

2169

BRIGHT STAR TRIO MINING CO. LTD.
Magnetometer Survey Report
Kingfisher Property

ALRAE ENGINEERING LTD.

January 12, 1970

TO PROTECT OUR CLIENTS, THE PUBLIC AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS AND AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS AND EXTRACTS FROM OUR REPORTS MUST RECEIVE OUR WRITTEN APPROVAL.

ALRAE ENGINEERING LTD.
VANCOUVER, B.C.
ENGINEERS & GEOLOGISTS

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MAPS
#1 Geology and Claim Location
#2 Magnetometer Survey

Scale
1" = 1,000'
1" = 200'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2169 MAP.....

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INTRODUCTION

During the period August 1 to October 21, 1969, a ground magnetometer survey was conducted over three separate grid areas on the company's claims on a picket line grid system which had been established by the company. These have been named the SSR, Star and Golden West grids as shown on the accompanying index map sheet.

Lead and zinc mineralization occurs at many points within the claim group and is associated with a steeply dipping sinuous band of quartzite running for approximately 1,000 feet through the claim group. Pyrrhotite mineralization frequently occurs in zones richest in galena and sphalerite and the survey was conducted in an attempt to delimit most heavily mineralized zones within the quartzite band.

The survey was conducted by Mr. Redgor Smith, a geophysical operator, working under the general supervision of the writer.

LOCATION AND ACCESS

The company's claims lie along Kingfisher Creek, approximately 29 miles northeast of Enderby, B.C. Enderby is 20 miles north of Vernon and is served by main highways and railways. Good gravel roads lead easterly from Enderby to Mabel Lake and private logging roads along Kingfisher Creek pass through the claim group.

Bulldozer trails of steep gradient lead to most of the mineralized showings on which work has been done. These are not passable by four wheel drive vehicles.

CLAIMS

Claims, and their record numbers, comprising the property are:

| <u>CLAIM NAME</u> | <u>RECORD NUMBER</u> |
|--------------------------|----------------------|
| Star 1 | 10494 |
| Star 2 | 10499 |
| Star 3 | 10495 |
| Star 4 | 10500 |
| Star 5 | 10496 |
| Star 6 | 10505 |
| Star 9 Fr. | 10697 |
| Star 10 - 12 | 10503 - 10505 |
| Star 13 | 10498 |
| Star 14 | 10506 |
| Star 17 & 18 | 10563 & 10564 |
| US 3 - 6 | 10733 - 10736 |
| BST 21 - 24 | 11163 - 11166 |
| Tony 1 - 4 | 10905 - 10908 |
| A 4 | 10419 |
| Golden West 1 - 8 | 10848 - 10855 |
| Golden West 9 | 10901 |
| Golden West 11 - 13 | 10902 - 10904 |
| X 5 & 6 | 10729 & 10730 |
| X 7 | 10737 |
| XJ 1 - 4 | 10897 - 10900 |
| Midnight 1 - 4 | 10278 - 10281 |
| Bright Star Trio 1 - 4 | 7041 - 7044 |
| Bright Star Trio 5 - 14 | 10917 - 10926 |
| Bright Star Trio 15 - 17 | 11132 - 11134 |
| Bright Star Trio 18 - 20 | 11160 - 11162 |
| Bright Star Trio 25 & 26 | 11167 - 11168 |
| Bright Star Trio 27 - 37 | 11217 - 11227 |
| Bright Star Trio 38 - 45 | 11354 - 11361 |
| JD 1 | 11130 |
| JD 2 | 11131 |
| JD 3 - 5 | 11148 - 11150 |
| Bob 1 - 4 | 11362 - 11365 |
| Deer 1 | 7326 |
| Deer 2 Fr. & 3 Fr. | 7341 - 7342 |
| Len 1 - 5 | 7448 - 7452 |
| Kingfisher 7 & 8 | 7107 & 7108 |
| Kingfisher 12 - 14 | 7112 - 7114 |
| King 9 - 11 | 7489 - 7491 |
| Don 1 - 4 | 11624N - 11627N |
| BST 46 - 48 | 11621 - 11623 |

All 123 claims are within the Vernon Mining Division.

