

REPORT ON DIAMOND DRILLING

SHAG CLAIMS
GOLDEN MINING DIVISION

N.T.S. 82-J-11 & 12
LATITUDE: 50°38'N; LONGITUDE: 115°30'W

OWNER: CHRIS GRAF
VANCOUVER, BRITISH COLUMBIA

OPERATOR: ESSO RESOURCES CANADA LIMITED
237 - 4th AVENUE S.W.
CALGARY, ALBERTA

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NOVEMBER, 1982

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T2P 0H6

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

11,170

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SHAG CLAIMS

Golden Mining Division

N.T.S. 82-J-11 and 12

ESSO MINERALS CANADA

M.H. Lenters

December, 1982

SUMMARY

Seventeen small sphalerite-galena occurrences are known to exist within the Shag Claims along a 5 kilometre length of Shag Creek Valley. They consist of very fine to coarse grained, variably coloured sphalerite, together with minor galena, that occur in the upper parts of at least two separate Middle Cambrian dolostone units. The uppermost Eldon Formation dolostone hosts the B.M. horizon mineralization, while the upper part of the Waterfowl Formation dolostone hosts both the C-4 type and Red Bed horizon mineralization. These dolostone host rock units are both thick-bedded, supratidal to intertidal accumulations of dolomitized carbonate bank material that are each overlain by an accumulation of thin-bedded, subtidal limestone. Together this package of alternating dolostone and limestone forms part of a cyclic sequence of Cambrian strata deposited along the outer edge of a shallow-water carbonate platform, adjacent to a large deep-water shale basin. This type of geologic environment is basically similar to that of many large Mississippi Valley type deposits.

Most of the mineralized occurrences on the Shag Claims consist of coarse replacement sphalerite in either thin, discontinuous disseminated zones, or in very small pods, lenses or breccia zones. The characteristics of these isolated types of occurrences suggest that their host rocks are unlikely to contain zones of significant mineralization. Only the mineralized occurrences along the Red Bed horizon (Waterfowl dolostone - Sullivan limestone contact) presented themselves as having the character and continuity to indicate that they could be part of a larger "ore" trend. Further work along this trend

resulted in the discovery of a 600 metre length of more or less continuous, weakly mineralized dolostone. One of three holes drilled through the downdip extension of the outcropping mineralization intersected an "ore-grade" hole (10.25% Zn over 3.3 metres).

Exploration work in 1982 included prospecting along the complete length of the Red Bed horizon, and the drilling of five additional holes in the downdip direction of Red Bed horizon mineralization. Prospecting did not significantly extend the limits of the 600 metre long, thinly mineralized outcrop zone that had been uncovered in 1981. Two of the five additional holes drilled intersected significant mineralization (10.15% Zn over 1.5 metres, and 3% Zn over 6.3 metres). Both these holes were drilled in close proximity to the previous "ore grade" hole. However, two other holes drilled between the three holes that encountered significant mineralization intersected only traces of sphalerite. The best mineralization, within the 3 significant holes, is associated with medium to dark grey, variably but generally finely crystalline, pyritic, argillaceous dolostone sections of the uppermost Waterfowl Formation. This mineralization includes very fine grained sphalerite that appears to be the product of very early diagenetic, stratigraphic replacement. It is not at all similar to the typical open space filling, Mississippi Valley type of mineralization. This fine grained replacement type of mineralization, if it were to be part of a large ore trend, would be expected to be more or less stratigraphically continuous. However, prospecting and the limited amount of diamond drilling tend to suggest that the mineralization along the Red Bed horizon is somewhat erratic in distribution and is of a limited areal extent. It is probably not part of a large "ore" trend. Even so, the downdip direction of the Red Bed horizon, which has yielded some significant mineralization, has not been fully tested and may warrant some additional diamond drilling in order to determine whether the grade and continuity of the sphalerite mineralization will continue to improve in this direction. However, no further large scale exploration program on the Shag Claims is recommended.

1. INTRODUCTION

In 1977, Rio Tinto Canada Exploration Limited sponsored the Graf Lead-Zinc Reconnaissance Program in the southeastern Rocky Mountains. One result of that work was the discovery of two small lead-zinc showings, within Middle to Upper Cambrian carbonate strata, near a major carbonate-shale facies boundary. These showings, together with some associated stream silt anomalies, led to the staking of the Shag Claims.

1.1 Location and Access (Figures 1 and 2)

The Shag Claims are located at latitude 50°38'N and longitude 115°30'W, in Albert River drainage, about 35 kilometres east of Radium Hot Springs, B.C. The western and northern parts of the claims are accessible via well maintained logging roads originating from Radium Hot Springs (60 km), and Canal Flats (65 km), B.C. Both these towns are located on a branch line of the Canadian Pacific Railway. The south-eastern parts, the higher elevations, and the main showings in the central part of the claim group are best approached by helicopter, available through Canwest Helicopters at Fairmont Hot Springs, B.C., situated 40 kilometres southwest of the claim group.

The terrain is rugged with surrounding peaks reaching 2,500 to 3,000 metres (8,000 to 10,000 feet) and valley floors at between 1,250 and 1,550 metres (4,000 to 5,000 feet). Snow cover between the peaks of the Royal Ranges, which occur along the eastern edge of the claim group, remains throughout the summer. Shag valley has very steep slopes that are heavily wooded below 2,150 metres (7,000 feet). Vertical cliffs are common and numerous deforested avalanche zones occur along sections of the steeper valley slopes. Above 2,150 metres, vegetation is scarce as outcrop peaks and cliffs, rock debris, and talus predominate. The topography of the claims is contained on N.T.S. map sheets 82-J-11W and 12E.



Figure 1.

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Shag Claims - Location Map - N.T.S. 82/J-11,12.

0 10 20 30 40 50
 Kilometres

Beoff 51m

520000m E.

45' 9

R 12 C

30' R 11 1

116°00'

51°00'

5640000m N.

3

45

N

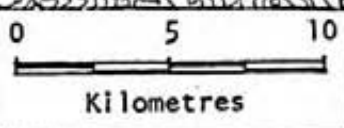
Radars Her Springs 2m

Golden 75m

Golden



Figure 2.



SCALE: 1:250,000

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Location Map - Shag Claims

N.T.S. 82/J-11,12

1.2 Description of the Claims

The Shag Claims consist of eight claim blocks comprising 127 claim units. They were staked in the summer of 1977 and recorded on August 15, 1977 as follows:

<u>Claim Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Recording Date</u>
Shag 1	20	158	August 15, 1977
Shag 2	12	159	August 15, 1977
Shag 3	20	160	August 15, 1977
Shag 4	20	161	August 15, 1977
Shag 5	12	162	August 15, 1977
Shag 6	18	163	August 15, 1977
Shag 7	15	164	August 15, 1977
Shag 8	10	165	August 15, 1977

Shag Claims 1 and 2 are grouped together as Shag Claim Group 725 (32 units) and Shag Claims 3, 4, 5, 6, 7 and 8 comprise Shag Claim Group 726 (95 units). These groups were recorded on February 10, 1982.

1.3 Previous Exploration Work

In the summer of 1978, Rio Tinto utilized a crew of five men for six weeks to perform prospecting, soil sampling and 1:10,000 scale geological mapping within the Shag Claims. This work located eight Pb-Zn showings, in addition to the two original showings discovered in 1977, and suggested that eight of the ten showings occurred along two main stratigraphic horizons. The upper one, consisting of six widely separated showings, was named the C-4 horizon, while the lower one, consisting of two showings, was named the B.M. horizon. The soil sampling survey detected several zinc anomalies and smaller lead anomalies associated with known showings, as well as a significant lead anomaly that has not been associated with any known mineralization to date.

In September of 1978, three diamond drill holes totalling 160 metres (520 feet) were drilled to test the main B.M. showing. On surface this showing consists of several discontinuous outcrops along a 90 metre length, which, at best, contain 1 to 2 percent sphalerite across a mineralized zone that is 1 to 3 metres thick. Each of the three holes were spotted directly behind exposed mineralization and intersected mineralization that was as low grade and spotty in occurrence as that of the outcrops. Diamond drill hole 78-1 contained the best mineralized intersection, yielding an assay having 4 percent Zn over 0.5 metres.

During the summer of 1979, two Rio Tinto geologists spent 10 days remapping a number of mineralized horizon contacts, mapping the main C-4 showing, and performing follow up prospecting on a number of soil anomalies not yet associated with known mineralization. They located three new sphalerite occurrences; one on the B.M., and two along the C-4 mineralized horizon.

In the fall of 1979, six diamond drill holes totalling 460 metres (1,497 feet) were drilled to test the two major mineralized horizons. The first four holes were designed to intersect the C-4 mineralized horizon. These holes were spotted at different locations within 200 metres of known showings. Though each of the holes intersected the contact that should have been mineralized, only DDH 79-4 encountered weak mineralization. The fifth and sixth diamond drill holes tested the B.M. mineralized horizon. Diamond drill hole 79-5 encountered no mineralization and DDH 79-6 was abandoned due to deteriorating weather, which produced extreme freezing conditions, at a point where it was beginning to encounter weak mineralization. Two additional showings were discovered during the course of spotting and prospecting around these holes, bringing the total number of showings along Shag Creek to fifteen.

In 1980, Rio Tinto became disinterested in the Shag property and relinquished interest in it to Chris Graf. In the spring of 1981, Esso Resources Canada Limited optioned the Shag property from Chris Graf.

During the summer of 1981, the writer, together with a second geologist, spent four weeks collecting stream sediment samples for heavy mineral analyses, mapping contacts near known lead-zinc occurrences, and mapping reported facies changes, structural complexities and stratigraphic horizons that appeared favourable for hosting additional mineralization. This work suggested that the lead-zinc mineralization had accumulated in dolomitized and early brecciated portions of a carbonate shoal complex along the edge of a shale basin. The dominant control over mineralization appeared to be stratigraphic as the showings occurred within the upper sections of two different dolostone horizons, in close proximity to an overlying argillaceous limestone. The lower one, or B.M. horizon, occurs in the upper part of the Eldon Formation dolostone, while the upper one occurs at the top of the Waterfowl Formation dolostone. The showings within the upper horizon were divided into two separate mineralization types. Those directly associated with the Waterfowl-Sullivan Formation contact were considered part of the Red Bed mineralized horizon, while those occurring at a stratigraphic level below that of the Sullivan Formation contact retained the name of C-4 type mineralization. In general, the known showings associated with each of the 3 mineralized horizons proved to be small, low grade, discontinuous pods and lenses that gave little promise of yielding significant mineralization. However, the work suggested that the area with the best potential for better mineralization lay along the east side of Shag Creek, within the uppermost dolostone of the Waterfowl Formation, along its contact with the Sullivan Formation argillaceous limestone. A short geological investigation of this contact (the Red Bed horizon), followed by a few short diamond drill holes to assess the downdip extensions of the best showings located along this trend, were recommended as further work.

In the fall of 1981, the writer together with an assistant spent 3 weeks investigating the Red Bed horizon, and supervising a short diamond drill hole program on the downdip extension of this

mineralized trend. Prospecting along the horizon resulted in the discovery of two new showings, numerous smaller shows, and the identification of a 600 metre length of more or less continuous mineralization, albeit in discontinuous outcrop, termed the main Red Bed horizon. Four diamond drill holes totalling 152 metres were drilled from three locations to intersect the Red Bed horizon downdip from the main mineralized trend. Holes 81-1 and 81-4 encountered only traces of sphalerite. Hole 81-2 intersected sphalerite over a 15 metre interval, including a section that yielded assay values averaging 10.25 percent Zn and approximately 1 oz/ton Ag over 3.3 metres. Hole 81-3 was aborted, due to extremely poor drilling conditions, at a point where it was beginning to encounter some sphalerite. A continuation of both the drill program and prospecting in the vicinity of the Red Bed horizon were recommended as additional work.

1.4 1982 Exploration Work

In June of 1982, the writer was party chief of a crew of 4 who spent 3 weeks prospecting and supervising a short (459 metres) diamond drill hole program on the Shag claims. The prospecting traverses focused on investigating both the Waterfowl-Sullivan Formation contact, particularly on the east side of Shag Creek in close proximity to the Red Bed horizon trend, and the surface trace of No Name Fault. The objective of the prospecting was to determine whether the Red Bed mineralized horizon could be part of a larger ore trend. The drill programs purpose was to evaluate the significance of the mineralization that was encountered in hole 81-2, and to test for additional mineralization along the downdip extension of the main Red Bed horizon.

The drilling work was contracted to Globe Drilling (1981) Ltd., of Vancouver, B.C., who utilized 4 men in two shifts to complete the drilling in 18 days. Canwest's Bell 206B helicopter from Fairmont Hot Springs, B.C., was utilized for daily access to the drill sites

and for all the drill moves. Drilling was done with a lightweight Hydro-Core 28 drill that yielded B.Q. core. Water for drilling was available from avalanche chute streams that were fed by the melting snow at higher elevations. The volume of water available from these streams decreased during the drilling operation, and would not have been sufficient to continue drilling into July. Drilling during the summer months would require pumping water up a vertical height of 250 metres from Shag Creek. Drilling personnel were accommodated in a tent camp, set up along the Albert River Road, in the northwest corner of the claim group.

In addition to the work on the Shag Claims, a further 3 weeks was spent collecting 254 stream sediment samples for heavy mineral analyses in a 10 km by 60 km belt adjacent to the Shag claims. Several prospecting traverses, along extensions of the Waterfowl-Sullivan Formation contact, were made in conjunction with the regional stream sediment sampling survey. The results of the regional exploration work are contained in a separate report (Lenters, 1982).

2. GEOLOGY

2.1 Regional Geology (Figures 3A, 3B, 4 and G.S.C. Open File 634)

The Shag Claims lie near the southern end of the Main Ranges Subprovince of the Rocky Mountain Fold and Thrust Belt, along a line that separates gently dipping, resistant Cambrian carbonates from recessive, cleaved and locally contorted Cambrian shales and argillaceous carbonates (Figures 3A and 3B).

These two packages of Middle to Upper Cambrian strata comprise two laterally equivalent facies that underly most of the Shag Claims. The eastern facies consists of an alternating sequence of thick-bedded or massive carbonates, and thin-bedded, argillaceous carbonates and shales. These alternating units are given a number of formational names as shown in the stratigraphic column of Figure 4. The western facies, comprising thin-bedded, cleaved, argillaceous carbonates and thick sections of calcareous shale and slate, are grouped together as the Chancellor Formation.

