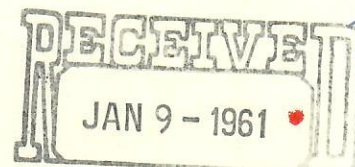


OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF COLORADO

## WELL COMPLETION REPORT

## INSTRUCTIONS

Within thirty (30) days after the completion of any well, the owner or operator shall transmit to the Director three (3) copies of this form, for wells drilled on Patented or Federal lands and four (4) copies for wells drilled on State lands. Upon request, geological information will be kept confidential for six months after the filing thereof.

Field Wildcat Operator SKELLY OIL COMPANY  
County Moffat Address Box 840  
City Casper State Wyoming  
Lease Name A. V. Sager Well No. 1 Derrick Floor Elevation 7225'  
Location C SE/4 SE/4 Section 6 Township 9N Range 91W Meridian 6 PM  
(quarter quarter)  
648 feet from S Section line and 672 feet from E Section Line  
N or S E or W

Drilled on: Private Land ☒ Federal Land ☐ State Land ☐

Number of producing wells on this lease including this well: Oil \_\_\_\_\_; Gas \_\_\_\_\_

Well completed as: Dry Hole ☒ Oil Well ☐ Gas Well ☐

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Date January 6, 1961

Signed J. A. Deffeyes (J. A. Deffeyes)  
Title District Superintendent

The summary on this page is for the condition of the well as above date.

Commenced drilling November 20, 19 60 Finished drilling December 21, 19 60

## CASING RECORD

SIZE	WT. PER FT.	GRADE	DEPTH LANDED	NO. SKS. CMT.	W.O.C.	PRESSURE TEST	
						Time	Psi
<u>10-3/4"</u>	<u>32.75</u>	<u>H-40</u>	<u>330'</u>	<u>225</u>	<u>24 hrs</u>	<u>30 min.</u>	<u>500</u>

## CASING PERFORATIONS

Type of Charge	No. Perforations per ft.	Zone	
		From	To

TOTAL DEPTH 7694'

PLUG BACK DEPTH \_\_\_\_\_

Oil Productive Zone: From \_\_\_\_\_ To \_\_\_\_\_ Gas Productive Zone: From \_\_\_\_\_ To \_\_\_\_\_

Electric or other Logs run 330' - 7693' Date December 20, 19 60

Was well cored? No

Has well sign been properly posted? \_\_\_\_\_

## RECORD OF SHOOTING AND/OR CHEMICAL TREATMENT

DATE	SHELL, EXPLOSIVE OR CHEMICAL USED	QUANTITY	ZONE		FORMATION	REMARKS
			From	To		

Results of shooting and/or chemical treatment: \_\_\_\_\_

## DATA ON TEST

Test Commenced \_\_\_\_\_ A.M. or P.M. \_\_\_\_\_ 19 \_\_\_\_\_ Test Completed \_\_\_\_\_ A.M. or P.M. \_\_\_\_\_ 19 \_\_\_\_\_

For Flowing Well:

Flowing Press. on Csg. \_\_\_\_\_ lbs./sq.in.

Flowing Press. on Tbg. \_\_\_\_\_ lbs./sq.in.

Size Tbg. \_\_\_\_\_ in. No. feet run \_\_\_\_\_

Size Choke \_\_\_\_\_ in.

Shut-in Pressure \_\_\_\_\_

For Pumping Well:

Length of stroke used \_\_\_\_\_ inches.

Number of strokes per minute \_\_\_\_\_

Diam. of working barrel \_\_\_\_\_

Size Tbg. \_\_\_\_\_ in. No. feet run \_\_\_\_\_

Depth of Pump \_\_\_\_\_ feet.

