COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS

RECORDS:

1965/17

MINOR METALLIFEROUS REPORTS NORTHERN TERRITORY
RESIDENT STAFF.

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MINOR METALLIFEROUS REPORTS - N.T. RESIDENT STAFF

RE-ASSESSMENT OF FRANCES CREEK IRON ORE DEPOSITS

by

P. W. Crohn

Introduction

At the request of the Director of Mines, an attempt has been made to carry out a re-assessment of the Frances Creek iron ore deposits, using assays and survey data provided to the N.T. Administration by New Consolidated Gold Fields (A'sia) Pty. Ltd. and Northern Iron Mining Corporation Ltd.

The data provided are not sufficient to arrive at a reliable estimate of the total reserves contained in these deposits, but the tonnages in some of the individual deposits can be estimated with reasonable confidence.

In the following discussion, the deposits are considered individually, commencing at the north end of the group, and an indication is given of the amount of additional work which would be required to obtain more satisfactory estimates.

A shipping grade of not less than 60% average iron contents has been used as a basis for all calculations.

Saddle Extended

Two lines of lode are exposed in this area, each about 2,000 feet long and with an average width of 30 to 40 feet, but with several bulges of more than 100 feet width.

New Consolidated Gold Fields records show that eight lines of chip samples were taken across these lodes, but no assay data were provided. Two lines of chip samples taken across the lodes by Resident Geologists in August 1961 assayed 62.1% over an estimated 80 feet on the eastern line and 54.5% over a comparable width on the western line.

Nine wagon drill holes have been put down on this deposit by New Consolidated Gold Fields, but very little high-grade ore (better than 60% iron contents), has been encountered. The best intersections were 11 feet of 62.1% grade in hole A4 and 11 feet of 61.6% grade in hole A9, both on the eastern lode. Holes A1 and A2 on the western lode cut 38 feet of about 55% material and 28 feet of 57% material respectively, with ignition losses ranging from 6 to 10%.

No adequate assessment of this deposit can be made without the assay results of the other surface samples, but on present indications the lodes have undergone superficial enrichment by processes of secondary concentration, and no substantial tonnages of better than 60% ore can be expected.

Saddle

In this area, a very prominent lode with average widths of 60 to 80 feet is intermittently exposed over a length of more than 2,000 feet. New Consolidated Gold Fields plans show that seven lines of chip samples

were taken across this lode, but no assay results are available. Nine drill holes were put down, but no high grade ore was encountered, the best results being 8 feet of 57.4% material in hole B2 and 48 feet of 55.5% material in B3. Ignition losses for this material range from about 8 to 11%. On present indications, there is no possibility of obtaining any ore of better than 60% grade from this deposit.

Saddle East

This deposit was tested by Northern Iron Mining Corporation by means of 12 wagon drill holes, and the Company state that 139,000 tons of 60.0% ore have been proved. On the basis of an independ it evaluation of the assay results provided by the Company, I agree with this figure.

Ochre Hill

Three sub-parallel lines of lode occur in this area, the most westerly being the widest. Parts of this line were tested by Northern Iron Mining Corporation by means of 36 wagon drill holes and five costeans. 1,134,000 tons of ore, averaging 58.4% iron, are claimed to have been proved in this deposit, but since all but four of these holes were drilled vertically, there is some uncertainty about the mineable width of some parts of the ore body.

If the lowest acceptable grade of ore is raised to 60%, which appears to be more in line with current practice, a cut-off grade of about 58% will have to be used, and this will reduce the estimated reserves by roughly one half.

Parts of the eastern lines and some small outcrops near the extremities of the western line were subsequently tested by New Consolidated Gold Fields by means of 11 drill holes and an equal number of lines and chip samples. The results of the chip samples are not available, but only one of the drill holes (No. 10) intersected ore of better than 60% grade, so that additional reserves resulting from this work must be regarded as negligible.

Beryl

This deposit was tested by New Consolidated Gold Fields by means of eight wagon drill holes, but no assay results are available. However, from the description of the samples, it would appear that very little high grade ore was encountered so that reserves, if any, are expected to be small.

Jasmine

This deposit has been tested by New Consolidated Gold Fields by means of 17 wagon drill holes and 11 lines of chip samples. The chip sampling has indicated two sections of the lode containing ore of better than 60% grade, but since the position of some of the sample lines differs appreciably from the outline of the lode as shown on the Company's plan, these are open to various interpretations. Assuming that the sample positions are correct, (which means that the lode outlines require modification), a horizontal extent of approximately 40,000 square feet, equivalent to about 4,000 tons per vertical foot of better than 60% grade material is indicated at the surface. However, the results of drill holes are generally less favourable. The best intersections are only 12 feet of better than 60% material in holes F4 and F8, eight feet in F17 and two separate intersections of eight feet each in hole F2.

