## $82-\# 957-10978$

## PAYMASTER RESOURCES LTD.

811 - 543 GRANVILLE STREET
VANCOUVER, BRITISH COLUMBIAASSESSMENT REPORT1-on aVLF-EM AND MAGNETIC SURVEYon the
FAIRVIEW AND MORNING STAR CLAIMSOSOYOOS MINING DIVISIONOLIVER, BRITISH COLUMBIA
UTS $82 \mathrm{E} / 4 \mathrm{E}$
N. Lat. $49^{\circ} 12^{\prime}$ ..... W. Long. $119^{\circ} 37^{\prime}$
by
R.J. ENGLUND, B. Sc.
STRATO GEOLOGICAL ENGINEERING LTD.
103 - 709 DUNSMUIR STREETVANCOUVER, BRITISH COLUMBIAFebruary 14, 1983GEOLOGICAL BRANCH
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FAIRVIEW AND MORNING STAR CLAIM GROUP

SUMMARY

A reconnaisance VLF electromagnetic and magnetic survey program carried out by Geo Peck Services Ltd. has indicated a number of conductive-magnetic zones which are attributed to an intrusive-metasediment contact and possible shear zones. Mineralized quartz veins associated with the sheared Kobau metasediments are known in the northern claim areas and so make the indicated conductive zones primary target areas for follow-up exploration.

A program of detail geophysical checks, geochemical soil sampling, and geological mapping is recommended to establish the mineral potential of the indicated zones of interest.

Respectfully submitted,
Strato Geological Engineering Ltd.


Ralph J. Englund, B.Sc.
Geophysicist.
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## INTRODUCTION


#### Abstract

Persuant to a request by the Directors of Consolidated Paymaster Mines Inc., a combined Magnetometer and VLF electromagnetic survey was conducted over the Fairview and Morning Star mineral claim group by Geo Teck Services Ltd. during the period May 2 to May $21,1982$.


The intent of the geophysical work was to outline any geological structure and/or fault or shear zones which might be related to possible gold vein structures known to occur within the northern claim areas.

The basis of this report is a study of the results of some 41 line kilometers of geophysical survey work presented to the writer by the company directors for interpretation and evaluation.

LOCATION, ACCESS, TOPOGRAPHY

The claim group is located some 8 kilometers west of the town of Oliver, B.C. along the south and east boundary area of a large block of reverted crown grant mineral claims in the former Fairview Mining camp.


FIGURE I

## LOCATION MAP

MORNING STAR \&
FAIRVIEW CLAIMS

Easy access to the property from Oliver is along a gravel road going westward to Cawston, B.C. The northern claim areas are also accessible by four-wheel drive vehicle along the old wagon trail road through the former Fairview Mining Camp (shown on topographic map 82E/4).

The property can be considered to have generally low to moderate topographic relief which slopes generally eastward. Some steeper ground is found along Reed Creek which traverses easterly through the southern claims area. Elevations vary between 670 meters at the southeast corner of the Morning Star claim to over 1400 meters along the southwestern boundary of the Fairview claim. The claims area is generally forested with fir, pine, and spruce with some grazing land at lower elevations.

## CLAIMS

The property consists of four reverted crown grant claims and two mineral claims located by staking situate in the Osoyoos Mining Division. The geographical coordinates of the approximate center of the claims group are $49^{\circ} 11.5^{\prime}$ north latitude by $119^{\circ} 37.5^{\prime}$ west longitude.


The claims are recorded as follows:

| Claim Name | $\begin{aligned} & \text { Lot } \\ & \text { No. } \end{aligned}$ | Record No. | Area <br> (Hectares) | Expiry <br> Date | Record Holder |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Black Diamond | L578s | $637(2)$ | 8.83 | Feb. 12, 1987 | J.C. Turner |
| Homestake | L649s | $641(2)$ | 8.09 | Feb. 12, 1987 | J.C. Turner |
| May Queen Fr | L3277s | 642(2) | 9.74 | Feb. 12, 1987 | J.C. Turner |
| Dalton Fr. | L3278s | 638(2) | 8.95 | Feb. 12, 1987 | J.C. Turner |
| Morning Star | - | 1300(12) | 9 units | Dec. 19, 1982 | K. George |
| Fairview | - | 1301(12) | 15 units | Dec. 19, 1982 | K. George |
| Fidelity | L3279 | 639 (2) | 1 unit | Feb. 12, 1983 | J.C. Turner |

The Fairview and Morning Star claims border a number of reverted crown grant claims in their northern areas and, as indicated on Figure 3, may not contain a full 24 claim units. The Morning Star claim is contiguous with the Black Diamond, Homestake, May Queen Fr., Dalton Fr., and Fidelity claims.

