

GEOLOGICAL CONSULTING & WELLSITE SUPERVISION

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Murfin Drilling Company Inc



Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name: Moonraker #6-27
API: 05-073-06757
Location: Sec. 27-10S-56W, Lincoln Co., CO
License Number: COGCC Opr #61650
Spud Date: 1/3/2019, 6:00 A.M.
Surface Coordinates: 2300' FNL & 1500' FWL

Region: Wildcat
Drilling Completed: 1/19/19, 2:15 p.m.

Bottom Hole Coordinates: Straight Hole
Ground Elevation (ft): 5,462'
Logged Interval (ft): 4,300 To: 4,800'
Logged Interval (ft): 6900 To: 8,300'
Type of Drilling Fluid: Pre-Mix & Chem-Gel
K.B. Elevation (ft): 5,475'
Total Depth (ft): 8,300'
Total Depth (ft): 8,300'

Printed by STRIP.LOG from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Murfin Drilling Company, Inc.
Address: 250 North Water, Suite #300
Wichita, Kansas 67202

GEOLOGIST

Name: Gregg Smith
Company: GPS Consulting Services LLC
Address: 289 CR 804, C-104
PO Box 388
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DSTs

DST #1, 7334' to 7402', Marmaton Fm., A,B,C zones
DST #2, 7440' to 7490', Ft Scott, Lower Ft Scott

ROCK TYPES

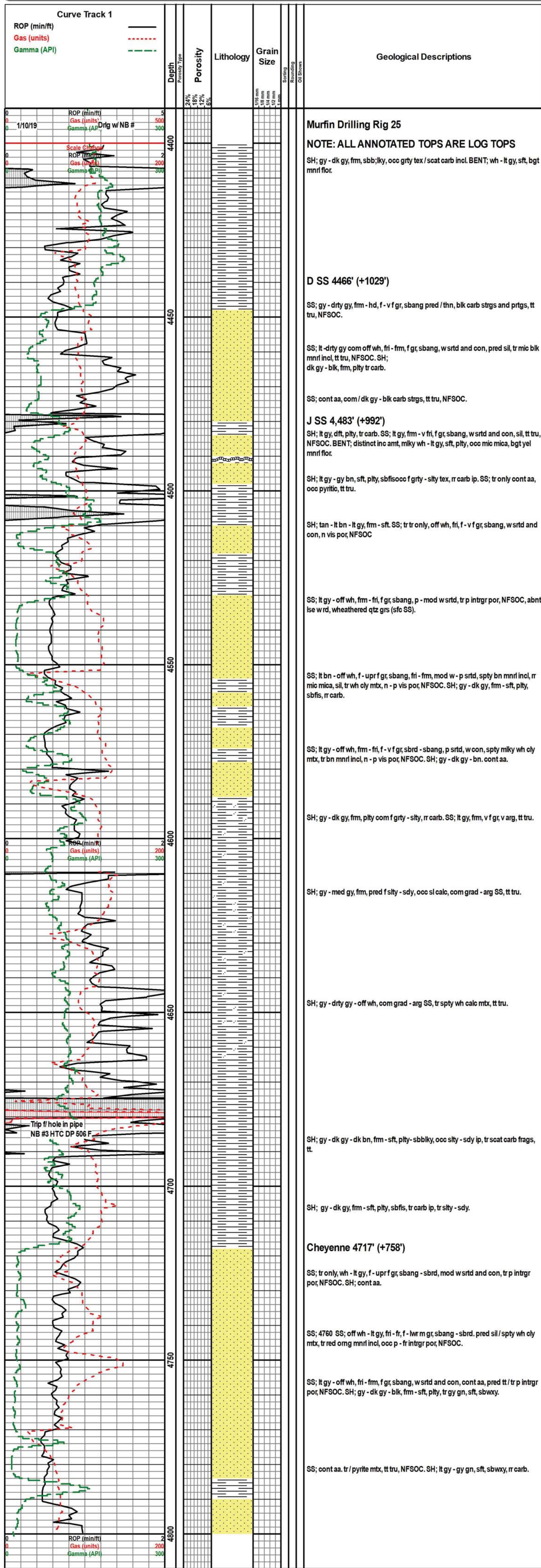
Anhy	Clyst	Gyp	Mrlst	Shgy
Bent	Coal	Igne	Salt	Sltst
Brec	Congl	Lmst	Shale	Ss
Cht	Dol	Meta	Shcol	Till

