

See Pan Am Black A-7; 18-30N-33W,  
Haskell Co., for full report



**Amoco Production Company**

Denver Region  
Amoco Building  
1670 Broadway  
Denver, Colorado 80202  
303-830-4640

March 23, 1983

Mr. K. David Newell  
KANSAS GEOLOGICAL SURVEY  
1930 Avenue A, Campus West  
University of Kansas  
Lawrence, Kansas 66044

Dear David,

Enclosed are the calcareous microfossil data from Paul Brenckle's work. You received a rough copy of his data in my February letter. This enclosure represents a final copy.

Sincerely,

A handwritten signature in cursive script that reads "Chuck Sawyer".

Chuck Sawyer

CS:dh

Enclosure

*Maune #9*

AMOCO PRODUCTION COMPANY  
Tulsa, Oklahoma  
February 22, 1983

83053ART0078

FILE: Technical Service 825370PS

TO: O. R. Hille, Denver Region

ATTN: C. W. Sawyer

SUBJECT: Calcareous Microfossil Identifications from Mississippian Core,  
Hugoton Embayment, Southwestern Kansas.

Attached is a list of Mississippian calcareous microfossils identified by P. L. Brenckle from nine wells in the Hugoton area. The Kansas Geological Survey supplied all the core for this study with the provision that Amoco provide microfossil identifications for any material used. The enclosed list contains identifications only of literature taxa and no confidential Amoco paleo data are included. Transmission of the identifications to the Kansas Survey would be appropriate.

ERIC R. MICHAELIS

By *Charles F. Upshaw*  
Charles F. Upshaw

PLB:sdg  
Attachment

cc: J. A. Babcock  
L. C. Babcock  
W. S. Davis, Denver Region  
H. R. Lane  
A. R. Ormiston  
J. W. Parks, Denver Region  
R. W. Sherwood, Denver Region

## M. L. Brown Maune No. 9, 31-21S-33W, Finney Co.

<u>Sample (depth in ft)</u>	<u>Identification</u>
4639-40	<u>Endothyra</u> sp., <u>Calcisphaera</u> sp., indet. <u>Aster-oarchaediscinae?</u> , <u>Nodosarchaediscus?</u> sp.
4644-45	<u>Endothyra</u> sp., <u>Pseudoammodiscus?</u> sp., <u>Calcisphaera</u> sp.
4650	<u>Endothyra</u> sp., indet. <u>Archaediscidae</u> , <u>Diplosphaerina</u> <u>inaequalis</u> , <u>Nodasperodiscus</u> sp.
4657	<u>Endothyra</u> sp., " <u>Stacheoides</u> " <u>spissa?</u> , indet. <u>Aoujgaliaceae</u> , <u>Stacheoides</u> sp., <u>Aoujgalia</u> <u>variabilis</u> , <u>Asphaltina?</u> <u>cordillerensis?</u>
4661-62	<u>Endothyra</u> sp., <u>Stacheoides</u> sp., <u>Koninckopora</u> <u>minuta/pruvosti</u> , <u>Tubisalebra?</u> sp., <u>Salebra</u> sp.
4668-69	Barren
4688-89	<u>Endothyra</u> sp., <u>Calcisphaera</u> sp., <u>Diplosphaerina</u> <u>inaequalis</u> .
4753-54	<u>Endothyra</u> sp., indet. <u>Aoujgaliaceae</u> , <u>Eoendothyranopsis</u> sp., <u>Diplosphaerina</u> <u>inaequalis</u> , <u>Stacheoides</u> sp., <u>Archaediscus</u> sp., <u>Nodararchaediscus</u> sp., <u>Stacheoides</u> <u>meandriformis</u> , <u>Koninckopora</u> <u>minuta/pruvosti</u> , <u>Aoujgalia</u> <u>variabilis</u> , indet. <u>Salebridae</u> .

