MAP NO.: 105 F 8/9

ASSESSMENT REPORT X
PROSPECTUS
CONFIDENTIAL X
OPEN FILE

DOCUMENT NO: 093036
MINING DISTRICT: WATSON LAKE
TYPE OF WORK: GEOCHEMICAL

REPORT FILED UNDER: JAMES S DODGE

DATE PERFORMED: 18-30 JULY 1991 **DATE FILED:** JULY 31, 1992

LOCATION: **LAT.:** 61°29'N **AREA:** KETZA RIVER

LONG.: 132°11'W **VALUE $:** 1,600

CLAIM NAME & NO.: LANCER 1-8 (YB33962-YB33969)

WORK DONE BY: JAMES S DODGE

WORK DONE FOR: JAMES S DODGE

DATE TO GOOD STANDING:

REMARKS: Rock samples were collected and sent out for petrographic analysis. REE, zirconium and yttrium occur in veins cutting skarn near peralkaline intrusive rocks. Analysis returned cerium, lanthanum, neodymium, thorium and yttrium in the 1,000's of ppms and zirconium in the 10,000 and 100,000's ppms.

09303€

RESULTS OF SAMPLING
LANCER 1-8 CLAIMS

CLAIM SHEET 105F-08
61°29'N 132°11'W

JAMES S. DODGE, P.ENG
18-30 JULY 1991

105 F 8/9

This report has been examined by the Geological Evaluation Unit under Section 53 (4) Yukon Quartz Mining Act and is allowed as representation work in the amount of $ 1600.

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

LANCER CLAIMS

No. 1 Posts for Lancer 7/8 and No. 2 Posts for Lancer 5/6

Posts are standing on 3-meter wide
rare earths+yttrium+zirconium vein

Rusty knob in mid-distance
is intrusive syenite plug

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ILLUSTRATIONS

ABSTRACT

Under the 1991 Yukon Mining Incentives Program, James S. Dodge, Yukon Professional Engineer, undertook a reassessment of the previously known rare earth elements (REE) occurrences at the head of the Ketza River, southcentral Yukon on NTS Map Sheet 105-F-08.

During May, 1991 the 1-8 Lancer claims were staked covering an area of peralkaline intrusive rocks and metavolcanics together with surrounding older slates, black phyllites and shale.

Prospecting and radiometric scanning of accessible sites in the craggy cirque terrain revealed that the several outcropping zones of REE mineralization, previously considered to be separate skarn-hosted entities, were undoubtedly the exposed portions of a single through-going vein. Several lines of field relations support this conclusion, as do petrographic descriptions of mineralized rocks and also the similarities shown in analyses of a few familiarization samples.

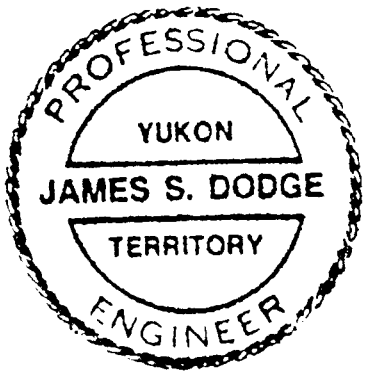
Four samples of representative vein material were analyzed for 14 REE elements plus uranium-thorium, yttrium, and zirconium. The results were highlighted by elevated values reported for yttrium, zirconium, cerium, lanthanum, and neodymium; collectively, a rather uncommon association of elements in the peralkaline environment.

A fifth sample from a talus boulder near the syenite plug yielded unexpectedly high values in both yttrium and zirconium, while the radiometric response in the field was not proportionately higher.

Thus, emphasis must be placed on detailed geological mapping, binocular microscopy in the base camp, rock geochemical sampling and analysis for yttrium and zirconium as pathfinder elements for REE; all as part of a planned follow-up Target Evaluation Program in 1992.

James A. Dodge

James S. Dodge, P.Eng.
Whitehorse, Yukon
01 October, 1991



INTRODUCTION

James Dodge chose the search for rare earth elements (REE) in the Yukon as a major emphasis for prospecting under the 1991 Yukon Mining Incentives Program. This decision followed a detailed library search of the geologic literature (winter 1990-91) on peralkalic rock hosts of rare earth deposits and a useful field inspection of the bastnaesite REE mine at Mountain Pass, California.

