

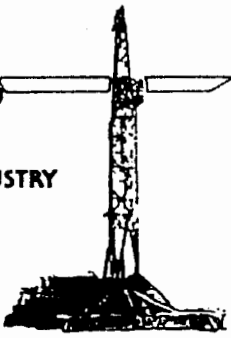
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GOOLSBY-BROTHERS
and associates, Inc.

CONSULTING GEOLOGISTS TO THE ENERGY INDUSTRY
Oil & Gas-Coal

1645 Court Place, Suite 303
Denver, CO 80202
(303) 893-1718



ORIGINAL

RELEASED

DEC 26 2000

CONFIDENTIAL

FROM CONFIDENTIAL

GEOLOGICAL WELLSITE REPORT

MAXX PRETOLEUM, LTD
BURIED HILLS PRODUCTION COMPANY

Maxx Antrim-Cossman #1 HZ

SUP SW/4 Section 7, T21S, R22W

BHLS NW/4 Section 18, T21S, R22W
Hodgeman County, Kansas

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Mathew D. Goolsby
Jeffrey R. Barkley

Consulting Geologists

RECEIVED
KANSAS CORPORATION COMMISSION

OCT 13 1997

CONSERVATION DIVISION
WICHITA, KS

7-215-2212

ORIGINAL

WELL DATA

RELEASED

APR 26 2000

FROM CONFIDENTIAL

OPERATOR: Maxx Petroleum LTD
(Buried Hills Production Co).

WELL NAME: Maxx Antrim-Cossman #1 HZ

LOCATION: Surface: 214' FSL, 1140 FWL (S/2 SW) Section 7, T21S,
R22W, Hodgeman County, Kansas
Bottom Hole Location: 2124' FNL, 1142' FWL, (S/2 NW/4)
Sec. 18, T21S R22W

FIELD: West Wieland (Mississippian Osage)

ELEVATION: 2264 feet GL, 2276.4 feet KB

ROAD DIRECTIONS: From Ness City, south 13 miles (one mile south of Hodgeman
county line) on US 283. East 7 miles, south 1 mile, west 0.1
mile into location

DRILLING CONTRACTOR: Nabors Drilling, Rig 296
TOOLPUSHER: Murray Becker, Bill Brown

GEOLOGICAL WELLSITE SUPERVISION: Goolsby Brothers & Assoc., Inc.
GEOLOGIST: Mathew D. Goolsby & Jeffrey R. Barkley

MUD ENGINEERING: Baker Hughes Inteq
PROGRAM: Water/Flocel Surface, Gel-Chem 2200' - 4803'', Bio-Lose
4803' to total depth

GEOPHYSICAL LOGGING: None

DIRECTIONAL DRILLING: Sperry Sun
MWD: Sperry Sun

HOLE SIZE: 12 1/4" to 638', 8 3/4" to 4803', 6 1/8" to total depth

SURFACE CASING: 9 5/8" to 629', 7" @ 4803'

SPUD DATE: 15 June 1997

DATE TD REACHED: 7 July 1997

SAMPLE PROGRAM: 10 ft intervals 4300' to total depth.

TOTAL DEPTH: 6447' Driller

BOTTOM HOLE FORMATION: Mississippian Osage

WELL STATUS: Probable Osage oil producer.

REMARKS: TVD @ TD: 4382.78 ft (-2106.4)

DAILY DRILLING REPORT

7:00 A.M, Depths

Spud well June 15 at 0530

Day No.	Date	Depth	Feet Made	Rotating Hours
1	6/15	41	41	1 ½
2	6/16	602	561	10
3	6/17	638	36	½
4	6/18	638	0	0
5	6/19	638	0	0
6	6/20	1022	384	3
7	6/21	2271	1249	15 ¾
8	6/22	2567	296	5 ¼
9	6/23	2787	220	6 ¾
10	6/24	3516	729	20 ¾
11	6/25	3748	232	6 ½
12	6/26	4231	483	13 ½
13	6/27	4296	65	3
14	6/28	4302	0	0
15	6/29	4461	159	8.75
16	6/30	4581	120	11.0
17	7/01	4685	104	13.75
18	7/02	4803	118	9.75
19	7/03	4803	0	0
20	7/04	4822	19	.75
21	7/05	5425	603	19
22	7/06	5837	412	12.75
23	7/07	6408	571	18.25
24	7/08	6447 (TD)	39	2

MUD RECORD

DEPTH	WT	VIS	WL	PV	GEL	YP	pH	CHLOR
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Water & Native Mud to about 2200', then start water-floc

2271	8.3	29	--				8.5	29K
2567	8.3	29	--				7.0	20K
2787	8.4	29	--				7.0	
3516	8.4	29	--				7.0	68K
3748	8.4	29	--				9.0	82K
4231	9.1	29	--				7.0	87K
4296	9.3	32	--				8.0	--
4461	9.4	28	104				7.0	83K
4590	9.3	36	100	5	16/16	20	7.0	75K
4707	9.2	42	105	7	20/22	28	7.0	67K
4803	9.5	52	-	10	24/28	46	7.0	62K
4810	8.5	28	11.2	2	0/1	2	8.4	6K
5489	8.6	36	6.0	8	1/1	6	8.4	6.2K
5844	8.6	36	5.6	9	1/1	4	8.3	5.8K
6421	8.6	34	6.0	6	0/1	4	7.0	5.7K

BIT DATA

NO.	MAKE	TYPE	SIZE	DEPTH	FEET	HOURS	REMARKS
				OUT	MADE	RUN	
1A	STC	FDJS	12 1/4	638	638	11 1/2	
1	RTC	HP11	8 3/4	2271	1633	18 3/4	
2	HTC	GT520	8 3/4	2567	296	5 1/4	LOST CONES
3	RTC	HP51X	8 3/4	3748	1181	34	
4	RTC	HP51X	8 3/4	4594	846	35 3/4	
5	HTC	6T520	8 3/4	4803	209	21 1/2	
1HZ	RTC	EHP53A	6 1/8	5837	1034	32 1/2	
2HZ	RTC	EHP53A	6 1/8	6447	610	20.25	

DEVIATION SURVEYS

DEPTH	DRIFT	DEPTH	DRIFT
127	3/4	219	1/2
404	1	496	1 1/2
622	1	691	3/4
1052	1	1353	1/2
1654	3/4	1960	1/2
2271	1	2503	1
2707	1	3051	1
3346	3/4	3727	3 3/4

For Additional Surveys See Attached Sperry-Sun Data

FORMATION TOPS

Elevations calculated using a KB elevation of 2276.4 feet.

Tops are from MWD Gamma Tool

Intervals above the Heebner not logged by MWD

FORMATION	MEASURED DEPTH	TVD	SUB-SEA	VERTICAL SECTION
<u>PENNSYLVANIAN</u>				
Heebner	3745	3745	-1468.6	16.5
Toronto	3770	3770	-1493.6	17.5
Lansing Group	3804	3803	-1526.6	21
Bonner Spgs Shale	3878.5	3876	-1599.6	36
Base Kansas City	4160.5	4128	-1851.6	159
Marmaton Group	4197	4158	-1881.6	180
Pawnee	4291	4234	-1957.6	232.5
Ft. Scott	4415	4321	-2044.6	323
Cherokee Shale	4449	4341	-2064.6	351
Cherokee Limestone	4463	4348	-2071.6	362
<u>MISSISSIPPIAN</u>				
Osage	4655	4393.5	-2117.1	547

ORIGINAL

MIN. CURVATURE CALCULATIONS (SPE-3362)

OPERATOR: Maxx Petroleum
 WELL: Antrim-Cossman #1 HZ
 LOCATION: Hodgeman County, Kansas