These two facies form part of the lower section of a Paleozoic miogeocline-platform sedimentary assemblage that accumulated as a continental terrace wedge, prograding into a transgressing ocean basin. The western facies strata (Chancellor Formation shales) accumulated in a deep water basin adjacent to the platformal shelf. The eastern facies strata accumulated on the outer edge of the platformal shelf along a raised bank margin or hinge line of carbonate deposition that was interrupted by cyclic incursions of muddy sediments. Inside the carbonate bank margin, the interior platformal shelf featured a sag or interior basin in which clastics and fine grained carbonates were deposited. Aitken (1971) named the Cambrian ridge or high along the edge of the platformal shelf the "Kicking Horse Rim". It is best developed near Field, B.C., but extends north and south for a total length of at least 120 km, localizing the eastern carbonate to western shale facies change to

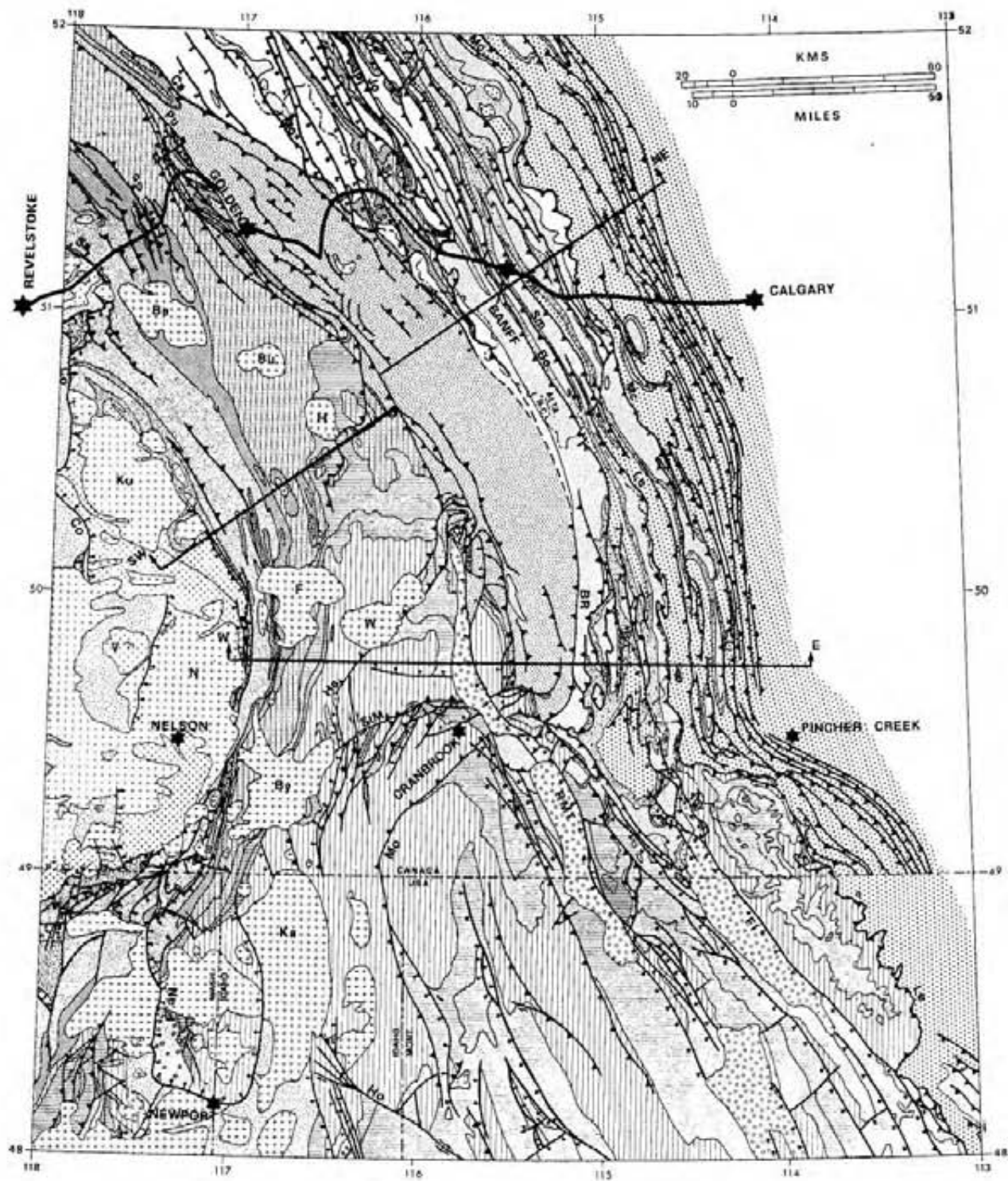


Figure 3A. Generalized geological map of Southeastern British Columbia, (After Price, 1981).

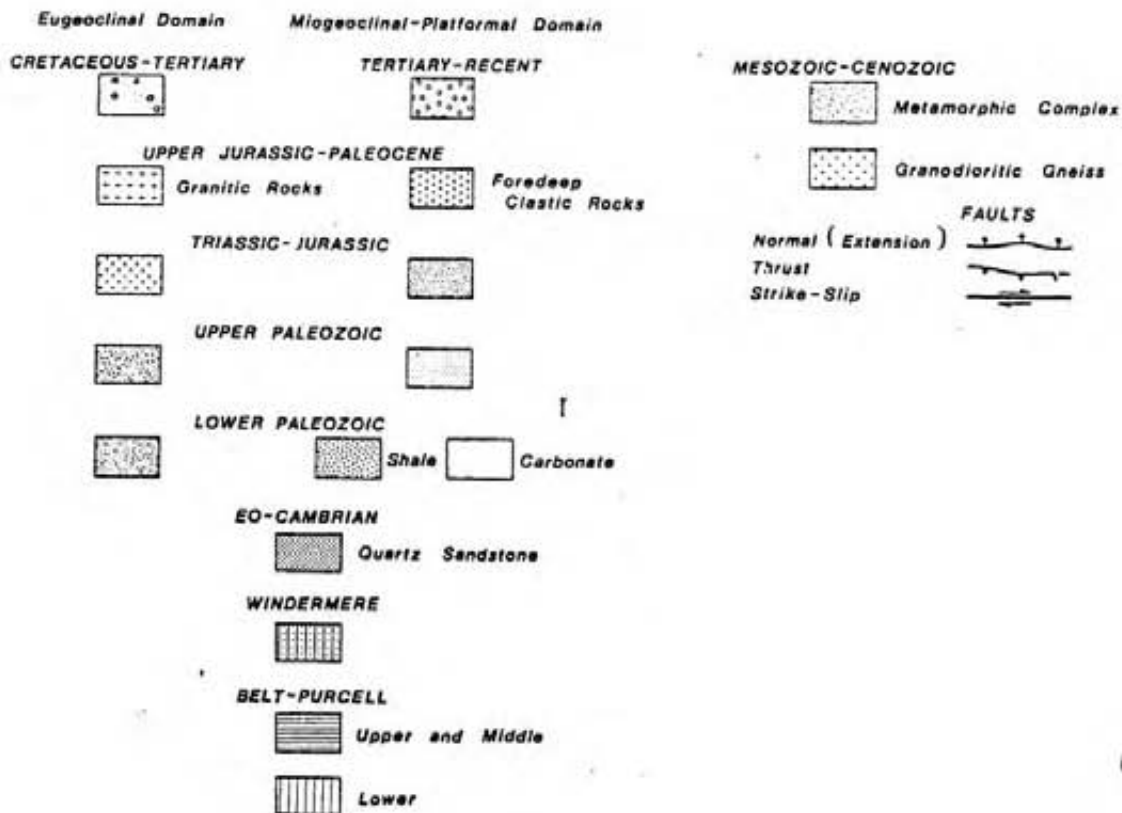
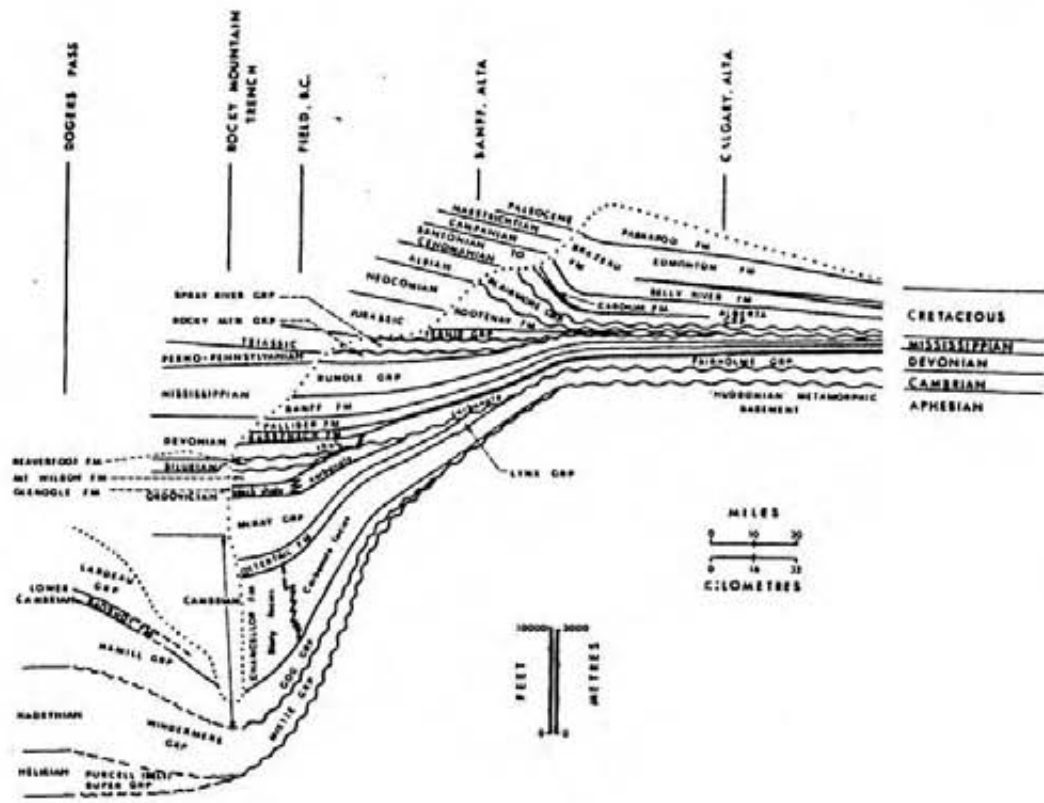
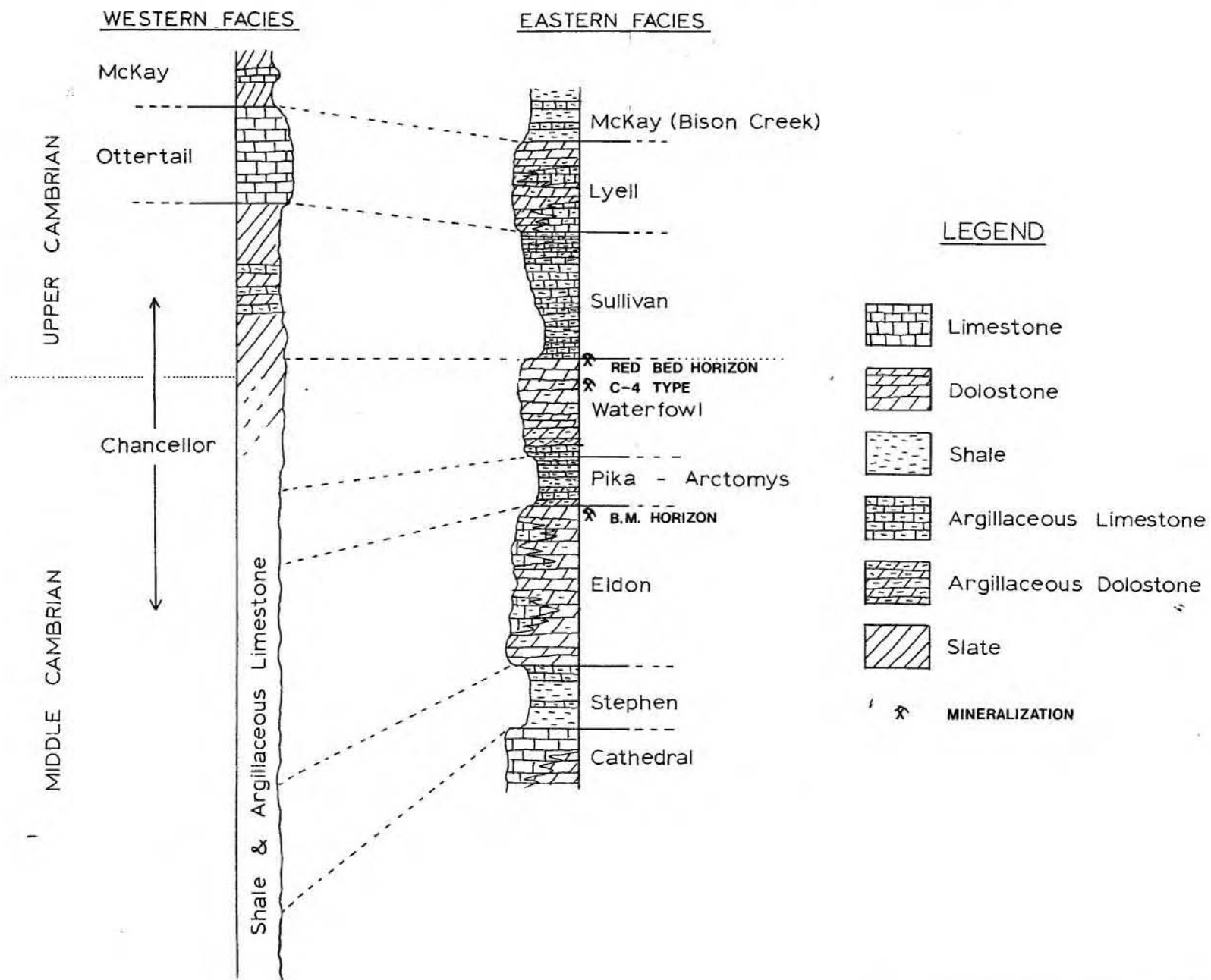


Figure 3B. Legend for Figure 3A, (After Price, 1981); and a schematic cross-section of the wedge of supracrustal rocks lying on the Hudsonian basement, along a line from just east of Calgary to just east of Revelstoke.

