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MINERAL EXPLORATION AND ENGINEERING CONSULTANTS

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A REPORT ON THE DIGHEM SURVEY OVER

THE STONEHENGE AREA, SPL129

for

RENISON LTD.

by

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RN/MG82/15
October, 1982

CONTENTS

TABLES AND FIGURES

SUMMARY

A Dighem survey of 149 line-kms. was flown over the eastern end of SPL129. The survey defined several sub-parallel linear conductive zones (trending approximately west-north-west) on the northern flank of a broad, 400 gamma) magnetic anomaly. Although parallel to the area's dominant fault direction and cutting across many bedrock strike directions, the likely source of the zones is a series of graphitic shales whose graphite content varies along strike and down dip (thus giving rise to anomalies of varying amplitudes with interpreted sources of varying conductances and depths).

If the interpretation of graphitic shales is geologically unacceptable, a possible explanation for the zones is highly conductive groundwater concentrated along a series of faults or fractures; the high conductivities arising from the widespread occurrence of sulphides. But it is noteworthy that no responses were recorded over the area's two prominent faults: the Balstrup and Tenth Legion faults.

For both interpretations there is the possibility that the zones are a series of short north or north-north-east trending conductors: there is little structural information and Dighem's interpreted zones may be (mostly) a function of the flight line direction.

Some anomalies were recorded over old workings, but these only occurred along the conductive zones; there were no individual responses over any other workings. Thus the association may be apparent (to be verified by ground follow up) or coincidental (i.e. the anomaly is not due to the old workings, but to the cause of the zone overall).

Two short zones trending north-east indicate a change in geologic strike in the western portion of the surveyed area (south of the Tenth Legion Fault). The zones overlie marshy areas and may be due to conductive layers within alluvium, however the zones parallel (and zone L may coincide with) local geologic contacts and some contribution from north-east structural features is likely. Some isolated anomalies were also due to surface conductors.

Potentially interesting anomalies include: H, an isolated anomaly with a 28 mho conductance at 24m.; I10, a 56 mho conductor at 36m.; and the adjacent anomaly I11 which is a 5 mho conductor at 0m., overlying an old shaft; and M6, another weak (3 mho) conductor over the old 'Sunshine' workings, with an interpreted depth of 36m.

INTRODUCTION

A Dighem survey of 149 line-kms. was flown over the eastern part of SPL129 in February 1982 for Renison Ltd. The lines were flown north-south with a nominal spacing of 150m., and average clearances of 40m. and 55m. for the EM bird and magnetometer respectively, were quoted in the Dighem report (Peters and Dvorak, 1982). The surveyed area has been called the Stonehenge Area after an old silver-lead mine near the centre of the survey.

The Dighem system is a helicopter-borne EM technique using a towed bird which contains two sets of transmitting and receiving coils: one pair of vertical coils with a common axis (co-axial) and a pair of horizontal, co-planar coils. The transmitted frequencies are sufficiently far apart to be recorded separately, but are close enough to assume both coils operate at 900 Hz. for mathematical treatment of the responses. The two coil orientations allow Dighem to differentiate different types of conductors, in particular conductive overburden from bedrock conductors.

The survey data is computer processed and, as well as giving the usual in- and out-of-phase responses for both coil orientations and the altimeter and magnetometer data, the profiles show apparent resistivity and depth for a conductive earth model; conductance for a vertical dyke model, plus various anomaly enhancement channels. Also shown are the ambient noise levels for both coil orientations. Further description is given in the Dighem report and in Fraser (1979).

The output from the Dighem survey consists of the original analogue records, computer processed profiles and four maps. One map shows the EM anomalies with a grade symbol and two series of dots. The grade is based on the conductance of a (assumed) vertical tabular body as the cause of the anomaly. One series of dots shows the size of the response, the other the interpreted depth. A second map is a contour plan of resistivity (a conductive earth beneath a resistive layer is assumed). A third map is a contour plan of the magnetics, and the fourth map is a plan of enhanced magnetics. The processing for the last map removes broad anomalies and amplifies the response of narrow ones; thus it accentuates near surface magnetic bodies. The resistivity and both magnetic maps show the EM grade symbol but not the other information. For all maps the base was a photomosaic at a scale of 1:10,000.