START: 35605.00
 FINISH:
 Tool Lengt 53 ft

PROP. DIRECTION 180.00

SURV NUM	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100	SUB-SEA AT TVD
TIE IN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	670.82	1.10	348.90	670.78	6.32	-1.24	-6.32	0.16	1605.62
3	1169.54	0.60	71.50	1169.46	11.85	0.32	-11.85	0.24	1106.94
4	1668.26	0.00	22.50	1668.17	12.67	2.79	-12.67	0.12	608.23
5	2166.90	0.90	151.90	2166.79	9.22	4.64	-9.22	0.18	109.61
6	2651.20	0.60	151.50	2651.05	3.64	7.64	-3.64	0.06	-374.65
7	3126.97	2.00	142.50	3126.68	-5.14	13.88	5.14	0.30	-850.28
8	3690.00	0.60	164.50	3689.55	-15.78	20.65	15.78	0.26	-1413.15
9	3729.27	0.40	157.90	3728.82	-16.10	20.76	16.10	0.53	-1452.42
10	3761.02	2.50	172.30	3760.56	-16.89	20.89	16.89	6.66	-1484.16
11	3792.70	6.00	174.10	3792.15	-19.22	21.15	19.22	11.05	-1515.75
12	3824.42	10.00	174.30	3823.55	-23.61	21.60	23.61	12.61	-1547.15
13	3856.16	14.50	178.20	3854.56	-30.33	22.00	30.33	14.41	-1578.16
14	3887.88	17.70	179.00	3885.04	-39.12	22.21	39.12	10.11	-1608.64
15	3919.70	20.90	179.40	3915.06	-49.64	22.35	49.64	10.07	-1638.66
16	3951.54	22.60	186.10	3944.64	-61.40	21.76	61.40	9.44	-1668.24
17	3983.24	24.00	185.70	3973.75	-73.88	20.47	73.88	4.44	-1697.35
18	4014.95	26.30	185.10	4002.46	-87.29	19.21	87.29	7.30	-1726.06
19	4046.75	27.40	188.10	4030.83	-101.55	17.55	101.55	5.49	-1754.43
20	4078.55	29.20	181.30	4058.83	-116.56	16.34	116.56	11.60	-1782.43
21	4110.23	31.60	188.30	4086.17	-132.50	14.97	132.50	13.50	-1809.77
22	4141.96	33.70	189.50	4112.88	-149.41	12.31	149.41	6.93	-1836.48
23	4173.00	34.20	188.20	4138.63	-166.54	9.65	166.54	2.84	-1862.23
24	4205.49	35.60	184.80	4165.28	-185.01	7.55	185.01	7.38	-1888.88
25	4243.38	36.50	187.34	4195.91	-207.17	5.19	207.17	4.60	-1919.51
26	4275.08	38.10	184.60	4221.13	-226.28	3.20	226.28	7.27	-1944.73
27	4306.96	40.40	182.90	4245.82	-246.40	1.89	246.40	7.96	-1969.42
28	4338.74	43.50	181.80	4269.45	-267.62	1.03	267.62	10.02	-1993.05
29	4370.54	46.90	181.40	4291.86	-290.18	0.40	290.18	10.73	-2015.46
30	4402.44	49.70	180.90	4313.07	-313.99	-0.08	313.99	8.86	-2036.67
31	4432.96	53.60	181.00	4332.01	-337.91	-0.48	337.91	12.78	-2055.61
32	4464.66	58.60	180.40	4349.68	-364.21	-0.79	364.21	15.85	-2073.28
33	4496.51	64.90	179.10	4364.75	-392.26	-0.66	392.26	20.10	-2088.35
34	4528.31	71.30	179.00	4376.61	-421.74	-0.17	421.74	20.13	-2100.21
35	4560.17	77.80	180.00	4385.09	-452.43	0.09	452.43	20.62	-2108.69
36	4591.85	83.10	179.20	4390.34	-483.66	0.31	483.66	16.91	-2113.94
37	4623.61	87.30	179.70	4393.00	-515.30	0.62	515.30	13.32	-2116.60

38	4655.33	90.80	179.50	4393.53	-547.01	0.84	547.01	11.05	-2117.13
39	4686.95	92.70	179.40	4392.56	-578.61	1.14	578.61	6.02	-2116.16
40	4718.66	93.40	178.00	4390.87	-610.27	1.86	610.27	4.93	-2114.47
41	4750.39	94.40	179.40	4388.71	-641.92	2.58	641.92	5.41	-2112.31
42	4769.68	95.10	179.40	4387.12	-661.14	2.78	661.14	3.63	-2110.72
43	4801.41	95.40	179.40	4384.21	-692.73	3.11	692.73	0.95	-2107.81
44	4833.11	93.80	179.80	4381.67	-724.33	3.33	724.33	5.20	-2105.27
45	4864.75	91.80	179.60	4380.13	-755.93	3.50	755.93	6.35	-2103.73
46	4896.42	90.00	180.20	4379.63	-787.59	3.55	787.59	5.99	-2103.23
47	4928.24	88.10	179.30	4380.16	-819.41	3.69	819.41	6.61	-2103.76
48	4959.97	88.30	178.50	4381.15	-851.12	4.30	851.12	2.60	-2104.75
49	4991.74	89.90	179.20	4381.65	-882.88	4.94	882.88	5.50	-2105.25
50	5023.40	90.40	178.60	4381.57	-914.53	5.54	914.53	2.47	-2105.17
51	5055.04	90.80	178.40	4381.24	-946.16	6.37	946.16	1.41	-2104.84
52	5086.81	90.50	179.00	4380.88	-977.92	7.09	977.92	2.11	-2104.48
53	5118.52	90.00	178.60	4380.74	-1009.62	7.76	1009.62	2.02	-2104.34
54	5150.81	90.10	178.90	4380.71	-1041.90	8.46	1041.90	0.98	-2104.31
55	5181.81	89.50	179.20	4380.82	-1072.90	8.97	1072.90	2.16	-2104.42
56	5213.51	89.70	179.20	4381.04	-1104.59	9.42	1104.59	0.63	-2104.64
57	5245.29	90.50	179.10	4380.98	-1136.37	9.89	1136.37	2.54	-2104.58
58	5277.16	89.50	179.60	4380.98	-1168.24	10.25	1168.24	3.51	-2104.58
59	5308.82	87.80	178.20	4381.73	-1199.88	10.86	1199.88	6.96	-2105.33
60	5340.54	87.20	178.00	4383.11	-1231.55	11.91	1231.55	1.99	-2106.71
61	5372.26	87.10	179.20	4384.69	-1263.22	12.68	1263.22	3.79	-2108.29
62	5404.01	88.00	179.10	4386.05	-1294.94	13.15	1294.94	2.85	-2109.65
63	5435.74	88.80	179.60	4386.93	-1326.65	13.51	1326.65	2.97	-2110.53
64	5467.45	89.00	180.30	4387.54	-1358.36	13.54	1358.36	2.30	-2111.14
65	5499.10	88.40	180.90	4388.26	-1390.00	13.21	1390.00	2.68	-2111.86
66	5530.76	88.40	180.90	4389.15	-1421.64	12.71	1421.64	0.00	-2112.75
67	5562.73	89.80	180.20	4389.65	-1453.61	12.41	1453.61	4.90	-2113.25
68	5594.48	90.60	181.20	4389.54	-1485.35	12.02	1485.35	4.03	-2113.14
69	5626.26	90.80	181.10	4389.15	-1517.12	11.38	1517.12	0.70	-2112.75
70	5658.00	90.20	179.20	4388.87	-1548.86	11.30	1548.86	6.28	-2112.47
71	5689.75	89.70	180.00	4388.90	-1580.61	11.52	1580.61	2.97	-2112.50
72	5721.56	90.00	179.80	4388.98	-1612.42	11.57	1612.42	1.13	-2112.58
73	5753.21	90.10	180.40	4388.95	-1644.07	11.52	1644.07	1.92	-2112.55
74	5784.81	90.40	181.40	4388.82	-1675.66	11.02	1675.66	3.30	-2112.42

