

REPORT ON GEOLOGICAL,
GEOCHEMICAL AND GEOPHYSICAL SURVEYS
ON MINERAL CLAIM GROUPS

Group IV: AB 61-76 YA 2807-2822
Group V: WAD 1-16 YA 5194-5209
Group VI: AB 25-40 YA 2771-2786
Group VII: AB 1-16 YA 2747-2762

Claim Sheet 116-B-11

Latitude 64°32'

Longitude 139°07'



July 12 - 17 , 1976

August 5 - 13, 1976

August 13- 27, 1976

for

STANDARD OIL COMPANY OF BRITISH COLUMBIA LIMITED

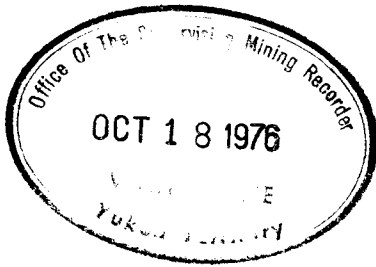
by

Helmut H. Wober, P.Eng.

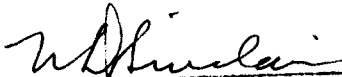
of

CHEVRON STANDARD LIMITED





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 \$ 13,500.00



~~at least a Geologist or Resident Mining Engineer~~

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


B.R. BAXTER
Supervising Mining Recorder


 Commissioner of Yukon Territory

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MAPS:

- Map 1: Location Grid Map
- 2: Geology Map
- 3: Contour Grid - Radiometric & Geochemical
- 4: Stream Silts - Geochemical
- 5: Radiometric Grid AB West
- 6: Geochemical Grid AB West

1) Claims:

This report covers work performed on the following claim groups held in the names of Standard Oil Company of British Columbia Limited, R. Dales, G. Walton, E. Onasick and G. Peattie. All work was performed by Chevron Standard Limited.

Group IV	-	AB 61-76	YA 2807 - YA 2822
V	-	WAD 1-16	YA 5195 - YA 5208
VI	-	AB 25-40	YA 2771 - YA 2786
VII	-	AB 1-16	YA 2747 - YA 2762

2) Introduction:

The claims were staked in 1975 and 1976 based on reconnaissance airborne radiometry, reconnaissance stream silt sampling and reconnaissance mapping. The work program in 1976 was carried out by staff of Chevron Standard Ltd. Minerals Staff, Suite 901, 355 Burrard St., Vancouver on behalf of Standard Oil Company of British Columbia Limited, the registered owner of the claims.

The work was aimed at the discovery of uranium mineralization.

3) General Geology and Economic Geology:

Reference is made to G.S.C. Memoir 364, by L.H. Green which contains maps and description of the general geology of the area.

The claim groups are underlain by unit 21b of L. H. Green which consists of hornblende and hornblende/biotite syenite belonging to an east-west trending chain of cretaceous intrusive stocks of varying composition. The stock at hand, which is also referred to as the Deadman Stock belongs to a group of syenitic stocks. The other stocks are the Tombstone-Brenner Stock and the Antimony Stock on Antimony Mountain to the east and southeast of the Deadman Stock. A number of discrete smaller plugs fringe the main intrusives.

Preliminary geological investigations indicate that the Deadman Stock is a multiphase intrusive the main phases of which are:

Pink and grey equigranular hornblende biotite syenite
Pseudoleucite-Tinguaite
Quartz Monzonite

Phase boundaries and texture of some of the phases indicate that they have intruded as a semiconsolidated crystal mush into already consolidated earlier phases and that they are dyke like in shape.

Other fine grained aplitic dykes carry disseminated pyrrhotite.

The entire assemblage intrudes into Precambrian sediments and volcanics (unit 3 and 4 of L. H. Green) with volcanics predominating on the west flank of the stock.

Uranium and Thorium mineralization of varying ratio composition has been observed in float and in place, however, relationships to phases and/or structures are still uncertain at this stage.

4) Work Performed

a) General

Four men, two geologists and two helpers were engaged in carrying out the work described below. The writer, in his capacity as Senior Geologist and Project Supervisor spent six days on the property carrying out geological work prospecting and sampling.