The probable reserves of better than 60% ore in this deposit must be therefore be regarded as small (almost certainly less than 100,000 tons).

Rosemary

This deposit consists of a number of ironstone lenses lying in the axial portion of a major north-west trending drag-fold. It has been tested by New Consolidated Gold Fields by means of 33 wagon drill holes and 10 lines of chip samples, but the assay results of the chip samples are not available. The drilling results were largely disappointing, the best intersections of better than 60% ore being 24 feet in hole E12 and eight feet in holes E2b, E5, E19 and E36. Unless some additional high grade portions of the lodes can be outlined as a result of the chip samples, the reserves of better than 60% ore in this deposit are therefore small (of the order of a few thousand tons only).

Thelma Frances

This deposit has been tested by New Consolidated Gold Fields by means of 13 wagon drill holes and eight lines of chip samples. The main ore body has an average outcrop width of about 37 feet over a length of 750 feet, but the true width of drill hole intersections is somewhat less than this, - average 25 feet. The lode projects as a razorback ridge for an average height of 40 feet above the drill sites and may be economically mineable for another 60 feet below this, giving total reserves of the order of 225,000 tons. The average grade of these reserves is expected to be between 63 and 65%. Small additional tonnages may be available from the northern and southern extensions of the lode.

Elizabeth Marion

A large number of small ironstone lodes of irregular shape occur in this area, the over-all control being a major north-pitching anticline. These bodies have been tested by New Consolidated Gold Fields by means of nine wagon drill holes, but no surface sampling appears to have been done. The assay results of the drill samples have not been made available, but the description of the samples suggests that little if any high-grade ore was encountered, so that reserves must be expected to be small or even negligible.

Helene Leases

All testing on these leases was done by New Consolidated Gold Fields.

Helene No. 1

Testing included three drill holes and three lines of chip samples. Assay results of chip samples not available. No high grade ore intersections in drill holes. Best result : 12 feet of 52.9% material in hole 22B.

Helene No. 2

Testing included one drill hole and one line of chip samples. Assay results of chip samples not available. Drill hole intersected 36 feet of 61.2% ore. Reserves probably small - of the order of 500 tons per vertical foot.

Helene No. 3

Testing included six drill holes and six lines of chip samples. Assay results available for three complete lines of chip samples and part of a fourth line, but position of samples does not agree with outline of lodes as shown on Company plan. Reasonable interpretation based on these

plans suggests 40,000 square feet of high grade ore at surface (average grade .63 to 64%), equivalent to about 4,000 tons per vertical foot.

Drill hole results are more patchy, ranging from 52 feet to 63.6% ore in hole H15 to only 4 feet of better than 60% ore in holes H18 and H19. No ore in hole H28, but this hole may have missed the lode. Reserves are impossible to calculate from the available information, but data strongly suggest that considerable surface enrichment has taken place, in which case reserves will probably be small - less than 100,000 tons.

Helene No. 4

No testing was carried out.

Helene No. 5

Testing included seven drill holes, six lines of chip samples. Assays available for two complete lines of chip samples and parts of the other four, but agreement between position of samples and outline of lode on Company plan is again poor. Assuming that sample positions shown on plan are correct and that available assay results are representative of all samples taken, there are some 50,000 square feet of 64 to 65% ore, equivalent to about 5,000 tons per vertical foot, exposed at the surface. Drill hole intersections, however, are invariably lower. Hole H13 obtained two separate intersections of 16 feet of 60.7% ore and 8 feet of 61.4% ore, but none of the other holes cut more than 12 feet of better than 60% ore, and three of them cut no high grade ore at all. Reserves are impossible to calculate from the available data, but are probably small - less than 1000,000 tons.

Helene No. 6, 7 and 8

Testing included 28 drill holes and eight lines of chip samples; assay results are available for only about one third of the chip samples from each line. Assuming that these were representative of all the samples that were taken, some 120,000 square feet of 65 to 67% ore are exposed at the surface, but the drilling results have shown that not all of this continues downwards as ore of economic grade.

The outcrops of ore follow the structure of a large north-west pitching syncline with some minor drag-folds and crenulations. They also lie at the crest of a steephill side, which slopes in the same direction as the pitch of this fold, so that the lodes remain within about 100 feet of the surface for some 800 feet down dip from the outcrop.

