

G.S.C. O.F. 1855 BIOSTRATIGRAPHIC AND MATURATION STUDIES OF THE SCOTIAN SHELF, PART 4; HUSKY-BOW VALLEY ET AL. EVANGELINE H-98

BIOSTRATIGRAPHIC AND MATURATION STUDIES

OF THE SCOTIAN SHELF

PART 4

HUSKY-BOW VALLEY et al.
EVANGELINE H-98



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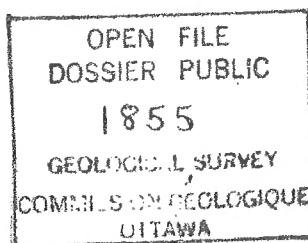
BIOSTRATIGRAPHIC AND MATURATION
STUDIES OF THE
SCOTIAN SHELF

- PART 4 -

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EVANGELINE H-98

BY

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C O N T E N T S

INTRODUCTION.....	1
Chapter 1. PALYNOLGY.....	2
Chapter 2. MICROPALAEONTOLOGY.....	6
Chapter 3. KEROGEN ANALYSIS.....	7
APPENDIX - A. Photographic record.....	9
APPENDIX - B. Foram and ostracod locations.....	NA
APPENDIX - C. Kerogen analysis sheets.....	17

MAP POCKET:

PALYNOLGY DISTRIBUTION CHART EVANGELINE H-98

BIOSTRATIGRAPHIC AND MATURATION STUDIES
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GSC locality: D251

Location: 43 17'26"N; 60 58'49.5"W

K.B. elevation: 22m Water depth: 174m

Total depth: 5044m Interval studied: 995-5045m

Casing set at: 456.6m, 982.4m, 3141.6m

Palynology by: J.K. Lentin.

Micropaleontology by: not available.

INTRODUCTION

This report is the fourth in a series of five reports detailing the palynology, micropaleontology, kerogen and fluorescence analysis from four wells on the Scotian Shelf. Each speciality is presented separately in individual chapters in each of the four well reports. The rangecharts included at the back of the reports graphically integrate the three parts of the studies. The fifth and final report will compare and correlate the four wells in the study.

Species cards with photographs of all taxa used in the palynological section of the study will be presented with the final report. Appendix A of each well report contains a complete list of photographs taken of fossils from the well.

CHAPTER 1

PALYNOLOGY

One hundred thirty six cuttings samples were studied from this well. All of the cuttings samples contained palynomorphs down to 4780m where the well entered a barren interval. There is extensive mixing of assemblages throughout the well. In particular there is recycling of Eocene material into the Miocene and caving of very abundant Miocene down to the final casing point at 3141.6 m. The following age determinations have been made:

0995-1295m Miocene undifferentiated.

1315-1500m Oligocene undifferentiated.

-Unconformity-

1520-1560m *P. pyrophorum* Zone (Early Paleocene).

1580-1775m *M. euclaense* Zone (Maastrichtian).

1795-1925m *O. operculata* Zone (Campanian).

- Unconformity -

1945-2795m *K. williamsii* Zone (Cenomanian).

2815-3125m *C. cf. vestitum* Zone (Albian).

- Unconformity -

3145-3890m *A. anaphrissa* peak Zone (Early Barremian).

3910-4760m Early Cretaceous undifferentiated.

4780-5045 BARREN.

The base of this well from 5045-4780m contains only dark brown to black particulate material with the exception of the kerogen sample from 5045m which contains a single poorly preserved dinoflagellate which was not identifiable. Above the barren zone is a thick sequence of sediments which were almost

certainly deposited during the Early Cretaceous but which contain such low diversity and abundance of fossils that they are impossible to assign to a specific age. Above this zone from 3890m to 3145m is a depauperate assemblage which is assigned to the Early Barremian. No assemblage zonal name is applied to fossils in this interval because the important zonal marker fossils as defined by Williams, 1975 are not present. Unconformably overlying the Early Barremian is the Albian from 3125-2815m and the Cenomanian from 2795-1945m. The Cenomanian is unconformably overlain by the Campanian through Paleocene from 1925-1520m. A third unconformity accounting for the loss of at least all of the Eocene occurs at around 1500m. Above this is the Oligocene followed by the Miocene. The Cretaceous interval spans 3465m of sediments and the Tertiary spans the upper 565m of sediments examined in this well.

The depositional environment, judging by the palynomorphs, shows little fluctuation and is considered to be marine throughout the well. Although lithological information was not available on this well, the extremely depauperate assemblages seen in the lower 1900m of this well may have been the result of deposition in a carbonate environment some distance from shore.

SELECTED PALYNOMORPHS:

0995-1295m: Miocene undifferentiated.

Thalassiphora delicata s.s., *Nematosphaeropsis lemniscata*, *Operculodinium israelianum*, *Tuberculodinium vancampoae*, as well as several undescribed species of *Sumatrardinum*. *Apectodinium homomorphum*, *Wetzelilla articulata*, and *Hafniaspheera septata* are considered to be recycled from the Eocene. *Pentadinium laticinctum* and *Selenopemphyx nephroides* have depressed tops within the interval.

1315-1500m: Oligocene undifferentiated.

Cyclopsiella coniata, *Hystrichokolpoma unispinum*, *Thalassiphora delicata* s. Williams and Brideaux, 1975, *Thalassiphora pelagica*, *Distatodinium craterum*, and *Cordosphaeridium cantharellum*. *Hystrichosphaeridium bowerbankii* is considered to be recycled from the Late Cretaceous. *Deflandrea phosphoritica* has a depressed top within this interval. This interval is strongly contaminated by caving.

1520-1560m: *P. pyrophorum* Zone (Paleocene).

Ceratiopsis pannucea, *Ceratiopsis diebelii*, and *Palaeoperidinium pyrophorum*. This interval also contains abundant fossils whose known stratigraphic ranges would place them in the Eocene, however, since the Paleocene top marker species continue from the Cretaceous, they are not considered to be recycled. There is abundant caving in this interval.

1580-1775m: *D. euclaense* Zone (Maastrichtian).

Rugubivesciculites rugosus, *Ceratiopsis danica*, *Ceratiopsis striata*, *Isabelidinium bakeri*, *Phelodinium magnificum*, *Trithyrodinium evittii*, *Chatangiella granulifera*, *Chatangiella victoriensis*, *Dinogymnium undulosum*, *Cicatricosporites hughesii*, *Dinogymnium acuminatum* and *Isabelidinium cooksonae*. Although abundant caving continued in this section the species with known ranges in the Tertiary were not recorded in this interval.

1795-1925m: *O. operculata* Zone (Campanian).

Alterbidinium acutulum, *Dinogymnium lanceolatum*, *Palaeohystrichophora infusoroides*, *Dinogymnium euclaense*, *Dinogymnium pustulicostatum*, *Isabelidinium delitiense*, and *Odontochitina costata*.

1945-2795m: *K. williamsii* (Cenomanian).

Spinidinium cf. echinoideum, *Xiphophoridium alatum*, *Florentinia resex*, *Hystrichosphaeridium difficile*, *Florentinia cooksoniae*, *Kiokansium williamsii* (= *C. polypes*), *Florentinia verdieri*, *Odontochitina rhakodes*, and *Xenascus plotei*. *Kleithriasphaeridium corrugatum* and *Stiphrosphaeridium arbustum* are considered to be recycled from the Early Cretaceous.

2815-3125m: *C. cf. vestitum* (Albian).

Palaeoperidinium sp. A of Williams and Brideaux 1975, and *Vitreisporites pallidus*.

3145-3895m: Early Barremian.

Surculosphaeridium sp. #TB, *Systematophora* sp. #TA, and

Taleisnhaera hydra. *Oligosphaeridium porosum* which is considered a good marker for the top of the Hauterivian is rare in the last two samples within this interval, but is considered insufficient evidence on its own to mark a boundary.

3910-4760m: Early Cretaceous undifferentiated.

Fossils seen in the overlying Early Cretaceous intervals are seen throughout this interval with only two species, *Trilobosporites marylandensis* and *Distaltriangulispores perplexus*, being seen for the first time.

4780-5045m: BARREN.

The palynology slides for this interval are barren of palynomorphs, however, a single unidentifiable dinoflagellate was seen on the kerogen slide for 5045m.

NOTE: Examination of the rangecharts for this well can result in several other interpretations for the age boundaries. Very few of the standard GSC zonal fossils are found in this well. There is very abundant caving as well as reworking throughout most of the well resulting in a very confused picture. This is further complicated by very poor quality slides which contain many times more macerate than should be placed on the coverslips.

It is most unfortunate that micropaleontology could not be completed on this well as a coordinated effort might have resulted in a more satisfactory zonation.

A major concern is whether there is any Eocene in this well. There are numerous fossils which are good Eocene markers, yet I can see no distinctive top. The well history states that the logs indicate a carbonate marker at 1496m. This carbonate zone is generally considered to be an Eocene marker.

An additional question is the value of the rare specimens of *Oligosphaeridium porosum* in the samples at 3850-3860m and 3880-3890m. This species has proved to be a reliable Hauterivian top marker in many of the over 40 wells previously studied on the Scotian Shelf. However, because of the extensive recycling seen throughout the well I am very dubious about using a single species to mark the top of a zone.

CHAPTER 2
MICROPALEONTOLOGY

No micropaleontological information is available on this well.

MACERAL ANALYSIS

Introduction

Kerogen analysis has been completed on twenty-one samples prepared by the Geological Survey. These samples, spaced at approximately 200 meter intervals in the well section, have been examined for kerogen type, determination of the thermal alteration index (TAI), and epifluorescence. The data from these analyses are presented on analysis sheets provided by the Geological Survey and are included as Appendix C. A summary of each analysis follows.

KEROGEN

In five of the six samples studied down to 2045m, the residue is a mixture of undigested clay minerals and finely disseminated, unstructured woody debris (collinite) with relatively rare spores, pollen and dinocysts (this is in marked contrast with the palynology slides which contain very abundant dinocysts). Because of the nature of the slides, the proportions of the kerogen macerals were impossible to determine with any degree of accuracy. By contrast, the 1865m sample is much cleaner.

All of the samples studied are dominated by woody and coaly debris in varying proportions. Structured sapropels vary from trace amounts to 24% of the total kerogen. High values were recorded at 1865m, 2435m, 2675m, 2855m and 3035m but, severe cavings contamination may have affected these values. The 4850m and 5045m samples contain abundant large, coaly fragments and woody material which is almost certainly cavings or mud contamination.

THERMAL ALTERATION INDEX

A series of color readings was taken on spores wherever possible and the results are presented on the chart. Where values fall between two TAI levels, both are plotted.

The well penetrated an immature section with values in the 1 to 1+ to 2- range down to 2435m. Below this point, maturity values of TAI 2 are present, increasing steadily to 2+ at 3440m, 3- at 3860m and 3 at 5045m (TD). The palynomorphs are corroded and extremely rare below 4250m.

FLUORESCENCE

The epifluorescence character of the individual samples usually mirrors the kerogen composition and maturity determinations in transmitted white light, however, in this well the slide mounting-medium fluoresced strongly in all of the slides and may have masked the true fluorescence colors. This is certainly true in the section below 4040m where the maturity is such that the fluorescence intensity is very low anyway.

Bright green to yellow colors characterize the section down to 2045m although extensive caving probably extends their range somewhat. The colors shift through yellow to yellow-orange and the intensity drops slightly down to 2855m. The color gradually changes to medium-dull orange-red below this point and there is a distinct reworked component down to 3245m. Fluorescence appears to have ceased at and below 4040m.

APPENDIX A

PHOTOGRAPHIC RECORD

Evangeline II-98

#	Name	Well #	Depth	Coordinate
J-236	<i>Leptodictinium maculatum</i>	D251	995-1005m	103.0 x 20.0
J-237	<i>Deflandrea</i> sp. #TA	D251	995-1005m	104.2 x 19.0
J-238	<i>Spiniferites</i> sp. A W&B/75	D251	995-1005m	108.0 x 18.9
J-239	<i>Thalassiphora</i> <i>delicata</i>	D251	995-1005m	105.0 x 18.5
J-240	<i>Tectatodinium</i> sp. #TA	D251	995-1005m	105.9 x 15.8
J-241	<i>Trinovantodinium</i> sp. #TA	D251	995-1005m	109.0 x 15.5
J-242	<i>Reticulatosphaera</i> <i>stellata</i>	D251	995-1005m	111.5 x 13.5
J-243	<i>Cannospheeropsis</i> sp. #TA	D251	995-1005m	119.1 x 13.3
J-244	<i>Sumatradinium</i> sp. #TA	D251	995-1005m	103.2 x 11.5
J-245	<i>Tricolporopollenites</i> sp. #TE	D251	995-1005m	107.5 x 10.0
J-246	<i>Lejeuneacysta faciax</i>	D251	995-1005m	110.0 x 10.0
J-247	<i>Impagidinium patulum</i>	D251	995-1005m	104.8 x 1.0
J-248	<i>Achromosphaera</i> #TC	D251	1025-1035m	99.8 x 17.8
J-249	<i>Selenopemphix</i> sp. A Powell 1986	D251	1025-1035m	116.2 x 13.8
J-250	<i>Tuberculodinium</i> <i>vancampoae</i>	D251	1025-1035m	110.8 x 8.0
J-251	<i>Nematosphaeropsis</i> <i>lemniscata</i>	D251	1025-1035m	110.2 x 5.0

J-252	Friporate sp. #IA	D251	1055-1065m	112.0 x 16.5
J-253	WetzelIELLA articulata	D251	1055-1065m	108.5 x 15.0
J-254	Choanopollenites sp. #TA	D251	1055-1065m	112.2 x 6.2
J-255	Apectodinium homomorphum	D251	1085-1095m	110.8 x 11.9
J-256	Spiniferites granulatus	D251	1085-1095m	102.0 x 15.0
J-257	Sumatrardinium #TD	D251	1085-1095m	99.5 x 14.0
J-258	Cyclopsiella vieta	D251	1085-1095m	101.2 x 6.5
J-259	Achomosphaera #TD	D251	1105-1115m	103.8 x 19.5
J-260	Impagidinium sp. C W&K/86	D251	1105-1115m	110.0 x 16.0
J-261	Nematosphaeropsis sp. #TA	D251	1105-1115m	114.8 x 10.0
J-262	Peridinioid indet.	D251	1105-1115m	110.0 x 9.5
J-263	Nematosphaeropsis sp. #TA	D251	1105-1115m	114.8 x 10.0
J-264	Sumatrardinium sp. #TB	D251	1105-1115m	115.0 x 5.0
J-265	Tricolporopollenites sp. #TF	D251	1105-1115m	112.0 x 2.9
J-266	Achomosphaera sp. #TE	D251	1135-1145m	106.0 x 1.0
J-267	Impagidinium sp. #TA	D251	1135-1145m	110.0 x 3.5
J-268	Kallosphaeridium cf. capulatum	D251	1165-1175m	112.0 x 12.2
J-269	Hystrichosphaeropsis quasicribrata	D251	1165-1175m	103.1 x 11.0
J-270	Batiacasphaera cf. micropapillatum	D252	1165-1175m	103.0 x 7.0
J-271	Adnatosphaeridium reticulensis	D251	1165-1175m	105.0 x 4.0
J-272	Kallosphaeridium cf. biornatum	D251	1165-1175m	6.5 x 1.0

J-273	Achomosphaera sp. #TE	D251	1135-1145m	10.6	x	1.0
J-274	Polysphaeridium pseudocolligerum	D251	1175-1205m	10.6	x	19.0
J-275	Batiacasphaera sp. #TA	D251	1195-1205m	11.6	x	17.0
J-276	Sumatradinium sp. #TC	D251	1195-1205m	102.5	x	7.5
J-277	Impagidinium paradoxum	D251	1195-1205m	107.0	x	3.5
J-278	Bitectatodinium sp. #TA	D251	1195-1205m	105.8	x	3.0
J-279	Hystrichospaeropsis ovum	D251	1125-1235m	110.0	x	16.0
J-280	Mendicodinium sp. #TA	D251	1225-1235m	117.5	x	14.0
J-281	Mendicodinium sp. #TA	D251	1225-1235m	102.0	x	8.2
J-282	Palaeocystodinium sp. #TA	D251	1255-1265m	111.5	x	19.5
J-283	Cordosphaeridium sp. #TC	D251	1255-1265m	112.0	x	17.5
J-284	Trinovantodinium sp. #TB	D251	1255-1265m	117.2	x	17.8
J-285	Cannosphaeropsis utinensis	D251	1255-1265m	112.3	x	16.5
J-286	Tuberculodinium sp. #TA	D251	1255-1265m	110.8	x	16.0
J-287	Heteraulacacysta campanula	D251	1255-1265m	112.2	x	15.0
J-288	Lejeunecysta lata	D251	1255-1265m	104.5	x	14.0
J-289	Impagidinium sp. #TB	D251	1255-1265m	112.0	x	13.0
J-290	Sumatradinium sp. #TE	D251	1255-1265m	112.5	x	11.8
J-291	Apectodinium quinquelatum	D251	1255-1265m	109.5	x	11.0
J-292	Lejeunecysta cf. lata	D251	1255-1265m	99.1	x	10.1
J-293	Spiniferites sp. #TA	D251	1255-1265m	104.0	x	3.1
J-294	Peridinioid sp. #TB	D251	1285-1295m	118.0	x	15.8
J-295	Sclenopempix sp. #TA	D251	1285-1295m	106.0	x	14.2

J-296	<i>Selenopempelix</i> sp. #TA	D251	1285-1295m	106.0 x 14.2
J-297	<i>Pentadinium laticinctum</i>	D251	1285-1295m	111.5 x 9.5
J-298	<i>SelenopempheX nephroides</i>	D251	1285-1295m	115.0 x 6.5
J-299	<i>Sumatradinium</i> sp. #TF	D251	1315-1325m	106.0 x 14.0
J-300	<i>Operculodinium</i> sp. #TA	D251	1315-1325m	105.1 x 10.0
J-301	<i>Areoligera</i> sp. #TA	D251	1345-1355m	106.8 x 17.5
J-302	<i>Impagidinium</i> cf. <i>aquaeductum</i>	D251	1345-1355m	114.1 x 10.0
J-303	<i>Palaeocystodinium</i> sp. #TB	D251	1375-1385m	18.2 x 17.0
J-304	<i>Aptedinium</i> sp. #TA	D251	1400-1410m	107.8 x 16.0
J-305	<i>Sumatradinium</i> sp. #TG	D251	1400-1410m	108.2 x 15.2
J-306	<i>Spiniferites</i> cf. <i>pseudofurcatus</i>	D251	1400-1410m	101.2 x 15.0
J-307	<i>Hystrichokolpoma</i> cinctum	D251	1400-1410m	98.0 x 14.5
J-308	<i>Thalassiphora delicata</i> ss. W&B/75	D251	1400-1410m	113.0 x 11.0
J-309	<i>Thalassiphora delicata</i> ss. W&B/75	D251	1400-1410m	15.5 x 7.0
J-310	<i>Lejeunecysta communis</i>	D251	1430-1440m	117.2 x 16.0
J-311	<i>Hystrichosphaeridium</i> sp. #TA	D251	1430-1440m	101.0 x 5.1
J-312	<i>Distatodinium</i> craterum	D251	1460-1470m	111.0 x 19.0
J-313	<i>Rhombodinium draco</i>	D251	1490-1500m	17.0 x 15.5
J-314	<i>Chiroppteridium</i> lobospinosum	D251	1490-1500m	115.5 x 15.5
J-315	<i>Phthanoperidinium</i> cf. comatum	D251	1490-1500m	106.5 x 15.1
J-316	<i>Membranophoridium</i> sp. #TB	D251	1490-1500m	116.5 x 10.0