The crews were mobilized from Whitehorse to Dawson City from where both crew and equipment were flown to the property by T.N.T.A. helicopter, using a 206B Jet Ranger. Supplies during the program were brought by helicopter from Dawson City as well.

b) Geological Mapping and Sampling

Geological mapping was carried out by traversing on foot using 9" x 9" airphotos as a base. Samples of the different rock types were collected both for analysis and for later study of thin sections. The present mapping and interpretation is based on field observations and the study of handspecimen.

An attempt was made to map phase boundaries of the various phases, however, outcrop is confined mainly to the ridges and large portions of the claims are covered by talus and glacial debris which obscure the relationships in those areas. The accompanying map covers not only the claim groups described in this report but also adjoining claim groups of the same owners. Part of the time and work spent on geological mapping will also be applied to these groups. G. Walton and G. Dales, the two geologists employed in the survey give the following account of their field observations:

"Petrology

The major rock types located in Deadman Stock and surrounding areas, based on field examination, are:

- 1) crumbly weathering syenite
- 2) black and white syenite
- 3) pink qtz monzonite
- 4) sheared/flow banded, foliated rocks
- 5) dyke rocks
- 6) contact rocks including volcanics and sediments

The crumbly weathering and black and white syenites can be described as follows; coarse grained, equigranular but locally porphyritic, often highly weathered, containing interstitial calcite and a high percentage K-feldspar and showing varying degrees of potassic alteration. They differ primarily in mafic content; the black and white variety containing 10 - 20% hornblende and/or biotite while the crumbly weathering syenite contains 0 - 5% hornblende and/or biotite. Both show variations in color.

The pink qtz monzonite appears to be the central core of the intrusive and is fine to medium grained, pink, 10% hornblende and/or biotite, equigranular, highly resistant to weathering and often forms the hanging wall of mineralized zones.

The highly foliated rocks (sheared, flow banded) are the most interesting within the stock. They are composed of two to five rock types depending on the location of the cross-section. They are always highly fractured. One unit contains rounded to octohedral pseudomorphic aggregates of qtz, feldspar and sometimes mafics. Phenocrysts of feldspar are stretched and lie within a fine to medium grained matrix showing some limonite staining. Only a limited number of minerals are recognizable in hand specimen within the unit.

The dyke rocks vary in thickness from 4 feet to a surface expression of 500 feet. They are fine to medium grained, equigranular, contain 30% mafics, pyrite, pyrrhotite and occasionally bornite.

Contact rocks examined include sediments (chert, sandstone, siltstone) and volcanics (andesites, tuffs with interbedded cherts).

Structure

The structural elements observed in the area are:

- 1) minor faulting
- 2) jointing
- 3) foliation

Faulting appears to be of little or no consequence as the only visible offsets were in the order of inches or tens of inches. Major faulting may be present but is not easily documented.

Joints having 3 main orientations have been developed. They are accompanied by several other randomly oriented and more infrequently occurring fracture planes of less significance. The fracture density varies from ca. 1/foot to ca. 7-10/foot in specific zones. The near vertical, north-trending joints generally dominate, many of them smooth and mineral coated; some of which respond to a U.V. lamp.

A foliation, partly due to primary flow banding and partly due to coeval or subsequent shear has been developed in specific areas or zones of the stock. The density of fissile planes is ca. 5/inch. Associated with the foliation are deformed clasts or pseudomorphous which show strain effects (pressure shadows, rotation, cataclasis)."

c) Geophysical Surveys

Ground radiometric surveys were carried out using 5 Scintrex BGS-1SL total count scintillometers (Serial Nos. 602315 to 602319 incl.). The instruments feature a 1.5" x 1.5" Thallium activated Sodium-Iodide crystal detector coupled to a photomultiplier tube and give radiation readouts in counts per second.

The instruments also have a variable threshold audio alarm signal.

All station readings were taken at waistlevel. Where the steep terrain and talus slopes did not allow the establishing of a line grid, radiometric surveys were carried out along regular elevation contour intervals, using Thommen altimeters and Topofil chains for control.

