REPORT OF GEOLOGICAL EXPLORATION

ON THE DECOSMOS PROPERTY

WH 7052 R253525(1)
WH 7054 R253524(1)

Skeena Mining Division

N.T.S 92 M/13

51° 55.7' N., 127° 58.6' W.

Owner:

KING ISLAND CLAY LTD.

4189 Doncaster Way
Vancouver, British Columbia
V6S 1W1

By:

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Consulting Geologist

May 31, 1992

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REPORT OF GEOLOGICAL EXPLORATION ON THE DECOSMOS PROPERTY

SUMMARY

The writer was retained by King Island Clay Ltd. of Vancouver, British Columbia through Cassiar East Yukon Expediting Ltd. to explore and report on recent production and the economic potential of Pleistocene-age clay deposits on the DeCosmos Property.

Exploration was conducted on the DeCosmos project from May 15 to 22, 1992.

The property is in the Hecate Lowland located west of the Coast Mountains on the central coast of British Columbia (Figure 1). It comprises 2 claims of 16 claim-units each. It covers 800 ha (1920 A) centred on 51° 55.7' north latitude and 127° 58.6' west longitude in the Skeena Mining Division of British Columbia (Figure 2). Although the claims cover 800 ha, only three areas covering 1.65 ha (3.96 A) total on the eastern shore of DeCosmos Lagoon can be developed by the company. The rest of the property-area is controlled by other claims (Figures 2 and 3). The whole of the property-area is in the Hakai Recreation Area.

During the May, 1992 program; supplies, equipment and crew went by road from Vancouver to Bella Coola, B.C. From there, the camp was taken directly to DeCosmos Lagoon by a piston Beaver (DeHaviland DH3) airplane equipped with wheel-floats operated by Wilderness Airline (1975) Ltd. The flight took a total of 0.75 hours of flying time one-way.

The property-area includes the low ridge between DeCosmos Lagoon and the eastern shore of Hunter Island on which elevations range from about 60 m (200 ft) to sea level (Figure 2). The three areas in which the company can develop clay deposits are all at sea level on the eastern shore of the lagoon (Figures 2 and 3).

The area around DeCosmos Lagoon is covered by a ragged forest of cedar, hemlock spruce, and yew. It is subject to warm summers and cool wet winters. Average annual precipitation is about 254 cm (100 in), some of which falls as wet snow during mid-winter.

DeCosmos Lagoon occupies a north-south trending graben-like structure that probably formed on the Hecate Lowland during the Eocene Epoch. During the five major Pleistocene glaciations the rocks around the lagoon were scraped clean of their Tertiary-age regolith and subsequently covered with a thin layer of till. A great thickness of clay was deposited on the floor of the lagoon during the last interglacial age. Most of the clay was removed by southwestward moving ice during the most recent glaciation. Consequently, intertidal clay deposits were preserved in southwesterly facing bays that formed pressure shadows beneath the ice.

There are two superimposed groups of claims each named WH 7052 and WH 7054 covering the area between DeCosmos Lagoon and the eastern shore of Hunter Island. The claims numbered 253524(1) and 253525(1) that are owned by King Island Clay Ltd. inherit the right to produce clay from the three areas on the eastern shore of the lagoon that were included within Licence of Occupation No. 512250. The claims numbered 254284(8) and 254285(8) that are owned by Roger Upton include the right to produce clay from all of the property-area except the areas included in Licence of Occupation No. 512250. These claims also contain the right to produce any minerals except clay from the whole of the property-area.

Reportedly, three areas of containing known clay deposits were included in Licence of Occupation No. 512250 . The northern and southern areas (Figures 2 and 3) were found to be underlain by wave-washed cobble and boulder till extending from granitic outcrops above the mean high tide level to well below mean low tide.

The existence of clay deposits beneath the till at these locations would require a trenching program to prove.

Good quality clay was found at Clay Bay located on the central area included in Licence of Occupation No. 512250 (Figures 2, 3 and 5 to 7) and at Notice Bay located in the southern part of the lagoon (Figures 2, 3 and 8). Poor quality clay mixed with sand and silt was found near the mouth of the creek on the northern shore of Otter Narrows at the

northern end of the lagoon (Figure 3).

These three deposits were the three known clay deposits sought by those who applied for Licence of Occupation No. 512250 in 1985. Two of the three deposits were mislocated on the application plan.

As a result: the Otter Narrows deposit is located on WH 7054 R254284(8) owned by R. Upton, the Notice Bay deposit is located on WH 7052 R254285(8) also owned by R. Upton and the Clay Bay deposit is located on WH 7052 R253525(1) owned by King Island Clay Ltd.

Recent production from DeCosmos Lagoon is summarized as follows:

Year	Location	Production in tonnes	tons	Reference
Late 1980s	South End	455	500	Figure 9
Summer, 1990	Notice Bay (Upton)	455	500	Figure 8
1990-1991	Notice Bay	143	157	Figure 8
1990-1992	Clay Bay	457	504	Figure 5

It is assumed by the writer that whoever conducted the post-1990 excavation at Notice Bay also extracted clay from ground at Clay Bay owned by King Island Clay Ltd. since 1990.

The writer believes that about 457 tonnes (504 tons) of marketable clay has been stolen from Claim WH 7052 R253525(1) owned by King Island Clay Ltd. by parties unknown.

The exact mineralogy of the clay is uncertain. The writer believes it to be a mixture of montmorillonite minerals and glauconite.

Total tonnage of clay at Clay Bay can not be calculated because its depth remains unknown. However, minable tonnage at Clay Bay is presently restricted to that clay located less that 3.5 m (11.5 ft) below mean high tide or 2 m (6.6 ft) below mean low tide. This tonnage can be calculated, as can the tonnage of clay located from 2 to 4 m (6.6 to 13.1 ft) below mean low tide.

Core-proven tonnage of clay reserves at Clay Bay is calculated as follows:

Level	m3 of Clay	Core-proven clay tonnes	Core-proven clay tons
1. high tide to 2 m below low tide	2600	5720	6292
2. 2-4 m below low tide	2300	5060	5566
Totals:	4900	10,780	11,858

NOTE: These tonnages are calculated using a specific gravity of 2.2 for water-saturated clay.

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1.0 INTRODUCTION

1.1 Terms of Reference

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Exploration was conducted on the DeCosmos project from May 15 to 22, 1992.

1.2 Location and Access

The DeCosmos Property is in the Hecate Lowland located west of the Coast Mountains on the central coast of British Columbia (Figure 1). The property comprises 2 claims of 16 claim-units each. It covers 800 ha (1920 A) centred on 51° 55.7' north latitude and 127° 58.6' west longitude in the Skeena Mining Division of British Columbia (Figure 2).

The property extends southwestward from DeCosmos Point on the eastern shore of Hunter Island to the head of the bay located about 500 m (1640 ft) south of the southern end of DeCosmos Lagoon. It includes most of the lagoon and the low ridge east of it. Although the claims cover 800 ha, only three areas covering 1.65 ha (3.96 A) total on the eastern shore of the lagoon can be developed by the company. The rest of the property-area is controlled by other claims (Figures 2 and 3). The whole of the property-area is in the Hakai Recreation Area.

The closest supply and service centre to Hunter Island and the property-area is the town of Bella Coola located at the western end of B.C. Hwy. 20 about 60 km (36.6 mi) east-northeast of the claims. Bella Coola is 996 km (607.5 mi) from Vancouver, B.C. via highways 1, 97 and 20. Wilderness Airline (1975) Ltd. operates scheduled flights from Vancouver to Bella Coola and will make chartered flights from Bella Coola to Hunter Island. Also, Vancouver Island Helicopters operates base at the Bella

Coola airport.

Boats capable of navigating the channels between Bella Coola and Hunter Island are available for charter at the town. At high slack tide such craft can enter DeCosmos Lagoon safely. Sea access to the clay deposits in the lagoon keeps the cost of their development low.

During the May, 1992 program; supplies, equipment and crew went by road from Vancouver to Bella Coola, B.C. From there, the camp was taken directly to DeCosmos Lagoon by a piston Beaver (DeHaviland DH3) airplane equipped with wheel-floats. The flight took a total of 0.75 hours of flying time one-way.

1.3 Terrain and Vegetation

The DeCosmos Property is in the Hecate Lowland located west of the Coast Mountains on the central coast of British Columbia.

Holland (1976) described the Hecate Lowland near Hunter Island and the Decosmos Property as follows:

> A strip of low-lying country, including both the mainland coast and adjacent islands, extends along the eastern side of the Coastal Trough southward from Prince Rupert to Vancouver. A constriction of the trough at Sayward separates a northern section, the Hecate Lowland, flanking the Hecate Depression, from a southern section, the Georgia Lowland, flanking the Georgia Depression. The eastern boundary of the lowland is arbitrarily taken as a generalized line along the 2,000-foot contour.
>
> The Hecate Lowland ... is 10 to 25 miles wide and includes considerably less of the mainland than it does of the islands of the archipelago. The large islands, such as McCauley, Banks, Aristazabal, Price, and Calvert and many others lie within it.
>
> Summit levels within the lowland are below 2,000 feet, except for a few isolated high areas on Banks Island, Hunter Island, and Calvert Island that protrude above the general level.
>
> A striking feature within the lowland is the accordancy of summits that represent remnants of an erosional surface of Late Tertiary age which truncates granitic and older rocks alike and which has been warped upward to the east. It is well displayed on an east-west profile drawn through Cape Caution. The old erosion surface rises gradually and progressively more steeply as the high Coast Mountains are reached. The amount of dissection increases eastward as relief increases. Remnants of the surface diminish in size and number as the mountains are approached, until ultimately the old surface is completely obliterated.
>
> Within the lowland, as for example on the west side of Pitt Island, the topography may be quite rough even though the total relief is not great. In contrast, however, there are areas north of Cape Caution, on the west side of Calvert Island, on Aristazabal Island, Campania Island, and Banks Island where a flat low plain, mostly below 100 feet elevation, is underlain by a variety of rocks, of which granite predominates. This constitutes the Milbanke Strandflat ... Many of these low areas display numerous well-marked

> lineaments and are occupied by large expanses of muskeg where drainage is poorly established.
>
> The lowland has been heavily glaciated, and bare bedrock everywhere shows the sculpturing effects of ice erosion. Cirque glaciation at sea-level is a remarkable feature in an area extending from Banks Island south to Cape Caution, and is an indication of the level reached by the snowline during the late Pleistocene.
>
> Holland, S.S.; 1976: pp. 34-35.

