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Mai Oil Operations Inc.  
Denker #9  
NE-NE-SW-SW (1097' FSL & 1018' FWL)  
Section 10-22s-12w  
Stafford County, Kansas

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**5 1/2" Production Casing Set**

**Contractor:** Southwind Drilling Co. (rig #3)  
**Commenced:** July 30, 2019  
**Completed:** August 6, 2019  
**Elevation:** 1865' K.B., 1863' D.F., 1856' G.L.  
**Casing program:** Surface; 8 5/8" @ 650'  
Production, 5 1/2" @ 3719'  
**Sample:** Samples saved and examined 2800' to the Rotary Total Depth.  
**Drilling time:** One (1) foot drilling time recorded and kept 2800' to the Rotary Total Depth.  
**Measurements:** All depths measured from the Kelly Bushing.  
**Drill Stem Tests:** There were four (4) Drill Stem Tests ran by Trilobite Testing Co.  
**Electric Log:** By Eli; Dual Induction, Compensated Density/Neutron and PE and Micro Log.

<u>Formation</u>	<u>Log Depth</u>	<u>Sub-Sea Datum</u>
Anhydrite	648	+1217
Base Anhydrite	669	+1196
Heebner	3146	-1281
Toronto	3163	-1298
Douglas	3177	-1312
Brown Lime	3278	-1413
Lansing	3291	-1426
Base Kansas City	3519	-1654
Conglomerate	3541	-1676
Viola	3554	-1689
Simpson Shale	3600	-1735
Simpson Sand	3632	-1767
Arbuckle	3654	-1789
Rotary Total Depth	3720	-1855
Log Total Depth	3718	-1853

(All tops and zone(s) corrected to Electric Log Measurements)

**SAMPLE ANALYSIS, SHOWS OF OIL, TESTING DATA, ETC.**

**TOPEKA SECTION**

3044-3054' Limestone, cream, tan; scattered vuggy porosity, dead black stain; no show of free oil and faint odor.

**TORONTO SECTION**

3163-3173' Limestone, cream, tan, fossiliferous, poor visible porosity; trace brown stain, no show of free oil and no odor.

**DOUGLAS SECTION**

3177-3182' Sand, gray; fine grained, sub-rounded; micaeous, friable in part, trace black stain, no show of free oil and no odor in fresh samples.

**LANSING SECTION**

3291-3300' Limestone, tan, brown; finely crystalline, poor visible porosity; slightly cherty; dense.

3301-3310' Limestone, cream, white, finely crystalline; slightly chalky, scattered vuggy type porosity; trace light brown stain, show of free oil and faint odor in fresh samples.

3324-3330' Limestone, cream, white; fossiliferous, oomoldic; slightly chalky, poorly developed vuggy and oomoldic porosity; poor brown spotty stain; show of free oil and faint odor in fresh samples.

3338-3344' Limestone, gray fossiliferous, chalky in part; poor to fair pinpoint type porosity; show of free oil and strong odor in fresh samples.

**Drill Stem Test #1** **3284-3360**

**Times:** 30-30-45-60

**Blow:** Strong

**G.T.S.** 1 ½ min gas gauged as follows

**Initial Flow**

10 min	652,000	cfgpd
20 min	610,000	cfgpd
30 min	598,000	cfgpd

**Final Flow**

10 min	596,500	cfgpd
20 min	551,400	cfgpd
30 min	530,900	cfgpd
40 min	526,600	cfgpd
45 min	526,500	cfgpd

**Recovery:** 558 gas cut muddy water

**Pressures:** ISIP 405 psi  
FSIP 391 psi  
IFP 333-278 psi  
FFP 280-287 psi  
HSH 1628-1559 psi

3371-3375' Limestone, cream, white, fossiliferous, chalky, poor visible porosity; trace black stain; no free oil and no odor in fresh samples.

3378-3384' Limestone, tan, brown; finely crystalline, dense; poor porosity, no shows.

- 3384-3410' Limestone, white, cream, tan, fossiliferous; scattered vuggy type porosity, trace brown stain; weak show of free oil and questionable odor in fresh samples.
- 3426-3434' Limestone, cream, white, fine to medium crystalline, scattered pinpoint porosity; black and golden brown stain and saturation, no show of free oil faint odor in fresh samples.
- 3444-3451' Limestone, tan, cream; finely crystalline; slightly chalky; fair pinpoint type porosity; black and golden brown stain and saturation, show of free oil and faint odor in fresh samples.
- 3458-3474' Limestone, white; oomoldic, good oomoldic and vuggy type porosity; dark brown to black stain; show of free oil and faint odor.
- 3488-3492' Limestone, cream, fossiliferous, few oomoldic; fair to good porosity, dark brown stain, show of free oil and faint odor in fresh samples.

