

Appendix C: Paleontology data, in Fehlmann, R.H., and Amoco Oil Co., Data compilation 1970 Amoco field party, western and central Brooks Range, Alaska

Fehlmann, R.H., and Amoco Oil Co.

GMC DATA REPORT 463C

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2019
State of Alaska
Department of Natural Resources
Division of Geological & Geophysical Surveys
GEOLOGIC MATERIALS CENTER





PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 24, 1970

Re: Conodonts from the 1970 1000 Series,
Knapp's Spot Samples, Brooks Range,
Alaska

File: Technical Service No. 5603IR

MEMORANDUM

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	1010C	0501	Barren of conodonts	
2	1011C	2740	<u>Spathognathodus</u> 2740	9
		2827	<u>Cavusgnathus</u> 2827	3
		2828	<u>Cavusgnathus</u> 2828	15
		2826	<u>Cavusgnathus</u> 2826	5
		2814	<u>Gnathodus</u> 2814	35
		2742	<u>Spathognathodus</u> 2742	3
		2957	<u>Synprioniodina</u> sp.	2
		2845	<u>Ozarkodina</u> sp.	3
		2618	Indet. conodonts	109

The fauna retrieved in sample 1011C belongs to fauna F of Lane, 1970. However, the complete absence of upper Meramec diagnostic conodonts strongly suggests a lower Chester age assignment.

3	1012C	0501	Barren of conodonts	
4	1013C	0501	Barren of conodonts	
5	1014C	2812	<u>Gnathodus</u> 2812	7
		2742	<u>Spathognathodus</u> 2742	1
		2957	<u>Synprioniodina</u> sp.	1
		2618	Indet. conodonts	11

The fauna retrieved from sample 1014C belongs to fauna F of Lane, 1970.

6	1034C	0501	Barren of conodonts
7	1037C	0501	Barren of conodonts
8	1041C	0501	Barren of conodonts

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
9	1048C	2720	<u>Polygnathus</u> 2720	37
		2718	<u>Polygnathus</u> 2718	1
		2726	<u>Spathognathodus</u> sp.	2
		2618	Indet. conodonts	73

The fauna retrieved from sample 1048C belongs with fauna A of Lane, 1970.

10	1061C	0501	Barren of conodonts
11	1066C	0501	Barren of conodonts
12	1081C	0501	Barren of conodonts
13	1085C	0501	Barren of conodonts
14	1087C	0501	Barren of conodonts
15	1096C	0501	Barren of conodonts
16	1104C	0501	Barren of conodonts
17	1105C	0501	Barren of conodonts
18	1109C	0501	Barren of conodonts

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska, Pan American Petrol. Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

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Re: Transmittal of Technical Service
Nos. 5578 IR, 5580 IR, 5584 IR,
5585 IR, 5587 IR and 5596 IR

~~Mr. R. W. Craig~~
Denver Division

Attention: R. N. Walker

Bro F. Lehmann

Dear Sir:

Attached are six technical service reports by H. R. Lane dealing with conodonts from the following 1970 surface sections in the Brooks Range, Alaska:

Mt. Bastille
Upper Agashashok
Mt. Bupto
Cape Dyer
Hanging Glacier Mountain
Cape Thompson

Yours very truly,

WILLIAM R. WALTON

By: *G. A. Sanderson*
George A. Sanderson

GAS:mjh

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

Re: Conodonts from the Mt. Bastille
Section, SW 1/4, T11S, R37W,
DeLong Mtns., Alaska

File: Technical Service No. 5578IR
Locality No. 4192

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
66	1113C	0501	Barren of conodonts	
67	1114C	0501	Barren of conodonts	
68	1118C	1425	<u>Polygnathus</u> 1425	4
		2700	<u>Polygnathus</u> sp.	3
		2845	<u>Ozarkodina</u> sp.	2
		2618	Indet. conodonts	2

Although the range of Polygnathus 1425 is not fully known, the form does occur in Frasnian (lower Upper Devonian) rocks where it has been reported. Therefore, the faunas in sample 68 are probably Frasnian in age.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

Re: Conodonts from the Upper Agashashok
River Section, SE 1/4, T26N, R12W,
Baird Mtn. Quad., Alaska

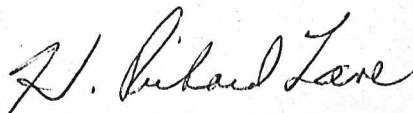
File: Technical Service No. 5580IR
Locality No. 5455

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
4	3217C	0501	Barren of conodonts	

The one sample from the Upper Agashashok River Section
was barren of conodonts.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

Re: Conodonts from the Mt. Bupto
Section, NE 1/4, T11S, R24W,
Howard Pass Quad., Alaska

File: Technical Service No. 5584IR
Locality No. 5459

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
2	2041C	2718	<u>Polygnathus</u> 2718	16
		2850	<u>Neoprioniodus</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	3
		2618	Indet. conodonts	4

The one conodont sample from the Mt. Bupto section yielded a fauna that may be upper Upper Devonian (Famennian) or Lower Mississippian and belongs to fauna A of Lane (1970).

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska: Pan American Petroleum Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

Re: Conodonts from the Cape Dyer
Section, S 1/2, T9S, R60W,
Pt. Hope Quad., Alaska

File: Technical Service No. 55851R
Locality No. 5460

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	4062C	0501	Barren of conodonts	

The one sample collected from Cape Dyer was barren of conodonts.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

Re: Conodonts from the Hanging
Glacier Mountain Section,
Long. 150° 45' W.,
Lat. 67° 53' N.,
Wiseman Quad., Alaska

File: Technical Service No. 5587IR
Locality No. 5462

MEMORANDUM

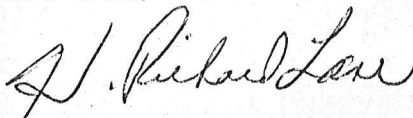
Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	4020C	0501	Barren of conodonts	
2	4023C	0501	Barren of conodonts	
3	4025C	0501	Barren of conodonts	
4	4026C	2826	<u>Cavusgnathus</u> sp.	1
		4489	<u>Magnilaterella</u> sp.	1
		2618	Indet. conodonts	3

The fauna recovered from sample 4 is Upper Meramec or Chester in age and belongs in fauna F of Lane (1970).

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska: Pan American Petroleum Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 6, 1970

Re: Conodonts from the Cape Thompson
Section, S 1/2, T32N, R32W,
Point Hope, Alaska

File: Technical Service No. 5596IR
Locality No. 4259

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
8	4095C	0501	Barren of conodonts	
9	4097C	0501	Barren of conodonts	
10	4098C	0501	Barren of conodonts	
11	4103C	4489	<u>Magnilaterella</u> sp.	1
		2618	Indet. conodonts	3
13	4105C	2827	<u>Cavusgnathus</u> 2827	4
		2828	<u>Cavusgnathus</u> 2828	1
		2826	<u>Cavusgnathus</u> sp.	6
		4489	<u>Magnilaterella</u> sp.	3
		2726	<u>Spathognathodus</u> sp.	3
		2858	<u>Neoprioniodus</u> sp.	2
		2958	<u>Hibbardella</u> sp.	3

The fauna recovered from samples 11 and 13 is Upper Meramec or Chester in age and belongs in fauna F of Lane (1970).

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska: Pan American Petroleum Report No. M70-G-16.

H. Richard Lane
H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 25, 1970

Re: Transmittal of Technical
Service Nos. 5589IR, 5590IR,
5591IR, 5594IR, 5595IR,
5603IR and 5604IR

Mr. R. W. Craig
Denver Division

Attention R. N. Walker

Dear Sir:

Attached are 7 technical service reports by H. R. Lane
on conodonts from the following 1970 Alaska surface samples:

- ✓ Marshmallow Ridge Section
- ✓ Upper West Fork Wulik Section
- ✓ Skimo Creek
- ✓ East Fork Aichilik River Sections,
 - Union Section E-35
 - Union Section E-36
- ✓ Spot Samples - 1000 Series
- ✓ Nuka Ridge Composite Section

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachments

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 23, 1970

Re: Conodonts from the Marshmallow
Ridge Section, SE 1/4, T14S, R5E,
Chandler Lake Quad.,
Brooks Range, Alaska

File: Technical Service No. 5589IR
Locality No. 5465

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	4011C	0501	Barren of conodonts	
2	4013C	2726	<u>Spathognathodus</u> sp.	7
		2858	<u>Neoprioniodus</u> sp.	10
		4510	<u>Ligonodina</u> 4510	5
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	58
3	4014C	0501	Barren of conodonts	

The conodonts retrieved from sample 2 suggest an Upper
Mississippian age.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 24, 1970

Re: Conodonts from the Upper West
Fork Wulik Section,
NE 1/4, T33N, R20W,
DeLong Mtns. Quad.,
Brooks Range, Alaska

File: Technical Service No. 5590IR
Locality No. 5476

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	2063C	0501	Barren of conodonts	
4	2067C	0501	Barren of conodonts	
6	2069C	0501	Barren of conodonts	
7	2071C	0501	Barren of conodonts	
8	2072C	0501	Barren of conodonts	
9	2073C	2858	<u>Hibbardella</u> sp.	1
		2618	Indet. conodont	1
10	2075C	3093	<u>Ligonodina</u> sp.	4
		2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	9
11	2076C	2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	9
12	2077C	2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	2

Conodonts from samples 9-12 indicate a Mississippian age.

13	2078C	4510	<u>Ligonodina</u> 4510	1
		2868	<u>Apatognathus</u> sp.?	1
		2826	<u>Cavusgnathus</u> sp.?	1
		2858	<u>Neoprioniodus</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	2
		2618	Indet. conodonts	15

If the qualified identifications are correct, conodonts retrieved from sample 13 indicate assignment to fauna E of Lane, 1970. Otherwise, the fauna indicates an Upper Mississippian age.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
14	2079C	4489	<u>Magnilaterella</u> sp.	1
15	2081C	2727	<u>Spathognathodus</u> 2727	1
		2868	<u>Apatognathus</u> sp.	3
		2826	<u>Cavusgnathus</u> sp.	1
		1395	<u>Spathognathodus</u> 1395	1
		2726	<u>Spathognathodus</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	2
		2618	Indet. conodonts	5

The fauna in sample 15 definitely belongs in fauna E of Lane, 1970.

16	2082C	0501	Barren of conodonts	
17	2084C	4489	<u>Magnilaterella</u> sp.	1
		3093	<u>Ligonodina</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	6
18	2085C	0501	Barren of conodonts	
20	2087C	2826	<u>Cavusgnathus</u> 2826	1
		2618	Indet. conodonts	3
21	2088C	3093	<u>Ligonodina</u> sp.	2
		2868	<u>Apatognathus</u> sp.?	1
		2811	<u>Gnathodus</u> sp.	1
		2618	Indet. conodonts	5

The questionable occurrence of Apatognathus sp. in sample 21 suggests assignment to fauna E of Lane, 1970.

23	2090C	0501	Barren of conodonts
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Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska, Pan American Petroleum Report No. M70-G-16.

H. Richard Lane

H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 24, 1970

Re: Conodonts from the Skimo Creek
Locality, Long. 151° 57' W.,
Lat. 68° 17' N., Alaska

File: Technical Service No. 5591IR
Locality No. 5584

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
2	1002C	0501	Barren of conodonts	
3	1003C	2827	<u>Cavusgnathus</u> 2827	1
		2858	<u>Neoprioniodus</u> 2858	1
		2618	Indet. conodonts	17
4	1006C	2827	<u>Cavusgnathus</u> sp.	1
		2618	Indet. conodont	1
5	1007C	2828	<u>Cavusgnathus</u> 2828	2
		2826	<u>Cavusgnathus</u> sp.	6
		2812	<u>Gnathodus</u> 2812	3
		2858	<u>Neoprioniodus</u> sp.	2
		2618	Indet. conodonts	70
6	1008C	0501	Barren of conodonts	
7	1009C	0501	Barren of conodonts	

The conodont faunas in samples 3-5 are upper Meramec or Chester in age and correlate with fauna F of Lane (1970).

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska, Pan American Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 24, 1970

Re: Conodonts from the East Fork Aichilik
River Section, Union Section E-35,
T37, R40E, Demarcation Quad., Alaska

File: Technical Service No. 5594IR
Locality No. 5576

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
9	RRR-133	0501	Barren of conodonts	
23	RRR-147	0501	Barren of conodonts	
28	RRR-152	0501	Barren of conodonts	
34	RRR-158	0501	Barren of conodonts	
48	RRR-171a	2826	<u>Cavusgnathus</u> sp.	4
		1427	<u>Cavusgnathus</u> 1427	1
		2618	Indet. conodonts	9

Cavusgnathus 1427 is only known to occur in the Chainman Shale of central Nevada (Dunn, 1970) where it occurs with an upper Chester conodont fauna (Menard through Kinkard Formations in terms of the type Mississippian succession). Although the range of C. 1427 is not known, its occurrence here suggests an upper Chester age and the fauna is probably younger than any reported by Lane, 1970.

53	RRR-176	0501	Barren of conodonts
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References

Dunn, D. L., 1970, Middle Carboniferous conodonts from western United States and phylogeny of the platform group: Jour. Paleont., v. 44, pp. 312-342.

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska, Pan American Petrol. Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 24, 1970

Re: Conodonts from the East Fork Aichilik
River Section, Union Section E-36,
T35, R40E, Demarcation Quad., Alaska

File: Technical Service No. 5595IR
Locality No. 5577

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
11	CDB-71	3076	<u>Idiognathoides</u> 3076	1
		2956	<u>Idiognathodus</u> sp.	6
		2618	Indet. conodonts	

The fauna retrieved from sample 11 indicates an upper Morrowan or lower Atokan (Lower Pennsylvanian) age.

14	CDB-74	3076	<u>Idiognathoides</u> 3076	2
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The occurrence of Idiognathoides 3076 in sample 14 indicates a Morrowan or lower Atokan (Lower Pennsylvanian) age.

23	CDB-83	0501	Barren of conodonts	
37	CDB-97	2828	<u>Cavusgnathus</u> 2828	1
		2618	Indet. conodont	1

Cavusgnathus 2828 ranges from upper Meramec through Chester (Upper Mississippian).



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 23, 1970

Re: Conodonts from the Nuka Ridge
Composite Section, SW 1/4,
T9S, R32W, and SE 1/4, T9S, R31W,
Misheguk Mtn. Quad., DeLong Mtns.,
Alaska

File: Technical Service No. 5604IR
Locality No. 5471

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
2	3093C	0501	Barren of conodonts	
3	3092C	4461	<u>Spathognathodus</u> 4461	1
		2618	Indet. conodont	1
6	3086C	3076	<u>Idiognathoides</u> 3076	2
		1426	<u>Gnathodus</u> 1426	1
		2618	Indet. conodonts	23
10	3080C	0501	Barren of conodonts	
12	3061C	0501	Barren of conodonts	
13	3060C	2618	Indet. conodonts	4
16	3055C	0501	Barren of conodonts	

The fauna recovered in samples 3 and 6 are lower Morrowan (Lower Pennsylvanian) in age and represents a new fauna that is younger than any presented in Lane, 1970.

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska, Pan American Petrol. Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 2, 1970

Re: Conodonts from the Nucleus
Mountain Section, NE 1/4,
T11S, R36W, Misheguk Mtn. Quad.,
Brooks Range, Alaska

File: Technical Service No. 5605IR
Locality No. 5470

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	5072C	2718	<u>Polygnathus</u> 2718	1
3	5070C	1428	<u>Pseudopolygnathus</u> 1428	1
		2618	Indet. conodont	1

Pseudopolygnathus 1428 is known from the lower part of the Gattendorfia Stufe (i.e., Siphonodella-P. triangulus inaequalis Zone of Voges, 1959) in the Sauerland of Germany. The Gattendorfia Stufe is Lower Carboniferous in age and correlates with the lower Kinderhook of the North American Mississippian. Therefore, the fauna in sample 3 is lower Kinderhook (Lower Mississippian) in age.

4	5069C	2718	<u>Polygnathus</u> 2718	1
		2819	<u>Gnathodus</u> 2819	2
		2736	<u>Spathognathodus</u> 2736	2
		2868	<u>Apatognathus</u> 2868	4
		2726	<u>Spathognathodus</u> sp.	6
		2845	<u>Ozarkodina</u> sp.	1
		2618	Indet. conodonts	24

Gnathodus 2819 occurs in uppermost Kinderhook and lower Osage strata in the Midcontinent of North America.

5	5065C	0501	Barren of conodonts
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PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 2, 1970

Re: Conodonts from the Nachramkunga
Mountain Section, NE 1/4,
T15S, R1E, Chandler Lake Quad.,
Brooks Range, Alaska

File: Technical Service No. 5602IR
Locality No. 5467

MEMORANDUM

The two samples examined for conodonts from the subject outcrop were found to be barren.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	3003C	0501	Barren of conodonts	
2	3005C	0501	Barren of conodonts	



H. Richard Lane

HRL:sd

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
6	5064C	2718	<u>Polygnathus</u> 2718	4
		2700	<u>Polygnathus</u> sp.	2
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	6

The fauna in sample 6 belongs to fauna A of Lane, 1970, but is Mississippian in age due to the occurrence of definite Mississippian conodonts in samples 3 and 4.

REFERENCES

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations in Northwestern Alaska: Pan American Petrol. Report No. M70-G-16.

Voges, Adolf, 1959, Conodonten aus dem Unterkarbon I und II (Gattendorfia- und Pericyclus Stufe) des Sauerlandes: Paläont. Zeitschr., v. 33, p. 266-314.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 14, 1970

Re: Conodonts from the ^{Lower} Eli River
Section, SW 1/4, T28N, R14W,
Baird Mountains Quad., Alaska

File: Technical Service No. 5592IR
Locality No. 4194

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
34	2143C	2767	<u>Palmatolepis</u> sp.	1
		2700	<u>Polygnathus</u> sp.	9
		2751	<u>Icriodus</u> sp.	2
		2930	Indet. platform conodonts	2
		2618	Indet. conodonts	19

The Palmatolepis sp. in sample 34 is a Frasnian type and suggests a Frasnian (lower Upper Devonian) age for that sample.

35	2146C	2700	<u>Polygnathus</u> sp.	2
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H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 14, 1970

Re: Conodonts from the East Wulik
River Section, NE 1/4, T34N, R19W,
DeLong Mountains Quad.,
Brooks Range, Alaska

File: Technical Service No. 5606IR
Locality No. 5475

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	2103C	0501	Barren of conodonts	
2	2105C	2718	<u>Polygnathus</u> 2718	16
		2726	<u>Spathognathodus</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	11

The fauna in sample 2 belongs in fauna A of Lane, 1970.

3	2107C	0501	Barren of conodonts	
4	2108C	0501	Barren of conodonts	
5	2109C	2817	<u>Gnathodus</u> 2817	1
		2819	<u>Gnathodus</u> 2819	4
		2718	<u>Polygnathus</u> 2718	4
		2858	<u>Neoprioniodus</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	2
		2618	Indet. conodonts	24
6	2111C	2819	<u>Gnathodus</u> 2819	1

Gnathodus 2819 and G. 2817 range from uppermost Kinderhook into the lower Osage. Therefore, the faunas in samples 5 and 6 indicate an upper Kinderhook or lower Osage (Lower Mississippian) age.

7	2112C	0501	Barren of conodonts	
8	2114C	2618	Indet. conodont	1
9	2115C	0501	Barren of conodonts	

- 2 -

REFERENCE

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska: Pan American Petrol. Report No. M70-G-16.

A handwritten signature in cursive script, reading "H. Richard Lane".

H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 21, 1970

Re: Transmittal of Technical
Service Nos. 5582IR, 5601IR,
and 5611IR

Mr. R. W. Craig
Denver Division

Attention R. N. Walker

Dear Sir:

Conodont reports by H. R. Lane dealing with the following
Alaska sections are attached:

Upper Alapah Creek Section
Monotis Creek Section
Lower West Wulik Section

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachments

2 Copies

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 18, 1970

Re: Conodonts from the Upper Alapah
Creek Section, NE 1/4, T15S, R5E,
Chandler Lake Quad., Brooks Range,
Alaska

File: Technical Service No. 5582IR
Locality No. 5457

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	3038C	2858	<u>Neoprioniodus</u> sp.	2
		2618	Indet. conodonts	9
3	3040C	2726	<u>Spathognathodus</u> sp.	4
		2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	3
4	3041C	0501	Barren of conodonts	
5	3044C	0501	Barren of conodonts	

The faunas in samples 1 and 3 suggest a Mississippian age.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 18, 1970

Re: Conodonts from the Monotis Creek
Section, NW 1/4, T13S, R4W,
Chandler Lake Quad., Central
Brooks Range, Alaska

File: Technical Service No. 5601IR
Locality No. 5466

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

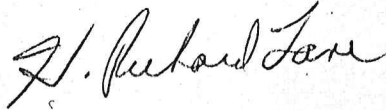
<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	2007C	2812	<u>Gnathodus</u> 2812	40
		1395	<u>Spathognathodus</u> 1395	9
		4510	<u>Ligonodina</u> 4510	1
		2845	<u>Ozarkodina</u> sp.	3
		2618	Indet. conodonts	39
2	2009C	2812	<u>Gnathodus</u> 2812	190
		2742	<u>Spathognathodus</u> 2742	167
		1429	<u>Spathognathodus</u> 1429	7
		2740	<u>Spathognathodus</u> 2740	7
		2726	<u>Spathognathodus</u> sp.	5
		2828	<u>Cavusgnathus</u> 2828	7
		2816	<u>Gnathodus</u> 2816	4
		4489	<u>Magnilaterella</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	20
		2855	<u>Lonchodina</u> sp.	18

Spathognathodus 1429 is known to occur in the Glen Dean Formation (Chester) in the type Mississippian succession (Rexroad, 1958). Its occurrence here with forms that range no higher than Lower Chester (e.g., Spathognathodus 2740 and Gnathodus 2812) strongly suggests a Lower Chester age.

3	2010C	0501	Barren of conodonts
4	2011C	0501	Barren of conodonts

REFERENCE

Rexroad, C. B., 1958, Conodonts from the Glen Dean Formation (Chester) of the Illinois Basin, Illinois State Geol. Surv. Rept. of Investigation 209, 27 pp.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 18, 1970

Re: Conodonts from the Lower West
Wulik Section, NE 1/4, T33N, R21W,
DeLong Mtn. Quad., DeLong Mtns.,
Alaska

File: Technical Service No. 5611IR
Locality No. 5477

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	2091C	0501	Barren of conodonts	
2	2093C	4489	<u>Magnilaterella</u> sp.	1
3	2096C	2816	<u>Gnathodus</u> 2816	1
		2618	Indet. conodonts	11
4	2097C	2727	<u>Spathognathodus</u> 2727	4
		2868	<u>Apatognathus</u> sp.	5
		2826	<u>Cavusgnathus</u> sp.	1
		2846	<u>Ozarkodina</u> 2846	1
		4510	<u>Ligonodina</u> 4510	1
		2618	Indet. conodonts	27
5	2098C	2727	<u>Spathognathodus</u> 2727	1
		2868	<u>Apatognathus</u> sp.	3
		2618	Indet. conodonts	4
6	2099C	2727	<u>Spathognathodus</u> 2727	1
		2826	<u>Cavusgnathus</u> sp.	1
		2618	Indet. conodonts	5

The conodonts recovered in samples 2-6 belong in fauna E of Lane, 1970.

7	2100C	2826	<u>Cavusgnathus</u> sp.	1
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Cavusgnathus sp. ranges from the base of fauna E (upper St. Louis) to the top of the Chester.

8	2101C	2618	Indet. conodonts	11
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- 2 -

REFERENCE

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations in Northwestern Alaska, Pan American Petroleum Report No. M70-G-16.

A handwritten signature in dark ink, appearing to read "H. Richard Lane". The signature is written in a cursive style with a large, stylized "L" at the end.

H. Richard Lane

HRL:sd

File

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 7, 1971

Re: Transmittal of Technical
Service Nos. 5594IR, 5607IR,
and 5609IR

ptw

Mr. R. W. Craig
Denver Division

Attention R. N. Walker

Dear Sir:

Attached are 3 technical service reports by H. R. Lane on
conodonts from the following Alaska surface sections:

East Fork Aichilik River Section
Lower East Kelly River Section
Nimiuktuk River Section

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd
Attachments

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 6, 1971

Re: Conodonts from the East Fork
Aichilik River Section,
Union Section E-35, T3S, R40E,
Demarcation Quad., Alaska

File: Technical Service No. 5594IR
Locality No. 5576

MEMORANDUM

Subsequent to reporting this section on November 24, 1970, several megafossil samples were processed and yielded conodonts. As the new faunas are from a portion of the section that has not previously yielded conodonts, I thought it important to report them here.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
15	RRR-139	2868	<u>Apatognathus</u> sp.	1
		2618	Indet. conodont	1
<u>Apatognathus</u> sp. occurs in fauna E of Lane, 1970.				
45	RRR-168	2827	<u>Cavusgnathus</u> 2827	1
		2828	<u>Cavusgnathus</u> 2828	1
		2826	<u>Cavusgnathus</u> sp.	2
		2618	Indet. conodont	1

The conodonts in sample 45 are upper Meramec or Chester in age.