Changes in radioactivity were found to reflect both mineralization and different lithologies. The changes in background due to lithological boundaries are probably caused by variations in potash-feldspar content as well as by geochemically different levels of Uranium and Thorium contained in the rocks.

The unusually high background of radiation in the entire stock (200 - 400 counts per second on the above instruments) is thought to be largely due to potassium (^{40}K) content.

The instruments were used both for systematic line grid and contour grid surveys and were also carried "switched on" on all geological traverses.

d) Geochemical Surveys

The purpose of the soil sampling surveys was threefold:

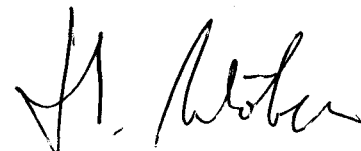
- i) to determine the mobility of uranium in the surficial environment of the area.
- ii) to detect mineralization in place, covered by overburden and/or glacial debris, the halo of which would have been carried upward by capillary groundwater action in the permanently frozen cover.
- iii) to indicate any mobilization of uranium from areas covered by talus slopes on the flanks of the valleys into the soils at the valley bottoms.

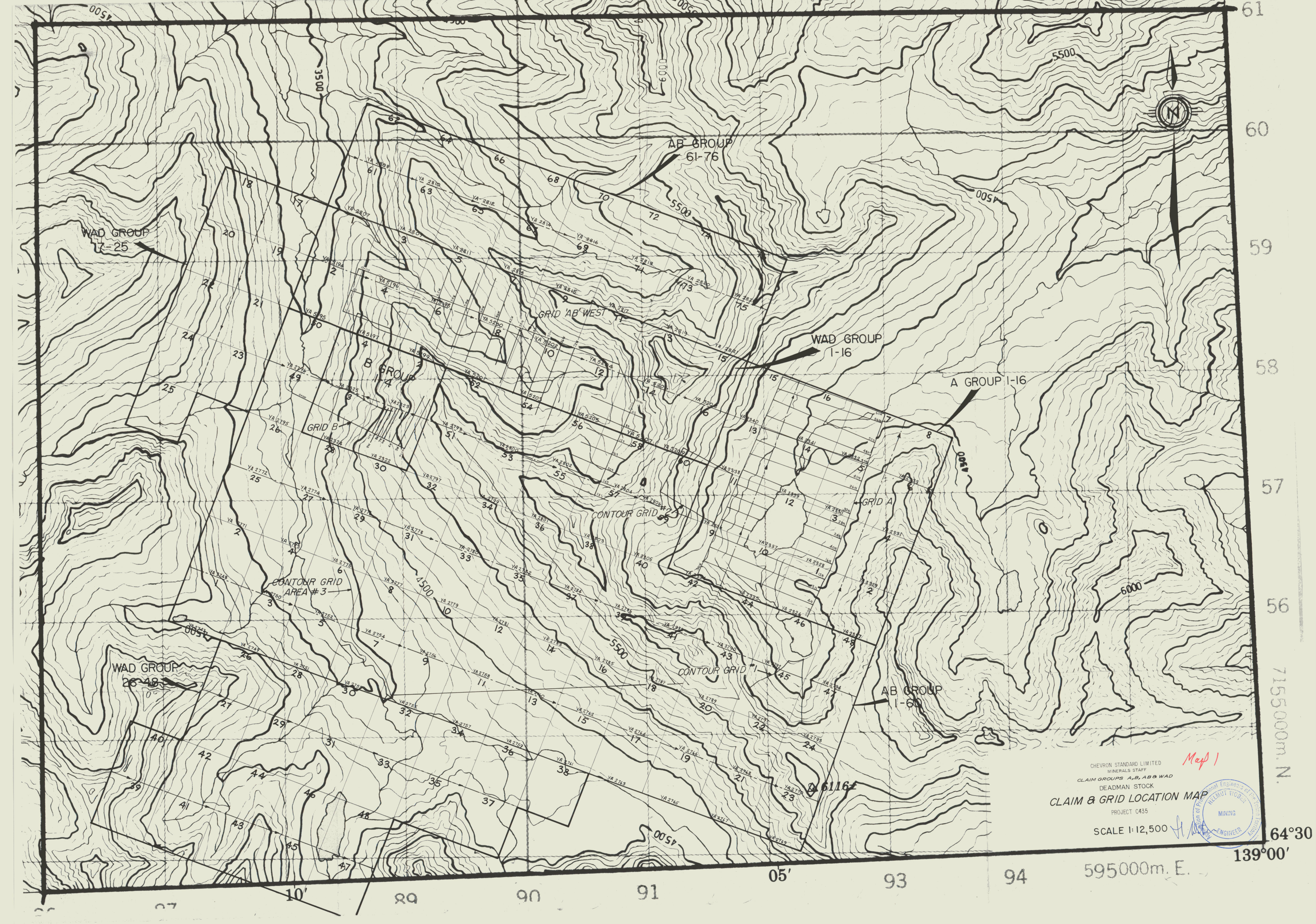
The 'B' horizon was sampled, the samples packed in craft paperbags and dried in the field. Analysis of the -80 mesh fraction was carried out by Bondar-Clegg & Company Ltd., 1500 Pemberton Avenue, North Vancouver, B. C. A hot nitric acid digestion followed by a fluorimetric determination method was used. The results of the soil sampling surveys proved to be inconclusive.