Thereupon, Dodge's review of the 1980 assessment report on the former Nokluit claims, prepared under the supervision of A. R. Archer, suggested that a careful field assessment was warranted on the basis of the level of REE values obtained at several sites and because of the current high degree of interest in, and anticipated growth for, rare earth elements; especially yttrium.

Previous work had identified sites of anomalously high radioactivity with associated promising REE values, albeit in relatively small, isolated bedrock and talus sources.

Noting that the area was open for staking and, moreover, that a road for 4x4 vehicles would provide limited but important access to the property once the area was free of late-melting snow, the staking of the first eight Lancer claims was undertaken on 30 May, 1991.

Ground access to the claims during the period 18-30 July provided the opportunity to prospect and reevaluate several of the sites previously reported to contain REE concentrations.

PROPERTY AND LOCATION

The core group of 8 Lancer claims are recorded in the Watson Lake Mining District recorder's office as follows:

Name	Grant Numbers	Date of Record
LANCER 1-8	YB33962-YB33969	05 June, 1991

Ownership of all the claims is held by Dodgex Ltd. of Whitehorse, Yukon.

The claims are situated at approximately 61°29' north latitude and 132°11' west longitude on NTS Map Sheets 105-F-08 and 105-F-09 near the headwaters of the Ketza River, 60 km south of the settlement of Ross River in the Pelly Mountains of southcentral Yukon.

Altitudes on the claims range from 1500 meters along the Ketza River to 2050 meters along the headwall of a composite cirque.

A 10 km 4x4 vehicle road connects the eastern boundary of the claims to the all-weather Ketza Mine road at a point 30.5 km southwest of the Campbell Highway.


LANCER CLAIMS
Elsa
Keno
Mayo
SILVER TRAIL
Stewart Crossing
Pelly Crossing
Minto
Carmacks
Little Salmon
Faro
Ross River
Tungsten
Macmillan Pass
Canol Road
ROBERT CAMPBELL HIGHWAY
Frances Lake
Tuchitua
Watson Lake
Upper Liard
Lower Post
ALASKA HIGHWAY
Teslin
Johnsons Crossing
Whitehorse
Champagne
Tagish
Carcross
Bennett
White Pass
Skagway
Klukwan
Haines
Port Chilkoot
Atlin
Cassiar
To Prince George
YUKON
BRITISH COLUMBIA
NADALEEN RANGE
SELWYN
MACKENZIE MOUNTAINS
HESS MOUNTAINS
RUSSELL RANGE
CLARKE HILLS
McARTHUR WILDLIFE SANCTUARY
WILKINSON RANGE
ANVIL RANGE
GLENLYON RANGE
TATCHUN HILLS
PELLY
BIG SALMON RANGE
ST CYR RANGE
MINERS RANGE
SIMPSON RANGE
CASSIAR MOUNTAINS
ENGLISHMANS RANGE
LOGAN MOUNTAINS
Big Salmon
Hootalinqua
Lower Laberge
Montague
Teslin
Boya Lake Prov Park
6
7
8
9
60 km

LANCER
9-24

James A. Dodge

LANCER CLAIMS
RESULTS OF INVESTIGATIONS

Activity under this prospecting phase of the 1991 Yukon Mining Incentives Program entailed a (1) field review of data provided in the 1980 Assessment Report #090577 on the former Nokluit claims prepared under the supervision of A. R. Archer and (2) thereupon, reassessment of these data following prospecting, ground radiometric scanning, laboratory analyses, petrological descriptions, and the determination of source-significance of numerous talus trains in the main cirque.

Geologic Terrane Reconnaissance

Prospecting traverses crisscrossed the Lancer group of 8 claims and confirmed the presence of a bimodal alkaline syenite intrusive plug with a southeasterly trending thermal metamorphic aureol expanding outward from skarn then to hornfels. This aureol has been developed prominently in both high level vesicular trachyte and in older phyllite and black shale.

The younger, layered tuffaceous syenite units commonly exhibit only weakly developed schistosity. Areas of dolomitic rocks adjacent to the west/northwest periphery of the syenite plug will require further study to determine their field relations.

Numerous narrow, parallel, steeply dipping fissure-filling siliceous pyritic zones lace the aureol in 100°-120°A trends.

Confirmatory Radiometric Scanning

Predicated on earlier reports of radiometric anomalies associated with REE concentrations in the cirque, a hand held Scintrex GIS integrating gamma ray spectrometer was used to assist in relocating sites of anomalous uranium/thorium concentrations. Field results which indicated that values for thorium were greater than those for uranium were later confirmed by analytical results.