The claims are shown on British Columbia Ministry of Energy, Mines, and Petroleum Resources Mineral Claim May $82 \mathrm{E} / 4 \mathrm{E}$. Assessment work has been filed, this report being a part of the work to maintain the Fairview and Morning Star claims in good standing until 1984 and the Fidelity claim until 1985.


GENERAL GEOLOGY

The main lithological units underlying the claims area are the Kobau (Anarchist) group of metasediments (schist, gneiss, phyllites, quartzites, and greenstone) and the Fairview granodiorite intrusive unit along with its associated dyke rocks. The younger oliver granitic unit is mapped as occupying the areas just north of the claim group. The claims overlie the northwestern portion of the Fairview intrusive unit with the Fairview claim occupying the northwestern contact area of this unit and the older Kobau metasediments. Structural trends in the metasediments are generally northwesterly through the claims area.
D.W. Tully, P.Eng., on property visits in 1979 through 1982, has noted considerable "dragfolding, shearing, and crossfaulting in the metasediments and frequently fine white quartz veins and veinlets in the area of former test pit operations." He further states that
"the strong shear zones noted on the Fairview claim area suggest these structures probably continue to great depth. These shear zones were the locus of emplacement of the quartz vein structures carrying gold with fine amounts of galena and sphalerite that were mined in the earlier underground operations in the Fairview Camp."

## SURVEY PROCEDURE AND INSTRUMENTATION

Field work was carried out by Geo Teck Services Ltd. during the period May 2, 1982 to May 21, 1982. Personnel consisted of R.N. Wank, contractor and field supervisor, M. Kloss, H. Wholstenholm, and R. Till, field technicians. Geophysical survey results were reduced, plotted, and submitted to the company for interpretation.

Survey work was completed from a picketed east-west baseline established along the northern boundary of the Morning Star claim and through the Fairview claim. North-south lines were compassed and chained from the baseline at 150 meter line separation and 50 meter station interval from $15+00 \mathrm{E}$ to $15+40 \mathrm{~W}$.

The magnetometer survey was conducted with a Gem Systems proton precession magnetometer, serial number 1202. Readings were taken at 50 meter stations and all lines were 'looped' to the baseline so as to correct for durinal variations in accordance with standard practice. The electromagnetic survey was carried out using a Phoenix UL-2 receiver, serial number 1061 and NPG, Jim Creek, Washington as the transmitting station. Readings were taken at 50 meter station intervals over the survey grid. Dip angle and field strangth measurements were plotted in profile plot plan form as Figure 4. Geo Teck Services Ltd. survey procedures are attached on Appendix $I$.

## DISCUSSION OF RESULTS

The VLF electromagnetic survey results, Figure 4, indicate several conductive zones traversing the claim group. The reconnaisance nature of the survey, with 50 meter station spacing, leaves the results of the survey open to topographical effects.

The main conductive zone, traversing east-west across the southern property area is associated with Reed Creek and, in part the Oliver Cable Vue Transmission line. This conductor shows strong cross-overs and some near coincident field strength results. Topographical effects due to the significant creek depression, particularly in the western area, and the transmission line must be considered as major contributing factors to this anomaly. The anomaly offset at line $3+00 \mathrm{~W}$, $12+75 S$ is apparently associated with a tributary of Reed Creek in this area. The anomaly signature and field strength suggest that the $E . M$. results here may well be due to more than just topographic effects and follow-up detail work should be done to confirm the presence of a geological conductor.

A second near east-west trending conductive zone is indicated some 300 meters north of the main conductor.

This zone shows as a very weak, intermittant conductor and has been placed in the 'possible' category. Because of a potential significant strike length (line $9+00 \mathrm{~W}, 9+005$ to line $15+00 \mathrm{E}, 7+005$ ) the zone should be checked at much closer station spacing to confirm the presence of a conductive zone here.

A third weak conductor trends northeasterly from about Line $10+50 \mathrm{~W}, 8+50 \mathrm{~S}$ to Line $0+00,0+75 \mathrm{~S}$. Although the continuity of this conductor is indefinite due to relatively wide line spacing, the shift in background readings indicates a possible geological contact with a more conductive rock unit to the north. Several magnetic deviations are also found along this conductive trend.

The weak conductive zone trending easterly from Line $15+40 \mathrm{~W}, 2+30 \mathrm{~N}$ to Line $10+50 \mathrm{~W}, 0+70 \mathrm{~N}$ may be associated with the creek in this area and may connect with an indicated conductive zone from Line $9+00 \mathrm{~N}, 2+50 \mathrm{~N}$ to Line $4+50 \mathrm{~W}, 4+00 \mathrm{~N}$, also likely associated with a creek depression. Topographical effects are considered to a possible factor here and more detail work should be carried out to confirm and delineate the zone.