FIGURE 4. STRATIGRAPHIC COLUMN AND CORRELATION CHART FOR GEOLOGIC FORMATIONS IN THE SHAG CLAIMS AREA



a very narrow belt. The carbonate units of the eastern facies cannot be traced westward across the facies boundary, which is thought to represent a possible fault zone (active in late Proterozoic and earliest Paleozoic time), that formed a steep escarpment controlling deposition within the basin.

On a broad scale, the eastern facies carbonates are now part of the western edge of the Rocky Mountain Main Ranges, while the western facies shales lie within the Rocky Mountain Western Ranges.

The geology of the area surrounding the Shag Claims is shown on a recent reconnaissance scale (1:126,720) map, released by the Geological Survey of Canada as Open File Report 634 (Leech, 1979). The Middle to Upper Cambrian strata exposed over the Shag Claims occur on the eastern side, and near the southern end, of the broad, northwest-trending Porcupine Creek Anticlinorium. In a general way, the axis of this anticlinorium coincides with the facies boundary that separates the western facies Chancellor Formation shales from the eastern facies Cambrian carbonates. The shales are exposed on the west limb, while the carbonates occur along the east limb of the anticlinorium.

As seen on Leech's Open File Map, distinctions between the various Middle to Upper Cambrian Formations of the eastern facies becomes increasingly difficult south of Mount Assiniboine, since adjoining formations are lumped together for mapping purposes. This is particularly true for the area south of White Man Mountain (located 10 km north of the Shag Claims), as no distinction is made for most of the various Middle Cambrian strata. Aitken (1967), who has carried out extensive mapping in the Lower Paleozoics of the southern Rocky Mountains states that "the Upper Cambrian Formations are recognizable as far south as White Man Mountain, but immediately to the south and west of that point, the distinctive character of the Upper Cambrian sequence cannot be recognized at all. Even the easily recognizable Arctomys Formation disappears without structural cause, when traced from White Man Mountain down

the Cross River". A change in the character of the sedimentary basin, possibly influenced by the Precambrian Montalta rise, inhibited the deposition of the strongly cyclic (shale to carbonate) sedimentation south of White Man Mountain. However, the main Cambrian Formations of the eastern facies can be recognized on the Shag Claims even though their relative thickness and character is different from that of the type sections to the north, and the contacts between these formations is less distinct.

Overlying both the western shale and eastern carbonate facies strata are younger Cambrio-Ordovician argillaceous strata of the McKay Group. In the Shag Claims area, this contact is generally sharp, well exposed and easily recognizable.

In the region surrounding the Shag Claims there are several carbonate-hosted Pb-Zn mineral occurrences of Cambrian age that are associated with the dolomitized portions of prominent biogenetic-bioclastic carbonate complexes. Though most of these represent somewhat different styles of mineralization, they demonstrate the availability of metals and potential for concentration within this type of rock. In the Kicking Horse area, mines and occurrences are found in Middle Cambrian carbonates in close proximity to the carbonate-shale facies front along the Kicking Horse Rim. Along the Rocky Mountain Trench and westward, mines and showings occur in the Upper Cambrian Jubilee Formation. In the Lardeau area, and south along the Kootenay Arc through the Salmo area into the U.S., mines occur in the Lower Cambrian Badshot Formation and its correlatives.

2.2 Stratigraphy and Geology of the Shag Claims (Figures 4 and 5)

A schematic stratigraphic column of the Cambrian Formations occurring in the Shag Claims area is presented in Figure 4. The location of these formations over the Shag Claims, as mapped in 1981, together with the locations of all the known showings and diamond drill holes is presented on a 1:10,000 scale geological map

(Figure 5). Complete descriptions of the Cambrian rock units, as encountered on the Shag Claims, is given in a previous report (Lenters, 1981a). For the purposes of this report a brief summary follows:

Western Facies Strata

Chancellor Formation (Middle and Upper Cambrian):

Thin- to medium-bedded, strongly cleaved argillaceous limestone, calcareous shale and minor slate.

Eastern Facies Strata

McKay Group (Ordovician and Upper Cambrian):

Thin-bedded, grey-green and grey, somewhat phyllitic shales with thin interbedded calcarenite units. The basal unit consists of a thin, distinctive reddish shale unit.

Lyell Formation (Upper Cambrian):

Thick-bedded, massive, cliff-forming, light to medium grey, generally micritic dolostone with some limestone.

Sullivan Formation (Upper Cambrian):

Thin- to medium-bedded, medium grey, banded argillaceous and silty limestone, and minor calcareous shale. Characteristically shows sedimentary boundinage structures.

Waterfowl Formation (Middle and Upper Cambrian):

Medium- to thick-bedded, massive, light coloured, fine to medium grained, sucrosic dolostone with interbeds of dolomitic limestone and dark grey limestone. The upper part of this formation hosts the C-4 type and Red Bed horizon mineralization.

Arctomys-Pika Formations (Middle Cambrian):

Thin-bedded, calcareous and dolomitic, dark coloured shale, siltstone, argillaceous limestone, and minor dolostone.

Eldon Formation (Middle Cambrian):

Thick-bedded, massive, cliff-forming, white to light grey, fine to coarse grained, sucrosic dolostone, darker argillaceous dolostone and minor limestone. The upper part of this formation hosts the B.M. horizon mineralization.

Stephan Formation (Middle Cambrian):

Thin-bedded, medium grey, fine grained argillaceous limestone, dolomitic limestone as well as very thinly bedded to laminated grey shale.

Cathedral Formation (Middle Cambrian):

Thin- to thick-bedded, medium to dark grey, generally fine grained limestone and dolomitic limestone as well as massive, coarsely crystalline, light grey to white dolostone. The base of the Cathedral Formation is not exposed on the claim group.

3. MINERALIZATION (Figures 4, 5, 6 and 7)

Rio Tinto (Bending, 1979a and 1979b; Whiting, 1979) initiated work that lead to the discovery of fifteen small lead-zinc showings in the Shag Claims area. Esso Minerals (Lenters 1981a, and 1981b) uncovered two additional showings and a number of smaller shows along the known mineralized trends. Fifteen of these 17 Pb-Zn showings occur along a 5 kilometre length of Shag Creek in association with two main stratigraphic horizons.

These two zones of mineralization occur in the upper parts of the Eldon and Waterfowl Formation dolostones, at or near the contact with overlying argillaceous limestone. Those showings associated with the Eldon Formation are said to occur along the B.M. mineralized horizon. Those showings associated with the Waterfowl Formation dolostone are of two types. The Red Bed mineralized horizon, which occurs in the uppermost part of the Waterfowl Formation dolostone at its contact with the Sullivan Formation, and C-4 type mineralization, which appears to occur at a stratigraphic level within the Waterfowl Formation somewhat below that of the contact with the overlying Sullivan Formation. A summary of the main characteristics of each of these three mineralized horizons is given in Lenters (1981b). Complete descriptions of all the individual showings are given in Bending (1979a and 1979b), Whiting (1979), and Lenters (1981a and 1981b). For the purpose of this report, which concentrates on investigating the Red Bed horizon, a brief summary of the mineralization of this horizon will be given, together with a more complete description of the new mineralization that was discovered along this trend during the course of this work.

3.1 Red Bed Horizon Mineralization (Figures 5 and 6)

The Red Bed horizon consists of numerous sphalerite-galena showings that constitute a thin, weakly mineralized band within the uppermost Waterfowl Formation dolostone. All of these showings occur along the east side of Shag Creek along a line that parallels

the flow of the creek. Most of them occur in close proximity to one another along a 600 metre long length of the Waterfowl-Sullivan Formation contact, within the central part of the claim group. This section of closely spaced mineralization has been termed the main Red Bed horizon. Separated from this main zone, but still associated with the Waterfowl-Sullivan Formation contact, are the Christmas Showing (1500 metres to the northwest of the main horizon) and the Pieces Float Show (450 metres to the southeast of the main horizon). During the course of this work, the complete length of the Red Bed horizon was reprospected and some additional mineralization was uncovered in the vicinity of the Christmas showing, and at the southeast end of the main Red Bed horizon (the Vug Show).

3.1.1 Main Red Bed Horizon (Figure 6)

The main Red Bed horizon includes the Rush, South Rush, Kim, Crackle and Red Bed showings, as well as numerous smaller shows that constitute a 600 metre long zone of mineralization between the Vug and Rush showings. In fact, between these two showings, some sphalerite mineralization has been found at the top of the Waterfowl Formation dolostone at every location that its contact with the overlying Sullivan Formation limestone can be exposed. Red Bed horizon mineralization, along this contact is generally thin (< one metre), and very low grade (< 1 to 5 percent Zn over 1 metre). It consists of either thin bands of small (0.1 to 2 mm), reddish coloured, disseminated sphalerite together with some coarser grained pods that also contain galena, or of fine to coarse sphalerite along either fractures or associated with sparry white dolomite in brecciated and pseudobrecciated sections of darker grey dolostone. Four chip samples taken from various locations along the main Red Bed horizon gave assay values of between 2 and 9 percent Zn over thicknesses of just under one metre (Lenters 1981b). The best mineralization along this

horizon occurs at the Red Bed and Kim showings. Here, mineralized widths of 0.5 to 1.5 metres are exposed in closely spaced, but discontinuous, outcrops and float blocks over lengths of 30 to 60 metres respectively. The mineralization is generally quite poor, but can contain intensely mineralized bands or pods that pinch and swell along exposed strike lengths. Some of these better zones are at least 1 to 3 metres long with visual estimates suggesting greater than 30 percent combined sphalerite and galena over thicknesses in the order of 10 to 30 cm.

In 1981, hole 81-2 drilled through the downdip extension of the main Red Bed horizon, at a location between the Red Bed and Kim showings, intersected 15 metres of mineralized strata, including a section yielding assay values indicating 10.25 percent Zn and 1 oz/ton Ag over 3.3 metres. The mineralization in this "ore grade" section consists of very finely disseminated red sphalerite that is associated with two separate, one metre thick, fine grained, dark grey, very argillaceous, pyritic dolostone horizons. These two mineralized bands are separated and surrounded by a medium grey, sucrosic, mottled or pseudobrecciated and sometimes brecciated dolostone containing much less, and coarser grained (0.1 to 2 mm) fracture associated sphalerite.

3.1.1.1 Vug Show (Figure 6)

The Vug show is located at the extreme southeast end of the main Red Bed horizon about 55 metres southeast of the Red Bed showing. It consists of two separate mineralized zones, 10 to 20 cm thick, that are each exposed over a length of a metre or two from beneath the overburden. They are separated by four metres of overburden. The showing is located on the north side of a main avalanche chute, and occurs at a stratigraphic

level about 6 or 7 metres below that of the Waterfowl-Sullivan Formation contact. Prospecting of the well exposed Waterfowl dolostones in the adjacent avalanche chute, yielded no additional sphalerite or galena mineralization. The mineralization within the Vug show consists of fine (0.1 to 1 mm) red sphalerite grains, together with some coarser (up to 1 cm) galena, that is associated with coarse white sparry dolomite in a vuggy, well brecciated dolostone. The surrounding dolostone is variably crystalline, light to medium grey, strongly pseudobrecciated and contains minor sphalerite, in a few places, where it is adjacent to mineralized breccia zones. The mineralization in the brecciated zone of the Vug show grades out into an unmineralized, pseudobrecciated dolostone towards the avalanche chute.

3.1.2 Christmas Showing (Figures 5 and 7)

The Christmas showing consists of a number of mineralized exposures within two side by side avalanche chutes on the west side of Citadel Peak. The northern stream channelway exposes two small mineralized zones, containing a minor amount of replacement sphalerite and galena, just below the Waterfowl-Sullivan Formation contact. The rest of the contact zone, though poorly exposed, is unmineralized. The southern channelway exposes an 8 metre length of a well mineralized dolostone bed containing abundant, fine grained, disseminated red and green coloured sphalerite. This mineralized bed is in the order of 30 to 35 cm thick.

On the northern edge of the exposed channelway the bed consists of approximately 50 percent very finely disseminated green sphalerite within a light coloured dolostone. Some darker (grey-brown), coarser (1 to 5 cm)

sphalerite occurs as recrystallized grains within the massive sections of fine-grained green sphalerite. The mineralized bed also contains large vugs, many of which are lined or filled with sparry, white dolomite, that contain no sphalerite.

Along strike to the north, the mineralized bed grades through a thin zone containing yellow and orange sphalerite into dolostone with somewhat coarser, more typical, red replacement sphalerite before it becomes covered by overburden. To the south, the bed quickly loses its mineralization and passes into a typical, medium grey, variably crystalline, mottled Waterfowl dolostone.

The overlying bed contains some mineralization in a couple of basal portions, where it is directly in contact with massive sphalerite of the underlying bed. Below the main mineralized bed, sphalerite occurs as individual, granular (1 mm), replacement grains, or as coarser crystals together with calcite in small pockets and veins. A continuous chip sample taken across a well mineralized section of the Christmas showing returned assay values indicating 16.6% Zn across 0.5 metres (Figure 7).

3.1.3 Pieces Show

The Pieces show consists of a number of dark grey, finely crystalline dolostone float blocks containing 3 to 5 percent extremely finely disseminated pyrite, and up to 30 percent fine to coarsely crystalline, flesh coloured, replacement sphalerite. These float pieces measure up to 0.5 x 0.25 x 0.25 metres in size. They are angular and do not appear to have been displaced a great distance. Although the Waterfowl-Sullivan Formation contact is poorly exposed directly above the float occurrence, exposures of the contact within 100 metres to either side contain no visible sphalerite mineralization.

FIGURE 7
SHAG CLAIMS
Christmas Showing Chip Sample

<u>Sample Number</u>	<u>Sample Location</u>	<u>Sample Description</u>	<u>Width Metres</u>	<u>Assay Value</u>		
				<u>Pb (%)</u>	<u>Zn (%)</u>	<u>Ag (oz./ton)</u>
C-104	Upper Section	o red and green sphalerite in basal part of overlying bed	0.25	.01	10.72	0.89
C-103	Upper-Middle Section	o disseminated green sphalerite in coarse, vuggy dolostone	0.15	.01	8.85	0.66
C-102	Lower-Middle Section	o Massive, fine green sphalerite	0.15	.01	33.35	2.93
C-101	Lower Section	o Minor disseminated red sphalerite as small equant grains within sucrosic, light grey dolostone	0.60	.01	0.67	1.58

4. PROSPECTING RESULTS

The prospecting traverses focused on examining the Red Bed horizon mineralized trend (the Waterfowl-Sullivan Formation contact) along the eastern side of Shag Creek. In addition, several prospecting traverses were made through vertical sections of Waterfowl strata, as well as along and across the surface trace of No Name Fault (Figure 5).