Only very low level total radioactive response was obtained from talus boulders below the syenite plug in which localized but high concentrations of macroscopic brown ziron were evident.

Prospecting Vein Outcrops (Photo 2)

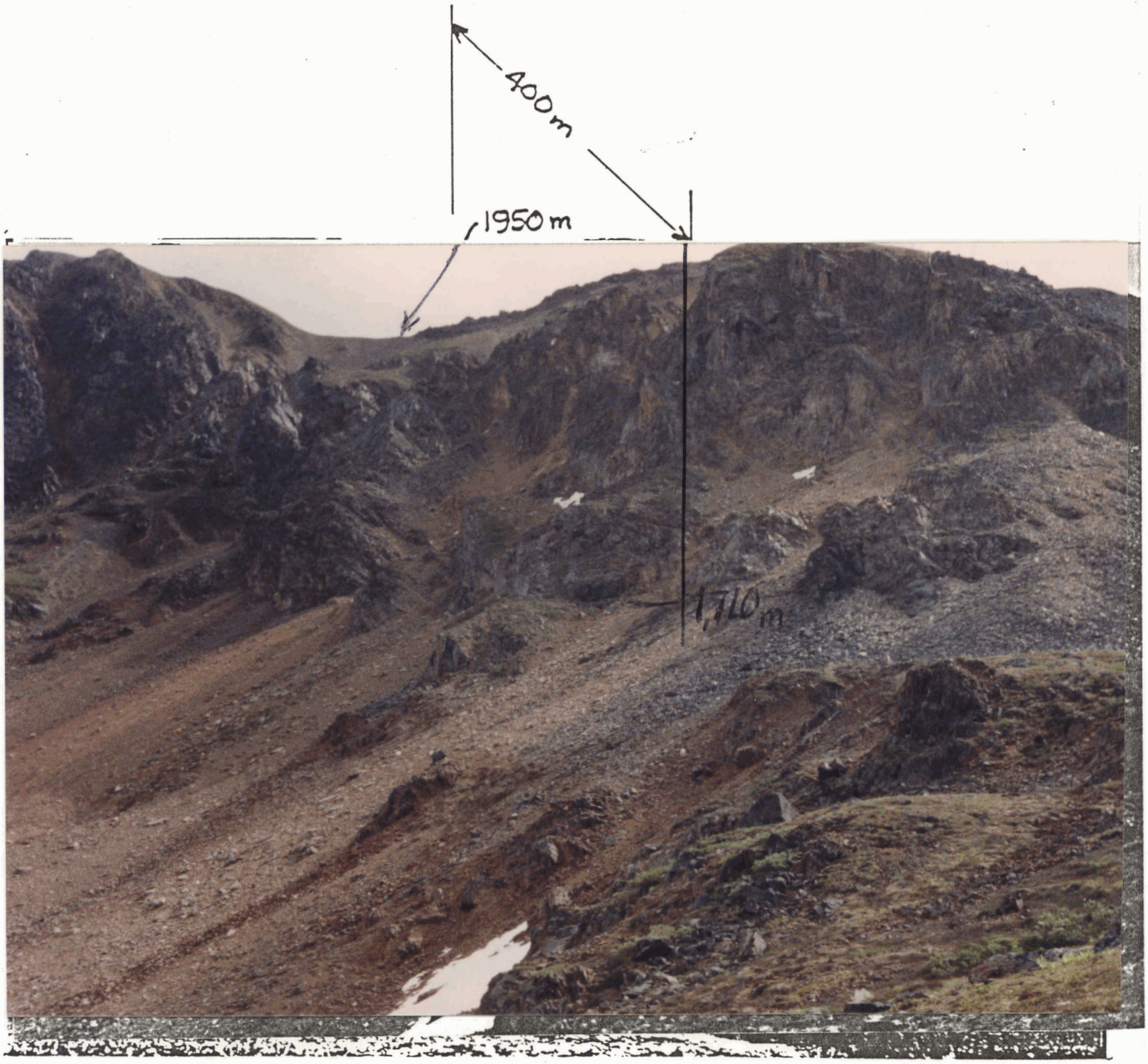
Prospecting along the headwall ridge of the main cirque relocated the 3-meter wide zone of anomalous radioactivity described as a dike in the 1980 report (Photo 3). The fine grained groundmass appeared to be unmetamorphosed. The hematitic feldspar of syenitic appearance, together with the fabric of closely spaced quartz and carbonate stringers and patches, suggested a late stage hydrothermal, possibly metasomatic, event rather than a true dike emplacement.