The property-area includes the low ridge between DeCosmos Lagoon and the eastern shore of Hunter Island on which elevations range from about 60 m (200 ft) to sea level (Figure 2). The three areas in which the company can develop clay deposits are all at sea level on the eastern shore of the lagoon (Figures 2 and 3).

The area around DeCosmos Lagoon is covered by a ragged forest of cedar, hemlock spruce, and yew. Numerous tall dead cedar trunks stand above the forest canopy. Salal and huckleberry dominate the undergrowth.

The area around the claims is subject to warm summers and cool wet winters. Average annual precipitation in the Hunter Island area is about 254 cm (100 in), some of which falls as wet snow. The property-area is snow-covered only for brief periods during the colder parts of the winter.

1.4 Property

The DeCosmos Property comprises the following 2 1-post claims obtained by application in the Hakai Recreation Area in the Skeena Mining Division of British Columbia:

Claim Name	Record No.	No. of Units	Owner	Record Date
WH 7052	253525(1)	16	King Island Clay Ltd.	Jan. 22,1990
WH 7054	253524(1)	16	"	Jan. 22,1990
Total number of units:		32		

The three areas controlled by King Island Clay Ltd. within the property-area were obtained within Licence of Occupation No. 512250 under Section 36 of the B.C. Lands Act in 1985 (Figures 2 and 3). The licence of occupation was issued for the purpose of producing clay. It granted rights to no other minerals.

Upon implementation of the B.C. Mineral Tenure Act in August, 1988 all such licences of occupation were to be converted to mineral claims. Before Licence No. 512250 was converted to claims, Roger Upton of Richmond, B.C. applied for and received claims WH 7052 and WH 7054; R254285(8) and R254284(8) respectively, in the Hakai Recreation Area.

Consequently, there are two superimposed groups of claims each named WH 7052 and WH 7054 covering the area between DeCosmos Lagoon and the eastern shore of Hunter Island. The claims numbered 253524(1) and 253525(1) that are owned by King Island Clay Ltd. inherit the right to produce clay from the three areas on the eastern shore of the lagoon that were included within Licence of Occupation No. 512250. The claims numbered 254284(8) and 254285(8) that are owned by Roger Upton include the right to produce clay from all of the property-area except the areas included in Licence of Occupation No. 512250. These claims also contain the right to produce any minerals except clay from the whole of the property-area.

Most of the clay exposed around DeCosmos Lagoon was developed in the intertidal zone. Since 1967 there has been a mineral reserve placed on "All those lands covered by tidal waters along the coast" of British Columbia. During 1990, an order in council was signed that amended the 1967 mineral reserve for those lands previously contained within Licence of Occupation No. 512250 allowing King Island Clay Ltd. to mine clay to a depth of 3.5 m (11.5 ft) below the mean high tide level (Davis, 1990).

To the writer's knowledge, the areas that were previously contained within Licence of Occupation No. 512250 and are now controlled by the claims numbered 253524(1) and 253525(1) owned by King Island Clay Ltd. are presently the only areas in DeCosmos Lagoon where it is legal to mine intertidal clay deposits.

1.5 Previous Work

Rumours and second-hand stories contain accounts of the local indians using clay from Hunter Island for medicinal purposes during visits by early european explorers to the British Columbian coast. No hard

evidence of ancient clay mining was seen by the writer in the DeCosmos Lagoon area during the 1992 exploration program.

Several exploration pits were dug around the front of a small stream delta at the south end of DeCosmos Lagoon just west of the property-area (Figures 3 and 9). It appeared by the degree of pit-wall sloughing and weed growth in the pit floors that the pits were dug during the late 1980's. The sediment excavated at that location comprised granitic and carbonate silt, and fine sand mixed with shell fragments. No clay was excavated there. For some reason unknown to the writer, the sediment excavated from the pits at the southern end of the lagoon was removed from the area. It had little commercial value.

Estimated production from these pits (Figure 9) was as follows:

Pit No.	m3 of Excavated	Production in tonnes	tons
1	5	13	14
2	40	104	114
3	15	39	43
4	75	195	215
5	20	52	57
6	5	13	14
7	10	26	29
8	5	13	14
Totals:	175	455	500

NOTE: These tonnages are calculated using a specific gravity of 2.6 for arenaceous sediment containing about 10% water.

About 500 tonnes (550 tons) of clay was excavated from the northern part of Notice Bay located along the southeastern shore of DeCosmos Lagoon during summer, 1990 (Figures 2, 3 and 8). A notice of physical work filed by Roger Upton in September, 1990 contained a description of reclamation in which gravel was dumped into the 1990 excavation to bring the foreshore profile back to its original shape. This work was located and mapped during the current exploration program (Figure 8). Because of the large warnings to boaters posted at this location, it was named Notice Bay by the 1992 exploration party.

Adjacent to the southern margin of the 1990 excavation is a large production pit (Figure 8) that; judging by the degree of pitwall slumping, was excavated shortly after the 1990 reclamation.

It is estimated that 65 cubic metres of clay were extracted from this pit representing about 143 tonnes (157 tons) of production.

It appears that after production ceased at Notice Bay, it resumed at Clay Bay located near the central part of the lagoon on ground owned by King Island Clay Ltd. (Figures 2, 3 and 5 to 7). Two very recent production pits (numbered 1 and 2) and a test pit (numbered 3) (Figures 5 and 6) were examined during the 1992 exploration program.

Estimated production from these pits (Figure 5) was as follows:

Pit No.	m3 of Excavated	Production in tonnes	tons
1	90	198	218
2	116	255	281
3	2	4	5
Totals:	212	457	504

NOTE: These tonnages are calculated using a specific gravity of 2.2 for water-saturated clay.

The discarded plastic bags and garbage found at the excavations at Notice Bay and Clay Bay are very similar. It is assumed by the writer that whoever conducted the post-1990 excavation at Notice Bay also extracted clay from ground at Clay Bay owned by King Island Clay Ltd. since 1990.

The officers of King Island Clay Ltd. maintain that they have engaged in no clay production from DeCosmos Lagoon. Consequently, the writer believes that about 457 tonnes (504 tons) of marketable clay has been stolen from Claim WH 7052 R253525(1) owned by King Island Clay Ltd. by parties unknown.

Recent production from DeCosmos Lagoon is summarized as follows:

Year	Location	Production in tonnes	tons	Reference
Late 1980s	South End	455	500	Figure 9
Summer, 1990	Notice Bay (Upton)	455	500	Figure 8
1990-1991	Notice Bay	143	157	Figure 8
1990-1992	Clay Bay	457	504	Figure 5

1.6 Summary of Present Work

Field work on the DeCosmos Property was conducted from May 15 to 22, 1992. The work was undertaken by:

John Ostler; M.Sc., P.Geo. West Vancouver, B.C.	Consulting Geologist
Barrie Field-Dyte Burnaby, B.C.	Geological Technician

The spring, 1992 work program on the DeCosmos Property included the following:

Geological Work

A. Geological Mapping 1.5 ha mapped at a scale of 1:500 including subsurface coring of some of the clay reserves with an extended Oakfield A-3 soil auger (Figures 5 to 9).	5.00 man-days
B. Sedimentological Survey 10 locations were surveyed for the presence of marine clay deposits, former exploration and production along 8 km of shoreline around DeCosmos Lagoon.	6.00 man-days
C. Transportation, expediting, camp set-up.	5.00 man-days
D. Data compilation, drafting and report time.	12.75 man-days
Total time spent on the May, 1992 work program	28.75 man-days

1.7 Claims Worked On

During 1992, work was done on the following claims:

Claim Name	Record No.	No. of Units	Current Expiry Date
WH 7052	253525(1)	16	Jan. 22, 1993
WH 7054	253524(1)	16	Jan. 22, 1993
Total number of units:		32	

2.0 GEOLOGY

2.1 Regional Geology

The area around Hunter Island has been a comparatively unpopular place for geologists from the government geological surveys during this century. Their lack of attention to the area was probably due to the total paucity of known metallic mineral deposits and vast exposure of monotonous granitic rocks in the area.

A preliminary survey of the shoreline rock outcrops around the mid-coast area was conducted by the Geological Survey of Canada during 1908 (Graham, 1909). It was found that the area was underlain by Mesozoic-age granitic rocks. Roof pendants and contact zones were almost absent and overlying volcanic and sedimentary rocks were preserved only in a few small areas (G.S.C. Map 92A).

Hunter Island was included in the northwestern corner of the Coast Mountain Project conducted by the G.S.C. during 1967 (Roddick and Hutchinson, 1968). Their sketch map (Figure 4) of the area showed that Hunter Island was underlain by quartz diorite to granodiorite related to the Coast Plutonic Complex.

Geologists from the British Columbia Ministry of Energy, Mines and Petroleum Resources have reported on no mapping programs conducted on Hunter Island.

2.2 Property Geology

The whole DeCosmos Lagoon area is underlain by medium to coarse-grained quartz monzonite to quartz diorite related to the Mesozoic-age Coast Plutonic Complex. Local variations in bedrock composition seem to be related to local concentrations of partly resorbed xenoliths; blocks and fragments of roof rocks that have fallen into the molten magma chamber during intrusion.