The Waterfowl Formation dolostones are resistant, cliff-forming rock units that are well exposed on the east side of Shag Creek. In general, it is thick bedded, light to medium grey, variably crystalline, mottled or pseudobrecciated and, in places, vuggy and brecciated. The Waterfowl Formation contains zones of well brecciated, coarse grained, vuggy dolostone that appear to be classic examples of typical stratabound, carbonate Pb-Zn host rock. However, traverses through numerous partial and complete sections of Waterfowl strata did not reveal any Pb-Zn mineralization, except for that associated with Red Bed horizon near its upper contact with the overlying limestone unit. In addition to lacking Pb-Zn mineralization below the contact zone, the Waterfowl Formation strata also lacked any significant zones of dark grey, pyritic, argillaceous dolostone that seemed to host the best mineralized sections within the Red Bed horizon (e.g., DDH 81-2).

Prospecting along the Red Bed horizon uncovered a minor amount of additional mineralization in the vicinity of the Christmas Showing and at the southern end of the main Red Bed horizon. This new mineralization is described in the previous section. No significant extensions or new zones of mineralization were uncovered. Much of the prospecting along the Sullivan-Waterfowl Formation contact centered on the area to both sides of No Name Creek, situated between the Christmas showing and the main Red Bed horizon. At this point, No Name Creek cuts through the sequence of Cambrian strata perpendicular to the exposed trace of the Red Bed mineralized horizon, and thus yields exposures within the third dimension, or downdip from this mineralized trend. However, outcrop exposures on the valley slopes of No Name Creek are quite scattered and

generally poor. Even so, in the places where the strata in the vicinity of the contact was examined, no Pb-Zn mineralization could be seen. No Name Creek also yielded low Pb and Zn metal values, on analyses from the heavy mineral separate concentrates of the coarse fraction of stream sediment samples, indicating a lack of significant mineralization in this direction.

Prospecting in the vicinity of No Name Fault suggests that it is a feature related to extensional tectonism within the very late stages of mountain building. The fault is a wide (several tens of metres), intensely fractured and brecciated zone that has been recemented by coarse, very clean, white calcite. Very little staining, no alteration, and no sulphide mineralization occurs in association with the fault zone. The trace of the fault dips very steeply to the southwest, and in the area directly behind the Red Bed horizon only involves in the order of several tens of metres of relative vertical displacement. The fault zone continues to the northwest, but to the southeast it passes into a folded zone in which there is no relative displacement across any zone. Though the trace of the fault parallels the direction of thrust faulting within the region, it appears to be a small normal fault in which the strata on the west are relatively lower than the strata on the east.

5. DIAMOND DRILLING RESULTS (Figures 5 and 6)

Six short diamond drill holes, totalling 458.1 metres (1503 feet), were drilled from six locations behind, or downdip from, the Red Bed mineralized horizon. One hole (82-1) tested for in place mineralization in the vicinity of the Pieces Float Show. Four holes (82-2, 3, 5 and 6) tested the main Red Bed horizon in the vicinity of last year's hole 81-2. The other hole (82-4), located at the extreme northern end of the main Red Bed horizon, failed to penetrate the overburden before being aborted due to poor drilling conditions. Specific information relating to the 1982 diamond drill holes, including the detailed drill hole logs, can be found in Appendix II of this report.

Diamond drill hole 82-1 was spotted approximately 60 metres behind, or in the downdip direction from the Pieces Float Show. This hole intersected the Waterfowl-Sullivan Formation contact at a depth of 33 metres. No sphalerite or galena was visible at the contact, or within the 22 metres of Waterfowl Formation dolostone drilled. The dolostone just below the contact is medium grey, variably crystalline, somewhat mottled and contains two very thin, pyritic, argillaceous zones similar to those that appeared to localize the sphalerite mineralization along the main Red Bed horizon. Below the contact zone, the Waterfowl Formation consists of a light coloured, pseudobrecciated dolostone that gradually grades into a coarser, white, vuggy dolostone.

Diamond drill holes 82-2 through 82-6 were spotted directly behind, or downdip from the main Red Bed mineralized horizon in order to evaluate the significance of the 3.3 metre section containing 10.25 percent zinc that was intersected in hole 81-2 the previous year.

Diamond drill hole 82-2 was spotted 56 metres behind the main mineralized outcrop zone at a point between holes 81-1 and 81-2, about 60 metres southeast of hole 81-2. This hole intersected the Waterfowl-Sullivan Formation contact at a depth of 46 metres and continued through 50 metres of Waterfowl Formation strata. The upper 10 metres of Waterfowl dolostone

contains zones with minor sphalerite, including a 1.47 metre section (53.12 to 54.59 metres) that yielded an assay value of 10.15 percent Zn. The main mineralized zones consist of finely disseminated, red coloured sphalerite together with a few coarser (0.5 to 2 cm) recrystallized sphalerite grains. In places, the fine sphalerite appears to be orientated in bands paralleling the bedding direction. Above and below the main zones of sphalerite mineralization, only traces of sphalerite occur in association with late fracturing. No galena was visible within the section. The host dolostone is medium to dark grey, fine to medium grained and contains several argillaceous bands. Below the mineralized strata, the Waterfowl Formation dolostones are generally light coloured, coarsely crystalline, mottled or pseudobrecciated and well fractured or brecciated.

Diamond drill hole 82-3 was spotted 70 metres behind the main mineralized outcrop zone at a point between holes 81-2 and 81-4, about 90 metres northwest of hole 81-2. This hole intersected the Waterfowl-Sullivan Formation contact at a depth of 48 metres and continued through 28 metres of Waterfowl Formation strata. Minor sphalerite mineralization was encountered throughout the upper 11 metres of Waterfowl dolostone. The best intersection (between 51.7 and 58.0 metres) yielded assay values that averaged 3.07 percent zinc over 6.3 metres. Within this zone, sphalerite occurs as small (0.25 to 0.5 mm), equant, reddish coloured grains in 0.5 to 5 centimetre thick bands that parallel bedding. A minor amount of sphalerite, together with traces of smithsonite, also occurs in association with fracturing. The host dolostone is medium to dark grey, finely crystalline, argillaceous and contains approximately one percent very finely disseminated pyrite. Below the mineralized section, the Waterfowl Formation dolostone is light coloured, variably crystalline, strongly pseudobrecciated and somewhat brecciated. Traces of sphalerite, in association with fracturing, are found throughout the section of Waterfowl Formation dolostone that was drilled.

Diamond drill hole 82-4 was spotted at the extreme end of the main Red Bed mineralized horizon, at a point about 38 metres beyond the Rush

Showing. This hole encountered difficult drilling conditions within the overburden and was aborted before encountering bedrock.

Diamond drill holes 82-5 and 82-6 were spotted between holes 82-2 and 82-3, directly downdip from hole 81-2. These two drill holes are both located approximately 80 metres downdip from the outcropping Red Bed mineralized horizon, and occur right between the three previously drilled holes that contained significant Pb-Zn mineralization. Both holes intersected the Waterfowl-Sullivan Formation contact approximately where anticipated, however, each encountered only traces of sphalerite mineralization within the section of Waterfowl Formation dolostone drilled. The upper few metres of Waterfowl dolostone in each hole contain a few zones where visual estimates suggest a zinc content of approximately 0.1 to 0.5 percent over sections of less than one metre. The Waterfowl Formation dolostone in both holes is again similar in lithology to that of the other holes drilled downdip from the main Red Bed horizon. It progresses from a medium grey, fine grained, more argillaceous dolostone near the Sullivan Formation contact, through a zone of lighter grey, variably crystalline, pseudobrecciated dolostone, to a light grey to white, coarse grained, vuggy and brecciated dolostone.

6. DISCUSSION AND CONCLUSIONS

Geological work by Esso Minerals in 1981, identified the Red Bed mineralized horizon (the Waterfowl dolostone - Sullivan limestone contact) as having some potential for being part of a larger "ore" trend. Follow-up work resulted in the discovery of a 600 metre long weakly mineralized outcrop zone that was termed the "main" Red Bed horizon. One of three holes drilled through the downdip extension of this horizon intersected a zone of sphalerite-galena mineralization that included a section where assay values averaged 10.25% Zn and 1 oz/ton Ag over 3.3 metres.

Additional prospecting and diamond drilling along the Red Bed horizon during 1982 did not significantly enhance the appearance of the prospect. However, this work was not completely negative.

Prospecting along the complete length of the Red Bed horizon resulted in the discovery of only a minor amount of additional mineralization in the vicinity of previously known showings. The lack of outcropping mineralization along the Waterfowl-Sullivan contact between the Christmas and the main Red Bed horizon is most disappointing on two accounts. As well as not extending the length of the known mineralized trend, it tends to suggest a limit to any downdip extension of the mineralization, since the contact in this vicinity occurring along No Name Creek cuts into the third dimension of the Red Bed horizon perpendicular to the direction of the known outcropping mineralized trend.¹

Prospecting along the surface expression of No Name Fault failed to reveal any indication that might suggest that it could be a localizing phenomena for any significant mineralization. It appears to be a small, localized, low-temperature event related to the late stages of mountain building.

A continuation of the limited diamond drill program through the downdip extension of the Red Bed horizon, immediately behind outcropping mineralization, produced mixed results. The first hole was drilled at the southern most end of the Red Bed horizon, behind the Pieces Showing,

and encountered no mineralization. The other four holes were all drilled in close proximity to one another, behind the main Red Bed horizon, each within a few hundred feet of the previous "ore grade" hole. Two of these holes encountered only traces of sphalerite, while the other two intersected significant mineralization (10.15% Zn over 1.5 metres and 3% Zn over 6.3 metres). The main mineralization in these two holes, as well as that of the previous mineralized hole, consists of very finely disseminated stratabound sphalerite, that occurs together with extremely fine pyrite (up to a few percent), within a medium to dark grey, fine to medium grained, argillaceous dolostone. The mineralization is stratigraphically controlled, showing a distinct relationship to the contact zone between diagenetic (probably penecontemporaneous or very early) dolostone and the overlying limestone, and in some instances the sphalerite has a syngenetic appearance. Early dolomitizing fluids probably played the major part in the introduction of the mineralization, and a smaller part in its localization. The localization of the fine grained sphalerite is poorly understood, and is of course the result of a complex interplay between the timing and availability of numerous factors, including source metals, dolomitizing fluids, pathways and fronts, and metal precipitating agents. Associated with the zones of fine grained mineralization in these holes, and occurring alone in the pods, stringers, veins and breccias of other showings on the Shag Claims, are coarser replacement sphalerite and sphalerite/galena mineralization that are the result of a later overprinting and/or redistribution of the original mineralization. Thus, the sphalerite and galena within the occurrences of the Shag Claims appear to be the result of early stratigraphic controlled replacement events, and are not at all similar to the classic open space filling Pb-Zn mineralization found in large Mississippi Valley type deposits.

The thin, discontinuous nature of the zones of exposed mineralization, the lack of mineralization adjacent to main zones of mineralization, and the type of Pb-Zn mineralization encountered in the main zones, suggest that even the sphalerite-galena found along the Red Bed horizon is probably not part of a large ore trend.

However, three points must be noted:

- 1) The downdip extension of the Red Bed horizon has not been sufficiently drill tested to preclude the possibility of better and more continuous mineralization. Along the Red Bed horizon, the mineralization tends to be associated with bands of argillaceous, pyritic dolostone. This type of strata would be thicker and more common to the east, in the downdip direction, as one progresses off the carbonate bank toward the carbonate platform basin.
- 2) Three of seven short diamond drill holes passing through the Red Bed horizon downdip from fairly poor mineralization on the surface intersected significant sphalerite mineralization at depth. This includes at least one hole with "ore grade" mineralization.
- 3) The persistent nature and large number of small sphalerite-galena showings along two similar stratigraphic horizons suggest there is some potential that this mineralization is an expression or small scale replica of a nearby "completely" blind ore body that could occur in a similar geologic setting. Possible host rock situations for such mineralization include further downdip or lateral extensions of the upper parts of the Waterfowl and Eldon Formation dolostones, as well as that of the stratigraphically lower Cathedral Formation dolostone. The latter hosts, the Monarch and Kicking Horse lead-zinc deposits, occurring further to the north along the same carbonate-shale facies boundary that passes through the Shag Claims. Though significant mineralization in a "blind" setting is always a possibility, surface work on the Shag Claims resulted in no other zones warranting further prospecting or any other mineralization warranting diamond drilling, apart from that of the Red Bed mineralized horizon.

7. RECOMMENDATIONS

No further large scale exploration program on the Shag claims is recommended.

A small grid of several 400 to 600 foot holes could be drilled in the downdip direction of the main Red Bed horizon, behind the previously drilled holes encountering significant mineralization, in order to fully test for a better and more continuous zone of stratabound sphalerite and galena in this direction.

8. REFERENCES

AITKEN, J.D., 1971, Control of Lower Paleozoic Sedimentary Facies by the Kicking Horse Rim, Southern Rocky Mountains, Canada; Bull. of Can. Petro. Geol., Vol. 19, No. 3, pp. 557-569.

AITKEN, J.D., and GREGGS, R.G., 1967, Upper Cambrian Formations, Southern Rocky Mountains of Alberta, An Interim Report; Geol. Surv. Canada, Paper 66-49, 91 p.

BENDING, D., 1979a, Shag Prospect; unpublished Rio Tinto Canadian Report 547, 20 p.

BENDING, D., 1979b, Shag Prospect; unpublished Rio Tinto Canadian Report 561, 17 p.

LEECH, G., 1979, Geology of the Kananaskis Map area; Geol. Surv. Canada, File Report No. 634.

LENTERS, M.H., 1981a, Report on Geological Mapping and Geochemical Shag Claims; unpublished Esso Minerals Canada Report, Filed with B.C. Government for assessment, 43 p.

LENTERS, M.H., 1981b, Report on Diamond Drilling - Shag Claims; Esso Minerals Canada report, Filed with B.C. Government for assessment, 35 p.

LENTERS, M.H., 1982, Report on Geochemical Stream Sediment Sampling - Cambrian Carbonate Prospect, S.E. British Columbia; unpublished Esso Minerals Canada Report, 15 p.

MCANDLES, P.M., 1979, Rock Project - 1978 Summary Report; unpublished Standard Mines Report, 11 p.