Maximum thicknesses of high grade ore have been encountered in two main areas. One of these extends between drill holes H4 (48 feet of better than 60% ore), H5 (more than 100 feet) and H36 (60 feet). The other extends between drill holes H2 (56 feet of better than 60% ore), H3 (36 feet), H24 (52 feet), H37 (more than 100 feet), H42 (32 feet) and H46 (more than 64 feet). Owing to the irregular spacing of these drill holes, it is not possible to make an accurate calculation of the reserves in these areas, but a rough estimate, using isopachs (lines of equal thickness of the ore body), indicates probable reserves of the order of 1,700,000 tons. Further drilling may increase this appreciably, especially if it should indicate the presence of mineable ore in the strip between the two known areas of maximum thickness. In this regard, it is encouraging that the four drill holes which bottomed in ore (H5, H37, H38 and H46), all lie in a north-westerly trending zone which passes through this strip.

Helene No. 9

Testing included five drill holes and four lines of surface samples.

Assay results of surface samples not available. The only intersections of better than 60% ore were 32 feet in hole J7 and four feet in hole J1, so that reserves are probably small - almost certainly less than 50,000 tons.

Helene No. 10

Two drill holes and two lines of surface samples were completed. Assay results of surface samples not available. No intersections of better than 60% ore in drill holes.

Helene No. 11

Four drill holes and three lines of surface samples were completed. Assay results of surface samples not available. Only one intersection of high grade ore : 32 feet, averaging 60.8% iron in hole J8. Reserves probably small - almost certainly less than 50,000 tons.

Summary

Subject to the qualifications indicated above, the following table summaries the known proved and probable reserves of the various deposits:

Saddle Extended	Probably small
Saddle	Negligible
Saddle East	140,000 (proved)
Ochre Hill	550,000 (probable)
Beryl	Probably small
Jasmine	Probably small
Rosemary	Probably very small
Thelma Frances	225,000 (proved)
Elizabeth Marion	Probably very small
Helene No. 1	Negligible
Helene No. 2	Probably small
Helene No. 3	Probably small
Helene No. 4	Probably negligible
Helene No. 5	Probably small
Helene No. 6, 7 and 8	1,700,000 (probable)
Helene No. 9	Probably small
Helene No. 10	Negligible
Helene No. 11	Probably small
Total proved and probable:	2,615,000 tons.

Small - less than 100,000 tons
Very small - less than 10,000 tons.

Impurities generally fall within the following ranges:

Phosphorus: .01 to .2 with averages between .05 and .1
Sulphur: .005 to .1 with averages between .01 and .05
Titanium: .05 to .35.

Recommendations

To complete this re-assessment, New Consolidated Gold Fields should be asked to provide the N.T. Administration with all assay data which have not yet been made available. These comprise the results of surface sampling at Saddle Extended, Saddle, Ochre Hill, Rosemary, Helene No. 1, 2, 9, 10 and 11, and parts of Helene 3, 5, 6, 7 and 8 as well as drill hole sampling at Beryl and Elizabeth Marion.

Further testing should initially be concentrated in the Helene No. 6, 7 and 8 area, where a further 3,000 feet of drilling, - preferably

diamond drilling, - would enable the known ore bodies to be delineated with greater accuracy and might indicate substantial extensions.

The following approximate allocation is suggested:

Testing accuracy of existing drilling results by putting down diamond drill holes to duplicate two or three typical wagon drill holes:	200'
Outlining ore body around hole H5 in greater detail:	600'
Outlining ore body around hole H37 in greater detail:	1,000'
Testing area between these two ore bodies (around hole H38):	800'
Testing other areas where high grade ore is indicated by surface samples, but is not supported by existing drilling results:	400'

The length of any one hole should not exceed 200 feet.

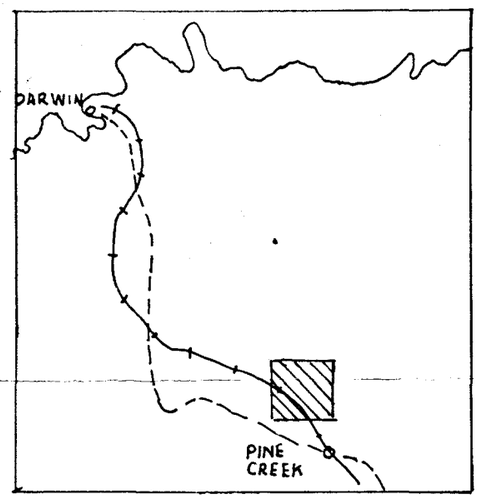
The actual locations of the individual holes would have to be determined after a further examination of the area. However, it may be anticipated that, owing to the steep topography of much of the area, extensive site preparation and road making by bull-dozer will be required before any drilling can be undertaken.

Subsequently, a re-examination of some of the other deposits, such as the Saddle Extended, Beryl and Jasmine, should also be undertaken to determine whether any further testing is warranted on any of them. If further drilling is required, the initial programme on any of these deposits is unlikely to amount to more than 1,000 feet.

If satisfactory arrangements for the further testing of these deposits can be made between the N.T. Administration and the leaseholders, the Resident Geological Section could undertake the surveys required for the location of the additional drill holes and the supervision of the drilling, both in the Helene area and in any other areas which may be shown to warrant further drilling.

PLATE I.

FRANCES CREEK IRON DEPOSITS



SCALE

1 Mile to 1 Inch

1 0 1 2 3 Miles

Known ironstone deposits

Railway line

TO MT HARRIS

MT WELLS BATTERY

BURRUNDIE

Spring Hill

Saddle extended

Saddle

Saddle east

Ochre Hill

Frances creek

Elizabeth

Marion

Beryl

Thelma

Frances

Rosemary

Jasmine

Haystack (Helene No 1-5)

Helene No. 6, 7, 8.

Helene No. 9, 10, 11

Bureau of Mineral Resources Geology and Geophysics

To accompany Record 1965/17

D52/A8/145

MINOR METALLIFEROUS REPORTS - N.T. RESIDENT STAFF

MINES BRANCH DIAMOND DRILLING AT HELENE NO. 7 LEASE, FRANCES CREEK, N.T. JULY - OCTOBER 1964

by

P. W. Crohn

Between July and October 1964, three diamond drill holes were put down on the Helene No. 7 Lease, Frances Creek, under an agreement between the Mines Branch, N.T. Administration, and the leaseholders, Northern Iron Mining Co. of Darwin. The sites for the holes were selected after discussion between officers of the Resident Geological Section and MacDonald Construction Company of Sydney, who are carrying out an investigation of the Frances Creek iron ore deposits on behalf of the leaseholders.

Prior to this diamond drilling programme, the iron ore deposits on Helene No. 6, 7 and 8 leases had already been tested by 28 wagon drill holes put down in 1962 by New Consolidated Goldfields (A'sia) Pty. Ltd., and some wagon drilling had also been done by MacDonald Construction Co. earlier in 1964.

Mines Branch D.D.H.1 was drilled to deepen MacDonald Construction W.D.H. 68 from 50 feet to 85 feet, but only 12 inches of core were obtained from this hole. D.D.H. 1A was accordingly put down alongside this wagon drill hole to a depth of 24 feet as a check on coring characteristics of the ore and good recovery (87%) was obtained in the ore section between 12 and 24 feet.

D.D.H.2 was put down alongside W.D.H. 67 and was taken to a total depth of 184 feet. Alternating bands of shale and hematite were passed through from 50 feet to 143 feet, but average core recovery in this section was only about 20%. From 143 to 184 feet, hematite was continuous, except for a few minor inclusions of incompletely replaced shale, and core recovery improved to 71%.

D.D.H.3 was put down alongside W.D.H.69 and was taken to a total depth of 200 feet. Hematite was the only material obtained as core between 68 and 192 feet, except for a shale band between 75 and 85 feet. However, core recovery was only 28% in the section from 68 to 108 feet, compared to 82% between 108 and 170 feet, and 48% between 170 and 192 feet.

Assays were carried out by Australian Mineral Development Laboratories, Adelaide, and a number of results of assays carried out by R. J. Gluyas & Co., Adelaide, were also made available by MacDonald Construction Co.

In general all assays of material which had been visually identified as hematite were extremely high (66 to 69% iron), and sludge samples from the section of poor core recovery in D.D.H.2 were also high (64 to 68% iron). This suggests that most of the material which was not recovered as core should be classed as ore on the basis of chemical composition, but this material may be expected to be extremely friable and hence to present considerable mining and handling problems. This conclusion is also supported by the presence of several sections of broken core in D.D.H.3, some of which almost disintegrated to a powder after a few weeks of exposure to the atmosphere.

Proposals for the drilling of at least one more diamond drill hole in this area have been put forward by MacDonald Construction Company, but no agreement to cover this work has been signed at the date of writing (November 1964). If further drilling is to be undertaken, a site between D.D.H.3 and W.D.H.37 should be given first priority, followed by a site between D.D.H.3 and W.D.H.39.

MINES BRANCH DIAMOND DRILLING

HELENE NO. 7 LEASE, FRANCES CREEK, N.T.