If flowing well, did this well flow for the entire duration of this test without the use of swab or other artificial flow device? \_\_\_\_\_

TEST RESULTS: Bbls. oil per day \_\_\_\_\_ API Gravity \_\_\_\_\_  
Gas Vol. \_\_\_\_\_ Mcf/Day; Gas-Oil Ratio \_\_\_\_\_ Cf/Bbl. of oil  
B.S. & W. \_\_\_\_\_ %; Gas Gravity \_\_\_\_\_ (Corr. to 15.025 psi & 60°F)

SEE  
REVERSE  
SIDE



# FORMATION RECORD

Give name, top, bottom and description of all formations encountered, and indicate oil, gas and water bearing intervals, cored sections and drill stem tests.

FORMATION NAME	TOP	BOTTOM	DESCRIPTION AND REMARKS
			<p>Within thirty (30) days of the date of any well, the owner or operator shall transmit to the Bureau of Land Management (BLM) copies of this form for wells drilled on patented or Federal lands and form (F) copies for wells drilled on other lands.</p> <p>Upon request, geological information will be kept confidential for six months after the filing thereof.</p> <p>Field Address _____ County Name _____ Operator _____ Address _____ Post Office _____</p> <p>SEE ATTACHED SAMPLE LOG.</p> <p>Please Name _____ Location _____ Section _____ Township _____ Range _____ Derrick Floor Elevation _____ Magnetic _____ True _____</p> <p>Drilled on: Private Land <input checked="" type="checkbox"/> ; Federal Land <input type="checkbox"/> ; State Land <input type="checkbox"/> ; Gas _____ Number of producing wells on this lease including this well: Oil _____ ; Gas _____ Well completed as: Dry Hole <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> The information given hereon is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.</p> <p>Date _____ January 6, 1961 Title _____ Signed _____ (Signature) December 21, 1960</p>

CASING BOARD

SIZE	WT PER FT.	GRADE	DEPTH LAPPED	NO. SKS. CNT.	W.O.C.	PRESSURE TEST
					Time	Test
10-3/4"	32.75	1-40	330'	325	24 hrs	500

CASING PERFORATIONS

[illegible]

Oil Productive Zone: From _____ To _____	Gas Productive Zone: From _____ To _____
Electric or other logs run 350' - 7600'	Date December 23, 1950
Was well cored? No	Has well sign been properly posted?

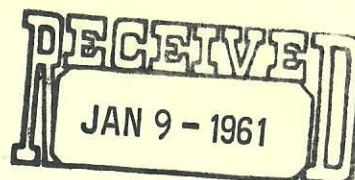
## RECORD OF SHOOTING AND/OR CHEMICAL TREATMENT

[illegible]

DATA ON TEST



SKELLY OIL COMPA  
NO. 1 A. V. SAC



OIL & GAS  
CONSERVATION COMMISSION  
672<sup>1</sup> FEL and 64<sup>1</sup> SE  
G SE SE Section 6, T 9 N, R 91 W  
Moffat County, Colorado

Elevation: 7225 KB  
6213 GR

Spudded: November 20, 1960  
Completed: December 21, 1960

Total Depth: 7694'

Dry and Abandoned

Set 10 3/4" at 330 w/225 Sacks

SAMPLE DESCRIPTION

Sample study starts at 411'.