74	5784.81	90.40	181.40	4388.82	-1675.66	11.02	1675.66	3.30	-2112.42
75	5816.60	90.70	180.70	4388.51	-1707.45	10.44	1707.45	2.40	-2112.11
76	5848.30	91.40	180.90	4387.93	-1739.14	10.00	1739.14	2.30	-2111.53
77	5879.90	91.20	181.10	4387.21	-1770.73	9.45	1770.73	0.89	-2110.81
78	5911.69	91.70	181.30	4386.41	-1802.50	8.78	1802.50	1.69	-2110.01
79	5943.43	92.60	181.40	4385.22	-1834.21	8.03	1834.21	2.85	-2108.82
80	5975.04	92.50	182.10	4383.81	-1865.77	7.07	1865.77	2.23	-2107.41
81	6006.79	91.00	181.70	4382.84	-1897.49	6.02	1897.49	4.89	-2106.44
82	6038.53	89.80	182.00	4382.62	-1929.21	4.99	1929.21	3.90	-2106.22
83	6070.23	88.70	181.80	4383.04	-1960.89	3.94	1960.89	3.53	-2106.64
84	6101.81	89.40	182.50	4383.56	-1992.44	2.76	1992.44	3.13	-2107.16
85	6133.54	89.60	182.70	4383.84	-2024.14	1.32	2024.14	0.89	-2107.44
86	6165.20	88.80	181.00	4384.28	-2055.78	0.29	2055.78	5.93	-2107.88
87	6196.98	89.70	180.30	4384.69	-2087.55	-0.07	2087.55	3.59	-2108.29
88	6228.80	89.60	180.30	4384.89	-2119.37	-0.23	2119.37	0.31	-2108.49
89	6260.50	90.10	180.00	4384.97	-2151.07	-0.32	2151.07	1.84	-2108.57
90	6292.20	90.00	180.10	4384.94	-2182.77	-0.34	2182.77	0.45	-2108.54
91	6323.93	90.00	179.50	4384.94	-2214.50	-0.23	2214.50	1.89	-2108.54
92	6355.62	90.70	178.60	4384.75	-2246.18	0.29	2246.18	3.60	-2108.35
93	6387.32	91.20	178.90	4384.22	-2277.87	0.98	2277.87	1.84	-2107.82
94	6394.00	91.40	179.10	4384.07	-2284.55	1.10	2284.55	4.23	-2107.67
TD	6447.00	91.40	179.10	4382.78	-2337.53	1.93	2337.53	0.00	-2106.38

SAMPLE DESCRIPTIONS

SAMPLES DESCRIBED FROM LAGGED SAMPLES CAUGHT BY RIG HANDS
SAMPLE QUALITY FAIR ALTHOUGH CUTTINGS VERY SMALL IN SIZE

- 4300 – 4310 LS (60%), buff, lt gy, tan, mudst & wkst, scat for frags, most hd & dns, sme w/ p intgran por, sme dolic, 30% lt yel pred mnrl flor, slo wk mlky cut. 40% sh & ss cvgs
- 4310 – 4320 LS (60%), similar to above w/ 40% lt yel pred mnrl flor. 40% cvgs, pred Permian red sh & ss
- 4320 – 4330 LS (50%) pred buff & lt gy, mudst & wkst as above w/ slo wk mlky cut, pred p vis por. SH (10%), dk gy to blk, hd, blk, v carb. 40% cvgs
- 4330 – 4340 LS (40%) pred buff & lt gy, mudst & wkst as above w/ slo wk mlky cut, pred p vis por. SH (10%), dk gy to blk, hd, blk, v carb. 50% cvgs
- 4340 – 4350 LS (60%) buff, v lt tan, off-wh, mudst & wkst, sme w/ scat fos frags, sme dolic, most hd & dns, tr w/ p intxl por, 40% w/ lt yel pred mnrl flor, slo wk mlky yel cut flor. SH (10%), m-dk gy, mnrl blk, hd, most v carb. 40% cvgs, mostly Permian red sh & sd
- 4350- 4360 LS (60%) similar to above, 60% w/ lt yel pred mnrl flor, slo wk mlky yel cut, most dns w/ p vis por. SH (10%) as above. 30% cvgs
- 4360 – 4370 LS (60%) v lt gy, v lt tan, buff, mudst & wkst, com scat fos frags, cln to sl arg, sme dolic, most hd & dns, tr w/ p vis intxl por, 60% w/ lt yel pred mnrl flor, slo wk mlky yel cut. SH (10%) m-dk gy, hd, blk, carb. 30% cvgs, mostly red Permian sh & sd
- 4370 – 4380 LS (50%) similar to above. SH (20%) m to dk gy, hd, sbply, most carb. 30% cvgs
- 4380 – 4390 LS (60%) similar to above. SH (10%) as above. 30% cvgs
- 4390 – 4400 LS (50%) lt-m gy, off-wh, buff, pred mudst, hd, sme v arg, dns, v p vis por, tr lt yel pred mnrl flor, n significant cut. SH (20%) as above, 30% cvgs
- 4400 – 4410 SH (30%) m-dk gy, sme blk, hd, fis to sbply, carb. LS (40%), lt-m gy, mudst, most sl-mod arg, tr fos frag, sme sl dolic, dns, v p vis por, tr lt yel flor, n significant cut. 30% cvgs
- 4410 – 4420 SH (30%) m-dk gy & blk, similar to above. LS (50%), lt gy, off-wh, lt tan, pred mudst, hd, cln to mod arg, dns, p vis por, 20% lt yel pred mnrl flor, n significant cut, 20% cvgs

- 4420 – 4430 LS (60%) off-wh, lt gy, lt tan, mudst w/ mnrl wkst, cln-sl arg, hd, dns, p vis por, 20% lt yel mnrl flor, n significant cut. SH (20%), similar to above, 20% cvgs
- 4430 – 4440 Sample similar to above w/ incr in lt-m gy arg ls
- 4440 – 4450 LS (60%) off-wh, lt gy & lt tan, mudst & wkst, cln to sl arg, scat fos frags, hd, dns, p intxl por, rr p-p vug, 70% lt yel pred mnrl flor, tr w/ slo mlky yel cut. SH (20%) m-dk gy & blk. 20% cvgs
- 4450 – 4460 sample similar to above, p spl after trip for bottom hole assembly
- 4460 – 4470 poor sample after trip, 40% cvgs, mostly Permian red sh
- 4470 – 4480 LS (70%) off-wh, v lt tan, buff, pred mudst w/ mnrl wkst, scat fos frags, occ vf-f clr rexl patch, cln to sl arg, dns, p vis por, 25% v lt yel pred mnrl flor, n significant cut, SH (10%) m-dk gy & blk, plty, most carb. 20% cvgs
- 4480 – 4490 LS (70%) similar to above, 80% w/ lt yel pred mnrl flor, slo wk mlky yel cut. SH (20%) lt-m gy, frm-hd, sme calc, sme slty, 10% cvgs
- 4490 – 4500 LS (60%) as above, mostly mudst w/ occ clr vf rexl patch, v p vis por, rr styl. SH (20%), as above. 20% cvgs, pred Permian red sh & ss
- 4500 – 4510 LS (50%) off-wh, v lt gy, buff, pred mudst w/ mnrl wkst, cln to sl arg, occ fos frag, hd, dns, v p vis por, 50% v lt gyl mnrl flor, n significant cut. SH (30%) m-dk gy, occ blk, tr mar & gn, sbplty to plty, 20% cvgs
- 4510 – 4520 LS (50%) similar to above, n sho. SH (30%) incr in m gn, gy-gn, & mar, decr in dk gy, plty, often sl mot apr, tr pyr. 20% cvgs
- 4520 – 4530 LS (50%) similar to above. SH (30%) m-dk gy, blk, less com mar & gy-gn, plty, gy & blk are carb. 20% cvgs
- 4530 – 4540 LS (60%) buff, off-wh, v lt gy & tan, pred mudst w/ mnrl wkst, cln to mod arg, hd, often sl mot apr, dns, v p vis por, 25% spty v lt yel mnrl flor, n significant cut. SH (20%), gy-gn, gn, lt-m gy, sl dolie & lmy, 20% cvgs
- 4540 – 4550 LS (60%) buff-brn, mudst, gen cln, tr foss frags, dns, hd, 20% yel min flor, n cuts. SH (25%), lt-dk gygn, occ lt gn, sb plty, sl dolie/lmy, sm. 15% cvgs
- 4550 – 4560 LS (60%) offwh-crm-tngy, mudst, ip wkst, scat foss frags, rr pin pt & p intxl por, gen dns & tite, ptchy yel min flor, n cuts. SH (30%) mar-gygn, gn, sb plty, rthy-wxy. CHT (tr), yel, orng, clr, trnsclnt. SS (tr) qtz, tn, vf-ufg, p srt, sb rnd-sb ang, silic cmt, frm, tite, n vis stn, ptchy lt yel flor, fair mlky yel cuts

- 4560 – 4570 SH (60%) gygn-mar, ip lt gn, mot, plty, smooth-wxy, ip dolc/lmy. LS (40%) crm-tngy, tn, mudst, scat wkst, gen cln, frm, rr pin pt por, ptchy (20%) yel min flor, n cuts. SS (tr) qtz, tn-clr, vf-ufg, sb rnd-ang, m-p srt, silic cmt, p intgrn por, sl ptchy pale yel flor, fair mlky yel cuts. CHT (tr) yel-orng, trnslent
- 4570 – 4580 SH (80%) dk mar-gygn, gn, blkyl-splty, smooth-wxy, ip dolc/lmy. LS (20%) crm-tn, pred mudst, freq wkst, cln-sl arg, gen dns, tite, nsfoc. Tr CHT & cvgs
- 4580 – 4590 SH (85%) dk mar-gn, ochre, mot, blkyl, tr slty w/ LS (15%) offwh-crm-lt gy, mudst, gen cln, v frm, tite, patchy dull min flor, n cuts. SS (1%) conglc, v silic, clr & frst qtz & cht., v hd, dolc, p vis por, sme w/ spty yel flor & slo cut
- 4590 – 4600 (SH) 80%) mar gy-gn & gn, occ ochre, often mot apr, blkyl to sbplty, tr CHT frag, 20% cvgs
- 4600 – 4610 SH (80%) similar to above, 5% CHT frags & lse qtz sd & ss (basal ss/congl), 15% cvgs
- 4610 – 4620 sample similar to above
- 4620 – 4630 SH (90%) mar, lt-m gy-gn & gn, gy, mntr ochre, plty, often mot apr, sme sl sdy, rr CHT frag & lse qtz sd gr. 10% cvgs
- 4630 – 4640 SH (90%) similar to above, 10% cvgs
- 4640 – 4650 SH (90%) similar to above. CHT frags & tr lse SD & SS (5%), lt gy, lt tan, clr, 5% cvgs
- 4650 – 4660 SH (90%) vcol gn-gygn-mar-rdbn, slty-wxy, rr fltg sd grain. 10% cvgs
- OSAGE 4655', tvd 4393.5' (-2117), @ 547'vs
- 4660 – 4670 SH (85%) vcol aa w/ DOL (10%) offwh, crm-v lt gy, mudst, sl-mod arg, tite, nsoc
- 4670 – 4680 SH (80%) vcol gn-mar-gygn-rdbn, scar slty/sdy. DOL (15%) offwh-v lt gn, mudst, ip mic suc, pyritic, cln-sl arg, tite, nsoc. SS (tr), qtz, lvf-vfg, clr-wh, m-p srt, sbang-ang, fri, est 10-13% intgrn por, fw spots lt brn stn & pale yel flor, gd mlky yel cuts
- 4680 – 4690 SH (70%) aa w/ DOL (25%) offwh, v lt gy, mudstn, ip micsuc, rr fltg sd grain, occ vf dessim pyr, scat p intxl por, n vis stn, sl patchy pale-mod yel flor, mlky-tr wkly strmg cuts. 5% cvgs & tr CHT clr-orng
- 4690 – 4700 SH aa w/ DOL (25%) offwh-v lt gn/gy, aa. CHT (5%), clr-clr orng

- 4700 – 4710 DOL (25%) offwh-v lt gy, mudst, tr wkst, ip mic suc, occ slty & sdy, tr chty w/ yel cht nod, tr intxl por, n stn, sl ptchy pale yel flor, gd mlky-wkly strmg lt yel flor. Tr clr-ornng CHT. 75% SH cvgs
- 4710 – 4720 DOL (30%), wh-offwh, mic-fxln, ip dns, ip sl suc, inc chty w/ clr-mlk wh cht, tr intxl por, shows pred aa but rr vis m brn stn, inc strmg cuts. CHT (10%) clr-mlky wh, tr yel. SH (60%) cvgs aa, including SH lt gn, blkly-plty, smooth-wxy
- 4720 – 4730 DOL (50%) wh-crm, pred mic-vfxln, inc suc, ip v chty w/ wh-clr cht, ptchy p intxl por, scat ptchy m brn stn, sl ptchy mod-bri yel flor, good strmg cuts & CHT (10%), clr-mlky wh, tr ornng/yel, sl petro odor fr/ spl
- 4730 – 4740 DOL (40%) wh-crm, occ tn, mic-vfxln, ip suc, ip dns, occ chty w/ clr-wh cht, tr intxl por, fw spts stn, sl ptchy mod yel flor, hd mlky-fr strmg lt yel cuts. CHT (5%) clr-wh. 55% SH cvgs
- 4740 – 4750 DOL (50%) off-wh, wh, crm, pred micxl, tr o stn mic-suc, gne p vis por, tr intxl por in mic-suc, yel flor w/ fst strmg cut where o stn. CHT (5%) lt gy, wh. 45% cvgs
- 4750 – 4760 DOL (65%) similar to above w/ incr in patches of lt brn o stn mic-suc, fair odor, 50% spty-even yel flor, fst strmg cut. CHT (5%) as above. 30% sh cvgs
- 4760 – 4770 DOL (60%) off-wh, wh, crm, micxl, hd, 30% w/ spty lt brn o stn gen associated w/ better mic-suc por, most tt & dns. spty-even yel flor w/ fst strmg cut where stn, n flor where n stn. CHT (10%) wh, lt gy, clr. 30% sh cvgs
- 4770 – 4780 sample similar to above, 40% of dol w/ p-fr mic-suc por & spty lt brn o stn, 60% of dol tt & dns w/ n vis stn
- 4780 – 4790 DOL (70%) off-wh, wh, v lt tan, micxl, hd, most tt & dns w/ p vis por, & tr spty lt yel flor w/ slo wk mlky yel cut, decr in o stn mic-suc to 10% of total dol. CHT (10%) wh, lt gy, clr, 30% cvgs
- 4790 – 4800 DOL (60%) similar to above w/ 10% o stn. CHT 10% as above. 30% sh cvgs
- 4800 – 4810 Cement (99%) w/ DOL (1%) offwh-wh, micxln, v frm, tt; n shows VPS
- 4810 – 4820 DOL (50%) wh-v lt tn, micxln-scat fxln, chty w/ mlky wh cht, most tt but 10% w/ ptchy inxl por & m brn stn, pale-mod yel flor, slow-fast strmg yel cuts. CHT (10%) wh-mlky wh. 40% cement
- 4820 – 4830 same, sl decr cmt, tr SH lt grn, sb plty, sft