## M. L. Brown Maune No. 11, 32-21S-33W, Finney Co.

<u>Sample (depth in ft)</u>	<u>Identification</u>
4728	<u>Brunsia</u> sp., <u>Planoarchaediscus?</u> sp., <u>Archaediscus</u> sp., <u>Endothyra</u> sp., <u>Asphaltina?</u> <u>cordillerensis?</u> , <u>Globoendothyra</u> sp., <u>Earlandia</u> <u>moderata</u> gp.
4735	<u>Diplosphaerina</u> <u>inaequalis</u> , <u>Endothyra</u> sp., <u>Asphaltina?</u> <u>cordillerensis?</u> <u>Globoendothyra</u> <u>piasae?</u> <u>Earlandia</u> <u>moderata</u> gp., <u>Earlandia</u> <u>vulgaris</u> gp., <u>Rectangulina</u> sp.
4737	<u>Eoendothyranopsis</u> sp., <u>Archaediscus</u> sp., <u>Endothyra</u> sp., <u>Stacheoides</u> <u>tenuis?</u>
4739	indet. <u>Aoujgaliaceae</u> , <u>Nodosarchaediscus</u> sp., <u>Eoendothyranopsis?</u> sp., <u>Archaediscus</u> sp. <u>Endothyra</u> sp.

<u>Sample (depth in ft)</u>	<u>Identification</u>
4692-93	<u>Endothyra</u> sp., <u>Eoendothyranopsis?</u> sp., <u>Archae-discus</u> sp., <u>Nodosarchaediscus</u> sp., <u>Stacheoides meandriformis</u> , <u>Koninckopora minuta/pruvosti</u> .
4696	indet. Endothyridae, indet. Aoujgaliaceae, <u>Eoendothyranopsis?</u> sp., <u>Calcisphaera</u> sp., <u>Diplosphaerina inaequalis</u> , <u>Globoendothyra?</u> sp., <u>Tetrataxis</u> sp.
4699	<u>Proninella</u> sp., <u>Eoendothyranopsis</u> sp., <u>Koninckopora minuta/pruvosti</u> .
4749	<u>Endothyra</u> sp., <u>Asphaltina?</u> <u>cordillerensis?</u> , <u>Proninella</u> sp., <u>Koninckopora minuta/pruvosti</u> , <u>Earlandia clavatula</u> gp., <u>Globoendothyra</u> sp.
4764-65	<u>Endothyra</u> sp., <u>Eoendothyranopsis</u> sp., <u>Diplosphaerina inaequalis</u> , <u>Stacheoides</u> sp., <u>Archae-discus</u> sp., <u>Koninckopora minuta/pruvosti</u> , <u>Epistacheoides</u> sp., <u>Aoujgalia variabilis</u> , <u>Skippella</u> sp., <u>Eoendothyranopsis scitula</u> , <u>Globoendothyra</u> sp.
4766.5	<u>Eoendothyranopsis</u> sp., <u>Archaediscus</u> sp., <u>Diplosphaerina inaequalis</u> , <u>Endothyra</u> sp., <u>Asphaltina?</u> <u>cordillerensis?</u> , <u>Koninckopora</u> sp., <u>Stacheoides meandriformis</u> , <u>Eoendothyranopsis scitula</u> , <u>Koninckopora minuta/pruvosti</u> .
4777	indet. Endothyridae, <u>Pseudoammodiscus?</u> sp., <u>Nodosarchaediscus</u> sp., <u>Eoendothyranopsis?</u> sp., <u>Endostaffella discoidea?</u> , <u>Planoarchaediscus?</u> sp., <u>Calcisphaera</u> sp., <u>Endothyra</u> sp., <u>Koninckopora minuta/pruvosti</u> .

M. L. Brown Maune No. 8, 31-21S-33W, Finney Co.

<u>Sample (depth in ft)</u>	<u>Identification</u>
4732	<u>Endothyra</u> sp., <u>Asphaltina?</u> <u>cordillerensis?</u> , <u>Stacheoides</u> sp., <u>Koninckopora minuta/pruvosti</u> , <u>Globoendothyra</u> sp., <u>Globoendothyra piasae?</u> , <u>Koninckopora tenuiramosa?</u>
4739.5	indet. Endothyridae, <u>Calcisphaera</u> sp., <u>Archae-discus</u> sp., <u>Endothyra</u> sp., <u>Earlandia clavatula</u> gp., <u>Earlandia moderata</u> gp., <u>Tubisalebrea?</u> sp.