Wasatch Formation - Surface

411	500	Conglomerate, quartz, clean, white, orange and pink, angular and sub-round, clear and translucent quartz, some large, silvery and black flakes of mica, few euhedral crystals of pyrite. Quartz is well sorted, grain average, 1 mm. Probable good water sand.
500	510	Siltstone, medium brown, with conglomerate as above; siltstone, clayey, soft.
510	520	Conglomerate quartz, as above, with brown, and some lavender, claystone and siltstone.
520	530	Shale, light gray, soft, bentonitic.
530	540	Shale, variegated and mottled red and gray, soft, gumbo.
540	550	Shale and conglomerate, as above.
550	560	Shale, maroon, red, soft, gumbo.
560	570	Shale, as above, with some angular, clear and translucent, quartz conglomerate, 1 mm.
570	580	Shale, variegated orange, yellow, white, gray, red, with conglomerate, as above.
580	590	Tripoli, white, soft, fine grain, with imbedded, round, 1 mm, quartz grains, medium reaction with HCl, with shale and conglomerate, as above.
590	620	Shale, variegated, soft, bentonitic, some quartz conglomerate.
620	630	Conglomerate, quartz, clear, clean, glassy, 1 mm, orange and white and pink grains. Some pink and white feldspar (5%).
630	640	Conglomerate, as above, some black and white (silvery) mica flakes. Some variegated shale.
640	650	Conglomerate, as above, and shale, as above, 50%.
650	670	Shale, variegated, some conglomerate, as above.
670	680	Shale, oxidized, bright iron red - maroon, mottled and variegated.
680	690	Conglomerate, quartz, clear, poorly sorted, 1-3-4 mm grains, with some variegated shale.
690	700	Conglomerate quartz, as above, very clean quartz sand. Trace chlorite flakes.



700	710	Shale and siltstone, iron red - oxidized.
710	750	Shale, variegated, some quartz conglomerate.
750	820	Shale and siltstone, gray, red and variegated and varicolored layers. Gumbo, soft, few grains quartz conglomerate.
820	830	Sandstone, silty, clayey with trace subbituminous coal, with shale, gray and variegated, as above.
830	1000	Shale, variegated, soft, bentonitic as above, mainly red - light gray, with minor trace quartz conglomerate (caving).
1000	1060	Shale, as above, variegated, soft, gumbo.
1060	1070	Conglomerate, quartz, clean, clear and translucent, angular, 1 mm, grain, trace feldspar, trace chert, black.
1070	1080	Shale, variegated, red, maroon, gray, soft, with some conglomerate as above.
1080	1130	Shale, light gray and lavender.
1130	1140	Conglomerate, quartz, as above.
1140	1160	Conglomerate, as above, with some (40%) variegated shale.
1160	1170	Shale, variegated, soft, gumbo.
1170	1190	Conglomerate, as above, with shale (50%).
1190	1200	Shale, variegated, lavender, gray.
1200	1240	Shale, variegated, as above, trace quartz conglomerate.
1240	1260	Quartz, pebble conglomerate, pink, orange, 3 mm, round, pebble conglomerate with quartz, angular, glassy conglomerate, trace silvery mica, soft.
1260	1290	Quartz conglomerate, as above, with 30-40% shale, variegated.
1290	1330	Quartz conglomerate, as above, clear and translucent, angular, 1 mm, quartz grains.
1330	1340	Shale, bright iron-red, variegated, sand above probably water bearing because of deeply oxidized lower shale.
1340	1380	Shale, gray, lavender, soft, bentonitic. Trace quartz conglomerate.
1380	1430	Shale, red, deeply oxidized zone, variegated. Trace quartz conglomerate.
1430	1440	Quartz, conglomerate, as above, trace black chert.
1440	1450	Conglomerate, as above, with variegated, rusty, oxidized, shale.
1450	1460	Shale, rusty, variegated, soft.
1460	1480	Conglomerate and shale, as above (50%).
1480	1490	Shale, variegated. Trace conglomerate.
1490	1500	Shale, variegated, some conglomerate, trace large, 5-9 mm, quartz pebble, and quartz conglomerate, abundant marcasite crystals and incrustations.
1500	1530	Shale, variegated, with some quartz conglomerate.
1530	1540	Conglomerate, quartz, as above, some chert, black and black mica, and marcasite.
1540	1560	As above, increase in variegated shale.
1560	1570	Conglomerate, with shale, as above, some quartz pebble and chert.



1570	1610	Shale as above, with some conglomerate as above.
1610	1630	Conglomerate, runty, oxidized with mica and coal fragments.
1630	1650	Conglomerate, white, and cherty (chert is black, hard) massive conglomerate.
1650	1670	Conglomerate and shale (50%) as above.
1670	1730	Shale, variegated, soft, bentonitic. Some silty shale.
1730	1740	Conglomerate, quartz as above.
1740	1750	Conglomerate and shale (50%).
1750	1780	Conglomerate, massive, quartz, some silty shale, dark gray.
		Thus far, sequence is mostly variegated and varicolored shale, with lenses of quartz grit conglomerate.
1780	1810	Grit, clean, clear and translucent, angular, very coarse, quartz grains. Unconsolidated, with some variegated shale.
1810	1820	Shale, variegated and varicolored, soft, bentonitic, chunky.
1820	1870	Shale as above, slightly more silty.
1870	1880	Grit, as above, unconsolidated. Some chert (black), silvery and black mica, trace marcasite.
1880	1900	Shale, bright rusty red and variegated - lavender, orange, yellow, light-medium gray, some chert cave and trace medium brown- medium green, angular sandstone.
1900	1910	Grit and variegated shale, as above, some hard, dark gray chert.
1910	1920	Shale, variegated, soft.
1920	1960	Grit, clean, loose, angular, 1 mm, grains, with some chert as above. Trace mica, trace round pebble quartz.
1960	1970	Shale, silty, medium gray, soft, clayey, with variegated shale.
1970	2000	Grit, quartz and chert, loose as above.
2000	2030	Grit, as above, with 50% shale, variegated as above.
2030	2050	Shale, silty, medium-light gray, soft, chunky.
2050	2060	Grit and shale (50%), as above.
2060	2070	Shale, lavender, brown, gray.
2070	2100	Shale, with grit as above.
2100	2150	Shale, variegated, some grit.
2150	2170	Grit, clean, clear, angular, loose, quartz, with some dark gray chert. Trace mica. Tracemarcasitic coal fragments.
2170	2190	Grit, as above, some shale, variegated.
2190	2200	Shale, variegated.
2200	2290	Shale, rusty-red, oxidized and mottled
2290	2300	Shale, very silty and sandy, medium gray, micaceous (black and white mica), poor porosity, with variegated shale.



2300	2400	Shale, varicolored, mottled, soft, bentonitic.
2400	2420	Sandstone (10%), white, salt and pepper (contains dark chert fragments), fine-angular grains, friable, fair-poor porosity, with variegated shale as above.
2420	2450	Grit with shale, as above, (50%). Trace chert pebble.
2450	2470	Grit, white, glassy, poorly sorted, 1-5 mm angular grains, loose, some chert grains.
2470	2480	Grit with some shale, variegated as above.
2480	2500	Grit, massive bed. Trace-some chert and quartz polished pebbles with some shale as above, trace pink feldspar.
2500	2530	Conglomerate, quartz and chert pebble conglomerate, large, subround 5-7-9 mm, white-darkgray, intermixed chert and quartz, some feldspar pebbles with variegated shale as above (30%).
2530	2540	Shale, silty and sandy, medium gray, poor porosity, with variegated shale as above.
2540	2550	Shale, as above. Trace white, fine grain, friable sandstone. No show.
2550	2570	Sandstone, clayey, medium gray, very fine grain, poor porosity, with shale as above. Few quartz, grain-grit cave?
2570	2600	Shale, variegated as above.
2600	2610	Sandstone (5-10%), white, fine-angular grains, good porosity (stringer) with shale as above.
2610	2620	Shale, as above, some grit (50%).
2620	2660	Grit, as above, shale (30-40%).
2660	2670	Grit, loose, clear, and translucent, white, coarse (1-2 mm), angular quartz grain; trace pink grains and trace marcasite.
2670	2690	Shale, variegated, soft, with some 30% grit as above.
2690	2740	Shale, as above, slightly silty.
2740	2750	Grit, quartz and chert pebble grit or conglomerate, dark gray, pitted and round, small 1-3 mm pebbles of chert and glassy quartz. Few small doubly terminated euhedral quartz crystals. Trace shiny hard, brittle coal.
2750	2760	Grit, as above, with shale, variegated (30%).
2760	2770	Shale, variegated.
2770	2780	Sandstone (1-3%), very fine grain, light brown, light stain in few fragments, poor show, with shale, variegated.
2780	2800	Shale, variegated, trace hard coal; shale, although variegated, has medium green cast overall.
2800	2820	Sandstone, (trace), light brown, very fine grain, clayey, micaceous, with shale, variegated.
2810	2820	Sandstone, (trace), light gray, fine grain, friable, good porosity, no show, with shale, variegated, silty.
2820	2830	Shale, variegated, silty.
2830	2840	Sandstone, medium gray, hard, clayey, mica (5%), no show, with shale as above.