4830 - 4840 DOL (60%) wh-lt tn, pred micxln, ip vf-fxln/suc, v chty w/ mlky wh cht, 20% w/ ptchy p-fr intxl por & evn-ptchy stn, fr-fast strmg cuts fr/ stn. CHT (30%) wh-mlky wh. SH (tr) lt gn, dolie, sft. 10% cement

4840 - 4850 sample similar to above, sl decr CHT

4850 - 4860 DOL (70%) wh-crm, micxln, v chty, 30% w/ p-fr intxl/suc por & evn-ptchy m brn stn, lt yel flor, fast strmg cuts. CHT (25%) mlky wh. SH (5%) lt gn, sl dolie

4860 - 4870 DOL(70%) wh, mic-vfxln, ip fxln, v chty w/ clr-mlk wh cht, 20% w/ ptchy intxl por & evn-ptchy brn stn, bri lt yel flor, fast-mod strmg yel cuts. CHT (30%) clr-wh, mlky wh. SH (tr) aa

4870 - 4880 AA but sl decr o stn/por

4880 - 4890 DOL (60%) wh, micxln, tr vfxln, v chty/mlky wh-clr cht, gen tt w/ n vis stn, 10% w/ sptty intxl por & brn stn, pred slow thin strmg cuts. CHT (35%) wh-clr. SH(5%) lt gn, flky, sft

4890 - 4900 DOL (60%) gen aa w/ 10% shows aa. CHT (40%) wh-clr. SH (tr) v lt-lt gn, flky

4900 - 4910 same

4910 - 4920 DOL (40%)wh, micxln, most tt but 20% vf-fxln w/ fr intxl por, sl ptchy-evn m brn stn, m yel flor, slo-fr strmg yel cuts. CHT (60%) clr-mlky wh. SH (tr) lt gn, flky

4920 - 4930 CHT (70%) wh-mlky wh. DOL (30%) wh, mic-vfxln, 30% w/ fr intxl por & sl ptchy-evn brn stn, lt yel -yel bri flor, fast strmg cuts

4930 - 4940 sample gen aa, DOL w/ occ gd intxl por

4940 - 4950 CHT (60%) mlky wh, tr clr. DOL (40%) wh, mic-fxln, v chty, 50% w/ fr intxl/suc por, m brn stn, immed strmg cuts

4950 - 4960 CHT (70%) aa. DOL (30%) aa, inc fr-gd intxl por, fw vugs, 60% w/ m-occ dk brn stn, immed strmg cuts

4960 - 4970 CHT (60%) mlky wh, trnsl, tr clr, tr w/ spty lt brn surf o stn. DOL (40%) wh, off-wh, tan/lt brn (o stn), micxl, hd, scat patches of mic-suc por, 95% of all vis por w/ spty-even lt brn o stn, fr odor, yel flor, fst strmg cut.

4970 – 4980	CHT (70%) as above, DOL (30% as above almost all vis por w/ var lt to dk brn o stn
4980 – 4990	CHT (80%) as above. DOL (20%) as above, all por w/ var lt to dk brn o stn, fr odor, tr mot lt gn/off wh SH
4990 – 5000	CHT (70%) as above. DOL (30%) as above, all por w/ var lt to dk brn o stn, fr odor, tr mot lt gn/off wh SH
5000 – 5010	DOL (60%) lt brn/tan, off wh, micxl, hd, most w/ patchy to even o stn mic-suc por, fr odor, var lt to dk brn o stn, fst stmg cut. CHT (40% milky wh, trns, scat repl fos frag, tr w/ v lt brn o stn. tr lt gn SH
5010 – 5020	sample similar to above, 60% DOL w/ fr odor and var lt to dk brn o stn. tr lt gn/mot gn/wh SH
5020 – 5030	DOL (50%) lt brn/tan, mnfr off-wh, micxl, hd, com patches of o stn mic-xuc por, all por w/ yel flor & fst stmg cut, fr odor. 45% cht, mlky wh, trns, scat repl ofs frags, tr w/ lt brn o stn. SH 5% lt gn, often mot gn/wh.
5030 – 5040	DOL (60%) as above. CHT ((35%) as above. SH (5%) as above
5040 – 5050	sample similar to above
5050 – 5060	DOL (50%) similar to above. CHT (45%) as above. SH (5%) lt gn, often mot, as above.
5060 – 5070	DOL (55%) lt brn & tan, mnfr off-wh, micxl, hd, most w/ patches and bands of o stn mic-suc por, fr odor, all vis por w/ var lt-m-dk brn o stn. 90% of dol w/ yel flor & fst stmg cut, fr odor. CHT (40%) mlky wh, trns, tr w/ spty lt brn o stn. SH (5%) lt gn, often mot gn & wh, wxy apr.
5070 – 5080	sample similar to above
5090 – 5090	DOL (50%) similar to above. CHT (45%) as above. SH (5%)
5090 – 5100	DOL (65%) lt brn & tan, as above, all vis por w/ var lt to dk brn o stn, fr odor. CHT (30%) mlky wh & trns, as above. SH (5%) lt gn, as above
5100 – 5110	DOL (50%) lt brn & tan w/ g sho, similar to above. CHT (45%) as above. SH (5%) as above
5110 – 5120	sample similar to above

5120 – 5130	DOL (50%) lt tan, lt brn, mnfr off-wh, micxl, hd, com o stn patches & bands of mic-suc por, all por w/ o stn, fr odor, rr p-p vug, all vis por w/ yel flor & fst stmg cut. CHT (45%) mlky wh, off-wh, trnsl, sme w/ spty lt brn o stn. SH (5%) lt gn, as above
5030 – 5140	sample similar to above
5140 – 5150	DOL (55%) as above w/ g sho. CHT (40%) as above, SH (5%) as above
5150 – 5160	sample similar to above.
5160 – 5170	DOL (60%) lt tan, lt brn, off-wh, micxl, hd, com patches & bands of mic-suc por, rr p-p vug, all vis por w/ var lt to mod brn o stn, yel flor, fst stmg cut, fnt odor. CHT (35%) mlky wh, off-wh, trnsl, sme w/ spty lt brn o stn. SH (5%) as above
5170 – 5180	sample similar to above
5180 – 5190	DOL (55%) similar to above. CHT (40%) as above. SH (5%) as above
5190 – 5200	DOL (50%) lt tan, lt brn, similar to above, faint odor, all vis por w/ mostly lt brn o stn. yel flor w/ fst stmg cut where stn, CHT (45%) similar to above. SH (5%) as as above
5200 – 5210	CHT (50%) mily wh, wh, trnsl, tr w/ spty lt brn o stn. DOL (45%) lt brn & tan, mnfr off-wh, similar to above. SH (5%) as above
5210 – 5220	DOL (60%) lt-m tan & brn, micxl, hd, incr in mic-suc por from above, incr in m & dk brn o stn, fr odor, even yel flor where o stn w/ fst stmg cut. CHT (35%) mlky wh, trnsl, scat repl fos frags, tr w/ spty lt brn o stn. SH (5%), lt gn, often mot gn & wh, wxy
5220 – 5230	sample similar to above w/ very good oil show w/ fair odor
5230 – 5240	DOL (65%) lt w/ mnfr m brn & tan, mnfr off-wh, micxl, similar to above CHT (30%) as above. SH (5%) lt gn, as above
5240 – 5250	CHT (60%) mlky wh, wh, sme trnsl, tr w/ spty lt brn o stn. DOL (40%) lt-m brn & tan, off-wh, similar to above, most w/ mod brn o stn w/ fr odor. Tr lt gn SH
5250 – 5260	DOL (60%) lt brn & tan, mnfr m brn & off-wh, micxl, hd, com o stn mic-suc por, rr p-p vug, all vis por w/ var lt to dk brn o stn, fr odor, all por w/ yel flor & fst stmg cut. CHT (40%) similar to above, tr lt gn SH
5260 – 5270	sample similar to above, most DOL w/ mod brn o stn & fr odor