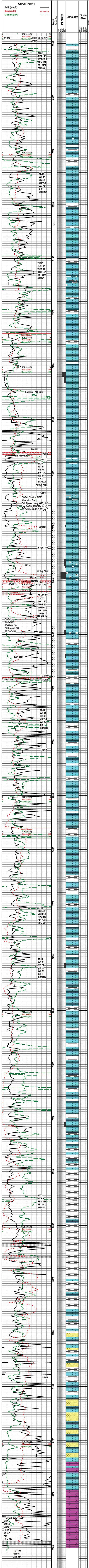
ACCESSORIES

MINERAL	Gyp	FOSSIL	Ostra	Sltstrg
Anhy	Hvymin	Algae	Pelec	Ssstrg
Arggrn	Kaol	Amph	Pellet	TEXTURE
Arg	Marl	Belm	Pisolite	Boundst
Bent	Minxl	Bioclst	Plant	Chalky
Bit	Nodule	Brach	Strom	Cryxln
Brecfrag	Phos	Bryozoa	STRINGER	Earthy
Calc	Pyr	Cephal	Anhy	Finexln
Carb	Salt	Coral	Arg	Grainst
Chtdk	Sandy	Crin	Bent	Lithogr
Chtlt	Silt	Echin	Coal	Microxln
Dol	Sulphur	Foram	Dol	Mudst
Feldspar	Tuff	Fossil	Gyp	Packst
Ferrpel		Gastro	Ls	Wackest
Glau		Oolite	Mrst	

OTHER SYMBOLS

POROSITY	Vuggy	ROUNDING	Spotted	EVENT
Earthy		Rounded	Ques	Rft
Fenest	SORTING	Subrnd	Dead	Sidewall
Fracture	Well	Subang	INTERVAL	
Inter	Moderate	Angular	Core	
Moldic	Poor	OIL SHOW	Dst	
Organic		Even		
Pinpoint				





Geological Descriptions

Ore Values

Murfin Drilling Co., Rig #25

NOTE: ALL ANNOTATED TOPS ARE LOG TOPS

LS; tan - lt bn, hd, bkly, mixcl, lt. SH; dk gy - blk, frm, phty, sbfis, com carb.

LS; tan - bn - dk bn, hd, bkly, f - mixcl, com c fragm ip, occ arg, tt tru, SH; cont aa.

LS; med - dk bn ooc dk gy, fm, sbblky, f - mixcl, com arg ip, tr red bn SH prigs, tt tru, SH; gy - dk gy, fm, sbblky, ooc phty fis, carb.

LS; lt tan - dk bn, hd, bkly, mixcl, com gran tex, arg ip, ooc / scat m gr ooids, n vis por, NSOC. CHT; dk bn, shp, opq.

LS; dk bn - dk gy, hd, bkly, mixcl, arg, tr carb ip, tt tru, SH; dk gy - blk, frm, phty, sbblky, com carb.

SH; dk gy - blk, frm, phty, sbfis, com carb. LS; dk bn - dk gy, hd, bkly, f - mixcl, com / mot tex, dk gy arg incl, tt tru.

Lansing 7019' (-1651')

LS; lt tan - lt bn - off wh, fm, sbblky, fcl, ooc fragm ip[, ooc sft rthy tex, tt tru, NSOC.

LS; tan - lt bn, fm - hd, bkly, f - mixcl, ooc rthy - cily tex, tt tru.

LS; tan - lt bn; hd, bkly, mixcl, r mot, fragm, tr thn blk carb strgs and prigs, tt tru, SH; dk gy - blk, frm, phty, carb.