Dighem have defined six grades for the EM anomalies. These are: -

Dighem grade	Conductance (σt) range
6	⩾ 100
5	50 - 99
4	20 - 49
3	10 - 19
2	5 - 9
1	⩽ 4
X	possible

The following quote is on all Dighem EM maps.

"Dighem anomalies are divided into six grades of conductivity-thickness product. This product in mhos is the reciprocal of resistance in ohms. The mho is a measure of conductance, and is a geologic parameter. Most swamps yield Grade 1 anomalies but highly conducting clays can give Grade 2 anomalies. The multi-coil anomaly shapes often allow surface conductors to be recognised, and these are indicated by the letter S on this map. The remaining Grade 1 and 2 anomalies could be weak bedrock conductors. The higher grades indicate increasingly higher conductances. Examples: the ore bodies of the Mogusi River camp yield Grade 4 anomalies, while Mattabi and Whistle give Grade 5. Graphite and sulphides can span all grades but, in this survey area, field work may show that the different grades indicate different types of conductors."

The Dighem system responds to a non-conductive magnetic body with a negative in-phase anomaly in both coil configurations. A conductive magnetic body will also give a quadrature response. Fraser (1979) states that the "difference technique (i.e. the difference in responses of the two coil orientations) which tends to eliminate the response of conductive ground, also has the same effect on broadly distributed magnetite."

Dighem identifies the anomalies on the computer profiles alphabetically from north to south on any one flight line; grade X responses are lettered separately, also starting from A. Anomalies thought to be spurious (i.e. caused by sferics, instrumental noise, etc.) are not plotted on the plans, and thus the anomaly labels may not be sequential and letters may be repeated if there are both definite and possible anomalies.

For this report, the anomalies have been replotted on to a 1:10,000 scale interpretive geology sheet which also shows the topography. The anomalies are indicated by open circles with the Dighem grade inside: possible anomalies are shown as X. Zones of anomalies have been outlined and these, together with isolated anomalies, have been labelled alphabetically. Table 1 lists the anomalies (geographically from the north) under this 'Mitre' labelling and gives the equivalent Dighem identification together with the respective EM channel amplitudes and Dighem's quantitative interpretation data. This presentation allows a ready comparison of anomalies within the one zone.

This report evaluates the EM responses recorded by the Dighem survey and gives an order of priority for ground follow up.

EXPLORATION TARGET AND GEOLOGIC SETTING

The surveyed area contains numerous old mines and prospects (see Figure 1); these were mostly over small, but often rich, silver-lead lodes which occurred in fissure veins along faults and fractures, etc. The lodes commonly had a pyritic gangue and were often dislocated by post-mineralisation faulting (Blissett, 1962). The host rocks for this (Devonian) mineralisation were usually the quartzites, shales and slates (including black shales) of the Pre-Cambrian Oonah Quartzite (which also contains flows of spilitic lava) and the greywackes and shales of the Cambrian Crimson Creek Formation and Dundas Group. However the main exploration target for the Dighem survey was for a cassiterite-stannite deposit similar to the Queen Hill complex of lodes which lies to the north of Stonehenge, and which promises to again become an operating mine.

The Queen Hill lodes are atypical of the Zeehan silver-lead mining field in that they contain significant stannite and/or cassiterite (again in a mainly pyritic gangue). Both and Williams (1968) have shown that this area is anomalous in an otherwise well defined zoning pattern and have postulated a cupola beneath Queen Hill which has superimposed its own mineralogical zoning pattern on that established by the Heemskirk Granite*. Both and Williams noted no other such anomalous zones and it must be concluded that if they exist, the sources are likely to be at a greater depth than that suspected beneath Queen Hill.