*P. [unclear] sp. [unclear]*

ROUND DRAFT  
FINAL WILL BE SENT AS IT BECOMES FINAL

AMOCO PRODUCTION COMPANY  
Tulsa, Oklahoma  
February 21, 1983

DRAFT 30520214

FILE: T.S. 825370PS

TO: C. F. Upshaw

SUBJECT: Calcareous Microfossils in Mississippian Core from the Hugoton Embayment, Southwestern Kansas

The following calcareous microfossils were found in Hugoton Mississippian cores supplied to us by the Kansas Geological Survey. The Denver Southern Division will forward these identifications to the Survey as part of our agreement for <sup>their</sup> use ~~of the cores~~. The ages of most of these microfossils have been outlined in my memorandum of November 18, 1982, and discussed at the Hugoton Core Evaluation meeting in Denver on December <sup>9-</sup> 10. Since the meeting, samples from the previously unstudied M.L.B. Maune 9 have been processed and supplemental thin sections made from the Pan Am Block <sup>d</sup> A-7 and S.W. Maune 4 wells. Identifications from all these new samples are included in this report.

Sample (depth in ft)	Identification
Pan Am Block A-7, 18-30N-33W, Haskell Co. 5501	indet. Endothyridae, indet. Aoujgaliaceae, indet. Archaediscidae, <u>Asphaltina?</u> <u>cordillerensis?</u> , <u>Stacheoides tenellus?</u> , <u>Stacheoides</u> , sp., <u>Pronipnella</u> sp., indet. Dasyclad <sup>d</sup> aceae. <sup>^</sup>

Proprietary Statement

S  
M. L. Brown Maune No. 8, 31-21~~8~~-33W, Finney Co.  
A

<u>Sample (depth in ft)</u>	<u>Identification</u>
4732	<u>Endothyra</u> sp., <u>Asphaltina?</u> <u>cordillerensis?</u> , <u>Stacheoides</u> sp., <u>Koninckopora minuta/pruvosti</u> , <u>Globoendothyra</u> sp., <u>Globoendothyra</u> <del>piasae?</del> <del>piasae?</del> , <u>Koninckopora tenuiramosa?</u>
4739.5	indet. Endothyridae, <u>Calcisphaera</u> sp., <u>Archaeodiscus</u> sp., <u>Endothyra</u> sp., <u>Earlandia clavatula</u> gp., <u>Earlandia moderata</u> gp., <u>Tubisalebra?</u> sp.

S  
M. L. Brown Maune No. 9, 31-21~~8~~-33W, Finney Co.  
A

<u>Sample (depth in ft)</u>	<u>Identification</u>
4639-40	<u>Endothyra</u> sp., <u>Calcisphaera</u> sp., indet. <u>Aster-oarchaediscinae?</u> , <u>Nodosarchaediscus?</u> sp.
4644-45	<u>Endothyra</u> sp., <u>Pseudoammodiscus?</u> sp., <u>Calcisphaera</u> sp.
4650	<u>Endothyra</u> sp., indet. <u>Archaeodiscidae</u> , <u>Diplosphaerina</u> , <u>inaequalis</u> , <u>Nodasperodiscus</u> sp.
4657	<u>Endothyra</u> sp., " <u>Stacheoides</u> " <u>spissa?</u> , indet. <u>Aoujgaliaceae</u> , <u>Stacheoides</u> sp., <u>Aoujgalia</u> <u>variabilis</u> , <u>Asphaltina?</u> <u>cordillerensis?</u>

A



11. M.L. Brown

C NW NE 31-21S-33W

#9 A. Maune

Mississippian 4639-4689; 4705-4755

Core Available In: 31 Three-Foot Boxes

Condition: Whole Core

With Plugs Taken at Various

Intervals

Coverage: Complete

NOTES: 13 Samples (for  $\phi$ , k, Srw, Sro) taken from 4639'-4689';

24 samples taken from 4705'-4755'.

RECEIVED 20th Oct 1982  
TO BE RELEASED TO PUBLIC FILES  
20th October, 1984

October 13, 1982

K. C. Sawyer  
R. W. Sherwood  
Norcal Building

The purpose of this memorandum is to report the results on the palynology samples collected from the following cores. Tom Hemler will report separately on the thermal maturation values for the same samples.

M. L. BROWN  
#9 A. Maune  
31-21S-33W  
Finney Co., Kansas

Depth (uncorrected)

4647'  
4653'  
4655' All four samples barren of palynomorphs.  
4657'

Some amorphous kerogen is present in the samples at 4647', 4653' and 4657'; however, these samples fall within the range of early generation for hydrocarbons.