PRICE, R.A. 1981, The Cordilleran Foreland Thrust and Fold Belt in the Southern Canadian Rocky Mountains, in Thrust and Nappe Tectonics, McClay, K.R., and Price, H.J., (eds.); Geol. Soc. of London, Special Pub. No. 9, pp. 427 - 448.

WHITING, B.H., 1979, Shag Report; unpublished Rio Tinto Canadian Report, 14 p.

APPENDIX I

Statement of Expenditures

SHAG CLAIMS

DIAMOND DRILLING - JUNE 1982

STATEMENT OF EXPLORATION EXPENDITURES

1. PERSONNEL: (Salaries - June 8 to June 30)		
Martin Lenters 23 days @ \$200.00/day =	4,600.00	
John Burton 23 days @ \$120.00/day =	<u>2,760.00</u>	7,360.00
2. ACCOMMODATION: (Fairmont Bungalows, Fairmont, B.C.)		
23 days @ \$42.40/day =		975.20
3. FOOD		
46 man days @ \$20.00/manday =		920.00
4. SUPPLIES		
Sample bags, zinc zap, etc =		285.17
5. DIAMOND DRILLING: (Globe Drilling (1981) Ltd)		
Mobilization and demobilization =	2,500.00	
Drilling - 143' overburden @ \$26.00/foot =	3,718.00	
- 1383' rock core @ \$25.00/foot =	34,575.00	
Extra Contract Charges:		
- labour (327 hrs @ 27.50/hour) =	8,992.50	
- core boxes, mud, lost core rod, etc =	<u>1,307.95</u>	51,093.45
6. HELICOPTER: (Canwest 206B, Fairmont, B.C.)		
Daily flights in and out for drill crew and 7 drill moves		
Rental: 47.2 hours @ 460.00/hour =	21,712.00	
Fuel and Oil: 47.2 hours @ 50.00/hour =	<u>2,360.00</u>	24,072.00
7. TRANSPORTATION: (Bow Mac Rentals, Calgary, Alta)		
Pickup truck - 23/30 x 650.00/month =	498.33	
Gasoline - 435 litres @ 45¢/litre =	<u>195.75</u>	694.08
8. SHIPPING: (Greyhound Bus Lines)		
Geochemical Samples (Fairmont/Vancouver) =		27.60
9. GEOCHEMICAL ASSAYS:		
Min-En Laboratories Ltd. (Vancouver, B.C.)		
21 Drill Core Samples (Pb, Zn, Ag) @ 24.75 =	519.75	
4 Chip Samples (Pb, Zn, Ag) @ 24.75 =	99.00	
Loring Laboratories (Calgary, Alberta)		
1 Drill Core Sample (Zn, Ag) @ 18.75	<u>18.75</u>	637.50

10. FIELD AND REPORT PREPARATION:

Martin Lenters 10 days @ \$200.00/day =
Typing, drafting and reproduction =

2,000.00
435.00

2,435.00
\$88,500.00

ML/dmb

Martin Lenters

SHAG CLAIMS

Government Offices and Contacts

1. GOLD COMMISSIONER
Golden Mining Division
Ministry of Energy Mines and Petroleum Resources
Parliament Buildings
VICTORIA, British Columbia
V8V 1X4

Telephone: (604) 387-5975
Contact: R. Rutherford (Chief Gold Commissioner)
Dave Wirtanen

2. GOLD COMMISSIONER
Golden Mining Division
Court House
P.O. Box 39
GOLDEN, British Columbia
VOA 1H0

Telephone: (604) 344-5221
Contact: K.L. Jankovic (Acting Deputy Gold Commissioner)

3. MINING RECORDER
Golden Mining Division
Court House
P.O. Box 39
GOLDEN, British Columbia
VOA 1H0

Telephone: (604) 344-5221
Contact: Bill Christie

4. MINING CLERK (Free Miners Certificate Renewals)
Mineral Resource Branch
310 Ward Street
NELSON, British Columbia
V1L 5S4

Telephone: (604) 352-2211
Contact: Diane Mayrhofer

5. DISTRICT INSPECTOR OF MINES (Notice of Work Forms)
Mineral Resource Branch
310 Ward Street
NELSON, British Columbia
V1L 5S4

Telephone: (604) 352-2211
Contact: Bruce Lang

SHAG CLAIMS


Government Offices and Contacts (Cont'd)

6. FOREST SERVICE - DISTRICT OFFICE
406 - 7th Avenue
P.O. Box 189
INVERMERE, British Columbia
VOA 1K0

Telephone: (604) 342-9257

Contact: Don Hendren (Forest Officer)
Paul Cohen (Resource Assistant)

Shag Claims
Service Companies


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APPENDIX II

Diamond Drill Logs

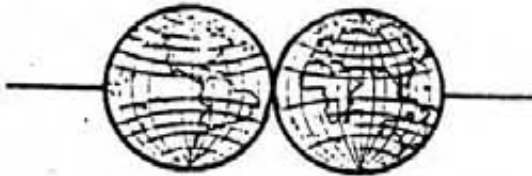
SHAG CLAIMS

1982 Diamond Drill Holes

<u>HOLE</u>	<u>LOCATION</u>	<u>ELEVATION</u>	<u>ATTITUDE</u>	<u>LENGTH</u>
82-1	Approx. 4+50SE; 0+00	1,916m (6,285')	Vertical	55.8m (183')
82-2	0+88NW; 0+28NE	1,926m (6,320')	Vertical	96.9m (318')
82-3	2+17NW; 0+36NE	1,932m (6,340')	Vertical	75.6m (248')
82-4	5+65NW; 0+25SW	1,928m (6,325')	Vertical	26.8m (88')
82-5	1+75NW; 0+61NE	1,946m (6,385')	Vertical	112.2m (368')
82-6	1+25NW; 0+51NE	1,940m (6,365')	Vertical	90.8m (298')
TOTAL LENGTH DRILLED:				458.1m (1,503')

ML/gf
10/11/82

Footage Report—Surface



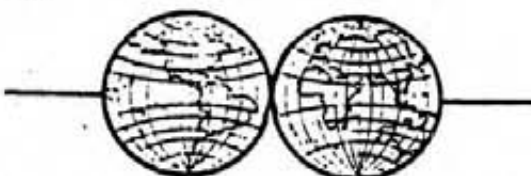
Globe Drilling Ltd.

Project ESSO MINERALS From JUNES To JUNE 15 19__

HOLE NUMBER	FROM	TO	O B FEET	BIT SIZE	ROCK FEET	BIT SIZE	CASING FT-SIZE	REMARKS
82-1	0	26	26			BW		
82-1	23	183			160	BA		
82-2	0	13	13			BW		
82-2	12	318			306	BA		
			TOTALS	39	466			

Foreman [Signature]
 Geologist Martin Sanders

Footage Report—Surface



Globe Drilling Ltd.

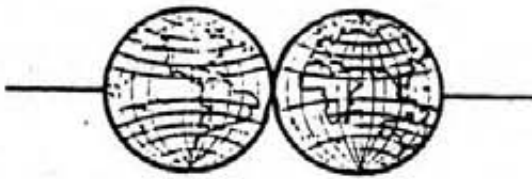
Project ESECO MINERALS From _____ To _____ 19__

HOLE NUMBER	FROM	TO	O B FEET	BIT SIZE	ROCK FEET	BIT SIZE	CASING FT-SIZE	REMARKS
82-3	0	23	23				BW	
82-3	22	248			226		BQ	
82-4	0	50	50				BW	
82-4	23	88			65		BQ	
TOTALS			73		291			

Foreman Richard

Geologist Martin Lenters

Footage Report—Surface



Globe Drilling Ltd.

Project ESSO MINERALS From _____ To JUNE 19__

HOLE NUMBER	FROM	TO	O.B. FEET	BIT SIZE	ROCK FEET	BIT SIZE	CASING FT. SIZE	REMARKS
5	0	11	11					
5	8	368			360			
6	0	20	20					
6	12	298			286			
TOTALS			31		646			

Foreman [Signature]
 Geologist [Signature]

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-1

PROPERTY SHAG CLAIMS PROJECT MA67

NTS 82J-11 # 12

Page 2 of 8

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				SAMPLE FOR THIN-SECTION
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	
		thinly laminated calcareous shale with some very thin (1-3cm) interbeds of lighter grey argillaceous limestone. These interbeds contain very thin (hairline), subparallel, wavy, shaly laminations spaced 1 to 3mm apart, which are orientated somewhat perpendicular to bedding and subparallel to the shaly cleavage, and give the beds a crossbedded appearance. However, this feature is the result of a combination of soft sediment and tectonic deformation.							
		- bedding and most of the laminations are orientated at 60 to 80° to the core axis. However there are a number of zones with complex, small scale open folding.							
		- cleavage is more or less at right angles to the bedding and at 80 to 85° to the core axis. Very thin (hairline to 1mm) calcite veins occur along some cleavage planes at 1 to 10cm intervals							
		- later calcite in thin (hairline to 1mm), irregular tension gashes, crosscut and offset cleavage plane calcite by a few millimetres.							
		12.43 to 12.47 metres - small, intensely veined and brecciated section with coarse calcite infilling.							
		- moderate fracturing consisting of variably orientated open fractures at approximately a 0.5 metre							
									82-1001 (11.61-11.67m)

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-1

PROPERTY SHAG CLAIMS

PROJECT MA 67

NTS 82J-11 #12

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
		spacing. - minor pyrite as fine disseminations within the more argillaceous sections, or as small (1 to 2mm) concentrations of fine pyrite in blebs within the calcareous interbeds. - upper contact is transitional though a zone of sedimentary boudinaged argillaceous limestone within calcareous shale. - lower contact is sharp, but irregular as thin cuspid flames of shale interfinger into and continue as very thin (hairline), shaly laminations within the limestone.						
14.13	27.33	Argillaceous limestone (Sullivan Formation): - light to medium grey, fine grained limestone containing 10 to 40 percent, irregular, wavy or kinked bands of dark grey calcareous mudstone, giving the rock a mottled texture. The calcareous mudstone is often oxidized to an orange-brown colour, particularly within a few centimetres of fractures. The argillaceous bands tend to contain and be separated from the limestone beds by wispy microstylitic surfaces. The limestone contains some poorly developed stylolites. - bedding is generally at 50 to 60° to the core axis, but is poorly preserved. - a poorly developed cleavage, at	Py < 1% 100%					

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-1

PROPERTY SHAG CLAIMS

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NTS 82J-11#12

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				ASSAY VALUE	SAMPLE FOR THIN SECTION
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH		
		<ul style="list-style-type: none"> - cleavage is well developed within the shaly units and is orientated somewhat perpendicular to the bedding at approximately 60° to the core axis. Thin (hairline to 2mm.) calcite veins about 1cm. apart occur along some of these cleavage planes, but are discontinuous through the limestone interbeds which have no shaly cleavage. Adjacent to fractures, the white calcite of these veins, as well as the shaly rock itself, take on a brownish orange oxidized colour. - a minor amount of later, thicker (1 to 2mm), irregular calcite veining brecciates both the limestone and shale interbeds as well as the earlier emplaced calcite along cleavage planes. 								
		27.33 to 28.00 - well brecciated section with calcite infilling.								
		<ul style="list-style-type: none"> - pyrite occurs as finely disseminated grains, thin wispy concentrations of fine pyrite, and as larger (1 to 5mm) blebs - all of which tend to orientate themselves parallel to bedding planes. 								
29.47	33.13	<p>Argillaceous limestone (Sullivan Formation):</p> <ul style="list-style-type: none"> - light to medium grey, fine grained limestone with up to 35 percent irregular "mottly" banded, dark grey or orange-brown, thin (1 to 10mm) argillaceous interbeds and wispy microstylitic 	Py=Tr 100%						82-1002 31.39 - 31.48m	

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-1

PROPERTY SHAG CLAIMS

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				ASSAY VALUE		
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	Pb(%)	Zn(%)	Ag(oz/ton)
		<p>laminations.</p> <p>30.69 to 30.83 - interbedded section of sedimentary boudinaged limestone within shale. (similar to the argillaceous limestone between 14.13 and 27.33 metres).</p> <ul style="list-style-type: none"> - moderate development of stylolites with approximately a 5cm spacing, as well as the argillaceous microstylitic surfaces common throughout the shaly sections. - a few thin (hairline to 1mm thick) calcite veins, at approximately 25 to 30° to the core axis - moderate fracturing (3 to 4 per metre). Orange-brown oxidation colouring of the more argillaceous units occurs in bands up to 10cm wide - adjacent to fractures. - pyrite occurs as fine disseminations, and as small (0.1 to 1mm) individual grains within the more argillaceous sections generally as concentrations paralleling bedding planes 									
33.13	55.78	<p>Dolostone (Waterfowl Formation):</p> <ul style="list-style-type: none"> - light to medium grey, medium to coarse grained dolostone and slightly calcareous dolostone, containing some 1 to 10 cm. zones with thin (1-3mm.) argillaceous laminations. These argillaceous zones occur throughout the section but are more common near the contact with the overlying 	Py <1% 100%		1001	36.08	36.34	0.26	.01	.12	.17

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-1

PROPERTY SHAG CLAIMS PROJECT MA67

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				SAMPLE FOR THIN-SECTION
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	
		argillaceous limestone.							
	36.20 to 36.24								82-1003
	53.04 to 53.30	- two particularly well developed argillaceous zones with abundant thin, shaly laminations that have a high (1 to 3%) pyrite content (as extremely fine grained disseminations).							38.01-38.02
		- much of the upper part of this dolostone section exhibits a relict irregular wavy or mottled texture that is typical of the overlying argillaceous limestone. Where this texture is best preserved the rock is somewhat calcareous as dolomitization is not complete. However, the mottled texture is also evident in areas that have been completely dolomitized.							82-1004
		- the lower part of the dolostone section is completely dolomitized with much of the original textures obliterated leaving variably crystalline somewhat pseudobrecciated zones. Below 45m., pseudobrecciation is well developed and appears as coarse white dolomite, generally surrounding open vuggy porosity, within light grey, medium grained dolostone.							53.07-53.13m
		- some moderately developed stylolites occur throughout the more massive dolostone in the lower part of the section, while numerous small wispy microstylitic surfaces							