REFERENCE

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska: Pan American Report No. M70-G-16.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 6, 1971

Re: Conodonts from the Lower East
Kelly River Section,
NW 1/4, T34N, R16W,
Delong Mtns. Quad.,
Brooks Range, Alaska

File: Technical Service No. 5607IR
Locality No. 5464

MEMORANDUM

The conodonts in samples 4 and 5 are upper Meramec or
Chester in age.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	2119C	0501	Barren of conodonts	
2	2121C	2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	2
3	2124C	0501	Barren of conodonts	
4	2126C	2827	<u>Cavusgnathus</u> 2827	1
		2828	<u>Cavusgnathus</u> 2828	1
		2826	<u>Cavusgnathus</u> sp.	5
		2726	<u>Spathognathodus</u> sp.	2
		4510	<u>Ligonodina</u> 4510	7
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	41
5	2127C	2826	<u>Cavusgnathus</u> sp.	2
		4510	<u>Ligonodina</u> 4510	2
		2618	Indet. conodonts	13



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 6, 1971

Re: Conodonts from the Nimiuktuk
River Section, NE 1/4, T32N, R6W,
Misheguk Mtn. Quad., Brooks
Range, Alaska

File: Technical Service No. 5609IR
Locality No. 5469

MEMORANDUM

The only sample processed from the subject outcrop was barren of conodonts.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	3103C	0501	Barren of conodonts	



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 8, 1971

Re: Conodonts from the Flood Creek
Section (Pan American),
T5S, R18E, Sagavanirktok Quad.,
Alaska

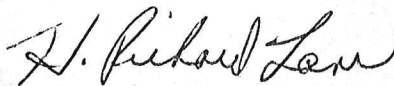
File: Technical Service No. 5586IR
Locality No. 5461

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
2	2022C	0501	Barren of conodonts	
3	2021C	0501	Barren of conodonts	
5	2019C	0501	Barren of conodonts	
7	2017C	0501	Barren of conodonts	
8	2016C	0501	Barren of conodonts	
9	2015C	0501	Barren of conodonts	
10	2014C	2956	<u>Idiognathodus</u> sp.	6
		2618	Indet. conodonts	11
11	2013C	2956	<u>Idiognathodus</u> sp.	9
		3077	<u>Adetognathus</u> sp.	1
		2845	<u>Ozarkodina</u> sp.	1
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	15

The faunas in samples 10 and 11 indicate a post-lower Morrowan Pennsylvanian age and represents the youngest conodont fauna yet reported from the Lisburne.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 8, 1971

Re: Conodonts from the Mouth of
Flood Creek (E), Union E-29,
Lat. 68° 59' N., Long. 147° 54' W.,
Phillips Smith Mtns. Quad.,
Alaska

File: Technical Service No. 5623IR
Locality No. 5570

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
2	CH-101	0501	Barren of conodonts	
4	CH-103	1430	<u>Idiognathoides</u> 1430	5
		1431	<u>Gnathodus</u> 1431	5
		2956	<u>Idiognathodus</u> sp.	24
		3093	<u>Ligonodina</u> sp.	1
		2618	Indet. conodonts	33

The conodont fauna in sample 4 suggests an Atokan (Pennsylvanian) age. However, a lower Desmoinesian age cannot be ruled out.

Idiognathoides 1430 is a new species and has been found in the Pan American No. 1 Kavik, and reported in a letter dated October 10, 1969, at the following stratigraphic intervals, WH-WL, WJ-WN, and I-IO. The age significance of I. 1430 was not realized until studying the Flood Creek samples reported herein.



H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 8, 1971

Re: Conodonts from the Nasorak
Creek Locality, NW 1/4,
T31N, R31W, Point Hope Quad.,
Cape Thompson, Alaska

File: Technical Service No. 5608IR
Locality No. 5468

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	4111C	2826	<u>Cavusgnathus</u> sp.	4
		2827	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	2
2	4113C	2826	<u>Cavusgnathus</u> sp.	1
		2618	Indet. conodont	1
3	4114C	0501	Barren of conodonts	
4	4115C	2826	<u>Cavusgnathus</u> sp.	2
		2618	Indet. conodonts	2
6	4117C	2827	<u>Cavusgnathus</u> 2827	1
		2826	<u>Cavusgnathus</u> sp.	1
		4489	<u>Magnilaterella</u> sp.	1
		4510	<u>Ligonodina</u> 4510	1
		2727	<u>Spathognathodus</u> 2727	1
		2868	<u>Apatognathus</u> 2868	2
		2618	Indet. conodonts	15
7	4118C	2858	<u>Neoprioniodus</u> sp.	2
		2618	Indet. conodonts	7
8	4119C	2868	<u>Apatognathus</u> sp.	1
		2826	<u>Cavusgnathus</u> sp.	1
		2618	Indet. conodonts	5
11	4122C	2868	<u>Apatognathus</u> sp.	1
		2826	<u>Cavusgnathus</u> sp.	1
		2618	Indet. conodonts	3
12	4123C	0501	Barren of conodonts	

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
13	4124C	2826	<u>Cavusgnathus</u> sp.	2
		2618	Indet. conodont	1
15	4128C	0501	Barren of conodonts	
16	4129C	2727	<u>Spathognathodus</u> 2727	2
		2868	<u>Apatognathus</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	2
		4510	<u>Ligonodina</u> 4510	2
		3051	<u>Hindeodella</u> sp.	2
		2618	Indet. conodonts	58
17	4130C	2827	<u>Cavusgnathus</u> 2827	2
		2826	<u>Cavusgnathus</u> sp.	2
		2858	<u>Neoprioniodus</u> sp.	14
		2958	<u>Hibbardella</u> sp.	1
		4510	<u>Ligonodina</u> sp.	5
		2727	<u>Spathognathodus</u> 2727	2
		4489	<u>Magnilaterella</u> sp.	5
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	39
18	4131C	2727	<u>Spathognathodus</u> 2727	2
		4489	<u>Magnilaterella</u> sp.	1
		4510	<u>Ligonodina</u> 4510	3
		2858	<u>Neoprioniodus</u> sp.	1
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	32
19	4132C	2828	<u>Cavusgnathus</u> 2828	2
		2868	<u>Apatognathus</u> sp.	1
		4510	<u>Ligonodina</u> 4510	2
		2845	<u>Ozarkodina</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	9
20	4133C	2827	<u>Cavusgnathus</u> 2827	2
		2618	Indet. conodont	1
21	4134C	2826	<u>Cavusgnathus</u> sp.	1
		2868	<u>Apatognathus</u> sp.	2
		3051	<u>Hindeodella</u> sp.	1
		4510	<u>Ligonodina</u> 4510	1
		2618	Indet. conodonts	45
22	4135C	2826	<u>Cavusgnathus</u> sp.	2
		4510	<u>Ligonodina</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	1
		4489	<u>Magnilaterella</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	15
23	4137C	2826	<u>Cavusgnathus</u> sp.	4
		2618	Indet. conodonts	13

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
24	4142C	4510	<u>Ligonodina</u> 4510	1
		2855	<u>Lonchodina</u> sp.	1
		2868	<u>Apatognathus</u> sp.	1
		4489	<u>Magnilaterella</u> sp.	1
		2618	Indet. conodonts	6
25	4145C	2828	<u>Cavusgnathus</u> 2828	4
		2826	<u>Cavusgnathus</u> sp.	10
		2727	<u>Spathognathodus</u> 2727	3
		4510	<u>Ligonodina</u> 4510	8
		2858	<u>Neoprioniodus</u> sp.	5
		4489	<u>Magnilaterella</u> sp.	2
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	40
26	4149C	0501	Barren of conodonts	

The conodont faunas in samples 6-25 belong to fauna E of Lane, 1970 and correlate with the upper part of the St. Louis Formation (upper Meramec) in the Mississippi Valley. The conodonts in samples 1-4 can be no older than upper Meramec and thus probably belong to fauna E.

Reference

Lane, H. R., Conodonts from the Eli, Kuguruk, Utukok, Lisburne, and Nasorak Formations of Northwestern Alaska: Pan American Petroleum Report No. M70-G-16.

H. Richard Lane

H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 26, 1971

Re: Conodonts from the Nunaviksak
Creek Section, SW 1/4, T10S, R40W,
DeLong Mtns., Alaska

File: Technical Service No. 5593IR
Locality No. 4258

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
95	69-II-WD-220	0501	Barren of conodonts	
96	69-II-WD-221	0501	Barren of conodonts	
97	69-II-WD-222	0501	Barren of conodonts	
98	69-II-WD-223	2868	<u>Apatognathus</u> sp.	1
		2618	Indet. conodonts	11
99	69-II-WD-225	0501	Barren of conodonts	
100	69-II-WD-229	2726	<u>Spathognathodus</u> sp.	4
		2858	<u>Neoprioniodus</u> sp.	1
		3093	<u>Ligonodina</u> sp.	2
		2618	Indet. conodonts	23
101	69-II-WD-231A	4510	<u>Ligonodina</u> 4510	2
		2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	13
102	69-II-WD-231B	2618	Indet. conodonts	6
103	69-II-WD-234	0501	Barren of conodonts	
104	69-II-WD-236	0501	Barren of conodonts	

Samples 95-104 were collected during the summer of 1969 and the faunas belong in Fauna A of Lane (1970).

105	3201C	0501	Barren of conodonts	
106	3197C	0501	Barren of conodonts	
107	3196C	0501	Barren of conodonts	
108	3191C	2845	<u>Ozarkodina</u> sp.	3
		2726	<u>Spathognathodus</u> sp.	3
		2868	<u>Apatognathus</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	1
		2618	Indet. conodonts	31

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
109	3189C	2868	<u>Apatognathus</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	6
		2858	<u>Neoprioniodus</u> sp.	1
		3093	<u>Ligonodina</u> sp.	3
		2618	Indet. conodonts	20
110	3186C	2718	<u>Polygnathus</u> sp.	1
		2837	<u>Pseudopolygnathus</u> cf. 2837	2
		2726	<u>Spathognathodus</u> sp.	4
		2868	<u>Apatognathus</u> sp.	1
		3093	<u>Ligonodina</u> sp.	3
111	3182C	2618	Indet. conodonts	14
		2726	<u>Spathognathodus</u> sp.	1
112	3180C	2618	Indet. conodonts	6
		2700	<u>Polygnathus</u> sp.	1
113	3179C	2837	<u>Pseudopolygnathus</u> cf. 2837	1
		2618	Indet. conodonts	8
		2718	<u>Polygnathus</u> 2718	21
		2837	<u>Pseudopolygnathus</u> cf. 2837	2
		2868	<u>Apatognathus</u> sp.	2
114	3176C	2858	<u>Neoprioniodus</u> sp.	2
		2957	<u>Synprioniodina</u> sp.	2
		2726	<u>Spathognathodus</u> sp.	11
		3093	<u>Ligonodina</u> sp.	1
		2618	Indet. conodonts	51
115	3175C	2718	<u>Polygnathus</u> 2718	3
		2618	Indet. conodonts	3
		2718	<u>Polygnathus</u> 2718	11
		2736	<u>Spathognathodus</u> cf. 2736	2
		2957	<u>Synprioniodina</u> sp.	2
116	3174C	3093	<u>Ligonodina</u> sp.	2
		2726	<u>Spathognathodus</u> sp.	4
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	18
		0501	Barren of conodonts	
120	3163C	0501	Barren of conodonts	
122	3158C	2718	<u>Polygnathus</u> 2718	2
		2726	<u>Spathognathodus</u> sp.	2
		2618	Indet. conodont	1
125	3150C	2718	<u>Polygnathus</u> 2718	2
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodont	1

Samples 105-125 were collected during the summer of 1970 and the faunas belong in Fauna A of Lane (1970).

REFERENCE

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne and Nasorak Formations of Northwestern Alaska: Pan American Report No. M70-G-16.

H. Richard Lane
H. Richard Lane

HRL:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 29, 1971

Re: Conodonts from the Ekokpuk,
Creek Section, SE 1/4, T16S, R2W,
Lat. 68° 0' 45" N.,
Long. 152° 14' 30" W.,
Chandler Lake Quad.,
Brooks Range, Alaska

File: Technical Service No. 5603IR
Locality No. 5712

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
3	2003C	4508	<u>Neopelekys</u> sp.	35
		1487	<u>Pseudopolygnathus</u> 1487	20
		2718	<u>Polygnathus</u> 2718	134
		1486	<u>Pseudopolygnathus</u> 1486	1
		2726	<u>Spathognathodus</u> sp.	21
		1489	<u>Scaliognathus</u> 1489	2
		1490	<u>Pseudopolygnathus</u> 1490	1
		2858	<u>Neoprioniodus</u> sp.	4
		3093	<u>Ligonodina</u> sp.	6
		2855	<u>Lonchodina</u> sp.	3
		2618	Indet. conodonts	72

The fauna in sample 3 is Osage in age and belongs in Fauna C of Lane, 1970.

4	2004C	0501	Barren of conodonts	
5	2005C	2726	<u>Spathognathodus</u> sp.	2
		2618	Indet. conodonts	8

The fauna in sample 5 is probably Mississippian in age.

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne, and Nasorak Formations of Northwestern Alaska: Pan American Petroleum Report No. M70-G-16.

H. Richard Lane

H. Richard Lane



File 1561
Amoco Production Company

Tulsa, Oklahoma
February 10, 1971

Re: Transmittal of Technical Service
Nos. 5625IR, 5626IR, 5628IR,
5630IR, 5631IR, 5632IR, 5633IR,
5635IR, and 5639IR

~~Mr. B. F. Baldwin~~
~~Denver Division~~

Attention R. N. Walker

Dear Sir:

Attached are conodont reports by H. R. Lane on the following
Alaska surface collections:

N. W. Shublik Section (Union E-14)
W. Sadlerochit Section (Union E-17)
E. Sadlerochit Section (Union E-19)
West End Shublik Section (Union E-21)
Katakturuk River Section (Union E-22)
Old Man Creek (Union E-23)
Eagle Creek Section (Union E-24)
W. Shublik Section (Union E-26)
Sadlerochit Mountain Section (Union E-31)

All of the reported sections are from the 1970 Union field
collections.

Very truly yours,

WILLIAM R. WALTON

By

G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachments
cc w/attachments: G. J. Verville



Amoco Production Company
Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the N. W. Shublik
Section (Union E-14), T2N, R25E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5625IR
Locality No. 5557

MEMORANDUM

Conodonts studied from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
6	CH-6	0501	Barren of conodonts	
9	CH-9	0501	Barren of conodonts	
14	CH-14	0501	Barren of conodonts	
19	CH-19	0501	Barren of conodonts	
25	CH-25	0501	Barren of conodonts	
28	CH-28	0501	Barren of conodonts	
34	CH-34	0501	Barren of conodonts	
39	CH-39	0501	Barren of conodonts	

All samples were barren of conodonts.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the West Sadlerochit
Section (Union E-17), T3N, R25E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 56261R
Locality No. 5558

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
34	FCH-570	2827	<u>Cavusgnathus</u> 2827	2
		2826	<u>Cavusgnathus</u> sp.	1
		2729	<u>Spathognathodus</u> 2729	1
		2618	Indet. conodonts	14

The occurrence of Cavusgnathus 2827 and Spathognathodus 2729 in sample 34 indicates a Chesterian (Upper Mississippian) age.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the E. Sadlerochit
Section, (Union E-19), T13N, R31E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5628IR
Locality No. 5560

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
30	RF-59	3076	<u>Idiognathoides</u> 3076	3
		3079	<u>Adetognathus</u> 3079	5
		3077	<u>Adetognathus</u> sp.	4
32	RF-61	4463	<u>Idiognathoides</u> 4463	3
		3077	<u>Adetognathus</u> sp.	2
		2618	Indet. conodonts	6
48	RF-77	0501	Barren of conodonts	

The faunas in samples 30 and 32 are lower Morrowan (Lower Pennsylvanian) in age and appear to correlate with the Idiognathoides 4463 Zone of Lane, 1969.

Reference

Lane, H. R., 1969, Conodont zonation of the Morrowan Series (Lower Pennsylvanian) of Arkansas and northeastern Oklahoma:
Pan American Report No. M69-G-31.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the West End
Shublik Section (Union E-21),
T1N, R25E, Mt. Michelson Quad.,
Alaska

File: Technical Service No. 5630IR
Locality No. 5562

MEMORANDUM

Conodonts studied from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
5	RF-92	0501	Barren of conodonts	
10	RF-97	0501	Barren of conodonts	

All samples were barren of conodonts.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the Katakturuk
River Section (Union E-22),
SE 1/4, T3N, R27E,
Sadlerochit Mtns.,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5631IR
Locality No. 5563

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
14	RF 114	2828	<u>Cavusgnathus</u> 2828	3
		2827	<u>Cavusgnathus</u> 2827	1
		2826	<u>Cavusgnathus</u> sp.	3
		4489	<u>Magnilaterella</u> sp.	2
		3093	<u>Ligonodina</u> sp.	1
		2618	Indet. conodonts	7
36	RRR-23	2828	<u>Cavusgnathus</u> 2828	3
		2826	<u>Cavusgnathus</u> sp.	4
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	3

The conodonts in samples 14 and 36 indicate an upper Meramec or Chester (Upper Mississippian) age.

42	RRR-29	3076	<u>Idiognathoides</u> 3076	17
		2618	Indet. conodonts	18

The conodonts in sample 42 are Morrowan or lower Atokan (Lower Pennsylvanian) in age.

55	RRR-42	2618	Indet. conodont	1
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H. Richard Lane

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the Old Man Creek *E-23*
Section, T1N, R32E, Mt. Michelson
Quad., Alaska

File: Technical Service No. 5632IR
Locality No. 5564

MEMORANDUM

Conodonts studied from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
6	RF-130	0501	Barren of conodonts	

The one sample was barren of conodonts.

H. Richard Lane

HRL:sd



Amoco Production Company
Tulsa, Oklahoma
February 8, 1971

Re: Conodonts from the Eagle Creek *E-24*
or Ikiakpuk Creek area section
(Union E-24), T1S, R27E,
Mt. Michelson Quad., Alaska


File: Technical Service No. 5633IR
Locality No. 5565

MEMORANDUM

Conodonts studied from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
4	CH-43	0501	Barren of conodonts	
11	CH-50	0501	Barren of conodonts	

Both samples were barren of conodonts.


H. Richard Lane

HRL:sd



Amoco Production Company
February 8, 1971

Re: Conodonts from the W. Shublik
Section (Union E-26), T2N, R26E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5635IR
Locality No. 5567

MEMORANDUM

Conodonts studied from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
3	CH-77	0501	Barren of conodonts	
10	CH-84	0501	Barren of conodonts	

Both samples were barren of conodonts.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
February 9, 1971

Re: Conodonts from the Sadlerochit
Mtn. Section, (Union E-31),
T4N, R30E, Mt. Michelson Quad.,
Alaska

File: Technical Service No. 5639IR
Locality No. 5572

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
17	RF-166	2956	<u>Idiognathodus</u> sp.	14
		2811	<u>Gnathodus</u> sp.	1
		1430	<u>Idiognathoides</u> 1430	1
		2739	<u>Spathognathodus</u> 2739	1
		2958	<u>Hibbardella</u> sp.	1
		2618	Indet. conodonts	11
24	RF-173	3076	<u>Idiognathoides</u> 3076	13
		4465	<u>Idiognathodus</u> 4465	2
		2618	Indet. conodonts	26

The faunas in samples 17 and 24 are upper Morrowan or Atokan
(Lower Pennsylvanian) in age.

32	RF-182	4461	<u>Spathognathodus</u> 4461	2
		2816	<u>Gnathodus</u> cf. <u>G.</u> 2816	1
		3079	<u>Adetognathus</u> 3079	1
		2618	Indet. conodonts	5

The conodonts in sample 32 are lower Morrowan (Lower Pennsylvanian)
in age.

42	RF-192	2826	<u>Cavusgnathus</u> sp.	4
		3080	<u>Adetognathus</u> cf. <u>A.</u> 3080	1
		2957	<u>Synprioniodina</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	2
		2618	Indet. conodonts	12

The conodonts in sample 42 are probably uppermost Chesterian (Upper Mississippian) in age.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
45	RF-195	2828	<u>Cavusgnathus</u> 2828	1
		2826	<u>Cavusgnathus</u> sp.	1
		2618	Indet. conodonts	9

The fauna in sample 45 indicates an upper Meramec or Chester (Upper Mississippian) age.

H. Richard Lane

H. Richard Lane

HRL:sd



Amoco Production Company
Tulsa, Oklahoma
March 24, 1971

Re: Conodonts from the Central
Sadlerochit Mtns. Section,
(Union E-33), T3N, R28E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5641IR
Locality No. 5574

MEMORANDUM

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
2	RF-218	0501	Barren of conodonts	
23	RF-239	0501	Barren of conodonts	
26	RF-242	0501	Barren of conodonts	

All samples were barren of conodonts.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
March 24, 1971

Re: Conodonts from the E. Brooks
Range Section, (Union E-34),
T3N, R32E, Mt. Michelson Quad.,
Alaska

File: Technical Service No. 5642IR
Locality No. 5575

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
11	RRR-111	3076	<u>Idiognathoides</u> cf. 3076	5
		2618	Indet. conodonts	4
26	RRR-116	3073	<u>Idiognathoides</u> 3073	1
		3079	<u>Adetognathus</u> 3079	4
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	12
30	RRR-119	0501	Barren of conodonts	

The faunas in samples 11 and 26 suggest a Lower Pennsylvanian age.

H. Richard Lane

HRL:sd



Amoco Production Company
Tulsa, Oklahoma
March 24, 1971

Re: Conodonts from the Clarence River
Section (Union E-37), T1N, R44E,
Demarcation Quad., Alaska

File: Technical Service No. 5643IR
Locality No. 5579

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
4	CDB-109	3076	<u>Idiognathoides</u> 3076	2
		3073	<u>Idiognathoides</u> sp.	1
		3079	<u>Adetognathus</u> 3079	2
		3077	<u>Adetognathus</u> sp.	3
		2957	<u>Synprioniodina</u> sp.	1
		2618	Indet. conodonts	5

The fauna in sample 4 is Lower Pennsylvanian in age.

9	CDB-114	2827	<u>Cavusgnathus</u> 2827	1
		2828	<u>Cavusgnathus</u> 2828	2
		2826	<u>Cavusgnathus</u> sp.	12
		2618	Indet. conodonts	8
17	CDB-122	2827	<u>Cavusgnathus</u> 2827	1

The faunas in samples 9 and 17 are Upper Mississippian in age and belong in Fauna F of Lane, 1970.

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne, and Nasorak Formations of Northwestern Alaska: Pan American Research Department Report No. M70-G-16.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
March 24, 1971

Re: Conodonts from the Carter Pass Section,
(Union E-32), T10S, R26E, Arctic Quad.,
Alaska

File: Technical Service No. 5640IR
Locality No. 5573

MEMORANDUM

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	RF-203	0501	Barren of conodonts	
7	RF-209	0501	Barren of conodonts	

Both samples were barren of conodonts.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
March 25, 1971

Re: Conodonts from the Union Oil
Grab Sample, Hunt Fork Formation,
NW 1/4, T16S, R10E,
Phillip Smith Quad., Alaska

File: Technical Service No. 5645IR
Locality No. 5839

MEMORANDUM

Conodonts recovered from the subject outcrop are as follows:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	RRR-77	2717	<u>Polygnathus</u> 2717	21
		2700	<u>Polygnathus</u> 2700	17
		2845	<u>Ozarkodina</u> sp.	1
		2858	<u>Neoprioniodus</u> sp.	5
		2618	Indet. conodonts	33

The fauna indicates a Frasnian or lower Famennian (Upper Devonian) age for the sample.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
April 7, 1971

Re: Conodonts from the Union Spot
Sample RF-252F, T12S, R21E,
Phillip Smith Quad., Alaska

File: Technical Service No. 5645IR

MEMORANDUM

The following conodonts were obtained from Union spot sample RF-252F from the Kayak Shale.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	RF-252	2620	<u>Siphonodella</u> sp.	1
		2720	<u>Polygnathus</u> 2720	8
		2726	<u>Spathognathodus</u> sp.	1
		2618	Indet. conodonts	

The above fauna is important from two aspects:

(1) The conodont genus Siphonodella is only known from Kinderhookian (Lower Mississippian) rocks in North America and this is its first reported occurrence in northern Alaska.

(2) To my knowledge, Mississippian rocks as old as Kinderhookian have, heretofore, not been reported from the eastern Brooks Range.

The fauna indicates a probable Kinderhookian (Lower Mississippian) age for the sample, but because Siphonodella ranges slightly higher in Europe, a lower Osage assignment cannot be ruled out.

H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma
April 14, 1971

Re: Conodonts from the 1970 Pan
American Spot Samples,
Brooks Range, Alaska

File: Technical Service No. 5603IR

MEMORANDUM

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
4	2047C	0501	Barren of conodonts	
5	2117C	0501	Barren of conodonts	
6	2148C	1491	<u>Polylophodonta</u> sp.	1

Polylophodonta sp. is only known to occur in Famennian
(upper Upper Devonian) age rocks.

7	3047C	0501	Barren of conodonts	
8	3063C	0501	Barren of conodonts	
9	3105C	2718	<u>Polygnathus</u> 2718	1
		2726	<u>Spathognathodus</u> sp.	1
		3093	<u>Ligonodina</u> sp.	1
		2618	Indet. conodonts	21

The fauna in sample 9 belongs in Fauna A of Lane, 1970.

10	3109C	0501	Barren of conodonts	
11	3193C	2868	<u>Apatognathus</u> sp.	1
		2726	<u>Spathognathodus</u> sp.	5
		3093	<u>Ligonodina</u> sp.	2
		2845	<u>Ozarkodina</u> sp.	2
		2618	Indet. conodonts	11

The fauna in sample 11 is Mississippian in age and probably
belongs in Fauna A of Lane, 1970.

12	4083C	0501	Barren of conodonts	
13	4086C	0501	Barren of conodonts	
14	4091C	0501	Barren of conodonts	

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
15	4104C	2826	<u>Cavusgnathus</u> sp.	6
		1395	<u>Spathognathodus</u> 1395	5
		2858	<u>Neoprioniodus</u> sp.	2
		2618	Indet. conodonts	19

The fauna in sample 15 belongs in Fauna F of Lane, 1970.

16	4106C	0501	Barren of conodonts	
17	4107C	0501	Barren of conodonts	
18	4109C	0501	Barren of conodonts	
19	4110C	2618	Indet. conodonts	5
20	5027C	0501	Barren of conodonts	
21	5029C	0501	Barren of conodonts	
22	5030C	0501	Barren of conodonts	
23	1059L Dark	0501	Barren of conodonts	
24	1059L Light	0501	Barren of conodonts	
25	1060L	0501	Barren of conodonts	
26	2077P	0501	Barren of conodonts	
27	4107P	0501	Barren of conodonts	
28	2019P	0501	Barren of conodonts	

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne, and Nasorak Formations of Northwestern Alaska, Pan American Research Department Report No. M70-G-16.



H. Richard Lane

HRL:sd



Amoco Production Company

Tulsa, Oklahoma

April 14, 1971

Re: Conodonts from the Union 1970
Field Collections, Brooks Range,
Alaska

File: Technical Service No. 56451R

MEMORANDUM

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>	<u>Count</u>
1	RF-138	2812	<u>Gnathodus</u> 2812	14
		2827	<u>Cavusgnathus</u> 2827	2
		2618	Indet. conodonts	26

The fauna in sample RF-138 belongs in Fauna F of Lane, 1970.

2	CH-66	0501	Barren of conodonts	
3	CH-72	0501	Barren of conodonts	
4	CH-69	0501	Barren of conodonts	
5	CDB-105	0501	Barren of conodonts	
6	FCH-623	0501	Barren of conodonts	
7	RRR-80	2618	Indet. conodont	1
8	RRR-90	0501	Barren of conodonts	
9	Blk. Tr. Sh.	0501	Barren of conodonts	

Reference

Lane, H. R., 1970, Conodonts from the Eli, Kugururok, Utukok, Lisburne,
and Nasorak Formations of Northwestern Alaska, Pan American
Research Department Report No. M70-G-16.

H. Richard Lane

HRL:sd



PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
September 22, 1970

Re: Transmittal of Technical
Service No. 5434IR

il. walton
to
P.W.

Mr. R. W. Craig
Denver Division

Attention G. F. Stansberry

Dear Sir:

The attached report by A. R. Ormiston is a review of the 1969 Union megafossil collections from the Alaska North Slope. These samples had been examined previously by a consultant for Union, D. A. Bostwick of Oregon State University. However, the present review contains a number of identifications not previously made and thereby considerably enhances the utility of the collections.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd

Attachment

cc w/attachment: G. J. Verville
W. D. Knapp
R. Fehlmann

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
September 21, 1970

Re: Identification of North Slope
megafossils from Union 1969
collections

File: Technical Service No. 5434IR

MEMORANDUM

I have examined the 1969 megafossil collections made by the Union Oil Company on the North Slope of Alaska. The samples taken by the Union East Party have already been reported on by D. Bostwick of Oregon State University. As the appended lists show, his report was less than exhaustive, especially with respect to Permian faunas.

The samples taken by the Union West Party are, for the most part, not useful either because of inappropriateness or lack of stratigraphic information. For example, conodont samples taken by this party were all shales and an entire series of Lisburne fossil samples from Niak Creek have no further stratigraphic designation and are consequently useless. Among the few useful West Party megafossil samples are the following:

<u>Field Designation</u>	<u>Taxa</u>	<u>Age</u>
NL#9-ME	<u>Syringopora</u> cf. <u>surcularia</u>	Mississippian
NU-30-ME	<u>Pudoproetus</u> cf. <u>chappelensis</u> gastropod indet.	Kinderhook or Osage
Betty Lake near Howard Pass approx. Lat. 68° 28' Long. 156° 36'	<u>Atrypa</u> cf. <u>cilipes</u> <u>Emanuella</u> cf. <u>meristoides</u> <u>Schizophoria</u> sp. <u>Leiorhynchus</u> cf. <u>carya</u> <u>Grammysia</u> sp. stromatoporoids <u>Alveolites</u> sp. <u>Thamnopora</u> sp. ostracodes <u>Anmodiscus</u> sp. <u>Polygnathus</u> <u>decorosus</u> sensu Anderson	Frasnian

Discussion

The Betty Lake collection can be correlated with 475' to 540' below the top of the Eli River section of the western Brooks Range. The Betty Lake Frasnian fauna is well preserved and includes organisms of reef building potential. This unit is apparently the same as that described in Chapman et al. (1964, p. 334) but is unquestionably of Frasnian age.

The collections of the Union East Party, previously examined by Bostwick, have been reexamined. In the following list, agreement with Bostwick's determinations is indicated by the phrase "no change". A listing of fossil names and/or an age determination indicates a revision of Bostwick's identifications and/or dating.

Reference

Chapman et al., 1964, Geology of the Killik-Etiviluk Rivers Region, Alaska, USGS Prof. Paper 303F.

<u>Field Designation</u>	<u>Taxa</u>	<u>Age</u>
FCH 46	<u>Syringopora</u> cf. <u>surcularia</u>	Mississippian
FCH 53	<u>Torynifer</u> sp. <u>Syringothyris</u> cf. <u>texanus</u>	Mississippian
FCH 67	no change	no change
FCH 245	<u>Linoproductus</u> sensu stricto <u>Phricadothyris</u> sp. spiriferid indet.	Permian
FCH 266	no change	no change
FCH 325	<u>Spiriferella</u> cf. <u>rajah</u> <u>Punctospirifer</u> sp. A <u>Marginifera?</u> sp.	Permian
FCH 328	no change	no change
FCH 329	no change	no change
FCH 330	acidized - apparently barren	?

<u>Field Designation</u>	<u>Taxa</u>	<u>Age</u>
FCH 348	no change	no change
FCH 351	no change	no change
FCH 356	no change	no change
FCH 360	no change	no change
FCH 369	no change	no change
FCH 381	no change	no change
DWA-103	barren	no change
DWA-167	no change	no change
DWA-185	<u>Leiorhynchus carboniferum</u> rhynchonellid indet.	Late Meramec or Chester
DWA-189	<u>Schellwienella</u> sp. <u>Cavusgnathus</u> sp. <u>Gnathodus texanus</u> ?	Late Meramec or Chester
DWA-191	delete <u>Schizophoria</u>	no change
DWA-226	<u>Horridonia</u> sp. nov. <u>Cancrinella</u> sp. <u>Megousia</u> ? sp. <u>Streptorhynchus</u> ? sp.	Permian (not Mississippian)
DWA-230	<u>Waagenoconcha</u> cf. <u>iriginiae</u> <u>Spiriferella</u> n. sp. cf. <u>rajah</u> <u>Cancrinella</u> sp. <u>Rhynchopora</u> sp. indet. <u>Streptorhynchus</u> ? <u>Megousia</u> ? <u>Aviculopecten</u> sp. <u>Straparolus</u> sp. fat small productid cf. <u>Tornquistia</u> <u>Punctospirifer</u> sp. A <u>Dyoros</u> sp. <u>Costiferina</u> sp.	Permian

<u>Field Designation</u>	<u>Taxa</u>	<u>Age</u>
DWA-236	barren	no change
DWA-248A	<u>Sirenites</u> sp. <u>Straparolus</u> sp. nuculoid clams myalinid pectinid	Upper Triassic
DWA-248B	<u>Parapopanoceras?</u> sp. <u>Spiriferina</u> cf. <u>canadensis</u> rhynchonellid brach. gastropods	Middle to Upper Triassic
DWA-249	no change	no change
DWA-250	no change	no change
DWA-251	<u>Halobia?</u> <u>Tetrarhynchia</u> sp. pectinids	Triassic
DWA-254	no change	no change
DWA-264	no change	no change
DWA-265	<u>Spiriferella</u> <u>rajah</u> subsp. B <u>Spirifer</u> <u>striatoparadoxus</u>	Permian
DWA-266	<u>Spiriferella</u> <u>rajah</u> <u>Spirifer</u> cf. <u>striatoparadoxus</u> <u>Neophricadothyris</u> sp. <u>Allorisma</u> sp. indet. tetracoral	Permian
DWA-271	<u>Spiriferella</u> cf. <u>rajah</u> <u>Muirwoodia</u> aff. <u>greenlandica</u> <u>Neophricadothyris</u> sp. indet. productid indet. coral	Permian
DWA-274	<u>Muirwoodia</u> <u>greenlandica</u> <u>Stenosisma</u> cf. <u>schlotheimi</u>	Permian
DWA-277	<u>Spiriferella</u> cf. <u>ordinaria</u> <u>Megousia</u> aff. <u>auriculata</u> <u>Linoproductus</u> sp. indet. tetracoral	Permian

Discussion

The Permian faunas are of particular interest as they are more varied than one would expect from previous USGS reports and include genera such as Megousia, Muirwoodia, Waagenoconcha, Cancrinella, Punctospirifer, and Horridonia which to my knowledge have not previously been reported from northern Alaska. Considering the cosmopolitan nature of northern Permian faunas (especially the commonalities between Siberia and northern Canada) their presence is no surprise, however. These Permian brachiopod assemblages are quite similar to Lower Permian (Wolfcamp and Leonard) faunas I have recently seen from the Kandik Basin area of the Yukon and are presumably of comparable age.

Allen R. Ormiston

Allen R. Ormiston

ARO:sd

Place in Tulsa Correspondence file

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
October 29, 1970

Re: Transmittal of Technical
Service No. 5578IR

Mr. R. W. Craig
Denver Division

Attention R. N. Walker

Dear Sir:

Attached is a technical service report by A. R. Ormiston concerning megafossil identifications from Mt. Bastille, Alaska. This is one of several Pan Am and Union samples for which a high priority was requested by Mr. Fehlmann.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd

Attachment

cc w/attachment: G. J. Verville
R. H. Fehlmann

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
October 26, 1970

Re: Megafossils from 1970 Collections,
Mt. Bastille, Alaska

File: Technical Service No. 5578IR
Locality No. 4192

MEMORANDUM

The following identifications can be made from 1970
megafossil collections from Mt. Bastille:

<u>Sample</u>	<u>Taxa</u>	<u>Age</u>
1113 CF	barren of megafossils	
1116 F	<u>Lingula</u> aff. <u>spatulata</u> <u>Eoparaphorhynchus?</u> sp.	Devonian
1118 F	<u>Cleiothyridina</u> or <u>Athyris</u> <u>Carinata?</u> sp.	Upper Devonian
4166 F	sample missing	

Discussion

Although of limited age significance, the fauna of sample 1116 F with abundant Lingula and a single Eoparaphorhynchus indicates a very shallow water marine environment.

No age more precise than Upper Devonian can be assigned the brachiopods of sample 1118 F. The Carinata? sp. is based on a single, broken specimen. If the generic identification could be positively confirmed, a Frasnian age would be indicated for the sample.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 5, 1970

Re: Transmittal of Technical
Service No. 5597IR

Mr. R. W. Craig
Denver Division

Attention R. N. Walker

Dear Sir:

Attached is a technical service report on A. R. Ormiston's identifications of Permian fossils in sample CDB-165 from Union's Section E-36A, North Slope. This is one of the samples for which a high priority was requested.

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachment

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
November 3, 1970

Re: Megafossils in Sample CDB-165
from Union's 1970 North Slope
Collections

File: Technical Service No. 5597IR
Locality No. 5578


MEMORANDUM

In response to a request by R. Fehlmann of the Denver Division, I have examined sample CDB-165 from Union Oil's Section E-36A, North Slope. The following megafossils are recognized:

<u>Union Sample</u>	<u>Taxa</u>	<u>Age</u>
CDB-165	<u>Muirwoodia</u> cf. <u>multistriata</u> <u>Neophricadothyris</u> sp. <u>Stenoscisma</u> sp. indeterminate productid <u>Straparollus</u> cf. <u>alaskensis</u> pectinid clam indet.	Lower Permian

Discussion

The fauna is of Lower Permian age and resembles the combined faunas of samples DWA-271 and DWA-274 from the 1969 Union collections. All specimens are considerably distorted as a result of moderate shearing of the rock and definite specific identifications are not possible.


Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 2, 1970

Re: Megafossils from Union
Section E-36, Demarcation
Quad., T3S, R40E, Alaska

File: Technical Service No. 5595IR
Locality No. 5577

MEMORANDUM

The following megafossils have been identified from samples designated by Union for early examination. In ascending order:

<u>Sample</u>	<u>Taxa</u>	<u>Age</u>
CDB-69	<u>Ditomopyge?</u> sp.	Pennsylvanian?
CDB-68	<u>Composita</u> cf. <u>ambigua</u>	Permian
CDB-66	Barren of megafossils	
CDB-65	<u>Spiriferella</u> aff. <u>ordinaria</u> <u>Stenopora</u> sp.	Permian
CDB-62	<u>Reticulatia</u> cf. <u>huecoensis</u> myalinid clams <u>Straparolus</u> sp.	Permian

Discussion

The trilobite in sample CDB-69 is very poorly preserved, but appears to be a Pennsylvanian Ditomopyge. Higher samples from this section are all Permian.

Allen R. Ormiston

Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 14, 1970

Re: Transmittal of Technical
Service No. 5594IR

Mr. R. W. Craig
Denver Division

Attention R. N. Walker

Dear Sir:

Attached is a paleontological memorandum by A. R. Ormiston on megafossil identifications from East Fork Aichilik River, Union Section E-35. All identifiable fossil material appears to be of Mississippian age.

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachment
cc w/attachment: R. H. Fehlmann

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 14, 1970

Re: Megafossils from East Fork
Aichilik River, Union Section E-35,
Demarcation Quad., T3S, R40E,
Alaska

File: Technical Service No. 5594IR
Locality No. 5576

MEMORANDUM

In compliance with the Denver Division request for early examination, the following megafossils have been identified from the E-35 Section:

<u>Field Sample No.</u>	<u>Taxa</u>	<u>Age</u>
RRR-127	calamitid plants	
RRR-129	Barren of megafossils	
RRR-130	<u>Rugosochonetes</u> sp. indet.	not determinable
RRR-136	<u>Lithostrotion</u> sp. indet.	Mississippian
RRR-138	<u>Amplexizaphrentis</u> cf. sp. C Sutherland	Meramec
RRR-139	<u>Syringopora</u> sp. indet.	not determinable
RRR-140	<u>Ekvasophyllum</u> cf. <u>turbineum</u>	Meramec
RRR-146	<u>Lithostrotion</u> (<u>Siphonodendron</u>) <u>sinuosum</u>	Meramec
RRR-154	<u>Lithostrotionella</u> <u>mclareni</u> <u>Ekvasophyllum</u> n. sp. <u>Gigantoproductus</u> <u>brazerianus</u>	late Meramec or Chester
RRR-157	<u>Gigantoproductus</u> <u>brazerianus</u> <u>Lithostrotionella</u> aff. <u>mclareni</u> <u>Ekvasophyllum</u> n. sp. <u>Syringopora</u> aff. <u>virginica</u>	late Meramec or Chester

<u>Field Sample No.</u>	<u>Taxa</u>	<u>Age</u>
RRR-159	<u>Gigantoproductus brazerianus</u> <u>Syringopora cf. virginica</u>	late Meramec or Chester
RRR-168	fenestellid bryozoans <u>Ekvasophyllum</u> n. sp.	late Meramec or Chester
RRR-175	<u>Fenestrellina</u> sp. <u>Stictopora</u> sp.	not determinable

Discussion

On the basis of megafossils, there can be recognized a Meramec interval and an overlying late Meramec to Chester interval in the Lisburne Group in this section. The latter interval corresponds in large part with the zone of Gigantoproductus brazerianus (samples 154 to 159) known elsewhere from the Cape Lewis section (Locality 4257, sample 17) and the Niak Creek section (Locality 4256, sample 13).

Additional conodonts recovered by processing excess matrix of megafossil samples from the subject section will be separately reported by H. R. Lane.


Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
December 16, 1970

Re: Spot Megafossil Samples from
Flood Creek Section, Alaska

File: Technical Service No. 5586IR
Locality No. 5461


MEMORANDUM

In response to a specific request from Denver, the following spot samples have been examined for megafossils:

<u>Union Samples</u>	<u>Taxa</u>	<u>Age</u>
FCH-517	<u>Megousia alata</u>	Lower or Middle Permian
FCH-521	indeterminate pectinid clam	not diagnostic
 <u>Pan American Sample</u>		
2021	<u>Muirwoodia</u> aff. <u>mammatus</u> <u>Composita</u> cf. <u>ambigua</u>	Permian

Discussion

I have not yet been able to locate Pan American samples 2020 and 2024 which were among those of which an examination was requested. They will be reported when located.


Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 8, 1971

Re: Megafossils from Upper Agashashok
River Section, Baird Mtns. Quad.
SE 1/4, T26N, R12W, Alaska

File: Technical Service No. 5580IR
Locality No. 5455

MEMORANDUM

<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
3210	<u>Squameofavosites</u> cf. <u>mixtus</u>	Givetian or Frasnian
3214	<u>Amhipora</u> cf. <u>ramosa</u> <u>Desquamatia</u> sp.	Frasnian
3218	<u>Amhipora</u> cf. <u>ramosa</u>	Frasnian
3222	<u>Trupetostroma</u> cf. <u>pseudopinque</u>	Frasnian
3225	sample not received	

Discussion

Although sample 3225 was not received, field identifications of stromatoporoids and corals which are mentioned on the log plus its stratigraphic position suggest that it, too, is Frasnian.

The types of fossils present are like those in the upper Skajit and Eli River Formations but are very much better preserved than any seen previously (e.g., Eli River). Original structure can still be easily seen in the Amhipora from this locality. The rocks are biostromal.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 13, 1971

Re: Megafossils from the Ains
Mtn. Section, Baird Mtns.
Quad., SW 1/4 T27N, R4W,
Alaska

File: Technical Service No. 5581IR
Locality No. 5456

MEMORANDUM

The fossil identifications listed below are based on thin section study. The rocks are imperfectly preserved and the more delicate fabrics have been lost. Ghost structures in all three samples which are the size and shape of Amphipora but cannot be definitely identified are suspected to have been Amphiporas.

<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
5049	<u>Alveolites</u> sp. (very abundant-20% of rock) <u>Thamnopora</u> ?	Givetian or Frasnian
5048	<u>Squameofavosites</u> cf. <u>mixtus</u> <u>Stringocephalus</u> cf. <u>asteius</u> <u>Thamnopora</u> sp.	Givetian
5041	<u>Squameofavosites</u> cf. <u>mixtus</u> <u>Alveolites</u> sp.	Givetian

Discussion

The unit is Skajit Formation and can be correlated on the common occurrence of Squameofavosites cf. mixtus with the lower part of the Upper Agashashok River Section (sample 3210). The presence of Stringocephalus in the Ains River Section (sample 5048) proves that it is partly of Givetian age and suggests that sample 3210 of the Agashashok River Section which shares Squameofavosites cf. mixtus with the Ains River Section is probably also of Givetian age.

- 2 -

Samples examined in Denver from the lower part of the Ains River Section were seen to contain stromatolitic textures and other features characteristic of supratidal sedimentation. By stratigraphic position these beds are of Givetian age. Apparently the Ains Mtn. Section represents a very shallow water sequence which deepens from supratidal to inner shelf up section.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 27, 1971

Re: Megafossils from Katakturuk
River, Mt. Michelson Quad.,
T3N, R28E, Union Section E-33,
Alaska

File: Technical Service No. 5641IR
Locality No. 5574

MEMORANDUM

<u>Field No.</u>	<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
RF-219	5574-3	stromatolites	
RF-228	5574-12	stromatolites	
RF-230	5574-14	<u>Stringocephalus</u> sp. stromatolites indet. stromatoporoids	Givetian

Discussion

The Stringocephalus in the RF-230 sample indicates a late Middle Devonian age for that horizon which is shown with query on the log to be basal Nanook Formation. The dominance of stromatolitic material in the three fossil samples is indicative of a very shallow water environment of deposition.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Paleo File

Amoco Production Company

Tulsa, Oklahoma
February 10, 1971

sfh

Re: Transmittal of Technical
Service No. 5623IR

Mr. R. F. Baldwin
Denver Division

Attention R. N. Walker

Dear Sir:

Attached is a paleontological memorandum by A. R. Ormiston identifying Pennsylvanian and Permian megafossils from the Mouth of Flood Creek Section in Alaska.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd
Attachment
cc w/attachment: G. J. Verville



Amoco Production Company

Tulsa, Oklahoma
February 9, 1971

Re: Megafossils from the Mouth of
Flood Creek, Lat. 68° 59' N.,
Long. 147° 54' W., Phillip *E-29*
Smith Mtns. Quad., Alaska

File: Technical Service No. 5623IR
Locality No. 5570

MEMORANDUM

<u>Field No.</u>	<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
CH-103	4	<u>Crenispirifer</u> sp. <u>Prehorridonia</u> 1492 <u>Rhipidomella</u> sp.	Pennsylvanian
CH-104	5	<u>Lithostroton</u> <u>kunthi</u> <u>Ditomopyge</u> <u>spitzbergensis</u> <u>Schizophoria</u> sp. indet. productid	probably Permian
CH-107	8	<u>Linoproductus</u> cf. <u>cora</u>	Permian
CH-110	11	<u>Waagenoconcha</u> aff. <u>irginae</u> <u>Derbyia</u> sp. fenestellids <u>Rhynchopora</u> <u>nikitini</u>	Permian
CH-116	17	" <u>Spirophyton</u> " sp. <u>Rhynchopora</u> sp. <u>Antiquatonia</u> sp. <u>Echinaria?</u> sp.	Permian

Discussion

Prehorridonia 1492, present in sample 4, is known elsewhere from Pennsylvanian strata of the western Yukon. The age of sample 5 is problematical as Ditomopyge spitzbergensis is known to range across

- 2 -

the Pennsylvanian Permian boundary. The presence of Lithostrotion kunthi does, however, suggest a Permian age. All higher samples from this section are clearly Permian. The presence of the trace fossil "Spirophyton" in sample 17 indicates a very shallow water environment of deposition. In the Permian of the Yukon, this trace fossil persists even after shallow-water myalinids have dropped out of a sequence that is regressive toward non-marine conditions.

Allen R. Ormiston

Allen R. Ormiston

ARO:sd



NORTH DISTRICT	
DS	
NW DG	
NE DG	
ND GEOM.	

Kali Tulsa
[Signature]
Amoco Production Company
Tulsa, Oklahoma
February 12, 1971
[Signature]

Re: Transmittal of Technical
Service No. 5592IR

~~Mr. B. F. Baldwin~~
~~Denver Division~~

Attention R. N. Walker

Dear Sir:

Attached is a paleontological memorandum by A. R. Ormiston identifying Upper Devonian megafossils from the Lower Eli River Section in Alaska.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd
Attachment



File Tulsa
Union

Amoco Production Company

Tulsa, Oklahoma
February 11, 1971

Re: Megafossils from Lower Eli
River Section, Baird Mtn. Quad.,
SW 1/4, T28N, R14W, Alaska

File: Technical Service No. 5592IR
Locality No. 4194

MEMORANDUM

<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
2143	<u>Mcgeea proetus</u> <u>Stachyodes</u> sp. <u>Thamnopora</u> sp. favositid coral indet. atrypid	Frasnian
2134	<u>Amphipora</u> cf. <u>ramosa</u> indet. button stromatoporoids <u>Thamnopora</u> ?	Frasnian or Givetian

Discussion

The association in sample 2143 confirms a Frasnian age for at least the upper several hundred feet of the Skagit Formation. The fossils in 2134 are too poorly preserved for positive identifications.

Allen R. Ormiston

Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma
February 24, 1971

Re: Megafossils from Union E-19
Section, Mt. Michelson Quad.,
T3N, R21E, Alaska

File: Technical Service No. 5628IR
Locality No. 5560

MEMORANDUM

Acid residues from a conodont sample from this locality
contained the following silicified megafossils:

<u>Field No.</u>	<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
RF-59	5560-30	<u>Derbyia</u> cf. <u>parvicostata</u> <u>Crenispirifer</u> 1494 <u>Spirifer</u> cf. <u>occidus</u> <u>Platyceras</u> sp. <u>Dibunophyllum</u> ? <u>Phricodothyris</u> sp.	Pennsylvanian

Discussion

This assemblage is clearly Pennsylvanian. Moreover, the
presence of Crenispirifer 1494 indicates a correlation with Loc.
5570, sample 4, where the same taxon (reported as Crenispirifer sp.)
occurs.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Amoco Production Company
Tulsa, Oklahoma
February 15, 1971

Re: Transmittal of Technical
Service No. 5584IR

Mr. B. F. Baldwin
Denver Division

Attention R. N. Walker

Dear Sir:

Attached is a paleontological memorandum by A. R. Ormiston identifying Mississippian megafossils from the Mt. Bupto Section in Alaska.

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachment



Amoco Production Company

Tulsa, Oklahoma
February 15, 1971

Re: Megafossils from Mt. Bupto
Section, Howard Pass Quad.,
NE 1/4, T11S, R24W,
Alaska

File: Technical Service No. 5584IR
Locality No. 5459

MEMORANDUM

<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
2042	<u>Paladin (Kaskia) arduennensis</u> Hahn <u>Tylothyris clarksvillensis</u> <u>Plicochonetes aff. ornatus</u> <u>Amesopleura</u> sp. <u>Athyris bradyensis</u> <u>Ovatia</u> sp. <u>Platyceras</u> sp. fenestellids	Lower Mississippian
2040	<u>Lithostrotion (Siphonodendron) cf. warreni</u>	Mississippian

Discussion

The brachiopods of sample 2042 suggest a correlation with the undifferentiated Chappel limestone of Texas, the lower part of which is Kinderhook in age and the upper part of which is early Osage. The trilobite present suggests a correlation with the lower CuII of Belgium. These correlations are compatible and suggest a Kinderhook or early Osage age.

Sample 2040 is still clearly Mississippian.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



File N. Slope Pale

Amoco Production Company
Tulsa, Oklahoma
February 26, 1971

Re: Megafossils from E-21 Section
of Union Oil Company,
Shublik Mtn., Alaska

File: Technical Service No. 5630IR
Locality No. 5562

MEMORANDUM

The one megafossil sample from this section has been
found to contain the following:

<u>Sample</u>	<u>Taxa</u>	<u>Age</u>
RF-97 (5562-10)	<u>Waagenoconcha irginae</u> <u>Megousia</u> sp. <u>Spiriferella ordinaria</u> <u>Muirwoodia greenlandica</u> <u>Muirwoodia</u> cf. <u>transversa</u> <u>Probolionia?</u> sp. pectinid clams bryozoans	Permian

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma
March 9, 1971

Re: Megafossils from Nuka Ridge
Section, Delong Mtns., Alaska

File: Technical Service No. 5604IR
Locality No. 5471

MEMORANDUM

<u>Field No.</u>	<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
3090	5471-4	<u>Subansiria</u> cf. <u>granulata</u> Armstrong <u>Muirwoodia</u> <u>greenlandica</u> <u>Spiroscala</u> sp. bellorophontid indet.	Permian
3088	5471-5	<u>Brachythyryna</u> cf. <u>ufensis</u> <u>Composita</u> cf. <u>subtilita</u> <u>Rhipidomella</u> <u>carbonaria</u>	Pennsylvanian or Permian
3085	5471-7	<u>Lophophyllidium</u> cf. <u>dunbari</u>	Pennsylvanian or Permian
3094	5471-1	<u>Brachythyryna</u> <u>ufensis</u> <u>Rugosochonetes</u> aff. <u>delicatus</u> <u>Neospirifer</u> cf. <u>dunbari</u> <u>Lophophyllidium</u> sp. <u>Orbiculoidea</u> sp.	Pennsylvanian or Permian
3082	5471-8	New productid genus	?
3081	5471-9	<u>Linoproductus</u> cf. <u>cora</u> <u>Rugosochonetes</u> cf. <u>delicatus</u> <u>Waagenoconcha</u> sp. <u>Punctospirifer</u> cf. <u>amesi</u> <u>Heterolosia</u> sp. <u>Cancrinella</u> aff. <u>altissima</u> <u>Paladin</u> sp. indet.	Pennsylvanian

<u>Field No.</u>	<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
3054	5471-17	forams but no megafossils	
3058	5471-15	<u>Aviculopecten</u> sp. <u>Michelinoceras dutroi</u> <u>Dolorthoceras</u> sp.	late Meramec or Chester
3059	5471-14	<u>Paladin rosei</u> Cisne <u>Avonia</u> aff. <u>pustulifera</u> <u>Ovatia</u> ?	late Meramec or Chester
3062	5471-11	<u>Avonia</u> aff. <u>pustulifera</u>	Mississippian

Discussion

The megafossil assemblage of sample 5471-4 leaves no doubt of its Permian age. The apparent conflict between this dating and the Pennsylvanian age earlier assigned stratigraphically higher sample 5471-3 on the basis of conodonts has several possible explanations. H. R. Lane and I agree that the most probable explanation in this instance is that the single conodont element on which that dating was based is here exhibiting an extension of its range (into the Permian) beyond that previously observed. This is not entirely unexpected in view of the preliminary state of knowledge of Permian conodonts.

The megafossils of samples 3088, 3085, 3094 and 3082 include genera known to occur in both Pennsylvanian and Permian strata, and my level of understanding of these taxa is inadequate for any precise dating.

Sample 3081 is regarded as Pennsylvanian because of the presence of Waagenoconcha (post-Mississippian), Paladin (pre-Permian) and Punctospirifer cf. amesi (Pennsylvanian).

The faunas of samples 3058 and 3059 are clearly late Meramec or Chester in age and suggest the Alapah Member of the Lisburne.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



NORTH DISTRICT	
DS	
NW EG	<i>W</i>
NE EG	
ND EG	

File Union
Tulsa Pale

DP
Amoco Production Company

Tulsa, Oklahoma

March 16, 1971

Re: Transmittal of Technical
Service Nos. 5625IR and 5645IR

To:
Mr. B. F. Baldwin
Denver Division

Attention R. N. Walker

Dear Sir:

Attached are two technical service reports by A. R. Ormiston on megafossil identifications from Union Section E-14 and from Union grab samples RRR-77 and RRR-78. All are 1970 Union collections from Alaska.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd

Attachments

cc w/attachments: G. J. Verville



Amoco Production Company

Tulsa, Oklahoma
March 12, 1971

Re: Megafossil Examination of
Union Section E-14,
N. W. Shubliks,
Mt. Michelson Quad.,
Alaska

File: Technical Service No. 5625IR
Locality No. 5557

MEMORANDUM

<u>Sample No.</u>	<u>Field No.</u>	<u>Taxa</u>
5557-6	CH-6	laminar stromatolites
5557-9	CH-9	LLH stromatolites
5557-14	CH-14	barren
5557-19	CH-19	barren
5557-25	CH-25	barren
5557-28	CH-28	barren
5557-34	CH-34	barren
5557-39	CH-39	barren

Discussion

Although no age diagnostic fossils were seen, the stromatolitic facies present is quite comparable to that seen in the E-33 Section (Locality No. 5574).

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma
March 12, 1971

Re: Megafossils from Union Oil
grab samples, Hunt Fork Fm.,
NW 1/4, T16S, R10E,
Phillip Smith Quad., Alaska

File: Technical Service No. 5645IR
Locality No. 5839

MEMORANDUM

<u>Field No.</u>	<u>Taxa</u>	<u>Age</u>
RRR-77	<u>Parallelodon</u> sp. <u>Paleoneilo</u> 2137 <u>Spinatrypa</u> 2403 <u>Devonoproductus secundus</u> Crickmay <u>Nervostrophia</u> cf. <u>vestita</u> new coral genus <u>Loxonema</u> sp. nautiloids <u>Polygnathus normalis</u>	Frasnian
RRR-78	<u>Spinatrypa</u> sp. <u>Nervostrophia</u> cf. <u>vestita</u> nautiloids <u>Loxonema</u> sp.	Frasnian

Discussion

Both samples are of Frasnian age, probably mid-Frasnian. The presence of Spinatrypa 2403 suggests correlation with higher parts of the Skajit Fm. (e.g., at Eli River, Loc. 4194). These Hunt Fork samples clearly have a more diversified brachiopod fauna than one could expect from the coral-rich carbonates of the Skajit.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma

March 30, 1971

Re: Paleontologic Examination of
Sample 5036L, Ains Mtn. Section,
Baird Mtns., Alaska

File: Technical Service No. 5680IR
Locality No. 5456

MEMORANDUM

Sample 5036L from the subject locality contains an abundance of 2 mm. diameter tubules concentrated parallel to bedding but randomly oriented within this plane. These fossils are completely recrystallized so that positive identification is not possible. Their abundance, size, and presumed age (Givetian by stratigraphic position below 5048F, see memorandum of January 8, 1971) suggest they represent the remains of Amphipora, a stick-stromatoporoid common elsewhere in the Skajit Formation or possibly a syringoporoid coral.

The arrangement of these structures mitigates against the likelihood of their having been any sort of burrows.

Both Amphipora and syringoporoids are frequently encountered in shallow-water carbonates of Givetian to Frasnian age.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma

April 6, 1971

Re: Megafossils in Skajit Grabs
RRR 79-81 of Union Oil, 1970,
E 1/2, T14S, R13E,
Phillip Smith Quad., Alaska

File: Technical Service No. 5645IR
Locality No. 5846

MEMORANDUM

The following megafossils have been recognized from the
subject locality.

<u>Field No.</u>	<u>Taxa</u>	<u>Age</u>
RRR-79	<u>Coenites</u> cf. sp. D McLaren & Norris <u>Theodossia kobayashii</u> (1500) cf. <u>Mictophyllum</u> sp. barren of conodonts	late Frasnian
RRR-80	sample missing	
RRR-81	<u>Theodossia kobayashii</u> (1500) <u>Spinatrypa</u> 2403 <u>Cyrtospirifer</u> sp. <u>Acinophyllum</u> cf. <u>trunctense</u>	late Frasnian

Discussion

Although Frasnian in age, these samples seem to be younger
than Skajit collections previously examined. The presence of
Theodossia kobayashii indicates a correlation with the Grumbler
Group of western Canada which is late Frasnian in age.

Allen R. Ormiston

Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma
April 7, 1971

Re: Megafossils from Union E-24
Section, T1S, R27E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5633IR
Locality No. 5565

MEMORANDUM

<u>Field No.</u>	<u>Taxa</u>	<u>Age</u>
CH-63	<u>Lithostrotionella</u> sp. B Armstrong, 1970 <u>Syringopora</u> sp.	probably Meramec
CH-59	<u>Lithostrotionella</u> aff. <u>mclareni</u>	probably Meramec
CH-58	Schellwienellid brachiopods indet.	
CH-50	Barren of megafossils	

Discussion

The Kayak appears to be getting very young this far west.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma
April 13, 1971

Re: Megafossils from 1970
Collections,
Mt. Bastille, Alaska

File: Technical Service No. 5578IR
Locality No. 4192

MEMORANDUM

<u>Field Number</u>	<u>Taxa</u>	<u>Age</u>
1113A	<u>Trupetostroma</u> sp.	Frasnian
1113F	<u>Tabulophyllum</u> n. sp. indeterminate camerate crinoid <u>Diaphorostoma</u> sp.	probably Frasnian

Discussion

Stromatoporoids of the type found in sample 1113A are typical of the Frasnian and do not range into the Famennian.

Allen R. Ormiston

Allen R. Ormiston

ARO:sd



Amoco Production Company

Tulsa, Oklahoma

April 14, 1971

Re: Megafossils from Union Oil
1970 Grab Samples,
Eastern Brooks Range, Alaska

File: Technical Service No. 5645IR

MEMORANDUM

<u>Field Number</u>	<u>Taxa</u>	<u>Age</u>
RRR-87	<u>Cyrtospirifer thalattodoxa</u> <u>Cyrtospirifer</u> cf. <u>whitneyi</u> indeterminate tetracoral	Frasnian
RRR-88	<u>Cyrtospirifer</u> cf. <u>charitopes</u>	Frasnian
RF-22	sample missing	
RF-24	<u>Lithostrotionella</u> cf. <u>banffensis</u>	Meramec
RF-25	<u>Lithostrotionella</u> cf. <u>banffensis</u>	Meramec
RF-28	barren of megafossils	
RF-29	<u>Thysanophyllum</u> sp. A Armstrong	Meramec
RF-274	<u>Spiriferella</u> cf. <u>ordinaria</u> <u>Tomioopsis</u> cf. <u>ovulum</u> indet. chonetid	Permian
RF-243	fenestellids	
RF-246	fenestellids	
RF-247	<u>Syringopora</u> <u>surcularia</u> fenestellids	Lower Mississippian
RF-252	<u>Vesiculophyllum</u> cf. <u>incrassatum</u>	Lower Mississippian

<u>Field Number</u>	<u>Taxa</u>	<u>Age</u>
RF-256	<u>Paracyclas</u> cf. <u>elliptica</u>	Devonian probably Upper
RF-259	barren of megafossils	
CH-67a	<u>Ditomopyge</u> aff. <u>spitsbergensis</u> <u>fenestellids</u> <u>Spiriferella</u> <u>rajah</u> subsp. A	Pennsylvanian
CH-69a	<u>Composita</u> cf. <u>ambigua</u>	Permian

Discussion

The reporting of these grab samples completes the 1970 Union megafossil collections which were assigned to me.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd



NORTH DISTRICT	
DS	<i>W</i>
NW DG	<i>W</i>
NE DG	
ND GEOPH.	

Tulsa Paleont. File

Amoco Production Company
Tulsa, Oklahoma
May 5, 1971

Re: Transmittal of Technical
Service No. 5603IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

We are attaching a paleontological memorandum by A. R. Ormiston concerning Grab Sample 1059F from the Baird Mountains of Alaska. These identifications represent the first positively identified Silurian fossils from the "Skajit Formation".

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd
Attachment
cc w/attachment: G. J. Verville
A. B. Shaw

*should be 1057F
work*



Amoco Production Company

Tulsa, Oklahoma
May 3, 1971

Re: Silurian Megafossils in
Grab Sample ~~1059F~~, ^{1057F}
"Skajit Fm.", Baird Mtns.,
T23N, R10W, Alaska

File: Technical Service No. 5603IR

MEMORANDUM

^{1057F}

Grab sample ~~1059F~~ from the "Skajit Formation" of the Baird Mtns. contains indisputable Upper Silurian (upper Wenlock or Ludlow) megafossils. This discovery substantiates the widely suspected (but not previously documented) presence of Silurian in the older parts of the Skajit Formation (probably better called Skajit Group considering the rock thickness and variety of ages that can be demonstrated for rocks so named). Earlier reports of Silurian fossils from the Skajit (see Brosge, Dutro, Mangus, and Reiser, 1962, p. 2179) have involved identifications of Conchidium. Reexamination of those specimens (J. T. Dutro, personal communication) has proved them to be Stringocephalids of Devonian age. The sample reported here apparently represents the first solid evidence for Silurian Skajit in the Baird Mountains.

<u>Sample No.</u>	<u>Taxa</u>	<u>Age</u>
1059F	<u>Kirkidium</u> n. sp. <u>Tryplasma</u> sp.	Upper Silurian late Wenlock or Ludlow

Discussion

Serial sections of the abundant pentamerids in the sample prove they represent a new species of Kirkidium, a genus known only from the late Wenlock and Ludlow.

Allen R. Ormiston
Allen R. Ormiston

ARO:sd

PAN AMERICAN PETROLEUM CORPORATION

Tulsa, Oklahoma
January 12, 1971

Re: Smaller Foram Identifications,
Flood Creek, Saga Vanirktok
Quadrangle, Alaska

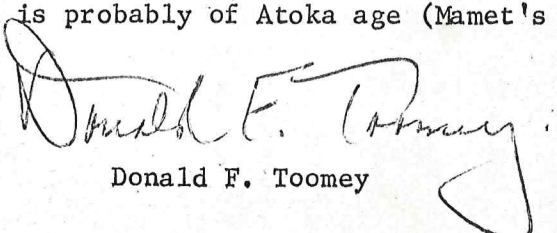
File: Technical Service No. 5586IR
Locality No. 5461

MEMORANDUM

Following is a list of smaller foraminifers identified in 2 thin-sections (5461-11) from the Flood Creek, Saga Vanirktok Quadrangle, Alaska:

1. apterrinellids (2)
Tetrataxis (3)
Endothyra? fragment (1)
poorly preserved archaediscids, probably
Neoarchaediscus (5)
2. apterrinellids (5)
Tetrataxis (4)
fibrous-layered Palaeotextularid (1)
Tuberitina (1)
poorly preserved archaediscids, probably
Neoarchaediscus (11)
Neoarchaediscus sp. cf. N. parvus regularis Suleimanov (3)
Archaediscus? (1)

The above microfauna plus the characteristic rock lithology indicate that the interval is Lower Pennsylvanian in age. More specifically, the interval is probably of Atoka age (Mamet's Zone 21).


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

May 21, 1971

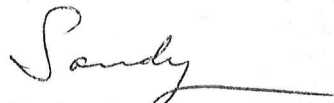
Dr. A. B. Shaw
Denver Division

Dear Alan:

Attached is Don Toomey's memorandum relating his preliminary zonation of the 1969 Union Surface collections to the measured sections as you requested. Please bear in mind that he is reviewing these early determinations, and some modification may be necessary. However, the major relationships are probably pretty firm. It should also be noted that many of Mamet's units are recognized only in single, widely-spaced collections, and tops and bases of many zones cannot be established due to sampling deficiencies.

If this doesn't give you what you need, let us know.

Yours sincerely,


G. A. Sanderson

GAS:sd
Attachment
cc w/attachment: G. J. Verville



Amoco Production Company

Tulsa, Oklahoma

May 21, 1971

Re: Tentative Foraminiferal Zonation
of the Lisburne Group in Western
Brooks Range, Alaska (1969 Outcrop
Sections)

MEMORANDUM

(NIAK CREEK SECTION, NO. 1)

<u>Footage</u>	<u>Mamet Foraminiferal Zone</u>	<u>Age</u>
550 to 650	high Zone 13 or 14?	Middle Meramec
1265 to 1320	high Zone 13	

(CAPE LEWIS SECTION, NO. 2)

5	Zone 18	Chester
740 to 1240	Zone 17	
1360	Zone 16s	
1705 to 1860	Zone 16i	

(SOUTH WULIK SECTION, NO. 3)

5	Zone 12	Middle Meramec
405	Zone 12?	
460	Zone 11?	
750	Zone 11	
1305	Zone 11?	

(NORTH WULIK SECTION, NO. 4)

5 to 155	Zone 11?	Lower Meramec
335 to 525	Zone 11	
890	Zone 11?	

(EAST KELLY SECTION, NO. 5)

<u>Footage</u>	<u>Mamet Foraminiferal Zone</u>	<u>Age</u>
100	Zone 12?	Middle Meramec
200	Zone 11	
280-320	Zone 11?	

(NUNAVIKSAK SECTION (LOWER PART), NO. 6)

2000-2250	Zone 12?	Lower to Middle Meramec
2300-2350	Zone 11?	
2410-4240	Zone 10-11 (<u>Earlandia</u> Facies)	

(NUNAVIKSAK SECTION (UPPER PART))

180	Zone 14-15?	Middle to Upper Meramec
900	Zone 14 (<u>Brunsia</u> Facies)	
1000	Zone 13	
1280	Zone 13?	

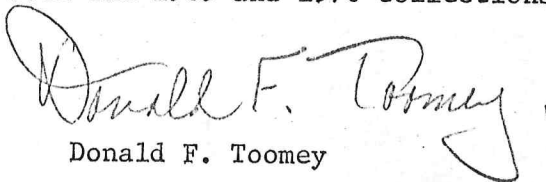
(TUPIK MOUNTAIN SECTION, NO. 7)

0-550	Zone 12 (possibly high Zone 11)	Lower to Middle Meramec
600-900	Zone 10-11 (<u>Earlandia</u> Facies)	

(TRAIL CREEK SECTION, NO. 8)

100	Zone 14 (<u>Brunsia</u> Facies)	Middle to Upper Meramec
240	Zone 14?	
290-480	Zone 13	
1240	Zone 12?	

Based on a rapid run through of approximately 300 thin sections the above ages and biostratigraphic zonation have been determined. Since the initial microscopic examination some 150 additional thin sections have been prepared from selected horizons of the above localities. Future examination and foraminiferal identifications may modify the above boundaries to some degree. Hence, this information should be utilized with this limitation in mind. It is hoped that before the end of the summer both the 1969 and 1970 collections can be finalized.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

May 27, 1971

Re: Smaller Foram and Algal
Identifications,
E-17, West Sadlerochit Section,
Mt. Michelson Quadrangle, North
Slope, Alaska

File: Technical Service No. 5626IR
Locality No. 5558

MEMORANDUM

Examination of 24 thin sections from the outcrop section E-17, West Sadlerochit, Mt. Michelson Quadrangle (T3N, R25E), from the North Slope, Alaska (0-1500 feet) yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
FCH-538	Intraclastic/pelletoidal, slightly oolitic, skeletal grainstone (BBC fauna) with some grains having heavy micrite envelopes and algal? borings; <u>Stacheoides</u> fragments (R), indet. dasyclad algal fragment (VR); archaediscid fragment (1), <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady) (4).
FCH-540	Partially recrystallized fenestrate bryozoan packstone with a few skeletal grains showing algal? borings and a few indet. dasyclad algal fragments, red alga <u>Cuneiphyucus</u> (R); <u>Stacheoides</u> fragments (C); <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady) (6); <u>Neoarchaeodiscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (dia. 247 microns) (2); <u>Tuberitina</u> (1).
FCH-541	Skeletal, intraclastic packstone with a few oolites and abundant grains with micrite envelopes; a few dasyclad algal fragments and

<u>Collection No.</u>	<u>Description and Identifications</u>
	<u>Stacheoides</u> (C); fusulinids (3), <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady) (24), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (dia. 247 microns) (6), cf. <u>Asteroarchaediscus</u> of the group <u>A. baschkiricus</u> (K & T) (2), <u>Tuberitina</u> (1).
FCH-545	Recrystallized and partially silicified, silty, skeletal wackestone; BOF.
FCH-548	Intraclastic/pelletoidal, skeletal grainstone/packstone with a few oolites and a few grains showing algal? borings; <u>Stacheoides</u> (R); fusulinid? (1), <u>Apterrinella</u> (7), <u>Tuberitina</u> (2), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (2), <u>Globoendothyra</u> sp. (10) (dia. 619 microns); most of the endothyras seen are poor cuts of poorly preserved forms most of which are mud-filled.
FCH-551	Slightly silty intraclastic/pelletoidal, skeletal packstone with <u>Stacheoides</u> fragments (R); fusulinids (49), <u>Trepeilopsis</u> (1), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (34).
FCH-552	Intraclastic/pelletoidal grainstone with some grains showing superficial oolitic coatings; <u>Globivalvulina</u> of the group <u>G. parva</u> Chernysheva (74), <u>Apterrinella</u> (61), <u>Tuberitina</u> (12), <u>Trepeilopsis</u> (2), small <u>Tetrataxis</u> ? (2), <u>Archaediscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernousova (1), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (80).
FCH-553	Partially recrystallized and silicified, silty, pelletoidal/intraclastic, fenestrate bryozoan packstone; <u>Tuberitina</u> (2), <u>Neoarchaediscus</u> ? (2).
FCH-557	Partially recrystallized, closely packed (interpenetrant), skeletal (BBC fauna) packstone/grainstone with very poorly preserved forams; cf. <u>Archaediscus</u> ? (10), <u>Tuberitina</u> (1), <u>Endothyra</u> (6), <u>Cornuspira</u> ? (1), <u>Neoarchaediscus</u> (2).

Collection No.

Description and Identifications

- FCH-560 Slightly silty, fine-grained skeletal wackestone; Stacheoides (R); fusulinids (93), Globoendothyra (2), Endothyra mosquensis Reitlinger (10), Globivalvulina of the group G.? parva Chernysheva (1), Neoarchaediscus of the group N. incertus (Grozdilova & Lebedeva) (190), Tuberitina (1).
- FCH-565 Slightly silty, fine-grained, pelletoidal/intraclastic, skeletal wackestone; Neoarchaediscus of the group N. incertus (Grozdilova & Lebedeva) (23).
- FCH-566 Layered, fine-grained, pelletoidal/intraclastic skeletal packstone; indet. foram (1), Earlandia? (2), small Tetrataxis (1), fusulinids? (4), Globivalvulina of the group G.? parva Chernysheva (1), very small Neoarchaediscus of the group N. incertus (Grozdilova & Lebedeva) (20), Forschid? (1).
- FCH-567 Fine-grained, skeletal (BBC fauna) grainstone/packstone; indet. forams (11), small Endothyra cf. E. of the group E. prisca? Rauser-Chernoussova and Reitlinger (4), Globivalvulina of the group G.? parva Chernysheva (1), small Neoarchaediscus of the group N. incertus (Grozdilova & Lebedeva) (6).
- FCH-568 Recrystallized, skeletal (BBC fauna) packstone with a few intraclasts; indet. forams (6), small Endothyra of the group E. prisca Rauser-Chernoussova & Reitlinger (6), Earlandia (1), Neoarchaediscus (2).
- FCH-570 Slightly silicified, skeletal packstone composed principally of fenestrate bryozoans; Globoendothyra sp. (2), Neoarchaediscus? (2), small Tetrataxis with fibrous layer (1), Cornuspira (1).
- FCH-571 Dolomitized, skeletal (BBC fauna, but dominantly bryozoans), wackestone; indet. forams (2), small Endothyra (3), cf. Neoarchaediscus (3), Globoendothyra (with diaphanotheca) (2), Cornuspira (1).

<u>Collection No.</u>	<u>Description and Identifications</u>
FCH-575	Fine-grained, well sorted, pelletoidal/intra-clastic, skeletal grainstone; cf. <u>Asteroarchaediscus</u> ? (1).
FCH-576	Silicified bioclastic rock; BOF.
FCH-581	Dolomitized and silicified, skeletal (BBC fauna, with conspicuous rugose corals) packstone; indet. forams (3), <u>Tetrataxis</u> (1), <u>Endothyra</u> (1).
FCH-582	Dolomitized skeletal (BBC fauna) packstone with some silicification; <u>Stacheoides</u> (R); indet. foram (1) <u>Cornuspira</u> ? (2) <u>Globo endothyra</u> (22) " <u>Eostaffella</u> " <u>discoidea</u> (2) <u>Tetrataxis</u> <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (5) <u>Archaediscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (2).
FCH-583	Fine-grained, well sorted, pelletoidal intraclastic, skeletal grainstone, some grains with micrite envelopes; forams very poorly preserved, indet. forams (2), small <u>Endothyra</u> (3), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (4).
FCH-584	Silty, pelletoidal, slightly silicified, skeletal packstone with poorly preserved forams; <u>Stacheoides</u> (R); archaeidisc fragments (18), <u>Archaediscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (4) (dia. 187, & 286 microns), primitive <u>Neoarchaediscus</u> ? (2), <u>Earlandia</u> (3)
FCH-595	Fine-grained, well sorted, pelletoidal/intraclastic, skeletal grainstone; some grains have micrite envelopes; indet. forams (2), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (1) (Dia. 238 microns)
FCH-597	Very well sorted, pelletoidal intraclastic, skeletal grainstone with a few scattered oolites and sponge spicules; some grains have micrite envelopes; indet. forams (2), <u>Cornuspira</u> ? (2), archaeidisc (2), small endothyrid (1).

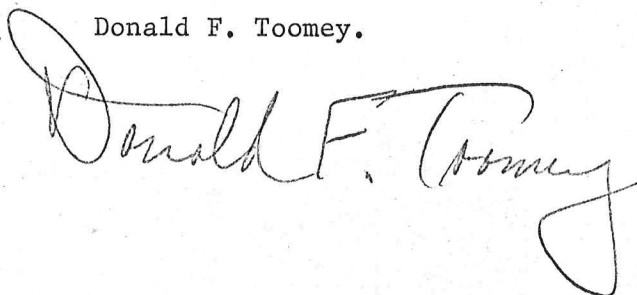
The above rock sequence and contained biota would indicate that the E-17 section ranges in age from Middle Pennsylvanian (Atoka), Mamet's Zone 21, down to Mississippian (Chester), Mamet's Zone 16.

The biozonation as compared to the collections is as follows:

FCH-538, 540, 541 Zone 21 (Atoka)
FCH-548 lowermost Zone 21? or highest Zone 20? (lowermost
Atoka or uppermost Morrow)
FCH-551, 552, 560, 565 Zone 20 (Morrow)
FCH-566 Zone 19? (Chester)
FCH-567, 568 Zone 19 (Chester)
FCH-570 Zone 18?? (Chester)
FCH-575 Zone 17??? (Chester)
FCH-581 Zone 16? (Chester)
FCH-582, 595, 597 Zone 16 (Chester).

I am not completely satisfied with the zone calls given above. There is obvious Pennsylvanian and Mississippian rocks (Atoka, Morrow, Chester) but, as to the placement of the zonal boundaries I am very dubious. I think this section points out how unrealistic it is to have only 24 thinsections spaced across 1500 feet of Lisburne and attempt to utilize this very sparse information to develop a precise zonation; it just can't be done. The above zonal boundaries should be used with caution and the stated limitations kept in mind.

Donald F. Toomey.

A handwritten signature in cursive script, reading "Donald F. Toomey". The signature is written in dark ink and is positioned below the typed name.



DISTRICT	
1	ES
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Amoco Production Company
Tulsa, Oklahoma
June 17, 1971

Re: Transmittal of Technical
Service No. 55951R

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

Attached is a paleontological memorandum by D. F. Toomey identifying small forams and algae in samples from Union Section E-36 on the Alaska North Slope. These determinations include consideration of lithology samples as well as the collections made specifically for fossils. Inasmuch as reports on the conodonts, fusulinids and megafossils have already been distributed, this memorandum will complete our planned study of Section E-36.

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachment
cc w/attachment: G. J. Verville
A. B. Shaw





Amoco Production Company

Tulsa, Oklahoma
June 16, 1971

Re: Smaller Foram and Algal
Identifications, E-36,
East Fork Aichilik River
Section, North Slope, Alaska

File: Technical Service No. 5595IR
Locality No. 5577

MEMORANDUM

Examination of 32 thin sections from the outcrop section E-36, East Fork Aichilik River, T3S, R40E, Demarcation Quadrangle, North Slope, Alaska (0-2008 feet), yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
CDB-62	Silty, partially silicified skeletal wackestone with some shell fragments algally? bored; nodosarid forams, cf. <u>Nodosaria</u> (65).
CDB-65	Silty, partially silicified skeletal wackestone with some bored grains; cf. <u>Nodosaria</u> (44), cf. <u>Fronicularia</u> (4), cf. <u>Hemigordiosis</u> ? (1).
CDB-66	Partially silicified siltstone with rare to common indet. microfossils (spherical accretions); cf. <u>Robuloides</u> ? (1).
CDB-68	Skeletal siltstone with some pelletoids and poorly preserved forams, cf. <u>Nodosaria</u> (6), indet. forams (2).
CDB-69	Silty, skeletal (mainly crinoidal) packstone with some algally? bored grains and sponge spicules; poorly preserved <u>Apterrinella</u> ? (19).
CDB-71	Silty, skeletal (dominantly crinoids and bryozoans) packstone with some sponge spicules and rugose coral fragments; <u>Apterrinella</u> ? (6), <u>Eolasiodiscus</u> ? (3).

<u>Collection No.</u>	<u>Description and Identifications</u>
CDB-72	Recrystallized, slightly silty, skeletal (bryozoan/crinoidal) packstone; archaediscid fragment (1), small endothyrid (1), <u>Monotaxinoides?</u> (1), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehrenberg (2).
CDB-74	Skeletal (mainly bryozoans) wackestone with some sponge spicules; good specimens of the questionable alga " <u>Asphaltina</u> " (C); cf. <u>Planospirodiscus</u> (probably two species) (3).
CDB-75	Skeletal (mainly fenestrate bryozoans) packstone with abundant spicules; palaeotextularid fragment (1), section too thick!
CDB-76	Silty, skeletal (mainly fenestrate bryozoans) packstone with very rare " <u>Asphaltina</u> "; archaediscid fragment (1).
CDB-77	Slightly silty, skeletal (mainly bryozoans) wackestone; archaediscid fragment, cf. <u>Neoarchaediscus?</u> (1).
CDB-78	Recrystallized (stress? re-oriented), skeletal (crinoidal/bryozoan) packstone; BOF.
CDB-80	Slightly silty, skeletal (predominantly bryozoans) packstone; archaediscid fragments (2), <u>Planospirodiscus</u> of the group <u>P. minimus</u> (Grozdilova & Lebedeva) (1), <u>Asteroarchaediscus</u> of the group <u>A. baschkiricus</u> (Krestovnikov & Teodorovitch), <u>Endothyra</u> cf. <u>E. mosquensis</u> Reitlinger (2), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehrenberg (3), <u>Globivalvulina</u> of the group <u>G.? parva</u> Chernysheva (9), indet. forams (probably oblique cuts of <u>Globivalvulina?</u>) (10).
CDB-81	Slightly silty, skeletal (mainly bryozoans) packstone with rare fragments of " <u>Asphaltina</u> "; archaediscid fragments (16), <u>Archaediscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (5), <u>Neoarchaediscus?</u> (3), <u>Planospirodiscus</u> of the group <u>P. minimus</u> (Grozdilova & Lebedeva) (1), small invaginated <u>Tetrataxis?</u> (3), endothyrid fragments (2), <u>Globivalvulina</u> of the group <u>G.? parva</u> Chernysheva (2).
CDB-82	Slightly silty, recrystallized, skeletal (crinoidal/bryozoan) packstone with rare " <u>Asphaltina</u> "; BOF.

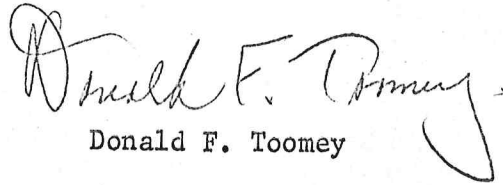
<u>Collection No.</u>	<u>Description and Identifications</u>
CDB-83	Altered, skeletal (mainly fenestrate bryozoans) wackestone; BOF.
CDB-84	Skeletal (bryozoan/crinoidal) packstone with rare " <u>Asphaltina</u> " fragments; <u>Tetrataxis</u> (1), endothyrid fragment (1), archaediscid fragment (1).
CDB-85	Skeletal (mainly fenestrate bryozoans and crinoids) packstone with very rare fragments of " <u>Asphaltina</u> " and <u>Stacheoides</u> ?; BOF.
CDB-86	Partially silicified skeletal spiculite; BOF.
CDB-87	Silicified, skeletal rock; BOF.
CDB-88	Fine-grained skeletal wackestone; archaediscid fragment, cf. <u>Neoarchaediscus</u> ? (1).
CDB-89	Fine-grained (finely broken) skeletal wackestone with spicules and <u>Spirorbis</u> ; archaediscid fragments (2), endothyrid fragments (2).
CDB-90	Altered, slightly silty, skeletal wackestone/packstone with <u>Stacheoides</u> fragments (C) and rare " <u>Asphaltina</u> " fragments; BOF.
CDB-91	Slightly silty, skeletal (mainly fenestrate bryozoans) packstone with some spicules; <u>Earlandia</u> (1), <u>Tuberitina</u> (5), archaediscid fragment (1), <u>Archaediscus</u> of the group <u>A. pauxillus</u> Schlykova (10).
CDB-93	Recrystallized skeletal grainstone?; BOF (poor thin section).
CDB-94	Skeletal (dominantly bryozoans) packstone with rare <u>Stacheoides</u> and " <u>Asphaltina</u> " fragments; fusulinids (3), <u>Earlandia</u> (2), <u>Tuberitina</u> (17), <u>Calcisphaera pachysphaerica</u> (Pronina) (19), <u>Tetrataxis</u> ? (1), <u>Planospirodiscus</u> of the group <u>P. minimus</u> (Grozdilova & Lebedeva) (1), <u>Archaediscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (3), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (24), indet. forams (32), cf. " <u>Zellerina</u> " (3).

<u>Collection No.</u>	<u>Description and Identifications</u>
CDB-95	Skeletal (dominantly bryozoans) packstone with very rare " <u>Asphaltina</u> " and <u>Stacheoides</u> fragments; archaediscid fragment (1), endothyrid fragment (1).
CDB-96	Skeletal (mainly bryozoans) packstone with <u>Spirorbis</u> and very rare " <u>Asphaltina</u> " and <u>Stacheoides</u> fragments; fusulinids (5), indet. forams (21), <u>Tuberitina</u> (2), <u>Tetrataxis</u> of the group <u>T. paraminima</u> Vissarionova (6), <u>Archaeodiscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (1), cf. <u>Globivalvulina? parva</u> Chernysheva (3), cf. " <u>Zellerina</u> " (2), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (7).
CDB-97	Tightly packed, skeletal (predominantly fenestrate bryozoans) with very rare " <u>Asphaltina</u> " and <u>Stacheoides</u> fragments; indet. forams (6), cf. <u>Planospirodiscus?</u> (1), cf. <u>Globivalvulina? parva</u> Chernysheva (1).
CDB-100	Partially recrystallized and silicified, skeletal (mainly fenestrate bryozoans) wackestone/packstone with <u>Spirorbis</u> and very rare <u>Stacheoides</u> fragments; indet. forams (3), archaediscid fragment (1), cf. <u>Archaeodiscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (2).
CDB-101	Recrystallized skeletal wackestone?; BOF.
CDB-102	Partially recrystallized skeletal wackestone? with rugose coral fragments; endothyrid fragment (1), archaediscid fragment (1).

The following age determinations are based upon relatively sparse microfaunas spaced within a very large sample interval (32 samples for 2000 feet of section). Nonetheless, the above rock sequence ranges in age from Permian to Upper Mississippian (Chester).

The biozonation as compared to the sample collections is as follows:

CDB-62 to 68 Permian
CDB-69 to 728 Middle Pennsylvanian-Atoka (Mamet's Zone 21)
CDB-80 to 90 Lower Pennsylvanian-Morrow (Mamet's Zone 20)
CDB-91 to 97 Mississippian-Chester (probably Mamet's Zone 18?)
CDB-100 to 102 (probably Chester also, but biota too sparse)


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma
June 25, 1971

Re: Transmittal of Technical
Service Nos. 5628IR, 5631IR,
5632IR, 5635IR, and 5629IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

We are attaching 5 reports by D. F. Toomey on small foram
and algal identifications from the following 1970 Union field
collections:

E-19 East Sadlerochit
E-22 Katakturuk River
E-23 Old Man Creek
E-26 West Shublik
E-29 Mouth Flood Creek

Both Mississippian and Pennsylvanian fossils are recognized,
and these are related to the Mamet zonation whenever possible.

Very truly yours,

WILLIAM R. WALTON

By G. A. Sanderson
G. A. Sanderson

GAS:sd
Attachments
cc w/attachments: G. J. Verville



Amoco Production Company
Tulsa, Oklahoma
June 23, 1971

Re: Smaller Foram and Algal
Identifications,
E-19, East Sadlerochit Section,
Mt. Michelson Quadrangle,
North Slope, Alaska

File: Technical Service No. 5628IR
Locality No. 5560

MEMORANDUM

Examination of 10 thin sections from the outcrop section E-19, East Sadlerochit, Mt. Michelson Quadrangle (T3N, R31E), from the North Slope, Alaska (approximately 850 feet) yielded the following rock types and identifiable biota:

Collection No.

Description and Identifications

FCH-460

Siltstone with much disseminated pyrite?;
BOF.

RF-78

Recrystallized, slightly silty, skeletal
(mainly fenestrate bryozoans) wackestone
with scattered pyrite?; BOF.

RF-71

Skeletal (mainly fusulinids)/oolitic grainstone;
grains either with oolitic coatings or micrite
envelopes and some grains are obviously bored;
fragments of indet. dasyclad? alga (R), beresellid
algal fragments (C), and very rare Stacheoides
and "Asphaltina" fragments; Tetrataxis of the
group T. conica Ehrenberg (2); Apterrinella?
(11); Calcisphaera (6); Tuberitina (2),
Globivalvulina of the group G. bulloides (Brady)
(9); Endothyra of the group E. mosquensis
Reitlinger (7), archaetid fragments (2),
Neoarchaetidiscus (2).

RF-60

Oolitic grainstone with abundant fusulinids;
most of the skeletal grains are oolite nuclei;
indet. dasyclad? algal fragments (VR),

Collection No.

Description and Identifications

- RF-59 Stacheoides (R), "Asphaltina" fragments (VR); Apterrinella? (41), Tuberitina (1); Globivalvulina (4), Endothyra of the group E. mosquensis Reitlinger (10), archaetid fragment (1), Planospirodiscus (1).
- RF-55(1) Slightly silty, oolitic/spicular/skeletal wackestone (areas where oolites are concentrated in abundance have the mud matrix winnowed out); many of the oolites have their outer layers bored and some grains are circumscribed by micrite envelopes; Stacheoides fragments (VR), Girvanella (VR), Apterrinella? (19), indet. forams (7), archaetid fragments (9), Globivalvulina of the group G. bulloides (Brady) (14), endothyrid fragment (1), Neoarchaetid of the group N. incertus Grozdilova & Lebedeva (3), Archaetid of the group A. krestovnikovi Rauser-Chernoussova (1).
- RF-55(2) Altered, silty, pelletoidal, intraclastic, skeletal packstone with very rare "Asphaltina" fragments; indet. forams (23), very small (diameter 104 and 113 microns) Archaetid of the group A. parvus regularis Suleimanov (117), Earlandia (8), Tuberitina (2), small Tetrataxis (1), Planoarchaetid of the group P. minimus? (Grozdilova & Lebedeva) (2).
- RF-54 Partially silicified dolomite with ghosts of skeletal debris; BOF.
- RF-51 Silicified skeletal grainstone? with ghosts of foraminifers; Stacheoides? (VR); fusulinids (5), Tuberitina? (1), endothyrid (1), archaetid (1).
- RF-44 Fine-grained, closely packed skeletal (mainly broken fenestrate bryozoans and crinoids) packstone/grainstone; Calcisphaera (4), Apterrinella? (3), Globivalvulina of the group G.? parva Chernysheva (7), endothyrid fragments (4), palaeotextularid fragment (1), indet. forams (6), archaetid fragments (9), Neoarchaetid (1).
- RF-44 Siltstone; BOF.

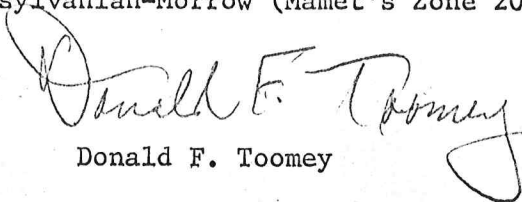
The biota from this section is sparse and very poorly preserved. The Lisburne Group, here at Section E-19, appears to be entirely of Pennsylvanian age.

The biozonation as compared to the sample collections is as follows:

RF-71, 60, 59, 55 - Middle Pennsylvanian-Atoka (Mamet's Zone 21)

RF-54 - Questionable Lower Pennsylvanian-Morrow (Mamet's Zone 20)

RF-51 - Lower Pennsylvanian-Morrow (Mamet's Zone 20)


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma
June 21, 1971

Re: Smaller Foram and Algal
Identifications, E-22,
Katakturuk River,
Sadlerochit Mountains,
North Slope, Alaska

File: Technical Service No. 5631IR
Locality No. 5563

MEMORANDUM

Examination of 8 thin sections from the outcrop section E-22, Katakturuk River, Sadlerochit Mountains, Mt. Michelson Quadrangle (SE $\frac{1}{4}$, T3N, R27E) yielded the following rock types and identifiable biota:

Collection No.

Description & Identifications

RRR-42

Skeletal (mainly bryozoans and crinoids) packstone to grainstone carrying scattered oolites and intraclasts, rare to common Prismopora and common Stacheoides fragments; fusulinids (13), endothyrid fragments (2), Neoarchaediscus (3), archaeodiscid fragments (4); Globivalvulina of the group G. bulloides (Brady) (1); Tetrataxis of the group T. conica Ehrenberg (1), Planospirodiscus (1).

RRR-29

Skeletal (predominantly fenestrate bryozoans and crinoids) grainstone with very rare "Asphaltina" fragments; Monotaxinoides (4), archaeodiscid fragment (1).

RRR-23

Skeletal wackestone with conspicuous patches where the muddy matrix has been winnowed out giving the appearance of a grainstone; Stacheoides fragments (R), Calcisphaera pachysphaerica (2), cf. Archaediscus (1), "Zellerina?" (1); Tuberitina (3), indet. foram fragments (4), small Monotaxinoides? (1), Globivalvulina of the group G.? parva Chernysheva

<u>Collection No.</u>	<u>Description & Identifications</u>
	(2), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (1).
RF-117	Partially silicified spiculite with rare other types of skeletal debris; BOF.
RF-115	Fine-grained, closely packed skeletal (mainly bryozoans and crinoids) packstone with very rare " <u>Asphaltina</u> " fragments; archaeidiscid fragments (4), <u>Archaeidiscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (1), <u>Neoarchaeidiscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (1).
RF-114	Pelletoidal skeletal wackestone with very rare <u>Stacheoides?</u> fragments; indet. forams (2), <u>Tuberitina</u> (2), <u>Calcisphaera pachysphaerica</u> (6), archaeidiscid fragments (23), <u>Archaeidiscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (2), <u>Cornuspira?</u> (1), endothyrid fragment (1).
RF-113	Silicified, pelletoidal, spiculitic grainstone?; BOF.
RF-101	Dolomite with ghost-like pelletoidal? structures; BOF.

The above rock sequence and contained biota would indicate that the E-22 section ranges in age from Middle Pennsylvanian (lower Atoka), Mamet's Zone 21, down to the Mississippian (probably Chester). The biota is too sparse and non-diagnostic within the Mississippian interval to be able to zone it more precisely.

The biozonation as compared to the above collections is as follows:

- RRR-42 Middle Pennsylvanian-lower Atoka (Mamet's Zone 21)
- RRR-29 Lower Pennsylvanian-Morrow (Mamet's Zone 20)
- RRR-23 Could be Lower Pennsylvanian (Morrow), Mamet's Zone 20, or Upper Mississippian (Chester)
- RF-115 Upper Mississippian
- RF-114 Upper Mississippian

Donald F. Toomey

DFT:sd



Amoco Production Company
Tulsa, Oklahoma
June 23, 1971

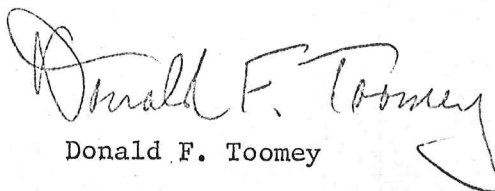
Re: Smaller Foram and Algal
Search, E-23, Old Man Creek
Section, North Slope, Alaska

File: Technical Service No. 5632IR
Locality No. 5564

MEMORANDUM

Examination of two thin sections from the outcrop section E-23, Old Man Creek (Kayak interval), Mt. Michelson Quadrangle (T1N, R32E), from the North Slope, Alaska, failed to yield any identifiable remains. The description of the thin sections is as follows:

<u>Collection No.</u>	<u>Description</u>
RF-130	Black, silty shale; BOF.
RF-125	Highly altered and recrystallized rock; BOF.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma
June 24, 1971

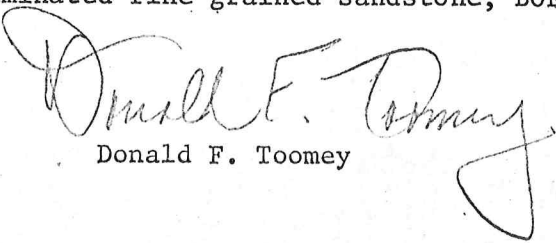
Re: Search for Foram and Algal
Remains, E-26, West Shublik
Section, North Slope, Alaska

File: Technical Service No. 5635IR
Locality No. 5567

MEMORANDUM

Examination of 4 thin sections from the outcrop section E-26, West Shublik, Mt. Michelson Quadrangle (T2N, R26E), North Slope, Alaska failed to reveal any identifiable organic remains. The thin section descriptions are as follows:

<u>Collection No.</u>	<u>Description</u>
CH-84	Dolomite; BOF.
CH-80	Partially laminated siltstone; BOF.
CH-77	Dark silty shale; BOF.
CH-76	Laminated fine-grained sandstone; BOF.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma
June 25, 1971

Re: Smaller Foram and Algal
Identifications, E-29,
Mouth Flood Creek,
North Slope, Alaska

File: Technical Service No. 5623IR
Locality No. 5570

MEMORANDUM

Examination of 8 thin sections from the outcrop section E-29, Mouth of Flood Creek, Sagavanirktó Quadrangle (T4S, R19E), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
CH-116	Silty, partially recrystallized, skeletal (mainly brach fragments) wackestone with very small and poorly preserved (tests corroded) syzranid-type foraminifers (29), indet. foram (1).
CH-111	Partially silicified and recrystallized siltstone with scattered cavities lined with calcite prisms; BOF.
CH-110	Partially silicified, recrystallized, silty, skeletal (bryozoans, brachs, crinoids) wackestone with very poorly preserved syzranids (4), <u>Apterrinella?</u> (3).
CH-109	Recrystallized, partially silicified, silty, skeletal wackestone with some spicules?; BOF.
CH-107	Partially silicified siltstone with a questionable syzranid fragment (1).

<u>Collection No.</u>	<u>Description and Identifications</u>
CH-104	Skeletal grainstone with some grains circumscribed by micrite envelopes and some grains algally? bored; <u>Stacheoides</u> fragments (VR); indet. forams (4); <u>Tuberitina</u> (1), <u>Apterrinella?</u> (13), <u>Globivalvulina</u> of the group <u>G.? parva</u> Chernysheva (1).
CH-103	Skeletal grainstone with some grains circumscribed by micrite envelopes and some grains algally? bored; <u>Stacheoides</u> and " <u>Asphaltina</u> " fragments (VR); <u>Prismopora</u> fragments (VR); <u>Tuberitina</u> (1), <u>Apterrinella?</u> (13).
CH-101	Slightly spicular mudstone; BOF.

The sparse microfauna identified from this section would tend to suggest that this interval is entirely of Pennsylvanian age.

Collections CH-116-107 contain very small poorly preserved syzranid-type foraminifers. I have never seen Syzrania in rocks younger than middle Virgil. Lithologically, this interval resembles the Permian Sadlerochit Formation, but unlike the Sadlerochit it does not contain the characteristic nodosarid foram assemblages.

Collections CH-104/103 are definitely Middle Pennsylvanian (Atoka) age, Mamet's Zone 21.


Donald F. Toomey

DFT:sd



15th

Amoco Production Company

Knapp

Tulsa, Oklahoma
July 9, 1971

Re: Transmittal of Technical Service
5633 IR and 5639 IR.

~~Mr. B. F. Baldwin~~
~~Denver Division~~

Attn: G. F. Stansberry

Dear Sir:

Attached are paleontological memoranda by D. F. Toomey dealing with identifications of small forams and algae in Union Sections E-24, Eagle Creek, and E-31, East Sadlerochit. Both sections were collected by the 1970 North Slope field parties. As in previous instances, the fossils identified are related to Mamet's biozonal scheme whenever possible.

Yours very truly,

WILLIAM R. WALTON

By: *G. A. Sanderson*

G. A. Sanderson

GAS:pkj

cc: G. J. Verville
A. B. Shaw



Amoco Production Company

Tulsa, Oklahoma
July 2, 1971

Re: Smaller Foram and Algal
Identifications, E-24,
Eagle Creek Section, North
Slope, Alaska

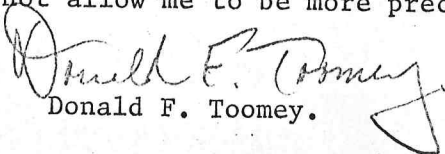
File: Technical Service No. 5633 IR
Locality No. 5565

MEMORANDUM

Examination of 7 thin sections from the outcrop section E-24, Eagle Creek (Ikiakpuk Creek area), Kayak Interval, Mt. Michelson Quadrangle (T1S, R27E), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
CH-64	Recrystallized, stress-reoriented?, pelletal, skeletal wackestone with rare <u>Stacheoides</u> fragments; indet. alga? (VR); very small poorly preserved <u>Parathuramina</u> (12), <u>Diplo-sphaerina</u> cf. <u>D.</u> of the group <u>D. maljavkini</u> (Mikhailov) (2), indet. forams (8), <u>Globoendothyra</u> of the group <u>G. baileyi</u> ? (Hall) (9), <u>Eoendothyranopsis</u> ? (1), cf. <u>Endothyra</u> of the group <u>E. similis</u> Rauser-Chernoussova & Reitlinger (1).
CH-63	Partially silicified, recrystallized, sandy rock; BOF.
CH-59	Silty/sandy, recrystallized, skeletal (crinoids mainly) packstone; <u>Globoendothyra</u> of the group <u>G. baileyi</u> ? (Hall) (3).
CH-58	Dolomitized, skeletal (crinoids mainly) packstone, with a few grains showing algal? borings; BOF.
CH-50	Dolomitized, skeletal (mainly fenestrate bryozoans) wackestone/packstone? with rare <u>Stacheoides</u> ? fragments; BOF.
CH-43	Recrystallized skeletal? rock; BOF.
CH-40	Recrystallized and stress-reoriented? rock; BOF.

The above biota is very poorly preserved (some of the foram specimens appear to be stress-reoriented) but the microfauna from Collection CH-64 and CH-59 are definitely of the Mississippian age. Most probably, both these collections could be placed within the Meramec, although the sparsity and poor preservation does not allow me to be more precise.


Donald F. Toomey.



Amoco Production Company

Tulsa, Oklahoma
July 8, 1971

Re: Smaller Foram and Algal
Identifications, E-31,
East Sadlerochit Section,
Mt. Michelson Quadrangle,
North Slope, Alaska

File: Technical Service No. 5639 IR
Locality No. 5572

MEMORANDUM

Examination of 24 thin sections from the outcrop section E-31, East Sadlerochit Mountains, Mt. Michelson Quadrangle (T4N, R30E), from the North Slope, Alaska yielded the following rock types and biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
RF-166 (8 large thin sections)	Skeletal (mainly broken fenestrate bryozoans and crinoids) grainstone with abundant archaetid and fusulinid Foraminifera along with very rare fragments of beresellid algae, <u>Stacheoides</u> , and "Asphaltina;" <u>Neoarchaetiscus</u> of the group <u>N. incertus</u> Grozdilova & Lebedeva (A), <u>Planospiriodiscus</u> (C), <u>Endothyra</u> of the group <u>E. mosquensis</u> Reitlinger (R), <u>Eolasioidiscus</u> (C), <u>Asteroarchaetiscus</u> ? (VR), <u>Tuberitina</u> (VR), <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady) (R), palaeotextularid fragments (VR), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehrenberg (R), <u>Trepeilopsis</u> (VR), <u>Earlandia</u> (VR), <u>Calcisphaera</u> (VR).
RF-171	Slightly silty, dolomitized, skeletal (mainly bryozoans and crinoids) packstone with <u>Spirorbis</u> and <u>Prismopora</u> fragments; fusulinids (18), indet. forams (8), <u>Tuberitina</u> (2), archaetid fragments (1), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehrenberg (7).
RF-172	Silty, dolomitized, skeletal (mainly fenestrate bryozoans and crinoids) packstone with very rare <u>Stacheoides</u> fragments; fusulinids (7), indet. forams (2), endothyrif fragment (1), <u>Tetrataxis</u> (2).
RF-173	Slightly silty, dolomitized, skeletal (mainly fenestrate bryozoans and crinoids) packstone; indet. forams (4), fusulinids (2).

Collection No.	Description and Identifications
RF-173? (3 large thin sections)	Oolitic packstone/grainstone; some grains circumscribed by micrite envelopes, others extensively algally? bored; <u>Stacheoides</u> fragments (VR); fusulinids (A), <u>Apterrinella?</u> (C), <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady) (R), <u>Neoarchaediscus</u> (VR), <u>Tuberitina</u> (VR), <u>Calcisphaera</u> (R), endothyrid (VR).
RF-174	Slightly silty, dolomitized, skeletal (mainly bryozoans and crinoids) wackestone; indet. forams (4), fusulinids (11), <u>Tetrataxis</u> (1).
RF-179	Oolitic/intraclastic grainstone with some grains circumscribed by micrite envelopes with very rare <u>Cuneiphyucus</u> , <u>Stacheoides</u> , and " <u>Asphaltina</u> " fragments; fusulinids (R-C), <u>Apterrinella?</u> (C), <u>Tuberitina</u> (VR), palaeotextularid fragments (VR), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> Grozdilova & Lebedeva (C), <u>Globoendothyra</u> (VR), <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady), <u>Eolasiiodiscus</u> (VR), <u>Archaediscus</u> of the group <u>A. parvus regularis</u> Suleimanov (R), <u>Planospirodiscus</u> (R), <u>Calcisphaera</u> (VR)
RF-180	Oolitic/intraclastic grainstone with some grains circumscribed with micrite envelopes and with very rare <u>Stacheoides</u> and " <u>Asphaltina</u> " fragments; fusulinids (2), <u>Eolasiiodiscus</u> (1), <u>Endothyra mosquensis</u> Reitlinger (1), <u>Globivalvulina</u> of the group <u>G. bulloides</u> (Brady) (16), archaeidiscid fragments (68), <u>Apterrinella?</u> (125), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> Grozdilova & Lebedeva (8), <u>Tuberitina</u> (3), <u>Planospirodiscus</u> (3).
RF-181	Silificied rock; section too thick.
RF-182	Slightly dolomitized, partially silicified, skeletal (mainly fenestrate bryozoans and crinoids) packstone with very rare <u>Stacheoides</u> and " <u>Asphaltina</u> " fragments; indet. forams (27), fusulinids (4), archaeidiscid fragments (5), palaeotextularid fragments (3), <u>Calcacisphaera</u> (1), small, tightly coiled endothyrid " <u>Zellerina?</u> " (10), <u>Archaediscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernoussova (1), <u>Neoarchaediscus</u> of the group <u>N. incertus</u> Grozdilova & Lebedeva (1), <u>Planospirodiscus</u> (1).
RF-185	Partially silicified, slightly recrystallized skeletal (mainly fenestrate bryozoans and crinoids) packstone with common " <u>Asphaltina</u> " fragments and very rare <u>Stacheoides</u> fragments; indet. forams (4),

Collection No.

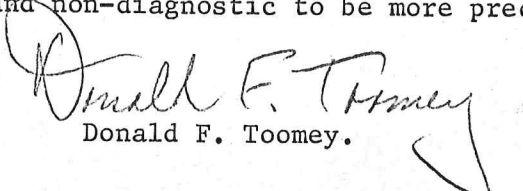
Description and Identifications

- archaediscid fragments (2), Archaediscus of the group A. krestovnikovi Rauser-Chernousova (2), endothyril (1).
- RF-192 Fine-grained, pelletoidal, skeletal (mainly fenestrate bryozoans and crinoids) grainstone with poorly preserved forams; indet. forams (9), archaediscid fragments (10), small Tetrataxis (1), small tightly coiled endothyril "Zellerina"? (1).
- RF-195 Fine-grained, pelletoidal, skeletal (mainly small crinoid ossicles and bryozoan debris) grainstone; indet. forams (13), archaediscid fragments (8), Archaediscus of the group A. krestovnikovi? (2), Calcisphaera (6).

The above rock sequence and contained biota would indicate that the E-31 section ranges in age from Middle Pennsylvanian (Atoka), Mamet's Zone 21, to somewhere in the Upper Mississippian (Chester).

The biozonation as compared to the collections is as follows:

- RF-166 to 173 Middle Pennsylvanian (Atoka), Mamet's Zone 21
RF-179 to 180 Middle or Lower Pennsylvanian (Atoka-Morrow),
Mamet's Zone 21 or 20
RF-182 Lower Pennsylvanian (Morrow), Mamet's Zone 20
RF-185, 192, 195 Mississippian (Chester), biota too sparse
and non-diagnostic to be more precise.


Donald F. Toomey.



*Knapp
File Surface Paleos.*

AKA

Amoco Production Company

Tulsa, Oklahoma
July 13, 1971

Re: Transmittal of Technical
Service Nos. 5642IR and 5643IR.

Mr. B. F. Baldwin
Denver Division

Attn: G. F. Stansberry

Dear Sir:

Attached are paleontological memoranda by D. F. Toomey on small forams and algae recovered from Union Sections E-34, Eastern Brooks Range, and E-37, Clarence River. Both are 1970 field sections, and both are related to the Mamet biozonation where possible.

Yours very truly,

WILLIAM R. WALTON

By: *G. A. Sanderson*
G. A. Sanderson

GAS:pkj

cc: G. J. Verville
A. B. Shaw



Amoco Production Company

Tulsa, Oklahoma
July 13, 1971

Re: Smaller Foram and Algal Identifications, E-34, Eastern Brooks Range, North Slope, Alaska

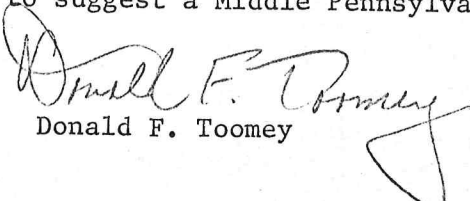
File: Technical Service No. 5642 IR
Locality No. 5575

MEMORANDUM

Examination of 5 thin sections from the outcrop section E-34, eastern Brooks Range, Mt. Michelson Quadrangle (T3N, R32E), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
RRR-92	Slightly skeletal siltstone with much disseminated pyrite and some large indet. algal? fragments; BOF.
RRR-111	Recrystallized, slightly silty, skeletal (mainly broken fenestrate bryozoans and crinoids) packstone with very rare " <u>Asphaltina</u> " and <u>Stacheoides</u> fragments; cf. <u>Eolasiodiscus</u> ? (2), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehrenberg (1).
RRR-112	Recrystallized, slightly silty skeletal wackestone; BOF.
RRR-116	Recrystallized, silty, skeletal (mainly crinoids and fenestrate bryozoans) packstone with a few questionable " <u>Asphaltina</u> " fragments; indet. foram (1).
RRR-119	Recrystallized, slightly silty, skeletal (Mainly crinoids and fenestrate bryozoans) grainstone with what appears to be stressed skeletal grain particles (show flowage) and with very rare <u>Stacheoides</u> and common " <u>Asphaltina</u> " fragments; BOF.

Very little meaningful information has been derived from the above poorly preserved and sparse biota. Collection RRR-111 carries a very sparse biota that would tend to suggest a Middle Pennsylvanian (Atoka) age, probably Mamet's Zone 21.


Donald F. Toomey



Amoco Production Company

Tulsa, Oklahoma
July 13, 1971

Re: Smaller Foram and Algal Identifications, E-37, Clarence River Section, North Slope, Alaska

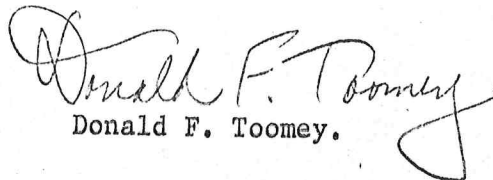
File: Technical Service No. 5643 IR
Locality No. 5579

MEMORANDUM

Examination of 7 thin sections from the outcrop section E-37, Clarence River, Demarcation Quadrangle (T1N, R44E), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
CDB-108	Recrystallized, silty, skeletal wackestone with very rare <u>Stacheoides</u> ?; BOF.
CDB-109	Recrystallized, silty, skeletal (mainly fenestrate bryozoans and crinoids) packstone with very rare " <u>Asphaltina</u> " and questionable <u>Stacheoides</u> fragments; <u>Neoarchaediscus</u> of the group <u>N. incertus</u> (Grozdilova & Lebedeva) (3), archaediscid fragments (4), relatively small <u>Tetrataxis</u> (4).
CDB-111	Recrystallized, slightly silty, skeletal (mainly bryozoans) wackestone; BOF.
CDB-112	Part of thin section can be classified as a recrystallized, slightly silty, skeletal (fenestrate bryozoans and crinoids) packstone with <u>Archaeidiscus</u> of the group <u>A. krestovnikovi</u> Rauser-Chernousova (1), " <u>Zellerina</u> ?" (1); rest of thin section is a silicified, skeletal, sponge spiculite; BOF. Thin section apparently cuts through a lithologic contact.
CDB-113	Recrystallized, intraclastic, skeletal (mainly bryozoans and crinoids) packstone with common " <u>Asphaltina</u> " fragments; indet. foram fragments (2).
CDB-114	Recrystallized, slightly silty, skeletal (bryozoans and crinoids) packstone with common " <u>Asphaltina</u> " fragments; indet. foram fragments (2), archaediscid fragments (4), endothyrid fragments (2), cf. <u>Diplosphaerina</u> (1).
CDB-119	Silty, fine-grained skeletal wackestone with very rare <u>Spirorbis</u> fragments; indet. foram fragment (1), cf. <u>Diplosphaerina</u> (1).

The above biota is really too sparse and consists of non-diagnostic species to be able to give meaningful age determinations. The biota from Collection CDB-109 is possibly of Lower Pennsylvanian age (Morrow-Mamet's Zone 20) and the biota from Collection CDB-112 is probably Mississippian (Chester) in age.


Donald F. Toomey.



ent. Conrad

✓ R 11/67
est.
Amoco Production Company

Tulsa, Oklahoma

August 5, 1971

Re: Transmittal of Technical
Service Nos. 5640IR and 5594IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

We are transmitting herewith two paleontological memoranda by D. F. Toomey dealing with smaller foram and algal identifications from Union Sections E-32 and E-35. Both are North Slope sections collected in 1970.

These two foram reports complete our scheduled work on the 1970 Union field collections, the conodont, fusulinid and megafossil reports having been completed earlier. Our work on the 1970 Amoco collections is also complete except for the foram studies which are now in progress. We anticipate their completion by the end of the summer.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd

Attachments

cc w/attachments: A. B. Shaw
G. J. Verville
Rosie Nash





Amoco Production Company

Tulsa, Oklahoma
August 5, 1971

Re: Smaller Foram and Algal
Identifications, E-32, Carter
Pass, Arctic Quadrangle, North
Slope, Alaska

File: Technical Service No. 5640 IR
Locality No. 5573

MEMORANDUM

Examination of 15 thin sections from the outcrop section E-32, Carter Pass, Arctic Quadrangle (T10S, R26E), from the North Slope, Alaska (approximately 1400 feet) yielded the following rock types and identifiable biota:

Collection No.

Description and Identifications

RF-203
(4 large TX & 1 small TS)

Recrystallized, skeletal (mainly crinoids) grainstone with rare Spirorbis and Stacheoides fragments; "Eoforschia" (R), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebed (diameter-703 microns, n=10) (A), Globoendothyra of the group G. baileyi (Hall) (A), Earlandia of the group E. vulgaris Rauser-Chernousova & Reitlinger (C-A), Parathuramina (VR), Endothyra of the group E. bowmani Phillips (R).

RF-204

Recrystallized, skeletal packstone?; indet. forams (3), Globoendothyra of the group G. baileyi (Hall) (54), Earlandia of the group E. vulgaris Rauser-Chernousova & Reitlinger (26), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebedeva) (3), Endothyra (1)

RF-205

Recrystallized, stress-reoriented?, skeletal packstone?; cf. Tetrataxis? (1), indet. forams (37), Globoendothyra of the group G. baileyi (Hall) (33), Earlandia of the group E. vulgaris Rauser-Chernousova & Reitlinger (8).

RF-208

Slightly recrystallized and silicified, skeletal (mainly crinoids) packstone with common Stacheoides; indet. forams (11), Globoendothyra of the group G. baileyi (Hall) (52), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebedeva) (1).

RF-209
(3 large TS & 1 small TS)

Recrystallized, skeletal (mainly crinoids) packstone with common Stacheoides; "Eoforschia" (C), Globoendothyra of the group G. baileyi (Hall) (A), Earlandia of the group E. vulgaris Rauser-Chernousova & Reitlinger (C), Eoendothyranopsis of the group E. pressa/rara (Groz-dilova in Lebedeva) (R), Parathuramina (VR), Endothyra cf. E. of the group bowmani Phillips (

RF-210

Skeletal (dominantly crinoids) packstone with common Stacheoides; indet. forams (94), Eoendothranopsis of the group E. spiroides (Zeller) (average diameter=550 microns, n=6) (149), Globoendothyra of the group G. baileyi (Hall) (40), Earlandia of the group E. vulgaris Rauser-Chernousova & Reitlinger (13), Parathuramina (

RF-212

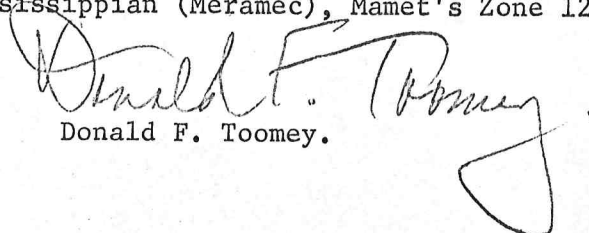
Fine-grained, skeletal wackestone (mainly laminae of sponge? spicules) Earlandia of the group E. elegans Rauser-Chernousova (20), very small Parathuramina? (20).

The above biota is abundant and well preserved and would indicate that section E-32 is entirely of Mississippian age. More specifically, Middle Mississippian (Meramec) age, and would probably range from the upper part of Mamet's Zone 12 into Zone 13.

The biozonation as compared to the collections is as follows:

RF-203, 204, 205, 208, 209, 210 Middle Mississippian (Meramec), Mamet's Zone 13

RF-211, 212 Middle Mississippian (Meramec), Mamet's Zone 12?.


Donald F. Toomey.



Amoco Production Company

Tulsa, Oklahoma
August 5, 1971

Re: Smaller Foram and Algal Identifications,
E-35, East Fork Aichilik River Section,
North Slope, Alaska

File: Technical Service No. 5594IR
Locality No. 5576

MEMORANDUM

Examination of 26 thin-sections from the outcrop section E-35, East Fork Aichilik River, Demarcation Quadrangle (T3S, R40E), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
RRR-175	Recrystallized, slightly silty, skeletal (mainly bryozoans and crinoids) packstone with very rare "Asphaltina" fragments; indet. foram fragments (2), archaediscid fragment (1).
RRR-174	Partially silicified, stress-reoriented?, skeletal (mainly crinoids and bryozoans) packstone with common "Asphaltina" fragments; BOF.
RRR-171A	Skeletal (mainly broken fenestrate bryozoans and crinoids) packstone with very rare <u>Stacheoides</u> ? and "Asphaltina" fragments; indet. foram fragments (4), <u>Endothyra</u> fragment (1).
RRR-168	Recrystallized (dolomitized) rock; BOF.
RRR-159	Skeletal wackestone with rare <u>Stacheoides</u> fragments and abundant foraminifers; <u>Eoendothyranopsis</u> of the group <u>E. pressa/rara</u> (Grozdilova in Lebedeva) (C-A), <u>Endothyranopsis</u> ? fragment (1), <u>Diplosphaerina</u> of the group <u>D. maljavkini</u> (Mikhailov) (R), <u>Parathurammia</u> (C), <u>Globoendothyra</u> of the group <u>B. baileyi</u> (Hall) (C), <u>Calcisphaera</u> (A), <u>Endothyra</u> of the group <u>E. bowmani</u> Phillips (R), <u>Earlandia</u> cf. <u>E. clavatula</u> Howchin (R), <u>Earlandinella</u> (R).

Collection No.

Description and Identifications

RRR-158

Recrystallized, skeletal wackestone/packstone with rare Stacheoides fragments and abundant foraminifers; Earlandia of the group E. elegans Rauser-Chernoussova (A), Parathuramina (VR), Archaediscus of the group A. krestovnikovi Rauser-Chernoussova (VR), Diplosphaerina of the group D. maljavkini (Mikhailov) (C), Globoendothyra (R-C), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebedeva) (C).

RRR-154

Recrystallized (dolomitized) rock with scattered silt/sand sized quartz grains; BOF.

RRR-152

Skeletal (dominantly crinoidal) packstone with common Stacheoides fragments; indet. forams (probably endothyrids) (8), Diplosphaerina (1).

RRR-143

(2 thin-sections)

Thin-section cutting a tabulate coral (lithostrotid-type); in skeletal wackestone between corallites very rare Stacheoides fragments; indet. forams (8), Earlandia of the group E. vulgaris Rauser-Chernoussova & Reitlinger (10), Parathuramina (7), endothyrid fragments (2), poorly preserved Globoendothyra (6).

RRR-147

Recrystallized, skeletal wackestone with sponge spicules and rare Stacheoides fragments; indet. forams (37), Parathuramina (4), Earlandia fragments (37), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebedeva) (2) (dia. 586 and 771 microns), cf. Globoendothyra of the group G. baileyi (Hall) (22).

RRR-146

(2 thin-sections)

Thin-section through a lithostrotid-type tabulate coral; BOF.

RRR-143

(2 thin-sections)

Partially recrystallized, skeletal wackestone/packstone with sponge spicules and abundant foraminifers; Stacheoides fragments (VR), Koninckopora? fragments (VR), fragments of a larger indet. (dasyclad?) alga (R-C); Diplosphaerina of the group D. maljavkina (Mikhailov) (C), Parathuramina of the group P. spinosa Lipina (C), Parathuramina of the group P. dagmarae Suleimanov (R), encrusting Parathuramina (new genus) (VR), Earlandia of the group E. vulgaris Rauser-Chernoussova & Reitlinger (dia. 269 and 158 microns) (A),

Collection No.

Description and Identifications

- Cornuspira (VR), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebedeva) (dia. 410, 520, 626, 661, 688 microns) (R), Earlandinella (R), Eovolutina? (VR), Globoendothyra of the group G. baileyi (Hall) (R), Endothyra of the group E. bowmani? Phillips (VR).
- RRR-142 Recrystallized, skeletal packstone with sponge spicules and relatively abundant foraminifers; Stacheoides and Koninckopora fragments (VR); indet. forams (76), Earlandia fragments (85), Parathurammina of the group P. spinosa Lipina (30), Cornuspira (2), Globoendothyra cf. G. baileyi (Hall) (2), Endothyra (18), Eoendothyranopsis of the group E. pressa/rara (Grozdilova in Lebedeva) (dia. 486, 491, 538, 551, 554, 658, 665 microns (27)).
- RRR-141 Dolomite; BOF.
- RRR-140 Recrystallized, silty, skeletal packstone with indet. algal (dasyclad?) fragments (R), and abundant foraminifers; indet. forams (155), Earlandinella (1), Earlandia of the group E. vulgaris Rauser-Chernoussova & Reitlinger (147), Cornuspira (4), Parathurammina (2), Eoendothyranopsis cf. E. pressa/rara (Grozdilova in Lebedeva) (5), Endothyra cf. E. bowmani? Phillips (23).
- RRR-139 Recrystallized, skeletal (mainly crinoidal) packstone with common Stacheoides fragments and poorly preserved foraminifers; indet. forams (110), Parathurammina (2), Endothyra? (9), Eoendothyranopsis? (1), Earlandia fragments (60), Globoendothyra? (1).
- RRR-138 Skeletal (mainly crinoidal) packstone with poorly preserved forams and common Stacheoides fragments; indet. forams (57), Earlandia fragments (41), Parathurammina (12), Globoendothyra (2), Endothyra? (6).
- RRR-137 Recrystallized, skeletal (dominantly fenestrate bryozoans) packstone with very rare Stacheoides fragments; indet. forams (3).

<u>Collection No.</u>	<u>Description and Identifications</u>
RRR-136	Silicified and dolomitized crinoidal rock with some ghost images of fossil debris; <u>Stacheoides</u> fragments (R); <u>Earlandia</u> (VR), endothyrid fragments (VR).
RRR-134	An altered (recrystallized, silicified, stress-reoriented) skeletal packstone; indet. forams (3).
RRR-130	Recrystallized, partially silicified, skeletal (mainly crinoidal) packstone with abundant <u>Stacheoides</u> ; <u>Endothyra</u> ? (1).
RRR-129	Shale; BOF.
RRR-127	Burrowed, siltstone to fine-grained sandstone; BOF.

Study of the above rock types and contained biota would indicate that Section E-35 is entirely of Mississippian age (Chester to Meramec).

The biozonation as compared to the sample collections is as follows:

RRR-175 to 168, probably Chester (poor microfaunal representation within this interval)

RRR-159 to 130, entirely Meramec, probably ranges from Mamet's Zones 12? to 14?.


Donald F. Toomey

DFT:sd



ch Conrad.

Amoco Production Company

Tulsa, Oklahoma
August 12, 1971

LJK

pm

Re: Transmittal of Technical
Service Nos. 5587IR, 5589IR,
5594IR, 5601IR, and 5602IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

We are transmitting herewith five paleontological memoranda by D. F. Toomey concerning identifications of small forams and algae from the following Alaska sections:

Hanging Glacier Mountain Section
Marshmallow Ridge Section
Lower East Kelly River Section
Monotis Creek Section
Nachramkunga Mountain Section

All are 1970 Amoco field collections, and all the identifiable specimens are of Mississippian age.

Very truly yours,

WILLIAM R. WALTON

By *A. A. Sanderson*
G. A. Sanderson

GAS:sd
Attachments
cc w/attachments: G. J. Verville
A. B. Shaw





Amoco Production Company

Tulsa, Oklahoma

August 10, 1971

Re: Smaller Foram and Algal
Identifications,
Hanging Glacier Mountain Section,
North Slope, Alaska

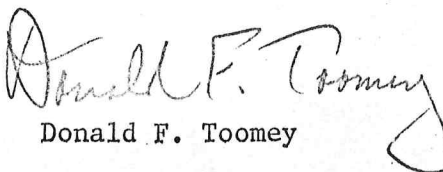
File: Technical Service No. 5587IR
Locality No. 5462

MEMORANDUM

Examination of 4 thin sections from the Hanging Glacier Mountain outcrop section, Wiseman Quadrangle (Long. 150° 45' W., Lat. 67° 53' N.), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
4026-C	Recrystallized, skeletal wackestone with poorly preserved foraminifers; <u>Parathurammina</u> (20), <u>Earlandia</u> (7).
4025-C	Partially recrystallized, skeletal (mainly crinoids and fenestrate bryozoans) grainstone; BOF.
4023-C	Recrystallized, skeletal wackestone? with poorly preserved foraminifers; indet. forams (5); <u>Parathurammina</u> (3); <u>Earlandia</u> ? (1).
4020-C	Skeletal (mainly crinoids and fenestrate bryozoans) grainstone with very rare <u>Stacheoides</u> fragments; some grains appear to be algally? bored; BOF.

The above biota is too sparse and non-diagnostic to be able to say anything beyond that it is of Mississippian age (post-Osage).


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma
August 11, 1971

Re: Smaller Foram and Algal
Identifications,
Marshmallow Ridge Section,
North Slope, Alaska

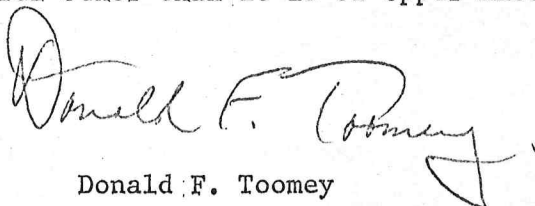
File: Technical Service No. 5589IR
Locality No. 5465

MEMORANDUM

Examination of three thin sections from the upper 200 feet of the Marshmallow Ridge outcrop section, Chandler Lake Quadrangle (SE 1/4 T14S, R5E), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
4014-C	Partially recrystallized, skeletal (crinoid and bryozoans mainly) packstone; <u>Earlandia</u> cf. <u>E. of the group E. elegans</u> Rauser-Chernoussova (21).
4013-C	Skeletal grainstone/packstone with remains of crinoids, bryozoans, brachs, ostracodes and trilobites and with very rare remains of <u>Stacheoides</u> ?; a few skeletal grains have micrite envelopes and appear to be algal? bored; <u>Earlandia</u> (8).
4011-C	Silty, skeletal (dominantly crinoidal) packstone; BOF.

The above biota is too sparse and non-diagnostic to be able to say anything more meaningful other than it is of Upper Mississippian age.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

August 10, 1971

Re: Smaller Foram and Algal
Identifications,
Lower East Kelly River Section,
North Slope, Alaska

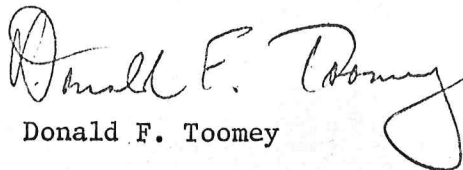
File: Technical Service No. 5594IR
Locality No. 5464

MEMORANDUM

Examination of 5 thin sections from the Lower East Kelly River outcrop section, De Long Mountain Quadrangle (NW 1/4, T34N, R16W), North Slope, Alaska (approximately 1100 feet), yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
2127-C	Partially recrystallized, skeletal (dominantly crinoids and fenestrate bryozoans) grainstone with very rare <u>Stacheoides</u> fragments; many of the crinoid ossicles show calcite overgrowths; <u>Earlandia</u> of the group <u>E. elegans</u> Rauser-Chernoussova (54), indet. forams (15); <u>Endothyra</u> (2), endothyrids (3), <u>Tetrataxis?</u> (2).
2126-C	Encrinite with rare bryozoans and very rare <u>Stacheoides</u> fragments; indet. forams (3).
2124-P,C	Burrowed, and in part laminated, spicular siltstone; BOF.
2121-L,C	Partially silicified, bryozoan/crinoidal packstone with rare <u>Stacheoides</u> fragments; <u>Earlandia</u> of the group <u>E. elegans</u> Rauser-Chernoussova (7), <u>Endothyra</u> (4), endothyrid (4), <u>Globoendothyra?</u> (2).
2119-C	Sponge spiculite; BOF.

The above biota is quite poorly preserved and for the most part sparse and non-diagnostic. The age of this section is definitely Mississippian, probably somewhere within the Meramec.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

August 11, 1971

Re: Smaller Foram and Algal
Identifications,
Monotis Creek Section,
North Slope, Alaska

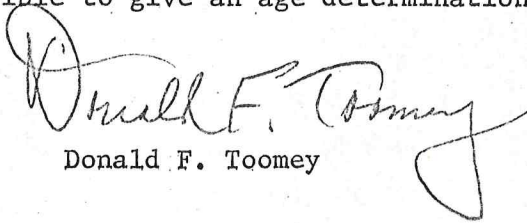
File: Technical Service No. 5601IR
Locality No. 5466

MEMORANDUM

Examination of 4 thin sections from a 150 foot outcrop section at Monotis Creek, central Brooks Range, Chandler Lake Quadrangle (NW 1/4, T13S, R4W), yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
2012-C	Silty, sparingly fossiliferous skeletal wackestone; BOF.
2010-C	Partially silicified, silty, skeletal (dominantly sponge spicules) wackestone/packstone; BOF.
2009-C	Recrystallized skeletal packstone (with many large brach and mollusc fragments, and large sponge spicules); BOF.
2007-C	Skeletal (dominantly sponge spicules) wackestone; BOF.

Since no algae or Foraminifera were encountered in the above thin sections, it is not possible to give an age determination.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

August 12, 1971

Re: Smaller Foram and Algal
Identifications,
Nachramkunga Mountain Section,
Chandler Lake Quadrangle,
North Slope, Alaska

File: Technical Service No. 5602IR
Locality No. 5467

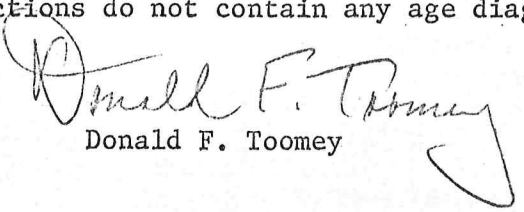
MEMORANDUM

Examination of 3 thin sections from the Nachramkunga Mountain outcrop section, Brooks Range, Chandler Lake Quadrangle (NE 1/4 T15S, R1E), North Slope, Alaska (approximately 2050 feet of section), yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
3007-L,F	Recrystallized skeletal packstone with a few large coral fragments; some skeletal grains are circumscribed by micrite envelopes; indet. forams (52), <u>Parathuramina</u> (8), <u>Earlandia?</u> (4), <u>Globoendothyra?</u> (4), <u>Endothyra</u> (7), " <u>Eoforschia</u> " (19), <u>Eoendothyranopsis</u> of the group cf. <u>E. pressa/rara</u> (Grozdilova in Lebedeva) (26) (diam. 585, 591, 615, 675, 710, 877 microns; average 675 microns, n=5).
3005-C	Recrystallized, skeletal (predominantly crinoids) grainstone with many crinoid ossicles having calcite overgrowths; <u>Earlandia</u> (2).
3003-C	Recrystallized, crinoidal packstone with many crinoid ossicles having conspicuous calcite overgrowths; BOF.

The microfauna from collection 3007-L,F is of Mississippian (Meramec) age. More specifically, this interval can be assigned to Mamet's Zone 13.

The other 2 collections do not contain any age diagnostic elements.


Donald F. Toomey

DFT:sd



ABZ *LH*

Amoco Production Company

Tulsa, Oklahoma
August 18, 1971

W. R. Walton

Re: Transmittal of Technical
Service Nos. 5582IR and
5608IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

Transmitted herewith are two more paleontological memoranda by D. F. Toomey on North Slope small forams and algae. The reports deal with the Upper Alapah Creek and Nasorak Creek Sections--both 1970 Amoco collections. Three additional sections from the 1970 Amoco field party remain to be studied and we anticipate their completion by the end of this month.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*

G. A. Sanderson

GAS:sd

Attachments

cc w/attachments: G. J. Verville
A. B. Shaw





Amoco Production Company

Tulsa, Oklahoma
August 17, 1971

Re: Smaller Foram and Algal
Identifications,
Upper Alapah Creek,
Chandler Lake Quadrangle,
North Slope, Alaska

File: Technical Service No. 5582IR
Locality No. 5457

MEMORANDUM

Examination of 6 thin sections from the Upper Alapah Creek outcrop section, Chandler Lake Quadrangle (NE 1/4, T15S, R5E), North Slope Alaska, yielded the following rocky types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
3051-F	Recrystallized (dolomitized) crinoidal rock with coral fragments; many of the crinoid ossicles show calcite overgrowths; BOF.
3045-F	Skeletal (mainly crinoidal) packstone with conspicuous coral fragments and common foraminifers; indet. forams (many probable Globoendothyrid fragments) (55); <u>Earlandia</u> of the group <u>E. clavatula</u> Howchin (53); <u>Parathurammina</u> (28); <u>Endothyranopsis?</u> (1), new genus of encrusting parathuramminid (1), <u>Globoendothyra</u> (18).
3044-C	Skeletal (mainly crinoids) packstone with conspicuous ostracodes and echinoid spines, and abundant foraminifers; <u>Globoendothyra</u> (R), indet. forams (probably globoendothyrid fragments) (C); <u>Parathurammina</u> of the group <u>P. spinosa</u> Lipina (A); <u>Earlandia</u> of the group <u>E. clavatula</u> Howchin (A); <u>Diplosphaerina</u> of the group <u>D. maljavkini</u> (Mikhailov) (VR), <u>Endothyranopsis?</u> (R); <u>Endothyra</u> (R).

Collection No.

Description and Identifications

3041-C

Recrystallized, skeletal (dominantly crinoids) packstone with very rare Stacheoides fragments; many crinoid ossicles have calcite overgrowths; BOF.

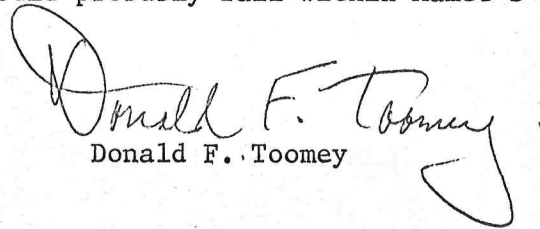
3040-C

Recrystallized (dolomitized) crinoidal rock; BOF.

3038-C

Partially recrystallized, skeletal (mainly crinoids and broken fenestrate bryozoans) grainstone with rare Stacheoides fragments; many crinoid ossicles have calcite overgrowths and a few grains show algal? borings; BOF.

Study of the above widely spaced biota would suggest that the fossiliferous horizons are of Mississippian age. More specifically, collections 3045-F and 3044-C can be assigned to the Meramec Series. Both of these collections would probably fall within Mamet's Zone 13?


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma
August 13, 1971

Re: Smaller Foram and Algal
Identifications,
Nasorak Creek Section,
North Slope, Alaska

File: Technical Service No. 5608IR
Locality No. 5468

MEMORANDUM

Examination of 20 thin sections from a 1200 foot outcrop section at Nasorak Creek (Cape Thompson), Point Hope Quadrangle (NW 1/4, T31N, R31W), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
4142-C	Recrystallized (dolomitized) and partially silicified crinoidal rock; BOF.
4135-C	Very slightly silty, recrystallized (dolomitized) crinoidal rock; BOF.
4134-C	Recrystallized (dolomitized) crinoidal rock; BOF.
4133-C	Recrystallized (dolomitized) crinoidal rock; BOF.
4132-C	Recrystallized (dolomitized) crinoidal rock; BOF.
4131-C	Recrystallized (dolomitized) crinoidal rock; BOF.
4130-C,F	Partially recrystallized, skeletal (mainly crinoids and broken fenestrate bryozoans) grainstone/packstone with very rare <u>Stacheoides</u>

Collection No.

Description and Identifications

- fragments and many crinoid ossicles showing calcite overgrowths; foraminifers are poorly preserved and some tests appear to be mud-filled; indet. foram (20), Earlandia? (5), very poor endothyrids (9); Globoendothyra? (1), Brunsia spp. cf. B. of group B. pulchra Mikhailov and B. of group B. spirillinoides Glebovskaia and Grozdilova (9).
- 4129-C Skeletal (mainly crinoids and broken fenestrate bryozoans) packstone with very rare "Asphaltina" fragments; many crinoid ossicles have calcite overgrowths; foraminifers are poorly preserved and some tests appear to be mud-filled; indet. forams (18), Diplosphaerina? (1), Earlandia (4), poorly preserved endothyrid? (4); Brunsia spp. cf. B. groups pulchra and spirillinoides (13).
- 4128-C Recrystallized, partially silicified, skeletal (mainly crinoids and bryozoans) wackestone/packstone; BOF.
- 4124-C,P Recrystallized, partially silicified, skeletal (mainly crinoids and bryozoans) packstone?; BOF.
- 4123-C,F Partially recrystallized, skeletal (mainly crinoids and bryozoans) packstone with very rare Stacheoides fragments and very poorly preserved foraminifers; indet. forams (12), Earlandia? (8), endothyrid? (2); Diplosphaerina? (3), very small Tetrataxis (2), poorly preserved Brunsia? (6).
- 4122-C,F Partially recrystallized, skeletal (mainly crinoids and bryozoans) wackestone/packstone with very rare "Asphaltina?" fragments and poorly preserved foraminifers; indet. forams (28), Earlandia (17), Tetrataxis (1), Diplosphaerina? (3), Endothyra (7), Brunsia spp. cf. B. groups pulchra and spirillinoides (20).
- 4121-F Thin section through a lithostrotid-type coral; BOF.
- 4119-C Partially recrystallized, skeletal (mainly crinoids and fenestrate bryozoans) wackestone/packstone; indet. forams (8); Diplosphaerina? (1),

Collection No.

Description and Identifications

- Cyclogyra? (3), Tetrataxis of the group T. conica Ehrenberg (2), Brunsia spp. cf. B. of the groups pulchra and spirillinoides (18).
- 4118-C Recrystallized (dolomitized) crinoidal wackestone; BOF.
- 4117-C Recrystallized, skeletal (dominantly crinoids and broken fenestrate bryozoans with a few large coral fragments) packstone; indet. forams (2), Archaeodiscus of the group A. krestovnikovi Rauser-Chernoussova (8).
- 4116-F Thin section through a lithostrotid-type coral; BOF.
- 4114-C Recrystallized, partially silicified, burrowed?, skeletal (dominantly sponge spicules) wackestone; BOF.
- 4113-P,C Recrystallized, partially silicified, skeletal (dominantly sponge spicules with some bryozoans) wackestone; Cyclogyra? (1).
- 4111-F,C Slightly silty, partially recrystallized, skeletal (mainly crinoids and broken fenestrate bryozoans) packstone with very rare Stacheoides fragments; many crinoid ossicles have conspicuous calcite overgrowths; indet. forams (14), Diplosphaerina? (1), small Tetrataxis (2), poor Endothyra (6), Archaeodiscus of the group A. krestovnikovi Rauser-Chernoussova (40), Brunsia spp. cf. B. of the groups B. pulchra and spirillinoides (50).

The above biota (starting with Collection 4130-C,F down to Collection 4111-F,C) is of Mississippian (upper Meramec) age. In the Mamet biozonation this would represent the interval of Zones 14-15, in what Mamet refers to as the "Brunsia Facies".

Donald F. Toomey

DFT:sd



C. L. Conrad

Amoco Production Company

Tulsa, Oklahoma
September 2, 1971

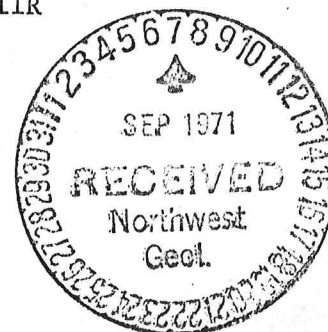
AHL

Re: Transmittal of Technical
Service Nos. 5590IR,
5606IR, and 5611IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:



We are transmitting herewith 3 paleontological memoranda by D. F. Toomey concerning small forams and algae from the Amoco Alaskan field sections listed below.

Upper West Fork Wulik River,
De Long Mountains Quadrangle,
North Slope, Alaska

East Wulik River Section,
De Long Mountains Quadrangle,
North Slope, Alaska

Lower West Fork Wulik River,
De Long Mountains Quadrangle,
North Slope, Alaska

The distribution of these reports completes our study of individual sections from the 1970 Amoco and Union field parties. A summary report synthesizing all the 1970 foram data is being prepared and should be ready for distribution in the near future.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd

Attachments

cc w/attachments: G. J. Verville
A. B. Shaw



Amoco Production Company

Tulsa, Oklahoma

September 1, 1971

Re: Smaller Foram and Algal
Identifications,
Upper West Fork Wulik River,
De Long Mountains Quadrangle,
North Slope, Alaska

File: Technical Service No. 5590IR
Locality No. 5476

MEMORANDUM

Examination of 24 thin sections from the Upper West Fork Wulik River outcrop section, De Long Mountains Quadrangle (NE 1/4, T33N, R20W), North Slope, Alaska, yielded the following rock types and identifiable biota:

Collection No.

Description and Identifications

2090-C

Recrystallized, pelletoidal, skeletal wackestone with abundant foraminifers; indet. forams (55), Earlandia of the group E. elegans Rauser-Chernousova (180), cf. Endothyranopsis of group E. compressa (Rauser-Chernousova & Reitlinger) (32), small Tetrataxis (1), Diplosphaerina (2).

2088-C
(7 thin sect.)

Partially silicified, recrystallized, pelletoidal, skeletal (mainly crinoids but with abundant foraminifers) grainstone/packstone; many crinoid ossicles have calcite overgrowths; very rare Stacheoides fragments; Earlandia of the group E. clavatula Howchin (VA), small Endothyra (C), small Tetrataxis (VR), Diplosphaerina (VR), Cyclogyra (VR).

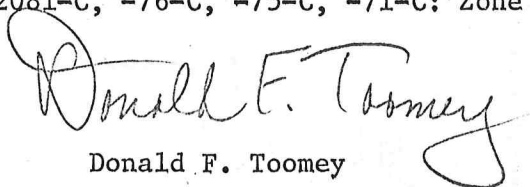
2087-C

Recrystallized, slightly pelletoidal, skeletal (mainly crinoids) grainstone with rare Stacheoides fragments; Earlandia of the group E. clavatula Howchin (53), small Endothyra (9), Tetrataxis of the group T. conica Ehrenberg (11), Diplosphaerina (5).

<u>Collection No.</u>	<u>Description and Identifications</u>
2085-C	Partially recrystallized, pelletoidal, finely broken skeletal (mainly crinoids and bryozoan fragments) packstone with poorly preserved forams and rare <u>Stacheoides</u> fragments; indet. forams (48), <u>Earlandia</u> spp. cf. <u>E. elegans</u> and <u>E. clavatula</u> (51), cf. small <u>Globoendothyra</u> ? (16).
2084-C	Skeletal (mainly crinoids and finely broken debris including bryozoans) packstone with rare <u>Stacheoides</u> fragments and poorly preserved forams; indet. forams (4), <u>Earlandia</u> ? (2), endothyrid? (3), <u>Diplosphaerina</u> (1).
2081-C (8 thin sect.)	Recrystallized, skeletal (mainly crinoids) packstone; cf. <u>Endothyra</u> (R), <u>Earlandia</u> (R), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehrenberg (R), <u>Parathurammina</u> (VR), <u>Diplosphaerina</u> (VR), <u>Globoendothyra</u> cf. <u>Globoendothyra</u> of the group <u>G. baileyi</u> (Hall) (VR).
2076-C (2 thin sect.)	Recrystallized, pelletoidal, skeletal (mainly crinoids) packstone with very rare <u>Stacheoides</u> fragments; <u>Earlandia</u> of group <u>E. clavatula</u> Howchin (C), <u>Globoendothyra</u> cf. <u>Globoendothyra</u> of the group <u>G. baileyi</u> (Hall) (VR), cf. <u>Endothyra</u> (VR).
2075-C	Recrystallized, pelletoidal, skeletal (mainly crinoids) packstone; <u>Endothyra</u> (2), <u>Diplosphaerina</u> (1).
2071-C (2 thin sect.)	Silty, skeletal (mainly crinoids and bryozoans) wackestone/packstone; <u>Eoendothyranopsis</u> ? (VR), <u>Eoforschia</u> ? (VR).

The above biota is of Upper Mississippian (middle Meramec) age and, in the Mamet biozonation, probably ranges from Zones 12 into Zone 13. The collections as compared to the Mamet biozonation are as follows:

Collections 2090-C, -88-C, -87-C, -85-C: Zone 13
Collection 2084-C: Zone 13?
Collections 2081-C, -76-C, -75-C, -71-C: Zone 12.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

September 1, 1971

Re: Smaller Foram and Algal
Identifications,
East Wulik River Section,
North Slope, Alaska

File: Technical Service No. 5606IR
Locality No. 5475

MEMORANDUM

Examination of 9 thin sections from the East Wulik River outcrop section, De Long Mountain Quadrangle (NE 1/4, T34N, R19W), North Slope, Alaska, yielded the following rock types and identifiable biota:

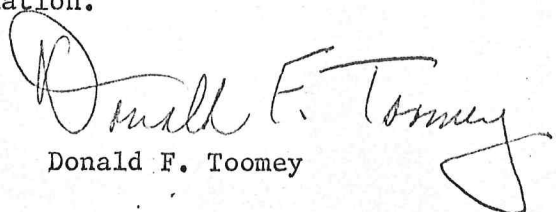
<u>Collection No.</u>	<u>Description and Identifications</u>
2115-C	Laminated, slightly pelletoidal, sponge spiculite; <u>Earlandia?</u> fragments (4).
2114-C	Pelletoidal, skeletal (mainly crinoids), sponge spiculite with poorly preserved foraminifers; <u>Earlandia</u> of the group <u>E. elegans</u> Rauser-Chernoussova (118), small <u>Parathurammina</u> (53), <u>Cyclogyra</u> (3).
2112-C,F	Laminated, partially silicified, skeletal (mainly crinoids) sponge spiculite with rare <u>Stacheoides</u> fragments; BOF.
2111-C	Partially silicified, skeletal (mainly crinoids), sponge spiculite with poorly preserved foraminifers; indet. forams (6); <u>Parathurammina?</u> (1); <u>Earlandia?</u> fragments (19); <u>Cyclogyra?</u> (3).
2109-C	Recrystallized, skeletal (mainly crinoids and bryozoans) packstone with rare <u>Girvanella?</u> fragments and abundant foraminifers; <u>Earlandia</u> of the group <u>E. clavatula</u> Howchin (average dia.

Collection No.

Description and Identifications

- 177 microns) (A); Cyclogyra (R), endothyrid?
cf. Tuberendothyra? (R), Parathuramina (VR),
Diplosphaerina cf. D. maljavkini (Mikhailov)
(VR).
- 2108-C Burrowed, sponge spiculite with much disseminated
pyrite?; Earlandia fragments (6); Parathuramina
(8).
- 2107-C Burrowed, sponge spiculite with finely disseminated
pyrite?; indet. forams (4), Earlandia (6),
Parathuramina (4), Cyclogyra (5).
- 2105-C Laminated, recrystallized sponge spiculite;
indet. foram? (1).
- 2103-C Slightly silty, sponge spiculite with disseminated
pyrite?; BOF.

Most of the biota observed in this sequence is non-diagnostic. If the questionable call of Tuberendothyra? in Collection 2109-C is correct, the age of this sample would be Lower Mississippian (upper Osage), probably Mamet's Zone 8-9. There is also the possibility that the great abundance of Earlandia in both Collections 2114-C and 2109-C, associated with the alga Stacheoides, may be indicative of a lower Meramec age in what Mamet has referred to as the "Earlandia Facies", Mamet's Zone 11. I personally feel that the latter interpretation is perhaps more correct. However, the lack of a diagnostic biota and the abundance of intercalated non-foraminiferal sponge spiculite beds prevents a more definitive age determination.


Donald F. Toomey

DFT:sd



Amoco Production Company

Tulsa, Oklahoma

September 2, 1971

Re: Smaller Foram and Algal
Identifications,
Lower West Fork Wulik River,
De Long Mountains Quadrangle,
North Slope, Alaska

File: Technical Service No. 5611IR
Locality No. 5477

MEMORANDUM

Examination of 8 thin sections from the Lower West Fork Wulik River outcrop section, De Long Mountains Quadrangle (NE 1/4, T33N, R21W), North Slope, Alaska, yielded the following rock types and identifiable biota:

<u>Collection No.</u>	<u>Description and Identifications</u>
2101-C	Recrystallized, skeletal (mainly crinoids and bryozoans) packstone with a few algally? bored grains and poorly preserved foraminifers; indet. forams (6); <u>Brunsia</u> spp. cf. <u>B.</u> of the groups <u>pulchra</u> and <u>spirillinoides</u> (60), <u>Tetrataxis</u> of the group <u>T. conica</u> Ehranberg (3).
2100-C	Recrystallized, skeletal (mainly crinoids and bryozoans) packstone with very rare <u>Stacheoides</u> fragments and poorly preserved foraminifers; a few skeletal grains appear to be algally? bored; indet. forams (9); <u>Brunsia</u> of the group <u>B. pulchra</u> Mikhailov (84), endothyrid? (6), <u>Earlandia</u> (3).
2099-C	Finely broken, skeletal (mainly crinoids and bryozoan fragments) packstone with very rare <u>Stacheoides</u> fragments and abundant foraminifers; some skeletal grains appear to be algally? bored; indet. forams (16); <u>Brunsia</u> of the group

Collection No.

Description and Identifications

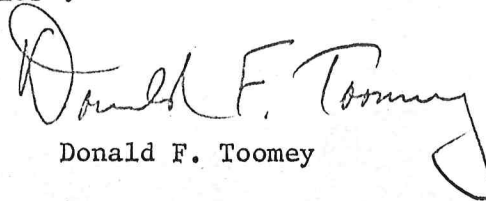
- B. pulchra Mikhailov (233), Archaediscus of the group A. krestovnikovi Rauser-Chernoussova (155), endothyrid (34), Earlandia (12), Globoendothyra (4), Diplosphaerina (1).
- 2098-C Recrystallized, skeletal (mainly crinoids and finely broken bryozoans) packstone with very rare Stacheoides fragments and abundant foraminifers; a few skeletal grains appear to be algally bored; Brunsia of the group B. pulchra Mikhailov (170), Endothyra (30), Earlandia of the group E. clavatula Howchin (38), Tetrataxis of the group T. conica Ehrenberg (6), Diplosphaerina (4), Globoendothyra? (2).
- 2097-C,F Partially silicified, recrystallized, skeletal (mainly crinoids and bryozoans) packstone with rare to common Stacheoides fragments; indet. forams (3), Brunsia of the group B. pulchra Mikhailov (56), endothyrid (2), cf. Endothyranopsis? (2).
- 2096-C Recrystallized, skeletal (mainly crinoids and bryozoan fragments) packstone/wackestone with rare Stacheoides fragments; Brunsia of the group B. pulchra Mikhailov (97), Earlandia of the group E. clavatula Howchin (20), endothyrid (15), Tetrataxis of the group T. conica Ehrenberg (1).
- 2093-C Recrystallized, skeletal wackestone with sponge spicules and very rare Stacheoides fragments; Brunsia of the group B. pulchra Mikhailov (200), poorly preserved endothyrid (40), cf. Endothyranopsis? (3), Earlandia of the group E. clavatula Howchin (40), Parathurammina? (2), Archaediscus of the group A. krestovnikovi Rauser-Chernoussova (5).
- 2091-C Recrystallized, skeletal wackestone with very rare Stacheoides fragments and abundant foraminifers; Endothyranopsis? (16), Brunsia of the group B. pulchra Mikhailov (35), endothyrid (57), Earlandia of the group E. clavatula Howchin (299), Earlandia of the group E. vulgaris Rauser-Chernoussova & Reitlinger (10),

Collection No.

Description and Identifications

Archaediscus of the group A. krestovnikovi
Rauser-Chernoussova (99), Diplosphaerina
(20), Globoendothyra? (3).

The biota from this sequence would indicate that the entire section is of Mississippian (Meramec) age. In the Mamet biozonation this sequence would fall entirely within his Zones 14-15 in what he refers to as the "Brunsia Facies".


Donald F. Toomey

DFT:sd



Handwritten: *R N Walker*

NORTH DISTRICT	
DS	<i>37</i>
NW DG	<i>148</i>
NE DG	
ND GEOPH.	

Handwritten: *File*

Amoco Production Company

Tulsa, Oklahoma
February 19, 1971

Handwritten: *200*

Re: Transmittal of Technical
Service Nos. 5590IR, 5604IR,
5605IR, 5606IR, 5608IR, and
5611IR

Mr. B. F. Baldwin
Denver Division

Attention R. N. Walker

Dear Sir:

Attached are 6 paleontological memoranda concerning the
following 1970 Pan American field collections from Alaska:

Upper West Fork Wulik River Section
Nuka Ridge Section
Nucleus Mountain Section
East Wulik River Section
Nasorak Creek Section
Lower West Fork Wulik River Section

All collections of Lisburne or other potentially fusulinid-bearing formations are being checked routinely for fusulinids. The sections reported above have not been productive of fusulinids, but small Foraminifera have been noted in a number of samples. These will be studied and reported separately by D. F. Toomey. We anticipate that our search for fusulinids will be more productive in sections from the Eastern Brooks Range.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd
Attachments



Amoco Production Company

Tulsa, Oklahoma
February 18, 1971

Re: Fusulinid Age Determinations,
Upper W. Fork Wulik River Section,
DeLong Mtns. Quad.,
Brooks Range, Alaska

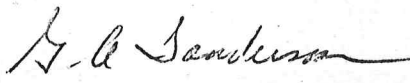
File: Technical Service No. 5590IR
Locality No. 5476

MEMORANDUM

The samples listed below have been checked for fusulinids
with negative results:

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	2063C	1101	No fusulinids present
4	2067C	1101	No fusulinids present
6	2069C	1101	No fusulinids present
7	2071C	1101	No fusulinids present
8	2072C	1101	No fusulinids present
9	2073C	1101	No fusulinids present
10	2075C	1101	No fusulinids present
11	2076C	1101	No fusulinids present
12	2077C	1101	No fusulinids present
13	2078C	1101	No fusulinids present
14	2079C	1101	No fusulinids present
15	2081C	1101	No fusulinids present
16	2082C	1101	No fusulinids present
17	2084C	1101	No fusulinids present
18	2085C	1101	No fusulinids present
20	2087C	1101	No fusulinids present
21	2088C	1101	No fusulinids present
23	2090C	1101	No fusulinids present

Small Foraminifera were noted in several samples. These
will be reported at a later date by D. F. Toomey.


G. A. Sanderson



Amoco Production Company

Tulsa, Oklahoma
February 18, 1971

Re: Fusulinid Age Determination,
Nuka Ridge Section,
Misheguk Mtn. Quad.,
DeLong Mountains, Alaska

File: Technical Service No. 5604IR
Locality No. 5471

MEMORANDUM

The following samples from the Nuka Ridge section were
examined for fusulinids with negative results.

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	3094F	1101	No fusulinids present
2	3093C	1101	No fusulinids present
3	3092C	1101	No fusulinids present
6	3086C	1101	No fusulinids present
7	3085F	1101	No fusulinids present
8	3082F	1101	No fusulinids present
9	3081F	1101	No fusulinids present
10	3080C	1101	No fusulinids present
11	3062F	1101	No fusulinids present
12	3061C	1101	No fusulinids present
14	3059F	1101	No fusulinids present
15	3058F	1101	No fusulinids present
16	3055C	1101	No fusulinids present

G. A. Sanderson
G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
February 18, 1971

Re: Fusulinid Age Determinations,
Nucleus Mountain Section,
Misheguk Mtn. Quad.,
NE 1/4 T11S, R36W,
Brooks Range, Alaska

File: Technical Service No. 5605IR
Locality No. 5470

MEMORANDUM

The samples listed below were examined for fusulinids with negative results.

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	5072F + C	1101	No fusulinids present
2	5071F	1101	No fusulinids present
3	5070C	1101	No fusulinids present
4	5069C	1101	No fusulinids present
5	5065C	1101	No fusulinids present
6	5064C	1101	No fusulinids present
7	5063F	1101	No fusulinids present

G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
February 18, 1971

Re: Fusulinid Age Determinations,
East Wulik River Section,
DeLong Mtn. Quad.,
Brooks Range, Alaska

File: Technical Service No. 5606IR
Locality No. 5475

MEMORANDUM

The samples listed below were examined for fusulinids
with negative results.

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	2103C	1101	No fusulinids present
2	2105C	1101	No fusulinids present
3	2107C	1101	No fusulinids present
4	2108C	1101	No fusulinids present
5	2109C	1101	No fusulinids present
6	2111C	1101	No fusulinids present
7	2112C	1101	No fusulinids present
8	2114C	1101	No fusulinids present
9	2115C	1101	No fusulinids present

G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
February 18, 1971

Re: Fusulinid Age Determinations,
Nasorak Creek Section,
Point Hope Quad.,
NW 1/4 T31N, R31W,
Cape Thompson, Alaska

File: Technical Service No. 5608IR
Locality No. 5468

MEMORANDUM

The following intervals were examined for fusulinids and
found to be barren:

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	4111C + F	1101	No fusulinids present
2	4113C	1101	No fusulinids present
3	4114C	1101	No fusulinids present
5	4116F	1101	No fusulinids present
6	4117C	1101	No fusulinids present
7	4118C	1101	No fusulinids present
8	4119C	1101	No fusulinids present
9	4120F	1101	No fusulinids present
10	4121F	1101	No fusulinids present
11	4122F + C	1101	No fusulinids present
12	4123F + C	1101	No fusulinids present
13	4124C	1101	No fusulinids present
15	4128C	1101	No fusulinids present
16	4129C	1101	No fusulinids present
17	4130C	1101	No fusulinids present
18	4131C	1101	No fusulinids present
19	4132C	1101	No fusulinids present
20	4133C	1101	No fusulinids present
21	4134C	1101	No fusulinids present
22	4135C	1101	No fusulinids present
24	4142C	1101	No fusulinids present

G. A. Sanderson
G. A. Sanderson



Amoco Production Company

Tulsa, Oklahoma
February 18, 1971

Re: Fusulinid Age Determination,
Lower West Fork Wulik River,
DeLong Mountains, Alaska

File: Technical Service No. 5611IR
Locality No. 5477

MEMORANDUM

The following samples were examined for fusulinids with negative results:

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	2091C	1101	No fusulinids present
2	2093C	1101	No fusulinids present
3	2096C	1101	No fusulinids present
4	2097C	1101	No fusulinids present
5	2098C	1101	No fusulinids present
6	2099C	1101	No fusulinids present
7	2100C	1101	No fusulinids present
8	2101C	1101	No fusulinids present

A prolific small foram fauna was noted, which will be studied by D. F. Toomey.

G. A. Sanderson
G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
February 24, 1971

Re: Fusulinid Age Determinations,
Hanging Glacier Mtn. Section,
Wiseman Quad.,
Brooks Range, Alaska

File: Technical Service No. 5587IR
Locality No. 5462

MEMORANDUM

The following samples were examined for fusulinids with negative results.

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	4020C	1101	No fusulinids present
2	4023C	1101	No fusulinids present
3	4025C	1101	No fusulinids present
4	4026C	1101	No fusulinids present

G. A. Sanderson
G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
February 24, 1971


Re: Fusulinid Age Determinations,
Marshmallow Ridge Section,
Chandler Lake Quad.,
SE 1/4 T14S, R5E,
Brooks Range, Alaska

File: Technical Service No. 5589IR
Locality No. 5465

MEMORANDUM

No fusulinids were found in the samples examined. Small Foraminifera were noted, however, and these will be reported separately by D. F. Toomey.

<u>Sample No.</u>	<u>Footage Coll. Nos.</u>	<u>IBM No.</u>	<u>Identification</u>
1	4011C	1101	No fusulinids present
2	4013C	1101	No fusulinids present
3	4014C	1101	No fusulinids present


G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
March 24, 1971


Re: Fusulinid Age Determinations,
Union Section E-23, Old Man Creek,
Mt. Michelson Quadrangle,
Alaska

File: Technical Service No. 5632IR
Locality No. 5564

MEMORANDUM

The two samples listed below yielded no fusulinids.

<u>Sample No.</u>	<u>Footage Coll.</u>	<u>IBM No.</u>	<u>Identification</u>
1	RF-125	1101	No fusulinids present
6	RF-130	1101	No fusulinids present


G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
March 24, 1971

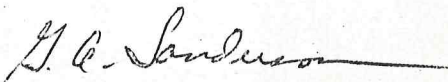
Re: Fusulinid Age Determinations,
Union Section E-22,
Katakturuk River,
Mt. Michelson Quadrangle,
Alaska

File: Technical Service No. 5631IR
Locality No. 5563

MEMORANDUM

The following four samples from the Union E-22 Section
were examined for fusulinids with negative results.

<u>Sample No.</u>	<u>Footage Coll.</u>	<u>IBM No.</u>	<u>Identification</u>
14	RF-114	1101	No fusulinids present
36	RRR-23	1101	No fusulinids present
42	RRR-29	1101	No fusulinids present
55	RRR-42	1101	No fusulinids present


G. A. Sanderson

GAS;sd



Amoco Production Company

Tulsa, Oklahoma

March 24, 1971

Re: Fusulinid Age Determinations,
Union Section E-37, Clarence River,
Demarcation Point Quadrangle,
Alaska

File: Technical Service No. 5643IR
Locality No. 5579

MEMORANDUM

The seven samples listed below have been examined for
fusulinids and found to be barren.

<u>Sample No.</u>	<u>Footage Coll.</u>	<u>IBM No.</u>	<u>Identification</u>
3	CDB-108	1101	No fusulinids present
4	CDB-109	1101	No fusulinids present
6	CDB-111	1101	No fusulinids present
8	CDB-113	1101	No fusulinids present
9	CDB-114	1101	No fusulinids present
14	CDB-119	1101	No fusulinids present
17	CDB-122	1101	No fusulinids present

G. A. Sanderson
G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
March 24, 1971

Re: Fusulinid Age Determinations,
Union Section E-36,
E. Fork Aichilik River,
Demarcation Point Quadrangle,
Alaska

File: Technical Service No. 5595IR
Locality No. 5577

MEMORANDUM

The eleven samples listed below were found to be barren
of fusulinids.

<u>Sample No.</u>	<u>Footage Coll.</u>	<u>IBM No.</u>	<u>Identification</u>
2	CDB-62	1101	No fusulinids present
5	CDB-65	1101	No fusulinids present
6	CDB-66	1101	No fusulinids present
8	CDB-68	1101	No fusulinids present
9	CDB-69	1101	No fusulinids present
11	CDB-71	1101	No fusulinids present
14	CDB-74	1101	No fusulinids present
15	CDB-75	1101	No fusulinids present
16	CDB-76	1101	No fusulinids present
23	CDB-83	1101	No fusulinids present
37	CDB-97	1101	No fusulinids present


G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma
March 24, 1971

Re: Fusulinid Age Determinations,
Upper Alapah Creek Section,
NE 1/4, T15S, R5E,
Brooks Range, Alaska

File: Technical Service No. 5582IR
Locality No. 5457

MEMORANDUM

The following samples were examined and found to be barren of fusulinids. However, abundant endothyrid forams were noted. These will be reported separately by D. F. Toomey.

<u>Sample No.</u>	<u>Footage Coll.</u>	<u>IBM No.</u>	<u>Identification</u>
1	3038C	1101	No fusulinids present
2	3039F	1101	No fusulinids present
3	3040C	1101	No fusulinids present
4	3041C	1101	No fusulinids present
5	3044C	1101	No fusulinids present
6	3045F	1101	No fusulinids present

G. A. Sanderson

GAS:sd



Supper
Calentilary

Amoco Production Company

Tulsa, Oklahoma
May 12, 1971

	NORTH DISTRICT
1	DS <i>W</i>
2	NW DG <i>W</i>
	NE DG
3	ND GEO. L. <i>D. Power</i>

Re: Transmittal of Technical
Service Nos. 5494IR, 5628IR,
5633IR, 5635IR, 5639IR,
5640IR, and 5642IR

Mr. B. F. Baldwin
Denver Division

Attention G. F. Stansberry

Dear Sir:

Attached are seven technical service reports by G. A. Sanderson on fusulinids from 1970 Union surface sections in Alaska. This completes the fusulinid examination of all Amoco and Union 1970 conodont and fossil samples. In areas of specific interest, lithology samples are also being examined for supplementary information, and you will be advised of any significant developments resulting from these studies.

Very truly yours,

WILLIAM R. WALTON

By *G. A. Sanderson*
G. A. Sanderson

GAS:sd

Attachments

cc w/attachments: G. J. Verville
A. B. Shaw



Amoco Production Company

Tulsa, Oklahoma

May 12, 1971

Re: Paleontological Age Determinations,
Union Section E-35, T3S, R40E,
Demarcation Quad., Alaska

File: Technical Service No. 5494IR
Locality No. 5576

MEMORANDUM

Fifteen samples from the Union E-35 Section were examined for fusulinids with negative results. Some forams were observed, however, and these will be reported separately by D. F. Toomey.

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
6	RRR-130	1101	No fusulinids present
9	RRR-133	1101	No fusulinids present
14	RRR-138	1101	No fusulinids present
15	RRR-139	1101	No fusulinids present
16	RRR-140	1101	No fusulinids present
19	RRR-143	1101	No fusulinids present
23	RRR-147	1101	No fusulinids present
28	RRR-152	1101	No fusulinids present
30	RRR-154	1101	No fusulinids present
34	RRR-158	1101	No fusulinids present
35	RRR-159	1101	No fusulinids present
45	RRR-168	1101	No fusulinids present
48	RRR-171	1101	No fusulinids present
52	RRR-175	1101	No fusulinids present
53	RRR-176	1101	No fusulinids present

G. A. Sanderson

G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma

May 12, 1971

Re: Paleontological Age Determinations,
Union Section E-19, T3N, R31E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5628IR
Locality No. 5560

MEMORANDUM

The following fusulinids have been recognized in samples
from Union Section E-19:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
15	RF-44	1101	No fusulinids present
22	RF-51	1101	No fusulinids present
30	RF-59	1101	No fusulinids present?
32	RF-61	4494	<u>Paramillerella</u> sp.?
32	RF-61	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian?
42	RF-71	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
42	RF-71	1422	<u>Pseudostaffella</u> , Lower Pennsylvanian
43	RF-72	1101	No fusulinids present
46	RF-75	1422	<u>Pseudostaffella</u> , Lower Pennsylvanian?
46	RF-75	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
46	RF-75	1129	<u>Millerella</u> sp.
47	RF-76	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
48	RF-77	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
48	RF-77	1422	<u>Pseudostaffella</u> , Lower Pennsylvanian
48	RF-77	4494	<u>Paramillerella</u> sp.
50	RF-79	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
50	RF-79	1422	<u>Pseudostaffella</u> , Lower Pennsylvanian?
50	RF-79	1001	<u>Staffella</u> sp.
50	RF-79	1009	<u>Eochubertella</u> , Atokan?
51	RF-80	1101	No fusulinids present

All of the identifiable fusulinids indicate a Lower Pennsylvanian
(Lower Atokan) age.

G. A. Sanderson
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GAS:sd



Amoco Production Company

Tulsa, Oklahoma
May 12, 1971

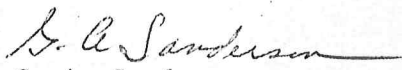
Re: Paleontological Age Determinations,
Union Section E-24, T1S, R27E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5633IR
Locality No. 5565

MEMORANDUM

The six samples listed below have been examined for fusulinids
and found to be barren:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
4	CH-43	1101	No fusulinids present
11	CH-50	1101	No fusulinids present
19	CH-58	1101	No fusulinids present
20	CH-59	1101	No fusulinids present
24	CH-63	1101	No fusulinids present
25	CH-64	1101	No fusulinids present


G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma

May 12, 1971

Re: Paleontological Age Determinations,
Union Section E-26, T2N, R26E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5635IR
Locality No. 5567

MEMORANDUM

The following four samples from Union Section E-26 have been examined for fusulinids with negative results:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
2	CH-76	1101	No fusulinids present
3	CH-77	1101	No fusulinids present
6	CH-80	1101	No fusulinids present
10	CH-84	1101	No fusulinids present

G. A. Sanderson
G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma

May 12, 1971

Re: Paleontological Age Determinations,
Union Section E-31, T4N, R30E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5639IR
Locality No. 5572

MEMORANDUM

The following fusulinids have been recovered from Union
Section E-31:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
17	RF-166	1129	<u>Millerella</u> sp.
17	RF-166	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
17	RF-166	1422	<u>Pseudostaffella</u> , Lower Pennsylvanian?
17	RF-166	1001	<u>Staffella</u> sp.
22	RF-171	1101	No fusulinids present
23	RF-172	1101	No fusulinids present
24	RF-173	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
24	RF-173	1422	<u>Pseudostaffella</u> , Lower Pennsylvanian
24	RF-173	1001	<u>Staffella</u> sp.
25	RF-174	1101	No fusulinids present
30	RF-179	1001	<u>Staffella</u> sp.
30	RF-179	1421	<u>Pseudoendothyra</u> , Lower Pennsylvanian
31	RF-180	1101	No fusulinids present
32	RF-181	1101	No fusulinids present

The fossiliferous horizons listed above contain characteristic Lower Pennsylvanian faunal elements we have recognized in several North Slope wells and Eastern Brooks Range sections and assigned to the Lower Atokan.

G. A. Sanderson

G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma

May 12, 1971

Re: Paleontological Age Determinations,
Union Section E-32, Carter Pass,
T10S, R26E, Arctic Quad., Alaska

File: Technical Service No. 5640IR
Locality No. 5573

MEMORANDUM

The samples listed below have been examined for fusulinids with negative results:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
1	RF-203	1101	No fusulinids present
2	RF-204	1101	No fusulinids present
3	RF-205	1101	No fusulinids present
6	RF-208	1101	No fusulinids present
7	RF-209	1101	No fusulinids present
8	RF-210	1101	No fusulinids present
9	RF-211	1101	No fusulinids present
10	RF-212	1101	No fusulinids present

However, numerous small forams have been noted, which will be identified and reported by D. F. Toomey.

G. A. Sanderson
G. A. Sanderson

GAS:sd



Amoco Production Company

Tulsa, Oklahoma

May 12, 1971


Re: Paleontological Age Determinations,
Union Section E-34, E. Brooks Range,
T3N, R32E, Mt. Michelson Quad., Alaska

File: Technical Service No. 5642IR
Locality No. 5575

MEMORANDUM

The following samples from Union Section E-34 were examined
for fusulinids with negative results:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
2	RRR-92	1101	No fusulinids present
21	RRR-111	1101	No fusulinids present
22	RRR-112	1101	No fusulinids present
26	RRR-116	1101	No fusulinids present
29	RRR-119	1101	No fusulinids present


G. A. Sanderson

GAS:sd

Tulsa, Oklahoma
May 28, 1971

Re: Paleontological Age Determinations,
Union Section E-17, T3N, R25E,
Mt. Michelson Quad., Alaska

File: Technical Service No. 5626IR
Locality No. 5558

MEMORANDUM

The following samples from Union Section E-17 have been examined for fusulinids with the following results:

<u>Sample No.</u>	<u>Footage</u>	<u>IBM No.</u>	<u>Identification</u>
9	FCH-545	1101	No fusulinids present
32	FCH-568	1101	No fusulinids present
34	FCH-570	1101	No fusulinids present
35	FCH-571	1101	No fusulinids present
40	FCH-576	1101	No fusulinids present
45	FCH-581	1101	No fusulinids present
46	FCH-582	1101	No fusulinids present
47	FCH-583	1101	No fusulinids present
48	FCH-584	1101	No fusulinids present
5	FCH-541	1101	No fusulinids present
12	FCH-548	1101	No fusulinids present
15	FCH-551	1101	<u>Millerella</u> sp.
24	FCH-560	1101	<u>Millerella</u> sp.
24	FCH-560	1101	<u>Paramillerella</u>
30	FCH-566	1101	<u>Millerella</u> sp.

Some small Foraminifera were noted, and these will be identified and reported separately by D. F. Toomey. The fusulinids present are primitive forms which occur in both the Late Mississippian and Early Pennsylvanian.


G. A. Sanderson

GAS:pkj