LS; lt - med bn, hd, bkly, mixcl, ooc rthy tex, mot, fragm ip, tt tru, SH; dk gy - blk, com carb, cont aa.

LS; lt tan - lt bn, hd, bkly, mixcl, ooc mot tex, tt tru, SH; gy - dk gy, hd, phty, ooc pale gn, ooc carb.

LS; lt gy - gy gn, frm, sbblky, pred sdy arg, ooc sft cily fragm, n vis por, NFSOC. SH; cont aa.

LS; tan - lt gy, hd, bkly, f - mixcl, ooc rthy mot, fragm, tt tru, NSOC. SH; dk gy - blk, frm, phty, carb.

LS; tan - lt bn, fm - hd, bkly, f - mixcl, com mot arg frags, tt tru.

LS; tan - lt gy, fm - hd, bkly, fcl, pred mot, fragm, arg ip, tr scat f gr ooids, n vis por, NSOC. SH; gy - dk gy - blk, frm, phty, sbfis, ooc carb ip, tr dk gy gn - pale gn, r sdy ip.

Samples lost in lost circ zone at 7222'; tr only LS; tan - lt bn, hd, bkly, mixcl, ooc / red bn - pale gn incl and strgs, tr pale red bn sily - sdy, r tr / v g oom - vgy inter ooid porosity, NSOC

LS; tan - lt bn, hd, sbblky, f - mixcl, pred / f - c p srtf ooids and pelr fos, abnt sft rthy - cily, p mic por only, NSOC.

LS; lt tan - med bn, fm - hd, f - mixcl, com sft, rthy - cily, tt tru, SH; lt gy, fm, phty, r carb ip.

STARK 7248' (-1773')

LS; lt tan - lt bn, hd, bkly, mixcl - fcl, tr c p srtf fos / p inter fos por, tr dk bn, lith tex, NSOC.

LS; lt tan - lt bn, fm - hd, bkly, fcl, p tr srtf fos, ooc sft rthy - cily, n - p vis por, NSOC. SH; dk gy - blk, sft, thn, sbfis, con carb.

LS; gy - dk gy, hd, bkly fcl, ooc arg ip, tt tru, SH; cont aa.

LS; tan - lt bn, fm - hd, bkly, f - mixcl, com fos frags, tr inter fos por, tr sft, cily / mic por, NSOC. SH; cont aa, ooc pale gn, sft, sbwxy.

LS; tan - lt bn, fm - hd, f - mio xcl, ooc fos, tt tru.

Mound City 7318' (-1843')

LS; tan - lt bn, hd, bkly, mixcl, c fos, cont aa com ly gy, sft, gran tex, pred arg ip, tt tru

Exline 7329' (-1854')

LS; tan - lt gy, fm, sbblky, pred f gran tex ooc f xln, ooc arg ip, n vis por, NSOC.

Pleasanton 7338' (-1863')

LS; tan - lt gy, fm - ft, fcl, com sty - sdy ip, n vis por, NSOC

Marmaton 7346' (-1871')

LS; tan - lt bn, fm - hd, sbblky, pred v f - mic gran tex, sply bn mntl incl, tt, r / dull yel for fnt slow stmg cut, no stain or odor

LS; lt tan, fm - hd, bkly, f - mixcl, ooc fragm ip, tt tru, NSOC. SH; dk gy - blk, fm, phty, sbfis, ooc carb.

Marmaton B 7372' (-1897')

LS; lt gy - lt bn, fm - hd, fcl, com / gran tex, sdy ip grad - calb SS, n - p vis por; tr bgt yel for; wk stmg cut, fr - g crush cut, NSO.

Marmaton C 7388' (-1913')

LS; wh - lt tan, fm, fcl, pred / rthy - cily tex, mic fragm, tr m gr ooids and r fus / mic suc mtx, tr v g molic and inter ooid por, tr dull yel for, fnt, residual cut, NSO.

LS; lt tan - lt bn, fm - hd, sbblky, pred fcl, tr mixcl, tr fragm, pos fos ip, tt tru.