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HISTORY

Lead, zinc mineralization was first discovered during 1963 in the valley of Kingfisher Creek and during 1964, Sheep Creek Mines Ltd. held an option to the central group of claims of the several properties located in the area. This company did bulldozing to expose mineralization, geological mapping, and drilled six short diamond drill holes totalling 642 feet. The option was relinquished at the end of 1964.

Cominco Ltd. held claims to the north of the Sheep Creek Mines in 1964 and did geological and geophysical surveys on their property. These claims now comprise the northernmost holdings of Bright Star Trio Mining Co. Ltd.

During 1964 and 1965, Dakota Silver Mines held claims immediately to the south of the Sheep Creek property and their work included bulldozer trenching, three diamond drill holes, and road access construction. These claims now comprise the southern portion of the Bright Star Trio property.

GEOLOGY

The claim area is underlain by the Archean or Proterozoic Monasheo group of metamorphic rocks including calcareous quartzite, recrystallized limestone, quartz biotite-gneiss, and pegmatite.

Sulphide minerals occur as disseminations in impure (carbonate) quartzite, and include pyrrhotite, sphalerite, galena, chalcopyrite, and pyrite in order of decreasing amounts. The sulphides occur in tabular, steeply dipping zones, conformable with the dip of the quartzite. Mineralization has been exposed at various points over approximately 3,000 feet. Mineralized areas range in width from four feet to approximately 40 feet. The sulphide zones are not continuous throughout the 3,000 feet of favourable

quartzite band, but are exposed at many points along the length of the quartzite. The quartzite is offset by several small cross faults.

A grab sample of a mineralized zone exposed in the vicinity of the Sheep Creek drilling was found, by assay, to contain traces of gold and silver, 2.03% lead and 6.44% zinc. Mineralized zones are incompletely exposed by work to date and in overburden covers much of the favourable limey quartzite band.

MAGNETOMETER SURVEY

Grid lines were prepared from base lines along the strike of the quartzite band and cross lines cut each 200 feet along the baseline. These lines are extended for various distances to cover the indicated location of the quartzite.

Magnetometer readings were taken along the baselines to establish base stations and at each one hundred feet along the cross lines. Diurnal corrections were applied to the readings and the corrected readings and their contour map over-lays are shown on the accompanying set of map sheets. More detailed station spacing was used in most anomalous areas.

The instrument employed in the survey is a Sharpe MP-1 flux-gate magnetometer, having a sensitivity of 20 gammas per scale division.

INTERPRETATION

As may be seen on the accompanying map sheets, the background magnetics in each of the grid areas is relatively featureless. The areas underlain by the favourable marble quartzite unit exhibits considerable magnetic relief (up to 1,700 gammas above the background level). Individual anomalous highs are small areas within the favourable marble quartzite band and are often near the contact of this rock unit with quartz-biotite-gneiss, syenite, and feldspar-

porphyry intrusives. Since pyrrhotite is often associated with more concentrated zones of silver-lead-zinc mineralization, these several anomalies become targets of further detailed exploration work.

One significant anomaly on the Golden West grid area is 450 feet in length and from 20 to 60 feet in width. Three small anomalies occur on the Star grid in a general linear pattern interpreted to be sub-parallel to the contact of the favourable rock unit. These anomalies trend along a zone 1,600 feet in length, varying in width from 100 to 200 feet. The arcuate shape of this zone may indicate cross-faulting and an offset of the limey quartzite contact. The BST grid is the more complex, magnetically, and ten anomalous zones are indicated in this area. Nine of these occur in the southeastern portion of the grid and are not completely delineated by the survey. The tenth anomaly occurs on the western portion of the grid area within an area mapped by Cominco Ltd. as gneissic rock. This anomaly is 450 feet in length and 50 to 150 feet in width.

The main mass of the syenite and feldspar porphyry intrusives lies to the north of this grid and epophyses of the intrusive are indicated by mapping to cut the favourable limey quartzite bands in the vicinity of the indicated anomalies. There are numerous galena-sphalerite exposures in the limey sediments in bulldozer trenches and surface test pits in this area.