CITIES SERVICE  
#1 Kell "B"  
5-28S-34W  
Haskell Co., Kansas

Depth (uncorrected)

5620'  
5624' Samples very poor - barren of palynomorphs.

ANADARKO  
#2 Davidson C  
9-33S-40W  
Morton Co., Kansas

Depth (uncorrected)

5796'  
5797'  
5812' All samples barren of palynomorphs.  
5834'

Some amorphous kerogen is present in the sample at 5812', and falls within

January 31, 1983

Palynological analysis has been completed on the following seven cores from the Kansas Geological Survey collection. The sample interval and raw data listings per sample are provided as previously requested. As analyses on the other cores are completed, similar data will be provided to the Kansas Geological Survey

  
Carol Ann Dawson

CAD/df

K. C. Sawyer

Shallow Water Refining  
#4 Maune  
31-21S-33W  
Finney Co., Kansas

Sample depth

Species present

4629'

Densosporites spinosus Dybova & Jachowicz 1957  
Laevigatosporites minor Loose 1934  
Granulatisporites sp. (Ibrahim) Potonié &  
Kremp 1954  
Calamospora sp. Schopf, Wilson, Bentall 1944  
Densosporites sphaerotriangularis Kosanke 1950  
Lycospora pellucida (Wicher) Schopf, Wilson,  
Bentall 1944  
Lophotriletes sp. (Naumova) Potonié & Kremp 1954  
Lycospora rotunda Bharadwaj 1957  
Costatascyclus crenatus Felix & Burbridge 1967  
Cristatisporites indignabundus (Loose) Staplin  
& Jansonius 1964  
Acanthotriletes sp. (Naumova) Potonié &  
Kremp 1954  
Raistrickia saetosa (Loose) Schopf, Wilson,  
Bentall 1944  
Potoniesporites sp. Bharadwaj 1954  
Florinites sp. Schopf, Wilson, Bentall 1944  
Crassispora kosankei (Potonié & Kremp)  
Bharadwaj 1957  
Densosporites variabilis (Waltz) Potonié &  
Kremp 1955  
Densosporites intermedius Butterworth &  
Williams 1958  
Dictyotriletes bireticulatus (Ibrahim) Smith &  
Butterworth 1967  
Cirratriradites saturni (Ibrahim) Schopf,  
Wilson, Bentall 1944

4634'

Densosporites sphaerotriangularis Kosanke 1950  
Densosporites triangularis Kosanke 1950  
Densosporites intermedius B. & W. 1958  
Cristatisporites indignabundus (L.) S. & J. 1964  
Cingulizonates bialatus (Waltz) Smith &  
Butterworth 1967  
Lycospora pellucida (W.) S.W.B. 1944  
Potoniesporites elegans (Wilson & Kosanke)  
Habib 1966  
Densosporites irregularis Hacquebard & Barss  
1957

Sample depth

Species present

4638'

Lycospora pellucida (W.) S.W.B. 1944  
Reinchozpora triangularis (Kosanke) Ravn 1979  
Dictyotriletes bireticulatus (I.) S.W.B. 1944  
Densosporites intermedius B. & W. 1958  
Schopfipollenites ellipsoides (Ibrahim)  
Potonié & Kremp 1954  
Granulatisporites sp. (I.) P. & K. 1954  
Acanthotriletes sp. (N.) P. & K. 1954  
Florinites visendus (Ibrahim) Schopf, Wilson,  
Bentall 1944  
Cingulizonates bialatus (W.) S. & B. 1967  
Potoniesporites sp. Bharadwaj 1954  
Densosporites irregularis H. & B. 1957  
Crassispora kosankei (P. & K.) Bharadwaj 1957  
Lophotriletes sp. (N.) P. & K. 1954  
Knoxisporites dissidius Neves 1961  
Trinidulus diamphidios Felix & Paden 1964  
Calamospora sp. S.W.B. 1944  
Radiizonates striatus (Knox) Staplin &  
Jansonius 1964  
Savitrissporites nux (Butterworth & Williams)  
Smith & Butterworth 1967  
Densosporites sphaerotriangularis Kosanke 1950  
Densosporites spinosus D. & J. 1957  
Raistrickia saetosa (L.) S.W.B. 1944  
Foveosporis avcinni Ravn & Fitzgerald 1982  
Waltzispota polita (Hoffmeister, Staplin  
Malloy) Smith & Butterworth 1967  
Triquitrites cf. angulatus Kosanke 1950  
Secarisporites remotus Neves 1961  
Lycospora rotunda Bharadwaj 1957  
Densosporites anulatus (Loose) Smith &  
Butterworth 1967  
Ahrensissporites guerickei var. ornatus Neves  
1961  
Colatisporites decorus (Bharadwaj & Vankatachala)  
Williams in Neves et al., 1973