Mafic volcanics form about 95% of the xenoliths. The rest are rhyolite and finely banded metasediments.

The grain size, compositional variation of the granitic rocks and the abundance of xenoliths indicates that these rocks are part of the

boundary phase of a pluton which was forcefully intruded beneath a volcanic succession. The abundance of coarse-grained plagioclase and hornblende in the intrusive rocks indicates that the pluton cooled very slowly at a depth of at least 1 km (0.61 mi) below surface.

During the Tertiary Period all of the overlying volcanic and sedimentary rocks were eroded away leaving a flat erosional surface. This surface was preserved as the Milbanke Strandflat around DeCosmos Lagoon where Pleistocene and Recent uplift was slight (Holland, 1976).

The lagoon itself occupies a steep-sided northerly trending graben that probably was downfaulted during Eocene-age crustal extension.

Five major glaciations occurred on the British Columbian coast during the Pleistocene Epoch. These glaciations were separated by interglacial periods each lasting up to 0.25 million years each. By the end of the fourth glaciation, the rock surface around DeCosmos Lagoon had been scraped bare.

During the interglacial period that followed, a small amount of clastic sediment was dumped into the western side of the lagoon by streams draining the centre of Hunter Island. The narrow, low ridge east of the lagoon was incapable of providing much clastic sediment. Only mud, settling out from suspension was deposited near the eastern margin of the lagoon. Both at Clay Bay and at Notice Bay, mud accumulation exceeded 4 m (13.1 ft) in depth.

Subsequently, local southwestward ice movement during the most recent glaciation scoured out most of the interglacial sediment from the floor and margins of the lagoon. Interglacial clay deposits were preserved in southwestward facing bays; Notice Bay and Clay Bay, where pressure shadow areas developed beneath the ice. As the ice advanced over the pressure shadows it paved over the interglacial clay deposits with a thin cobble till which is preserved at both locations near the high tide level.

It is possible that clay deposits have been preserved beneath the cobble till covering in the other two areas included in King Island's

former Licence of Occupation No. 512250 and current claims. No time was spent excavating the cobble till in these areas to search for buried clay deposits during the 1992 exploration program.

2.3 Interglacial Clay Deposits

The clay at Clay Bay and Notice Bay was cored during the 1992 exploration program. It was found to be in excess of 4 m (13.1 ft) thick at both locations. Variations in stratigraphy within the clay were absent at both locations indicating that the clay was deposited in one continuous episode under uniform conditions.

The weathered clay on the walls of the recent production pits at Clay Bay display thin partings. These may be varves, representing annual accumulations of about 1 mm (0.04 in) of clay. With such an annual accumulation rate it would take only 4000 years to deposit the 4 m (13.1 ft) thickness of clay recorded at Clay Bay and Notice Bay. If clay was deposited continuously throughout the last interglacial period in DeCosmos Lagoon then it is possible that a great depth of clay was deposited on the lagoon floor at that time.

Upon removal from the core tube, the clay resembles light blue toothpaste. After exposure to air for a day, it stiffens and turns from blue to green. When the clay is dried, it regains its light blue colour.

Several opinions have been advanced concerning the mineralogy of the clay at DeCosmos Lagoon. R. Beatty (1988) deduced from chemical analyses that the clay was kaolinite containing a high saline water content. Later, he became of the opinion that the clay contained too much Fe^{2+} and K^{1+} to be kaolinite and was a disordered form of mica named illite (Beatty, 1989).

L.A. Groat (1990) produced x-ray diffraction patterns from untreated, glycolated and heated samples of clay from DeCosmos Lagoon. He concluded that the minerals present in the clay in order of their abundance were: sodic feldspar, quartz and kaolinite with minor amphibole, mica and vermiculite.

The writer tentatively disagrees with both R. Beatty and L.A.

Groat on the mineralogy of the DeCosmos clay. In his opinion the clay is predominantly a mixture of montmorillonite group minerals and glauconite.

One of the distinctive features of the clay is its blue-green colour which is typical of the montmorillonite group of minerals and glauconite. Both kaolinite and illite are white, even in saline, reducing conditions. Also, the improvement in definition and height of the (001) peaks in the x-ray diffraction patterns of the samples with glycolation and heating are similar to results achieved by those treatments on typical montmorillonites.

An intensive microscope, chemical and x-ray diffraction analysis would be required to positively identify the mineralogy of the clay.

Beatty (1988) assumed from the area held by Licence of Occupation 512250 as related to him by Doug Bell, that three clay deposits occurred in areas 150 x 100 x 1.7 m (492 x 328 x 5.6 ft). He calculated, using an in-situ specific gravity of 1.4 that each deposit contained about 35,700 tonnes (39,270 tons) resulting in an approximate reserve estimate of 100,000 tonnes (110,000 tons).

That description bore no resemblance to the reality observed on the property by the writer.

All three of the areas included in Licence of Occupation No. 512250 were examined during the 1992 exploration program. The northern and southern areas (Figures 2 and 3) were found to be underlain by wave-washed cobble and boulder till extending from granitic outcrops above the mean high tide level to well below mean low tide.

The existence of clay deposits beneath the till at these locations would require a trenching program to prove.

Good quality clay was found at Clay Bay located on the central area included in Licence of Occupation No. 512250 (Figures 2, 3 and 5 to 7) and at Notice Bay located in the southern part of the lagoon (Figures 2, 3 and 8). Poor quality clay mixed with sand and silt was found near the mouth of the creek on the northern shore of Otter Narrows at the northern end of the lagoon (Figure 3).

The writer believes that the three deposits mentioned above were the three known clay deposits that were sought by those who applied for Licence of Occupation No. 512250 in 1985 and that two of the three deposits were mislocated on the application plan.

As a result: the Otter Narrows deposit is located on WH 7054 R254284(8) owned by R. Upton, the Notice Bay deposit is located on WH 7052 R254285(8) also owned by R. Upton and the Clay Bay deposit is located on WH7052 R253525(1) owned by King Island Clay Ltd.

A detailed examination was made of the clay deposit at Clay Bay. It included mapping at a scale of 1:500 over a tape and compass survey of the bay (Figure 5). Four east-west lines spaced 15 m (49 ft) apart were cored at roughly 10 m (33 ft) intervals. Coring was done with an Oakfield A-3 soil auger which was extended to a maximum of 4 m (13 ft) by threaded steel rods and bolt connectors.

It was found that Clay Bay was a steep-walled graben-like structure that had been completely filled with clay. Featureless blue clay extended beneath the depth of sampling everywhere but near the margins of the bay (Figures 6 and 7).

Total tonnage of clay can not be calculated for this deposit because its depth remains unknown. However, minable tonnage at Clay Bay is presently restricted to that clay located less that 3.5 m (11.5 ft) below mean high tide or 2 m (6.6 ft) below mean low tide. This tonnage can be calculated, as can the tonnage of clay located from 2 to 4 m (6.6 to 13.1 ft) below mean low tide.

Core-proven tonnage of clay reserves at Clay Bay is calculated as follows:

Level	m3 of Clay	Core-proven clay tonnes	tons
1. high tide to 2 m below low tide	2600	5720	6292
2. 2-4 m below low tide	2300	5060	5566
Totals:	4900	10,780	11,858

NOTE: These tonnages are calculated using a specific gravity of 2.2 for water-saturated clay.

The above calculated tonnages can only be produced if a systematic mining method is employed in which the rock outcrop at the margin of the bay is used as a stable pit wall from which cuts to the lower legal limit of extraction are made. If the previous mining method of digging holes all over the place is continued, much of the clay reserves will be wasted.

Three cores were taken at Notice Bay south of the area reclaimed by Upton during 1990. Pure blue clay similar to that cored at Clay Bay extended beyond the maximum depth of penetration of the auger. Reserves for this deposit were not calculated.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

DeCosmos Lagoon occupies a north-south trending graben-like structure that probably formed on the Hecate Lowland during the Eocene Epoch. During the five major Pleistocene glaciations the rocks around the lagoon were scraped clean of their Tertiary-age regolith and subsequently covered with a thin layer of till. A great thickness of clay was deposited on the floor of the lagoon during the last interglacial age. Most of the clay was removed by southwestward moving ice during the most recent glaciation. Consequently, intertidal clay deposits were preserved in southwesterly facing bays that formed pressure shadows beneath the ice.

There are two superimposed groups of claims each named WH 7052 and WH 7054 covering the area between DeCosmos Lagoon and the eastern shore of Hunter Island. The claims numbered 253524(1) and 253525(1) that are owned by King Island Clay Ltd. inherit the right to produce clay from the three areas on the eastern shore of the lagoon that were included within Licence of Occupation No. 512250. The claims numbered 254284(8) and 254285(8) that are owned by Roger Upton include the right to produce clay from all of the property-area except the areas included in Licence of Occupation No. 512250. These claims also contain the right to produce any minerals except clay from the whole of the property-area.

Reportedly, three areas of containing known clay deposits were included in Licence of Occupation No. 512250 . The northern and southern

areas (Figures 2 and 3) were found to be underlain by wave-washed cobble and boulder till extending from granitic outcrops above the mean high tide level to well below mean low tide.

The existence of clay deposits beneath the till at these locations would require a trenching program to prove.

Good quality clay was found at Clay Bay located on the central area included in Licence of Occupation No. 512250 (Figures 2, 3 and 5 to 7) and at Notice Bay located in the southern part of the lagoon (Figures 2, 3 and 8). Poor quality clay mixed with sand and silt was found near the mouth of the creek on the northern shore of Otter Narrows at the northern end of the lagoon (Figure 3).

These three deposits were the three known clay deposits sought by those who applied for Licence of Occupation No. 512250 in 1985. Two of the three deposits were mislocated on the application plan.

As a result: the Otter Narrows deposit is located on WH 7054 R254284(8) owned by R. Upton, the Notice Bay deposit is located on WH 7052 R254285(8) also owned by R. Upton and the Clay Bay deposit is located on WH7052 R253525(1) owned by King Island Clay Ltd.

Recent production from DeCosmos Lagoon is summarized as follows:

Year	Location	Production in tonnes	tons	Reference
Late 1980s	South End	455	500	Figure 9
Summer, 1990	Notice Bay (Upton)	455	500	Figure 8
1990-1991	Notice Bay	143	157	Figure 8
1990-1992	Clay Bay	457	504	Figure 5

It is assumed by the writer that whoever conducted the post-1990 excavation at Notice Bay also extracted clay from ground at Clay Bay owned by King Island Clay Ltd. since 1990.

The writer believes that about 457 tonnes (504 tons) of marketable clay has been stolen from Claim WH 7052 R253525(1) owned by King Island Clay Ltd. by parties unknown.

The exact mineralogy of the clay is uncertain. The writer believes it to be a mixture of montmorillonite minerals and glauconite.

Total tonnage of clay at Clay Bay can not be calculated because its depth remains unknown. However, minable tonnage at Clay Bay is presently restricted to that clay located less that 3.5 m (11.5 ft) below mean high tide or 2 m (6.6 ft) below mean low tide. This tonnage can be calculated, as can the tonnage of clay located from 2 to 4 m (6.6 to 13.1 ft) below mean low tide.

Core-proven tonnage of clay reserves at Clay Bay is calculated as follows:

Level	m3 of Clay	Core-proven clay tonnes	tons
1. high tide to 2 m below low tide	2600	5720	6292
2. 2-4 m below low tide	2300	5060	5566
Totals:	4900	10,780	11,858

NOTE: These tonnages are calculated using a specific gravity of 2.2 for water-saturated clay.

3.2 Recommendations

The writer recommends the following:

1. Steps should be taken to identify and seek restitution from those parties who have stolen about 457 tonnes (504 tons) from the deposit at Clay Bay since 1990.
2. Markets should be sought for the 5720 tonnes (6292 tons) of clay minable under current regulations at Clay Bay so that profitable production can commence in a minerlike fashion.
3. A hand trenching and coring program should be conducted to determine in any marketable clay exists beneath the cobble till at the northern and southern areas included in former Licence of Occupation No. 512250.

West Vancouver, British Columbia
May 31, 1992

John Ostler; M.Sc., P.Geo.
Consulting Geologist

4.0 REFERENCES

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Davis, Jack; 1990: Regulation of the Minister in the Matter of the Mineral Tenure Act S.B.C. 1988, C.5; Amendment to B.C. Reg. 100/68 dated April 12, 1990 (14280-03-093), 2p.

Graham, R.P.D.; 1909: On a Preliminary Survey of the Geology of the British Columbia Coast from Kingcome Inlet to Dean Channel, Including Adjacent Islands; Geol. Surv. Canada, Summary Rept. for 1908, pp. 38-40.

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Holland, S.S.; 1976: Landforms of British Columbia, A Physiographic Outline; B.C. Min. Energy, Mines and Petr. Res., Bull. 48, p. 40.

Roddick, J.A. and Hutchinson, W.W.; 1968: Coast Mountains Project; in Report of Activities; Geol. Surv. Canada, Pap. 68-1A, pp. 37-41.

5.0 ITEMIZED COST STATEMENT FOR THE MAY, 1992 PROGRAM

Wages:		
John Ostler; M.Sc., P.Geo.		
consulting geologist		
13 days @ $300/day	$ 3900.00	
Barrie Field-Dyte		
geological technician		
8 days @ $200/day	$ 1600.00	
	$ 5500.00	$ 5500.00
Transport:		
Truck;		
1 1-ton 4X4 pickup, 0.25 month @ $2400/month	$ 600.00	
Gasoline and oil	$ 195.07	
Parking	$ 4.28	
Aircraft;		
Two trips in DH-3 Beaver	$ 1050.00	
	$ 1849.35	$ 1849.35
Camp and Equipment:		
1 2-man fly camp inc. sampling equipment		
0.25 month @ $600/month	$ 150.00	
Naphtha	$ 19.73	
Camp + survey supplies	$ 119.29	
	$ 289.02	$ 289.02
Crew Costs:		
Hotel	$ 100.68	
Meals in Transit	$ 206.26	
Camp food	$ 197.51	
	$ 504.45	$ 504.45
Communication:		
1 SBX11A radio, 0.25 month @ $300/month	$ 75.00	
Radiotelephone + L.D. calls.	$ 25.00	
	$ 100.00	$ 100.00
Report Production:		
Drafting 27 hours @ $25/hr	$ 675.00	
Report production and copy	$ 123.37	
	$ 798.37	$ 798.37
Cost of May, 1992 work		**$ 9041.19**
G.S.T.; 7% of $ 8843.68		$ 619.06
Total Cost of May, 1992 work.		**$ 9660.25**

APPENDIX A

CERTIFICATE OF QUALIFICATION

I, John Ostler, of 2224 Jefferson Avenue in the City of West Vancouver, Province of British Columbia do hereby certify:

That I am a consulting geologist with business address at 2224 Jefferson Avenue, West Vancouver, British Columbia;

That I am a graduate of the University of Guelph in Ontario where I obtained my Bachelor of Arts degree in Geography (Geomorphology) and Geology in 1973 and that I am a graduate of Carleton University of Ottawa, Ontario where I obtained my Master of Science degree in Geology in 1977;

That I am licensed to practice as a Professional Geoscientist by the Association of Professional Engineers and Geoscientists of British Columbia and as a Professional Geologist by the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and that I am a Fellow of the Geological Association of Canada;

That I have been engaged in the study and practice of the geological profession for over 20 years;

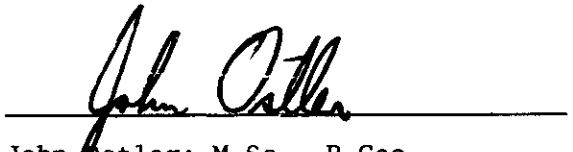
That this report is based on data in literature and work conducted by me on

the DeCosmos claim group from May 15 to 22, 1992;

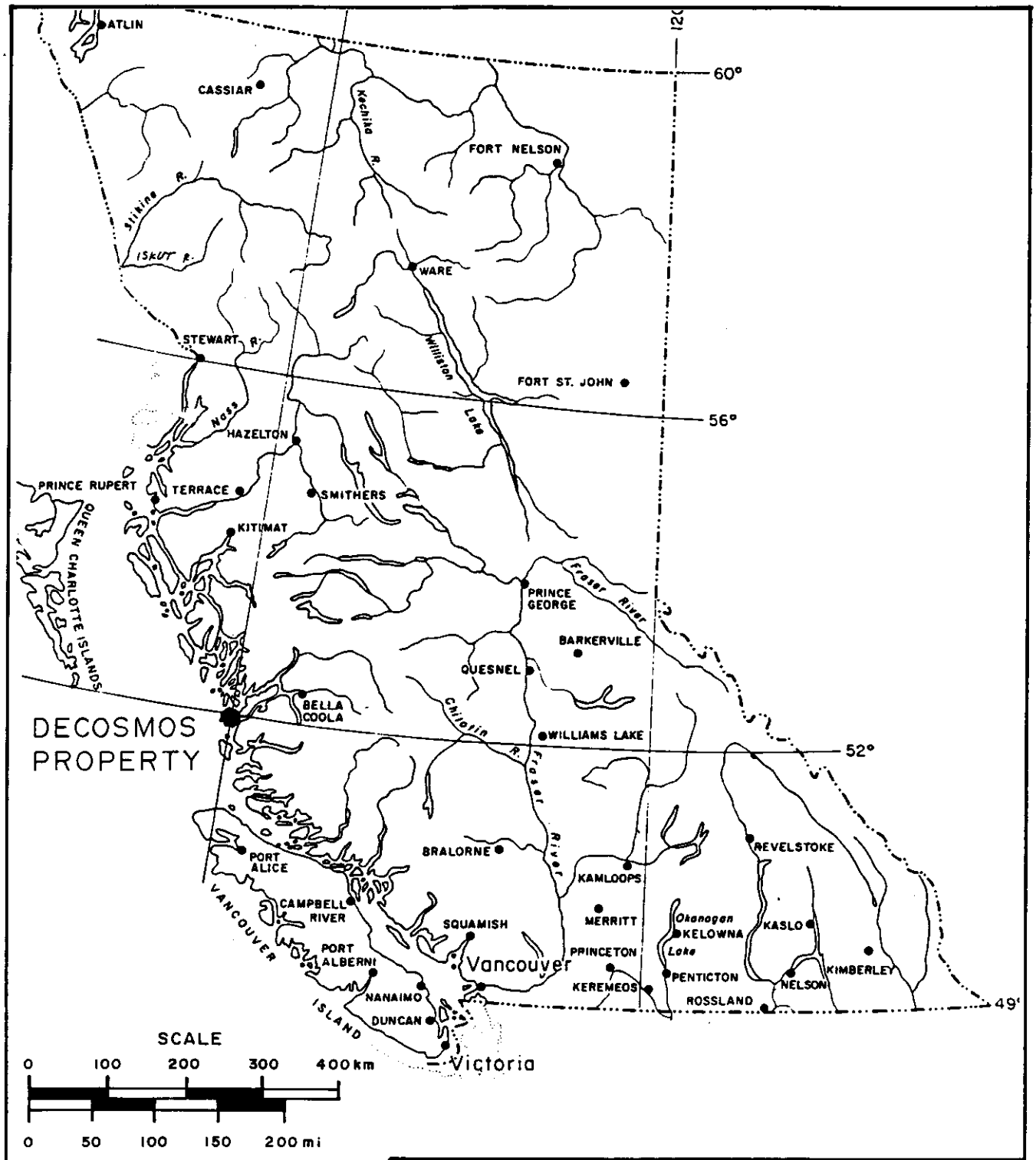
That I have no interest in the DeCosmos Property or the securities of King

Island Clay Ltd. nor do I expect to receive any.

Dated at West Vancouver, British Columbia this 31st day of May, 1992.



John Ostler; M.Sc., P.Geo.
Consulting Geologist



PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. D. OSTLER
SCIENTIST

Figure 1

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

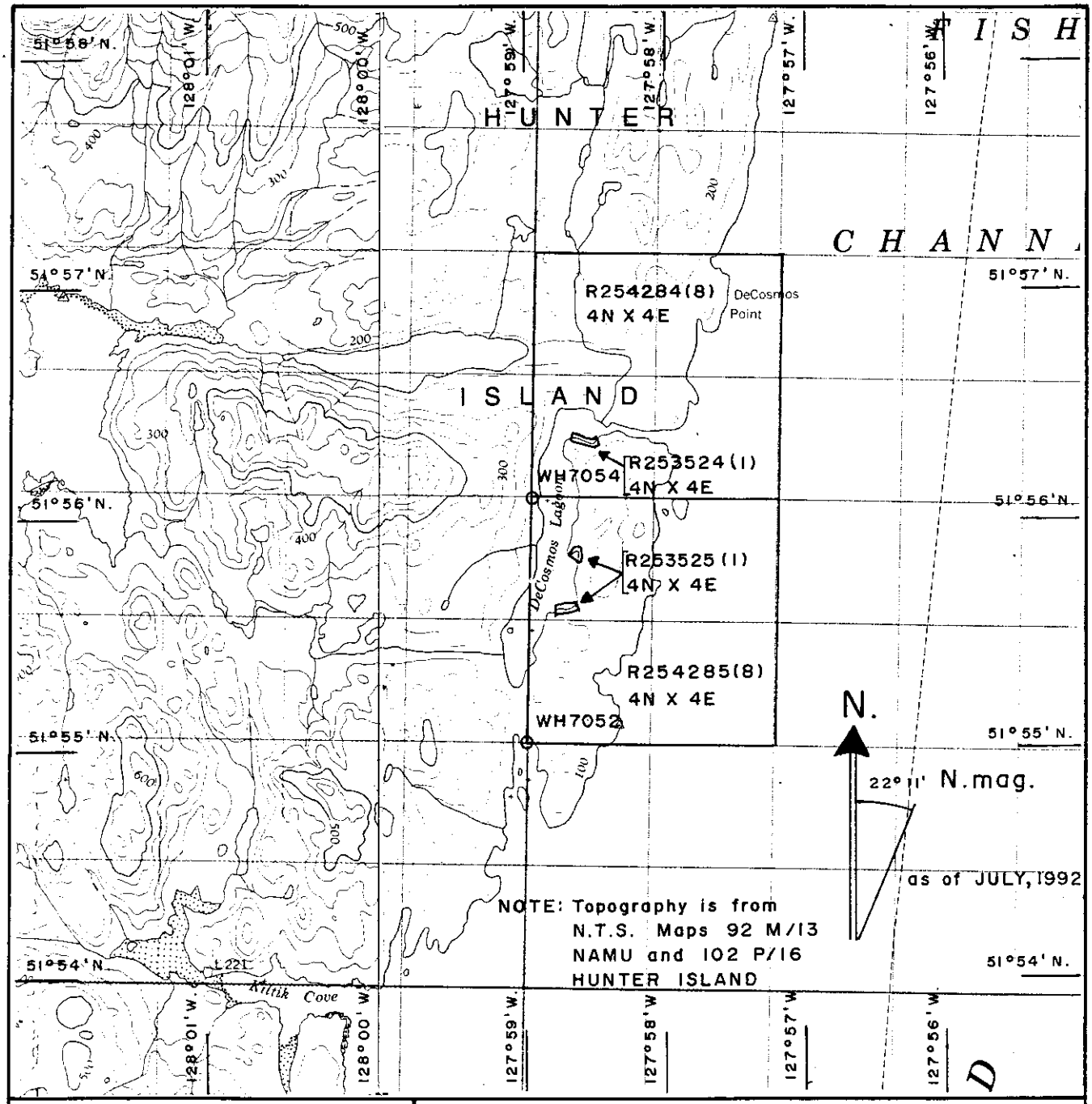
GENERAL LOCATION

DECOSMOS PROPERTY

51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992



LOCATION

Figure 2

CASSIAR EAST YUKON EXP. LTD.

PROFESSIONAL ENGINEERS PROVINCE OF BRITISH COLUMBIA JOHN OSTLER GEOSCIENTISTS

SCALE

0 1 2 3 km

0 1 2 mi

KING ISLAND CLAY LTD.

LOCATION and TERRAIN

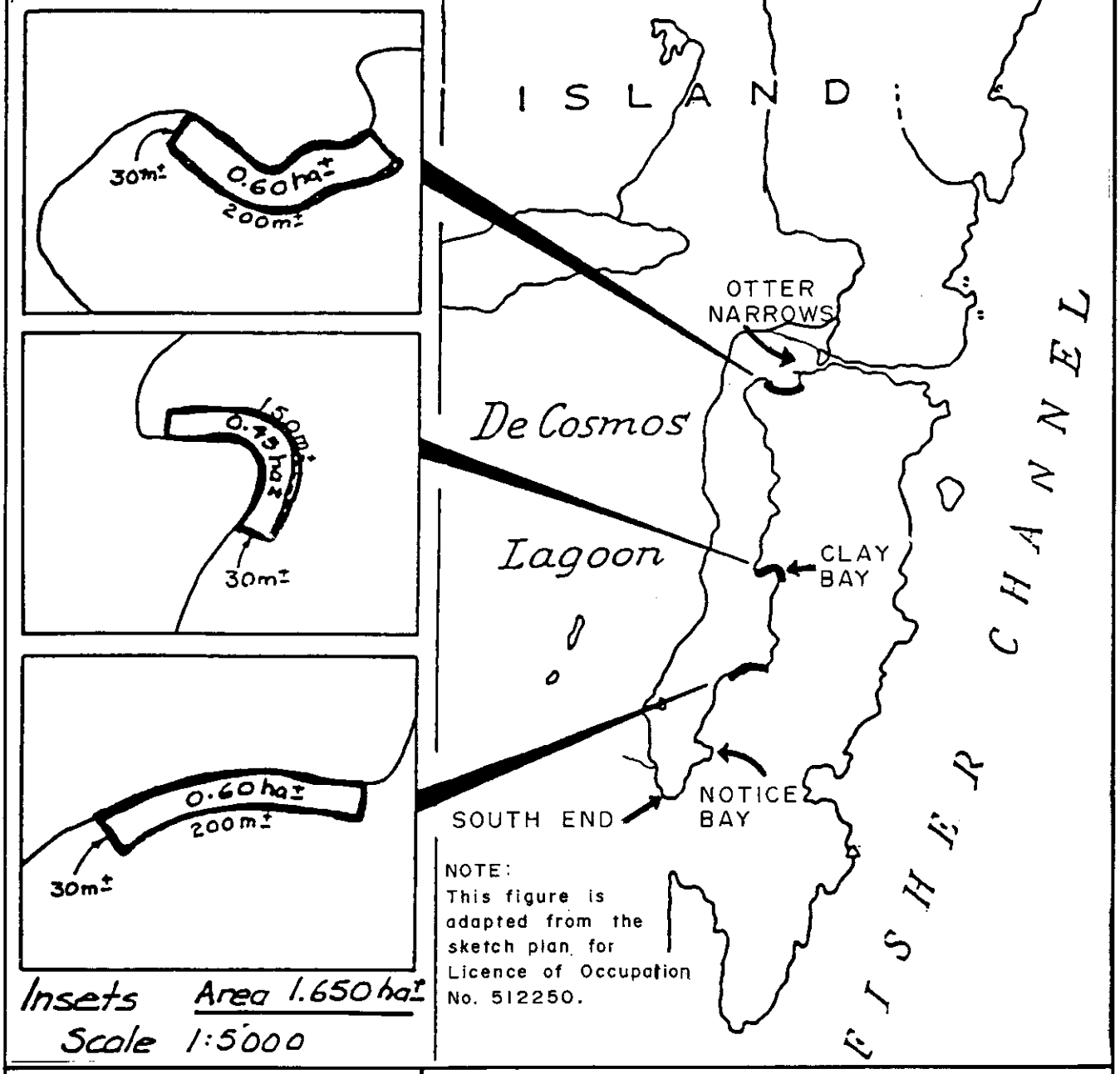
DECOSMOS PROPERTY

51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992

1.2 Sketch Plan



NOTE:
This figure is adapted from the sketch plan for Licence of Occupation No. 512250.

Insets Area 1.650ha±
Scale 1:5000

SCALE
0 1 2 km
0 0.5 1 mile

N.
22°11' N. mag.
as of JULY 1, 1992

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
J. D. OSTLER
GEOSCIENTIST

Figure 3

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

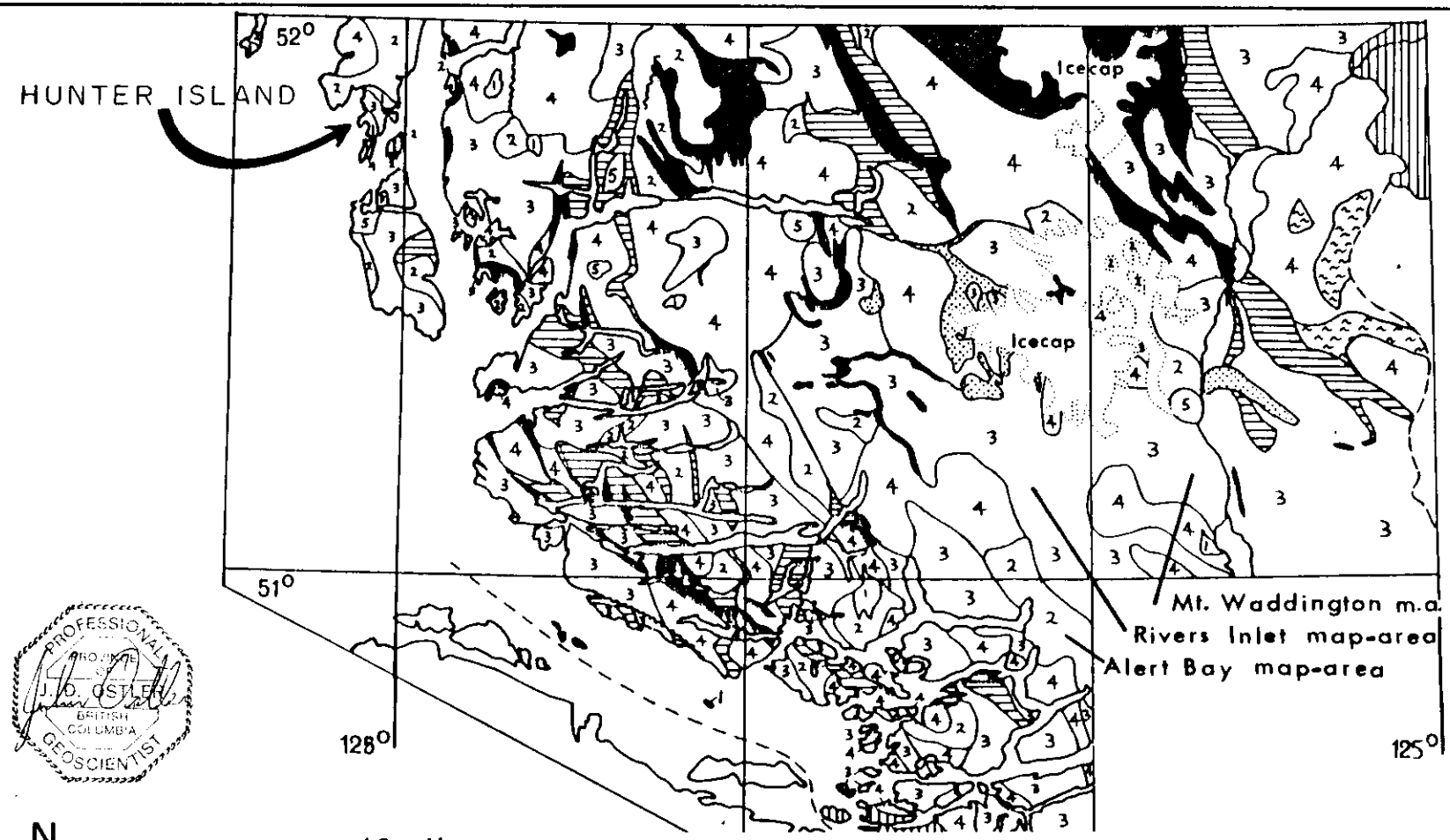
CLAY DEPOSITS at DECOSMOS LAGOON

DECOSMOS PROPERTY

51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992



PROFESSIONAL ENGINEER
J. O. OSTLER
BRITISH COLUMBIA
GEOSCIENTIST

NOTES: Geology is from G.S.C. Paper 68-1A, p.38, Figure 1.

For legend, see Figure 4A.

Figure 4

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

REGIONAL GEOLOGY from G.S.C. PAP. 68-1A

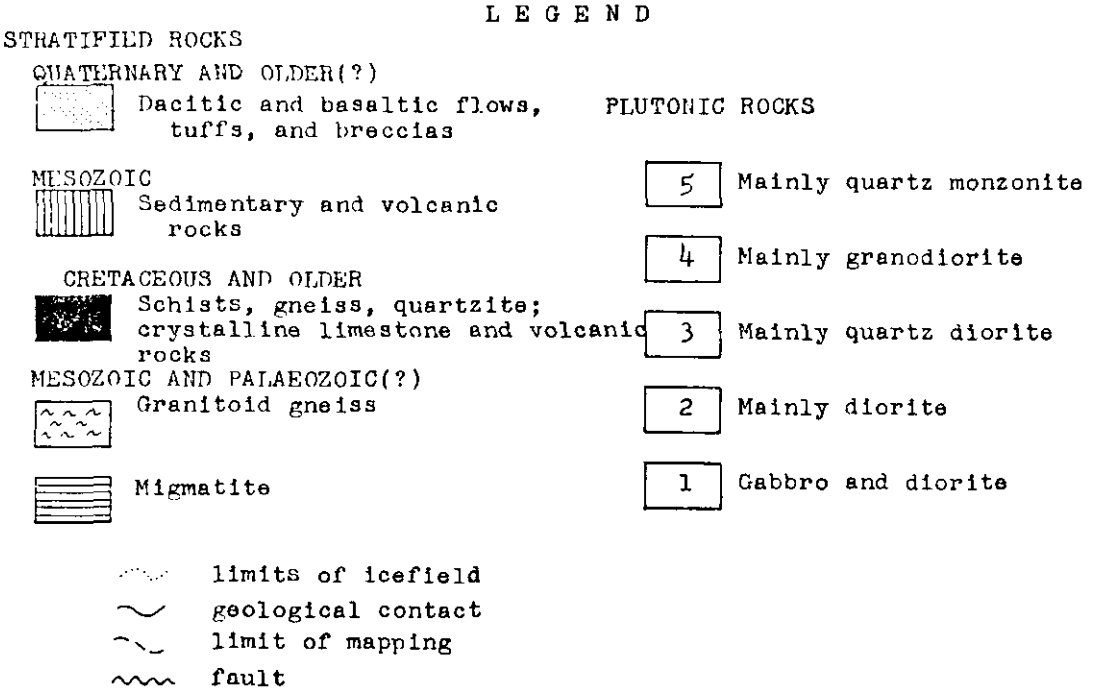
DECOSMOS PROPERTY

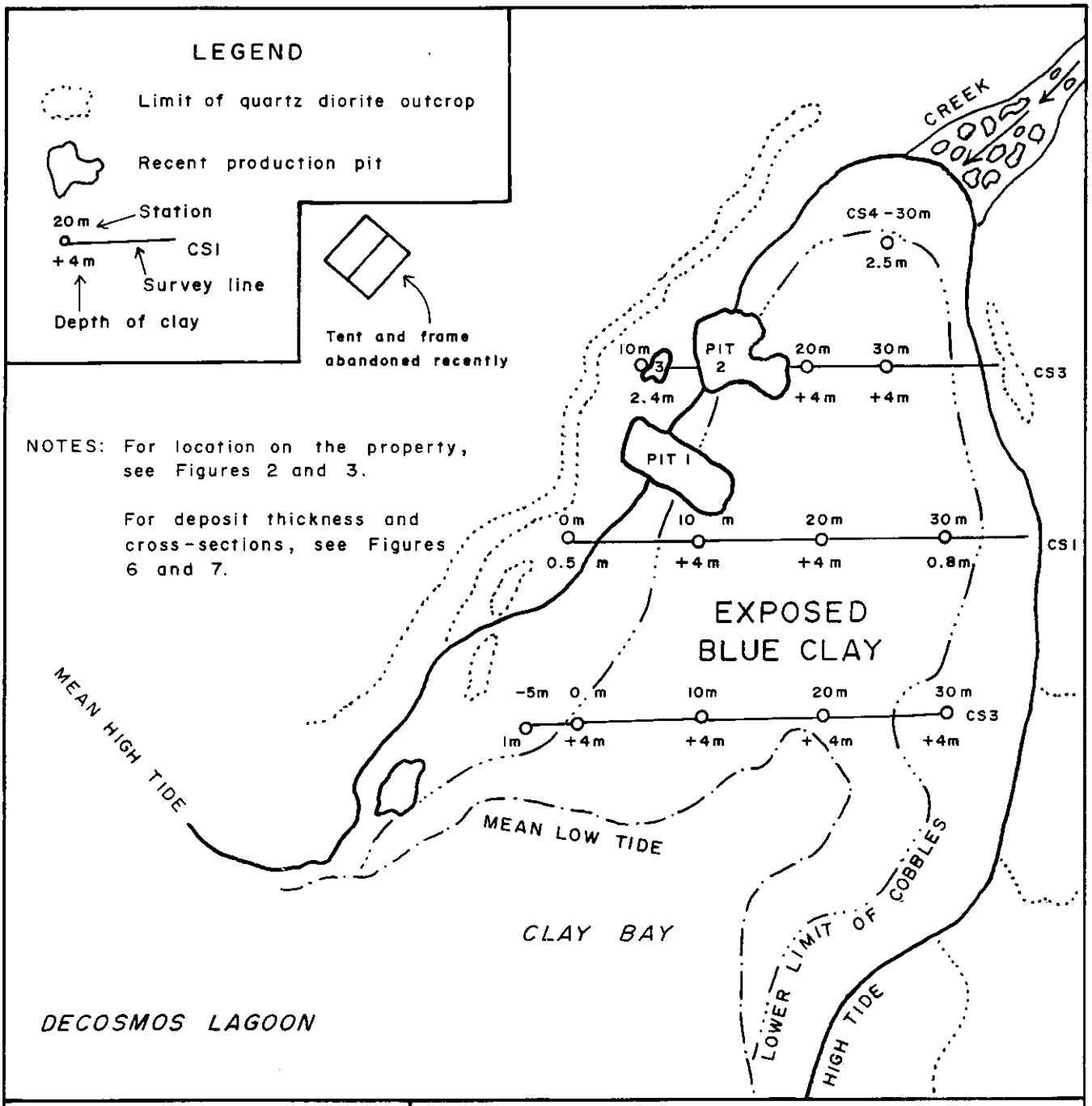
51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992

FIGURE 4A
LEGEND TO FIGURE 4





SCALE

0 10 20 30 metres

0 20 40 60 80 100 feet

N.