- 5270 – 5280 DOL (55%) lt brn & tan, mnrr off-wh, micxl, hd, com patches & bands of o stn mic-suc por, rr p-p vug, all vis por w/ lt-mod brn o stn, fr odor, 90% of all dol an all vis por w/ yel flor & fst strmg cut. CHT (45%) mlky wh, trnsf, as above. tr gn SH
- 5280 – 5290 sample similar to above, g oil sho
- 5290 – 5300 DOL (55%) similar to above, incr in lt brn o stn from above, decr in odor to fnt. CHT (45%) similar to above. Tr lt gn SH
- 5300 – 5310 DOL (50%) lt brn & tan, mnrr m brn & off-wh, micxl,hd, com mic-suc por, rr p-p vug, all vis por w/ lt to mod brn o stn, (incr in stn & odor from prior spl), spty-even yel flor, fst strmg cut. CHT (50%) similar to above, tr lt gn SH
- 5310 – 5320 DOL (60%)wh-tn, mic-vfxln, ip fxln, gen suc w/ fr intxl por, scat vugs, sl ptchy-evn brn stn, evn bri yel flor, immed strmg cuts. CHT (40%), wh-mlky wh. Tr lt gn SH
- 5320 – 5330 sample aa w/ DOL inc to 50%, good shows aa
- 5330 – 5340 DOL (60%) wh-tn-lt brn, gen vf-fxln, chty,most suc w/ fr intxl por, fw vf vugs, near evn m brn stn/bri yel flor, fast strmg cuts. CHT (40%) mlky wh
- 5340 – 5350 DOL (60%) wh-lt brn, vfxln, ip fxln, chty, most suc, fr-gd intxl por, inc pin pt-vf vugs, near evn brn stn/bri yel flor, fast strmg cuts. CHT (40%) mlky wh-clr. rr lt gn SH. NOTE: lt scum oil floats fr/ smpl
- 5350 – 5360 same
- 5360 – 5370 DOL (50%) wh-lt brn, mic-vfxln, tr fxln, freq suc, chty, 80% w/ fr-gd intxl/suc por, rr vugs, near evn lt-dk brn stn, (evn hvy stn in better por), bri yel flor/fast strmg cuts. Cht (50%) wh-mlky wh
- 5370 – 5380 DOL (60%) wh-lt brn, pred vfxln, ip mic & fxln, sl-v suc, 70% w/ p-fr intxl/suc por, ptchy brn stn, evn yel flor, fast strmg cuts w/ 40% CHT aa
- 5380 – 5390 DOL (50%) wh-tn, mic-vfxln, aa w/ 50% CHT
- 5390 – 5400 DOL (60%) wh-lt brn, vfxln, in micxln, pred suc, tr vf vugs, pred w/ fr-occ gd por & near evn lt-m brn stn, near evn bri yel flor, fast cuts. CHT (40%) wh-mlky wh
- 5400 – 5410 CHT (70%) wh-mlky wh. DOL (30%) wh-tn, pred vfxln, suc, chty, p-gd intxl & occ vf vug por, near evn m brn stn/bri lt yel flor, immed cuts, scum oil floats off washed smpl

5410 – 5420	aa w/ tr QTZ euhed clumps, evn stn/flor/immed cuts <u>indicating open vug/frac</u>
5420 – 5430	CHT (80%) wh-mlky wh, ip tripolitic w/ DOL (20%) wh-tn, pref vfxln, ip micxln, gen suc w/ fr intxl & tr pin pt vug por, near evn brn stn/bri yel flor, immed cuts
5430 – 5440	CHT (90%) wh, ip tripolitic w/ occ vugs & ptchy brn stn. DOL (10%) wh, vfxln, suc, v chty, p-fr intxl/suc por, few vugs, near evn stn/flor, immed cuts. NOTE: with the decr in DOL, smple shows have decr overall
5440 – 5450	same
5450 – 5460	CHT (90%) wh-clr, in pt tripolitic w/ scat stn. DOL (10%) tn-brn, vfxln, ip micxln, v chty, p-gd intxl por, near evn brn stn/bri lt yel flor, immed cuts
5460 – 5470	CHT (70%) aa w/ DOL (30%) crm-brn, vfxln, v chty, suc, pred fr intxl por, ip p/gd por, evn stn/bri yel flor, immed cuts
5470 – 5480	same, rr pin pt vugs in DOL
5480 – 5490	CHT (70%) aa. DOL (30%) wh-brn, vfxln, ip fxl, pred suc w/ fr-gd intxl por, few pin pt vugs, pred evn m brn stn/bri yel flor, immed cuts
5490 – 5500	CHT (70%) wh-clr, mlky wh. DOL (30%) wh-crm-brn, vfxln, gen suc w/ fr-gd intxl por, few vugs, evn lt-m brn stn, dk hvy sat appear stn, bri yel flor, immed cuts
5500 – 5510	aa, DOL (30%) aa, inc hvy sat appear stn
5510 – 5520	CHT (70%) wh-mlky wh, tr tripolitic. DOL (30%) wh-crm-brn, vfxln, suc, pred fr intxl por, occ gd por, few pin pt vugs, evn lt-dk brn stn/bri yel flor, immed cuts
5520 – 5530	CHT (80%) clr-mlky wh. DOL (20%) wh-lt brn, vfxln, chty, gen suc w/ p-gd intxl por, rr vugs, near evn stn/bri yel flor, immed cuts
5530 – 5540	sample aa w/ fw flakes lt gn SH
5540 – 5550	CHT (70%) aa w/ DOL (30%) wh-brn, vfxln, gen suc w/ p-gd intxl por, tr vugs, evn lt-m brn stn, evn bri lt yel flor, immed cuts
5550 – 5560	aa w/ tr SH lt- m bri gn, blkylky
5560 – 5570	CHT (70%) mlky wh-wh, ip tripolitic. DOL (30%) wh-brn, vfxln, v chty, suc, p-gd intxl por w/ near evn m brn stn/bri yel flor, immed cuts

