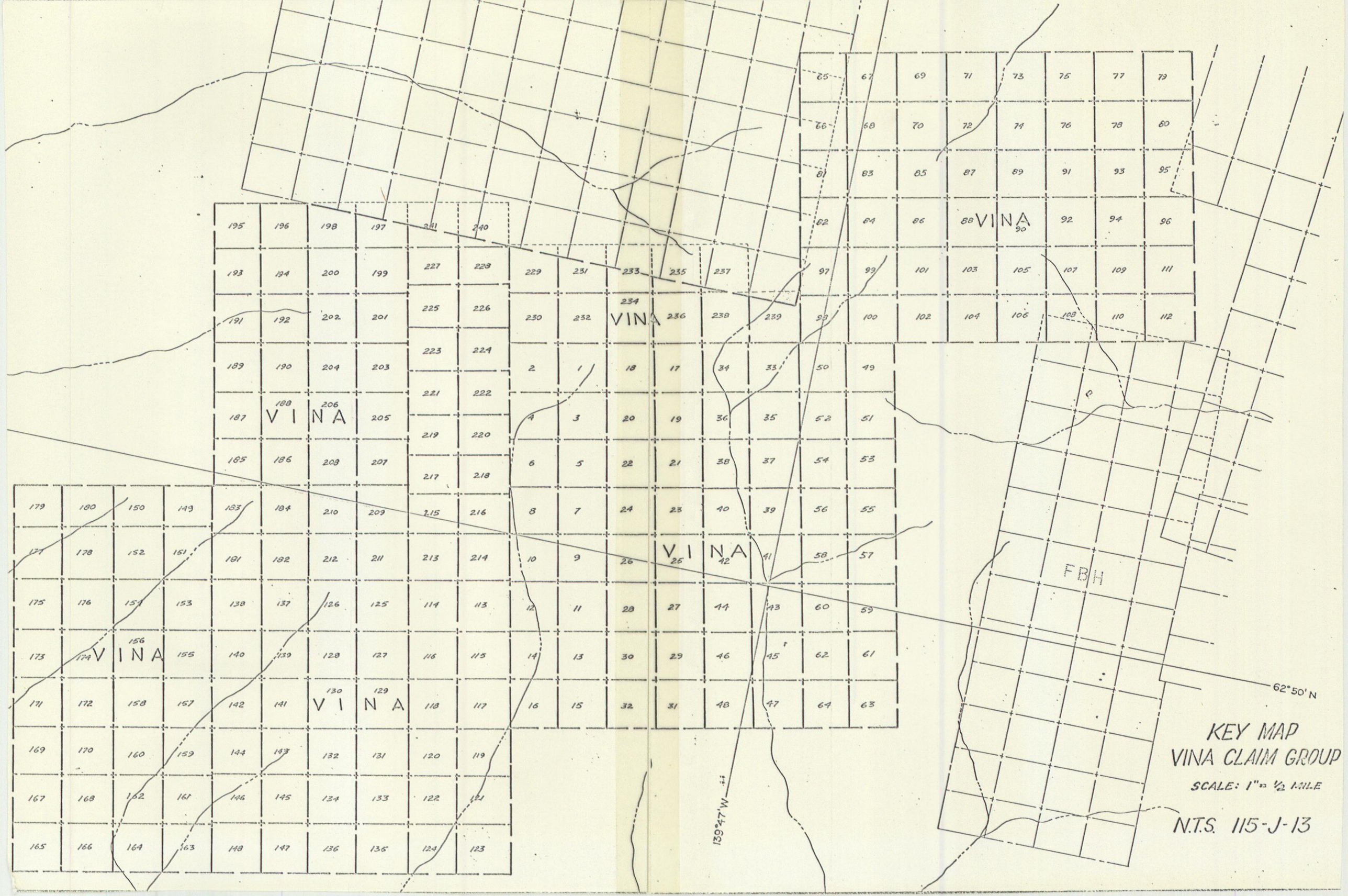
September, 1970

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. E. GORDON DAVIS



Scale: 1" = 32 miles

KEY MAP SHOWING
VINA CLAIM GROUP
DAWSON RANGE – YUKON TERRITORY


VINA
188
206
156
130
129
234
25
42
90
62°50'N
139°47'W
KEY MAP
VINA CLAIM GROUP
SCALE: 1" = ½ MILE
N.T.S. 115-J-13

Cross Section A-A'
Horiz. Scale 1" = 2000'
Vertical Scale 1" = 1000'

GEOLOGICAL LEGEND

TERTIARY (?)
Buff, pink or brown rhyolite and felsite flows and related porphyry and fine grained granite dykes. Flow and dyke textures may be aphanitic, porphyritic, banded and/or spherulitic.

TERTIARY (?)
Basic and ultrabasic dykes: latite and dacite porphyry, diabase, serpentinite.

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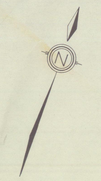
Nome Granite.
Fine to medium grained equigranular pink biotite granite, biotite quartz monzonite and alaskite. Commonly porphyritic and/or monophytic. Minor propylitic alteration. Sills, stocks, plugs and dykes.

LATE CRETACEOUS (?)
Klotassin Granodiorite
Medium to coarse grained hypidiomorphic and/or porphyritic grey hornblende (minor biotite) granodiorite, quartz diorite and quartz monzonite. Weak propylitic alteration developed locally. Foliated and gneissic, in part. Related diorite dyke.

PRE-CAMBRIAN
Yukon Group
High-grade metamorphic assemblage including granitic and diorite gneiss, quartz hornblende gneiss, grey to blue quartzite, and amphibolite. Foliation trends northwest to west and dips southward.



ATLAS EXPLORATIONS LIMITED		
GEOLOGY OF VINA CLAIMS Dawson Range - Yukon		
N.T.S.: 115-J-13		SCALE: 1" = 1000'
DATE OF SURVEY: July 1970		PARTY CHIEF: K.M. DAWSON
DATE DRAFTED: SEPT 14, 1970		DRAFTED BY: G.T.
DATE REVISED:		REVISED BY:
CHECKED BY:		FIGURE No.: