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#13

June 19, 1980

TO: Husky/U. S. Geological Survey

RE: Husky/USGS, NPR-A  
Lisburne #1  
Sec. 17, 11S/16W, U.B.M.  
North Slope, Alaska

### PALYNOLOGY REPORT

#### Introduction

A total of 329 samples were processed and examined for palynological age determinations. This total consisted of 190 ditch and 126 core samples taken between 130 feet and the total depth of 17,000 feet. Also included are three (3) surface samples taken from the wellsite area.

A summary of the results is given below and accompanying the report are two (2) charts illustrating the distribution of recognized palynomorph taxa in the core and ditch samples. There is also a third figure which displays the mixed age assemblages in the upper part of the well.

#### Summary of Results

Three (3) wellsite outcrop samples.

##### 9BO-1

Undifferentiated bisaccates (F), Tsuga (R).

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Three (3) wellsite outcrop samples (con't.).

9B0-1 (con't.)

Odontochitina operculata (R), Tasmanaceae (R).

AGE: Cretaceous

ENVIRONMENT: Marine

9AB0-1

Barren of palynomorphs.

AGE: Indeterminate

ENVIRONMENT: Indeterminate

1-79-02

Recent contamination. Betulaceae, Pinaceae, fungal spore.

AGE: Indeterminate

ENVIRONMENT: Indeterminate

130-2087'C?

Undifferentiated bisaccates (F-A), Rogalskaisporites cicatricosus (R), Classopollis classoides (R, sporadic); numerous occurrences of reworked Triassic spores.

Tasmanaceae (R-F), Odontochitina operculata (R), Oligosphaeridium complex (R-C); numerous occurrences of reworked Triassic, Jurassic and Neocomian dinocysts.

AGE: Early Cretaceous, Aptian-Early Albian  
(P-M18)

ENVIRONMENT: Marine

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130-2087'C? (con't.)

The large numbers of pre-Aptian palynomorphs present through this interval are attributed to reworking. The Neocomian dinocysts recovered appear mixed and reveal no consistent sequence. This suggests that the Neocomian and older palynomorphs observed are probably all reworked into this interval.

The cumulative percentage diagram (figure 3) displays the high degree of mixing through this interval.

2087-4550'

Spore-pollen assemblage remains essentially unchanged.

Cyclonephelium distinctum (F-A), Odontochitina operculata (R-A), Oligosphaeridium complex (F-A), O. complex (thick-wall) (R-A), Gardodinium trabeculosum (R-F), Dimidiadinium uncinatum (R), Pseudoceratium nudum (R-F), Herendeenia pisciformis (R-F); few scattered occurrences of reworked Triassic and Jurassic dinocysts.

AGE: Early Cretaceous, Neocomian  
(P-M19)

ENVIRONMENT: Marine

This interval consistently yielded Neocomian dinocysts representing the P-M19 zonule. The next interval below has been assigned the same age but has been separated because the overall palynomorph abundance and diversity is reduced.

RE: Husky/USGS - Lisburne #1, North Slope, Alaska

4550-6070'

Undifferentiated bisaccates (F-C), Monosulcites spp. (R-F), Rogalskaisporites cicatricosus (R).

Cyclonephelium distinctum (R), Oligosphaeridium complex (R), Clathroctenocystis elegans (R), Herendeenia pisciformis (R-F), Cribroperidinium muderongense (R, sporadic).

AGE: Early Cretaceous, Neocomian  
(P-M19)

ENVIRONMENT: Marine

The presence of dinocysts such as C. elegans and H. pisciformis indicate that these strata are of Neocomian age. This interval has been separated in this summary due to the decreased assemblage herein relative to the superjacent interval.

6070-7870'?

Undifferentiated bisaccates (R-F), indeterminate spores (R, poorly preserved); rare sporadic occurrences of Triassic and Jurassic/Cretaceous spore-pollen.

Rare Cretaceous dinocysts apparently derived from uphole.

AGE: Indeterminate

ENVIRONMENT: Indeterminate

The palynomorphs with any age significance lack consistency in occurrences and appear to be either reworked or derived from uphole.

RE: Husky/USGS - Lisburne #1, North Slope, Alaska

7870-8410'?

Densospores (R), indeterminate spores (R-F, poorly preserved).

AGE: Possibly in Carboniferous

ENVIRONMENT: No evidence Marine

This is a very tentative age assignment based principally on the occurrences of Densosporites spp.

8410-9215'

Densospore (single), indeterminate spores (R).

Scolecodonts (R-F).

AGE: Indeterminate

ENVIRONMENT: Marginal Marine

9215'

Taeniaesporites sp. (R), Classopollis classoides (R).

AGE: Possibly in Triassic

ENVIRONMENT: Nonmarine?

The single sample at 9215 feet yielded palynomorphs which, if indigenous, indicate a Triassic age for this depth.

9300-12,180'

Indeterminate spores and spore fragments (R-F).

Scolecodonts (R, sporadic).

AGE: Indeterminate

ENVIRONMENT: In part Marginal Marine

RE: Husky/USGS - Lisburne #1, North Slope, Alaska

12,180-13,160'

Densospores (R), indeterminate spores and spore fragments (R-F).

Scolecodonts (R-F).

AGE: Possibly in Carboniferous

ENVIRONMENT: Marginal Marine

13,160-14,510'

Rare to frequent occurrences of questionable spores or spore fragments.

Scolecodonts (R).

AGE: Indeterminate

ENVIRONMENT: Marginal Marine

14,510-15,332'C

Densospores (R), indeterminate and questionable spores or spore fragments (R-F), Krauselisorites sp. (R).

Scolecodonts (R-F).

AGE: Possibly in Carboniferous

ENVIRONMENT: Marginal Marine

The occurrence of Krauselisorites sp. at 15,332 feet in Core #14 indicates that possibly the top part of the core may be as young as Permian-Triassic.

RE: Husky/USGS - Lisburne #1, North Slope, Alaska

15,332.5-16,220'

Rare occurrences of indeterminate and questionable spores or spore fragments.

Scolecodonts (R).

AGE: Indeterminate

ENVIRONMENT: Marginal Marine

16,220-16,590'

Densospore (R-F), Calamospora sp. (R), Lycospora sp. (R),  
?Tripartites sp. (single).

Scolecodonts (R).

AGE: In Mississippian (P-T21)

ENVIRONMENT: Marginal Marine

16,590-17,000' T.D.

Indeterminate and questionable spores or spore fragments (R),  
Densospore (single).

Scolecodonts\* (R-F).

AGE: Indeterminate

ENVIRONMENT: Marginal Marine

The single specimen of a Densospore at 16,993.2 feet is possibly evidence for a Carboniferous age at that depth.

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Hideyo Haga