CONCLUSIONS AND RECOMMENDATIONS

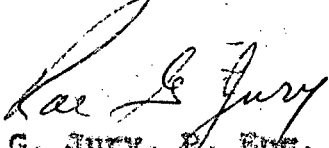
As may be seen on the index to the grid locations, only a very small portion of the favourable limey quartzite band has been tested by magnetic survey. Work on these three grids has indicated distinct magnetic anomalies to occur within the favourable limey quartzite unit which contains all of the known exposures of lead-zinc sulphides. Pyrrhotite is often associated with the more heavily mineralized zones and is a moderately magnetic mineral. The anomalies

encountered by this survey may reflect sulphide mineralization and each should be examined in detail to determine cause of the anomalies. This work should take the form of detailed geological mapping, bulldozer trenching or shallow diamond drilling, as required. The magnetic survey grids should ultimately be extended to cover the entire favourable rock unit as exploration work continues on the claim group.

COST RECORD

| | | | |
|--|---------------------------------------|----------------------------------|--------------------|
| J. Butula | Supervisor | Aug. 1 - Oct 21/69 | \$ 2,344.94 |
| J.P. Butula | Line Cutting | Aug. 27 - Oct 19/69 | 284.60 |
| K. Cox | Line Cutting | Sept. 2 - 5/69 | 50.40 |
| K. Sapp | Line Cutting | Sept. 9 - Oct. 3/69 | 258.70 |
| R. MacDonald | Line Cutting | Oct. 6 - 21/69 | 306.75 |
| J. MacDonald | Line Cutting | Oct. 13 - 15/69 | 57.65 |
| R. Smith | Inst. Operator | Oct. 14 - 23/69 | 502.10 |
| R. Jury | Supervision and Report Preparation | October 1969 and January 1970 | 450.00 |
| N. Grant-Brown | Drafting | January 1970 | 200.00 |
| Truck Rental | | | 299.59 |
| Instrument Rental - Sharpe Magnetometer MF-1 | | | 100.00 |
| | | | <u>\$ 4,854.73</u> |

Respectfully Submitted:


Rae G. Jury, P. Eng.



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 Mines and Petroleum Resources
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 NO. 2169 MAP #1

LEGEND

- E Syenite, feldspar porphyry, diorite
- D Mineralization pyrrhotite, pyrite, sphalerite, galena
- C Unit "C" mainly gneiss
- B Unit "B" marble, quartzite
- A Unit "A" gneiss, marble, quartzite