There is a large magnetic anomaly beneath Queen Hill (defined by Turair (1973) and Mines Dept. (1982) surveys) which may be due to hornfelsing or metasomatism of the country rocks around the cupola and some encouragement may be gained from a similar, but much larger anomaly defined by the Dighem survey over the Stonehenge area. (Other causes are of course possible and they need not be the same for the two anomalies. Likely alternatives for the Stonehenge anomaly include a deep-seated gabbro or a series of basic rocks (e.g. ? spilitic lavas) or even a series of pyrrhotite lodes). Apart from the difference in amplitude between the anomalies (Queen Hill about 200 gammas, Stonehenge about 400 gammas), only Queen Hill has a shallower source superimposed on the main anomaly (see Figure 2) which may be due to the (?) economic mineralisation#. In the Turair survey, various EM conductors were defined around the flanks of the Queen Hill magnetic anomaly (Howland-Rose, 1973), and a similar pattern was obtained by the Dighem survey on the northern side of the Stonehenge anomaly.

Apart from responding to Airborne EM surveys, Queen Hill also causes IP, applied potential and SP anomalies. The last mentioned was particularly strong (>400mV) and clearly defined the Stormsdown and Clarke's lodes. (Downhole resistivity surveys showed the Clarke's and Gippsland lodes to be at least 100 times more conductive than the host rocks (Howland-Rose, 1972).) Apparently some of the deeper lodes contain

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*Both and Williams (1968) claim some geophysical support for the cupola from unpublished gravity data by the BMR: this should be confirmed (or otherwise) by the soon-to-be-released detailed gravity survey of the Zeehan area by the Tasmanian Mines Dept. Obviously the data should also be extremely useful for locating any other such occurrences.

#Assuming a single spherical source for this anomaly, the depth to the centre is about 200m: if a susceptibility of .005 cgs units is chosen from a range of say .001 to .01 units, then for a density of 4gm/c.c., a resource of 3 million tonnes is estimated from a range of 15 to 1.5 million tonnes respectively.

significant amounts of pyrrhotite (Roberts, pers. comm.) and thus magnetics may also be a diagnostic method.

Bedrock EM anomalies may be caused by sulphides (with or without tin or base metals), graphite or even faults and fractures. Whilst responses over the last mentioned will usually be weak, it is often difficult to distinguish between sulphides and graphite. Magnetics may be a useful method for detecting (hopefully tin-bearing) pyrrhotite, but the lack of an associated magnetic response would not preclude further evaluation of an EM anomaly and thus it seems likely that geochemistry should provide the best means of discriminating between these various EM responses. However for the deep cupola postulated above, a buried, sealed deposit may occur, in which case geochemistry may also not be effective. For such a body, a deep looking (ground) EM or IP survey is probably the most effective technique.

Both and Williams (1968) noted that the dominant strike direction of the faults in the area was approximately west-north-west, while the trend of most of the mineralised veins was north-north-west, with others between north and north-north-east.

RESULTS

The survey defined a total of seventy four anomalies of which one was grade 5, eight were grade 4, fifteen were grade 3, twelve were grade 2, twenty were grade 1 and eighteen were possible anomalies. Most of the anomalies had strong responses which gives credence to the mho estimates (i.e. grades) and suggests that they should be readily detected on the ground (assuming reasonable accuracy in their location).

The zones and individual anomalies are evaluated below from north to south. The grades in each zone are indicated, with the number of anomalies having a particular grade shown in brackets. Individual anomalies within a zone are numbered from west to east.

Anomaly A: one response, grade 1. This anomaly is at least 600m. outside of the lease, and has not been considered.

Zone B: three responses, grades 2 (2) and X. This zone overlies the old Susannite and possibly Britannia (? exact location) workings, however the nearest anomaly is more than 350m. away from the lease and the zone has not been considered.

Zone C: two responses, grades 3 and 2. This zone which (?) overlies the Comstock workings occurs well outside the lease and has not been considered.