D.D.H.1

Azimuth 85° Depression 55°

Deepening wagon drill hole No. 68

DRILL RUN	CORE RECOVERY	DESCRIPTION
50' - 85'	12"	Brecciated shale, in part replaced by specular hematite. (From about 70')

D.D.H.1A

Azimuth and depression as for D.D.H.1

Re-drilling wagon drill hole No. 68

DRILL RUN	CORE RECOVERY	DESCRIPTION	SAMPLE NO.	ASSAY % Fe (A.M.D.L.)
0' - 12'6"	1'3"	Broken and weathered shale		
	9"	Specular hematite		
12'6" - 14'	3"	Specular hematite		
	1'9"	Specular hematite with remnants of partly replaced shale.	12'-16' 145835	64.6
14' - 19'8"	4'6"	Specular hematite replacing shale. Degree of replacement varies from moderate to almost complete.	16'-20' 145836	61.9
19'8" - 24'	3'3"	Specular hematite with remnants of partly replaced shale.	20'-24' 145837	65.2

DRILL RUN	CORE RECOVERY	DESCRIPTION	SAMPLE NUMBER	ASSAY %Fe (R.J. GLUYAS & CO.)	ASSAY %Fe (A.I.M.E.L.)	SLUDGE SAMPLES %Fe. (R.J. GLUYAS & CO.)
0' - 15'	9"	Shale.				10' - 39.8
15' - 24'	1' 3"	Shale.				
24' - 35'	1' 0"	Shale and micaceous hematite				30' - 33' - 23.2
35' - 44'10"	2' 9"	Shale and micaceous hematite				
44'10"- 53'	6"	Shale				
	9"	Micaceous hematite				
	1' 6"	Shale and micaceous hematite				
53' - 60'	1' 3"	Specular and micaceous hematite.				
60' - 63'1"	1' 0"	Specular and micaceous hematite, very broken core.	145838	67.9	66.8	
63'1"- 71'6"	1' 3"	Specular and micaceous hematite with some cavities.				
	3' 6"	Brecciated shale in various stages of replacement by fine-grained and micaceous hematite.				
71'6"- 80'6"	1' 0"	Shale.				
80'6"- 90'	3"	Shale and hematite.				80' - 86' - 67.5
	1' 9"	Massive, specular and micaceous hematite.				86' - 90' - 65.0
90' - 99'3"	1' 0"	Massive, specular and micaceous hematite.				90' - 95' - 68.5
99' - 105'	9"	Massive, specular and micaceous hematite.	145839	69.1	68.8	95' - 98' - 68.5
						98' -99'6" - 67.9
						99' - 104' - 69.0
105' - 112'	5' 9"	Massive and micaceous hematite. Some remnants of incompletely replaced shale.				104' - 105' - 68.8
112' - 120'3"	1' 0"	Massive and micaceous hematite. Some remnants of incompletely replaced shale.	145840	68.9	68.8	105' - 109' - 67.1
						115' - 120' - 67.9
120'3"- 127'3"	6"	Intensely weathered shale.				120' - 125' - 64.9
127'3"- 133'9"	9"	Micaceous hematite with remnants of only partially replaced shale.				125' - 127' - 64.5
						127' - 133' - 67.6
133'9"- 143'6"	6"	Micaceous and specular hematite	145841	68.9	68.2	

D.D.H. 2 (cont.)

DRILL RUN	CORE RECOVERY	DESCRIPTION	SAMPLE NUMBER	ASSAY % Fe (R. J. GLUYAS & CO.)	ASSAY % Fe (A.M.D.L.)	SLUDGE SAMPLES % Fe. (R.J. GLUYAS & CO.)
143' 6" - 144'	9"	Micaceous, massive and specular hematite with some cavities.				
144' - 152'	3' 6"	Massive and specular hematite with small clusters and irregular veinlets of quartz crystals.	145842	66.8	66.5	
	4' 9"	Micaceous hematite with minor remnants of incompletely replaced shale.	145843	69.1	68.3	
152' - 158'7"	4' 3"	Micaceous and massive hematite with remnants of only partly replaced shale.				
158'7" - 160'6"	1' 9"	Micaceous and massive hematite with remnants of only partly replaced shale.	145844	68.6	68.3	
160'6" - 163'	2' 3"	Micaceous and massive hematite.				
163' - 166'6"	1' 3"	Massive and micaceous hematite.	145845	69.5	68.5	
	2' 0"	Shale and micaceous hematite.				
166' 6" - 169'	9"	Shale and micaceous hematite.				
169' - 174'8"	9"	Shale and hematite.	145846	67.7	67.5	
	6"	Massive hematite, replacing shale.				
	1' 6"	Specular hematite with some small clusters of quartz crystals and some remnants of incompletely replaced shale.	145847	68.1	68.7	
174' 8" - 176'6"	6"	Specular hematite.				
	1' 9"	Massive and micaceous hematite. Core broken over 9".	145848	69.0	68.8	
176' 6" - 180'1"	2' 6"	Micaceous and massive hematite.	145854		68.2	
180' 1" - 181'3"	1' 6"	Micaceous hematite. Core very broken over 12".				
181' 3" - 182	9"	Micaceous hematite. Very broken core.	145855		68.9	
182' - 184'3"	2' 0"	Micaceous hematite. Core very broken over 12".				
	6"	Silicified and partly iron-replaced shale.				