4639'

Lycospora pellucida (W.) S.W.B. 1944  
Densosporites intermedius B. & W. 1958  
Murospora dupla (Ishchenko) Playford 1962  
Cingulizonates bialatus (W.) S. & B. 1967  
Densosporites spinosus D. & J. 1957  
Calamospora sp. S.W.B. 1944  
Crassispora Kosankei (P. & K.) Bharadwaj 1957  
Cristatisporites indignabundus (L.) S. & J. 1964  
Schopfipollenites ellipsoides (I.) P. & K. 1954  
Acanthotriletes sp. (N.) P. & K. 1954  
Knoxisporites dissidius Neves 1961  
Lophotriletes sp. (N.) P. & K. 1954

Sample depthSpecies present

4639' (Cont.)

Colatisporites decorus (B. & K.) W. in Neves  
et al., 1973  
Granulatisporites sp. (I.) P. & K. 1954  
Waltzispota polita (H.S.M.) S. & B. 1967  
Densosporites irregularis H. & B. 1957  
Alatisporites pustulatus (Ibrahim) Ibrahim 1933  
Dictyotriletes bireticulatus (I.) S.W.B. 1944  
Densosporites sphaerotriangularis Kosanke 1950  
Densosporites anulatus (L.) S. & B. 1967  
Raistrickia saetosa (L.) S.W.B. 1944  
Triquitrites cf. angulatus Kosanke 1950  
Trinidulus diamphidios F. & P. 1964  
Florinites visendus (I.) S.W.B. 1944  
Lycospora rotunda Bharadwaj 1957

4646'

Lycospora pellucida (W.) S.W.B. 1944  
Foveosporis avcinni Ravn & Fitzgerald 1982  
Granulatisporites sp. (I.) P. & K. 1954  
Raistrickia saetosa (L.) S.W.B. 1944  
Potoniesporites novicus Bharadwaj 1954  
Cingulizonates bialatus (W.) S. & B. 1967  
Densosporites sphaerotriangularis Kosanke 1950  
Densosporites anulatus (L.) S. & B. 1967  
Lycospora rotunda Bharadwaj 1957  
Waltzispota polita (H.S.M.) S. & B. 1967  
Trinidulus diamphidios F. & P. 1964  
Cristatisporites indignabundus (L.) S. & J. 1964  
Densosporites intermedius B. & W. 1958  
Crassispora kosankei (P. & K.) Bharadwaj 1957  
Remysporites eccentricus Mishell  
Ibrahimisporites brevispinosus Neves 1961  
Densosporites spinosus D. & J. 1957  
Radiizonates striatus (K.) S. & J. 1964  
Colatisporites decorus (B. & K.) W. in Neves  
et al. 1973  
Cirratriradites saturni (I.) S.W.B. 1944  
Mooreisporites trigallerus Neves 1961

4647'

Lycospora pellucida (W.) S.W.B. 1944  
Cingulizonates bialatus (W.) S. & B. 1967  
Densosporites spinosus D. & J. 1957  
Densosporites anulatus (L.) S. & B. 1967  
Acanthotriletes sp. (N.) P. & K. 1954  
Knoxisporites dissidius Neves 1961  
Colatisporites decorus (B. & K.) W. in Neves  
et al., 1973  
Granulatisporites sp. (I.) P. & K. 1954  
Densosporites sphaerotriangularis Kosanke 1950  
Calamospora sp. S.W.B. 1944  
Densosporites irregularis H. & B. 1957