Zone D: four responses, grades 3 (3) and X. This zone lies outside of the lease with the nearest anomaly 150m. north of the boundary. Location errors of this magnitude and greater are unlikely in this part of the survey area and the zone has not been considered.

Zone E: four responses, grades 3, 2 and X (2). This zone is at least 250m. outside of the lease and has not been considered.

Zone F: eight responses, grades 2, 1 (6) and X. This zone lies between 120m. and 200m. north of the lease boundary and the zone has not been considered. However location errors of this magnitude have occurred in similar Dighem surveys (i.e. in areas with reasonable control) and the anomalies have been listed in Table 1.

Zone G: eighteen responses, grades 4, 3, 2 (6), 1 (7), and X (3). Anomalies G1 to G4 of this zone (Grades 4 and 2 (3)) lie outside of the lease. The zone has a strike length of over 2500m. which suggests a formational or structural cause. The strike direction of approximately west-north-west is that of the dominant fault direction noted by Both and Williams (1968), however many of the anomaly conductances are too high for a barren fault. The interpretation of a partly mineralised fault is reinforced by the apparent coincidence of this zone with the old South Comstock workings, but this may be coincidental (see Conclusions, below). Alternatively the fault may be filled with very conductive water, caused by the widespread sulphide occurrences. A more likely explanation is a black shale horizon in which the graphide content varies along strike and down dip, thus accounting for the range of conductances and depths to the conductive sources. The bedrock strike measurements in the area are at variance with this interpretation, however these (rather infrequent) measurements may reflect small amplitude folding on a regional (i.e. at least over 3 to 4 kms.) west-north-west strike direction.

Anomaly H: two responses, grades 4 and X. These two anomalies are coincident. The grade X response (H1) does not, in this instance, indicate a very low amplitude response, but rather a manually picked anomaly that was not sufficiently separated from the large adjacent anomaly I7 to be automatically identified by the computer data processing. H may be a southern extension of zone D (500m. to the west-north-west), however the conductance for H is considerably higher (28 mhos for H2) and the depth of 24m. contrasts with 0m. for all of the quantifiable D anomalies. Thus anomaly H, despite its lack of any defined strike length, is of definite interest.

Zone I: thirteen responses, grades 5, 4 (7), 3 (3), 2 and X. This zone is similar to G mentioned above: the zones are subparallel (west-north-west) and I has a strike length of nearly 1800m. However the conductance values for the I anomalies which average around 20 mhos are consistently higher than the G anomalies. The zone overlies two old shafts (one directly beneath I11) but since the computed depth for most anomalies is 0m. (including I11), a long, conductive, shallow black shale band (with possibly associated and intermittent mineralisation) within the Oonah Quartzite is the likely cause of Zone I. Countering this interpretation are the high angle bedrock strike directions near I12, but as was suggested above, these may be measurements of a microstructure on the regional west-north-west strike direction. A north-north-west striking fault (? lineament) has been mapped near these strike and dip measurements; this presumably has little horizontal displacement, since no offsets occur where it crosses zones F, I and M.

If there is any encouragement for mineralisation along this zone, the most promising Dighem target is I10 which has a conductance of 53 mhos at a depth of 36m., assuming a vertical, tabular source.

Anomaly J: one response, grade X. Like H2, this anomaly has been manually picked from the shoulder of an adjacent, large amplitude anomaly (I11). Little comment can be made about this anomaly for which there is no quantitative information, other than it may be an extension of the potentially interesting conductor H which lies 600m. to the west-north-west.

Zone K: two responses, grade 1 (2). This zone trends approximately north-east and is thus at a high angle to the trend of the zones described above. Both anomalies in the zone have been interpreted as having surficial causes and a conductive clay layer within the alluvial marsh deposits over which the zone occurs is a likely source. However the zone parallels zone L which probably overlies a geologic contact (as well as alluvium) and a similar feature (fracture or joint) may be (partly) responsible for this zone.