**Drill Stem Test #2** **3418-3503**

**Times:** 30-30-45-60

**Blow:** Strong; gas to surface in 3 mins

**G.T.S. Gauged as follows**

**Initial Flow**

10 min	235,840	cfgpd
20 min	238,200	cfgpd
30 min	235,100	cfgpd

**Final Flow**

10 min	270,690	cfgpd
20 min	265,070	cfgpd
30 min	241,940	cfgpd
40 min	235,840	cfgpd
45 min	233,170	cfgpd

**Recovery:** 45' mud  
 124' oil and gas cut muddy water  
 (20% gas; 20% oil; 30% water; 40% mud)  
 310' very heavily oil cut muddy water  
 (20% gas; 40% oil; 30% water; 10% mud)

**Pressures:** ISIP 754 psi  
 FSIP 799 psi  
 IFP 183-146 psi  
 FFP 166-172 psi  
 HSH 1795-1668 psi

**VIOLA SECTION**

- 3550-3570' Chert; white; gray; boney; few tripolitic; scattered porosity, trace black stain, no free oil, no odor in fresh samples.
- 3570-3580' Chert; as above.
- 3580-3600' Chert; white; cream, gray; boney; poor visible porosity; black edge staining; no show of free oil and no odor in fresh samples.



**SIMPSON SECTION**

3632-3635' Sand, gray, dark brown; medium grained; poorly developed porosity, trace gray to black stain; no show of free oil and no odor in fresh samples.

**ARBUCKLE SECTION**

3654-3659' Dolomite, tan, fine and medium crystalline, scattered vuggy and inter-crystalline type porosity; trace brown stain and saturation; show of free oil, good show of gas bubbles and strong odor in fresh samples.

**Drill Stem Test #3** **3585-3659**

**Times:** 30-30-45-60

**Blow:** Strong

**Recovery:** 620' gas in pipe  
310' oil and gas cut mud  
(45% gas; 20% oil; 15% water; 20% mud)  
124' oil and gas cut water  
(40% gas; 10% oil; 30% water; 20% mud)  
434' slightly oil cut muddy water  
(5% gas; 5% oil; 80% water; 10% mud)

**Pressures:** ISIP 1033 psi  
FSIP 1028 psi  
IFP 58-222 psi  
FFP 223-394 psi  
HSH 1786-1740 psi

3659-3661' Dolomite, as above; good inter-crystalline porosity, good stain and saturation, fair to good show of free oil and good odor in fresh samples.

**Drill Stem Test #4** **3655-3661**

**Times:** 30-30-45-60

**Blow:** Strong

**Recovery:** 605' gas in pipe  
15' clean oil  
186' oil and gas cut water  
(60% gas; 10% oil; 20% water 10% mud)  
124' oil and gas cut water  
(40% gas; 10% oil; 50% water)  
434' slightly oil cut muddy water  
(5% gas; 10% oil; 85% water)

**Pressures:** ISIP 1062 psi  
FSIP 1063 psi  
IFP 46-159 psi  
FFP 173-340 psi  
HSH 1840-1734 psi

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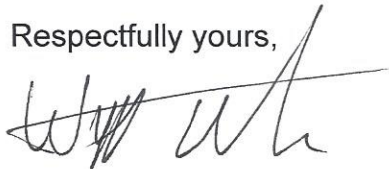
3661-3670'	Dolomite, tan, white; sucrosic; fair porosity, brown stain, no show of free oil and faint odor in fresh samples.
3670-3700'	Dolomite, white; medium crystalline; poor to fair inter-crystalline porosity; dark black stain; no free oil and no odor; plus white oolitic chert.
3700-3710'	Dolomite, tan, medium crystalline; few sucrosic; good inter-crystalline porosity; light brown stain, trace of free oil and faint odor.
3710-3720'	Dolomite, tan, buff; cherty in part, poor porosity; no show and strong sulfuric odor in fresh samples.

**Rotary Total Depth: 3720**  
**Log Total Depth: 3718**

**Recommendations:**

5 ½" production casing was set and cemented on the Mai Oil Operations, Inc., Denker #9

Respectfully yours,



Wyatt Urban  
Petroleum Geologist