Several more weak conductors, somewhat associated with magnetic anomalies, are located on the northeastern

Fairview claim area. More detailed survey work is required here before comment can be made on the interconnections and the continuity of these conductors.

A weak, intermittent conductive zone is located on the northeast corner of the Morning Star claim (Line 7+50E, $1+50 \mathrm{~S}$ to Line $12+00 \mathrm{E}, \mathrm{l}+50 \mathrm{~S}$ ). The zone appears to border some magnetic anomalies including a significant magnetic low at Line $10+50 \mathrm{E}, 0+50 \mathrm{~S}$ and may extend southeasterly to near an old Mine Shaft on Line 15+00E. Detail electromagnetic work should be carried out here to establish the continuity of the zone and to eliminate any possible topographic effects.

The results of the magnetometer survey are presented in isomagnetic plan form with a magnetic datum base of 50,000 gammas as Figure 5 and magnetic field data is presented on Figure 6.

Magnetic relief over the survey area is generally less than 300 gammas but some individual readings give a total magnetic relief of over 1000 gammas. The results do not clearly distinguish a contact between the metasediments and the intrusive unit assumed to underlie the Morning Star and part of the Fairview claim.

A weak magnetic gradient, rising to the east, is found in the south-central claims area and a higher background, variable magnetic zone underlies the northeastern quarter of the Fairview claim. The higher background magnetics in the eastern claims areas are believed to indicate the Fairview granodiorite rocks.

Several magnetic 'dipolar' anomalies and magnetic 'lows' appear to be associated with indicated VLF electromagnetic conductors. Although most of these are single station or single line anomalies, likely due to course grid spacing, and their cause is not readily apparent, these areas warrant further work to better define the anomalies and explain their geological basis. Of particular interest are several magnetic variations which appear to be associated with a weak electromagnetic conductor (possible contact) trending northeasterly from Line $10+50 \mathrm{~N}, 8+50 \mathrm{~S}$ to Line $0+00$, $1+25 \mathrm{~s}$.

A magnetic gradient and 'high' in the area of two old adits $(3+25 \mathrm{~W}, 8+10 \mathrm{~N}$ and $5+75 \mathrm{~W}, 9+50 \mathrm{~N})$ warrants detail survey work to establish a magnetic relationship with local geology in that area. Results could then be used to further evaluate detail work over other indicated areas of interest.

A magnetic 'low' of over 500 gammas, located in the central area of the May Queen claim (Line $10+50 \mathrm{E}$, $0+505$ ), appears to flank a probable conductor in this area. Detail work is required to further define an exploration target in this area. The magnetic 'low' near Reed Creek (Line 9+00E, 13+50S), although a single reading anomaly, warrants further work to explain the cause of the magnetic results.

## CONCLUSIONS

The reconnaissance geophysical program conducted by Geo Teck Services Ltd. has indicated a number of magnetic and electromagnetic target areas that warrant follow-up work. The zones outlined are attributed to a geological contact and possible shear zones. Since the sheared Kobau metasediments are considered to be favorable host rocks for gold bearing quartz-filled vein zones, all outlined conductive zones are considered important within this environment. Some detail geophysical work, geological mapping, and geochemical soil sampling will be required before comments regarding the mineral potential of the indicated targets can be ascertained.

## RECOMMENDATIONS

Each of the indicated target areas should be checked with a small detail magnetic and VLF electromagnetic grid survey to confirm and delineate the targets. A few detail survey lines would clearly establish the nature of the indicated conductive zones and the extent to which the area should be tested.

A program of geochemical soil sampling and geological mapping is also recommended to establish the mineral potential of the defined geophysical targets. Should results of this program show the ground to have mineral potential, it is proposed that an induced polarization/resistivity survey be carried out in order to further define the targets for diamond drill testing.

Respectfully submitted,
Strato Geological Engineering Ltd.


Ralph J. England, B.Sc.

Geophysicist.

February 14, 1983.

## REFERENCES

(I) Report on the Black Diamond, Homestake, May Queen Fr., Dalton Fr. Mineral Claims, Fairview Mining Camp, Osoyoos Mining Division (with Addendum dated July 10 , 1982) for Paymaster Mines Inc. by Donald W. Tully, P. Eng. dated June 1, 1979.
(2) Geological Survey of Canada Memoir 179, pp. 1-10 and Map 341A.