2840	2850	Shale, as above, slightly silty, with some imbedded chert pebble and quartz grit.
2850	2860	Sandstone stringer, medium gray, clayey, medium grain, mica and with chert grains and chlorite grains, with shale as above.
2860	2870	Shale, very sandy, tight, medium green, micaceous.
2870	2910	Shale, variegated, soft.
2910	2930	Shale, as above, trace light gray and medium grain, clayey, sandstone stringer, shale, predominately medium green.
2930	2940	Shale, varicolored, bright iron red; trace brown sandstone, clayey, no show; trace coal, hard, shiny.
2940	2950	Trip sample. Shale, variegated.
2950	2960	Coal, hard, black, shiny, subbit, with carbonaceous, black, shale. Definite lithology break; more carbonaceous section and more waxy carbonaceous and black shales.
2960	2990	Shale, medium-light green, waxy, soft, clayey and silty; trace coal and carbonaceous shale.
2990	3000	Shale, as above, black and carbonaceous shale.
3000	3040	Shale, light green, soft, silty, some variegated gray shale.
3040	3080	Shale, light green, and carbonaceous, black shale.
3080	3090	Shale, as above, with minor thin sandstone stringers. Trace shiny cannel coal.
3090	3100	Shale, as above.
3100	3110	Shale, black, carbonaceous, trace coal and medium green shale.
3110	3120	Sandstone, (trace), clayey, fine grain, no show, with shale as above.
3120	3160	Shale, dark gray, waxy, with trace coal and shale, medium gray.
3160	3170	Shale, as above, trace some coal.
3170	3270	Shale, dark gray-black, waxy, soft, carbonaceous, trace coal and sandstone stringers. Section from 3100 to 3270 very carbonaceous generally.
3270	3340	Shale, dark gray and medium green, soft, waxy, carbonaceous.
3340	3350	Coal (10%) stringer, (2'), hard, black, brittle, shiny, subbit, with shale, medium-dark gray, waxy.
3350	3400	Shale, as above.
3400	3410	Coal (10' thick very probably), bit-sub anthracite, hard, black, shiny.
3410	3430	Shale, light-medium green to medium-dark gray, soft, waxy, trace coal.
3430	3470	Shale, medium-dark gray, as above, considerable recycling of samples.
3470	3480	Sandstone (trace) fine-medium grain, light gray-white, good porosity, no show, with shale as above, trace coal.