D.D.H. 3

RE-DRILLING AND DEEPENING WAGON DRILL HOLE 69

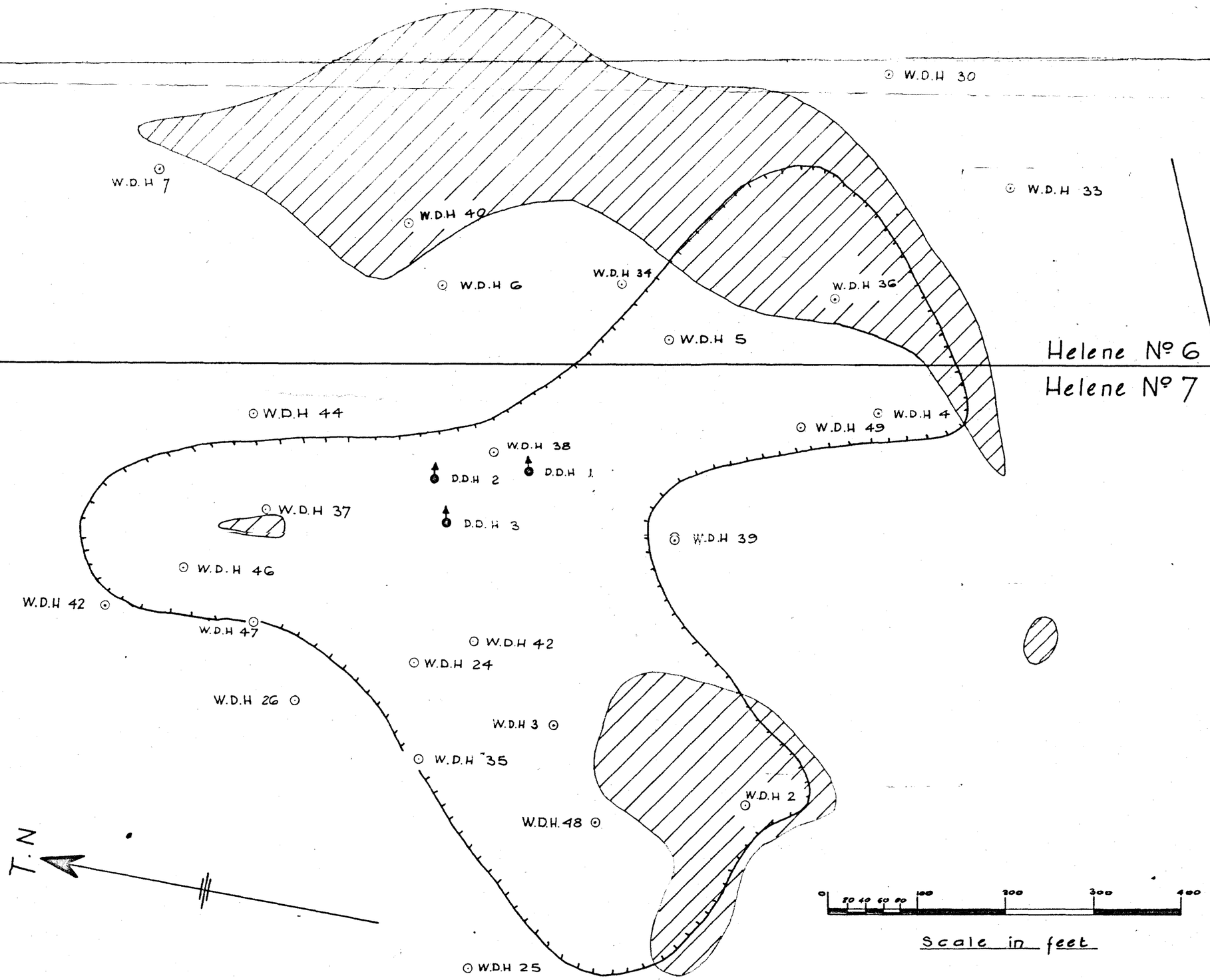
Azimuth 85°, Depression 65°

DRILL RUN	CORE RECOVERY	DESCRIPTION	SAMPLE NUMBER	ASSAY Fe (A.M.D.L.)
0' - 7'	6"	Mudstone		
7' - 8'	6"	Mudstone		
8' - 12' 3"	2'6"	Mudstone		
12' 3" - 17' 6"	1'0"	Mudstone		
17' 6" - 25' 3"	1'0"	Shale		
25' 3" - 30' 9"	1'0"	Shale		
30' 9" - 36' 8"	1'3"	Shale		
36' 8" - 38' 8"	1'3"	Shale		
38' 8" - 41' 3"	1'9"	Shale		
41' 3" - 51'	1'6"	Shale		
51' - 56'	1'9"	Shale		
56' - 59'	1'3"	Shale, strongly brecciated in part.		
59' - 68'9"	1'3"	Shale		
68'9" - 73'	1'3"	Micaceous hematite.	145856	68.8
73' - 74'1"	1'3"	Massive and micaceous hematite.		
74'1" - 75'	10"	Micaceous hematite with remnants of incompletely replaced shale.		
75' - 85'	1'3"	Shale	145857	62.0
85' - 96'3"	1'3"	Micaceous hematite with remnants of incompletely replaced shale. Core broken over 9".		
96'3" - 100'1"	2'3"	Micaceous and massive hematite.		
100'1" - 101'	1'0"	Massive, micaceous and cellular hematite with minor clay seams and pellets.		
101' - 104'	9"	Massive and micaceous hematite.	145858	68.8
104' - 105'6"	6"	Massive and micaceous hematite.		
105'6" - 108'	6"	Massive and micaceous hematite.		
108' - 110'	1'3"	Micaceous and cellular hematite. Core very broken in part.	145859	69.1
110' - 114'4"	4'6"	Massive and micaceous hematite. Core very broken in part.		

DRILL RUN	CORE RECOVERY	DESCRIPTION	SAMPLE NO.	ASSAY % FE (A.M.D.L.)
114' 4" - 121'	2'9"	Massive and micaceous hematite.	145860	69.6
