X11ORRISON

REPORT

on

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REIN BARITE PROPERTY

NTS 116 B/9 64°43.3N, 138°09.5W

Owned By

Union Miniere Explorations & Mining Corporation Limited

in the

MAYO MINING DISTRICT

YUKON TERRITORY

CANADA

For

DOME PETROLEUM LIMITED

By

W.S.Read, B.Sc., P.Eng.
Cobble Hill, B.C.
Canada

February 1982

WAYLAND S. READ, B.SC., P.ENG.
CONSULTING GEOLOGIST

AREA CODE 604-TELEPHONE 743-2279 — 851 CHERRY POINT ROAD, COBBLE HILL, B.C. V0R 1L0 CANADA

8 March 1982

Mr. R. A. Buckley, P.Eng.,
Dome Petroleum Limited,
Box 200,
Calgary, Alberta,
T2P 2H8

Dear Mr. Buckley:

Please find attached my report on the investigation and check sampling of the Rein barite property, located near the Dempster Highway, northern Yukon Territory, and owned by Union Miniere Explorations and Mining Corporation Limited.

Five barium mineralized beds were check sampled. Through observation and analysis they were found to contain various combinations of barium minerals, some of which are unacceptable in drill mud.

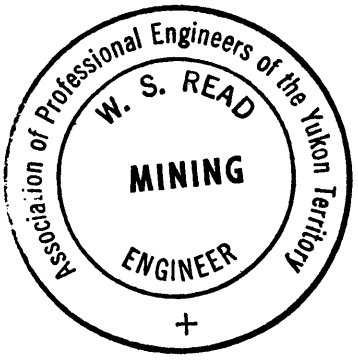
This report describes the results, relates them to former work, and suggests zones that appear to require the least beneficiation.

Respectfully submitted,

W. S. Read

WSR:mr

Wayland S. Read, P.Eng.



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INTRODUCTION:

Present and future drilling in the Canadian Arctic, particularly offshore drilling, requires a large tonnage of barite as an inert weighting agent for drill mud. Barite is a relatively low value commodity, but freight costs can greatly increase the effective cost at the drill site. This is particularly true for drilling in the Canadian Arctic.

The ground barite has to meet rigorous standards of regulatory agencies, the petroleum companies, and specifications set out by the American Petroleum Institute, (see Appenxix 3).

The writer was requested by Dome Petroleum Limited to advise and assist in evaluating the potential of several barite deposits in the Yukon Territory in 1981, one of which was the Rein property, the subject of this report.

The location of the property is quite favourable, being about seven to eleven kilometers from the Dempster Highway, 131 kilometers by road northeast of Dawson City, and 600 kilometers southwest of Inuvik on the MacKenzie Delta. There is no infrastructure and the nearest supply point is Dawson City.

Between 1976 and 1980 preliminary exploration, some bulldozer trenching and percussion drilling had been carried out. Some reasonably large tonnages in several beds were indicated, complicated by a mixture of barium minerals in various combinations, some of which are unacceptable for drill mud. There was little documented sample information indicating the proportions of these minerals.

Preliminary channel sampling across five zones was conducted under

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)
REIN BARITE PROPERTY

NTS 116 B/9 64° 43.15' N. 138° 08.8' W.

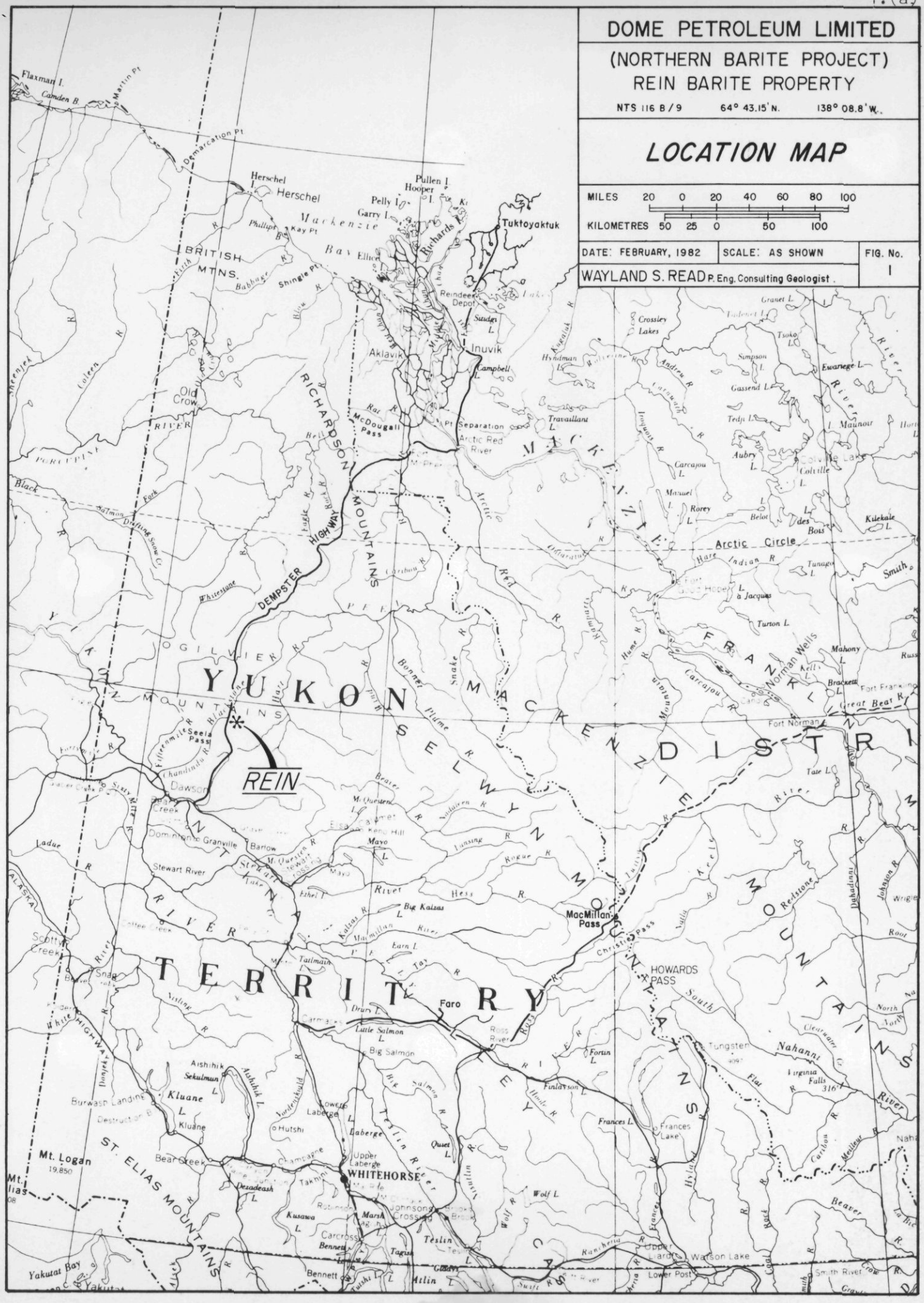
LOCATION MAP

MILES 20 0 20 40 60 80 100

KILOMETRES 50 25 0 50 100

DATE: FEBRUARY, 1982 | SCALE: AS SHOWN | FIG. No. 1

WAYLAND S. READ P. Eng. Consulting Geologist.



direction of the writer between 6-10 September inclusive. These samples weighed a total of about one tonne, allowing enough weight for both analysis and metallurgical testing. They were sent to the metallurgical laboratory in Vancouver for analysis, to be followed, if warranted, by metallurgical testing.

This report details the sampling, the subsequent analytical results, and relates this information to available past work.

LOCATION:

The Rein group of ninety mineral claims is located about 95 km. northeast of Dawson City in the Yukon Territory, Canada. The barite showings are 7 tO 11 kilometers east of the Dempster Highway, and about 131 km. by road northeast of Dawson City. The settlements of Fort MacPherson and Inuvik, on the MacKenzie Delta, lie respectively 480 km and 600 km by road to the north-northeast, (see Appendix 2). Elevations on the property range between 3500 feet and 5500 feet.

The Rein - Ridge Zone is located at about 64^{o} 43.3' north latitude and 138^{o} 09.5' west longitude, in mountanous terrain about 10.5 km east of the Dempster Highway.

The Clif Zone is about 0.7 km across a ridge to the southeast from the Ridge Zone.

The West Creek Zone, which is about 7 km east of the highway, is exposed by drainage cuts in more gently rolling country.

Two other zones, known as the Saddle Zone and the Cordilleran Zone were not examined or sampled because of lack of outcrops and shortage of time to locate them from the small-scale maps provided. The trenching required was considered to be beyond the scope of this

preliminary examination. The Saddle Zone is about 300-400 metres northwest of the Ridge Zone and the Cordilleran Zone is about 1.0 kilometer east of the Clif Zone.

ACCESS:

Access to the property for this examination was by helicopter from Dawson City, Yukon, some 95 air km to the southwest, on 6-10 September 1981, inclusive.

Dawson City is the nearest supply centre to the property.

In the past most exploration work has been carried out from a base camp on the Dempster Highway with crews moved by helicopter.

Milchem Incorporated optioned the property, and according to assessment files, commenced work on the property on November 25, 1979 and completed on March 25, 1980. Equipment taken to the property included a D8K bulldozer and a Becker air reverse circulation rotary/percussion drill rig. Drill roads were constructed on and between the Ridge and Clif Zones. These were found to be partly sloughed at the time of our visit. No other roads exist except for the odd bulldozer track across the tundra.

Preliminary air examination indicates some glacial features exist in the valley of the East Blackstone River in the form of drumlins and eskers that could provide a gravel base and source of material for road construction across the tundra. Many minor drainages and wet areas would be encountered. East of the East Blackstone River, a south east-trending low glacial ridge within the valley is the most likely place for a road base and materials for a length of about 3 km.

Keeping north of the mountain that is between the Dempster Highway and West Creek, a crossing for West Creek would need to be found, probably north of the West Creek barite showing.

From West Creek, at elevation of about 3950 feet, a long grade could be established angling up the south-facing slope, of the west-draining valley, to a mountain pass of elevation about 4800 ft, that is southwest of the Ridge and Clif Zones. From there a road could angle down a southeast-facing hillside and branch to the Ridge and Clif zones.

Depending upon routing, access road requirements are estimated to be 8-10 kilometers to the West Creek area, and an additional 5-7 km to the Ridge and Clif Zones.

If a bulldozer is considered necessary for additional exploration, it could be taken in with heavy supplies on a winter road, and walked out after freeze-up in the fall. Because of the low gold prices, some equipment may be available during the coming season from placer operations near Dawson City.

Water is available for drilling from streams near the Rein and Clif Zones. The flow diminishes and late in the season water may only be available from the streams at elevations well below the showings. This was the case during sampling on 6-9 September, although on 23 July adequate water for a small drill was available from seepage.

The West Creek Zone adjoins a good water supply from the north-flowing West Creek. On 17 September 1981 a rough check on the volume of flow through a steep-banked, flat-bottomed section of the creek, 2.5 metres wide by 0.4 metres deep (1.0 sq.metre on section) was flowing at a velocity of 15 metres in 20 seconds, or a volume of 45 cubic metres (9,900 imperial gallons) per minute.

CLAIMS:

The Shell Resources report, dated May 11, 1981, describes the Rein property as consisting of 80 contiguous mineral claims (Rein 7-96) of which 77 lie within the Mayo Mining District and three within the Dawson Mining District, Yukon Territory, NTS 116B/9. A count of claims on the claim map shown unexpired in February 1982 indicates 90 claims exist, unless some claims have been allowed to lapse and have not been crossed off the map.

No search of title has been made by the writer, as it is considered that the owners retain counsel to assure title to the property.

Claim posts, where observed, were lying on the ground. This would not fulfill the requirements of the Yukon Quartz Mining Act 2(i)(j) and 20(1). One set of posts found lying in the buckbrush about 200 metres west southwest from the creek at the West Creek showing had no metal tag or trace of writing.

The claims on which certificates of work have been issued would appear to fall under Section 60 of the Act, which states: "Upon any dispute as to the title to any mineral claim, no irregularity happening previous to the date of the record of the last certificate of work affects the title thereto, and it shall be assumed that up to that date the title to such claim was perfect, except upon suit by the Attorney General of Canada based upon fraud."

A ground check on the claim posts is recommended, especially the key claims, if Dome is to explore the property .

HISTORY:

The Rein barite occurrences were discovered as a result of a regional search for shale-hosted lead-zinc occurrences in the Taiga Basin Area as part of the 1976 Blackstone Joint Venture. Involved in the joint venture were Union Miniere and Shell Canada Resources.

The Rein claims were first recorded on 14 July 1977 as a result of zinc geochemical anomalies produced by hydrozincite. Further prospecting showed barite beds of possible economic significance.

More detailed geology and trenching were carried out in 1977 with some bulk samples sent to Britton Research for preliminary metallurgical testing between October and December 1977.

More detailed geology and trenching programs are reported in 1978.

Milchem Incorporated of Houston, Texas, optioned the property, and according to assessment reports, worked on the property doing bulldozer trenching and percussion drilling on the Ridge and Clif Zones between 25 November 1979 and 25 March 1980.

Milchem terminated the option agreement on its anniversary date, 30 December 1980.

A preliminary overview examination was conducted on 23 July 1981. The followup sampling program was conducted between 6-10 September, followed by an examination with Dome officials on 17 September 1981.

About one tonne of samples were taken from the Rein-Ridge Main, Ridge North 1, Ridge North 2, Clif and West Creek Zones. These were shipped directly to the metallurgical laboratory of Bacon, Donaldson and Associates in Vancouver, B.C., for preparation, analysis and required testing (which is presently in progress.)

GEOLOGY:

The geology is covered by G.S.C. Memoir 364 by L.H.Green, published in 1972. A copy of the Dawson Geology sheet, Map 1284A is enclosed. This map, at a scale of 1:250,000 gives an overview of the regional rock formations and relationship of topography and roads to Dawson City, the nearest settlement.

The Shell Resources report by G.W. Moffat, dated May 11, 1981, contains two Geology maps covering the claim area attributed to Umex Corporation Ltd., Blackstone Project 1976 and 1977, at a scale of one inch = 1000 feet, and 1 inch = 1320 feet (¼ mile).

The geological environment is described in the report as sedimentary barite exposed within a folded, thrust-faulted sequence of Siluro-Devonian pelitic sediments forming the southern edge of the east-trending Taiga Basin.

In stratigraphic section, the barite is described as occurring between a change in lithology from rhythmically bedded basal shales and argillites to a thick sequence of silicious argillites and cherts. A facies change to shelf carbonates occurs northward across the basin.

The legend to accompany the 1977 map describes the rock units adjoining the barite as follows, (from oldest to youngest):

Unit C-a: Platy to papery, calcareous, carbonaceous shales with graptolites, tentaculites and styliolina; minor pyrite.

Unit C-b: Noncalcareous black shale with minor grey limestone and black siliceous argillite.

Unit C-c: Black siliceous argillite and shale, rhythmite with minor grey limestone. Forms majority unit; weathered surfaces sometimes coated with gypsum, hydrozincite or carbonate. Zinc spot test reaction weak and spotty in C-a and C-b, strong in C-c and C-d.

Unit C-d: Buff to olive grey weathering calcareous to non-calcareous platy black shale with characteristic gastropods, minor black micritic limestone and bioclastic limestone.

Unit C-d: Lenses(?) Massive to finely laminated baritic limestone; minor black baritic limestone, black siliceous argillite to chert, and black chert nodules (lower barite horizon).

Unit D-3: Black siliceous argillite to chert with minor shaley interbeds and minor silvery grey weathering shale; minor calcareous (west) to argillaceous (east) grey weathering black barite (upper barite horizon) bedded pyrite and chert breccia--all near contact with C. Note: may include undifferentiated C.

Thrust faulting has been mapped striking in an east-west direction and dipping southward. The Umex 1976 map (12A) Fig.3 Shell report, interprets on section, that the Clif, Ridge and Saddle Zones are upthrust blocks repeating the same barite zones. The 1977 geology plan shows a thrust fault passing to the north of these zones instead of between them.

If the thrust faulting does pass farther to the north, there is a possibility of the Clif Zone extending extending northwest towards the Ridge Zone and a dip slope existing on the adjoining hillside to the northwest, if the barite bed continues. This would bear investigating because of the potential for lower stripping ratios if the barite continued and its characteristics proved favourable.

All major zones observed dipped south to southwest at angles varying from 30 - 85 degrees.

There is considerable variation in the mineralization between the different baritic zones and even within the beds. Barium carbonates in the form of witherite ($BaCO_3$) and in some cases as Baryto-calcite ($Ba,Ca(CO_3)_2$ occur as well as Barite ($BaSO_4$). Also included is Calcite ($Ca\ CO_3$) and silica (SiO_2).

When the mineral samples were tested with dilute HCl, effervescence ranged from negative to extreme.

Although interest in the area was first aroused by zinc geochemical anomalies, no sulphides were observed and the zinc spot test detected no hydrozincite in the barite specimens tested.

Photo 1

REIN Sampling Ridge North 2 Zone, Road 'E'

Photo 2

REIN Sampling Main Zone, Road 'E'

Photo 3.

REIN Ridge Zone

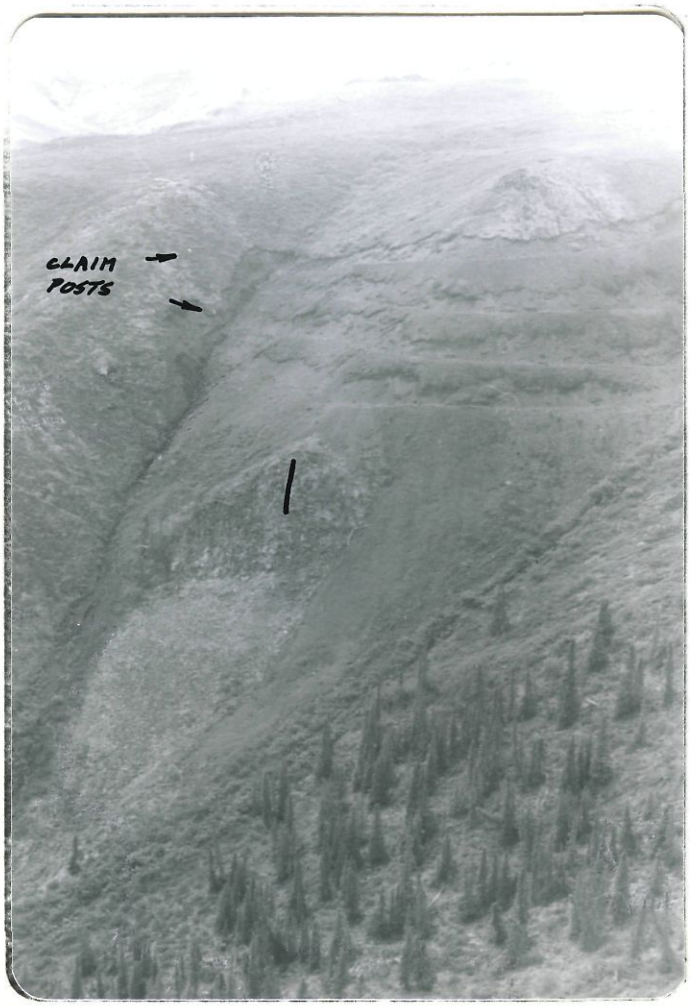


Photo 4.

REIN Clif Zone

Photo 5.

REIN Clif Zone

Sample taken on cliff below bulldozer trenches.

Photo 6

REIN Clif Zone

Close-up of vertical sample on cliff.

Within a few metres of stratigraphic thickness the Ridge on Road 'E' in descending stratigraphic order gives the following weighted averages.

Location:	Sample	Width (m)	S.G. Measured	S.G. Calc.	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
Ridge-Main Zone	36001-25	12.5	3.80	3.86	7.78	72.7	5.06
Ridge-North 1 Zone	36026-31	3.0	3.62	3.66	32.44	37.2	8.77
Ridge-North 2 Zone	36033-52	10.0	4.14	4.20	85.52	4.52	3.33

A lower zone referred to as Ridge North 3 Zone , believed similar to the Ridge North 2 Zone, was searched for in the frost-heaved rubble and sloughed bulldozer cuts without success. It would appear that the lower zones (North 2 Zone) contain the most favourable barite mineralization with low witherite and silica content, approaching or at direct shipping specific gravity of 4.20.

The Ridge North 2 Zone strikes in the topographical nose of the hillside and dips 85^{o} south. Data is incomplete but from initial observation, although some open cut tonnage is available, it is better suited to an underground operation with steep-dipping beds accessible by adits.

The Clif Zone is approximately on strike about 0.7 km southeast of the Ridge Zone. The barite bed strikes northwest and dips $30\text{-}55^{o}$ southwest where measured on the cliff face exposure, and may steepen to the southwest. Sample analysis (Fig.4 and Appendix 1.)

Across a 10.5 metre sample width, which is approximately true width, returned S.G. 4.01, $BaSO_4$ 84.13%, $BaCO_3$ 1.16%, SiO_2 8.99%, which accounts for 94.28% of the contained weight, leaving 5.72% for other components and assay variation.

A section through two drill holes and the cliff face sampled (Figure 18) and further interpretation of the Umex data, indicates that our sampling did not cross the full width of the Clif Zone, although visually at the time, the best section was sampled.

All Clif Zone sections are oblique to the strike and dip of the barite bed and not enough topographic data is available to reconstruct them. For this reason, dips between intersections are apparent dips, not true dips.

A zone of black banded phyllitic chert exposed by Road 1, had a southeast strike (125^{o}) and dipped 70^{o} southwest. This corresponds very closely with the strike of the barite bed measured at the outcrop and a strike calculated from barite intersections from the Milchem drill holes. (See Fig.17,18).

This dip of 70^{o} would give an apparent dip of 30^{o} along the section between drill holes RC1-1 and RC2-1 and corresponds to the drill results as shown on Firgure 18, indicating either a steeper dip or a pinching of the barite bed to the southwest. Detailed mapping of additional outcrops in relationship to the barite beds would be very useful in interpreting the subsurface structure and stripping ratios.

The hillside on strike to the northwest of the Clif Zone could have the surface trace of the bed covered by overburden. This would bear further examination as a partial dip slope with better stripping ratios could exist if the bed continues towards the Ridge Zone.

The West Creek Zone (Photos 7 & 8) is exposed in a slide on the west side of a north flowing drainage, flowing into Lomond Creek.

Preliminary mapping by Umex indicates that it is on the south limb of an east-plunging anticline. Bedding within the outcrop had a strike

Photo 7.

REIN West Creek Zone looking North

Photo 8.

REIN West Creek Zone looking West
Detail of Horizontal Sample Area

varying from Az.30°-59° and a dip from 43° to 47° southeast. To the northeast 122 metres at Az.75° is a second outcrop with a strike and dip of Az.75°/60° southeast. This second outcrop was not further mapped or sampled.

The barite continues westward up the slope from the sample site. Further up the nose of the ridge at Az.320° the rock is hard black cherty shale and an outcrop described as phyllitic black chert, which is believed to be the footwall of the barite zone, has a strike of Az.64° dipping 43° southeast.

The exposure sampled is on a dip slope and initially would have a low stripping ratio. Black sooty manganese-like staining is present. The barite is dark grey to black with brown weathering. The fine white veining through the rock may be both barite and calcite as only part of it effervesces with dilute HCl. Some sections of the barite rock effervesced with dilute HCl. indicating a carbonate content.

The West Creek Zone has shorter access from the highway, good water supply and apparently the lowest stripping ratio of the Rein showings examined. The highest specific gravity reading was 3.96 and averaged 3.62 across the 19.0 metres sampled. Its quality is third after the Ridge North 2 Zone and the Clif Zone.

SAMPLING:

Sampling was laid out and supervised by the writer, and samples were taken by an experienced two-man crew.

The area to be sampled was cleared down to bedrock and continuous channel chip sample was taken. Samples were cut with a heavy hammer and tungsten-carbide tipped moil, and, where possible, with the aid of

an Atlas Copco Cobra gasoline drill with chisel bit, used as a gas hammer.

Most samples were cut at 0.5 metre intervals except the West Creek Zone with 1.0 meter intervals, because of an oblique cut across the barite bed. Each sample nearly filled a 12 inch by 20 inch plastic sample bag. These are estimated to weigh an average of about 8 kilograms each. The large samples would accumulate enough weight of sample for follow-up metallurgical testing. The short sample interval would show any chemical variation across the barite bed.

The sample number was marked on each bag as well as the enclosed tag, packed in fibre shipping bags, also showing sample numbers, and taken daily by helicopter from the site to Dawson City with the return of crew. A spike with flagging and sample numbered aluminum tag marked some sample cuts along the trench, as can be seen on Photo 2.

The bags were put on pallets and shipped by White Pass and Yukon truck directly to the Metallurgical Laboratory of Bacon,Donaldson and Associates in Vancouver.

Sample preparation and analysis were done at the metallurgical laboratory. The results are included in the appendix to this report.

The samples were analysed for Specific Gravity, $BaSO_4$%, $BaCO_3$% and SiO_2%. See Appendix 1.

Four samples were selected for testing by Scanning Electron Microscope, one each from the Ridge Main Zone, Ridge North 2 Zone, Clif Zone and the West Creek Zone. The results will be discussed under Mineralization.

MINERALIZATION:

Barite ($BaSO_4$) is a heavy mineral with a specific gravity of 4.5. Colour can vary from colourless, white and light shades of blue to yellow, red and grey. It can be transparent to translucent. Barite has many chemical uses, but the largest consumption is in the drilling industry as an inert weighting agent for drill muds.

The ground barite has to meet rigorous standards of regulatory agencies, the petroleum companies, and specifications set out by the American Petroleum Institute. (See Appendix 3).

The Rein property covers several barium mineralized beds containing a mixture of barium minerals in various combinations. The main minerals found were Barite ($BaSO_4$, S.G. 4.5) Witherite ($BaCO_3$ S.G.4.3), Barytocalcite ($Ba,Ca(Co_3)_2$ S.G. 3.65) Calcite ($CaCO_3$, S.G. 2.72) and Silica (SiO_2 S.G.2.65) The assay sheets for the zones sampled are contained in Appendix 1, and the sample average tables are contained in Figures 2, 3 and 4.

Several plans and sections from the Shell report are included to relate the 1981 data to the previous work. The Shell sections were photographically reduced to correspond with the scale of the plan and the new data were added to the old on a best fit basis. However, on Road 'E' samples were related to drill hole RRE-3 and the remains of stations believed to be MPE2 and MPE4. (Figure 10).

Section G of the Ridge Zone was missing from the Shell report, so could not be shown. Some of the Milchem results are shown as taken from "fill" sections on the drill roads. This is probably a misplot.

The Ridge Zones are covered by Photo 3. This photo shows the drill roads, and on close examination, the 1981 sample trenches on Road 'E'

and the trench samples and sample crew on Road 'F'. Photos 1 and 2 show a detail of the sample areas on Road 'E'.

Appendix 4 is a table from the Shell Resources report--Summary of Indicated and Inferred Reserves, Rein Barite Project, which is included for reference purposes only.

The Ridge Zone strikes northwest and dips steeply southwest at angles ranging from 59^{o} to 85^{o}. Within this zone are four lens-like sections of higher specific gravity that have been named from the upper (southwest) to the lower (northeast) as the Ridge Main Zone, Ridge North 1, Ridge North 2 and Ridge North 3 Zones.

Milchem carried out 202 metres of trenching and 691.42 metres of percussion drilling in 17 holes in the Ridge area during 1979. The majority of the holes (16) tested the Ridge Main and Ridge North 1 Zones, which are considered to pinch out at depths below 35 metres, and are of limited strike length. Assays were not reported for $BaSO_4$, $BaCO_3$, or SiO_2.

Average specific gravity reported at 4.04 and 4.03 respectively on Road 'E' is higher than the results of our check sampling summarized on Figure 2 and 10. As a further check on specific gravity the laboratory ran a calculated specific gravity from analytical results, which is documented in Appendix 1 and Figure 10. By inspection, the measured specific gravity results are usually slightly lower than the calculated specific gravity, particularly for the 73 samples taken on the Ridge Zones.

The Ridge Main Zone both measured and calculated was lower than the Milchem results. The average for the 12.5 metres sampled across the Ridge Main zone was: Measured S.G. 3.80, Calculated S.G. 3.86, compared to S.G. 4.04 for a narrower width of about 8.0 metres. Assays

REIN BARITE RIDGE MAIN ZONE ROAD 'E' SAMPLE AVERAGES

Sample Numbers	Sample Width (m)	Accum. Width (m)	Measured S.G.	Measured Accum. S.G.	Calculated S.G.	Calculated Accum. S.G.	$BaSO_4$ %	Accum. $BaSO_4$ %	$BaCO_3$ %	Accum. $BaCO_3$ %	SiO_2 %	Accum. SiO_2 %
36001	0.5	0.5	3.59	3.59	3.55	3.55	15.64	15.64	49.5	49.5	4.41	4.41
36002-36006	2.5	3.0	3.81	3.78	3.92	3.86	12.63	13.14	70.6	67.1	5.31	5.16
36007-36012	3.0	6.0	3.73	3.75	3.73	3.79	3.17	8.15	71.7	69.4	5.66	5.41
36013-36020	4.0	10.0	3.94	3.83	4.05	3.90	8.83	8.42	80.7	73.9	3.82	4.77
36021-36025	2.5	12.5	3.67	3.80	3.70	3.86	5.20	7.78	68.0	72.7	6.22	5.06

REIN BARITE RIDGE NORTH 1 ZONE ROAD 'E' SAMPLE AVERAGES

36026-36031	3.0		3.62		3.66		32.44		37.2		8.77	

FIGURE 2

averaged $BaSO_4$% 7.78, $BaCO_3$% 72.7, and SiO_2% 5.06 .

The 3.0 metres sampled across the Ridge North 1 Zone averaged: Measured S.G. 3.62, Calculated S.G. 3.66, while the Milchem results averaged 4.03 across the same width. Assays averaged $BaSO_4$% 32.44, $BaCO_3$% 37.2 and SiO_2% 8.77.

Visually there was no significant difference between the Main Zone, the North 1 Zone and the unsampled section between them. Samples across the full width effervesced strongly when treated with dilute HCl.

Sample 36018 from the Main Zone, assaying S.G.4.07, Calculated S.G.4.10, $BaSO_4$% 16.97, $BaCO_3$% 74.1, SiO_2% 2.67, was examined by Bacon, Donaldson and Associates with a scanning Electron Microscope with the following results:

"The barium minerals in this sample are witherite and barytocalcite. There is no apparent barite. No metallurgy to produce barite is possible with this sample."

Under grain size, the description is "Large areas of witherite. Barytocalcite present in fairly coarse grains. Silica varies from very fine (micron size) to fairly coarse."

The bed containing the Rein Main and Rein No.1 Zones has a high percentage of carbonates. The barite content, by analysis, increases and the witherite content decreases towards the base of the bed in the No. 1 Zone. This, however, is only academic since the barite ($BaSO_4$) content is very low and the metallurgists believe there is no practical metallurgy to produce a barite product from the sample examined.

The Ridge North 2 Zone (Figure 3, 10) is a few metres stratigraphically below the bed containing the Ridge Main and No.1 Zones. Field examination indicated that this zone contained the most promising barite mineralization on the Rein claims. Shell lists total reserves of 52,459 tonnes.

REIN BARITE RIDGE NORTH 2 ZONE ROAD 'E' SAMPLE AVERAGES

Sample Numbers	Sample Width (m)	Accum. Width (m)	Measured S.G.	Measured Accum. S.G.	Calculated S.G.	Calculated Accum. S.G.	$BaSO_4$ %	Accum. $BaSO_4$ %	$BaCO_3$ %	Accum. $BaCO_3$ %	SiO_2 %	Accum. SiO_2 %
36032	0.5		3.73		3.72		66.67		3.32		22.31	
			Start of Accumulative Width And Grade									
36033-36036	2.0	2.0	3.99	3.99	4.05	4.05	73.65	73.65	10.97	10.97	4.71	4.71
36037-36050	7.0	9.0	4.18	4.14	4.25	4.21	88.90	85.51	2.82	4.63	2.81	3.24
36051-36052	1.0	10.0	4.11	4.14	4.18	4.20	85.65	85.52	3.49	4.52	4.20	3.33
36053-36054	1.0	11.0	3.79	4.10	3.85	4.17	73.25	84.41	2.81	4.36	19.04	4.76
36055-36056	1.0	12.0	3.79	4.08	3.90	4.15	63.61	82.67	15.15	5.26	14.29	5.55
36057	0.5	12.5	2.80	4.03	2.87	4.10	14.76	79.96	4.41	5.23	7.27	5.62

REIN BARITE RIDGE NORTH 2 ZONE ROAD 'F' SAMPLE AVERAGES

36058	1.5		3.29		3.35		48.51		2.47		27.06	
36059	1.0		3.70		3.81		70.65		3.71		7.25	
36060-36065	6.0		4.13		4.26		91.15		0.99		2.95	

REIN BARITE RIDGE NORTH 2 ZONE EXTENSION SAMPLE AVERAGES

36066-36073	4.1		4.24		4.35		94.23		0.85		1.91	

FIGURE 3

Exposure on the drill roads was poor and had to be hand trenched. The North 2 Zone was found outcropping down the hill to the southeast (Photo 3) a horizontal distance of about 27 metres, beyond the last sample shown on the Shell-Milchem data. This effectively doubles the known strike length of higher grade barite. It may extend still farther down the hill toward the creek, but this has not been checked.

This exposure was sampled across a width of 4.1 metres which averaged S.G.4.24, Calculated S.G.4.35, $BaSO_4$% 94.23, $BaCO_3$% 0.85, SiO_2% 1.91. The width of the zone at this point is unknown as the surrounding area was covered with overburden.

Samples of North 2 Zone were also taken from trenches dug on drill roads 'E' and 'F' to the northwest, making a total of 3 sample cuts over a strike length of about 55 metres.

The only previous drill intersection was by drill hole RRE-3 on Road'E' shown on plan Figure 10 and section Figure 15. This hole scaled at angle of -46^{o} intersected about 12 metres that averaged S.G. 4.24. True width would be about 10 metres. The 1981 surface samples from the trench above this hole, numbers 36037-36050 for a sample width of 7.0 metres, averaged, Measured S.G. 4.18, Calculated S.G. 4.25, $BaSO_4$% 88.90, $BaCO_3$% 2.82, SiO_2% 2.81. For a wider sample width of 10.0 metres, samples 36033-52 averaged Measured S.G. 4.14, Calculated S.G. 4.20, $BaSO_4$% 85.52, $BaCO_3$% 4.52, SiO_2% 3.33.

The intermediate trench on Road 'F' tested the zone indicated in the Shell report, but the north end of the trench may have been stopped before reaching the footwall of the zone. Samples 36060-65 across 6.0 metres averaged Measured S.G. 4.13, Calculated S.G. 4.26, $BaSO_4$% 91.15, $BaCO_3$% 0.99 and SiO_2% 2.95.

From examining these figures and the tables of Figure 3,

calculated specific gravity is always higher than measured specific gravity. There is an improvement in quality of the barite in the North 2 Zone, on surface, as one progresses from the northwest to the southeast. The average grade of the barite increases, witherite and Silica decrease. Figure 15 shows a specific gravity decrease on strike to the northwest. Since there is also an elevation drop, it is not known if this grade improvement to the southeast is a factor of strike only or if lower elevation has exposed better quality barite that would also be intersected by deeper drilling.

Sample 36068 from the Ridge North 2 Zone, Road 'E' (assaying Measured S.G. 4.20, Calculated S.G. 4.38, $BaSO_4$% 95.58, $BaCO_3$% 0.68 and SiO_2% 1.37) was examined as formerly with the Scanning Electron Microscope, with the following results.

"The matrix is basically barite with fine to very fine silica grains. These grains would require very fine grinding to eliminate silica from a barite concentrate. The fine grinding required precludes gravity separation and thus a flotation scheme is necessary to produce a barite concentrate." Under grain size, is reported. "Large areas of barite. Fine to very fine inclusions of silica."

It is interesting that a barite bed exists in a carbonate rich basin, contains barite of direct shipping specific gravity with $BaCO_3$ content of less than 1.0%. It is not known the extent of the area this zone covered at the time of deposit, but it is a favourable stratigraphic horizon for barite exploration.

Where measured, at the southeast exposure the bed was dipping 85^{o} southwest. Part of the barite would be available for open cut type mining, but I would estimate that because of high stripping ratio, most of the potential tonnage would require underground methods

The North 2 Zone is amenable to underground mining, with indicated adequate mining width, steep dip and accessible by adit directly on the outcropping barite bed. Because of colour and other similarity between the barite bed and the wallrock, it is estimated that, with similar grade control efforts, a higher grade mill head could be produced from an underground than an open pit operation.

This is all speculation until adequate reserves are drilled off.

The Ridge North 3 Zone is indicated from the Shell report to be about 6.0 metres to the footwall and parallel to the Ridge North 2 Zone. At the time of sampling there was no outcrop visible on Road 'F' nor a concentration of barite float where the zone was indicated. (Figure 10). The amount of time required to search for the zone by hand trenching was considered beyond the scope of the project.

The Ridge North 3 Zone could be checked if the Ridge North 2 Zone is drilled by extending the first drill holes through the Ridge North 2, into the footwall to determine the position and characteristics of the Ridge North 3 Zone. As seen on Photo 3, there is little or no outcrop exposed north of Ridge North 2 Zone.

The Clif Zone is located on strike about 0.7 km southeast of the Ridge Zone. (Figure 9). Barite mineralization has not been traced between the two zones and there is a high percentage of overburden cover.

In 1979 Milchem drilled four vertical holes totaling 214.87 metres on two sections oriented at N12W. The Shell report gives Drill Indicated Reserves of 108,678 tonnes (4.09 S.G.) and Inferred Reserves 178,800 -800,000 tonnes (4.00 + S.G.). The barite bed, where measured, on the cliff strikes northwest and dips 30-55^{o} southwest. The strike calculated from outcrop elevations and drill intersections averages approximately Az.305^{o}.

REIN BARITE CLIF ZONE SAMPLE AVERAGES

Sample Numbers	Sample Width (m)	Accum. Width (m)	Measured S.G.	Measured Accum. S.G.	Calculated S.G.	Calculated Accum. S.G.	$BaSO_4$ %	Accum. $BaSO_4$ %	$BaCO_3$ %	Accum. $BaCO_3$ %	SiO_2 %	Accum. SiO_2 %
36074-36076	1.6		3.76		3.81		70.33		4.28		17.06	
36077-36078	1.0		3.42		3.40		51.57		2.12		10.62	
			Start of Accumulative Width And Grade									
36079-36083	3.0	3.0	3.85	3.85	3.96	3.96	79.57	79.57	0.88	0.88	14.07	14.07
36084-36098	7.5	10.5	4.07	4.01	4.14	4.08	85.96	84.13	1.28	1.16	6.96	8.99
36099	0.5	11.0	3.69	3.99	3.73	4.07	60.34	83.05	11.0	1.61	19.81	9.48

FIGURE 4

REIN BARITE WEST CREEK ZONE SAMPLE AVERAGES

36100-36108	9.0	9.0	3.41	3.41	3.47	3.47	52.44	52.44	4.84	4.84	24.08	24.08
36109-36118	10.0	19.0	3.80	3.62	3.77	3.63	64.54	58.81	8.06	6.54	13.02	18.26

As shown on Figure 17, the strike of the deposit approximately parallels the drill roads to the north of the topographical nose. This is also shown on Photos 4 and 5. The barite is bedded and light grey in colour, Interbanded are thin beds of light grey sedimentary rock and light grey limestone, especially near the top and the base of the exposure on the cliff.

The 1981 sampling consisted of locating the barite bed and sampling a cross-section down the cliff face, as shown on Figures 17,18 and Photos 4,5 and 6.

Twenty-six samples, numbers 36074-36099 were taken down 13.6 metres of the cliff as close to true width of the bed as possible. The results are shown in Appendix 1, with sample averages on Figure 4 and cross-section Figure 18. Samples 36079-36098 across 10.5 metres averaged Measured S.G. 4.01, Calculated S.G. 4.08. $BaSO_4$% 84.13, $BaCO_3$% 1.16 and SiO_2% 8.99.

Figures 17 and 18 show the sample location on plan and section, by tape and compass survey, in relationship to the approximate position of drill hole RC1-1.

From examination of the site, it appears more likely that the Umex samples, Bulk Samples 3 and 4, came from the area of our 1981 sampling rather than where shown on the Shell sections A and B, Figure 20, 21. Some well-deteriorated flagging was found that would approximately correspond to those sample intervals. Those positions are recorded on Figure 18 with a further estimate as to Umex samples BF1-BF4 that might be represented.

Surface trenching 1977 - Umex.

Sample #	Ba %	Width Feet	Sample #	Ba %	$BaSO_4$ %	$BaCO_3$ %	S.G. (a)	Sample #	S.G.	Ba %	$BaSO_4$ %(b)	$BaCO_3$ %(c)
BF1	35.9	12.0	Bulk									
BF2	49.8	12.0	Barite	43.21	70.17	2.8						
BF3	51.5	12.0	3				4.09					
BF4	51.0	12.0	Bulk					Composite				
BF5	52.2	12.0	Barite	54.35	83.12	7.8		B	4.15	52.2	73.4	12.9
BF6	51.7	12.0	4									
Average	48.7			48.78	76.64	5.3						
Total		72.0 (21.94 m)										

Notes on samples: Composite 'B' was made up of rejects from sample - Bulk Barite 4 only, by Britton Research Ltd.

(a) Figure 20. (Shell Fig.18) shows bulk samples 3 and 4 to average S.G.4.09.

(b) Barite ($BaSO_4$) calculated from HCl insoluble Ba.

(c) Witherite ($BaCO_3$) calculated from HCl soluble Ba.

Sample 36079 from the Clif Zone (assaying Measured S.G. 3.85, Calculated S.G. 3.94, $BaSO_4$% 78.62, $BaCo_3$% 1.25, SiO_2% 14.65) was examined by Bacon, Donaldson & Associates with a Scanning Electron Microscope with the following results:

"The matrix is barite with grains of silica and calcite throughout. The grain size of these unwanted minerals is 20 - 50 microns. A flotation scheme is the most probable method of beneficiation that would produce a barite concentrate." Under grain size, the description is: "Large areas of barite. Fairly fine calcite and silica distributed thoughout some of the barite. (20-50 microns)."

The Clif Zone barite mineralization requires beneficiation before it would be acceptable for drill mud. Metallurgical testing would be necessary to determine if an acceptable product could be produced. There is not enough information to do reserves and stripping rations, but from observation this could likely be mined by open pit methods. At present, with outcrop and drill holes assuming an area 100 m X 50 m

X 20 m thick and a specific gravity of 4.0 would contain 400,000 tonnes of barite mineralized rock.

Follow-up exploration after preliminary metallurgy would require further trenching, mapping and sampling across the outcrop in the cliff area; checking and testing for strike extension, especially to the northwest; core drilling to extend and outline the deposit; and surveying for geological and engineering control and study.

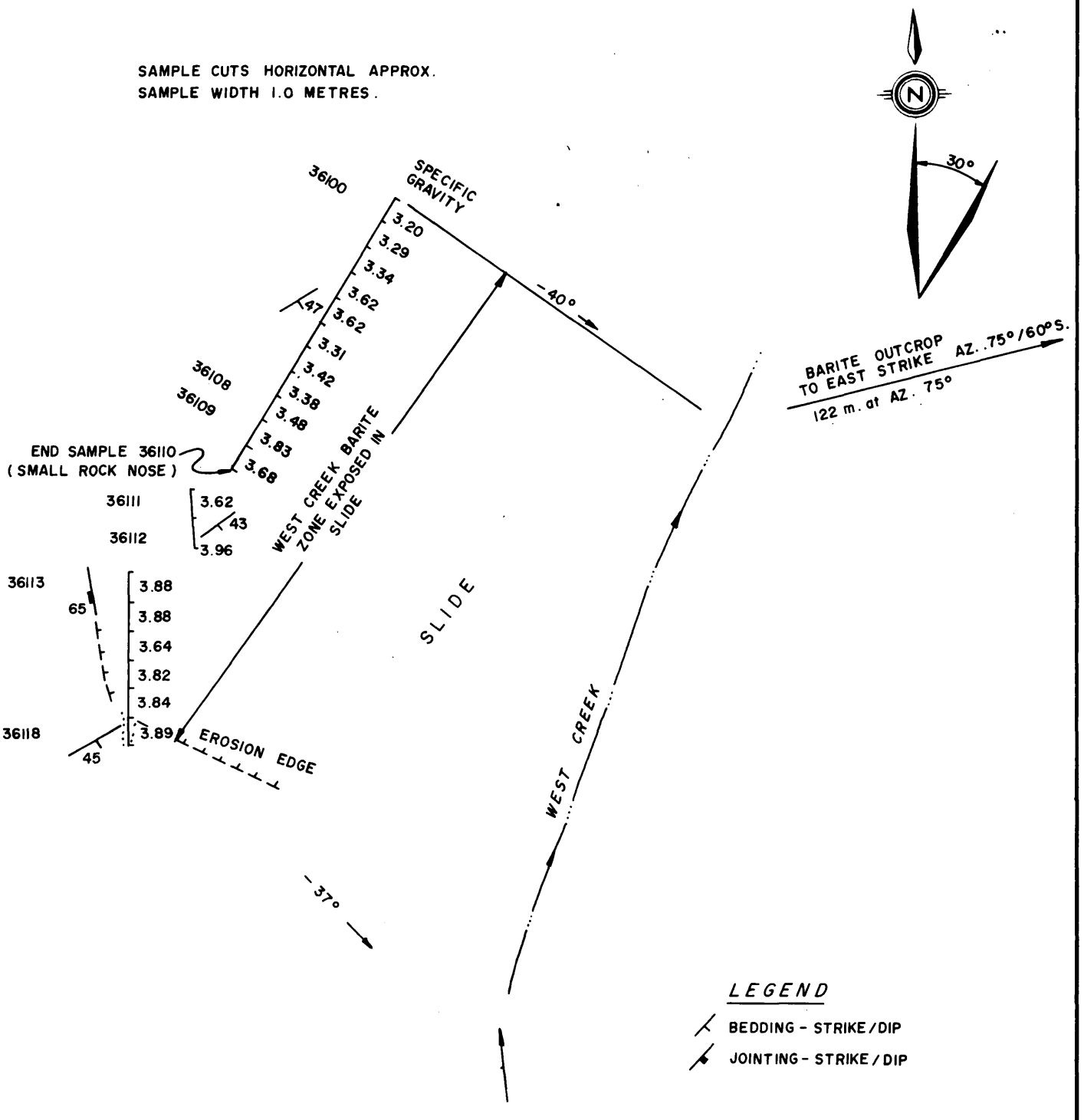
The West Creek Zone has the shortest access to the highway, a good water source and initially the lowest stripping ratio of any of the Rein deposits examined. It is estimated to be third in quality after the Ridge North 2 and the Clif Zones. This material would require beneficiation and barytocalcite may cause problems. The Shell reserve summary gives an indicated reserve of 447,000 tonnes with S.G. ranging between 3.9 and 4.1. This is from a zone Shell estimated as 190m strike length X 18 m average width X 30m depth.

The eastern section of this zone has indicated reserves of 195,000 tonnes (S.G.3.2-3.9) in a zone estimated by Shell as 350m strike length X 9m average length X 9m deep.

The short examination could not confirm the basis for the long strike projections resulting in the large tonnage estimates per outcrop.

The 1981 sampling is shown on Figure 5 and photo location on Photos 7 and 8. The zone is difficult to sample, being on a dip slope in a slide area.

Nineteen, one metre samples were taken in an approximately horizontal cut across the slide and oblique to the strike. This, while not completely satisfactory, appeared to be the only choice as a cut at right angles to the strike would have followed the dip and sampled across even less thickness of the barite bed. The zone is well suited for testing by diamond drilling if warranted.



SAMPLE	WIDTH (m)	S.G.	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36100-08	9.0	3.41	52.44	4.84	24.08
36109-18	10.0	3.80	64.54	8.06	13.02
	19.0	3.62	58.81	6.54	18.26

CONTROL BY CHAIN AND COMPASS

DOME PETROLEUM LIMITED

NORTHERN BARITE PROJECT

DEMPSTER HIGHWAY AREA, YUKON TERRITORY

64°42.5'N. 138°13.5'W.

PRELIMINARY SKETCH PLAN
WEST CREEK BARITE ZONE

Metres 0 5 10 Metres

Feet 0 10 20 30 Feet

Scale : 1:200

FEBRUARY, 1982 | N.T.S. 116 B/9 | FIG 5

WAYLAND S. READ P.ENG. Consulting Geologist Cobble Hill, B.C.

Sampling was conducted from the footwall towards the hangwall of the bed. The hangwall of the bed was not exposed so a total thickness can not be calculated. As shown by the following table, specific gravity, $BaSO_4$% and $BaCO_3$% increased from the footwall towards the hangwall, while SiO_2 decreased.

Sample averages, 1981.

Sample #		Measured S.G.	Calculated S.G.	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36100-36108	9.0	3.41	3.47	52.44	4.84	24.08
36109-36118	10.0	3.80	3.77	64.54	8.06	13.02
Avrge.	19.0	3.62	3.63	58.81	6.54	18.26

Sample numbers 36103 from the West Creek Zone assaying Measured specific gravity 3.62, Calculated S.G. 3.73, $BaSO_4$% 50.71, $BaCO_3$% 21.0. SiO2% 14.59 was examined by Scanning Electron Microscope at the metallurgical laboratory with the following results:

"There are large grains of barite and barytocalcite. Fairly large grains of calcite with smaller grains of silica are also present. It is anticipated that it will be difficult to produce a barite concentrate from ore of this type, due to barytocalcite. If a concentrate could be produced containing some barytocalcite, it could be upgraded by a weak hydrochloric acid leach." Under grain size, the description is: "Large areas of barite, some interspersed with barytocalcite and calcite. Calcite varies from micron size to coarse."

The sample tested contained much higher than average $BaCO_3$ and lower than average $BaSO_4$ as can be seen from the previous tables.

In 1977 Umex took samples across 28.0 feet (7.53 metres) of the zone believed to be between our 1981 sample area and West Creek.

A tabulation of their results follow:

Sample Number	Ba %	Length Feet	Average	Sample Number	Ba %	$BaSO_4$ %	$BaCO_3$ %	Sample Number	SG.	Ba %	$BaCO_4$ % (a)	$BaCO_3$ % (b)
BA1(Up)	50.0	4.0										
BA2	50.6	4.0	47.2%	Bulk 1	47.1	73.6	5.5					
BA3	44.6	4.0	14.0ft					Comp.				
BA4	40.0	4.0	Av.43.5%	Avrg.				A		3.82	43.9	63.6 9.3
			28.0 ft.	Bulk1,2	46.55	71.79	6.2					
BA5	43.3	4.0										
BA6	40.2	4.0	39.7%	Bulk 2	46.01	69.99	7.0					
BA7	35.6	4.0	14.0 ft.									
No Sample (O.B.)		3.0										
BA8(Lo)	12.8	1.0										

Note: Composite 'A' was made up of equal weights of rejects from samples Bulk 1 and Bulk 2 by Britton Research Ltd.

(a) Barite ($BaSO_4$%) calculated from HCl - insoluble Ba.

(b) Witherite ($BaCO_3$%) calculated from HCl - soluble Ba.

There is good correlation between average BA1-4 and Bulk 1, i.e. Ba% 47.2 and 47.1.

There is poor correlation between average of samples BA 4-7, and Bulk 2, i.e. Ba% 39.7 and 46.01.

Since there is close correlation between the average of samples BA 1-7 and Composite 'A', Ba% 43.5 compared to Ba% 43.9, may suggest an assay error on the high side for the Bulk 2 results.

Two other areas of the West Creek Zone were sampled by Umex in 1977 as follows:

Inferred tonnes 195,000. Strike 350m X 9m wide X 9m deep.

Sample Number	Ba %	Length Feet	Metres	Averages Ba %	Ft.	Metres	Ba. %	Ft.	Metres
BB1(Lower)	31.5	8.0	2.43	34.6	16.0	4.86			
BB2	37.7	8.0	2.43				39.12	26.0	7.90
BB3	46.3	4.5	1.37	46.35	10.0	3.04			
BB4(Upper)	46.4	5.5	1.67						

West Creek Showing -North Area- (North limb of anticline?)

Sample Number	Ba %	Length Feet	Length Metres
BC1	17.7	3.0	0.91
BC2	18.3	7.0	2.13
BC3	30.1	7.0	2.13

These latter two showings were not visited.

In the West Creek Zone, barite has been found outcropping over a large area with a large potential tonnage. Beneficiation is required and may be difficult due to contained barytocalcite.

CONCLUSIONS:

The Rein mineral claims, favourably located near the Dempster Highway in the Northern Yukon, cover five known barite mineralized areas, named from east to west the Cordilleran Zone, Clif Zone, Ridge Zone, Saddle Zone and West Creek Zone. During the 1981 sampling program, 118 samples weighing about one tonne were cut from channels across the Ridge-Main, North 1 and North 2 Zones, Clif Zone and North Creek Zone for analysis and possible metallurgical testing.

Within the rock units are calcareous shales, limestones and black siliceous argillites to cherts. Several barite mineralized beds contain a mixture of barium minerals in various combinations, some of which are unacceptable in drill mud. The main minerals found were barite ($BaSO_4$, S.G.4.5), witherite ($BaCO_3$, S.G.4.3) barytocalcite (Ba, $Ca(CO_3)_2$, S.G.3.65) calcite ($CaCO_3$, S.G. 2.72) and Silica (SiO_2, S.G.2.65).

All except barite are undesirable, although silica is acceptable as long as the other specifications are met.

The Rein Main zone, which received the bulk of past work, contained mostly witherite. The 1981 check sampling across a 12.5 metre sample width averaged Measured S.G. 3.80, Calculated S.G. 3.86, $BaSO_4$% 7.78, $BaCO_3$% 72.7, and SiO_2% 5.06.

A few metres to the footwall the Ridge North 2 Zone, for a width of 7.0 metres, averaged Measured S.G. 4.18, Calculated S.G. 4.25, $BaSO_4$% 88.90, $BaCO_3$% 2.82, SiO_2% 2.81, a complete reversal in the $BaSO_4$ - $BaCO_3$ ratio. The $BaCO_3$ decreases even more in this zone to the southeast.

Of the zones sampled, only one, the Ridge North 2 Zone, contained barite that would average specific gravity of 4.2 or better. The strike into the hillside and steep dip indicates that most potential reserves would require mining by underground methods. Beneficiation would be required to remove a low but persistent $BaCO_3$ content, some silica and wall rock dilution from mining. A metallurgical scoping test is being conducted at the writing of this report, but the results have not been received.

The Clif Zone from present data may contain about 400,000 tonnes of baritic rock that may be expanded with further drilling and trenching. Narrow bands of sedimentary rock and limestone, combined with a low but persistent $BaCO_3$ and SiO_2 content would make beneficiation necessary. Preliminary metallurgical testing to indicate if a product could be made at reasonable cost would be the next step preceding further exploration.

The West Creek Zone has considerable strike length to develop tonnage, is the closest to the highway, and has a good water supply.

An examination of one sample from this zone with a Scanning Electronic Microscope indicated a barytocalcite content and metallurgical problems. This would require more metallurgical and possibly field checking because of its favourable access.

The stratigraphic relationships of the more favourable beds to each other and their strike projections does not appear to have been attempted. This could help define exploration target for barite beds of higher quality that may presently be overburden-covered.

Involved would be detailed geological field work and trenching in overburden covered target zones, or exploratory drilling. The cost of this work compared to the value of the product would need to be closely examined.

CERTIFICATE OF QUALIFICATIONS

I, Wayland Stuart Read, do hereby certify that:

1. I am a practising Mining Geologist and my address is Cherry Point Road, Cobble Hill, British Columbia.

2. I am a graduate in Geology from Acadia University, Wolfville, Nova Scotia, and have been granted the degree of Bachelor of Science in Geology, and have engaged in practising my profession for the past twenty-three years.

3. I am a member of the Association of Professional Engineers of British Columbia, and the Yukon Territory, a Fellow of the Geological Association of Canada, and a Member of the Canadian Institute of Mining and Metallurgy.

4. This report is based on my personal examination and work on the property on 6-10 September 1981, inclusive, as well as broad experience in mineral exploration, development and production in the Yukon and Northwest Territories over the past twenty years.

Respectfully submitted,

W. S. Read

Wayland S. Read, B.Sc., P.Eng.,

Consulting Geologist

Cherry Point Road,
Cobble Hill, B.C.

February 1982.

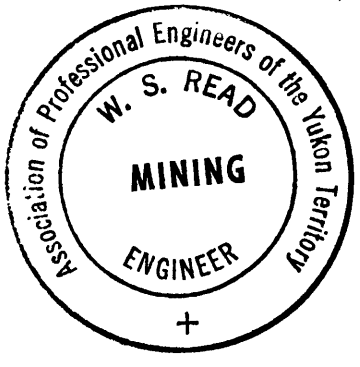


TABLE 1 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge Main Zone Road "E"

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36001	0.5	3.59	3.55	15.64	49.5	4.41
36002	0.5	3.66	3.93	15.26	68.6	4.90
36003	0.5	3.87	3.89	8.73	73.6	4.92
36004	0.5	3.78	3.84	5.92	74.2	3.57
36005	0.5	3.92	3.96	2.07	84.1	6.33
36006	0.5	3.83	3.96	31.19	52.6	6.85
36007	0.5	3.59	3.59	4.99	62.9	2.20
36008	0.5	3.67	3.64	4.34	66.0	5.03
36009	0.5	3.66	3.61	3.53	65.7	3.79
36010	0.5	3.81	3.78	0.99	76.7	5.22
36011	0.5	3.89	3.94	3.94	80.9	8.56
36012	0.5	3.75	3.81	1.21	78.2	9.13
36013	0.5	3.93	4.05	8.38	80.9	5.45
36014	0.5	3.90	4.01	11.20	76.6	5.73
36015	0.5	3.99	4.09	4.90	86.5	3.68
36016	0.5	3.91	4.00	6.77	80.8	4.26
36017	0.5	3.95	4.03	4.46	84.4	2.95
36018	0.5	4.07	4.10	16.97	74.1	2.67
36019	0.5	3.93	4.10	8.83	82.6	3.06
36020	0.5	3.85	4.03	9.12	79.3	2.74

TABLE 2 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge Main Zone Road "E" (Cont.)

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36021	0.5	3.76	3.83	9.04	70.8	3.06
36022	0.5	3.78	3.81	0.50	78.7	4.54
36023	0.5	3.52	3.46	0.44	60.8	2.48
36024	0.5	3.62	3.66	7.62	63.7	6.72
36025	0.5	3.69	3.72	8.40	66.1	14.29

TABLE 3 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge North 1 Zone Road "E"

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36026	0.5	3.68	3.75	33.15	41.0	11.02
36027	0.5	3.63	3.63	16.60	52.7	3.74
36028	0.5	3.86	3.90	45.33	35.1	6.37
36029	0.5	3.49	3.53	33.40	29.2	8.71
36030	0.5	3.67	3.63	30.60	37.8	17.97
36031	0.5	3.38	3.53	35.57	27.4	4.81

TABLE 4 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge North 2 Zone Road "E"

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36032	0.5	3.73	3.72	66.67	3.32	22.31
36033	0.5	4.00	4.06	83.25	1.37	9.03
36034	0.5	4.09	4.15	87.04	0.99	5.99
36035	0.5	4.08	4.14	77.10	11.2	2.74
36036	0.5	3.80	3.84	47.19	30.3	1.09
36037	0.5	4.17	4.30	92.13	1.19	2.08
36038	0.5	4.10	4.10	85.12	1.02	8.11
36039	0.5	4.30	4.30	90.83	2.74	1.80
36040	0.5	4.29	4.33	93.69	0.86	1.65
36041	0.5	4.29	4.35	94.18	1.09	1.54
36042	0.5	4.26	4.33	93.78	0.78	2.29
36043	0.5	4.20	4.32	91.70	2.44	2.27
36044	0.5	4.10	4.26	90.82	1.25	3.44
36045	0.5	4.19	4.29	92.06	0.83	3.40
36046	0.5	4.21	4.28	92.11	0.62	2.85
36047	0.5	4.18	4.29	91.74	1.15	2.95
36048	0.5	3.75	3.79	50.97	23.9	1.95
36049	0.5	4.23	4.24	90.46	0.91	3.02
36050	0.5	4.25	4.36	94.67	0.69	2.05
36051	0.5	4.11	4.17	84.94	3.88	3.12
36052	0.5	4.11	4.19	86.36	3.10	5.28

TABLE 5 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge North 2 Zone Road "E" (Cont.)

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36053	0.5	3.77	3.85	72.84	3.28	18.82
36054	0.5	3.81	3.85	73.66	2.33	19.25
36055	0.5	3.84	3.93	68.09	12.1	12.62
36056	0.5	3.73	3.86	59.12	18.2	15.96
36057	0.5	2.80	2.87	14.76	4.41	7.27

TABLE 6 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge North 2 Zone "F" Road

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36058	1.5	3.29	3.35	48.51	2.47	27.06
36059	1.0	3.70	3.81	70.65	3.71	7.25
36060	1.0	4.05	4.11	84.10	2.27	4.43
36061	1.0	4.11	4.22	90.06	0.65	3.74
36062	1.0	4.14	4.31	93.16	0.66	2.55
36063	1.0	4.16	4.30	92.57	0.99	2.65
36064	1.0	4.14	4.32	93.47	0.70	2.27
36065	1.0	4.17	4.32	93.52	0.69	2.08

TABLE 7 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Ridge North 2 Zone - Extension

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36066	0.5	4.27	4.41	96.44	0.56	0.98
36067	0.5	4.23	4.33	93.74	0.62	1.37
36068	0.5	4.20	4.38	95.58	0.68	1.37
36069	0.5	4.21	4.38	95.60	0.66	1.54
36070	0.5	4.26	4.40	96.00	0.82	2.12
36071	0.5	4.19	4.27	90.75	1.57	3.32
36072	0.5	4.35	4.33	93.58	0.92	2.05
36073	0.6	4.24	4.30	92.47	0.95	2.44

TABLE 8 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Cliff Zone

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36074	0.6	3.74	3.78	65.90	7.33	20.73
36075	0.5	3.86	3.89	76.47	0.93	16.81
36076	0.5	3.70	3.74	69.49	1.52	12.88
36077	0.5	3.47	3.40	51.52	2.13	14.42
36078	0.5	3.36	3.40	51.61	2.11	6.82
36079	1.0	3.85	3.94	78.62	1.25	14.65
36080	0.5	3.86	3.99	80.87	0.70	15.44
36081	0.5	3.88	4.01	81.75	0.75	11.57
36082	0.5	3.82	3.95	79.40	0.59	13.31
36083	0.5	3.83	3.92	78.13	0.72	14.78
36084	0.5	4.10	4.15	87.43	0.70	7.46
36085	0.5	4.06	4.19	88.82	0.80	6.63
36086	0.5	4.22	4.34	94.01	0.76	3.21
36089	0.5	4.17	4.30	92.79	0.70	4.79
36088	0.5	3.87	3.92	78.13	0.85	19.08
36089	0.5	4.12	4.18	88.34	0.78	6.37
36090	0.5	4.10	4.15	86.65	1.24	4.98

TABLE 9 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: Cliff Zone (Cont.)

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36091	0.5	3.97	4.05	83.72	0.52	12.84
36092	0.5	4.12	4.19	88.69	0.62	5.82
36093	0.5	4.16	4.15	87.03	0.86	5.82
36094	0.5	3.82	3.81	69.30	4.86	5.54
36095	0.5	3.77	3.84	71.72	4.07	7.78
36096	0.5	4.20	4.27	91.61	0.78	5.01
36097	0.5	4.16	4.27	91.36	0.83	3.59
36098	0.5	4.20	4.22	89.78	0.80	5.43
36099	0.5	3.69	3.73	60.34	11.0	19.81

TABLE 10 FILE 3430

SAMPLE DESCRIPTION: Rein Barite NTS 116 B/9

LOCATION: West Creek Zone

Sample Number	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
36100	1.0	3.20	3.31	47.39	0.96	33.76
36101	1.0	3.29	3.39	52.26	0.82	32.34
36102	1.0	3.34	3.30	44.93	3.06	21.58
36103	1.0	3.62	3.73	50.71	21.0	14.59
36104	1.0	3.62	3.63	61.25	4.64	18.93
36105	1.0	3.31	3.52	51.49	8.98	25.07
36106	1.0	3.42	3.70	68.02	1.01	28.21
36107	1.0	3.38	3.14	36.75	1.49	13.01
36108	1.0	3.48	3.53	59.16	1.64	29.20
36109	1.0	3.83	3.80	72.72	0.79	15.81
36110	1.0	3.68	3.64	64.77	1.39	13.80
36111	1.0	3.62	3.55	60.66	0.93	14.82
36112	1.0	3.96	3.90	77.44	0.62	14.20
36113	1.0	3.88	3.83	60.98	15.1	15.96
36114	1.0	3.88	3.90	52.00	27.6	8.11
36115	1.0	3.64	3.60	45.85	19.7	9.93
36116	1.0	3.82	3.70	68.14	0.82	11.40
36117	1.0	3.84	3.90	76.87	1.37	14.03
36118	1.0	3.89	3.89	65.95	12.3	12.17

Oil boom may elude Yukon companies

By Anne Templeman-Kluit

WHITEHORSE

THE DEMPSTER Highway, Canada's only land link between Yukon and the Arctic coast, could close within three years, dashing hopes of Yukon transportation companies of sharing in the Beaufort Sea oil boom.

The 700-kilometre Dempster, officially opened in 1979, begins slightly south of Dawson City in Yukon and runs to Inuvik, N.W.T., from where there is 240-km ice road to Tuktoyaktuk on the Beaufort coast. The Dempster is busiest in winter, when two ice bridges are possible on the Peel and Mackenzie rivers south of Inuvik, and provides a cost-viable alternative to expensive air-freight service in the territories.

However, the highway requires regular and heavy maintenance and has been steadily deteriorating as the shifting permafrost on which it is built eats away at the road shoulders, causing serious drainage problems and reducing many sections to single-lane traffic.

Despite federal government assurances, nothing has been done, says John MacLeod, corporate adviser to Points North Transportation, an Inuvik-based company with a large terminal in Whitehorse. Points North operates over the Inuvik-Tuktoyaktuk ice road from mid-January to mid-April.

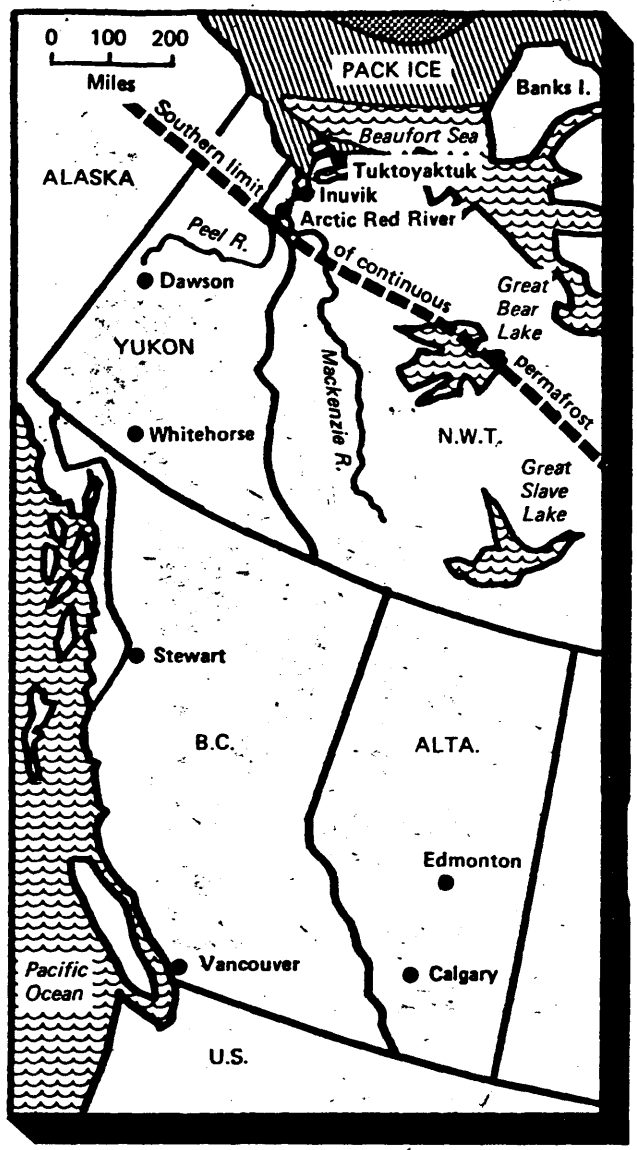
Faster return trip

Bill Farmer, owner of the company, says the return trip between the two communities takes about eight hours by truck and costs about $650; but by comparison, barging supplies during the summer months up the Mackenzie River costs $4,000 for a load of four containers and takes two days.

Points North relies heavily on Dome Petroleum, which accounts for 50% of its business. Fifteen trucks a week leave Edmonton for Inuvik "when we're busy," Farmer says. "But I do get a little nervous sometimes," since any problems in the petroleum company's Beaufort Sea program would affect Points North.

The company also serves the four Hudson's Bay Co. outlets, and 224 other businesses in the Mackenzie River delta.

"The weak link on the Dempster is the ferry," Farmer says. The ferry on the Mackenzie River at the community of Arctic Red River, for example, takes three trucks in one crossing, but the trucks must roll on, and reverse off — a dangerous and time-consuming operation, with steep and often slippery landing areas. The ferries operate 12 hours a day, and if a driver misses the last ferry he has no choice but to wait until morning.



Also, the Dempster Highway is closed for several months each year when ice makes ferry crossings hazardous, but is not strong enough to support an ice bridge.

Consultant MacLeod worries about the capacity of the highway. He believes it has a limit of 50,000 tons annually; in 1981, 20,000 tons of freight were trucked on it. "If Gulf Canada and Esso Canada start operating (in the Beaufort) in a big way, the Dempster could be going at full capacity in two or three years — if it's still open," he says.

Arrow Transport, a Vancouver-based company opened a

TRUCKING IN THE WEST

Whitehorse office last April. Four years ago it tried to bring goods to Yukon by barging loads from Vancouver to Stewart in Northern British Columbia, and trucking the freight from there to Whitehorse. The idea foundered from the beginning: "We had scheduling problems with the barges (between Vancouver and Stewart) and the trucks," explains Alan Eng, manager of the company's customized freight service.

Arrow Transport admits that the expected Alaska gas pipeline boom, as distant as ever, "figured quite heavily" in its plans for Yukon, but Points North's Farmer says, "if it ever happens, it'll only be for a few years, and then we'll be back where we started."

Permit problems

Yukon truckers also face a problem with permits. Until last spring, any outside trucker coming into Yukon could buy a permit at the boundary for $50, but Yukon drivers were allowed only six permits per year outside the territories before having to apply for trucking authority. Permits into the Yukon now cost between $250 and $350 (depending on the weight of the vehicle), but the number allowed per trucker remains unlimited, while Yukon companies continue to be restricted to the six-permit limit for uses outside the territories.

SCHEDULE

QUALITY CONTROL INSPECTION OF BULK BARITE

Specifications

1.1 Barite physical and chemical requirements as per A.P.I. specification 13 A, section 2. (API specifications attached)

a) Specific gravity — 4.20 Minimum

b) Soluble alkaline earth metals as calcium — 250 P.P.M. Maximum

c) Wet Screen Analysis:

Residue on U.S. sieve No. 200	3.0 % Maximum
Residue on U.S. sieve No. 325	5.0 % Minimum

Cannot have less than 5%

NOTE: Sieve designation as per A.S.T.M. E 11 "Sieves for Testing Purposes"

d) pH determination, API RP 13 B, section 6, (reported for reference only).

1.2 Analysis for trace metals by total acid digestion for the following elements:

Mercury	1 P.P.M. Maximum
Copper	50 P.P.M. Maximum
Lead	10 P.P.M. Maximum
Cadmium	1.5 P.P.M. Maximum
Chromium	5 P.P.M. Maximum
Nickel	10 P.P.M. Maximum
Zinc	5 P.P.M. Maximum
Cobalt	5 P.P.M. Maximum
Arsenic	1 P.P.M. Maximum
Iron	~~1000 P.P.M. Maximum~~

SUMMARY OF INDICATED & INFERRED RESERVES
REIN BARITE PROSPECT

Zone	Drill Indicated Reserves (Tonnes)	Avg. S.G.*	Indicated +4.2 S.G. Reserves (Tonnes)	% $BaSO_4$/ % $BaCO_3$ Ratio	Inferred Reserves (Tonnes)	Total Reserves	Strike Distance	Avg. Width	Maximum Vertical Depth of Inferred Reserves
West Creek Zone									
West	-	3.9-4.1	-	?	447,000	447,000	190 m	18 m	30 m
East	-	3.2-3.9	-	?	195,000	195,000	350 m	9 m	9 m
Saddle Zone	-	3.6-4.0	-	?	226,800	226,800	244 m	15 m	0.5 m
Ridge Zone									
Main	71,561	4.08	-	Low	28,431	99,992	115 m	7 m	36 m
North 1	27,935	4.06	-	Low	864	28,799	60 m	3 m	44 m
North 2	10,417	4.24	10,417	High	42,042	52,459	60 m	8 m	35 m
North 3	2,722	4.20	2,722	High	44,064	46,786	60 m	6 m	35 m
Cliff Zone	108,700	4.09	28,000	High	178,860 +800,000	1,087,560	60 m 200 m	10-15 m	65 m
	221,335	4.09	41,139		1,963,000	2,184,300			

* Average Specific Gravity

SHEET 116B-9

FIG. 6

NOTICE

THIS MAP IS ISSUED AS A PRELIMINARY GUIDE FOR WHICH THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT WILL ACCEPT NO RESPONSIBILITY FOR ANY ERRORS, INACCURACIES OR OMISSIONS WHATSOEVER.

SCALE: ½ MILE To 1 INCH

F.T. 1500 0 1500 3000 4500 6000 7500 9000 10500 F.T.

inches 0 1 2
centimetres 0 1 2 3 4 5

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will change if the image is resized as the image, therefore it can be used as a reference for the original size.

MAGNETIC NORTH 33° 10'E

116B-15	116B-16	116A-13
116B-10	116B-9	116A-12
116B-7	116B-8	116A-5

WHITEHORSE, Y.T. 8 FEB. 80 10 Jan. 72 19 SEPT. 81 3 SEPT. 81 7 JAN 81 11 AUG 80 8 FEB. 80

138°30' 64° 45' 138°00' 64° 45'

LOMOND CREEK

REIN

TUNDRA

GRAPS

ST. BRIDGET

TAK

RIKU

SAID TO BE BOUNDARY BETWEEN DAWSON & MAYO MINING DISTRICTS

DEMPSTER HIGHWAY

NORTH PASS FORK

DISTRICT DISTRICT

DAWSON MINING MAYO MINING

WEST HART R

4000 4500 5000 5500 6000 6500

64° 30' 138°30' 138°00'

116B-9

PROVISIONAL MAP

116 B/9

CANADA

1:50,000

Joins 116 B/16

EDITION 1

CARTE PROVISOIRE

116 B/9

138°30' — 138°00' — 64°45' — 64°30'

620000m. E. — 642000m. E. — 7182000m. N. — 7158000m. N.

333000m. E. — 622000m. E. — 643000m. E. — 7157000m. N.

Joins 116 B/10 — Joins 116 A/12 — Joins 116 B/8

Refer to this map as: 116 B/9 EDITION 1 MCE SERIES A 722

RIDGE ZONE

GLIK ZONE

WEST CREEK ZONE

O G I L V I E

M O U N T A I N S

G L O U D Y

R A N G E

NORTH FORK PASS

BM 3531

BM 3780

BM 4229

BM 3930

F B

T.N.

2°29' or 44 Mils

31°03 or 552 Mils

Grid North

Magnetic North

Use diagram only to obtain numerical values.
APPROXIMATE MEAN DECLINATION 1967
FOR CENTRE OF MAP
Annual change decreasing 4.0'

ONE THOUSAND METRE
UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 7

GRID ZONE DESIGNATION	100,000 M. SQUARE IDENTIFICATION
7 W	F B

EXAMPLE OF METHOD USED TO GIVE A REFERENCE TO NEAREST 100 METRES

THE FOLLOWING GRID REFERENCE IS A SAMPLE ONLY AND DOES NOT REFER TO A POINT ON THIS MAP

REFERENCE POINT	CHURCH (as above)
EASTING: Read number on grid line immediately to left of point	97
Estimate tenths of a square from thin line eastward to point	5
	975
NORTHING: Read number on grid line immediately below point	98
Estimate tenths of a square from thin line northward to point	4
	984

EXAMPLE MILITARY GRID REFERENCE 975984

Nearest similar grid reference 100,000 metres (about 63 miles)

BROWN NUMBERED TICKS INDICATE THE 1000 METRE U.T.M. GRID ZONE 8

inches 0 1 2

centimetres 0 1 2 3 4 5

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

CONVERSION SCALE FOR ELEVATIONS

Metres: -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100

Feet: -100 -50 0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

Roads:

	2 lanes or more / 2 voies ou plus	less than 2 lanes / moins de 2 voies
loose or stabilized surface, all weather ... gravier aggloméré, toute saison ...		
loose surface, dry weather and unclassified streets ... de gravier, temps sec et rues hors classe ...		

Scale 1:50,000 Échelle

Miles 1 — 0 — 1 — 2 — 3 Milles

Metres 1000 — 0 — 1000 — 2000 — 3000 — 4000 Mètres

Yards 1000 — 0 — 1000 — 2000 — 3000 — 4000 Verges

This Provisional Map is equivalent to a standard map in accuracy of content.

Some names on this map are not yet official.

Corrections or additions are invited by the Surveys and Mapping Branch.

CONTOUR INTERVAL 100 FEET

Elevations in Feet above Mean Sea Level

North American Datum 1927

Transverse Mercator Projection

Cette carte provisoire équivaut une carte régulière au point de vue précision de l'information.

Certains noms inscrits sur cette carte ne sont pas encore officiels. La Direction des levés et de la cartographie saurait gré au public de lui signaler corrections et additions.

ÉQUIDISTANCE DES COURBES 100 PIEDS

Élévations en pieds au-dessus du niveau moyen de la mer

Système de référence géodésique nord-américain, 1927.

Projection transverse de Mercator

Produced, 1968, by the SURVEYS AND MAPPING BRANCH, DEPARTMENT OF ENERGY, MINES AND RESOURCES, from aerial photographs taken in 1951 and 1963. Field surveys 1964-65. Printed 1970.

Copies may be obtained from the Map Distribution Office, Department of Energy, Mines and Resources, Ottawa.

Établie en 1968, par la DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, d'après des photographies aériennes prises en 1951 et 1963. Levés sur le terrain en 1964-65. Imprimée en 1970.

Ces cartes sont en vente au Bureau de distribution des cartes, ministère de l'Énergie, des Mines et des Ressources, Ottawa.

116 B/9
EDITION 1

FIG. 7

IN METERS

TRUE NORTH (GRID NORTH)

MAGNETIC NORTH

35° 32'

APPROXIMATE MEAN DECLINATION 1967
Annual change decreasing 4' 0"

NOTE:

HORIZONTAL GRID ARBITRARILY ORIGINATES AT SURVEY STATION BL-1 (ASSUMED 10,000.00 N, 10,000.00 E). GRID IS ORIENTED TRUE NORTH AS DETERMINED BY MULTIPLE COMPASS SIGHTINGS. ALL ELEVATIONS ARE REFERENCED TO THE 4640 PEAK, ASSUMED TO HAVE AN ELEVATION OF 4640 FEET OR 1414.29 METERS

EXPLANATION

- RRA-1 ELEV 1352.92m — Drill Hole Location / Elevation
- BL-1 ELEV 1377.12m — Primary Survey Station / Elevation
- TP-1 ELEV 1337.72m — Temporary Survey Station / Elevation
- ELEV 1272.97m — Road Intersection and/or Elevation Reference
- REIN 79 POST #1 — Claim Post
- 20 Meter Grid Mark
- MP-G-2 ELEV 1272.87m — Mapping Point / Elevation
- Start / End Sample Line
- Sample Line / Specific Gravity of Samples
- 80 — Strike / Dip of Barite Contact

Ridge Area

N-1 ELEV 1373.23m

BL-1 ELEV 1377.12m

RRA-1 ELEV 1352.92m

RRA-2 ELEV 1352.74m

RRB-1 ELEV 1336.81m

RRB-2 ELEV 1337.02m

RRB-3 ELEV 1336.78m

RRB-4 ELEV 1336.82m

MP-B-1 ELEV 1337.32m

MP-B-2 ELEV 1337.22m

RRC-1 ELEV 1318.45m

RRC-2 ELEV 1318.17m

MP-C-1 ELEV 1319.05m

MP-C-2 ELEV 1318.68m

RRD-1 ELEV 1305.80m

RRD-2 ELEV 1305.93m

RRD-3 ELEV 1305.82m

RRD-4 ELEV 1307.01m

MP-D-1

RRE-1 ELEV 1294.33m

RRE-2 ELEV 1294.16m

RRE-3 ELEV 1294.21m

MP-E-1 ELEV 1294.4m

MP-E-2 ELEV 1294.4m

MP-E-3 ELEV 1299.14m

MP-E-4 ELEV 1294.38m

RRF-1 ELEV 1284.74m

RRF-2 ELEV 1284.74m

MP-F-1 ELEV 1287.36m

MP-F-2 ELEV 1284.31m

MP-F-3 ELEV 1284.72m

MP-F-4 ELEV 1284.72m

MP-G-1 ELEV 1277.4m

MP-G-2 ELEV 1272.87m

ELEV 1324.98m

ELEV 1297.08

ELEV 1338.76m

ELEV 1319.64m

ELEV 1309.81m

ELEV 1297.52m

ELEV 1292.28m

ELEV 1272.97m

Start Line 4, Rd D ELEV 1308.87m

Start Line 3, Rd D ELEV 1307.25m

Start Line 2, Rd D

End Line 1, Rd D

Start Line 2, Rd E ELEV 1293.09m

End Line 1, Rd E ELEV 1294.59m

Start Line 2, Rd F ELEV 1285.50m

End Line 1, Rd F ELEV 1284.87m

DRILL HOLE RRE-1 TO COMMON CORNER REIN 9,10,11,12 AM221, 212.96 METERS. SEE 1/1000 BASE MAP

SECTION REFERENCE LINE

NO BARITE VISIBLE AT SURFACE

BARITE VISIBLE AT SURFACE

INACCESSIBLE TO SAMPLING

SAMPLE LINE A-1 BEARING N45E

SAMPLE LINE B-1 BEARING N45E

SAMPLE LINE C-1 BEARING N45E

SAMPLE LINE C-2 BEARING N45E

SAMPLE LINE D-1 BEARING N45E

SAMPLE LINE D-2 BEARING N45E

SAMPLE LINE D-3 BEARING N45E

SAMPLE LINE E-1 BEARING N45E

SAMPLE LINE E-2 BEARING N45E

SAMPLE LINE F-1 BEARING N45E

SAMPLE LINE F-2 BEARING N45E

SAMPLE LINE G-1 BEARING N45E

4.09 S.G.

4.04 S.G.

4.03 S.G.

3.93 S.G.

4.20 S.G.

4.27 S.G.

4.29 S.G.

4.02 S.G.

RIDGE MAIN ZONE

RIDGE NORTH 1 ZONE

RIDGE NORTH 2 ZONE

RIDGE NORTH 3 ZONE

ROAD A

ROAD B

ROAD C

ROAD D

ROAD E

ROAD F

ROAD G

SECTION A

SECTION B

SECTION C

SECTION D

SECTION E

SECTION F

SECTION G

NORTH LINE - REIN 93

EAST LINE - REIN 11
WEST LINE - REIN 9

10,060 N

10,040 N

10,020 N

10,000 N

9,980 N

9,960 N

9,940 N

9,920 N

9,900 N

10,000 E. IN METERS

10,020 E.

10,040 E.

10,060 E.

10,080 E.

10,100 E.

10,120 E.

10,140 E.

10,160 E.

10,180 E

10,200 E. IN METERS

1981 SAMPLE DATA

Sample No	Sample Width (m)	Measured Specific Gravity	Calc. Specific Gravity	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
RIDGE NORTH 2 ZONE ROAD "E"						
36032	0.5	3.73	3.72	66.67	3.52	22.31
36033	0.5	4.00	4.06	83.25	1.37	9.03
36034	0.5	4.09	4.06	83.25	1.37	9.03
36035	0.5	4.08	4.14	77.10	11.2	2.74
36036	0.5	3.80	3.84	47.19	30.3	1.09
36037	0.5	4.17	4.30	92.13	1.13	2.08
36038	0.5	4.00	4.11	80.83	10.28	1.80
36039	0.5	4.30	4.30	90.83	2.76	1.93
36040	0.5	4.29	4.33	93.69	0.86	1.65
36041	0.5	4.09	4.05	94.18	1.09	0.54
36042	0.5	4.26	4.33	93.78	0.78	2.29
36043	0.5	4.00	4.04	87.04	0.99	5.99
36044	0.5	4.06	4.06	87.04	0.99	5.99
36045	0.5	4.09	4.29	92.06	0.83	3.40
36046	0.5	4.01	4.28	92.31	0.62	2.85
36047	0.5	4.18	4.23	91.74	1.05	2.95
36048	0.5	3.75	3.79	50.97	23.9	1.95
36049	0.5	4.23	4.24	90.46	0.91	3.02
36050	0.5	4.11	4.17	89.11	0.96	3.12
36051	0.5	4.11	4.07	84.54	3.88	3.12
36052	0.5	4.11	4.19	86.36	3.10	5.28
36053	0.5	3.77	3.85	72.84	3.28	18.82
36054	0.5	3.81	3.93	73.66	2.33	19.23
36055	0.5	3.84	3.93	68.09	12.1	12.92
36056	0.5	3.73	3.86	59.12	18.2	15.96
36057	0.5	2.80	2.87	14.76	4.41	7.27
RIDGE NORTH 1 ZONE ROAD "E"						
36026	0.5	3.68	3.75	33.15	41.0	11.02
36027	0.5	3.63	3.63	16.60	52.7	3.76
36028	0.5	3.86	3.90	45.33	35.1	6.37
36029	0.5	3.69	3.53	33.40	29.2	8.71
36030	0.5	3.67	3.63	30.60	37.8	17.97
36031	0.5	3.58	3.53	39.57	27.4	4.81
RIDGE NORTH 2 ZONE ROAD "F"						
36058	1.5	3.29	3.35	48.51	2.47	27.06
36059	1.0	3.70	3.81	70.65	3.71	7.23
36060	1.0	4.05	4.02	94.00	2.67	1.43
36061	1.0	4.11	4.22	96.62	0.85	1.96
36062	1.0	4.14	4.31	95.16	0.66	2.55
36063	1.0	4.16	4.30	92.57	0.99	2.85
36064	1.0	4.14	4.32	93.47	0.70	2.27
36065	1.0	4.17	4.32	93.52	0.69	2.08
RIDGE NORTH 2 ZONE - EXTENSION						
36066	0.5	4.27	4.41	96.44	0.56	0.98
36067	0.5	4.23	4.33	93.74	0.82	1.37
36068	0.5	4.20	4.34	95.58	0.68	1.37
36069	0.5	4.21	4.38	95.60	0.68	1.54
36070	0.5	4.09	4.40	96.00	0.82	2.12
36071	0.5	4.19	4.27	90.75	1.57	3.32
36072	0.6	4.36	4.33	93.56	0.92	2.04
36073	0.6	4.24	4.30	92.47	0.95	2.44
RIDGE MAIN ZONE ROAD "E"						
36001	0.5	3.59	3.55	15.64	49.5	4.41
36002	0.5	3.66	3.93	15.26	68.6	4.90
36003	0.5	3.87	3.89	8.73	73.6	4.92
36004	0.5	3.78	3.84	5.07	74.2	5.57
36005	0.5	3.93	3.96	9.09	84.1	3.57
36006	0.5	3.93	3.96	11.19	82.6	4.85
36007	0.5	3.59	3.59	4.89	82.9	7.20
36008	0.5	3.67	3.64	4.34	66.0	5.03
36009	0.5	3.81	3.74	3.98	78.2	5.22
36010	0.5	3.81	3.76	2.99	19.7	5.22
36011	0.5	3.89	3.94	3.94	80.9	8.56
36012	0.5	3.75	3.85	1.21	78.2	9.13
36013	0.5	3.93	4.05	8.38	80.9	5.45
36014	0.5	3.99	4.09	4.90	80.5	3.68
36015	0.5	3.99	4.09	4.90	80.5	3.68
36016	0.5	3.91	4.00	6.77	80.8	4.26
36017	0.5	3.93	4.03	4.46	84.4	2.95
36018	0.5	4.07	4.10	16.97	74.1	2.67
36019	0.5	3.97	4.03	9.12	79.3	3.74
36020	0.5	3.83	4.03	9.12	79.3	3.74
36021	0.5	3.76	3.83	9.04	70.8	3.06
36022	0.5	3.79	3.81	0.50	78.7	4.54
36023	0.5	3.52	3.46	0.44	60.8	2.48
36024	0.5	3.62	3.96	7.62	63.7	6.72
36025	0.5	3.69	3.72	8.40	66.1	14.29

	Sample Width (m)	Measured S.G.	Calc. S.G.	$BaSO_4$ %	$BaCO_3$ %	SiO_2 %
WEIGHTED AVERAGES	2.0	3.99	4.05	73.65	10.97	4.71
WEIGHTED AVERAGES	7.0	4.18	4.25	88.90	2.82	2.81
WEIGHTED AVERAGES	1.0	4.11	4.18	85.65	3.49	4.20
WEIGHTED AVERAGES	1.0	3.79	3.85	73.25	2.81	19.04
WEIGHTED AVERAGES	1.0	3.79	4.08	63.61	15.15	14.29
WEIGHTED AVERAGES	6.0	4.13	4.26	91.15	0.99	2.95
WEIGHTED AVERAGES	4.1	4.24	4.35	94.23	0.85	1.91

FIGURE 9

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199F
YUKON TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
TRENCH & DRILL PLAN
MAYO MINING DIVISION, Y.T.

AUTHOR G. MOFFAT | SCALE 1:200 | DRAWING No.:
DATE APRIL 1981 | REVISED: | ENCLOSURE No.:
To Accompany REPORT FROM 1980 MILCHEM REPORTS

DOME PETROLEUM LIMITED

NORTHERN BARITE PROJECT

REIN BARITE PROSPECT
RIDGE ZONE
MAYO M.D. YUKON TERRITORY

64° 43' N.
138° 09' 5" W

NTS 116 B/9

TRENCH & DRILL PLAN
1981 CHECK SAMPLING DATA

Feet 20 10 0 20 40
Metres 5 0 5 10 M

DATE: FEBRUARY, 1982 | SCALE: 1:200 | REVISED: | FIGURE NO. 10

WAYLAND S. READ P.Eng., Consulting Geologist, Cobble Hill, B.C.

Yukon Geological Survey

The reference grids for this base added by the Yukon Geological Survey. Other details on the base are as shown on the original base. Can be used as a reference for the original data.

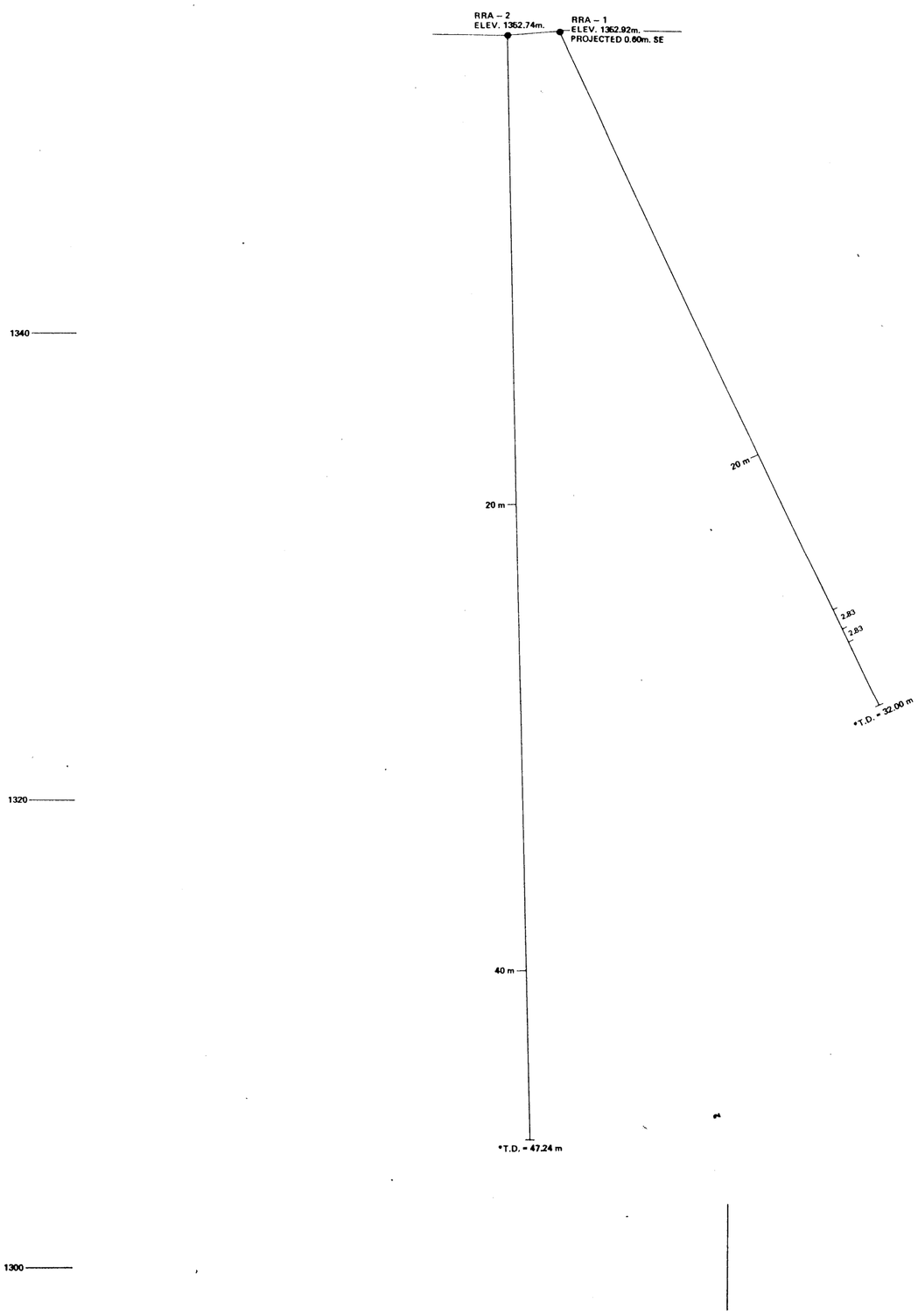
BEARING OF CROSS SECTION N 24° E

SECTION REFERENCE LINE

SOUTH

NORTH

ELEVATION (m)



SKEW HOLE TO SECTION PROJECTION DATA

DRILL HOLE	SEGMENT	TRUE INCLINATION	TRUE BEARING	APPARENT INCLINATION	APPARENT LENGTH	SCALE COMPRESSION FACTOR
RRA-1	0-32.00	64N	N 30E	64° 07'	31.97	0.9989
RRA-2	0-47.24	88N	N 34E	88° 02'	47.24	1.0000

NOTES:

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. *APPARENT LENGTH
4. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS)
5. TONNAGE & GRADE ESTIMATES BASED UPON MILCHEM INCORP (9179-80) DRILL DATA
6. **SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

ORIGINAL DATA COMPILED BY MILCHEM

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199 F
YUKON - TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
DRILL SECTION A
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 10

AUTHOR: Q. MOFFAT	SCALE: 1:100	DRAWING No.
DATE: APRIL 1981	REVISED:	ENCLOSURE No.:
To Accompany		

TO ACCOMPANY REPORT BY W. S. READ, P. ENG., FEBRUARY 1982.

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

RIDGE ZONE

N.T.S. 116 B/9 — MAYO M.D. YUKON TERRITORY — 64°43.3'N 138°09.5'W

DRILL SECTION A

Feet 20 10 0 20 40

Metres 5 0 5 10

DRAWN BY	REVISED:	SCALE:	NO.
DATE: FEBRUARY, 1982		1:200	11

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B.C.

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

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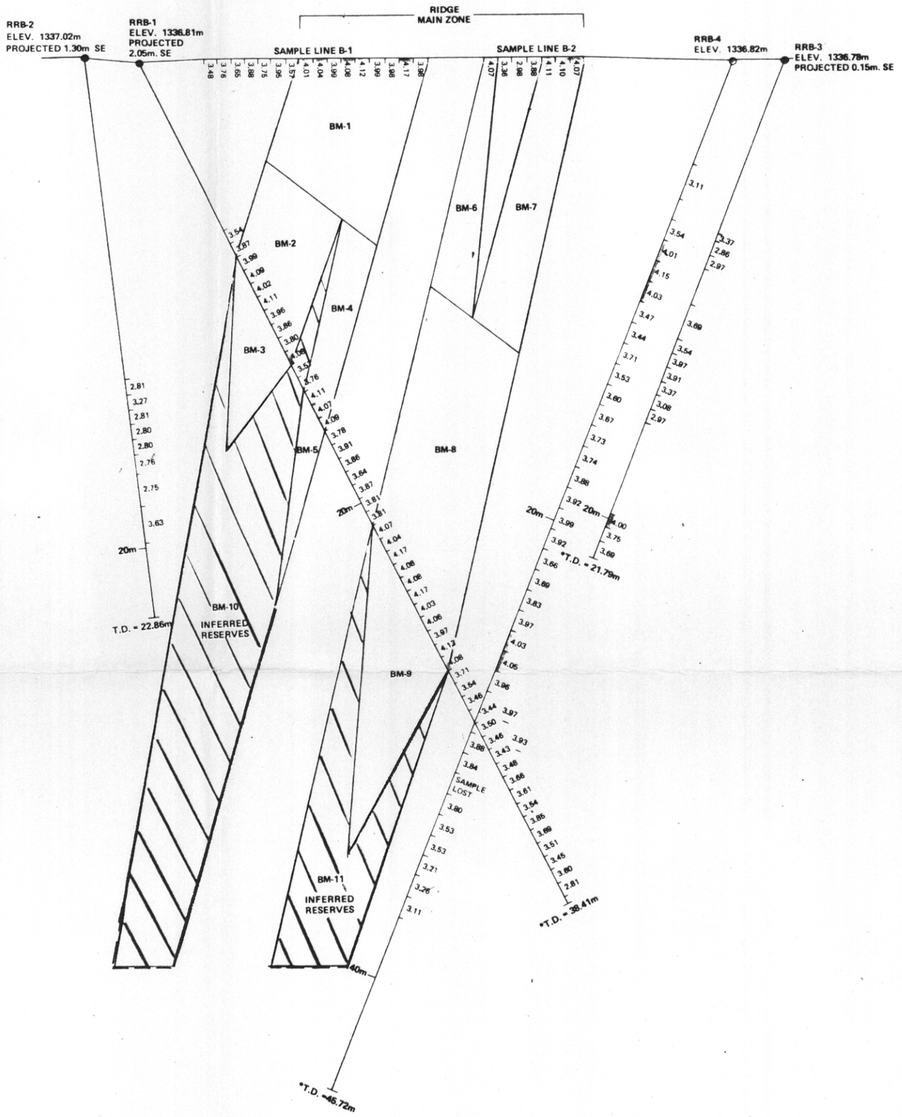
SOUTH

BEARING OF CROSS SECTION N 24° E

ELEVATION (m)

NORTH

SECTION REFERENCE LINE



1340

1320

1300

TONNAGE & GRADE CALCULATIONS

RIDGE MAIN ZONE

BLOCK No.	AREA (SQ. M)	X	STRIKE LENGTH (m)	=	VOLUME (cu. m)	X	AVG. S.G.	=	TONNES	
BM-1	31.3		21		657		4.04		2654	
BM-2	18.7		21		393		3.99		1568	
BM-3	10.0		21		210		3.99		838	
BM-4	10.3		21		216		4.09		883	
BM-5	4.9		21		103		4.09		421	
BM-6	9.9		21		210		4.07		855	
BM-7	21.6		21		454		4.09		1857	
BM-8	49.1		21		1031		4.08		4206	
BM-9	23.4		21		491		4.08		2003	
							4.06		15285	TONNES - DRILL INDICATED (4.06 S.G.)
BM-10	77.9		21		1636		**4.00		6543	
BM-11	34.6		21		727		**4.00		2910	
									9453	TONNES - INFERRED (TO 1300 LEVEL)

SKEW HOLE TO SECTION PROJECTION DATA

DRILL HOLE	SEGMENT	TRUE INCLINATION	TRUE BEARING	APPARENT INCLINATION	APPARENT LENGTH	SCALE COMPRESSION FACTOR
RRB-1	0-38.41	63N	N22E	63° 01'	38.41	0.9999
RRB-2	0-22.86	83N	N22E	83° 00'	22.86	1.0000
RRB-3	0-21.79	68S	S09W	68° 41'	21.69	0.9953
RRB-4	0-45.72	66S	S04E	68° 32'	44.88	0.9816

NOTES

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. *APPARENT LENGTH
4. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS)
5. TONNAGE & GRADE ESTIMATES BASED UPON MILCHEM INCORP. (1979-80) DRILL DATA
6. **SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

ORIGINAL DATA COMPILED BY MILCHEM

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199 F
YUKON - TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
DRILL SECTION B
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 11

AUTHOR G. MOFFAT | SCALE 1:100 | DRAWING No.
DATE APRIL 1981 | REVISED | ENCLOSURE No.
To Accompany

TO ACCOMPANY REPORT BY W. S. READ, P. ENG., FEBRUARY 1982.

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

RIDGE ZONE

N.T.S. 116 B/9 — MAYO M.D. YUKON TERRITORY — 64°43.3'N 138°09.5'W

DRILL SECTION B

Feet 20 10 0 20 40

Metres 5 0 5 10

DRAWN BY: | REVISED: | SCALE: 1:200 | NO. 12

DATE: FEBRUARY, 1982

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B.C.

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

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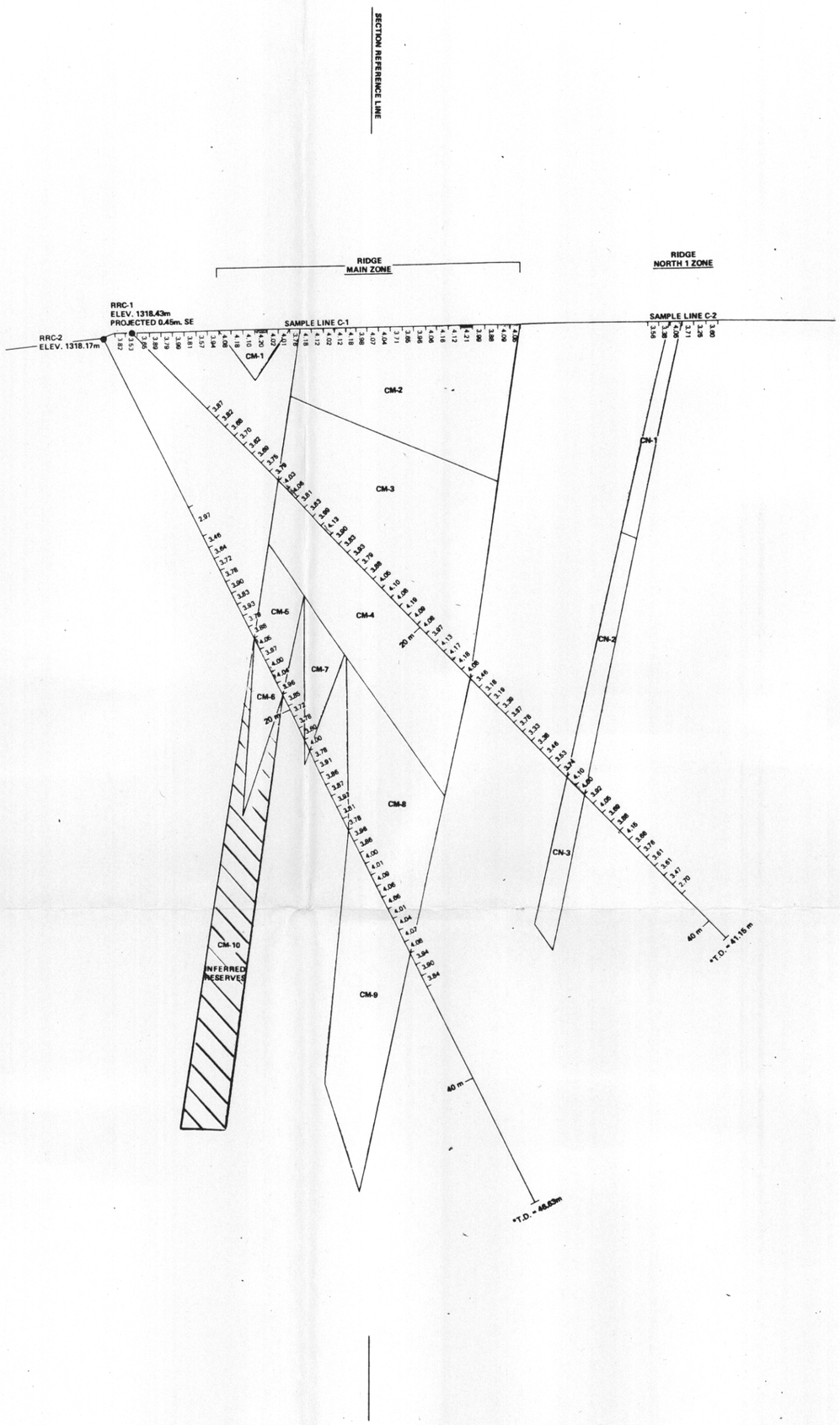
SOUTH

BEARING OF CROSS SECTION N 24° E

ELEVATION (m)

NORTH



TONNAGE & GRADE CALCULATIONS

RIDGE MAIN ZONE

BLOCK NO.	AREA (SQ. M)	X	STRIKE LENGTH (m)	=	VOLUME (cu. m)	X	AVG. S.G.	=	TONNES	
CM-1	4.2	X	27		113		4.10		463	
CM-2	57.9	X	27		1563		4.03		6299	
CM-3	81.0	X	27		2187		4.01		8770	
CM-4	47.3	X	27		1277		4.01		5121	
CM-5	9.4	X	27		254		4.00		1016	
CM-6	6.4	X	27		173		4.00		692	
CM-7	8.2	X	27		221		4.00		884	
CM-8	35.7	X	27		964		4.02		3875	
CM-9	37.6	X	27		1015		4.02		4080	
							4.02		31200	TONNES - DRILL INDICATED (4.02 S.G.)
CM-10	39	X	27		1053		**4.00		4212	TONNES - INFERRED (TO 1280 LEVEL)

NORTH 1 ZONE

BLOCK NO.	AREA	X	STRIKE LENGTH	=	VOLUME	X	AVG. S.G.	=	TONNES	
CN-1	8.5	X	11.5		98		4.05		397	
CN-2	11.1	X	11.5		128		4.05		518	
CN-3	8.1	X	11.5		93		4.05		381	
									1296	TONNES - DRILL INDICATES (4.05 S.G.)

SKEW HOLE TO SECTION PROJECTION DATA

DRILL HOLE	SEGMENT	TRUE INCLINATION	TRUE BEARING	APPARENT INCLINATION	APPARENT LENGTH	SCALE COMPRESSION FACTOR
RRC-1	0-41.15	45N	N 22E	45° 01'	41.14	0.9997
RRC-2	0-46.63	63N	N 26E	63° 01'	46.62	0.9999

NOTES:

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. *APPARENT LENGTH
4. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS)
5. TONNAGE & GRADE ESTIMATES BASED UPON MILCHEM INCORP (9179-80) DRILL DATA
6. **SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

ORIGINAL DATA COMPILED BY MILCHEM

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3199 F
YUKON - TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
DRILL SECTION C
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 12

AUTHOR: G. MOFFAT | SCALE 1:100 | DRAWING No.:
DATE: APRIL 1981 | REVISED: | ENCLOSURE No.:
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TO ACCOMPANY REPORT BY W. S. READ, P. ENG., FEBRUARY 1982.

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

RIDGE ZONE

N.T.S. 116 B/9 — MAYO M.D. YUKON TERRITORY — 64°43.3'N 138°09.5'W

DRILL SECTION C

Feet 20 10 0 20 40

Metres 5 0 5 10

DRAWN BY:
DATE: FEBRUARY, 1982

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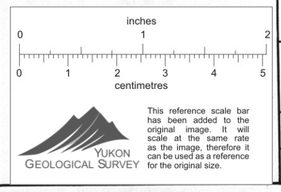
SCALE: 1 : 200

NO. 13

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B.C.



YUKON GEOLOGICAL SURVEY

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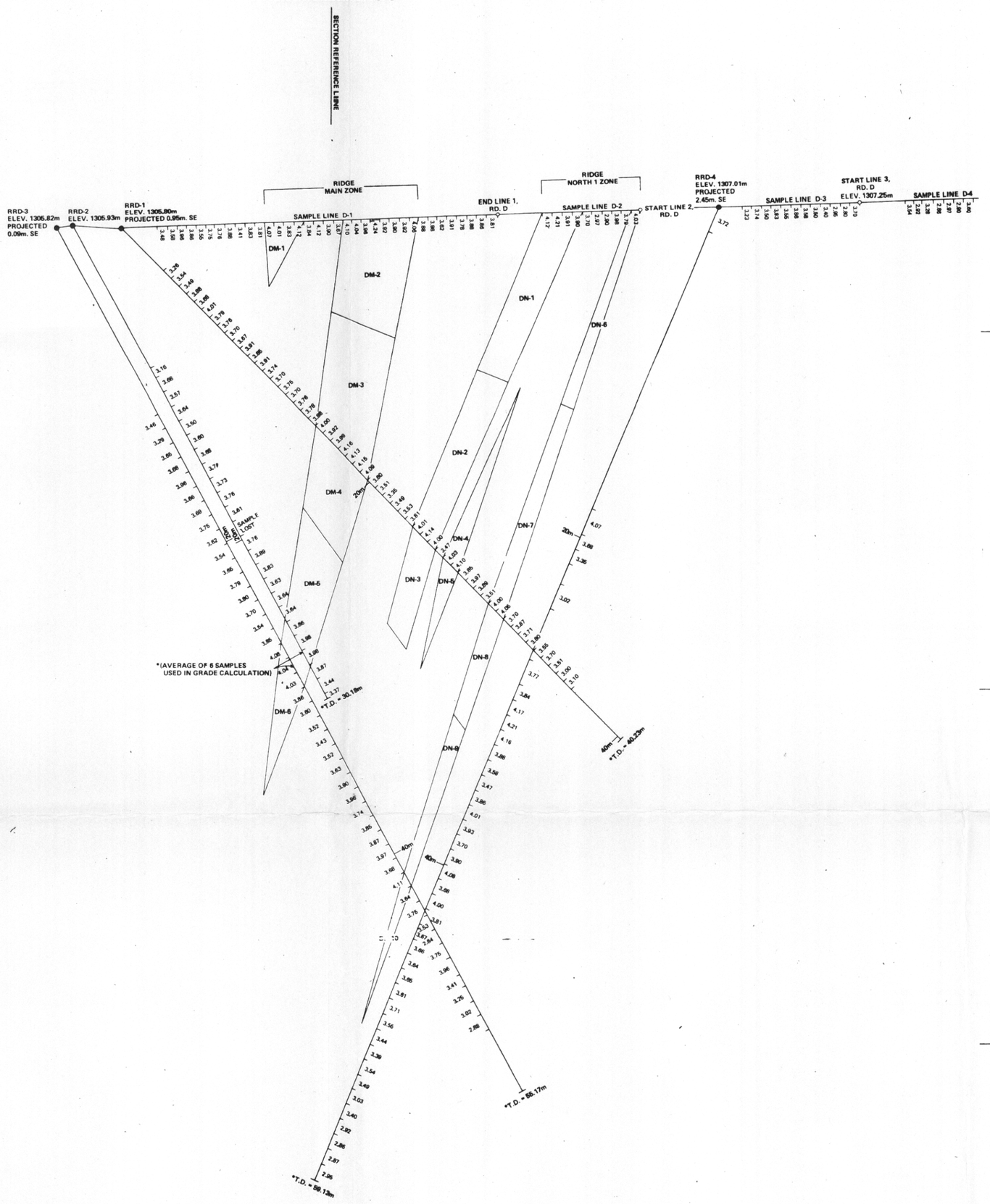
BEARING OF CROSS SECTION N 24° E

ELEVATION (m)

SOUTH

NORTH



TONNAGE & GRADE CALCULATIONS

RIDGE MAIN ZONE

BLOCK No.	AREA (SQ. M)	X	STRIKE LENGTH (m)	=	VOLUME (cu. m)	X	AVG. S.G.	=	TONNES
DM-1	4.0		22		88		4.01		353
DM-2	24.8		22		546		4.02		2195
DM-3	26.2		22		576		4.06		2338
DM-4	15.6		22		343		4.06		1392
DM-5	18.0		22		396		3.99		1580
DM-6	6.8		22		150		3.99		598
							4.03		8456 TONNES - DRILL INDICATED (4.03 S.G.)

RIDGE NORTH 1 ZONE

BLOCK No.	AREA	X	STRIKE LENGTH	=	VOLUME	X	AVG. S.G.	=	TONNES
DN-1	20.0		22		440		4.03		1773
DN-2	17.6		22		387		4.05		1567
DN-3	8.4		22		185		4.05		749
DN-4	5.9		11		65		4.06		264
DN-5	3.1		11		34		4.06		138
DN-6	6.9		22		152		4.03		612
DN-7	10.8		22		238		4.02		957
DN-8	6.4		22		141		4.02		567
DN-9	7.4		22		163		4.11		670
DN-10	2.6		22		57		4.11		234
							4.04		7531 TONNES - DRILL INDICATED (4.04 S.G.)

SKEW HOLE TO SECTION PROJECTION DATA

DRILL HOLE	SEGMENT	TRUE INCLINATION	TRUE BEARING	APPARENT INCLINATION	APPARENT LENGTH	SCALE COMPRESSION FACTOR
RRD-1	0-40.23	45N	N23E	45° 00'	40.23	0.9999
RRD-2	0-30.18	61N	N16E	61° 14'	30.11	0.9977
RRD-3	0-55.17	61N	N17E	61° 11'	55.07	0.9983
RRD-4	0-59.13	68S	S11W	68° 31'	58.92	0.9964

NOTES:

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. *APPARENT LENGTH
4. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS)
5. TONNAGE & GRADE ESTIMATIONS BASED ON MILCHEM INCORP. (1979-80) DRILL DATA

ORIGINAL DATA COMPILED BY MILCHEM

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199 F
YUKON - TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
DRILL SECTION D
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 13

AUTHOR: G. MOFFAT | SCALE: 1:100 | DRAWING No.:
DATE: APRIL 1981 | REVISED: | ENCLOSURE No.:
To Accompany

TO ACCOMPANY REPORT BY W. S. READ, P. ENG., FEBRUARY 1982.

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

RIDGE ZONE

N.T.S. 116 B/9 — MAYO M.D., YUKON TERRITORY — 64°43.3'N 138°09.5'W

DRILL SECTION D

Feet 20 10 0 20 40

Metres 5 0 5 10

DRAWN BY: | DATE: FEBRUARY, 1982 | REVISED: | SCALE: 1:200 | NO. 14

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B.C.

inches 0 1 2

centimetres 0 1 2 3 4 5

YUKON GEOLOGICAL SURVEY

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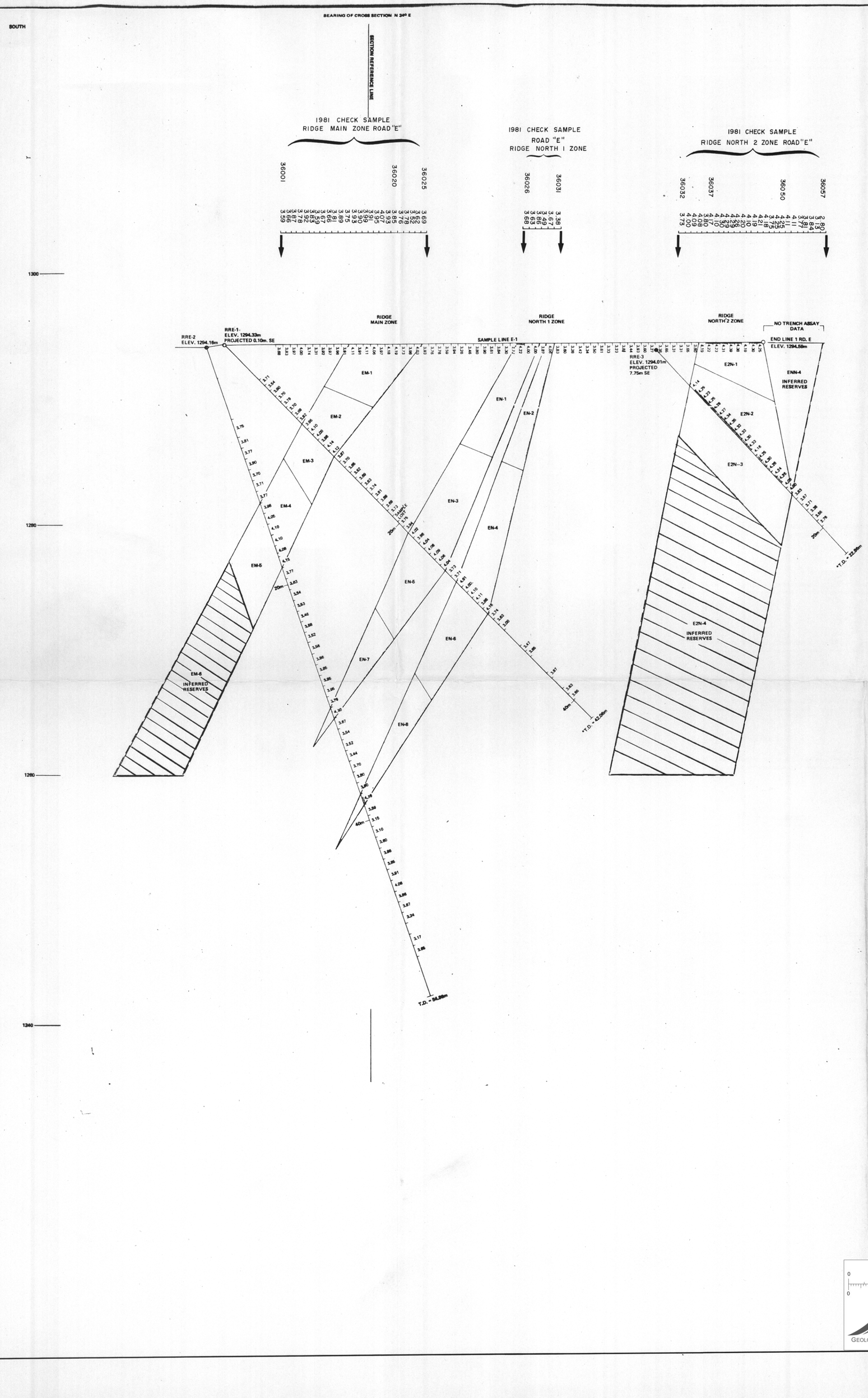


TONNAGE & GRADE CALCULATIONS

RIDGE MAIN ZONE

BLOCK No.	AREA (SQ. M)	X	STRIKE LENGTH (m)	=	VOLUME (cu. m)	X	AVG. S.G.	=	TONNES	
EM-1	22.9		18.5		424		4.01		1700	
EM-2	16.2		18.5		300		4.05		1215	
EM-3	12.8		18.5		237		4.05		960	
EM-4	18.3		18.5		338		4.03		1362	
EM-5	21.2		18.5		392		4.03		1580	
							4.03		6817	TONNES - DRILL INDICATED (4.03 S.G.)
EM-6	73.5		18.5		1361		**4.00		5446	TONNES - INFERRED (TO 1260 LEVEL)

RIDGE NORTH 1 ZONE

EN-1	21.2		18.5		392		4.07		1595	
EN-2	12.3		18.5		227		4.06		922	
EN-3	30.3		18.5		560		4.04		2262	
EN-4	27.8		18.5		514		4.04		2076	
EN-5	22.1		18.5		409		4.04		1652	
EN-6	23.3		18.5		431		4.04		1741	
EN-7	13.9		18.5		257		4.10		1054	
EN-8	16.3		18.5		301		4.19		1261	
							4.06		12563	TONNES - DRILL INDICATED (4.06 S.G.)

RIDGE NORTH 2 ZONE

BLOCK No.	AREA	X	STRIKE LENGTH	=	VOLUME	X	AVG. S.G.	=	TONNES	
E2N-1	18.1	X	21.5		389		4.27		1661	
E2N-2	30.5	X	21.5		655		4.24		2777	
E2N-3	40.6	X	21.5		869		4.24		3684	TONNES - DRILL INDICATED (4.24 S.G.)
							4.24		8122	
E2N-4	28.9	X	21.5		621		4.21		2614	
E2N-5	23.5	X	21.5		5052		**4.00		20,208	
									22,822	TONNES - INFERRED (TO 1260 LEVEL)

2350

SKEW HOLE TO SECTION PROJECTION DATA

DRILL HOLE	SEGMENT	TRUE INCLINATION	TRUE BEARING	APPARENT INCLINATION	APPARENT LENGTH	SCALE COMPRESSION FACTOR
RRE-1	0-42.06	45N	N25E	45° 00'	42.06	0.999
RRE-2	0-54.86	70° 30'N	N25E	70° 30'	54.86	1.0000
RRE-3	0-22.86	45N	N06E	46° 26'	22.31	0.9758

NOTES:

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. *APPARENT LENGTH
4. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS - MILCHEM (1980) REPORT
5. TONNAGE & GRADE ESTIMATES BASED UPON MILCHEM INCORP. (1979-80) DRILL DATA
6. **SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

ORIGINAL DATA COMPILED BY MILCHEM

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3198 F
YUKON - TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
DRILL SECTION E
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 14

AUTHOR: G. MOFFAT | SCALE: 1:100 | DRAWING No.
DATE: APRIL 1981 | REVISED: | ENCLOSURE No.:
To Accompany

TO ACCOMPANY REPORT BY W. S. READ, P. ENG., FEBRUARY 1982.

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

RIDGE ZONE

N.T.S. 116 B/9 — MAYO M.D. YUKON TERRITORY — 64°43.3'N 138°09.5'W

DRILL SECTION E WITH 1981 CHECK SAMPLE DATA

Feet 20 10 0 20 40
Metres 5 0 5 10

DRAWN BY:
DATE: FEBRUARY, 1982
REVISED:
SCALE: 1 : 200
NO. 15

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B.C.

inches 0 1 2
centimetres 0 1 2 3 4 5

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

BEARING OF CROSS SECTION N 24° E

SOUTH

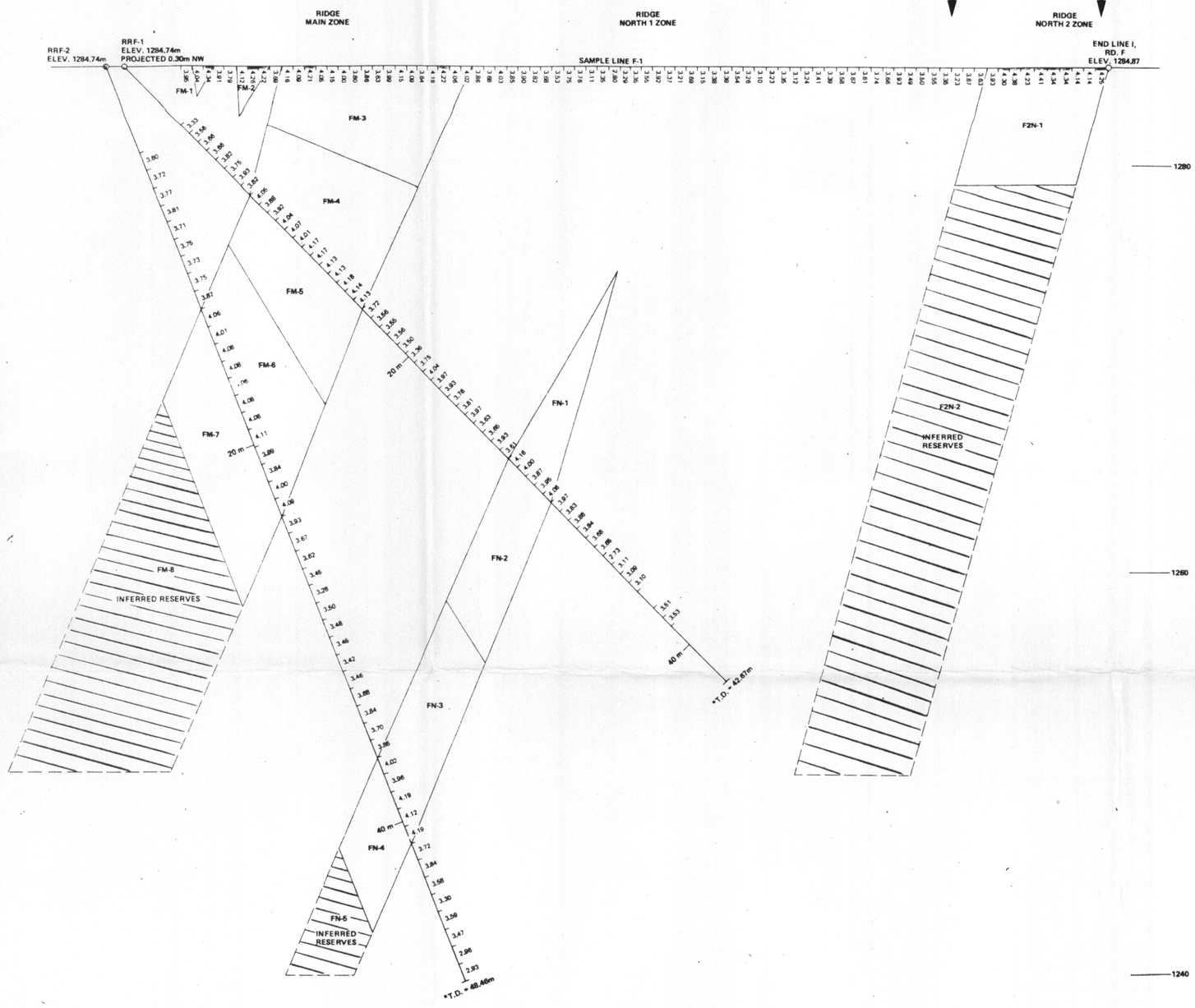
NORTH

ELEVATION (m)

SECTION REFERENCE LINE

1981 CHECK SAMPLE
RIDGE NORTH 2 ZONE ROAD EXTENSION

36058	36060	36065
3.39	3.70	4.05
		4.11
		4.14
		4.16
		4.14
		4.17



TONNAGE & GRADE CALCULATIONS

RIDGE MAIN ZONE

BLOCK NO.	AREA (SQ. M)	X	STRIKE LENGTH (m)	=	VOLUME (cu. m)	X	AVG. S.G.	=	TONNES	
FM-1	0.70		16		12		4.19		50	
FM-2	2.10		16		33		4.20		139	
FM-3	39.6		16		634		4.02		2549	
FM-4	38.4		16		614		4.08		2505	
FM-5	28.6		16		458		4.08		1869	
FM-6	34.4		16		550		4.04		2222	
FM-7	37.1		16		594		4.04		2400	
							4.05		11,734	TONNES - DRILL INDICATED (4.05 S.G.)
FM-8	108		16		1728		**4.00		6912	TONNES - INFERRED (TO 1250 LEVEL)

RIDGE NORTH 1 ZONE

FN-1	15.6	16	250	4.01	1002	
FN-2	22.4	16	358	4.01	1435	
FN-3	28.2	16	481	4.10	1849	
FN-4	16	16	256	4.10	1050	
				4.06	5336	TONNES - DRILL INDICATED (4.06 S.G.)
FN-5	13.5	16	216	**4.00	864	TONNES - INFERRED (TO 1240 LEVEL)

RIDGE NORTH 2 ZONE

F2N-1	38.0	15	540	4.25	2295 TONNES - DRILL INDICATED
F2N-2	172.5	15	2580	**4.00	10,350 TONNES - INFERRED (TO 1250 LEVEL)

SKEW HOLE TO SECTION PROJECTION DATA

DRILL HOLE	SEGMENT	TRUE INCLINATION	TRUE BEARING	APPARENT INCLINATION	APPARENT LENGTH	SCALE COMPRESSION FACTOR
RRF-1	0-42.67	45N	N 27E	45° 02'	42.64	0.9993
RRF-2	0-48.46	68N	N 27E	68° 02'	48.45	0.9998

NOTES:

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. *APPARENT LENGTH
4. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS)
5. TONNAGE & GRADE ESTIMATES BASED UPON MILCHEM INCORP (9179-80) DRILL DATA
6. **SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

ORIGINAL DATA COMPILED BY MILCHEM

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199 F
YUKON - TERRITORY
REIN BARITE PROSPECT
RIDGE ZONE
DRILL SECTION F
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 15

AUTHOR: S. MOFFAT	SCALE: 1:100	DRAWING No.
DATE: APRIL 1981	REVISED:	ENCLOSURE No.
To Accompany:		

TO ACCOMPANY REPORT BY W. S. READ, P. ENG., FEBRUARY 1982.

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

RIDGE ZONE

N.T.S. 116 B/9 — MAYO M.D. YUKON TERRITORY — 64°43.3' N 138°09.5' W

DRILL SECTION F WITH 1981 CHECK SAMPLE DATA

Feet 20 10 0 20 40

Metres 5 0 5 10

DRAWN BY:	REVISED:	SCALE:	NO.
DATE: FEBRUARY, 1982		1: 200	16

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B.C.

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

IN METERS

EXPLANATION

- RCI-3 ELEV. 1218.53m — Drill Hole Location / Elevation
- STATION 3 ELEV. 1237.95m — Primary Survey Station / Elevation
- TP-11 ELEV. 1270.90m — Temporary Survey Station / Elevation
- ELEV. 1230.31m — Road Intersection and/or Elevation Reference
- REIN 79 POST #1 — Claim Post
- 20 Meter Grid Mark

Subcrop taken from Shell Canada Resources Limited Sections.

ELEV. 1229.79m

ELEV. 1237.90m

EAST LINE - REIN 94
WEST LINE - REIN 79

ROAD 1

ROAD 2

ROAD 3

ROAD 4

1203.4 Top First Sample
1201.4 Top Main Zone
1189.6 Base Main Zone
1181.0 Base Last Sample
VERTICAL HOLE
RCI-3
ELEV. 1218.53m

DRILL INDICATED RESERVES

Slope Overburden

40°

X El. 1204.6 Barite Outcrop

55

Base of Outcrop at Talus Elev. 1190.0±

Base of Main Bed El. 1198.12 ±
End of Sample 36099
Az. 99°±

Zone of Mixed Limestone, Barite and Sedimentary Rock. Not Sampled.

Old Flogging - End of Sample 36095

Band Distorted Limestone 10.5m±

Start Sample 36074
Elev. 1208.41

Elev. 1203.41
Start No 36088
Old Flogging

Top Main Bed
Elev. 1206.41
Sample 36079 (1.0m)
Old Flogging

Black Banded - Phyllitic Chert

70

1197.8 Top First Sample
1186.6 Top Main Zone

RC2-1
ELEV. 1227.88m
VERTICAL HOLE
1189.4 Base Main Zone
1168.7 Base Last Sample

RCI-1
ELEV. 1218.20m
VERTICAL HOLE
1197.7 Top First Sample
1195.0 Top Best Zone
1174.3 Base Best Zone

STN 1
El. 1218.21

STN 2
El. 1210.41
Nose of Ridge

-26°

30±°

1195.4 Top Main Zone

AZIMUTH 307°±

Cliff Area

SECTION REFERENCE LINE

TP-11
ELEV. 1270.90m

RCI-2
ELEV. 1220.41m
VERTICAL HOLE
1174.8 Top First Sampling
1172.0 Top Best Zone
1164.0 Base Best Zone
1159.7 Base Last Sample

SECTION AA

SECTION A

SECTION B

SECTION C

ELEV. 1238.45m

ELEV. 1245.27m

REIN 94 POST #1

REIN 79 POST #1

REIN 77 POST #2

REIN 78 POST #1

STATION 3
ELEV. 1237.95m

Note: Posts for Rein 77, 78 & 79 located further up hillside to S.W. Post 1 Rein 94 may have fallen down hillside to present position shown.

SOUTH LINE - REIN 94
NORTH LINE - REIN 77

SOUTH LINE - REIN 79
NORTH LINE - REIN 78

EAST LINE - REIN 77
WEST LINE - REIN 78

SECTION LINE

9,620 N
9,600 N
9,580 N
9,560 N
9,540 N
X Barite Outcrop above Cliff Elev. 1199.0±
9,520 N
9,500 N
9,480 N
9,460 N

10,660 E.
10,680 E.
10,700 E.
10,720 E.
10,740 E.
10,760 E.
10,780 E.
10,800 E.
IN METERS

NOTE: Samples and Cliff Profile Located in Relation to Drill Collars by Tape and Compass. Base control after Shell Canada Resources Limited, April 1981 Redraft from 1980 MILCHEM Report.

inches / centimetres

This reference scale bar has been added to the original drawing. The origin at the same rate on the sheet as a reference for the original size.

YUKON GEOLOGICAL SURVEY

DOME PETROLEUM LIMITED

(NORTHERN BARITE PROJECT)

REIN BARITE PROSPECT

CLIF ZONE

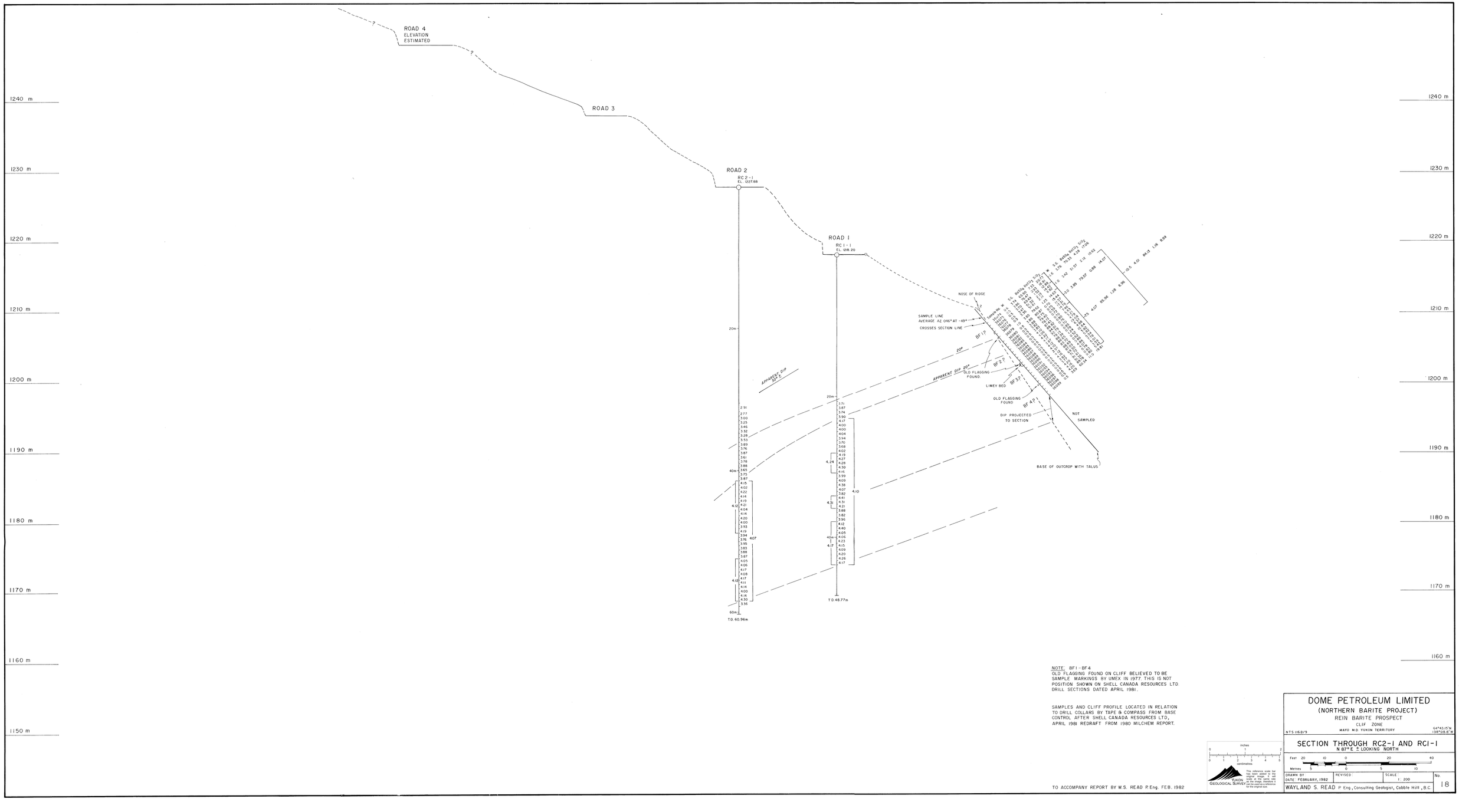
NTS 116B/9 — MAYO M.D. YUKON TERRITORY — 64°43.15' N 138° 08.8' W

DRILL AND SAMPLE PLAN

Metres 5 0 5 10 15 Metres
Feet 10 0 10 20 30 40 Feet

DRAWN BY	REVISED:	SCALE: 1:200	No.
DATE: FEBRUARY, 1982			17

WAYLAND S. READ P. Eng., Consulting Geologist, Cobble Hill, B. C.



NOTE: BF1 - BF4
OLD FLAGGING FOUND ON CLIFF BELIEVED TO BE SAMPLE MARKINGS BY UMEX IN 1977. THIS IS NOT POSITION SHOWN ON SHELL CANADA RESOURCES LTD DRILL SECTIONS DATED APRIL 1981.

SAMPLES AND CLIFF PROFILE LOCATED IN RELATION TO DRILL COLLARS BY TAPE & COMPASS FROM BASE CONTROL AFTER SHELL CANADA RESOURCES LTD, APRIL 1981 REDRAFT FROM 1980 MILCHEM REPORT.

TO ACCOMPANY REPORT BY W.S. READ P.Eng. FEB. 1982

DOME PETROLEUM LIMITED
(NORTHERN BARITE PROJECT)
REIN BARITE PROSPECT
CLIF ZONE
MAYO M.D. YUKON TERRITORY
NTS 116 B/9
64°43.15'N
138°08.8'W

SECTION THROUGH RC2-1 AND RC1-1
N 87°E ± LOOKING NORTH

Feet 20 10 0 20 40
Metres 5 0 5 10

DRAWN BY: WAYLAND S. READ P.Eng., Consulting Geologist, Cobble Hill, B.C.
DATE FEBRUARY, 1982
REVISED:
SCALE: 1: 200
No. 18

Inches 0 1 2
centimetres 0 1 2 3 4 5

YUKON GEOLOGICAL SURVEY

This reference scale bar should measure 2 inches on original images. It will scale at the same rate as the original drawing and can be used as a reference for the original size.

PLANE OF SECTION N 12° W

SECTION REFERENCE LINE

SOUTH

NORTH

ELEVATION (m)

RC2-1
(PROJECTED FROM SECTION A)

RC1-2
PROJECTED FROM SECTION (A)

RC1-3
(PROJECTED FROM SECTION A)

NO SAMPLE ASSAY DATA

1220

1200

1180

1160

AA-1

AA-2

INFERRED RESERVES
(PROJECTED FROM SECTION A)

AA-3

INFERRED RESERVES
(PROJECTED FROM SECTION A)

TONNAGE CALCULATIONS

BLOCK NO.	AREA (SQ.M)	X	STRIKE DISTANCE (m)	=	VOLUME (cu. m)	X	S.G.	=	TONNES
AA-1	113		15		1695		*4.00		6780
AA-2	356		15		5340		*4.00		21,360
AA-3	366		15		5490		*4.00		21,960
AA-4	258		15		3870		*4.00		15,480
									65,580 TONNES INFERRED

inches
0 1 2
0 1 2 3 4 5
centimetres

YUKON GEOLOGICAL SURVEY

This reference scale bar has been added to the original image. It will scale at the same rate as the image, therefore it can be used as a reference for the original size.

SCALE: 1:200

Metres 5 0 5 10 15 Metres

Feet 20 0 20 40 Feet

FIG. 19

To accompany report by WAYLAND S. READ, P. Eng., February, 1982

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199F
YUKON - TERRITORY
REIN BARITE PROSPECT
CLIFF ZONE
DRILL SECTION AA
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 17

AUTHOR G. MOFFAT SCALE DRAWING No.
DATE APRIL 1983 REVISED ENCLOSURE No.
As Accepted

SOUTH

NORTH

ELEVATION (m)

SECTION REFERENCE LINE

PLANE OF SECTION N 12° W

RC2-1
ELEV. 1227.88m
PROJECTED 0.80m N.E.

RC1-2
ELEV. 1220.41m

RC1-3
(ELEV. 1218.53m)

1220

1200

1180

1160

20m

40m

60m

BULK SAMPLES #3 & #4 – AVG. 76.64% $BaSO_4$, 5.3% $BaCO_3$/7Z' (22 m)
– AVG. SPECIFIC GRAVITY 4.09

– SAMPLES TAKEN FROM TRENCH (BF-1-6) STRIKING N 55° E HOWEVER ITS EXACT POSITION RELATIVE TO DRILL SECTION (N 12° W) IS NOT KNOWN FROM THE DATA AVAILABLE.

A-1

A-2

A-3

A-4

A-5

A-6

A-7

A-8
INFERRED RESERVES

T.D. = 84.01m

T.D. = 60.96m

T.D. = 41.15m

SCALE: 1:200

Metres 5 0 5 10 15 Metres

Feet 10 0 10 20 30 40 50 Feet

To accompany report by WAYLAND S. READ, P. Eng. February, 1982

inches 0 1

centimetres 0 1 2

YUKON GEOLOGICAL SURVEY This reference scale bar has been added to the original image. It will scale at the same rate as the original. Do not use as a reference for the original size.

TONNAGE & GRADE CALCULATIONS

BLOCK No.	AREA (SQ. M)	X	STRIKE DISTANCE (m)	=	VOLUME (cu. m)	X	S.G.	=	TONNES	
A-1	78		15		1170		4.13		4832	
A-2	146		15		2190		4.13		9044	
A-3	210		15		3150		4.07		12,820	
A-4	197		15		2955		4.07		12,026	
A-5	169		15		2535		4.06		10,291	
A-6	130		15		1950		4.06		7917	
A-7	77		15		1155		*4.09		4724	
							4.08		61,654	TONNES-DRILL INDICATED (4.08 S.G.)
A-8	35		15		525		*4.00		2100	TONNES - INFERRED

NOTES

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS - MILCHEM (1980) REPORT)
4. TONNAGE & GRADE ESTIMATIONS BASED UPON MILCHEM INCORP. (1979-80) DRILL DATA.
5. * SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

FIG. 20

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3199F
YUKON - TERRITORY
REIN BARITE PROSPECT
CLIFF ZONE
DRILL SECTION A
MAYO MINING DIVISION, Y.T.
NTS 116 B/9

FIG. 18

AUTHOR G. MOFFAT | SCALE 1:100 | DRAWING No.
DATE APRIL 1981 | REVISED | ENCLOSURE No.
To Accompany

MAP 4

SOUTH

PLANE OF SECTION N 120 W

NORTH

ELEVATION (m)

SECTION REFERENCE LINE

1220

1200

1180

RC1-1
ELEV. 1218.20m
PROJECTED 24.10m S

BULK SAMPLES #3 & #4
– AVG. 76.64% $BaSO_4$, 5.3% $BaCO_3$/7" (22 m)
– AVG. SPECIFIC GRAVITY 4.09

– SAMPLES TAKEN FROM TRENCH (BF-1-6) STRIKING N 55° E)
HOWEVER ITS EXACT POSITION RELATIVE TO DRILL SECTION (N 15° W)
IS NOT KNOWN FROM THE DATA AVAILABLE.

– WIDTH OF ZONE AT SURFACE PROJECTED FROM SECTION A.

B-3

(PROJECTED FROM SECTION A)

B-2

B-1

B-4
INFERRED RESERVES
(PROJECTED FROM SECTION A)

20m
3.71
3.87
3.74
3.90
4.17
4.00
4.00
4.04
3.94
3.70
3.88
4.02
4.19
4.27
4.28
4.30
4.16
3.99
4.09
4.38
4.07
3.82
4.41
4.31
4.21
3.88
3.82
3.98
4.12
4.40
4.05
40m
4.06
4.23
4.15
4.09
4.20
4.26
4.17

T.D. = 48.77m

TONNAGE & GRADE CALCULATIONS

BLOCK No.	AREA (SQ. M)	X	STRIKE DISTANCE (m)	=	VOLUME (cu. m)	X	S.G.	=	TONNES	
B-1	235		15		3525		4.10		14,452	
B-2	235		15		3525		4.10		14,452	
B-3	302		15		4530		4.09		18,120	
							4.10		47,024	TONNES - DRILL INDICATED (4.10 S.G.)
B-4	573		15		3595		*4.00		34,380	TONNES - INFERRED

SCALE: 1:200

Metres 5 0 5 10 15 Metres

Feet 10 0 10 20 30 40 50 Feet

inches 0 1 0 1 2 centimetres

This reference scale bar has been added to the original image. It will change in size as the image, therefore it can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

NOTES

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS - MICHEM (1980) REPORT)
4. TONNAGE & GRADE ESTIMATIONS BASED UPON MILCHEM INCORP. (1979-80) DRILL DATA
5. * SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

To accompany report by WAYLAND S. READ, P. Eng. February, 1982

FIG. 21

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3199F
YUKON - TERRITORY
REIN BARITE PROSPECT
CLIFF ZONE
DRILL SECTION B
MAYO MINING DIVISION, Y.T.

FIG. 19

AUTHOR G. MOFFAT | SCALE 1:100 | DRAWING No.
DATE APRIL 1981 | REVISED | ENCLOSURE No.
To Accompany

PLANE OF SECTION N 12° W

SECTION REFERENCE LINE

SOUTH

NORTH

ELEVATION (m)

1220

1200

1180

1160

RC1-1
(PROJECTED FROM SECTION B)

NO SAMPLE ASSAY DATA

INFERRED RESERVES
(PROJECTED FROM SECTION B)

C-1

C-2

C-3

C-4

64.01m

TONNAGE CALCULATIONS

BLOCK No.	AREA (SQ. M)	X	STRIKE DISTANCE (m)	=	VOLUME (cu. m)	X	S.G.	=	TONNES
C-1	573		15		8595		*4.00		34,380
C-2	235		15		3525		*4.00		14,100
C-3	235		15		3525		*4.00		14,100
C-4	237		15		3565		*4.00		14,220
									76,800 TONNES - INFERRED

SCALE: 1:200

Metres 5 0 5 10 15 Metres

Feet 10 0 10 20 30 40 50 Feet

inches 0 1

centimetres 0 1 2

This reference scale bar has been added to the original image. It will be at the same ratio as the original and can be used as a reference for the original size.

YUKON GEOLOGICAL SURVEY

NOTES:

1. ASSAY RESULTS REPRESENT SPECIFIC GRAVITY
2. ALL DEPTHS ARE IN METERS
3. UNSAMPLED INTERVALS ARE NON-BARIUM BEARING (SEE LOGS - MILCHEM (1980) EFFORT
4. TONNAGE & GRADE ESTIMATIONS BASED UPON MILCHEM INCORP. (1979-80) DRILL DATA
5. SPECIFIC GRAVITY OF INFERRED RESERVES ASSUMED TO BE 4.00

FIG. 22

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3100F
YUKON - TERRITORY
REIN BARITE PROSPECT
CLIFF ZONE
SECTION C
MAYO MINING DIVISION
NTS. 116 0/9

FIG. 20

AUTHOR: G. MOFFAT | SCALE: 1:100 | DRAWING No.
DATE: APRIL 1981 | REVISED: | ENCLOSURE No.
As Accompany

To accompany report by WAYLAND S. READ, P. Eng. February, 1982