5) Conclusion and Recommendations

The fieldwork, consisting of geological mapping, sampling radiometric and geochemical surveys, has to date not indicated any clear rules with regard to primary distribution of uranium mineralization or remobilization thereof. It is felt, however, that the Thorium rich mineralization is associated with primary magmatic differentiation whereas the high Uranium - low Thorium mineralization is related to processes which are still poorly understood and need further study in order to establish whether it is related to late hypogene hydrothermal processes or to surficial weathering processes.

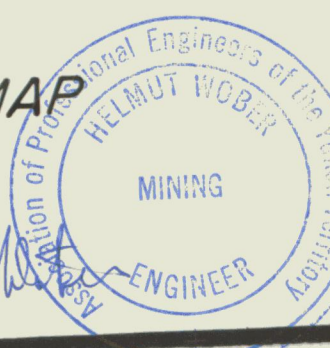
Further work, consisting of drilling and blasting of radioactive zones on surface and possibly some core drilling to determine if surface leaching is a major factor are recommended.



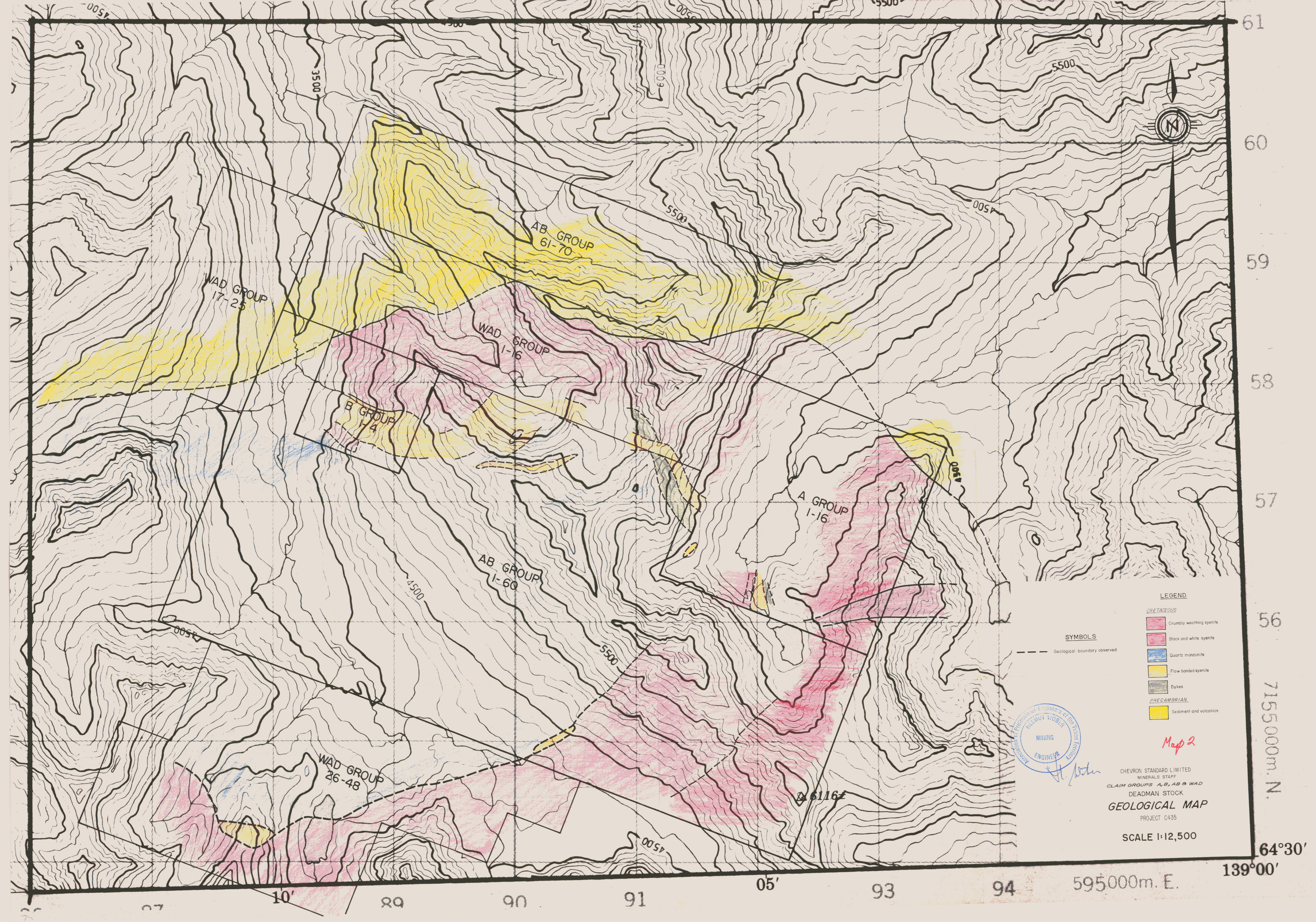


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MINERALS STAFF
CLAIM GROUPS A,B, AB & WAD
DEADMAN STOCK
PROJECT C435

Map 1



SCALE 1:12,500
595000m. E. 64°30' 139°00'

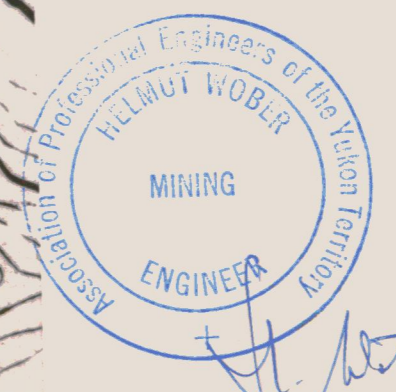


LEGEND

- CRETACEOUS**
- Crumbly weathering syenite
 - Block and white syenite
 - Quartz monzonite
 - Flow banded syenite
 - Dykes
- PRECAMBRIAN**
- Sediment and volcanics

SYMBOLS

- Geological boundary observed



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 CLAIM GROUPS A, B, AB & WAD
 DEADMAN STOCK
GEOLOGICAL MAP
 PROJECT C435
 SCALE 1:12,500

Map 2

61
60
59
58
57
56
7155000m. N.

10' 29 90 91 05' 93 94 595000m. E. 64°30' 139°00'