The several narrow, siliceous pyritic fissure filling veins along the ridge exhibited generally 120°A trends which matched closely that of the reported REE-bearing radioactive zone. Thus, further evidence was provided to indicate that the radioactive zone was most likely a vein emplaced in a similar fissure zone.

Solo prospecting northwesterly following the outcrop of the vein from the ridge was restricted by the very steep slopes leading down into the cirque. Accordingly, attention was redirected to the examination of several radioactive REE-bearing bedrock areas reported to outcrop at the head of talus slides some 240 meters lower altitude and an estimated 400 meters slope distance to the northwest.

Location of the lower area was confirmed by the discovery of two adjacent vein outcrops (Photo 4) with lithology quite similar to the vein exposed at the ridge outcrop. Moreover, the 120°A strike and near-vertical inclination in both of these lower, 8-meter wide, in-line outcrops suggested a genetic commonality with outcrops of the same vein as on the ridge.

Skarn is confined to the wall rocks at all vein outcrops. This implies that the REE-bearing vein material is younger than the thermal metamorphic event and was emplaced from a magmatically differentiated solution arising from an underlying syenite intrusive which had probably overall cooled significantly by that time.



Looking south into main cirque covered by LANCER 5/6/7/8 claims.

Solid red lines outline ridge (1950m altitude) and cliff (1710m) outcrop areas examined in 1991.

Dotted red lines indicate trend of distinct talus trains containing boulders of REE-bearing, radioactive vein material lithologically similar to that in vein outctops examined in 1991.

Dashed red line predicts trend of bedrock vein on-line between ridge and lower outcrop sites as sources of vein material in talus.

PHOTO 2

Interpretation of Talus Components

As seen in Photo 2, a group of talus trains, with a combined width of over 150 meters, descend from cliffs and rock chutes, therewith provide a sampling of the various lithologic units within the cirque. All of the trains contain varying concentrations of phyllitic hornfels, trachytic hornfels and skarn, siliceous pyritic veins, and radioactive REE-bearing vein boulders (Photos 5 and 6).

REE-bearing vein material in the various talus trains displays remarkably similar lithology with the exception that fluorite is more commonly seen in the two westernmost talus trains; thus, the higher fluorite content noted in the lower outcrop sites is clearly reflected in the talus.

The ubiquitous REE-bearing vein presence in all talus appears significant with regard to relating this to the location of probable bedrock sites as sources of the talus. On this evidence it would seem likely that the vein extends, more or less continuously, from the ridge outcrop down through the craggy terrain of the cirque to the lower outcrops.

Familiarization Sampling

In order to verify the presence of significant values of yttrium, zirconium, and rare-earth elements (REE) at several accessible sites which exhibited anomalously high radio-activity - pathfinder to this type of mineralization - first priority was given to sampling rather than carrying out detailed geological mapping.

Four rock samples were selected for analysis by Chemex Labs in Toronto to provide information which could confirm the reported presence of interesting values in rare earths and associated elements in vein material. Results were provided on Certificate of Analysis #A911456. One representative chip sample was taken from each of the ridge (#420727) and lower bedrock (#420725) outcrops; also, one from each of the two adjacent talus trains (#420726) and #420728) as grab chips from approximately 8-10 boulders.

Analyses were carried out for 14 REE elements, thorium-uranium, yttrium, and zirconium. These revealed important values in yttrium and zirconium as well as anomalously high values in lanthanum, cerium and neodymium. Thorium values consistently exceeded those of uranium.

A fifth sample was taken from a talus boulder beneath the north-facing buttress of the syenite plug. Visible in the fine grained melasyenite specimen was a 5cm-wide band of compact, medium grained, mostly euhedral brown zircon. Although the very high (27.8% Zr) zirconium content was anticipated, the high (#420730) value for yttrium was unexpected.

Radiometric scanning using a GIS-4 gamma ray spectrometer to identify outcrops mostlikely to contain yttrium, zirconium, and REE owing to high radioactivity signatures from accompanying thorium and uranium minerals.

Petrographic Descriptions

In order to corroborate the field evidence that the deposit was of a vein-type origin, rather than a localized skarn setting, petrographic study confirmed that hydrothermal metasomatism of an earlier syenite dike was the vein-type host of the unique mineralization.