Fort Scott 7420' (-1945')

LS; tan - lt bn ooc off wh, hd, bkly, f - mixcl, com / dull rthy lus, r fos, tt tru.

LS; ta - lt bn, hd, bkly, mixcl, com / rthy - cily tex, r dk bn, lith tex, tt tru.

LS; tan - lt bn, fm, sbblky, abnt f - m gr p srtf dk bn pel and ang calc frags, rthy mtx, n - p vis por; bgt yel for - g stmg cut, NSO.

SH; dk bn - dk gy, fm, phty - sbblky, pred / f gran tex, abnt f - mic vit carb incl scat tru. LS; off wh - lt tan, fm, sbblky, fcl, com rthy tex, tt tru.

Lower Fort Scott 7463' (-1988')

LS; tan - off wh, fm, fcl, pred / rthy - cily tex, mic fragm, tr pos fos frags, tr vgy inter fragm por, r / bgt yel for, fnt stmg cut, NSO. SH; cont aa.

LS; lt tan - bn, hd, bkly, mixcl, ooc mic fragm, ooc / rthy tex, tt tru, NSOC. SH; cont aa.

Excello 7488' (-2013')

SH; gk gy - dk bn, ooc blk, fm, phty, sbfis, carb. LS; cont aa.

Breezy Hill 7945' (-2020')

LS; tan - lt bn, fm - hd, bkly, mixcl, ooc fragm / scat mot red bn mntl incl and strgs, tr rthy fos cily ip, n vis por, NSOC. SH; dk gy - blk, fm, phty, sbfis, com carb.

LS; tan - lt bn - lt gy, fm - hd, bkly, f - mixcl, com rthy fragm / tr red omg rthy mntl incl and strgs, n vis por, NSOC. SH; dk gy - blk, pred carb.

Oakley 7530' (-2055')

SH; dk gy - blk, fm, phty, ooc splnt, sbfis, com carb, tr gran tex. LS; cont aa, tt tru.

Celia 7536' (-2061')

LS; tan - lt bn - lt gy, fm - hd, bkly, mixcl, lt. SH; dk gy - blk, fm, phty, carb.

LS; off wh - tan - lt bn, hd, bkly, mixcl, tr mot fragm, tt tru, SH; dk gy - blk, cont aa.

LS; tan - lt bn, hd, bkly, mixcl, ooc rthy tex mic fragm, tr red omg mntl strgs, n vis por, NSOC. SH; gy - dk gy - blk, fm, phty, com carb ip, ooc pale gn sft, sbwxy.

Johnson Zone 7609' (-2134')

LS; tan - lt gy, fm - hd, bkly, ht, tr mot, fos, tr mic gran tex pos dolomitic ip, tt tru, SH; gy - dk gy, fm, phty, ooc f gran tex, ooc carb.

SH; dk gy - blk, fm, phty - sbblky, tr carb ip, ooc pale gn, sft, tr gran tex. LS; cont aa, ooc wh sft cily / p mic por; bgt yel floe, NSOC.

SH; gy - dk gy, fm, sbblky - phty, com carb, tr pale gn, sft rthy. LS; tan - lt bn, sft - fm, fcl, rthy, f - mio fragm, tr fos, tt tru.

Atoka 7676' (-2201')

LS; tan - off wh, fm, bkly, f - mixcl, abnt f gran fragm, ooc rthy tex, tr mio fos, tt tru, SH; tan = wh, fm - hd, f - mixcl, tr fos, tr gn oly strgs, tt tru. SS; tr lse c / r glau, tr gran tex - sily, tr blk carb.

LS; off wh - tan - lt gy, fm, sbblky, f xlin, com mic fos and fragm ip, tt tru, SH; gy - lt gy, cont aa, com blk phty, carb.

LS; tan - lt bn, fm - hd, bkly, f - mixcl, tr fragm / p inter fragm por, tr fos frags, NFSOC. SH; cont aa.

SH; LS; tan - lt bn, hd, bkly, mixcl, com mic gran tex, tr fos n - p vis por, NSOC. SH; gy - dk gy, tan - lt bn, fm - hd, bkly, mixcl, com carb ip.