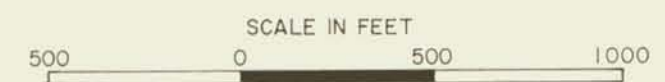
LEGEND

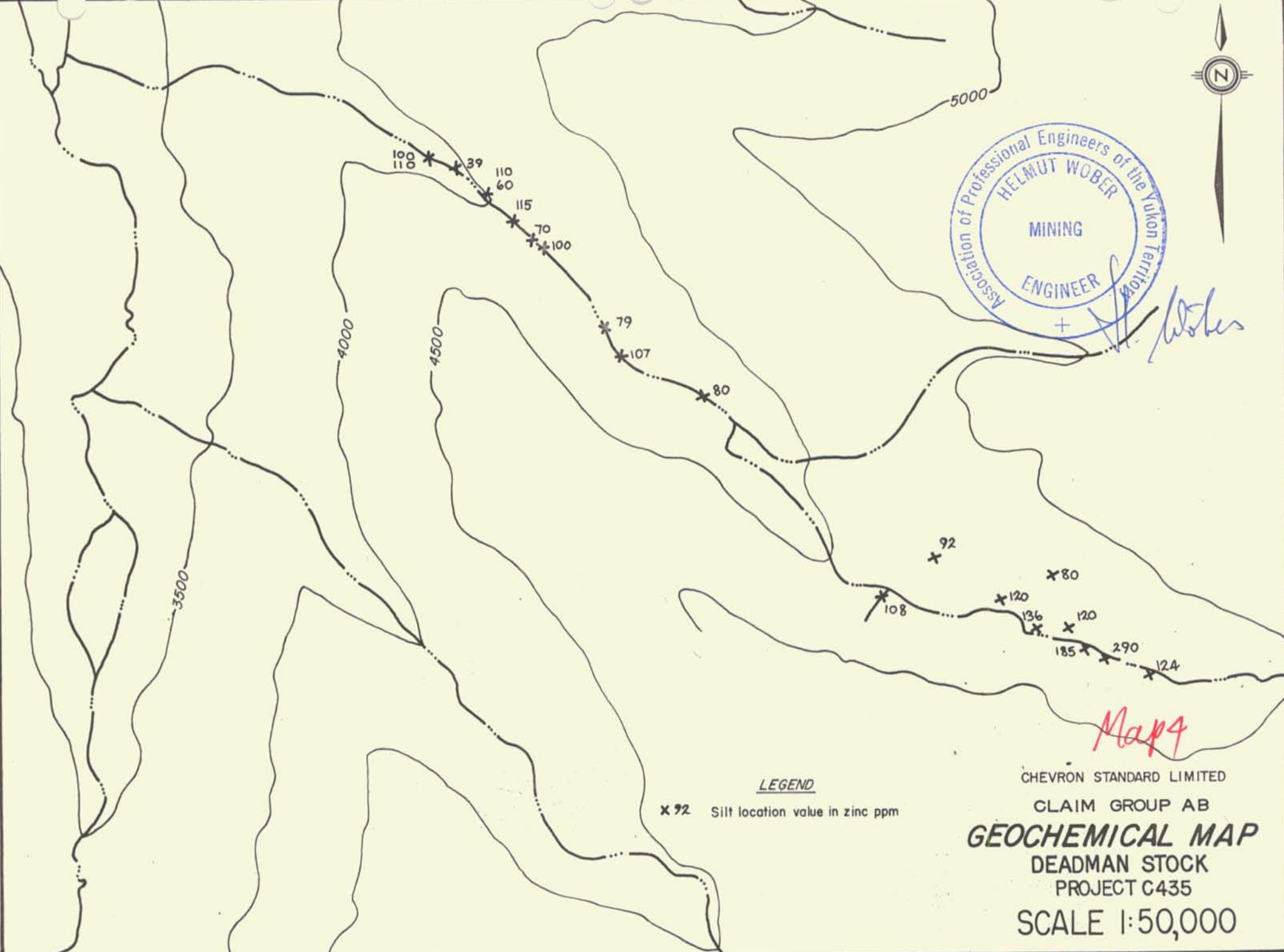
- 240 Scintillometer value in counts per second
Instrument - Scintrex BGS 1SL
- 12 ○ Uranium value in ppm



Map 3

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**RADIOMETRIC &
GEOCHEMICAL SURVEY**
CONTOUR GRID #3
DEADMAN STACK
PROJECT C435