Four rock samples were submitted for petrographic descriptions to Vancouver Petrographics in Fort Langely, British Columbia (attached). Samples 1 to 3 were of vein material and the fourth was of the zircon rich-zone in the syenite boulder.

From the descriptions it is concluded that the early matrix of the vein material was principally high-sodic feldspar which was metasomatized upon the introduction of late stage quartz and carbonate bearing hydrothermal solutions. No discrete yttrium, zirconium or REE minerals were identified, although hematite particles could now contain these and the radioactive elements.

Based on the relationship of high yttrium and lower REE values in the syenite boulder sample, a 2-stage genesis is proposed for the "main" vein: that the circonium-rich syenitic vein filling was followed by metasomatizing radioactive hydrothermal solutions rich in REE. Metasomatism may also have produced metamict phase of zircon by altering the original zirdon which could have served as a carrier for yttrium in the first stage of vein genesis.

CONCLUSIONS

Prospecting reassessment of the Lancer property during 1991 has shown that:

1. Rare earth elements, as well as yttrium and zirconium, occur in anomalously high percentages in two widely separated vein-type outcrops which are lithologically and structurally quite similar.

2. The occurrence of concentrations of all of these elements in a single geological setting is uncommon.

3. The high incidence of vein material occurring as boulders in all of the talus trains, sourced from that section of the main cirque lying between the two vein-type outcrop areas, most likely points to the existence of a through-going vein between these outcrops.

4. Not all yttrium and zirconium concentrations outside the main vein necessarily have associated anomalously high radiometric signatures.

5. Consequently, future reconnaissance rock geochemical sampling of the Lancer claims should focus on yttrium and zirconium not only as economic targets in themselves but also as the pathfinder elements for REE concentrations. Laboratory analyses for just these two elements are inexpensive and have rapid laboratory turnaround time.

6. Verification of the suspected bedrock vein occurrences in the less accessible zones of the cirque will confirm that the vein is the prime initial target for sub-surface exploration.

7. The Lancer property requires detailed geological mapping and rock geochemical sampling, along with radiometric scanning, to establish all the potential targets for concerted sub-surface exploration for concentrations of rare earth elements plus yttrium and zirconium.

RECOMMENDATIONS

The recommended program for evaluation of the Lancer claim group during a 4-weeks period in 1992 includes:

1. Establishment of a series of control survey stations in the cirque from a base station on the mountain north of the Ketza River. Electronic distance measuring survey equipment will be essential.

2. Ground reconnaissance of the craggy cirque terrain with safety lines to search for vein outcrops between the ridge and top of the talus trains.

3. Close spaced sampling of all vein outcrops.

4. Detailed geological mapping, radiometric scanning, and rock geochemical sampling for yttrium and zirconium over select areas of the claim group.

5. As a contingent supplement, core drill at least one "geologic continuity" hole into the vein.

Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers
212 Brooksbank Ave., North Vancouver
British Columbia, Canada V7J 2C1
PHONE: 604-984-0221

To: DODGE, JAMES S.

14 MACDONALD RD.
WHITEHORSE, YUKON
Y1A 4L2

Project :
Comments: ATTN:JAMES DODGE

Page Number :1
Total Pages :1
Certificate Date: 05-SEP-91
Invoice No. : I9119456
P.O. Number :

CERTIFICATE OF ANALYSIS A9119456

SAMPLE DESCRIPTION	PREP CODE		Ce NAA ppm	Dy NAA ppm	Er NAA ppm	Eu NAA ppm	Gd NAA ppm	Ho NAA ppm	La NAA ppm	Lu NAA ppm	Nd NAA ppm	Pr NAA ppm	Sm NAA ppm	Tb NAA ppm	Th NAA ppm	Tm NAA ppm	U NAA ppm	Yb NAA ppm	Y ppm	Zr ppm
420725H	205	294	6506	93	40	23.50	350	18	5057	7.60	1285	675	230.2	17.50	981.2	44	140.0	48.50	1100	6990
420726H	205	294	3914	75	40	14.50	< 50	13	2376	5.70	1085	410	208.5	16.10	1403.5	8	83.0	39.70	780	3350
420727H	205	294	5832	139	120	18.50	300	20	3844	11.30	1405	670	286.7	20.60	2735	4	214.0	56.50	1420	11200
420728H	205	294	5650	114	40	19.50	200	24	2980	8.50	1455	470	257.0	21.60	1242.5	13	144.0	58.10	1120	7620
420730H	205	294	2614	238	340	38.50	250	56	1279.0	66.50	505	220	157.10	33.80	2199	40	320.0	370.7	2200	278000