Sample depthSpecies present

- 4647' (Cont.) Ibrahimisporites brevispinosus Neves 1961  
Lophotriletes sp. (N.) P. & K. 1954  
Densosporites variabilis (W.) P. & K. 1956  
Schulzospora sp. Kosanke 1950  
Triquitrites cf. angulatus Kosanke 1950  
Ahrensia guerickei var. ornatus Neves 1961  
Lycospora rotunda Bharadwaj 1957  
Nexuosporites comtus Felix & Burbridge 1967  
Lycospora noctuina Butterworth & Williams 1958
- 4657' Savitrisporites nux (B. & W.) S. & B. 1967  
Calamospora sp. S.W.B. 1944  
Granulatisporites sp. (I.) P. & K. 1954  
Ahrensia guerickei var. ornatus Neves 1961  
Lophotriletes sp. (N.) P. & K. 1954  
Densosporites irregularis H. & B. 1957  
Densosporites spinosus D. & J. 1957  
Densosporites variabilis (W.) P. & K. 1956  
Cirratriradites saturni (I.) S.W.B. 1944  
Densosporites triangularis Kosanke 1950  
Savitrisporites asperatus Sullivan 1964  
Foveosporis avcinni R. & F. 1982  
Radiizonates striatus (K.) S. & J. 1964  
Murospora dupla (I.) P. 1962  
Densosporites sphaerotriangularis Kosanke 1950
- 4730' Savitrisporites nux (B. & W.) S. & B. 1967
- 4736' Barren of palynomorphs
- 4773' Barren of palynomorphs

CAD/mlt  
020783  
RPT096

M. L. Brown  
#9 A. Maune  
31-21S-33W  
Finney Co., KS

Sample Depth

Interpretation

4647' }  
4653' }  
4655' }  
4657' }

All samples barren of palynomorphs.

AMOCO PRODUCTION COMPANY  
Tulsa, Oklahoma  
February 11, 1983

83042ART0110

TO: K. C. Sawyer, Denver

SUBJECT: Processing of Conodont Samples - Deep Hugoton Project

The following wells associated with the deep Hugoton project have been processed for conodonts. This memorandum serves as a summary of my work on this project to date. Appropriate information contained herein may be extracted at your discretion and sent to the Kansas Geological Survey in fulfillment of our agreement with them to provide conodont identifications.

Footage	Sample No.	Taxon No.	Conodont	Count
4633-34	1	3078	<u>Adetognathus lautus</u>	1
4671-72	2	0501	Barren of conodonts	
4689	3	0501	Barren of conodonts	
4699-4700	4	2618	Indet. conodont	1
4709-10	5	2618	Indet. conodont	1
4720-21	6	2618	Indet. conodonts	2
4637-38	7	2868	<u>Apatognathus sp.</u>	1
		4510	<u>Ligonodina levis</u>	2
4764-65	8	2618	Indet. conodont	1

\*Age determined by DZ from core.

6. Locality 12442 M. L. Brown No. 9 Maune. Sec 31, T21S, R33W, Finney Co., Kansas

Footage	Sample No.	Taxon No.	Conodont	Count
4639-40	6	23360	<u>Taphrognathus-</u>	1
			<u>Cavusgnathus transition</u>	
		2727	<u>Spathognathodus scitulus</u>	1
4644-45	7	2618	Indet. conodonts	10
4650	1	2618	Indet. conodonts	7
4658	2	2828	<u>Cavusgnathus unicornis</u>	1
		2827	<u>Cavusgnathus altus</u>	1
4661	10	0501	Barren of conodonts	
4705	13	0501	Barren of conodonts	
4719-20	14	0501	Barren of conodonts	
4725	3	2827	<u>Cavusgnathus altus</u>	1
		2828	<u>Cavusgnathus unicornis</u>	2
		2846	<u>Ozarkodina laeviposticus</u>	1
4727-28	15	2868	<u>Apatognathus sp.</u>	1
4743-44	16	2618	Indet. conodonts	2
4748.5	4	2826	<u>Cavusgnathus sp.</u>	1
		2868	<u>Apatognathus sp.</u>	2
		2727	<u>Spathognathodus scitulus</u>	1
		2741	<u>Spathognathodus scitulus</u>	1
		4489	<u>Magnilaterella sp.</u>	2
4753-54	17	4489	<u>Magnilaterella sp.</u>	2
		2618	Indet. conodonts	3
4753.5-55	5	2618	Indet. conodonts	4

M.L. BROWN - 9 NAJUE  
 FINNEY CO, KANSAS 31-215-35W