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-2

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NTS 82J-11#12

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72/764

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
		<p>that the irregular kinked or wavy argillaceous zones, have become more shaly, more abundant and more regular, forming separate interbeds. Numerous hairline to 5mm thick, even, discontinuous, dark grey shaly laminations and interbeds occur throughout the section.</p> <ul style="list-style-type: none"> - approximately 5 percent calcite veining throughout section, as 1 to 10mm veins along cleavage partings within the shale, or as thinner veinlets cutting across the more competent limestone perpendicular to bedding. In places, this veining is quite irregular and brecciates numerous parts of the section. - shaly cleavage is orientated at 70 to 75° to the core axis. - pyrite is very finely disseminated throughout the section but also occurs as wispy concentrations of fine pyrite within the shale and as larger 1x5mm grains within the calcite veins and limestone sections. 						
8.69	12.85	<p>Argillaceous limestone (Sullivan Formation):</p> <ul style="list-style-type: none"> - medium grey, fine to medium grained argillaceous limestone with 5 to 20 percent dark grey, thin (1 to 10mm), irregular wavy or kinked zones of very fine grained calcareous mudstone. The latter contain numerous thin, 	Py = Tr. 100%					

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-2

PROPERTY SHAG CLAIMS PROJECT MA67

NTS 82J-11 #12

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	ASSAY VALUE
		<p>discontinuous shaly surfaces (wispy microstylolites). Some of the darker grey argillaceous zones have been partially oxidized to an orange-brown colour, particularly in thin bands adjacent to fractures.</p> <ul style="list-style-type: none"> - cleavage and bedding at 60 to 70° to the core axis - approximately 2 fractures per metre orientated at 30° to the core axis and usually with calcite along the surfaces. - traces of pyrite as very fine grained disseminations. 							
12.85	16.87	<p>Calcareous shale (Sullivan Formation):</p> <ul style="list-style-type: none"> - dark grey, very fine grained and thinly laminated calcareous shale with abundant calcite and some and quartz-carbonate veining - in places the shales are oxidized to a brownish colour, particularly in thin bands adjacent to fractures - this section also contains a few very thin (0.5 to 5 cm.) interbeds of lighter grey argillaceous limestone. These interbeds have very thin (hair-line), parallel, wavy laminations of shale that are orientated somewhat perpendicular to bedding and parallel to cleavage. - bedding is at 70 to 80° to the core axis with some complex isoclinal 	Py < 1% 100%						

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-2

PROPERTY SHAG CLAIMS PROJECT MA67

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6733

74/08

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
		and open folding on a small scale.						
		- cleavage at 75 to 80° to the core axis and somewhat perpendicular to the bedding.						
		- approximately 5 percent calcite veining throughout section as thin (<1mm) laminae along cleavage planes (generally grouped together in zones 2 to 3 cm. wide with 5 to 10 laminae) and as larger (1 to 20 cm.), more irregular calcite veins that also generally parallel the cleavage direction.						
		13.24 to 13.31						
		13.47 to 13.65 - two brecciated sections containing calcite/quartz veins with included shale fragments.						
		15.40 to 15.45						
		16.00 to 16.08 - two faulted / contorted zones with abundant calcite veining.						
		- well developed late fracturing producing an extremely broken core section.						
16.87	19.16	Argillaceous limestone (Sullivan Formation):	Py < 1%					
		- medium grey, fine to medium grained argillaceous limestone with 5 to 10 percent, dark grey, thin (1 to 5mm) irregular, discontinuous, wavy argillaceous bands and wispy microstylolites. The argillaceous component is often oxidized to an orange-brown colour, particularly adjacent to fractures.						

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-2

PROPERTY SHAG CLAIMS PROJECT MA67

NTS 82J11 # 12

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8733
78/08

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				SAMPLE FOR THIN-SECTION
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	
		33.50 to 34.10 - four small (<5mm), clay, fault gouge seams that are orientated parallel to bedding and occur within the argillaceous shale unit, which has been completely oxidized to an orange-brown colour.							
		- pyrite occurs as large (0.5 to 5 cm) elongate blebs or concentrations of fine crystals, generally within the argillaceous limestone, and as fine disseminations within the shaly sections.							
34.10	46.04	Argillaceous limestone (Sullivan Formation) - medium grey, fine to coarse grained, argillaceous limestone. Contains approximately 10% dark grey (or oxidized to an orange-brown colour adjacent to fractures), thin (1 to 10mm) irregular kinked argillaceous laminations and thin shaly, wispy microstylitic laminations. This section also contains a number of 10 to 30 cm. thick zones where more regular, thin (1 to 3mm), even and parallel shaly laminations are interbedded with equally thin limestone units.	Py=1%	100%					
		- bedding and shaly cleavage at about 70° to the core axis.							
		- limestone is composed of grains somewhat coarser than the overlying units, and shows a mottled or burrowed texture.							

82-2001

41.79 to 41.81m

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DIAMOND DRILL LOG

Hole No. 82-2

PROPERTY SHAG CLAIMS PROJECT MA67

NTS 82J11#12

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES									
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	ASSAY VALUE					
									Pb (%)	Zn (%)	Ag (oz./ton)			
		<ul style="list-style-type: none"> - sedimentary boudinaging of the limestone is evident within the shale. 												
		42.30 to 42.35												
		43.45 to 43.85 - very thinly interbedded limestone and shale zones with marked movement or slippage along cleavage within shales. Contains a few thin gouge or thin fault seams, the largest being 5cm of broken shale and clay.												
		- small (0.1 to 3mm) pyrite grains throughout, and small fine disseminations within shaly zones.												
		- contact with the underlying dolostone occurs across a 2cm wide calcite vein orientated at 45° to the core axis												
46.04	52.14	Dolostone and calcareous dolostone (Waterfowl Formation) :	Py=1% 95%											
		<ul style="list-style-type: none"> - medium grey, medium grained, calcareous dolostone and dolostone. These are dolomitized equivalents of the overlying argillaceous limestone and contain sections with a well preserved irregular wavy, "mottled" texture that is common to the overlying units. - a weaker mottling due to burrowing is evident throughout the section - bedding is at 20° to 30° to the core axis - numerous small stylolites parallel to bedding - several 1 to 5 mm wide, white 			2005	47.94	48.73	0.43	0.01	0.03	0.07			

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-2

PROPERTY SHAG CLAIMS PROJECT MA67

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES				ASSAY VALUE		
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	Pb(%)	Zn(%)	Ag (oz/ton)
52.36	53.12	Dolostone (Waterfowl Formation): - medium to dark grey, fine to medium crystalline, mottled, slightly calcareous dolostone containing small (1 to 2 mm), irregular birdseye inclusions of white dolomite. - minor fracturing with dolomite coatings, orientated at steep angles to core axis. - traces of sphalerite along fractures - pyrite as fine disseminations	Py: 3% Sph: Tr		2003	52.36	53.12	0.76	0.01	0.02	0.08
53.12	54.59	Dolostone - mineralized horizon (Waterfowl Formation): - medium to dark grey, fine to medium crystalline dolostone with minor black shaly zones and some very coarsely crystalline dolomite infilling irregular vugs and fractures - shaly zones contain abundant pyrite as fine disseminations and concentrations of fine disseminations paralleling bedding, and some larger grains up to 1 cm. in size. - sphalerite occurs as pale wine red coloured very finely disseminated grains that concentrate into mosaics of very sphalerite rich zones having up to 50% sphalerite. A few coarse (0.5 to 2cm), recrystallized sphalerite crystals within the zones of abundant very fine disseminations.	Sph: 10% Py: 3-5%		Shag*1	53.12	54.59	1.47	-	10.15	0.17

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

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Hole No. 82-3
Co-ordinates 2+17NW; 0+36NE
Core Size BQ
Purpose Test mineralization along Red Bed horizon
Started June 16, 1982
Completed June 18, 1982
Drilled By Globe Drilling, Vancouver, B.C.
Logged By Martin Lenters

PROPERTY SHAG CLAIMS PROJECT MA 67 NTS 82J-11412
11 Core Boxes - Stored at Fairmont, B.C.
Box 1 6.70 - 13.58m Box 7 48.24 - 55.25m
Box 2 13.58 - 20.53m Box 8 55.25 - 62.44m
Box 3 20.53 - 27.10m Box 9 62.44 - 68.24m
Box 4 27.10 - 34.00m Box 10 68.24 - 74.92m
Box 5 34.00 - 40.95m Box 11 74.92 - 75.59m
Box 6 40.95 - 48.24m

Latitude 50° 38'
Longitude 115° 30'
Datum Level 1932 metres
Azimuth Vertical
Dip 90°
Total Length 75.59m (248 feet)
Hor. Project -
Vert. Project 75.59m

4733
7/2/82

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
Surface	6.70	Overburden						
6.70	9.47	Argillaceous limestone (Sullivan Formation): - medium grey, fine grained limestone with 20% dark grey (or oxidized to an orange-brown colour), 1 to 10mm thick, irregular, wavy or kinked argillaceous bands and very thin, wispy, argillaceous microstylolites. - bedding at about 55° to core axis - minor stylolite development along wispy microstylolitic surfaces - minor porosity along stylolitic and fracture surfaces - minor fracturing; most with calcite along surfaces - pyrite as small (0.1 to 0.25 mm) individual grains disseminated throughout the section	Py < 1% 100%					
9.47	10.80	Interbedded calcareous shale and argillaceous limestone (Sullivan Formation) - medium grey, fine grained, 1 to 10 mm thick limestone beds with thin argillaceous laminae, interbedded with dark grey, very fine grained, 1 to 5 mm. thick calcareous shale units.	Py < 1% 100%					

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-3

PROPERTY SHAG CLAIMS PROJECT MA67

NTS 82J-11 # 12

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES					
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	ASSAY VALUE	
		<ul style="list-style-type: none"> - bedding at 70 to 75° to core axis - the section is cut by numerous 1 to 20 mm wide, irregular calcite and dolomite/calcite veins generally intruding along bedding or shaly cleavage surfaces. - numerous microfractures (tension gash) cut across bedding. - minor late fracturing with some associated porosity and oxidation of dark grey shales to a brown-orange colour. - pyrite as very small disseminated grains, especially in the calcareous shale horizons, and large (0.1 to 2 mm) grains in bands parallel to bedding. 								
10.80	19.10	<p>Argillaceous limestone (Sullivan Formation):</p> <ul style="list-style-type: none"> - medium grey, fine to medium grained limestone with 20 to 30 percent irregular, medium to dark grey (or oxidized orange-brown), wavy or kinked argillaceous bands and argillaceous wispy microstylitic surfaces. Together with the compositional mottling, a burrowed mottling is also evident. Burrowed sections are composed of - medium grained composite aggregates somewhat coarser than the unchurned limestone. - bedding is at 65 to 75° to core axis - a few 1 to 5 mm. calcite veins paralleling bedding. 	Py=Tr	100%						

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-3

PROPERTY SHAG CLAIMS PROJECT MA67

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9753

7/7/88

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES								
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	ASSAY VALUE				
									Pb(%)	Zn(%)	Ag (oz/ton)		
		to core axis. Some with calcite coatings. Most with some fracture porosity allowing for alteration of pyrite to limonite and oxidation of dark grey shaly sections to an orange-brown colour.											
		- pyrite as fine grains disseminated throughout, or as larger grains (0.1 to 2mm) along surfaces separating shale and limestone beds or associated with the calcite veining.											
47.77	49.45	Dolostone (Waterfowl Formation): - medium grey, coarsely crystalline (0.25 to 0.5mm), sucrosic dolostone - minor irregular argillaceous and stylitic surfaces generally orientated perpendicular to the core axis. - a few 1 to 3 cm. calcite veins and a 1 cm. dolomite vein orientated perpendicular to the core axis. - pyrite as small grains within intergranular porosity of dolomite rhombs.	Py < 1%	100%	3001	47.77	49.45	1.68	0.01	0.11	0.08		
49.45	51.69	Dolostone (Waterfowl Formation): - medium grey, medium to coarsely crystalline, sucrosic dolostone with some 0.5cm dark grey, wavy argillaceous bands - bedding at 20 to 30° to the core axis. - pyrite as fine grains disseminated	Py < 1% Sph = Ir to 1%	95%	3002	49.45	49.90	0.45	0.01	0.23	0.08		
					3003	49.90	51.69	1.79	0.02	0.23	0.10		

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-3

PROPERTY SHAG CLAIMS PROJECT MA 67

NTS 82J114 12

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES							
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	ASSAY VALUE			
									Pb (%)	Zn (%)	Hg (g/t)	As (ppm)
		throughout section, particularly the shaly units										
		- sphalerite as wine red, individual grains about 0.25 mm in size in thin irregular bands more or less paralleling bedding.										
51.69	56.19	Argillaceous dolostone (Waterfowl Formation):		Sph=13% Py=1% 95%	3004	51.69	52.30	0.61	0.02	5.48	0.48	
		- medium to dark grey, finely crystalline argillaceous dolostone with up to 50 percent grey shale in thin wavy bands throughout section										
		- bedding at 55 to 75° to core axis										
		- well fractured section in which argillaceous zones have a weathered look in places, and some sphalerite grains are weathered out leaving behind porosity pits.										
		- sphalerite as red, equant, 0.25 to 0.5 mm, individual grains in 0.5 to 5 cm bands more or less paralleling bedding.										
		- pyrite as fine grains disseminated throughout, but concentrated in the shaly zones, and larger grains up to 3mm in size scattered throughout.										
		53.96 to 54.02 - clay in fault gouge zone										
		55.30 to 55.60 - rubbly faulted section										
56.19	57.00	Dolostone (Waterfowl Formation):		Sph=10% Py<1% 75%	3012	56.19	57.00	0.62	0.01	7.77	0.59	
		- medium grey, fine grained, rotten or brecciated dolostone										
		- abundant fine (0.1 to 0.25 mm), red, equant,										

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-3

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DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
		smithsonite along fracture surfaces.						
		57.84 to 57.96 - thin zone of scintery argillaceous dolostone with sphalerite mineralization. Much of the fine grains of sphalerite have been weathered out producing a very fine boxwork-like structure. Sphalerite occurs as orange-red, 0.1 to 0.25 mm sized, individual equant crystals. Zone also contains yellow to creamy coloured smithsonite						
		- pyrite as fine disseminations and small grains.						
58.93	75.59	Dolostone (Waterfowl Formation):						
		- very light to medium grey, generally medium grained, well pseudobrecciated and brecciated dolostone	Py:Tr Sph:Tr	100%				
		- well mottled, pseudo brecciated dolostone having pockets of vuggy, extremely coarse, white dolomite connected by networks of coarse white dolomite surrounding medium grained, grey dolostone						
		- a few, large, irregular calcite veins brecciating small zones						
		- pseudo-brecciated zones generally intensely microfractured						
		- moderate large fracturing (2 to 3 per metre) generally at 30 to 45° to core axis with calcite coatings						
		- moderate vuggy and fracture porosity						

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Hole No. 82-5

PROPERTY SHAG CLAIMS PROJECT MA 67

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6733
7/8/88

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES						
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH	ASSAY VALUE		
44.72	48.27	<p>Calcareous shale (Sullivan Formation):</p> <ul style="list-style-type: none"> - dark grey, very fine grained, thinly laminated calcareous shale, with minor noncalcareous shale and a few interbeds of argillaceous limestone. Much of the section has been oxidized, altering the colour of the shale from grey to brown. - bedding at 50 to 70° to core axis in limestone beds. Shales show minor small scale folding. - cleavage at 70 to 80° to core axis and somewhat perpendicular to bedding. - moderate veining. Generally as 1 to 10 cm. wide extremely coarse somewhat irregular calcite, calcite-quartz and calcite-dolomite veins. more than less breaking along the cleavage direction. - moderate to intense microfracturing with calcite coated surfaces. <p>48.12 - 48.13 - small intensely sheared shale and clay gouge fault seam.</p> <ul style="list-style-type: none"> - pyrite as very fine grains disseminated throughout the section. 	Py < 1%	100%							
48.27	50.09	<p>Argillaceous limestone (Sullivan Formation):</p> <ul style="list-style-type: none"> - medium grey, fine grained, burrowed limestone with minor, medium grey, thin argillaceous bands and numerous (5mm spacing), dark grey, hairline, 	Py < 1%	100%							

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

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Hole No. 82-6

Co-ordinates 1+25 NW; 0+51 NE.