Zone L: two responses, grade X (2). This zone also apparently overlies alluvial marsh deposits, but it may also be coincident with the (? faulted) contact between a gabbro intrusion to the north-west and the Cambrian sediments (to the south-east). The zone may be extended through to anomaly N (an appropriately positioned response can be seen on the intervening flight line 250) where a definite response was recorded. For all three anomalies (L1, L2 and N) a surficial source has been interpreted and alluvium with some contribution from a contact or fracture/jointing is the likely cause.

Zone M: 6 responses, grades 3 (2), 2, 1 and X (2). This zone has a strike length of 900m. and has been defined by very large amplitude anomalies (e.g. M5 has responses over 100 ppm.). The two X responses probably also have large amplitudes, but there are unresolved from the adjacent anomalies to the north and south. Three of the anomalies have an interpreted depth of 0m. for a vertical tabular conductor, which suggests black shales as the source, noting again the presence of (one) countering bedrock strike measurement. M6, which has the lowest grade and weakest response of the definite anomalies in this zone, apparently overlies the old 'Sunshine' workings. The interpretation of this anomaly gives a 3 mho conductive source at 36m: the low amplitudes confer little reliability to these values, but they are of some interest if an association with mineralisation is confirmed by a ground EM survey.

Anomaly N: one response, grade 1. This strong response was discussed in zone L, since it is a probable extension of that zone. A near-surface conductive layer within the alluvium, and/or a geologic contact is the likely cause of the anomaly.

Anomaly O: one response, grade 1. Anomaly O also has a weakly conducting surficial source, and a similar cause(s) to that postulated for N is likely.

Zone P: two responses, grade 1 and X. Although P1 has not been designated a surface response ('S' anomaly), a surficial source is likely for both P 1 and P2. (The Dighem interpretation gives a bedrock conductor at 0m. for P1).

Anomaly Q: one response, grade X. A surficial response within alluvium is the likely source.

Anomaly R: one response, grade X. A surficial response within alluvium is the likely source.

CONCLUSIONS AND RECOMMENDATIONS

A total of eighteen zones and individual anomalies were defined by the Stonehenge Dighem survey: of this total, nine were a series of long subparallel linear conductive zones at the northern end of the area, trending approximately west-north-west. Five of these nine zones lie to the north of the lease and have not been further considered, but a similar cause to those within the lease is expected.

The west-north-west direction was noted by Both and Williams (1968) as being the strike direction for many of the prominent faults in the area and some zones (e.g. parts of G and F) closely follow nearby mapped faults (which did not respond). Further evidence for non strataform conductors is suggested by the varying, and often high angle to west-north-west, strike measurements. However the conductances (assuming a vertical, tabular source) for many of the anomalies are too high for barren faults which perhaps indicates some mineralisation within the faults, an indication reinforced by the fact that some old workings apparently coincide with the conductive zones (e.g. Sunshine on zone M; Susannite on zone B; South Comstock on zone G). But for most of these zones, the interpreted depth to the source is zero, or nearly zero, metres. One possible explanation for these high conductances is very conductive ground water within the faults or fractures, caused by the widespread sulphide occurrences. (This could probably be tested by measuring the water conductivity at regular intervals across the zones). But since the prominent Balstrup and Tenth Legion Faults did not cause any EM responses, a more likely explanation is that the zones are due to graphitic shale bands and that the contrary bedrock strike measurements reflect small amplitude folding superimposed on the regional west-north-west strike direction.

The association with old workings may be apparent; the exact location of the workings may be considerably displaced from the conductive zone - a fact that can be verified by ground EM surveys, or it may be coincidental; since the only responses over old workings are those on the linear zones: there are no individual anomalies over any other indicated workings or prospects in Figure 1.

Two zones were defined which do not trend in a west-north-west direction: these are zones K and L which parallel each other in a roughly north-east direction. They both occur over alluvial marsh deposits, however it is likely that the responses are at least partly due to faults or geologic contacts. They appear to have no economic interest. (The west-north-west direction of the other zones may be a function of the flight line direction: the possibility of a series of shorter north, or north-north-east zones should be considered when planning or interpreting any follow up ground EM surveys.)