121' - 126'6"	3'0"	Massive and micaceous hematite.		
126' 6" - 131'	4'6"	Massive and micaceous hematite. Core very broken over 18".	145861	69.0
131' - 136'6"	5'3"	Massive and micaceous hematite. Core very broken over sections of 18" and 9".	145862	68.3
136'6" - 140'	3'3"	Dominantly micaceous hematite.	145863	68.3
140' - 146'6"	5'9"	Micaceous and cellular hematite. Core rather broken over two sections, each of 6".	145864	68.2
146'6" - 151'	4'6"	Micaceous and cellular hematite.	145865	68.4
151' - 156'8"	5'9"	Micaceous and massive hematite.	145866	67.9
156'8" - 161'	4'6"	Massive and micaceous hematite. Occasional quartz grains in massive phase.	145867	67.8
161' - 163'	1'9"	Micaceous and cellular hematite.	145868	66.6
163' - 170'	4'3"	Massive and cellular hematite.		
170' - 178'8"	3'9"	Massive and cellular hematite. Occasional quartz grains in massive phase.	145869	68.0
178'8" - 185'	2'0"	Dominantly massive hematite.		
185' - 192'	4'9"	Massive, cellular and micaceous hematite.	145870	66.8
192' - 200'	6"	Silicified shale with disseminated iron oxides.		
	5'3"	Green shale and siltstone. (?glauconitic).		

END OF HOLE

PLATE 2.



HELENE Nº 6 & 7 LEASES
FRANCES CREEK N.T

Showing position of wagon drill holes, and diamond drill holes

NOTE-

This map compiled from information supplied by New Consolidated Gold Fields, and Macdonald Construction Co'

KEY

- IRONSTONE OUTCROPS
- APPROXIMATE LIMIT OF KNOWN ORE OCCURRENCES
- D.D.H — DIAMOND DRILL HOLE
- W.D.H — WAGON DRILL HOLE