Core Size BQ

Purpose Test mineralization along Red Bed horizon

Started June 23, 1982

Completed June 26, 1982

Drilled By Globe Drilling, Vancouver, B.C.

Logged By Martin Lenters

PROPERTY SHAG CLAIMS PROJECT MA67 NTS 82J-11#12

13 Core Boxes - Stored in Fairmont, B.C.

Box 1	3.96 to 10.76m.	Box 8	51.33 to 58.51m.
Box 2	10.76 to 17.43m.	Box 9	58.51 to 65.65m.
Box 3	17.43 to 24.26m.	Box 10	65.65 to 72.89m.
Box 4	24.26 to 31.30m.	Box 11	72.89 to 81.83m.
Box 5	31.30 to 38.05m.	Box 12	81.83 to 88.63m.
Box 6	38.05 to 44.97m.	Box 13	88.6 to 90.83m.
Box 7	44.97 to 51.33m.		

Latitude 50°38'

Longitude 115°30'

Datum Level 1940 metres

Azimuth Vertical

Dip 90°

Total Length 90.83m. (298 feet)

Hor. Project -

Vert. Project 90.83 metres

8222
8223

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
Surface	3.96	Overburden						
3.96	9.32	Argillaceous limestone (Sullivan Formation): - medium grey, very fine grained limestone with very thin, dark grey, wavy, shaly laminations (wispy microstylolites) and some irregularly mottled, dark grey shaly interbanding. The latter are often oxidized to an orange-brown colour in thin bands adjacent to fractures - bedding at 70 to 90° to core axis 5.65 to 5.72 - 7 cm. thick calcite vein within a more shaly section 9.29 to 9.32 - 3 cm. thick calcite vein - minor fracturing paralleling bedding, with adjacent bands of oxidation. - pyrite as large grains up to 1cm. in size and as fine disseminations, particularly in the more argillaceous sections.	Py <1%	100%				
9.32	10.40	Calcareous shale (Sullivan Formation): - dark grey, very fine grained calcareous shale with some interbands of medium grey limestone. - bedding and cleavage at 70 to 90°	Py <1%	100%				

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-6

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78/08

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC.	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
		<ul style="list-style-type: none"> cleavage - Pyrite as a few small (0.1 to 2mm) and occasionally as larger (up to 5mm) grains generally associated with the more shaly sections. Pyrite has been oxidized to limonite. 						
31.48	37.14	<p>Calcareous shale (Sullivan Formation):</p> <ul style="list-style-type: none"> - dark grey, very fine grained calcareous shale interbedded (cm. scale) with medium grey limestone containing thin (hairline), shaly laminations orientated at an angle to the bedding. - the shaly sections tend to be oxidized to an orange-brown colour adjacent to fracturing. - soft sediment deformation apparent as small scale open folding in shaly sections - several bedding blocks have been rotated due to early slippage parallel to cleavage directions. - bedding generally at 70° to core axis - cleavage at 60 to 80° to core axis and somewhat perpendicular to bedding. - thin (hairline to 5cm), irregular veins of calcite with some quartz, that tend to prefer orientations subparallel and subperpendicular to the core axis. 	Py=Tr 100%					

ESSO RESOURCES CANADA LIMITED - MINERALS
DIAMOND DRILL LOG

Hole No. 82-6

PROPERTY SHAG CLAIMS PROJECT MA 67

NTS 82J11412

Page 7 of 9

DEPTH (m)		DESCRIPTION	Mineralization	CORE REC	CORE SAMPLES			
FROM	TO				ASSAY NUMBER	FROM	TO	WIDTH
52.78	54.87	<p>Calcareous shale (Sullivan Formation):</p> <ul style="list-style-type: none"> - dark grey, very fine grained calcareous shale, interbedded (cm. scale) with medium grey limestone containing thin (hairline), shaly laminations orientated at an angle to bedding. - much of the dark grey shaly material has been oxidized to an orange-brown colour within faulted sections and in bands a few cms. wide adjacent to fractures. - bedding at 70 to 90° to core axis - cleavage subparallel to bedding and at 70 to 80° to core axis - minor calcite veining as thin (1. to 2mm.) laminae between cleavage plane surfaces. - moderate fracturing, which together with a well developed cleavage produces a well broken section of core - pyrite as very finely disseminated grains throughout section 	Py < 1%	100%				
54.87	61.53	<p>Argillaceous limestone (Sullivan Formation):</p> <ul style="list-style-type: none"> - medium grey, very fine grained limestone with some irregular wavy to kinked bands of dark grey more shaly interbands producing a mottled texture. Some of the latter are oxidized to an orange-brown colour - bedding at about 70° to core axis - moderately fracture as irregular 	Py < 1%	100%				

APPENDIX III

Assay Analyses

SHAG CLAIMS

Chip Samples Assayed

<u>SAMPLE NUMBER</u>	<u>SAMPLE LOCATION</u>	<u>WIDTH METRES</u>	<u>ASSAY VALUE</u>		
			<u>Pb (%)</u>	<u>Zn (%)</u>	<u>Ag (oz/ton)</u>
C-101	Christmas Showing (lower part)	0.60	0.01	0.67	1.58
C-102	Christmas Showing (lower- middle part)	0.15	0.01	33.35	2.93
C-103	Christmas Showing (upper- middle part)	0.15	0.01	8.85	0.66
C-104	Christmas Showing (upper part)	0.23	0.01	10.72	0.89

SHAG CLAIMS

Split Core Samples Assayed

<u>SAMPLE NUMBER</u>	<u>DRILL HOLE</u>	<u>METERAGE</u>		<u>WIDTH METRES</u>	<u>ASSAY VALUE</u>		
		<u>FROM</u>	<u>TO</u>		<u>Pb (%)</u>	<u>Zn (%)</u>	<u>Ag (oz./ton)</u>
1001	82-1	36.08	36.34	0.26	0.01	0.12	0.17
2001	82-2	51.31	52.14	0.83	0.01	0.07	0.07
2002	82-2	52.14	53.36	0.22	0.09	1.09	0.08
2003	82-2	52.36	53.12	0.76	0.01	0.02	0.08
Shag #1	82-2	53.12	54.59	1.47	-	10.15	0.17
2004	82-2	54.59	55.78	1.19	0.01	0.04	0.09
2005	82-2	47.94	48.37	0.43	0.01	0.03	0.07
3001	82-3	47.77	49.45	1.68	0.01	0.11	0.08
3002	82-3	49.45	49.90	0.45	0.01	0.23	0.08
3003	82-3	49.90	51.69	1.79	0.02	0.23	0.10
3004	82-3	51.69	52.30	0.61	0.02	5.48	0.48
3005	82-3	52.30	52.81	0.51	0.01	0.37	0.09
3006	82-3	52.81	53.07	0.26	0.01	1.09	0.10
3007	82-3	53.07	53.76	0.69	0.01	0.14	0.06
3008	82-3	53.76	54.09	0.33	0.02	3.67	0.12
3009	82-3	54.09	54.44	0.35	0.02	2.09	0.27
3010	82-3	54.44	55.60	1.16	0.03	2.38	0.13
3011	82-3	55.60	56.19	0.59	0.01	1.76	0.23
3012	82-3	56.19	57.00	0.81	0.01	7.77	0.59
3013	82-3	57.00	57.84	0.84	0.01	0.17	0.09
3014	82-3	57.84	57.96	0.12	0.01	26.10	2.62
3015	82-3	57.96	58.93	0.97	0.01	0.77	0.12

ML/gf
10/11/82

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project **Shag** Date of report **July 27/82.**

File No. **2-387** Date samples received **July 22/82.**

Samples submitted by: **M. Lenters**

Company: **Esso Minerals**

Report on: **Geochem samples**

..... **5** **Assay samples**

Copies sent to:

1. **Esso Minerals, Calgary, Alta.**

2.

3.

Samples: Sieved to mesh Ground to mesh **-100**

Prepared samples stored discarded

 rejects stored discarded

Methods of analysis: **Acid digestion-chemical analysis.**

Remarks:

SPECIALISTS IN MINERAL ENVIRONMENTS

MIN-EN LABORATORIES LTD.

705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
 PHONE: (604) 980-5814 OR (604) 988-4524

Certificate of Assay

TO: Esso Minerals Canada,
237-4th Ave. S.W.,
Calgary, Alta.

PROJECT No. Shag
 DATE: July 27/82.
 File No. 2-387

SAMPLE No.	Pb %	Zn %	Ag oz/ton
	C 101	.01	.67
102	.01	33.35	2.93
103	.01	8.85	.66
C 104	.01	10.72	.89
1001	.01	.12	.17

[Handwritten Signature]

MINE-EN Laboratories Ltd.
 CERTIFIED BY:

MIN-EN Laboratories Ltd.

705 WEST 15th STREET,
NORTH VANCOUVER, B.C., CANADA V7M 1T2
TELEPHONE (604) 980-5814

ANALYTICAL REPORT

Project Shag Date of report July 8/82.

File No. 2-250 Date samples received June 29/82.

Samples submitted by: M. Lenters

Company: Esso Minerals Canada

Report on: Geochem samples

20 Assay samples

Copies sent to:

- Esso Minerals Canada, Calgary, Alta.
- Esso Minerals Canada, Fairmont Hot Springs, B.C.
-

Samples: Sieved to mesh _____ Ground to mesh -100

Prepared samples stored discarded

rejects stored discarded

Methods of analysis: Acid digestion-chemical analysis.

Remarks: _____


SPECIALISTS IN MINERAL ENVIRONMENTS

Certificate of Assay

TO: Esso Minerals Canada,
237-4th Ave. S.W.,
Calgary, Alta.

PROJECT No. Shag
DATE: July 8/82,
File No. 2-250

SAMPLE No.	Pb %	Zn %	Ag oz/ton		
2001	.01	.07	.07		
02	.09	1.09	.08		
03	.01	.02	.08		
04	.01	.04	.09		
2005	.01	.03	.07		
3001	.01	.11	.08		
02	.01	.23	.08		
03	.02	.23	.10		
04	.02	5.48	.48		
05	.01	.37	.09		
06	.01	1.09	.10		
07	.01	.14	.06		
08	.02	3.67	.12		
09	.02	2.09	.27		
10	.03	2.38	.13		
11	.01	1.76	.23		
12	.01	7.77	.59		
13	.01	.17	.09		
14	.01	26.10	2.62		
3015	.01	.77	.12		

MINE-EN Laboratories Ltd.
CERTIFIED BY: 

To: ESSO MINERALS CANADA
Esso Plaza, 237 4th Avenue S.W.
Calgary, Alberta T2P 0H6



File No. 23639
Date June 24, 1982
Samples Core

ATTN: Leo Kirwan

Certificate of
ASSAY of
LORING LABORATORIES LTD.

SAMPLE No.	OZ./TON Silver	% Zn
<u>Shag # 1</u>	.17	10.15

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE
ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES

Rejects Retained one month.
Pulps Retained one month
unless specific arrangements
made in advance.

D. Enders

Assayer

APPENDIX IV

Shag Claims Information

APPENDIX V

Statement of Qualifications

CERTIFICATION

I, Martin H. Lenters of 1433 - 27th Street S.W., Calgary, Alberta, do thereby certify and declare that:

1. I am a graduate of the University of Toronto (1976) with a B.Sc. in Geology (Specialist Degree), and that I have taken three years of Graduate Studies at the University of Toronto.
2. Since 1976, I have worked as a geologist in Nova Scotia, New Brunswick, Ontario, Saskatchewan, British Columbia, the Yukon and Northwest Territories, and that I have been employed by Esso Resources Canada Ltd., in their Minerals Exploration department since April, 1979.
3. The information included in this report is based on literature research, field mapping, geological prospecting and an examination of diamond drill core.
4. I hold no direct or indirect interest in the property reported herein, nor do I expect to receive any.