5570 – 5580	CHT (90%) mlky wh, occ clr. DOL (10%) aa
5580 – 5590	CHT (70%) aa. DOL (30%) crm-brn, vfxln, chty, gen w/ fr-gd intxl & pin pt vug por, evn lt-m-dk brn stn, evn bri lt yel flor, immed cuts
5590 – 5600	sample as above
5600 – 5610	CHT (70%) mlky wh-tr clr, tr tripolitic. DOL (30%) wh-lt brn, vfxln, v chty, gen suc w/ fr intxl por, scat vf vugs, near evn lt-m brn stn/bri yel flor, immed cuts
5610 – 5620	CHT (70%) wh-mlky wh, freq tripolitic, scat sptty stn. DOL (30%) vfxln, suc p-gd intxl por, fw vf vugs, near evn lt-dk brn stn, bri lt yel flor, immed cuts
5620 – 5630	sample similar to above
5630 – 5640	CHT (70%) as above, tr w/ spty lt brn o stn. DOL (30%) micxl w/ mntr vf xl, var p-fr vis por, scat p-p vug, all vis por w/ var lt to dk brn o stn, yel flor, fst stmg cut. tr lt gn SH
5640 – 5650	CHT (75%) similar to above. DOL (25%) as above, tr lt gn SH
5650 – 5660	sample similar to above. All DOL w/ var lt to dk brn o stn, fnt odor
5650 – 5670	CHT (70%) mlky wh, wh, mntr trnsl, tripolitic ip, sme dolie, occ w/ spty lt brn o stn. DOL (25%) lt tan, lt brn, mntr off-wh, similar to above, all vis por w/ var lt to dk brn o stn. SH (5%) lt gy, often mot gn/wh, wxy apr.
5670 – 5680	sample similar to above w/ decr in sh to trace.
5680 – 5690	CHT (70%) mlky wh, wh, mntr trnsl, scat repl fos frags, tr w/ spty lt brn o stn. DOL (30%) lt tan, lt brn, mntr off-wh, micxl, hd, most w/ patches & bands of mic-suc por, rr p-p vug, all vis por w/ var lt to dk brn o stn. yel flor, fst stmg cut. tr lt gn SH.
5690 – 5700	sample similar to above, sl incr in DOL w/ dk brn o stn from above.
5700 – 5710	CHT (70%) as above. DOL (30%) as above, all vis por w/ var lt to dk brn o stn. tr lt gh SH
5710 – 5720	CHT (75%) mlky wh, wh, sme trnsl, sme tripolitic, sme dolie, tr w/ spty lt brn o stn. DOL (25%) lt tan, lt brn, mntr wh, micxl, all vis por w/ pred lt brn o stn, decr in mod & dk brn stn from above. Tr lt gn SH
5720 – 5730	CHT (65%) similar to above. DOL (35%) as above, all vis por w/ var lt to dk brn o stn. tr lt gn SH.

5730 – 5740	sample similar to above.
5740 – 5750	CHT (70%) similar to above. DOL (30%) as above w/ continued o stn in all vis por. tr lt gn SH.
5750 – 5760	sample similar to above.
5760 – 5770	CHT (70%) mlky wh, wh, mntr trnsl, tripolitic ip, sme dolc patches and bands, tr w/ spty lt brn o stn. DOL (30%) lt tan, lt brn, mntr wh, micxl w/ mntr vf xl, rr p-p vug, all vis por w/ var lt to dk brn o stn, most w/ even yel flor, fst strng cut. tr lt gn SH.
5770 – 5780	CHT (65%) as above. DOL (35%) similar to above w/ incr in dk brn o stn. rr lt gn SH.
5780 – 5790	CHT (60%) as above. DOL (35%) all vis por w/ var lt to dk brn o stn. SH (5%) incr in lt gn and mot gy-gn/gn/wh sh from prior sample.
5790 – 5800	CHT (65%) similar to above. DOL (35%) similar to above, tr lt gn SH.
5800 – 5810	CHT (60%) as above. DOL (30%) as above, incr in lt gn SH to 5%
5810 – 5820	CHT (60%) mlky wh, wh, mntr trnsl, sme tripolitic, occ lt brn o stn. DOL (30%) lt tan, lt brn, occ wh, micxl w/ mntr vf xl, com patches & bands of mic-suc por, rr p-p vug, all vis por w/ var lt to dk brn o stn. even yel flor, fst strng cut. SH (5+%) lt gn, often mot gn/gy-gn-wh, wxy apr trip for bit at 5837'
5820 – 5830	poor sample after bit trip
5830 – 5840	DOL (50%) wh-crm-tn, mic-vfxln, chty, most suc, p-fr intxl por, sl ptchy lt-dk brn stn, evn bri yel flor, fr-fast strng yel cuts. CHT (50%) mlky wh & SH (tr) lt-m gn
5840 – 5850	aa w/ minor tripolitic CHT
5850 – 5860	DOL (60%) wh-tn, mic-vfxln, gen suc w/ p-fr intxl por, sl ptchy stn/bri yel flor, fr-fast strng yel cuts & CHT (40%) mlky wh, tr tripolitic w/ fw spts stn
5860 – 5870	DOL (50%) wh-brn, vfxln, suc, fr-gd intxl por, fw vf vugs, near evn lt-dk brn stn/bri yel flor, fast cuts. CHT (50%) aa. <u>NOTE: scum oil still washes fr/ samples</u>
5870 – 5880	DOL (50%) aa, rr frac healed w/ wh cht. Cht (50%) wh-mlky wh, occ mlky lt gy

5880 – 5890	DOL (60%) wh-lt brn, vfxln, pred suc w/ p-gd intxl por, sl ptchy lt-m brn stn/bri yel flor, gen fast cuts. CHT (40%) aa
5890 – 5900	CHT (60%) mlky wh-wh, freq tripolitic, tr w/ spts stn. DOL (40%) aa, inc vuggy
5900 – 5910	CHT (70%) wh-mlky wh, ip tripolitic. DOL (30%) wh-tn, vfxln, suc w/ p-fr intxl por, ptchy lt brn stn/sl ptchy bri yel flor, fr strmg cuts
5910 – 5920	sample aa, DOL w/ fw pin pt vugs
5920 – 5930	CHT (70%) wh-mlky wh, freq tripolitic w/ tr stn. DOL (30%) wh-crm-lt brn, vfxln, suc, chty, p-fr-occ gd intxl por, scat vugs, ptchy lt-dk brn stn, sl ptchy bri yel flor, fr-fast strmg cuts
	NOTE: scum of oil continues to float from washed sample.
5930 – 5940	CHT (60%) aa. DOL (40%) wh-crm-lt brn, vfxln, chty, pred suc w/ fr-gd intxl & sl vuggy por, sl ptchy lt-m brn stn, gen evn bri lt yel flor, immed cuts
5940 – 5950	CHT (60%) wh-mlky wh, ip tripolitic w/ scat stn. DOL (40%) aa, inc gd intxl & vuggy por
5950 – 5960	sample aa
5960 – 5970	DOL (70%) wh-crm-brn, vf-fxln, v suc, v chty, abnt gd intxl & vug por, near evn m-hvy brn stn, evn bri yel flor, immed cuts. CHT (30%) mlky wh
5970 – 5980	DOL (60%) gen aa, sl decr vuggy por. CHT (40%) mlky wh-wh
5980 – 5990	DOL (50%) wh-lt brn, vfxln, chty, most suc, fr-gd intxl por, occ vf vugs, near evn lt-m-occ dk brn stn, evn bri yel flor, fast cuts. CHT (50%) mlky wh, clr, rr xtln qtz
5990 – 6000	sample same but inc clr, xtln qtz, occ w/ pthy m brn stn
6000 – 6010	DOL (50%) similar to above, all vis por w/ lt to mod brn o stn. CHT (45%) as above. Incr in lt gn SH to 5%
6010 – 6020	DOL (55%) lt tan, lt brn, off-wh, micxl, hd, abnt mic-suc por, scat p-p vugs, all vis por w/ lt to mod brn o stn, even yel flor, fst stmg cut fnt odor. CHT (45%) mlky wh, off-wh, mnr trnsl, occ repl fos frag, tr w/ spty lt brn o stn. tr lt gn SH.
6020 – 6030	DOL (55%) as above. CHT (40%) as above, incr in lt gn SH to 5%.