Cerium
Lanthanum
Neodymium
Thorium
Uranium
Yttrium
Zirconium

CERTIFICATION: Adriana Alexandru

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph.D. Geologist
CRAIG LEITCH, Ph.D. Geologist
JEFF HARRIS, Ph.D. Geologist
KEN E. NORTHCOTE, Ph.D. Geologist

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8080 GLOVER ROAD,
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Report for: James Dodge,
14 MacDonald Road,
WHITEHORSE,
Yukon, Y1A 4L2

Job 217

September 19th, 1991

SAMPLES:

4 samples of possible Zr and REE-bearing rock, for sectioning and petrographic examination.

The samples are numbered Dodge 1-91 through 4-91.

SUMMARY:

Sample 1 is a mafic-free syenite of intrusive aspect, composed essentially of fresh K-feldspar. It is intergranularly and veniformly pervaded by carbonate and quartz.

Sample 2 is a silica-carbonate rock of metasomatic origin, apparently representing the wholesale alteration of an intrusive protolith - possibly an albitite dyke.

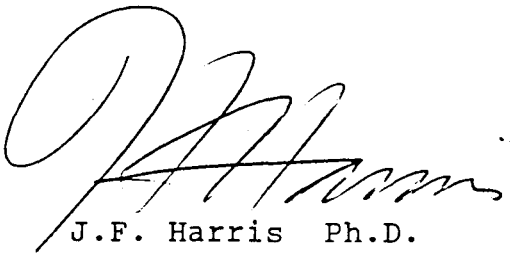
Sample 3 is a sodic porphyry of specialized composition, consisting of a groundmass of fresh, equigranular albite and abundant phenocrysts of aegiritic pyroxene. It is cut by veniform alteration zones rich in carbonate, fluorite, phlogopite and hematite.

Sample 4 is another specialized rock, probably representing a pegmatitic differentiate of the syenite complex. It is composed predominantly of zircon, as individual, subhedral grains abundantly scattered through a matrix of albite with minor intergrown quartz and carbonate. The zircon shows partial alteration to a dusty sub-opaque form (cyrtolite).

The source of rare earth elements in these samples is not immediately apparent from the petrographic study (except for the zircon, which is almost certainly a carrier in Sample 4). Rare earths may be concentrated in diffuse ferruginous products or hematite, and in possible traces of bastnaesite associated with carbonate.

More or less extensive checks by scanning electron microprobe analysis would be required to pursue this question.

Individual petrographic descriptions are attached.



J.F. Harris Ph.D.

((604) 929-5867)

SAMPLE: DODGE 91-1 **SYENITE**

Estimated mode

K-feldspar	60
Plagioclase	10
Rutile	trace
Quartz	10
Carbonate	16
Limonite	4

This sample is a syenite, composed predominantly of fresh, perthitic K-feldspar.

It shows a wide grain size range, from microgranular material on the scale 0.02 - 0.1mm, up to coarse, blocky aggregates of 1 - 2mm. Grain shapes are anhedral, and grain boundaries are commonly crenulate.

Minor plagioclase occurs intimately intergrown with the perthite.

The rock appears to be devoid of mafic silicates. Sparse traces of rutile and/or Fe-Ti oxides occur as fine-grained disseminations.

Carbonate and quartz are major accessories, probably representing late-stage deuteric or hydrothermal introductions. Carbonate constitutes a pervasive phase of intergranular pockets and networks throughout the feldspar aggregate, locally expanding to sizeable, ragged patches which show included remnants of feldspar, and apparently involve partial replacement of the syenite matrix.

The sectioned portion includes a pair of prominent veinlets (2 - 4mm thick) of sparry carbonate and clumpily intergrown, coarse quartz. The quartz extends laterally into the syenite as irregular, pockety networks. The rock is also cut by a few discrete, sub-parallel, hairline veinlets of quartz and carbonate.

The carbonate is unreactive to dilute HCl, and locally shows flecks and cleavage-controlled networks of limonitic staining - suggesting that it is a ferruginous variety (ankerite or siderite). Limonite impregnation is particularly strong in the two principal carbonate veinlets, which appear dark brown in the off-cut.