J-317	<i>Hystrichokolpoma rigaudiae</i>	D251	1490-1500m	110.5	x	6.0
J-318	<i>Hystrichokolpoma salacia</i>	D251	1520-1530m	114.9	x	19.5
J-319	<i>Lingulodinium machaerophorum</i>	D251	1520-1530m	100.1	x	16.5
J-320	<i>Laternosphaeridium cf. vectense</i>	D251	1520-1530m	114.0	x	16.0
J-321	<i>Apectodinium cf. summissum</i>	D251	1520-1530m	115.0	x	15.0
J-322	<i>Impleetosphaeridium sp. #TA</i>	D251	1520-1530m	98.8	x	15.0
J-323	<i>Diphyes colligerum</i>	D251	1520-1530m	98.2	x	15.0
J-324	<i>Glaphrocysta laciniiformis</i>	D251	1520-1530m	103.5	x	13.0
J-325	<i>Chiropteridium sp. #TA</i>	D251	1520-1530m	106.2	x	12.0
J-326	<i>Homotribrium pallidum</i>	D251	1520-1530m	111.0	x	8.0
J-327	<i>Adnatosphaeridium sp. #TA</i>	D251	1520-1530m	108.2	x	8.1
J-328	<i>Glaphrocysta exhuberans</i>	D251	1520-1530m	104.8	x	7.5
J-329	<i>Cannosphaeropsis #TB</i>	D251	1520-1530m	108.1	x	7.0
J-330	<i>Spiniferites membranacea</i>	D251	1520-1530m	111.0	x	5.8
J-331	<i>Adnato. reticulense</i>	D251	1520-1530m	116.8	x	2.2
J-332	<i>Ceratiopsis pannacea</i>	D251	1520-1530m	117.0	x	1.5
J-333	<i>Apectodinium sp. #TA</i>	D251	1550-1560m	103.8	x	17.5
J-334	<i>Hystrichokolpoma unispinum</i>	D251	1550-1560m	102.1	x	17.5
J-335	<i>Glaphrocysta ordinatum</i>	D251	1550-1560m	105.0	x	15.0
J-336	<i>Amphorosphaeridium multispinosum</i>	D251	1550-1560m	110.0	x	13.8
J-337	<i>Alisocyta cp. circumtabulata</i>	D251	1550-1560m	100.2	x	13.0