Surficial sources within alluvium are also probable causes of the isolated anomalies N, O, Q and R, all of which have been designated as surface responses on the Dighem EM maps.

This leaves three isolated anomalies undiscussed, only two of which (H and J) are inside the lease. It is quite possible (? probable) that these are expressions of a south-easterly extension of zone D and that therefore the remarks made above about all the zones may be applied to H and J, however the interpreted depth for H is 24m. and the conductance is 28 mhos, whereas the zone D conductors were between 10 and 17 mhos, all with a depth of 0m. J is also a definite anomaly but it has no quantitative data since the response was not sufficiently resolved from the adjacent anomalies.

Thus the responses which should be included in any follow up surveys include:

H (an apparently isolated 28 mho conductor at 24m.) and J (an unresolved anomaly)
I10 (a 53 mho conductor at 36m.) and the adjacent anomaly
I11, which is a 5 mho conductor at 0m. overlying an old shaft, and
M6 which is also a weak conductor (of 3 mhos), but at 36m., and which apparently overlies the old 'Sunshine' workings.

A cause for (? part of) zone G could perhaps be sought in the creek near G18 (which had very large responses for an interpreted outcropping conductor).

J.R. Bishop
October, 1982

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TABLE 1

EM Anomaly List

(in approximately geographical order from the north and numbered within zones from west to east)

Anomaly or Zone	Dighem Label	Grade	Responses Coaxial IP	Coaxial OP	Coplanar IP	Coplanar OP	Interpretation Vertical Dyke mhos	Vertical Dyke depth (m)	Horiz. Sheet mhos	Horiz. Sheet depth (m)	Conduct. earth ohm-m	Conduct. earth depth (m)
A	600m east of lease boundary											
B	at least 350m north of lease boundary											
C	at least 400m north of lease boundary											
D	at least 150m north of lease boundary											
E	at least 250m north of lease boundary											
F	between 120m and 200m outside of the lease boundary											
F1	400A	1	3	9	2	22	2	0	2	53	45	19
F2	390A	1	8	17	6	37	3	0	2	41	47	11
F3	410XA											
F4	440A	1	1	1	3	7	2	17	3	59	25	33
F5	430A	2	1	2	8	10	5	24	3	55	20	31
F6	420A	1	4	8	1	6	3	1	1	77	93	32
F7	450A	1	7	20	0	33	2	0	1	29	101	0
F8	460A	1	3	5	0	0	4	25	1	76	79	33
G	G1 to G4 outside of lease boundary											
G5	330C	1	1	8	0	3	3	11	1	43	92	6
G6	340B	1	3	8	0	9	2	5	1	50	78	16
G7	350B	2	26	31	25	43	8	3	2	39	46	12
G8	360B	2	9	9	11	15	7	11	2	57	55	23
G9	370C	1	0	4	0	7	4	24	1	33	141	0
G10	380XA											
G11	400XA											
G12	390C	1	7	9	4	15	4	22	1	49	82	17
G13	410B	2	11	10	2	6	7	16	1	36	83	4
G14	430XA											
G15	420C	1	10	14	5	17	4	0	1	25	74	0
G16	450D	1	5	7	0	11	4	13	1	45	73	11
G17	460C	1	6	9	2	15	3	0	1	41	57	7
G18	470C	3	45	48	82	102	13	0	2	22	21	0
H1	440XA											
H2	430B	4	10	0	15	9	28	24	3	51	14	30

Table 1 continued..