22°11' N. mag.

as of JULY 1, 1992

J. D. OSTLER

PROFESSIONAL ENGINEER

BRITISH COLUMBIA

CANADA

Figure 5

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

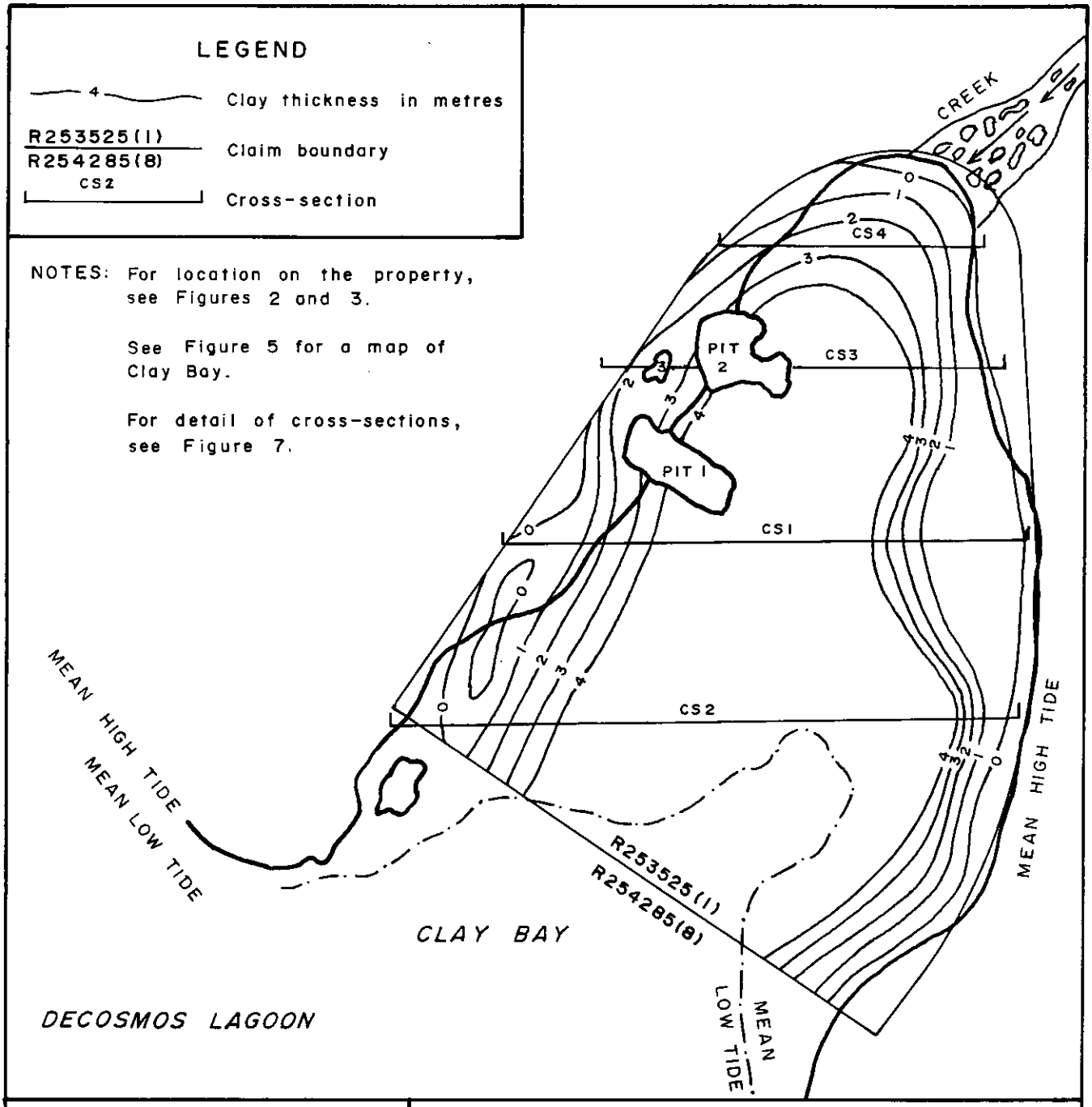
CLAY DEPOSIT at CLAY BAY

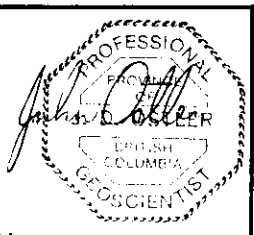
DECOSMOS PROPERTY

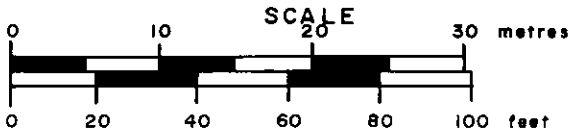
51°55.7'N., 127°58.6' W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992







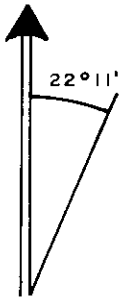


Figure 6

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

THICKNESS of RESERVES at CLAY BAY

DECOSMOS PROPERTY

51°55.7'N., 127°58.6'W.

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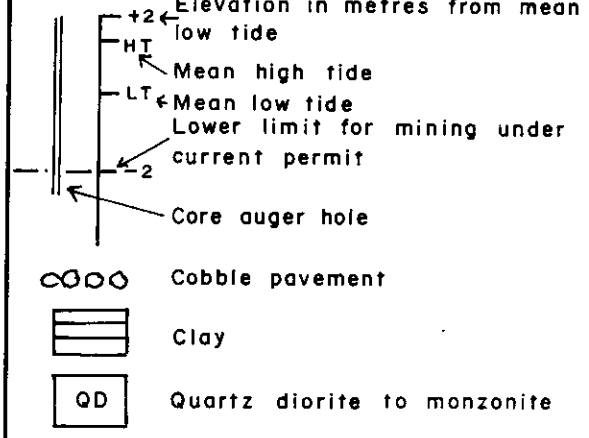
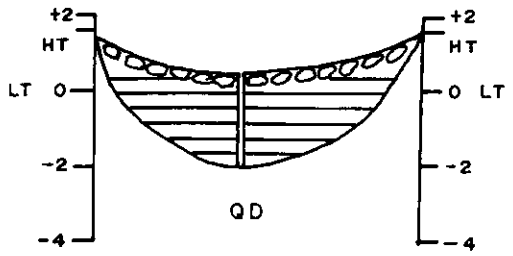
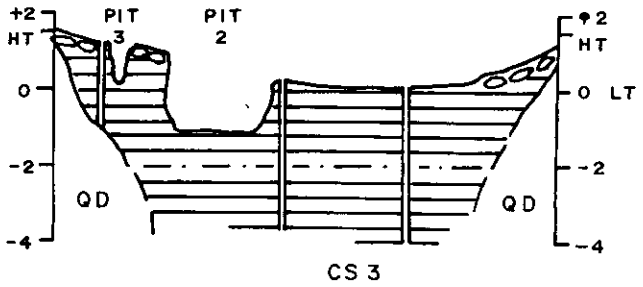
LEGEND





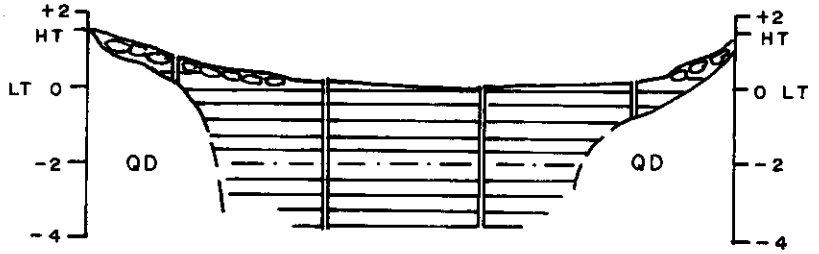


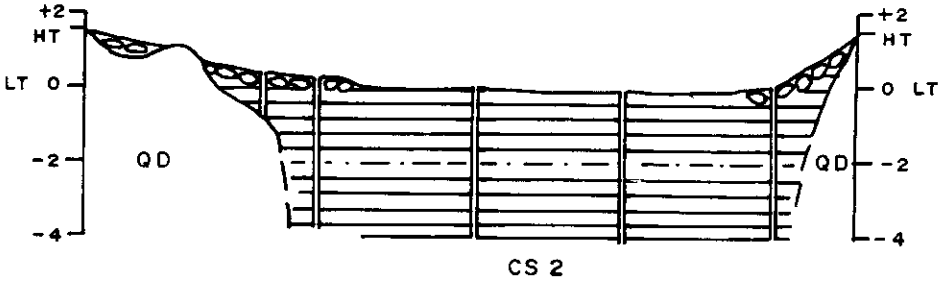
NOTES:

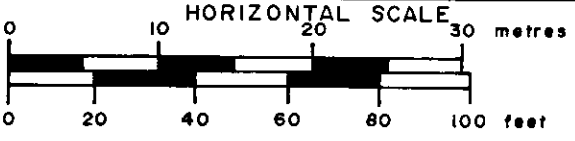
For location of cross-sections see Figures 5 and 6.

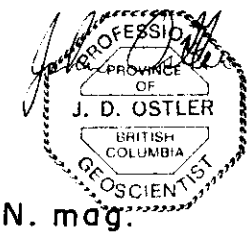
For location on property, see Figures 2 and 3.