J-338	<i>Apectodinium paniculatum</i>	D251	1550-1560m	108.1 x 13.0
J-339	<i>Tanyosphaeridium xanthiopyxides</i>	D251	1550-1560m	113.5 x 10.0
J-340	<i>Areoligera</i> sp. #TB	D251	1550-1560m	119.2 x 7.1
J-341	<i>Cribroperidinium</i> sp. #TB	D251	1550-1560m	110.5 x 4.0
J-342	<i>Isabelidinium acuminatum</i>	D251	1580-1590m	108.5 x 15.0
J-343	Gen. et sp. indet.	D251	1580-1590m	106.0 x 15.0
J-344	<i>Phthanoperidinium</i> cf. <i>multispinum</i>	D251	1580-1590m	106.2 x 11.5
J-345	<i>Dinogymnium</i> sp. #TA	D251	1580-1590m	103.8 x 8.0
J-346	<i>Ceratiopsis striata</i>	D251	1615-1625m	103.0 x 14.5
J-347	<i>Ceratiopsis danica</i>	D251	1615-1625m	13.0 x 10.0
J-348	<i>Williamsidinium</i> sp. #TA	D251	1645-1655m	12.8 x 20.0
J-349	<i>Palaeocystodinium</i> cp. #TC	D251	1645-1655m	102.0 x 17.0
J-350	<i>Chatangiella granulifera</i>	D251	1675-1685m	100.2 x 8.5
J-391	<i>Chatangiella</i> sp. #TA	D251	1705-1715m	104.2 x 17.0
J-391a	<i>Dinogymnium undulosum</i>	D251	1705-1715m	113.6 x 17.8
J-392	<i>Alterbidinium</i> cg. #TA	D251	1705-1715m	115.5 x 14.5
J-394	<i>Ceratiopsis diebelii</i>	D251	1735-1745m	112.3 x 14.0
J-395	<i>Chatangiella granulata</i>	D251	1735-1745m	103.8 x 2.8
J-396	<i>Isabelidinium cooksoniae</i>	D251	1765-1775m	111.2 x 15.1
J-397	<i>Isabelidinium korojonensis</i>	D251	1765-1775m	108.0 x 12.0
J-398	<i>Isabelidinium</i> cf. <i>cretaceum</i>	D251	1765-1775m	113.5 x 10.0
J-399	<i>Dinoflagellate</i> indet. 1	D251	1765-1775m	104.5 x 10.0

J-400	Dinoflagellate indet 2	D251	1795-1805m	111.2 x 19.2
J-401	<i>Isabelidinium glabrum</i>	D251	1795-1805m	119.0 x 14.0
J-402	<i>Ceratiopsis diebelii</i>	D251	1795-1805m	99.5 x 12.5
J-403	<i>Fromea fragilis</i>	D251	1795-1805m	102.5 x 12.0
J-404	<i>Dingymnum enclaense</i>	D251	1825-1835m	109.5 x 17.1
J-405	<i>Dinogymnum pustulicostatum</i>	D251	1825-1835m	116.2 x 11.5
J-406	<i>Odontochitina costata</i>	D251	1885-1895m	113.5 x 6.0
J-407	<i>Xenascus gochtii</i>	D251	1885-1895m	102.9 x 1.0
J-408	<i>Dinogymnum albertii</i>	D251	1945-1955m	118.4 x 16.2
J-409	<i>Pervosphaeridium truncigerum</i>	D251	1945-1955m	100.5 x 14.5
J-410	<i>Hystrichodinium</i> cg. #TA	D251	1945-1955m	114.4 x 14.0
J-411	<i>Xiphophoridium alatum</i>	D251	1945-1955m	109.0 x 9.0
J-412	<i>Spinidinium cf echinoideum</i>	D251	1945-1955m	119.0 x 17.0
J-413	<i>Florentinia rescx</i>	D251	1975-1985m	111.2 x 12.9
J-414	<i>Heterosphaeridium difficile</i>	D251	1975-1985m	119.0 x 9.2
J-415	<i>Appendicisporites cristatus</i>	D251	2005-2015m	117.5 x 11.5
J-416	<i>Kleithriasphaeridium corrugatum</i>	D251	2005-2015m	118.0 x 7.5
J-417	<i>Cyclonephelium hughesii</i>	D251	2065-2075m	116.0 x 14.8
J-418	<i>Dinogymnum acuminatum</i>	D251	2095-2105m	117.5 x 11.0
J-419	<i>Lycopodiacyclites casperatus</i>	D251	2095-2105m	103.0 x 9.5
J-420	<i>Subtilisphaera pontis-mariae</i>	D251	3175-3185m	105.5 x 8.0
J-421	<i>Afropollis</i> sp. #TB	D251	3205-3215m	111.5 x 10.0
J-422	<i>Lagenorhytis</i> cg. #TA	D251	3295-3305m	109.0 x 11.0