## TIME - COST DISTRIBUTION

- The geophysical survey was conducted over the Fairview-Morning Star claim group by Geo Teck Services Ltd. during the period May 2 to May 21, 1982. Drafting, interpretation and report compilation were completed by Strato Geological Engineering Ltd. A listing of personnel and distribution of costs is as follows:


## Personnel

Strato Geological Engineering Ltd.
R. J. Englund, B.Sc. Geophysical interpretation and Report.
S. Gokool

Drafting, etc.

Geo Teck Services Ltd.
R. N. Wank
M. Kloss
H. Wholstenholm
R. Till

Contractor, Field Supervisor
Field Technician
Field Technician
Field Technician

## Cost Distribution

Strato Geological Engineering Ltd.

| Drafting, map compilation etc. | $\$ 1,890.00$ |
| :--- | ---: | ---: |
| Map reduction, copying, typing, etc. | 354.78 |
| Interpretation and report | $1,200.00$ |

Geo Peck Services Ltd.
As per invoice dated Jan. 10, 1983 \$ 15,500.00
(Appendix II)

Total
\$ 18,944.78

Signed


Strata Geological Engineering Ltd.

## CERTIFICATE

I, RALPH J. ENGLUND, of the City of Vancouver, in the Province of British Columbia, hereby certify as follows :
(1) I am a practising geophysicist with offices at 103 - 709 Dunsmuir Street, Vancouver, B.C., V6C 1m9.
(2) I am a graduate of the University of British Columbia where I obtained my Bachelor of Science (Physics) in 1971.
(3) I am a member in good standing of the British Columbia Geophysical Society.
(4) I have been engaged in the study, teaching, and practice of exploration geophysics continuously for nine years. I have worked as a geophysical consultant on numerous projects in Western North America since 1972.
(5) This report is based upon geophysical field maps submitted to me, a personal knowledge of the area, and from personal communications. Only the report and interpretation were done under my direct supervision.

Dated at Vancouver, British Columbia, this 14 th day of February, 1983.


Ralph J. Englund, B.Sc. Geophysicist.

## SURVEY PROCEDURES

```
MORNING STAR and - 24 Units
Paymaster Resources Ltd
Osoyoos Mining Div., Oliver, B.C.
FIELD PERSONNEL - R.N. Wank (Contractor - Watson Lake, Y.T.)
    M. Kloss - Field Technicien
    H. Wholstenholm - Field Technicien
    R. Till - Field Technicien
PERIOD OF SURVEY - May 2, 1982 to May 21, 1982.
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The contract consisted of completing a survey grid, magnetometer survey and Electromagnetic survey.

The survey was completed with compass and hip chains with a base line running East West through the center of the Fairview claims and on the Northern Boundary of the Morning Star claim group. Lines were then run North South every 150 meters from station $15+00$ East to $15+40$ West. Lines on the Southern portion of Fairview and all of Morning Star ran from $0+00$ to $15+00$ South (except where river and canyon prohibited). Lines running North ran from $0+00$ to $10+00$ North.

Every 50 meter station along base line was marked with a picket. Every 50 meter station along survey lines was marked with blue and orange ribbons.

The Magnetometer survey was completed with the use of the Gem Systems Proton magnetometer serial \#1202. Readings were taken every 50 meters with base stations at the intersection of the base line and survey lines.

The Electromagnetic survey was completed with the use of the Phoenix UL-2 Unit, serial \#1061.

Seattle Washington ( 186 KHZ ) and Cutler Main (17.85 HZ) were used as transmitting stations. Cutler Main was used only as a cheat to Seattle.

Readings were taken every 50 meters along survey grid.
The result of the surveys were then plotted and shipped to Vancouver.
-2:


ROBERT WANK
GEO TECK SE\&VICES LTD

January 10, 1983.

Fajmaster Resources,
811 - 543 Sranville St.,
Vancouver, B.S.
yoc $1 \times 8$

## Dear Verna,

You will find enclosed the cost break down for fajmaster Besources' Magnetoneter and E.K. Surveys on Nomiris Star and Fairview claims as follow:

| Labour | $\$ 7.875 .00$ |
| :--- | ---: |
| Air fare | $1,270.00$ |
| Car | $1,200.00$ |
| Accomodation | $2,800.00$ |
| Equiphert gental | $1,300.00$ |
| iisc. | 600.00 |

for a total cost of 15.045 .00 , and a total amcunt owed of $\$ 15.500 .00$ (includir.s drafting cost).


Robert Nank, Seo Teck Services Itd, 30×172, Watson Lake, Y.'T. YOA 1 Co