Martin Lenters

Martin H. Lenters

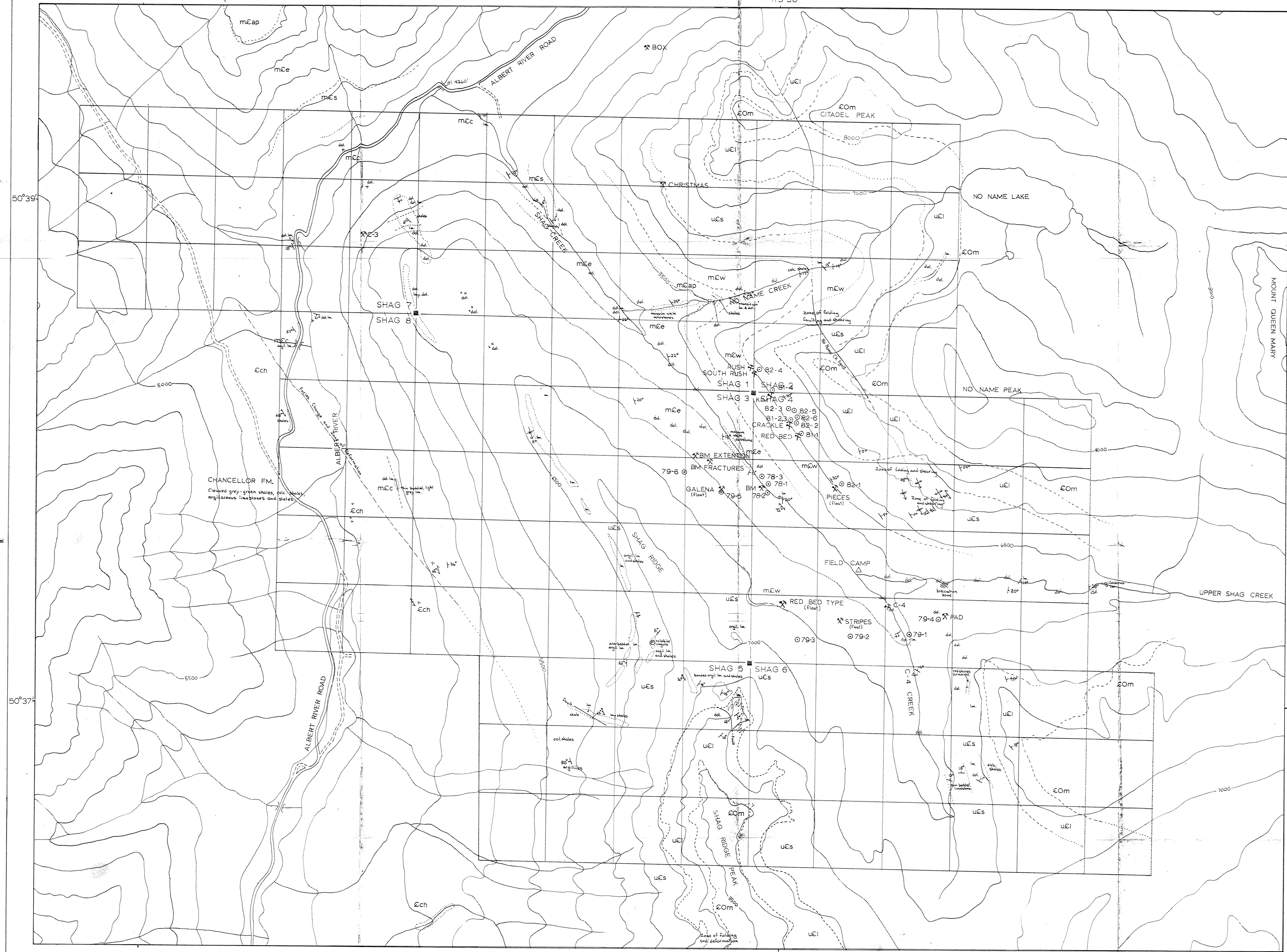
February 25, 1983

Date

115°34'

115°30'

DECLINATION 21° E



50°39'

50°39'

50°37'

50°37'

GEOLOGY LEGEND

- EASTERN FACIES**
LOWER ORDOVICIAN AND UPPER CAMBRIAN
 [EOM] MCKAY GROUP
 Red-green shales, thin interbedded limestones
- UPPER CAMBRIAN**
 [UCI] LYELL FORMATION
 Dolostones and limestones
- [UCS] SULLIVAN FORMATION
 Argillaceous limestones, calcareous shales, limestones, minor dolostones, dolomitic limestone.
- MIDDLE CAMBRIAN**
 [MCW] WATERFOWL FORMATION
 Dolomite and limestone; minor argillaceous limestone.
- [MCA] ARCTOMYS - PIKA FORMATION
 Calcareous and dolomitic shale, siltstones, argillaceous limestone, thin bedded dolostones.
- [MCE] ELDON FORMATION
 Massive dolostones, limestones, argillaceous limestones.
- [MCS] STEPHEN FORMATION
 Thin bedded, argillaceous limestones and shales.
- [MCC] CATHEDRAL FORMATION
 Massive dolostones, dolomitic limestones, limestones.
- WESTERN FACIES**
UPPER AND MIDDLE CAMBRIAN
 [ECH] CHANCELLOR FORMATION
 Cleared argillaceous limestone, calcareous shales, shales.

GEOLOGICAL SYMBOLS

- GEOLOGICAL BOUNDARY
 (defined, approximate, assumed)
- x OUTCROP BOUNDARY
 (some isolated outcrops delineated, but many of the streams and sections have almost continual exposure)
- 15° BEDDING
 (inclined)
- 10° CLEAVAGE
 (inclined, vertical)
- FAULT
 (defined, approximate, assumed)
- ↑ ANTICLINE
 (showing direction of plunge)
- ↓ SYNCLINE
 (showing direction of plunge)
- FACIES BOUNDARY
- x PAD LEAD - ZINC OCCURRENCE
 (name of showing)
- o 79-1 DIAMOND DRILL HOLE
 (year and hole number)
- o FOSSIL LOCALITY

LEGEND

- ROAD
- TRACK
- BRIDGE
- RIVER, CREEK OR STREAM
- INTERMITTANT STREAM
- o LAKE OR POND
- CONTOUR (interval 500 feet)
- CLAIM UNIT BOUNDARY
- SHAG 4 LEGAL CORNER POST

115°34'

115°30'

GEOLOGICAL BRANCH ASSESSMENT REPORT

11,170

ESSO MINERALS CANADA
 A DIVISION OF ESSO RESOURCES CANADA LIMITED

SHAG CLAIMS 1-8
 GEOLOGY MAP

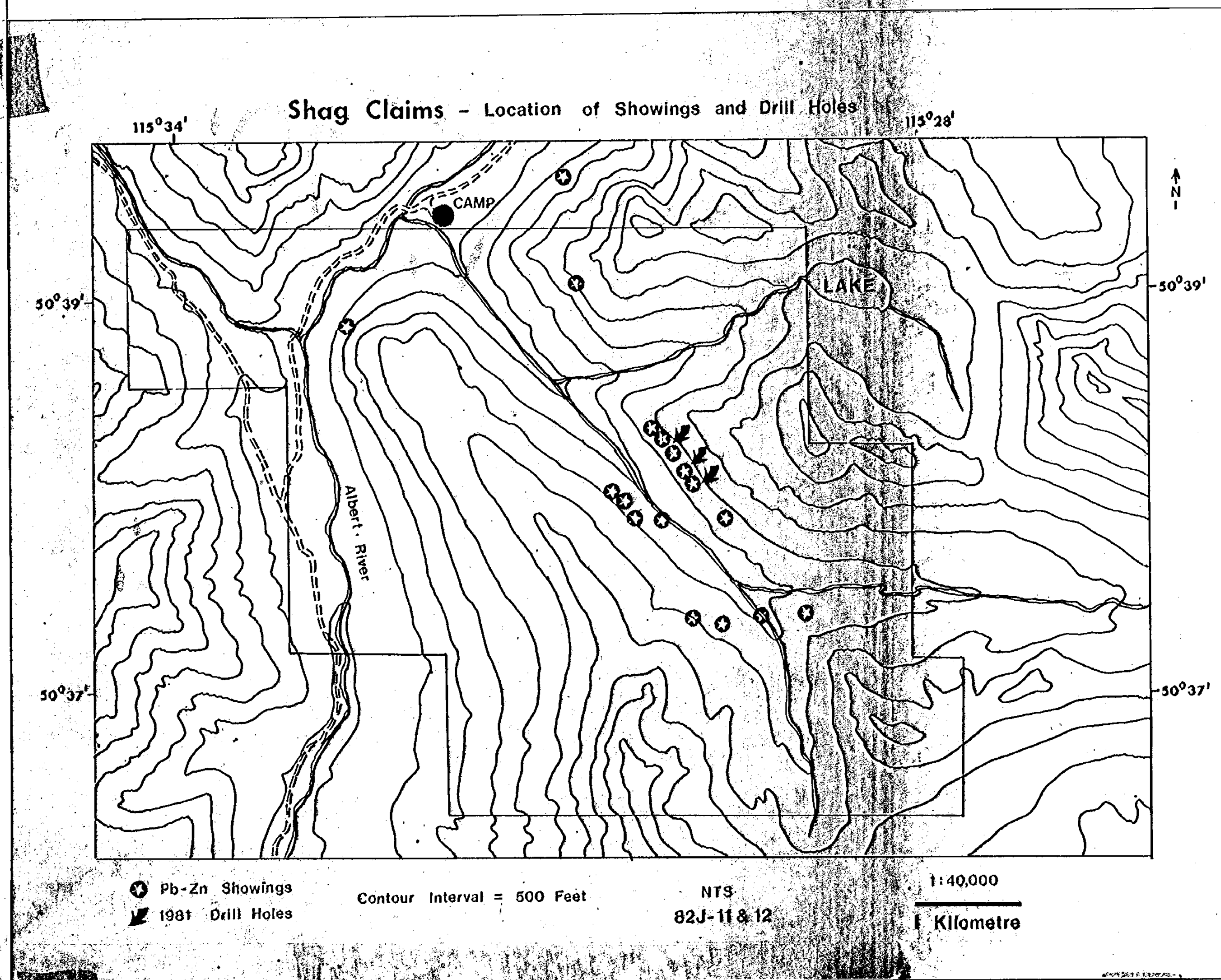
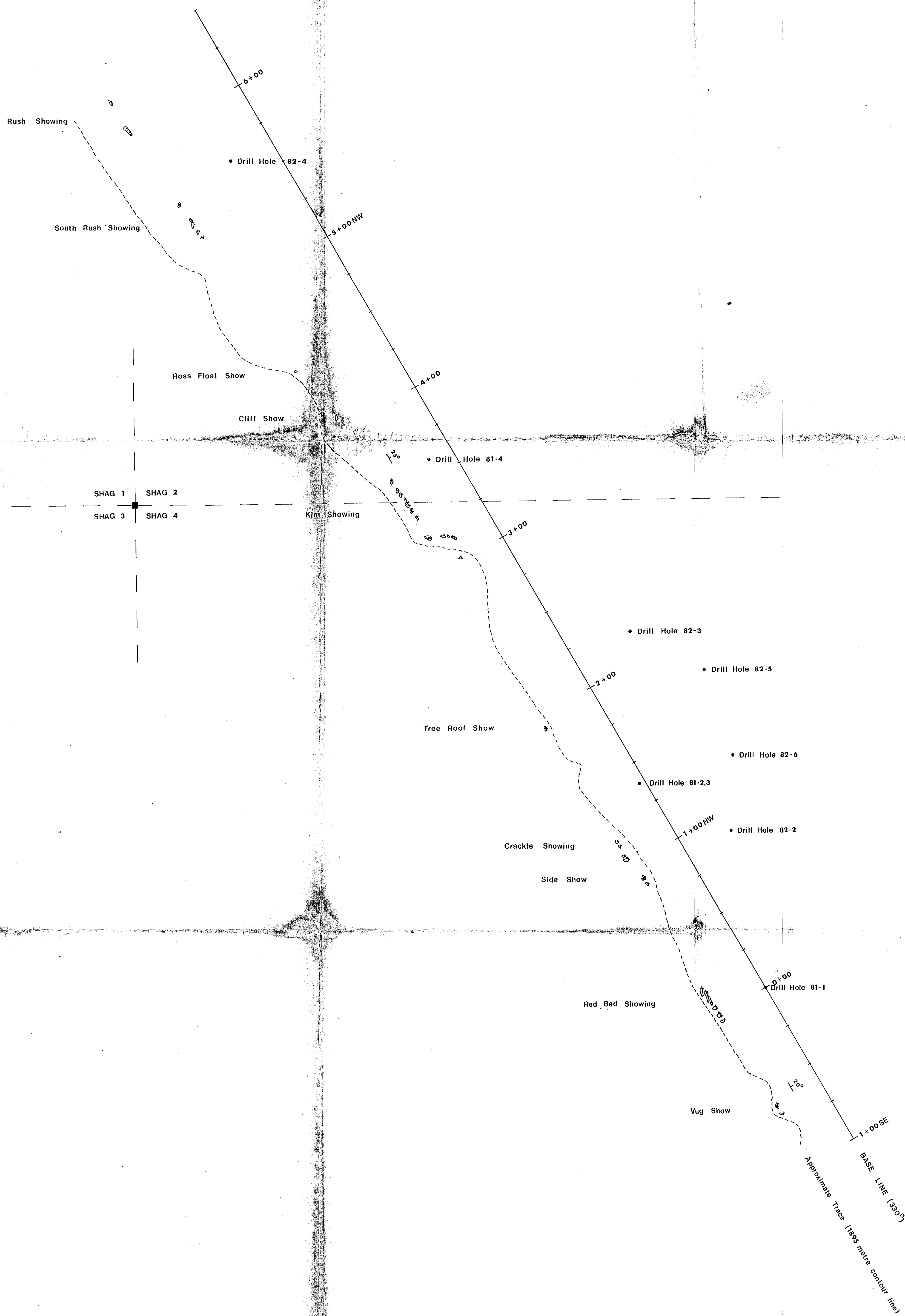
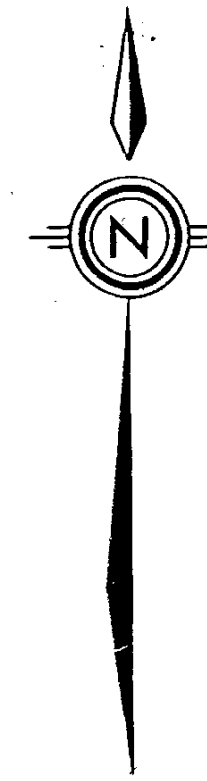
Project No. SHAG Mining Division GOLDEN

Latitude 50°38' Longitude 115°30'

NTS 82J 11,12 Scale 1:10,000

To Accompany A Report By M. LENTERS

Dated AUG. 1982 Map No. 5



GEOLOGICAL BRANCH ASSESSMENT REPORT

11,170

• Drill Hole 82-1

Pieces Float Showing

ESSO MINERALS CANADA
 A DIVISION OF ESSO RESOURCES CANADA

SHAG CLAIMS
 LOCATION OF SHOWINGS & DIAMOND DRILL HOLES
 ALONG RED BED MINERALIZED HORIZON

Project No. MA 87 Mining Division GOLOEN
 Latitude 50°38' Longitude 115°30'
 NTS 82J-11&12W SCALE 1:1000

TO ACCOMPANY A REPORT BY M. LENTERS
 DATED OCT. 1982 MAP No. 6