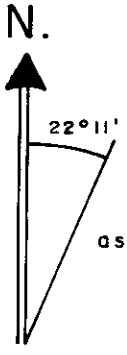
Vertical exaggeration in this figure is 2.5 : 1











as of JULY 1, 1992

Figure 7

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

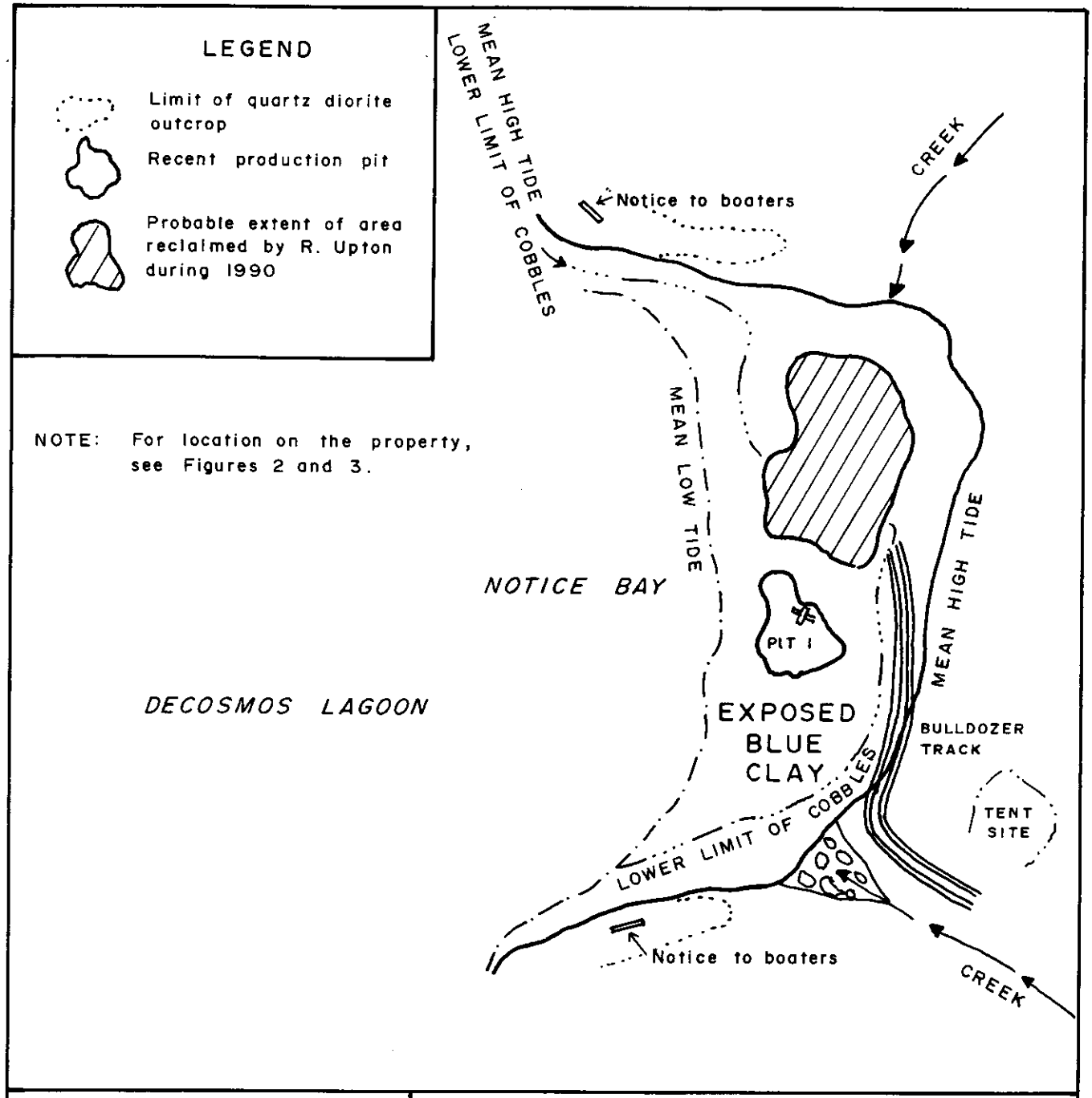
CROSS-SECTIONS of CLAY BAY

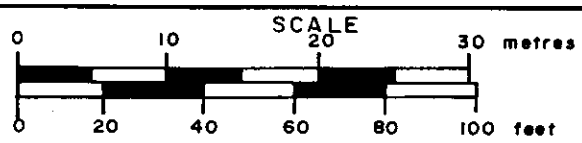
DECOSMOS PROPERTY

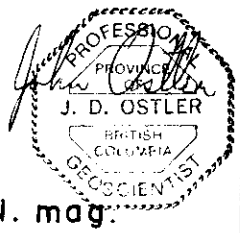
51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992







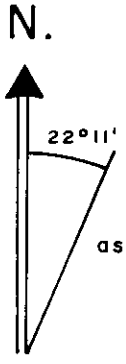


Figure 8

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

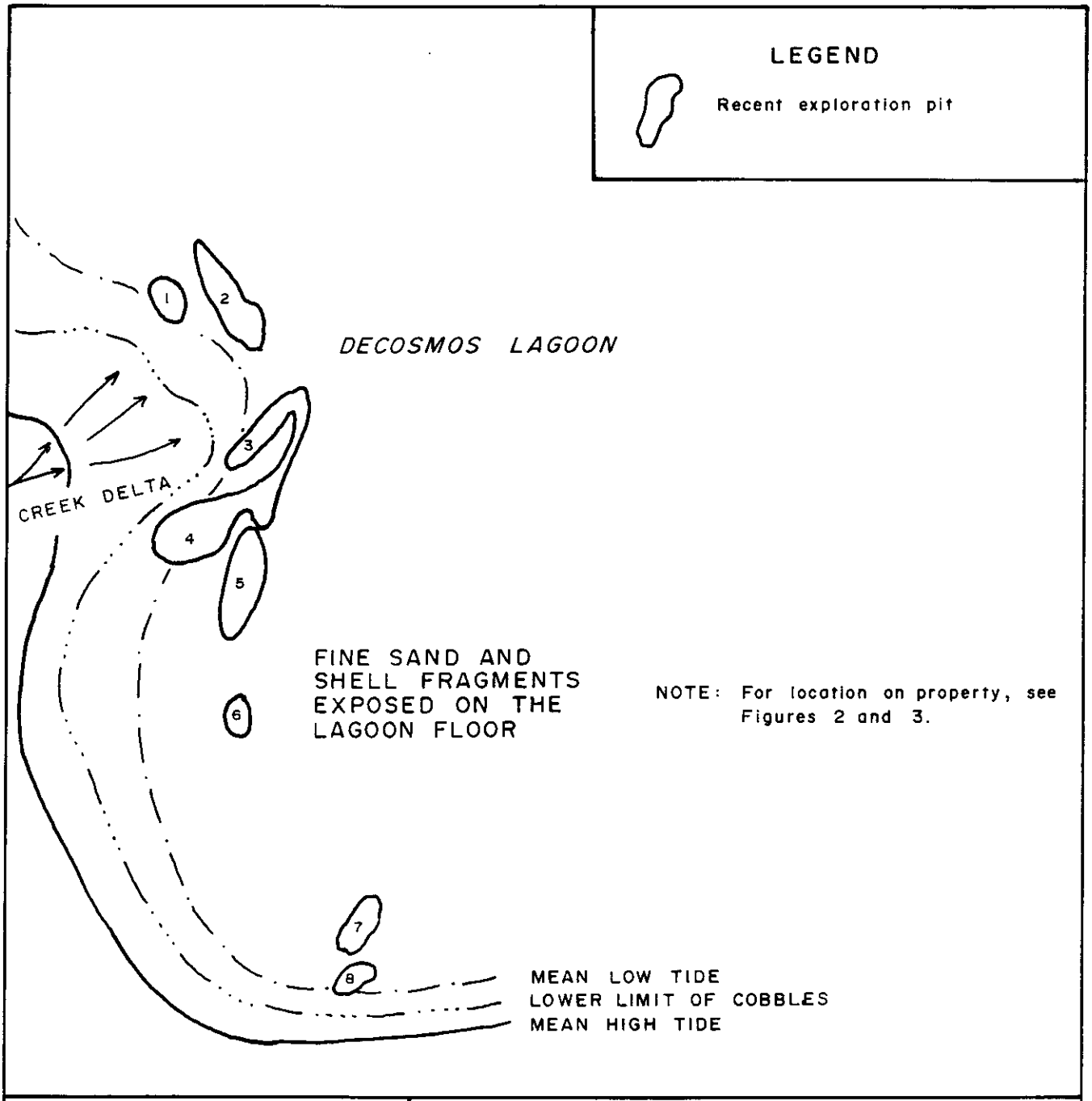
CLAY DEPOSIT at NOTICE BAY

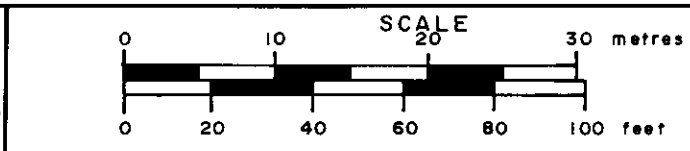
DECOSMOS PROPERTY

51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992





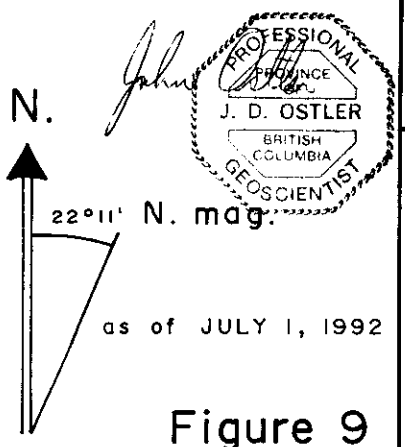


Figure 9

CASSIAR EAST YUKON EXP. LTD.

KING ISLAND CLAY LTD.

RECENT EXPLORATION PITS at SOUTH END

DECOSMOS PROPERTY
51°55.7'N., 127°58.6'W.

SKEENA M.D., B.C., N.T.S. 92 M/13

JOHN OSTLER; M.Sc., P.Geo., MAY, 1992