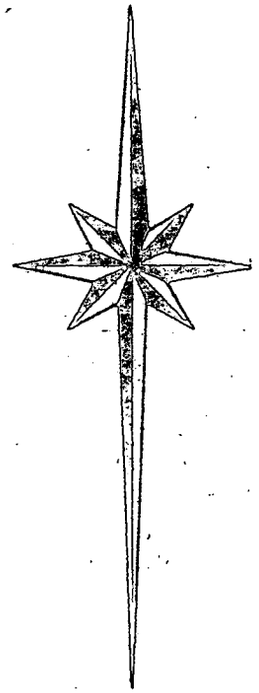
To accompany Record 1965/17

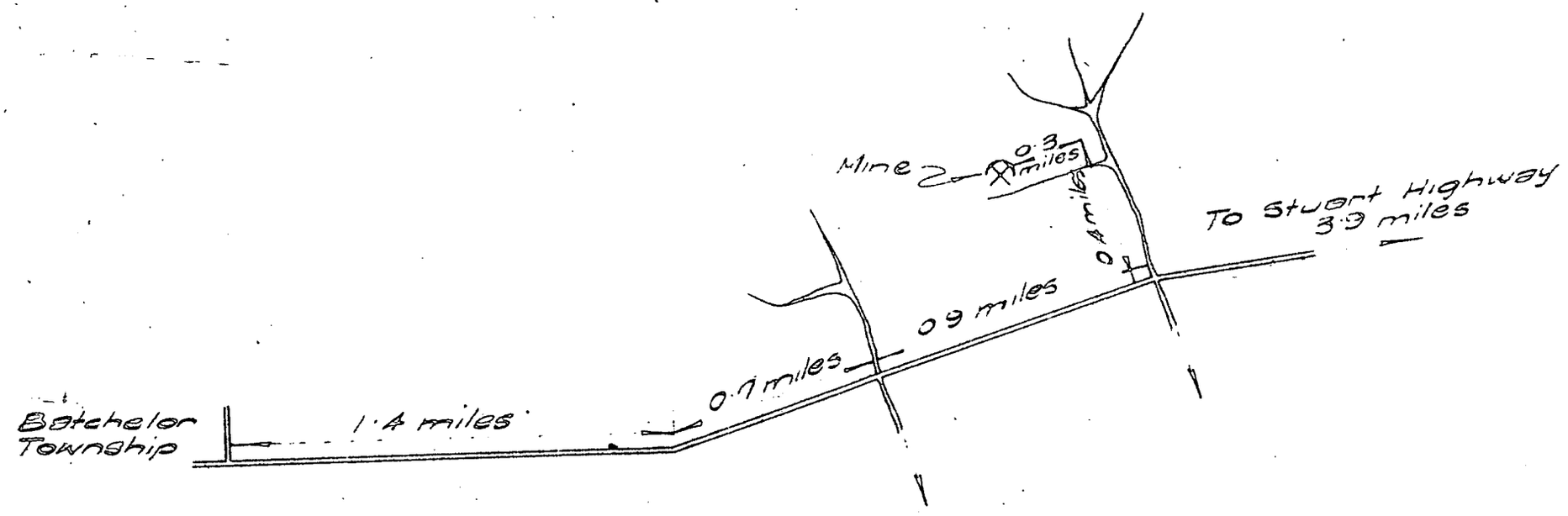
TRACED BY C.H 27-7-64 DMR Mines Branch

D52/A8/147

PLATE 3.

RUM JUNGLE GOLD MINE
GML 11B
Locality Plan





SCALE

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D52/A8/146

To accompany Record 1965/17

MINOR METALLIFEROUS REPORTS - N.T. RESIDENT STAFF

RUM JUNGLE GOLD MINE, G.M.L. 11B

by

P. W. Crohn

Rum Jungle gold mine was visited on October 27th, 1964, in company with Captain I. Schwenke of Darwin and Mr. R. Dodson, Bureau of Mineral Resources. This mine had been discovered in 1943 by Captain Schwenke's father, but has not been worked for at least 15 years, and the only recorded production is 12 ounces of gold from 12 cwt. of ore, obtained in 1943.

The mine is reached by turning off the main Batchelor road 3 miles east of Batchelor township or 3.9 miles from the Stuart Highway. From this point a bush track is followed for 0.4 miles in a north-north-westerly direction along the west bank of a small gully, and a low ridge of arkose, grit and conglomerate is then followed for 0.3 miles in a west-south-westerly direction, to the mine. The mine, which is situated on the south side of this ridge, just below the crest, consists of a stope from the surface, about 30 feet long, 25 feet deep and 4 feet wide, trending north-south. The country rock is a very weathered arkosic grit, somewhat indurated in the immediate vicinity of the lode, and in places containing ironstained cavities which have some resemblance of boxworks. Most of the lode material appears to have been removed, but the dump still contains fairly abundant fragments of a quartz-tourmaline rock which agrees with the description of the ore reported to have been won from the mine in 1943, and some stringers of similar material are still visible in the west wall of the stope.

Three grab samples were collected for assay:

145871: Arkosic country rock, east wall of stope.
Assay: Trace (less than 0.2 dwts. gold per ton)

145872: Quartz-tourmaline rock from dump.
Assay: 0.2 dwts. gold per ton.

145873: Stringers of quartz-tourmaline rock and indurated arkose, west wall of stope.
Assay: 1.0 dwts. gold per ton.

For comparison, seven samples assayed from this mine in 1946 gave results between 2.1 and 23.4 dwts. of gold per ton, averaging 8.7 dwts., but there is no record of the rock types or the locations of the samples.

It appears, therefore, that the mine was situated on a small, rich lode, which has been substantially mined out. However, if there is no legal bar to the granting of a lease in this area at the present time, it is recommended that the stope be cleaned out and that the possible extensions of the lode be checked by deepening the most southerly portion of the stope by about 5 feet and by cutting a vertical channel, about 3 feet deep, into the present west wall of the stope. Representative samples of the material obtained from these operations should be assayed, and any decisions regarding further work should be guided by these results.

There appears also to be some scope for further prospecting in this area, both for other lodes of this type and for alluvial deposits derived from them.