SYMBOLS

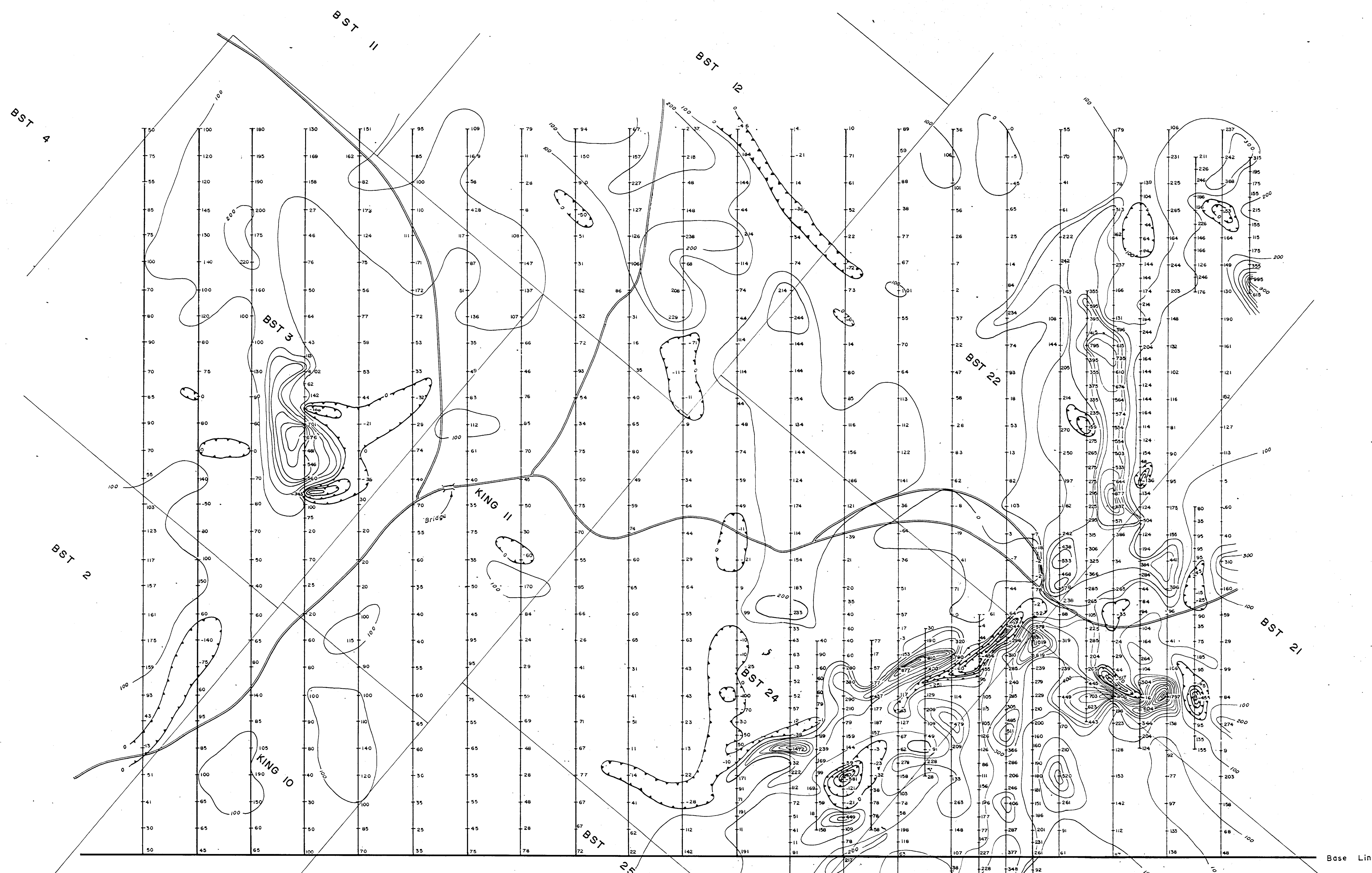
- Geological boundary
- Outcrop
- Dyke
- Attitude of bedding
- Faulting
- Swamp
- Small creek showing direction of flow
- Road
- BST grid (Bright Star Trio)
- Star grid
- Golden West Grid

Note:
 Geology after Cominco Ltd. 1964

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To accompany geophysical report.
 Dated: Jan. 12, 1970 by: R.G. Jupp P. Eng.
R.G. Jupp

| | |
|--|-------------------|
| BRIGHT STAR TRIO MINING CO. LTD. (NPL) | |
| GEOLOGY AND CLAIM LOCATION MAP | |
| ALRAE ENGINEERING LTD. GEOLOGISTS AND ENGINEERS VANCOUVER, B. C. | |
| DESIGNED: _____ | SCALE: HOR. _____ |
| DRAWN: N.S.R. | VERT. 1" = 1000' |
| CHECKED: R.S.V. | DWG. No. _____ |
| DATE: Jan. 8, 1969 | |
| REVISED: _____ | |