LS; off wh - lt tan

LS; off wh - lt tan, hd, bkly, f - mixcl, tt. SH; gy - lt gy, fm - sft, phty, sbfis, com gy gn - pale gn, ooc mot tex vgtf, ooc blk carb.

LS; off wh - lt tan - lt bn, fm - hd, fcl, ooc gran tex, mic fragm, tr fos, tt tru, SH; dk gy - blk, fm, phty, sbfis, carb.

LS; tan - lt bn, fm - hd, sbblky, com f gran tex, pos dollie ip, tt tru, SH; dk gy - blk, fm, sbphy, pred carb.

LS; lt tan - lt bn, fm - hd, sbblky, fcl, com mot, f gran tex, dollie ip, ooc arg ip, n - p vis por, NFSOC.

SH; gy - dk gy - dk gy, fm, sbphy, ooc blk, carb, ooc pale gn - gy gn, sft, sbwxy. LS; bn - dk bn, hd, bkly, mot, arg ip, tt tru.

SH; cont aa, pred phty, tr splnt, ooc carb. LS; tan - lt bn, hd, bkly, mic - fcl, ooc mot fragm / dk gy arg incl, tt tru.

Morrow 7960' (-2485')

SH; mod distinct change, gy - lt gy - gy gn, sft - fm, phty, splnt, sbfis, ooc f gran tex, tr mic carb incl, r vgtf / dk gy SH, tr carb. LS; cont aa, tt tru.

SH; gy - lt gy ooc pale gn, hd, bkly, splnt sbwxy, ooc dk gy carb, tr lse blk vit COAL, tr lse PYR. LS; off wh - tan, hd, bkly, dull rthy lus, tt.

SH; gy - dk gy - blk, fm, sbblky, carb, abnt cont aa, tr lse COAL. LS; lt tan - bn, hd, bkly, com c fragm, ooc rthy tex, tt tru.

LS; pale gn - lt gy, fm, phty, splnt, com dk gy - blk, carb ip, LS; cont aa, tt tru.

SH; gy - lt gy - pale gn, fm - sft, phty, splnt, r vgtf, ooc blk, carb. LS - lt tan - off wh, hd, bkly, mixcl, com fragm tr fos, tt tru.

SH; lt gy - gy gn - dk gy, sft, splnt, sbfis - fis, ooc v carb, tr vgtf, tr flot qtz grs. LS; off wh - lt bn, hd, bkly, micl, ooc fragm, tt tru.

SH; gy - dk gy - blk, fm, phty, splnt, sbfis, com carb ip, com pale gn - gy gn, sft, sbwxy, tr vgtf. LS; cont aa.

SH; pale gn - gy gn, LS; lt gy tr coopper - red bn, sft, splnt sbwxy, ooc sbfis, tr vgtf, com gy - dk gy, cont aa. LS; off wh - tan, fm - hd, sbblky, fcl, com mic fragm, tt tru.

KEYES 8078' (-2603')

SH; vcol, cont aa, tr lse PYR, tr blk, carb. LS; bn - dk bn, fm - hd, c xli, com c fragm / scat p srtf fos frags, tr tru, NSOC.

SH; pale gn - gy - gy gn - dk gy ooc blk, sft, splnt, sbfis, ooc carb

SH; cont aa. LS; lt tan, fm - hd, bkly, mixcl, ooc fos, tr lse c fos frags, tt tru. SS; r tr only, wh, fm - hd, bkly, mixcl, ooc blk, carb, n vis por, NFSOC.

SH; pale gn - pale gn - gy - dk gy, fm - sft, phty, splnt, sbfis, com vgtf ip, tr carb. LS; lt tan = wh, fm - hd, f - mixcl, tr fos, tr gn oly strgs, tt tru. SS; tr lse c / arg - sb rd qtz grs, NFSOC.

SH; cont aa. LS; cont aa. SS tr only, wh - off wh, ft - fm, f - v fgr, sbnd, w srtf and cons, lly wh - srtf and cons, rly wh mtx, sl calc, n vis por, NFSOC.