3480	3490	Coal, (5') sub-sub to sub-anthracite, with carbonaceous shale, dark gray-black.
3490	3500	Coal and carbonaceous shale as above, maybe two distinct beds.
3500	3510	Coal (20%) with carbonaceous shale and dark gray shale.
3510	3520	Coal (40-50%) with carbonaceous shale and dark gray shale.
3520	3530	Coal (50%) and carbonaceous shale (50%), very dirty, black, organic and carbonaceous shale.
This coal bed, if not a series, may be 50' thick and one of the thickest sub-bit beds throughout the Rocky Mountain States.		
3530	3550	Sandstone, arkose or grit, clear and translucent, poorly sorted, angular, 1-5 mm, loose, average, 1 mm, quartz grains. Trace orange brittle, coaly resin, with shale, variegated dark gray and light gray. No show.
3550	3570	Grit, as above, with some chert (dark gray) grains, clear quartz grains.
3570	3580	Grit, more coarse sandstone size with some chert grains. Grit is angular-subround. Some caving coal is sample 3530-3580.
3580	3600	Grit, salt and pepper, clear subround to subangular, clear and translucent, quartz grains with dark gray, opaque chert grains of coarse grain size. Trace amethyst grains, trace pink feldspar and unknown hard, light green, grains. Trace black chert; trace orange quartz. Trace chlorite and silver mica.
3600	3610	Coal and grit.
3610	3620	Coal (50%) with dark gray shale. Trace grit cave?
3620	3630	Coal (10' bed) with trace grit and shale, as above, high grade, commercial coal.
3630	3640	Grit or arkose as above, sample 3580-3600.
3640	3650	Grit and coal (50%)
3650	3670	Coal and coarse Arkose as above.
3670	3680	Grit, with 10% coal and variegated shale. Trip sample.
3680	3700	Grit, chert and quartz (10-25% coal).
3700	3720	Coal (7' bed) with grit, as above.
3720	3730	Coal and grit 50%.
3730	3740	Grit, as above, trace quartzite fragments.
3740	3750	Coal (large 10' bed), sub-bit.
3750	3760	Grit, quartz, as above, with medium gray, soft, shale.
3760	3770	Coal, black, shiny, subbit-but-7-8' bed.
3770	3820	No samples. Replacing motor on shale shaker.
No show from Gas readings.		
3820	3840	Coal (4-5') subbit-bit, with shale, medium gray, chunky, some grit as above (20%).



3840	3850	Shale, medium-dark gray, soft, non-fissile, some grit, as above, (20%). Trace coal.
3850	3870	Shale, white-light gray, soft, chunky; trace grit, trace coal and carbonaceous shale.
3870	3880	Shale, as above, with dark gray shale; some grit and carbonaceous shale.
3880	3890	Shale, khaki, with shale, as above; trace grit and carbonaceous shale.
3890	3900	Shale, medium-gray - white - light gray; some light gray, silty and sandy shale.
3900	4050	Shale, white - light gray, medium brown and dark gray, soft, waxy. Trace grit and coal throughout.
4050	4080	Sandstone (trace), white, fine-medium, friable, angular-subround, fair porosity, with shale, as above, some grit and coal (cave?).
4080	4090	Shale, varicolored, light gray and dark gray with mottled shale cave; trace sandstone, brown, tight, hard, micaceous.
4090	4100	Sandstone (10%), white, fine-medium good porosity-poor porosity, friable-hard; with shale, as above.
4100	4110	Shale, light-dark gray, soft, with trace salt and pepper sandstone, white, clay cement, friable, no show.
4110	4120	Sandstone, white and salt and pepper (chert and coal fragments), friable in part, angular-subround grains, fair-poor porosity; and angular, large, 1-3 mm, grit grains of chert and quartz. Coal 10%. With shale, as above.
4120	4130	Coal, large 9' bed, bit. Trace dirty, coaly siltstone and white sandstone, as above.
4130	4140	Sandstone, medium gray, slightly coaly, fine-medium-angular grains, poor-fair porosity, no show, with some coal, as above, and variegated shale, as above.
4140	4150	Shale, light-dark gray, soft, chunky, trace sandstone and dirty siltstone. Trace coal and carbonaceous shale.
4150	4200	Shale, as above, large rounded recycled fragments with white sandstone (trace) fine-medium grain, fair-good porosity; trace coal.
4200	4220	Sandstone, white and salt and pepper, with chert and coal grains, fine-medium-angular grains, fair porosity; coal, 3-4' bed, bit.
4220	4230	Shale, medium-dark gray, with sandstone and coal, as above (40%).
4230	4240	Sandstone, 20%, white, salt and pepper, fine grain, intercalated with coal and shale, as above.
4240	4250	Shale, as above, some coal.
4250	4260	Coal, 3-4' bed, bit, with sandstone, white, fine-medium grain, fair porosity, friable, no show.
4260	4270	Coal and sandstone, as above.
4270	4290	Sandstone, white, salt and pepper, chert and coal grains intermixed, white clay cement binder, poor-fair porosity with carbonaceous shale and trace coal.
4290	4300	Shale, light-dark gray and light green, soft, waxy and silty.
4300	4330	Sandstone, shale and carbonaceous shale stringer intercalated, as above.
4330	4340	Shale, light-dark gray, soft, chunky.