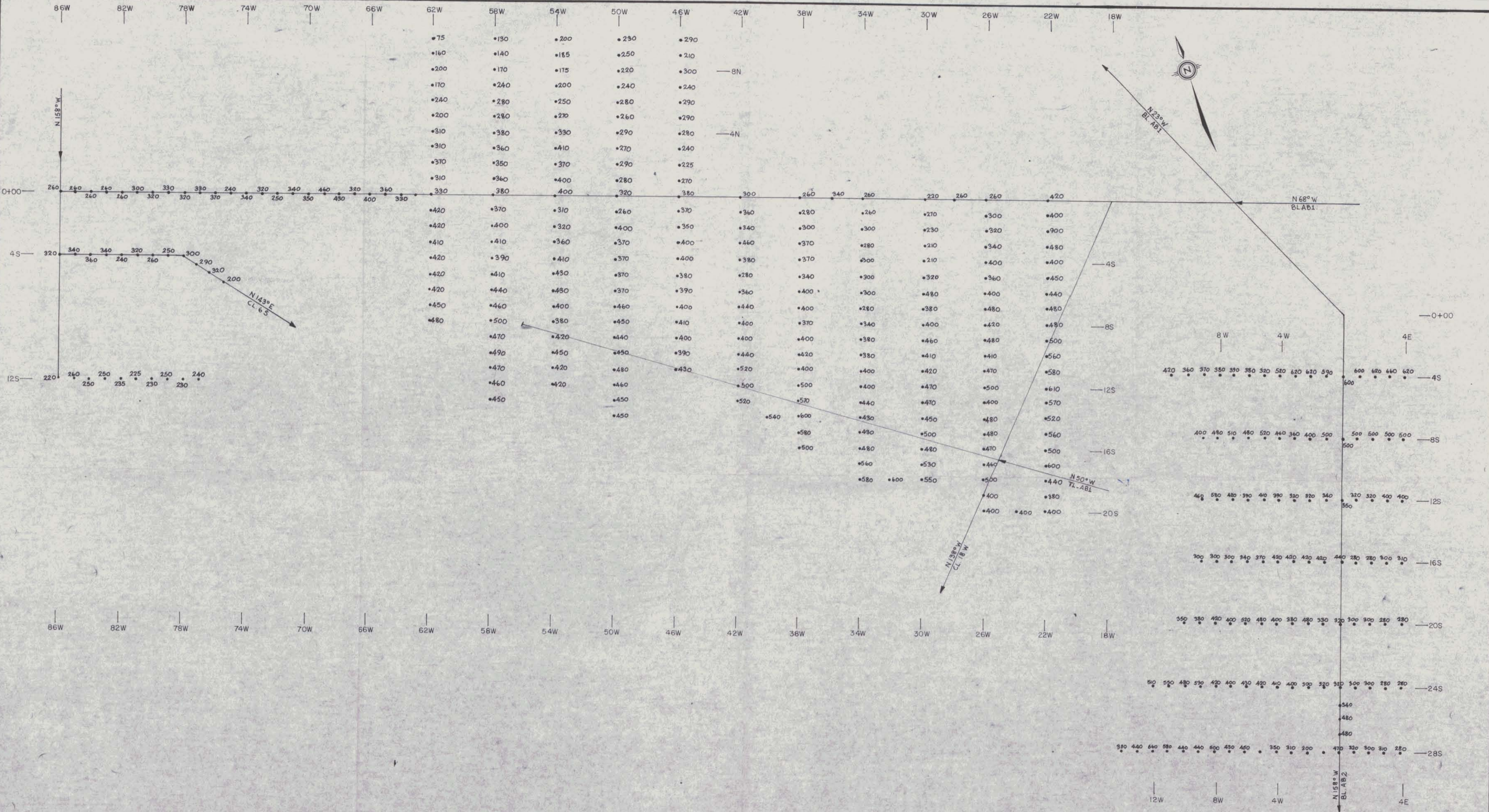


LEGEND

x 92 Silt location value in zinc ppm

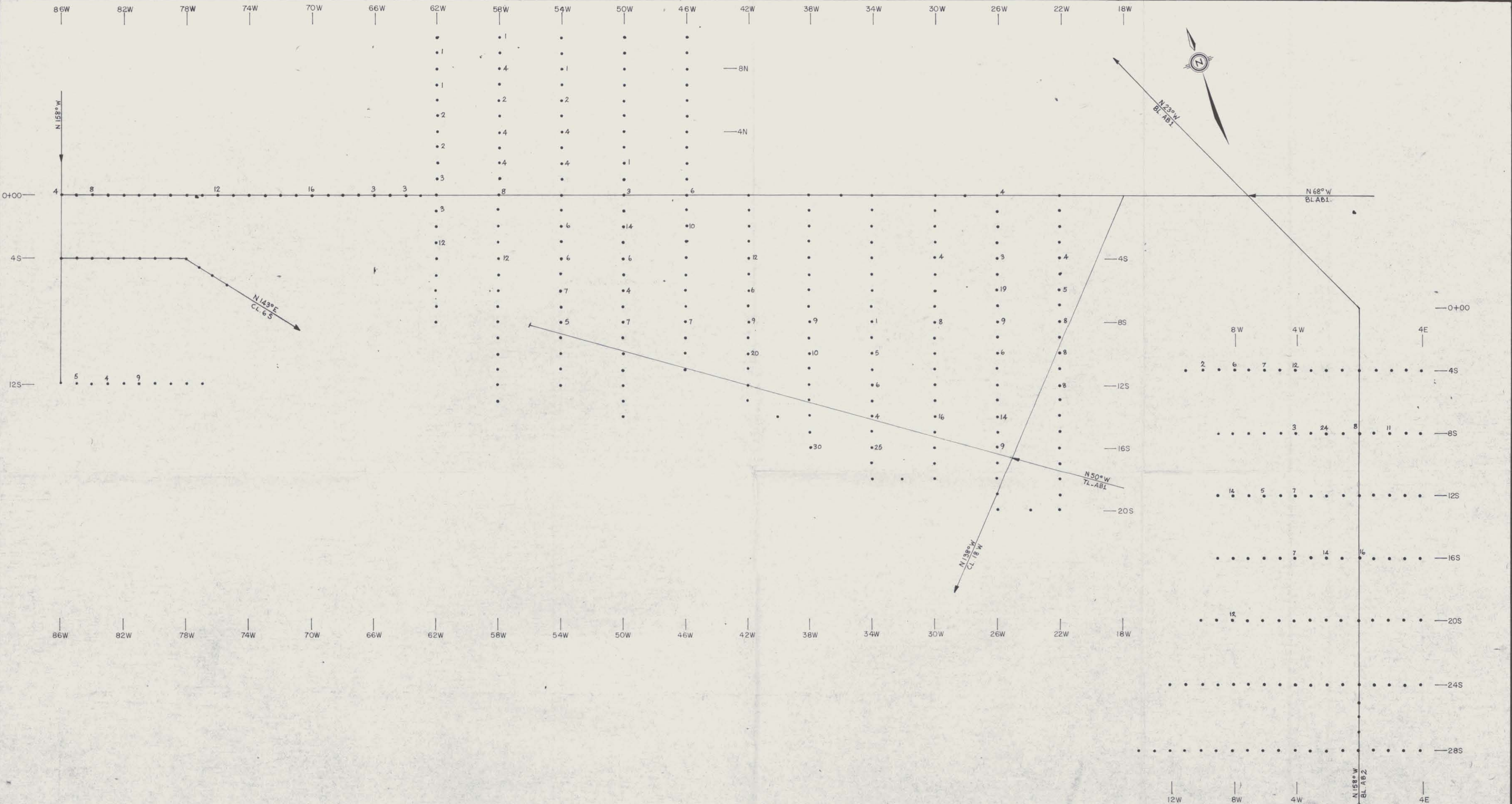
Map 4

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CLAIM GROUP AB
GEOCHEMICAL MAP
DEADMAN STOCK
PROJECT C435
SCALE 1:50,000



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Map 5 CLAIM GROUP
RADIOMETRIC SURVEY
GRID 'AB' WEST
PROJECT C435
SCALE IN FEET
0 400 800



LEGEND
 • 10 Uranium value in ppm.



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 CLAIM GROUP
 SOIL SAMPLING SURVEY
 GRID 'AB' WEST
 PROJECT C435

SCALE IN FEET
 0 400 800

Map 6

H. Wober