- 6030 – 6040 DOL (50%) lt tan, lt brn, off-wh, as above, all vis por w/ var lt to dk brn o stn. CHT (50%) mlky wh, wh, mntr trnsl, sme tripolitic, sme w/ lt brn o stn. tr lt gn SH.
- 6040 – 6050 sample similar to above, fnt odor, mostly p to fr mic-suc por in DOL
- 6050 – 6060 CHT (55%) mlky wh, wh, mntr trnsl, sme dolie incl, scat repl fos frags lt brn o stn. DOL (45%) lt brn, lt tan, micxl, sme chty, com patches and bands of mic-suc por, rr p-p vug, all vis por w/ var lt to dk brn o stn, fnt, tr w/ odor, even yel flor, fst stmg cut. tr lt gn SH
- 6060 – 6070 DOL (55%) lt tan, lt brn, as above w/ incr in mod to dk brn o stn, incr in o stn mic to vf sucrosuc por, fr odor (better than average show). CHT (45%) similar to above. tr lt gn SH.
- 6070 – 6080 DOL (50%) similar to above w/ better than average oil staining. CHT (50%) similar to above. tr lt gn SH.
- 6080 – 6090 CHT (50%) mlky wh, wh, mntr trnsl, tripolitic ip, occ w/ lt brn o stn. DOL (45%) lt tan, lt brn, mntr off-wh, most w/ o stn mic-suc por, var lt to dk o stn (decr in stn from above). SH (5%) lt gn, often mot gn & wh, wxy.
- 6090 – 6100 sample similar to above.
- 6100 – 6110 CHT (60%) mlky wh, wh, mntr trnsl, tripolitic ip, sme w/ spty lt brn o stn. DOL (40%) lt tan, lt brn, off-wh, micxl w/ mntr vf xl, hd, com patches and bands of o stn sucrosic por, even flor, fnt odor, even lt yel flor, fst stmg cut. tr lt gn SH.
- 6110 – 6120 sample similar to above.
- 6120 – 6130 CHT (55%) as above. DOL (45%) as above, most w/ even lt brn o stn, fnt odor. tr lt gn SH
- 6130 – 6140 DOL (55%) lt tan, v lt brn, micxl w/ mntr vf xl, abnt o stn mic-suc por, rr p-p vug, all vis por w/ var lt to dk brn o stn, fair odor, abnt even yel flor, fst stmg cut. CHT (45%) similar to above. tr lt gn SH
- 6140 – 6150 DOL (50%) as above, CHT (50%) as above, v rr lt gn SH.
- 6150 – 6160 CHT (60%) mlky wh, wh, mntr trnsl, scat repl fos frags, sme tripolitic, occ spty lt brn o stn. DOL (40%) lt tan, lt brn, off-wh, micxl w/ mntr vf xl, com o stn mic-suc por, rr p-p vug, all vis por w/ var lt to dk brn o stn, fnt odor, even yel flor, fst stmg cut. tr lt gn SH
- 6160 – 6170 CHT (50%) similar to above. DOL (50%) as above, tr lt gn SH.

6170 – 6180	sample similar to above, DOL w/ pred lt to mod brn o stn
6180 – 6190	CHT (60%) mlky wh, wh, trnsl, sme tripolitic, tr w/ spty lt brn o stn. DOL (40%) lt tan, lt brn, off-wh, pred micxl, hd, scat mic-suc por, rr p-p vug, pred lt-mod brn o stn, fnt odor, even yel flor, fst stmg cut (sl decr in sho from previous. tr lt gn SH.
6190 – 6200	CHT (50%) similar to above. DOL (50%) similar to above w/ incr in mod brn o stn. tr lt gn SH
6200 – 6210	sample similar to above
6210 – 6220	CHT (60%) mlky wh, wh, mntr trnsl, scat repl fos frags, tr w/ spty lt brn o stn. DOL (40%) lt tan, lt brn, off-wh, mic-vf xl, com patches of o stn sucrosic por, rr p-p vug, all vis por w/ var lt to dk brn o stn, fnt odor, even yel flor, fst stmg cut. tr lt gn SH.
6220 – 6230	sample similar to above.
6230 – 6240	CHT (75%) mlky wh, wh, trnsl, tripolitic ip, scat repl fos frags, tr w/ spty lt brn o stn. DOL (25%) similar to above, most w/ lt brn o stn, v fnt odor. tr lt gn SH.
6240 – 6250	CHT (70%) similar to above. DOL (25%) as above w/ incr in mod brn o stn, (incr from previous). SH (5%) lt gn, often mot gn & wh, wxy.
6250 – 6260	CHT (55%) as above. DOL (45%) as above, var lt to dk brn o stn, fnt odor, even yel flor, fst stmg cut. tr lt gn SH.
6260 – 6270	sample similar to above
6270 – 6280	CHT (60%) mlky wh, wh, trnsl, tripolitic ip, scat fos frags, sme w/ spty lt brn o stn. DOL (40%) lt tan, off-wh, crm, micxl, p mic-suc por, pred lt brn o stn, v fnt odor, even yel flor, fst stmg cut. tr lt gn SH.
6280 – 6290	CHT (50%) similar to above. DOL (50%) similar to above w/ incr in mod brn o stn, fnt odor. tr lt gn SH
6290 – 6300	CHT (60%) wh-mlky wh, trnsl. DOL (40%) wh-tn, vfxln, ip micxln, sl-v suc, p-fr intxl por, ptchy lt-m brn stn, near evn bri yel flor, fast strmg cuts
6300 – 6310	CHT (70%) wh-mlky wh, scat tripolitic. DOL (30%) wh-lt tn, vfxln, v chty, suc, p-occ fr intxl por, ptchy lt brn stn/bri yel flor, fr-fast strmg cuts

NOTE: SCUM OF OIL CONTINUES TO FLOAT FROM WASHED SAMPLE.

- 6310 – 6320 no change
- 6320 – 6330 CHT (60%) mlky wh. DOL (40%) wh-tn, vfxln, suc w/ p-occ fr intxl por, scat vugs, sl ptchy lt brn stn/near evn bri yel flor, fr-fast strmg cuts
- 6330 – 6340 CHT (60%) wh-mlky wh. DOL (40%) gen aa, pred fr intxl por, fw pin pt vugs, sl ptchy lt-m brn stn/evn bri yel flor, pred fast strmg cuts. Tr lt gn SH
- 6340 – 6350 CHT (70%) aa, scat vf vugs in tripolitic txt, spts stn. DOL (30%) aa
- 6350 – 6360 CHT (70%) mlky wh, trnsf, rr spts stn. DOL (30%) wh-tn, vfxln, p-fr intxl por, tr gd intxl/vug por, sl ptchy lt-m brn stn, near evn bri yel flor, fast strmg cuts. Rr flk gn SH
- 6360 – 6370 CHT (60%) mlky wh, tr sptty stn. DOL (40%) wh-lt tn, brn, vfxln, suc, chty, most w/ p-fr intxl por, occ w/ gd intxl/vug por, sl ptchy lt-m brn stn, near evn bri yel flor, fast strmg cuts
- 6370 – 6380 no change
- 6380 – 6390 CHT (70%) mlky wh, wh. DOL (30%) wh-crm, mic-vfxln, sl suc, p intxl por, ptxhy lt brn o stn, ptchy mod-bri yel flor, fr strmg cuts. SH (tr) lt gn, occ m-dk gygn, flky
- 6390 – 6400 CHT (60%) wh-mlky wh. DOL (40%) wh-crm, mic-vfxln, chty, freq p intxl por, v ptchy vis lt brn stn, sl ptchy mod yel flor, fr-fast strmg cuts. SH (tr) lt gn, plty, sft
- 6400 – 6410 CHT (70%) mlky wh-wh. DOL (25%) wh-tn, vfxln, ip micxln, most suc, ptchy p intxl por, ptchy lt brn stn/pale-bri yel flor, fr strmg cuts. SH (5%) lt-m gn, flky, wxy
- 6410 – 6420 same w/ 10% SH
- 6420 – 6430 decr Cht & DOL w/ SH (20%) lt-m bri gn, flky, ip dolie
- 6430 – 6440 CHT (60%) wh-mlky wh. DOL (30%) wh-lt tn, mic-vfxln, freq vfxln & suc, p-fr intxl por, sl ptchy lt-m brn o stn, sl ptchy bri yel flor, slow-fast strmg cuts. SH (10%) lt gn, v dolie, v brit

6440 – 6447(TD) sample gen aa w/ SH inc to 15%

NOTE: To the last sample, a light scum of oil could be floated from the sample when washing.