Anomaly or Zone	Label	Grade	Responses Coaxial IP	Coaxial OP	Coplanar IP	Coplanar OP	Interpretation Vertical Dyke mhos	Vertical Dyke depth (m)	Horiz. Sheet mhos	Horiz. Sheet depth(m)	Conduct. earth ohm-m	Conduct. earth depth (m)
I1	370XA											
I2	380B	4	9	0	15	14	26	20	3	55	14	33
I3	400B	4	24	15	56	37	23	0	4	30	12	11
I4	390B	4	36	26	68	53	21	0	3	31	13	12
I5	410A	4	33	22	57	41	22	0	4	39	11	21
I6	430C	3	15	18	34	36	10	0	3	37	20	14
I7	440B	3	20	21	40	41	12	0	3	32	18	9
I8	420B	4	16	8	24	14	22	0	5	39	6	21
I9	450B	4	30	17	38	31	21	13	5	54	8	37
I10	460B	5	8	3	15	3	53	36	4	71	13	48
I11	470A	2	16	41	32	70	5	0	2	32	28	9
I12	480A	4	0	0	3	0	41	86	3	126	20	93
I13	490A	3	5	4	10	8	10	33	2	93	36	61
J	470XA											
K1	170A(S)	1	9	26	12	54	3	0	1	0	153	0
K2	180A(S)	1	3	4	2	7	3	0	1	48	927	0
L1	260XA(S)											
L2	270XA(S)											
M1	420XA											
M2	450C	2	18	26	22	32	7	0	3	40	15	19
M3	460XA											
M4	470B	3	31	33	82	57	13	0	2	42	27	17
M5	480B	3	49	54	107	103	16	0	4	26	8	11
M6	490B	1	2	3	3	6	3	36	1	65	293	16
N	240A(S)	1	6	17	15	44	3	0	1	12	154	0
O	150A(S?)	1	0	8	1	14	1	0	1	29	1035	0
P1	510A	1	1	8	2	8	1	0	1	39	358	0
P2	520XA											
Q	360XA(S)											
R	390XA(S)											

GEOLOGY

Quaternary: Qra Recent Alluvium
Tertiary ?: Ironstone Outcrop, Scree includes Magnetite, Limonite, Ferruginous Wad, Gossan; Iron Rich Soils, Ironstone Scree, Lateritic Development
Ordovician: Oz Mt Zeehan Conglomerate
Cambrian: Dundas Group — Black Siltstone; Greywacke, Siltstone, Minor Sandstone, Quartzite; Carbonate; Siltstone, greywacke; Conglomerate; Chert; Basal Volcanics
Crimson Creek Formation: €c Undifferentiated
Precambrian: Oonah Formation — Quartzite and Siltstone; Siltstone, minor Quartzite, Carbonate; Spilite
Igneous Rocks: Dg Devonian Granite and Adamellite; €g Cambrian Gabbro

SYMBOLS

Geological Boundary; Geological boundary unconformable and/or fault; Limit of hornfelsing; Fault and linear negative topographic features; Lode - open stope; Dip and strike of bedding; Dip and strike of bedding overturned; Dip and strike of foliation; Anticline syncline axis; Trend bedding; Mine workings Adit; Shaft; Dump

②——③ Dighem conductance grade

G —— Zone or anomaly label

Survey flown Feb., 1982 – North-South Flight lines spaced 150m. apart.