The dispersed carbonate often includes tiny euhedra and/or spheroids of a darker carbonate in a predominant, colourless, lower relief host, suggesting that two (or more) varieties of carbonate may be present. There is also a possibility that this material could be bastnaesite.

SAMPLE: DODGE 91-2 SILICA-CARBONATE ROCK

Estimated mode

Quartz	53
Carbonate	36
Sericite	1
Plagioclase	8
Limonite	2
Pyrite	trace

This is a compact, structureless rock which appears, in thin section, to represent a product of intense metasomatic alteration (silicification/carbonatization) of an original intrusive rock.

It now consists essentially of a vari-granular intergrowth of quartz and carbonate.

Quartz is the dominant component, forming an aggregate of strained, anhedral grains, in the size range 0.1 - 2.0mm. Carbonate is developed rather evenly throughout this matrix as individual, tiny euhedra and aggregates thereof, forming irregular pockets and semi-continuous networks, intergranular to, and within, the quartz grains.

Tiny flecks of sericite are a minor associate of the carbonate.

The rock exhibits a rather well-developed relict texture of randomly oriented, slender laths. These clearly originated as plagioclase and, in part, survive as such. Others are partially and wholly pseudomorphed by carbonate, or are recognizable as ghosts, delineated by dusty limonite in the quartz matrix.

The remaining constituents are sub-opaque/limonitic material, as diffuse dust and small granules, mainly associated with the carbonate; and sparsely disseminated pyrite, as individual pyritohedral grains 50 - 200 microns in size.

This rock probably represents an advanced stage of the quartz-carbonate alteration process exemplified in Sample 1.

SAMPLE: DODGE 91-3 ALBITE-AEGIRINE ROCK

Estimated mode

Albite	53
K-feldspar	trace
Aegirine	28
Phlogopite	2
Carbonate	7
Fluorite	4
Quartz	1
Hematite	5

This is a texturally heterogenous rock (see etched off-cut), showing streaky, crypto-fragmental variations in grain size and mineral proportions.

In thin section the dominant assemblage is found to consist of a matrix of varigranular, stumpy, subhedral-anhedral plagioclase (grain size 0.03 - 0.8mm), studded with abundant, elongate, prismatic grains of euhedral pyroxene. These range from 0.1 - 2.0mm in length.

The plagioclase is strikingly fresh, and sharply twinned. It shows twinning extinction angles and refractive index indicative of albite.

The pyroxene is also mainly fresh. It is pleochroic from green to yellow-green, and has the almost straight extinction and elongate habit characteristic of aegirine. It commonly shows skeletal/ fragmented form, with the albite matrix intergrown as inclusions, cleavage lamellae, and apparent fracture fillings.

Locally the pyroxene appears to be partially replaced by carbonate - typically showing limonite staining, and apparently a ferruginous variety, as in the other rocks of the suite.

The sectioned area includes linear zones of alteration, probably related to shearing. These contain high concentrations of carbonate, and include oriented flakes of phlogopite - possibly an alteration of the pyroxene.

A prominent accessory in these zones (intimately intergrown, as irregular pockets and networks, with the carbonate and remnant albite) is fluorite, showing typical colourless - purple zonation. Fluorite is also occasionally seen in the fresh albite-aegirine assemblage, but is rare.

The remaining accessory is hematite, of fine-grained acicular form, occurring as sporadic, irregular clumps and meshwork clusters. This is notably concentrated in the carbonate-phlogopite-fluorite alteration zones (partially pseudomorphing original pyroxene?), and is also abundant in an isolated patch near the centre of the sectioned area. Here it forms a meshwork of flakes within a matrix

of albite. Aegirine is virtually absent in this patch, apparently being replaced by the hematite. This area merges gradationally to the normal feldspar-pyroxene assemblage.

No obvious source of REE values is recognizable. If these exist in this material they are most likely associated with the hematite and/or diffuse limonitic phases.

SAMPLE: DODGE 91-4 ZIRCON ROCK

Estimated mode

Zircon	60
Plagioclase	22
Sericite	trace
Quartz	12
Carbonate	6
Pyrite) Limonite)	trace

This is a homogenous, equigranular rock of unusual composition.

The major constituent is zircon, as individual euhedral-subhedral crystals, 0.02 - 2.0mm in size, densely disseminated through a matrix of fresh, anhedral plagioclase with sporadically intergrown quartz and carbonate. The plagioclase seldom shows distinct twinning, but its low refractive index suggests that it is probably albite.