J-424	<i>Sentusidinium</i> cf. <i>rioultii</i>	D251	3370-3380m	108.2 x 15.0
J-425	<i>Cyclonephelium</i> <i>paucispinum</i>	D251	3370-3380m	117.0 x 11.2
J-426	<i>Ascodinium</i> <i>scabrosum</i>	D251	3400-3410m	105.0 x 19.0
J-427	<i>Heterosphaeridium</i> sp. #TA	D251	3490-3500m	112.0 x 19.0
J-428	<i>Oligosphaeridium</i> <i>albertense</i>	D251	3520-3530m	101.0 x 16.2
J-429	<i>Pterodinium</i> cg. sp. #TA	D251	3790-3800m	110.0 x 10.0
J-430	<i>Oligosphaeridium</i> <i>porosum</i>	D251	3850-3860m	111.5 x 12.6
S-234	<i>Cribroperidinium</i> sp. #CC	D251	2275-2285m	32.6 x 112.3
S-418	<i>Canningia</i> sp. #TG	D251	2185-2195m	44.2 x 92.2
S-419	<i>Apteodinium</i> sp. #TC	D251	2215-2225m	45.2 x 92.2
S-420	<i>Exochosphaeridium</i> <i>pseudohystrichodinium</i>	D251	2245-2255m	33.5 x 92.1
S-422	<i>Heterosphaeridium</i> sp. #TB	D251	2335-2345m	34.9 x 92.3
S-423	<i>Scriniodinium</i> <i>campanula</i>	D251	2395-2405m	39.6 x 109.3
S-424	<i>Distaltriangulispores</i>	D251	2455-2465m	41.1 x 97.4
S-426	<i>Wallodinium</i> <i>luna</i>	D251	2545-2555m	39.0 x 94.0
S-427	? <i>Oligosphaeridium</i> sp. #TC	D251	2545-2585m	30.1 x 92.8

PREP. NO.	DEPTH	COLOR OF ORGANIC MAT.	STATE OF ORGANIC MATTER	SIZE OF PARTICLE PRESERVATION	MATURATION INDEX	DEPOSITIONAL ENVIRONMENT	REMARKS						
							1	2	3	4	5	6	7
P 26827	1065 m	X X	X	X	X X	X X							
P 26834	1265	X X	X	X	X X	X X							
P 26840	1440	X X	X	X	X X	X X							
P 26847	1655	X X	X	X	X X	X X							
P 26854	1865	34-1858	X X	X	X X	X X							
P 26860	2045	X	X	X	X	X							
P 26867	2255	06-1707	70	X X	X X	X X							
P 26873	2435	205030	X	X	X X	X X							
P 26881	2675	14-5427	X	X	X X	X X							
P 26887	2855	136025	X	X	X X	X X							
P 26893	3035	204535	X	X	X X	X X							
P 26900	3245	054055	X	X	X X	X X							
P 26906	3440	1114504	X	X	X X	X X							
P 26913	3650	73070	X	X	X X	X X							
P 26920	3860	125137	X X	X X	X X	X X							
P 26926	4040	116326	X X	X X	X X	X X							
P 26933	4250	104944	X X	X X	X X	X X							
P 26940	4440	095537	X X	X X	X X	X X							
P 26946	4640	085537	X X	X X	X X	X X							
P 26953	4850	11585	X X	X X	X X	X X							
P 26960	5045 m	113670	X X	X X	X X	X X							

EVANGELINE 4-95

GEODIMENSIONAL SURVEY OF CANADA - QUALITATIVE FLUORESCENCE ANALYSIS SHEET

LOCALITY	D. 2.5.1.
NUMBER	E. V. A. N. G. E. L. I. A. S.
LOCALITY	H - 9 8

ANALYSIS BY:
PT. M.
W.