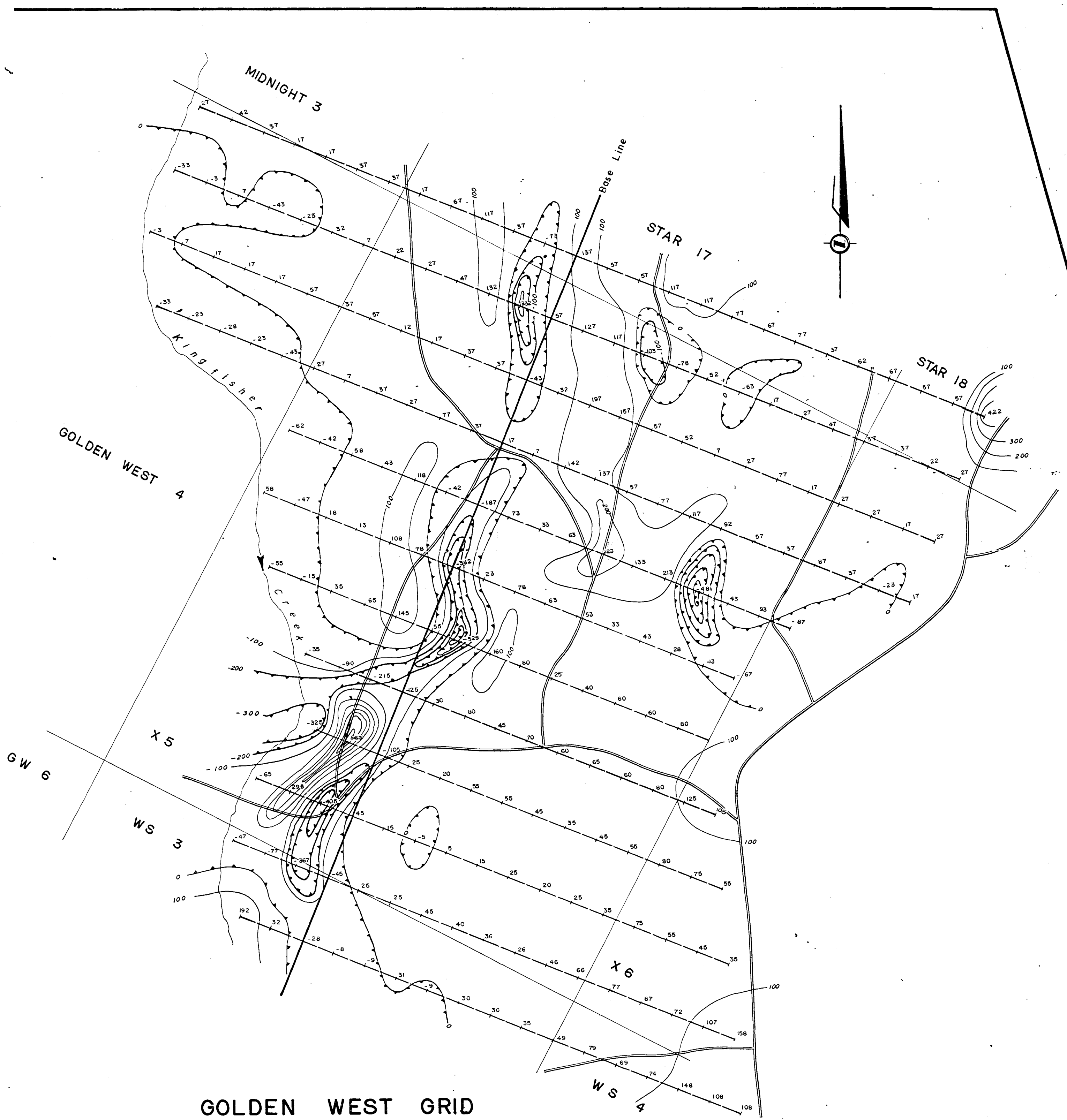
BRIGHT STAR TRIO GRID

L E G E N D

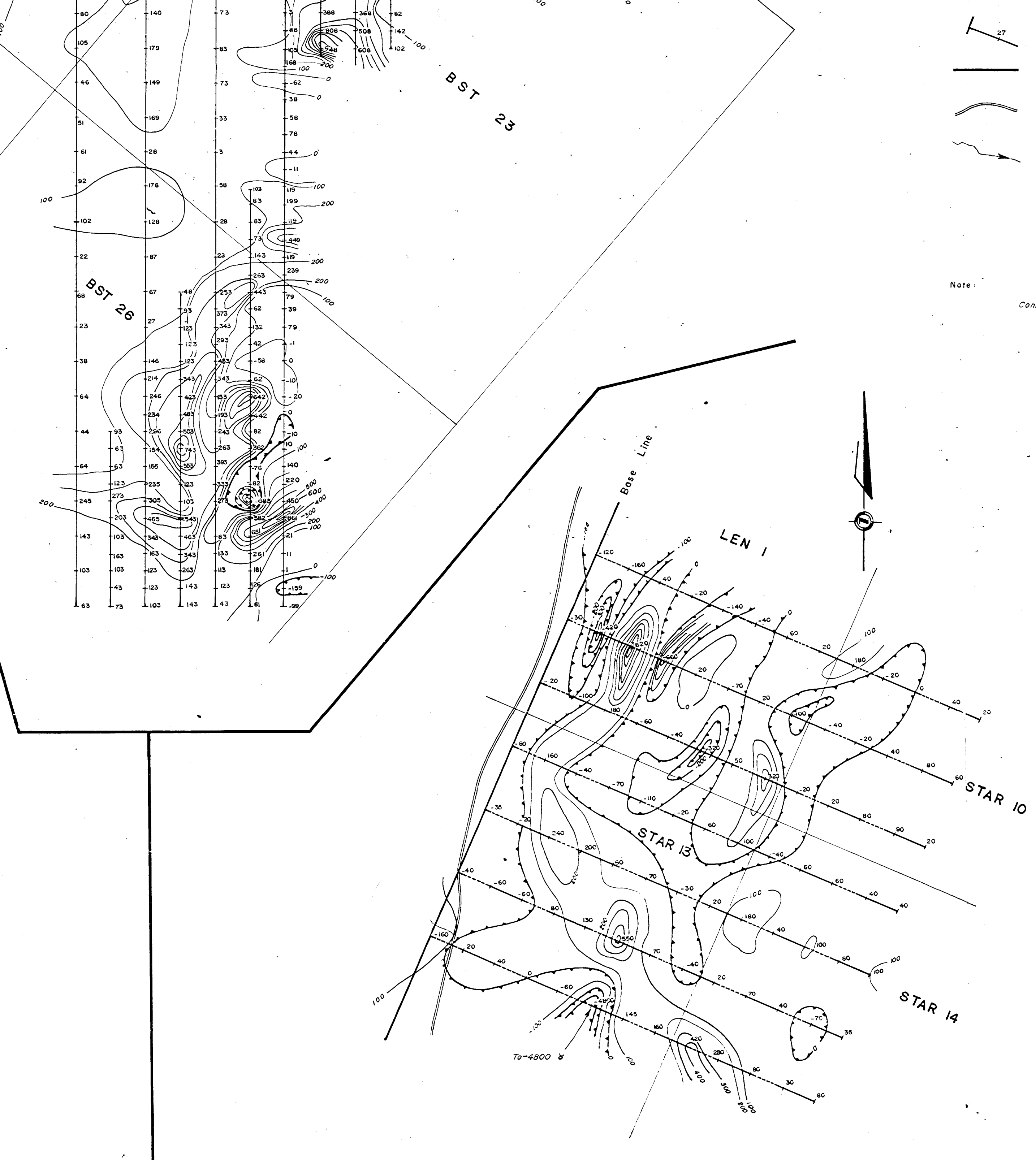
- Magnetometer station (value in gammas)
- Magnetometer contour (value in gammas)
- Magnetic high
- Magnetic low
- Claim line
- BST grid (Bright Star Trio)
- Star grid
- Golden West grid
- Base line
- Road
- Creek and direction of flow

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Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2169 MAP #2

Note: Contour Interval 100 gammas



GOLDEN WEST GRID



STAR GRID

To accompany geophysical report.
Dated Jan 12, 1970 by R.G. Jury, P. Eng.

R.G. Jury

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| | |
|---|-------------------|
| BRIGHT STAR TRIO MINING CO. LTD. (NPL) | |
| MAGNETOMETER SURVEY MAP | |
| ALRAE ENGINEERING LTD. GEOLOGISTS AND ENGINEERS VANCOUVER, B.C. | |
| DESIGNED: _____ | SCALE: HOR. _____ |
| DRAWN: M. S. | VERT. 1" = 200' |
| CHECKED: R. G. J. | DWG. No. _____ |
| DATE: JUN 18, 1970 | REVISED _____ |