5 cm

ZEEHAN B/3	ZEEHAN B/4
ZEEHAN D/1	ZEEHAN D/2

Ref: RN/MG. 82/15

RENISON LIMITED

(ZEEHAN D1) 82-1887
STONEHENGE
DIGHEM E.M. ANOMALIES

SCALE. 1: 10,000 METRES

DRAWN	J B
TRACED	T G D S/S F
DATE	Oct. 1982
SCALE	1:10000
DRAWING No.	
FIG. I	

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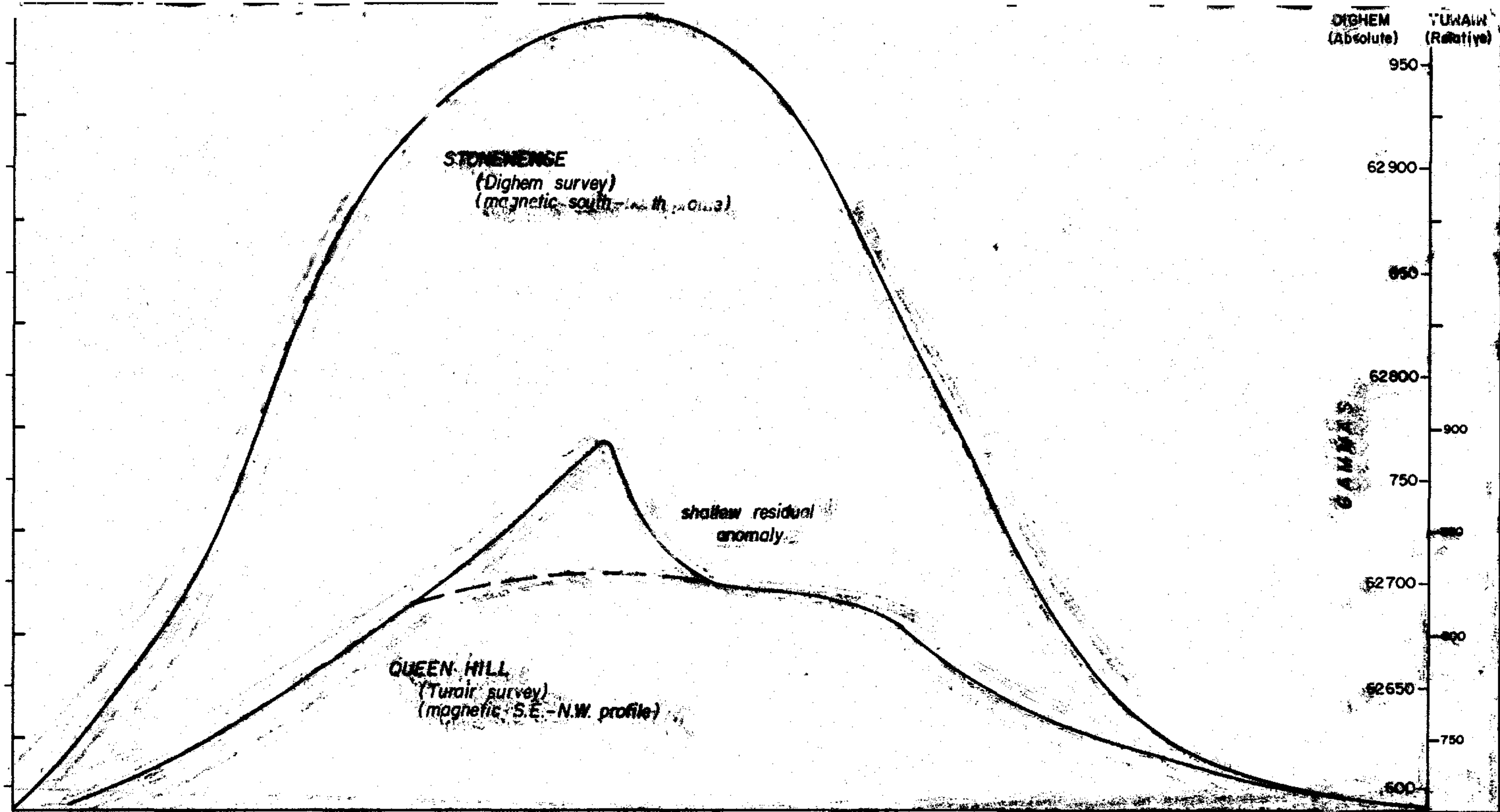

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NOTE: Survey heights would be approximately the same for the Dighem and Turrair surveys.

5 cm

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STONEHENGE & QUEEN HILL MAGNETIC ANOMALIES	DRAWN BY : J.B. DRAFTSMAN: S.F. DATE REVISIONS
	FILE NO. T.H. 387
SCALE 1:10000	FIG. 2

Ref: RN/M.G.82/15