Some of the zircon grains are of composite/skeletal form, and incorporate small inclusions of the matrix components.

At each end of the sectioned area the abundance of zircon shows a marked fall-off, and the rock becomes predominantly an aggregate of feldspar, mildly flecked and dusted with sericite.

Opaques consist of very rare, tiny specks of pyrite, partially altered to limonite. The carbonate component also tends to show diffuse limonitization along cleavages and grain boundaries.

Many of the zircon crystals have a more or less dusty appearance, and sometimes show development of diffuse networks of sub-opaque to opaque material. Rarely, the original crystal structure is destroyed and converted to a fibrous/radiate form. This phenomenon represents partial alteration of the zircon to cyrtolite. Rare earth elements are typically concentrated in this sub-opaque breakdown product.

The origin of this rock is indeterminate from the petrography. It is most likely a late-magmatic/pegmatitic differentiate of the syenite, in the form of a dyke or vein.

STATEMENT OF EXPENDITURES

LANCER 1-8 Lode Claims
YB33962-YB33969
Claim Sheet 105-F-08

Work Performed During 01 July and 01 October, 1991

TRAVEL	4x4 pickup Whitehorse to Lancer claims via Ross River and Ketza Mine road and return: 981 km @ YTG 38.5¢/km		$ 377.55
ASSAYING	6 representative samples taken on Lancer 5&6 during 17-30 July CHEMEX Labs Certificate re #I9119456		515.85
**	3 samples petrographically described by Vancouver Petrographics to determine rare earth minerals on Lancer 5&6 claims		300.00
SUBSISTENCE	3 days during 17 July-02 August while sampling @ YTG $52.85/day		158.55
EQUIPMENT RENTAL			
***	Scintrex GIS-4 Spectrometer		
	1 month rental	$336.00	
	Air freight delivery	52.82	
	Air freight return	20.33	
			409.15
	TOTAL ASSESSMENT EXPENDITURES		$1,761.10

James S. Dodge

James S. Dodge, P.Eng. Yukon
74 MacDonald Road
Whitehorse, Yukon Y1A 4L2

Notes:

*** Field use of a gamma ray spectrometer was essential in order to identify radioactive sites for rock sampling for yttrium, zirconium, and REE.

** Thin-section petrographic studies needed to corroborate field evidence that deposit was vein-type and not localized skarn mineralization.

STATEMENT OF QUALIFICATIONS

I, James S. Dodge, Professional Engineer Yukon, of 14 MacDonald Road, Whitehorse, Yukon submit the following information which establishes some of my qualifications bearing on the necessary level of competence required to carry out the field work and preparation of the report qualifying for assessment work credit on the Lancer 1-8 quartz claims:

Education

Missouri School of Mines, B.S., Mining Engineering, 1941
Princeton University, Field Geology, 1940
Stanford University, M.S., Economic Geology, 1951
Albert-Ludwigs Universitaet (Germany),Economic Geology, 1952

Experience

Active in mineral industry since 1941 in North and South America, Asia and Africa as prospector, company geologist, mining engineer, mine operator, and consultant in ferrous and non-ferrous metals and in industrial minerals. Among the many organizations with which I have been associated as an employee or consultant:

Anaconda, Esso, Mitsui, USAEC, Ventures, DIAND, SCAP-Japan, Atlas, Glidden, Spartan/Nuspar, Hirst-Chichagof, Floyd Odlum, Yukon Barite, Standard Silver, Ocean Gold

Inasmuch as thorium/uranium gamma radiation is a reliable signature for deposits containing yttrium, niobium, zirconium, and rare earth elements, the writer's experience in evaluating anomalous natural radiation has been developed by:

a) Served as vein-type uranium expert with the U.S. Atomic Energy Commission in Washington, D.C. and New York City.

b) Inspected Blind River uranium belt as guide for Turkish geologists.

c) Grassroots discovery of commercial vein-type uranium deposit in Colorado.

d) Guest of government of France to examine all main vein-type uranium deposits in France.

e) Investigated unconformity related uranium deposits in Churchill River district, Saskatchewan.

The writer has examined the geology at the largest North American rare-earth mine at Mountain Pass, California.

Professional Affiliations

Registered Professional Engineer (No. 311) by Association of Professional Engineers of the Yukon Territory
Fellow of Society of Economic Geologists
Senior Member of American Institute of Mining Engineers

James S. Dodge