SH; pale gn - lt gy - red bn, sft, splnt pred cavings, com vgtf. LS; tan - off wh, hd, bkly, mixcl, com c fragm ooc / pale gn oly incl and strgs, tt tru.

SH; vcol, cont aa, pred cavings. LS; lt tan - off wh, fm - hd, mixcl, com c fragm, tr fos, tt tru.

SH; cont aa. LS; lt tan - off wh, fm - hd, mixcl, c fragm, ooc / scat c gr sbnd qtz grs, n vis por, NSOC. SS; wh - cfl, fm - ft v g mnt sbang, w srtf, pred sil / r glau, tt tru, NFSOC.

SH and LS; cont aa. SS; mly wh - pale gn, ft - fm - f - v fgr, sbang, w srtf and cons, pred sil, abnt scat fgr dk gn, glau pel, n vis por, NFSOC.

Mississippian 8186' (-2711')

LS; tan - lt bn - off wh, fm - hd, f - mixcl, com mic fragm, ooc sdy ip, tr fos, r glau, tt tru. SS; wh - lt gn cont aa, tr lwr m gr, n vis por, NFSOC. SH; cont aa.

LS; lt tan - off wh, fm - hd, f - mixcl, ooc / dn oly incl and strgs, tr fos, r sdy, tt tru. SS; cont aa. SH; tan - off wh, fm - hd, bkly, mixcl, com mic fragm, ooc sdy ip, tr fos, r glau, tt tru.

DOL; tr only, tan - lt bn, fm, sbblky, f - mic gran tex, tr arg ip, tt tru. LS and SH; cont a.

LS; off wh - lt tan - lt bn, hd, bkly, mixcl, tr mic fragm, r lith tex, tt tru. SH; pred Morrow SH cavings.

Osage 8287' (-2772')

DOL; tr only, bn - lt bn, fm - hd, mic gran tex, tr suc ip, tr c xli - n vis por, NSOC.

DOL; tan - bn - dk bn, hd, sbblky, fcln, com gran tex ooc mot arg, tr m xln / scat fos frags, tr glau, tt tru, NSOC. LS, tan - bn, hd, bkly, mixcl, tr c fos, tr lse c fos frags, SH; pred Morrow cavings aa.

SH; pred vcol Morrow SH cavings. LS; lt tan, fm - hd, bkly, mixcl, com fos ip, tr fos, r lse c fos frags, tr glau, tt tru. SH abnt cavings cont aa. DOL; tr only tan - lt bn, fm - hd, sbblky, fcl, com f - mic gran, tt tru.

SH; pred vcol Morrow SH cavings. LS; lt tan, fm - hd, bkly, mixcl, com fos ip, tr fos, r lse c fos frags, tr glau, tt tru. SH abnt cavings cont aa. DOL; tr only tan - lt bn, fm - hd, sbblky, fcl, com f - mic gran, tt tru.

DOL; tr only, tan - lt bn, fm, sbblky, f - mic gran tex, tr arg ip, tt tru. LS and SH; cont a.

LS; off wh - lt tan - lt bn, hd, bkly, mixcl, tr mic fragm, r lith tex, tt tru. SH; pred Morrow SH cavings.

Osage 8287' (-2772')

DOL; tr only, bn - lt bn, fm - hd, mic gran tex, tr suc ip, tr c xli - n vis por, NSOC.

DOL; tan - bn - dk bn, hd, sbblky, fcln, com gran tex ooc mot arg, tr m xln / scat fos frags, tr glau, tt tru, NSOC. LS, tan - bn, hd, bkly, mixcl, tr c fos, tr lse c fos frags, SH; pred Morrow cavings aa.

SH; pred vcol Morrow SH cavings. LS; lt tan, fm - hd, bkly, mixcl, com fos ip, tr fos, r lse c fos frags, tr glau, tt tru. SH abnt cavings cont aa. DOL; tr only tan - lt bn, fm - hd, sbblky, fcl, com f - mic gran, tt tru.