4340	4350	Sandstone, white, fine grain, clayey, friable, fair porosity, no show.
4350	4360	Sandstone, 10%, white and salt and pepper, fine-medium grain, with coal, bit, and shale, as above.
4360	4370	Coal, dull and shiny, bit, with sandstone, as above, clayey (10%)
4370	4380	Siltstone, very clayey, light gray, micaceous, slightly friable; trace coal, papery.
4380	4390	Shale, light gray, silty, hard. Trace coal.
4390	4400	Sandstone (20%), white and salt and pepper, medium grain, contains black coal grains; cemented with white clay, poor porosity. Trace coal and medium green-green shale.
4400	4420	Sandstone, (some increase in sand and coal), as above.
4420	4430	Sandstone, as above, fine-medium grain, abundant coal.
4430	4440	Coal, 2-3' bed; with sandstone, as above.
4440	4450	Coal, 4-5' bed; with sandstone, white and slightly salt and pepper, fine-medium grain; some micaceous siltstone.
4450	4500	Coal (50-75-85%) in interval 4450-4500, with minor white, fine-medium grain sandstone stringers; poor-good porosity, no show. Coal is sub-bit to bit.
4500	4540	Coal and sandstone intercalated as interval 4450-4500.
4530	4540	Sandstone (20%), white to light gray, soft, clayey, poor porosity with shale, medium gray, soft.
4540	4550	Shale, medium green and dark gray, carbonaceous with sandstone, as above, 20%.
4550	4570	Sandstone, white, slightly salt and pepper, fine-angular grains, clayey, soft, slightly calcareous, no show, with carbonaceous black shale.
4570	4610	Sandstone, as above, white and salt and pepper, fine-medium grain, slightly micaceous and calcareous, fair porosity with carbonaceous shale. Sandstone is speckled with black chert and coal grains. Trace quartz and chert granules. Appears to be a massive 60' sand.
4610	4620	Trip sample - poor: Shale, light-dark gray, clayey shale.
4620	4630	Trip sample - poor: Shale, light-dark gray, clayey, trace sandstone, as above, and coal.
4630	4640	Shale, light-medium-dark gray, soft, chunky, some siltstone, white, clayey.
4650	4710	Shale, medium green and medium dark, with sandstone, 10-15%, as above. Trace coal.
4710	4720	Coal, 2' bed, white sandstone, salt and pepper (10%), clayey, fine-medium grain, fair-poor porosity.
4720	4730	Coal (6' bed), sub-bit-bit, with some sandstone (10%) coaly, fine grain.
4730	4750	Sandstone, dirty, carbonaceous, fine grain, with carbonaceous shale. Trace coal.



4750	4760	Coal (large 8' bed) subbit, with sandstone (5%), clean, white, some slightly speckled with coal and mica flakes, fair porosity in part.
4760	4770	Coal (10' bed), subbit, as above.
4770	4780	No sample.
4780	4790	Shale, medium-dark gray, soft, some coal.
4790	4800	No sample (mud pump down).
4800	4830	Sandstone, 30%, white and salt and pepper, fine-medium, angular to subround grains, speckled with black coal and chert grains, slightly calcareous, friable and good porosity in part, with coal (50%).
4830	4840	Sandstone (50%), white, clean, fine grain, very friable, good porosity with coal, 50%.
4840	4850	Sandstone (70%), white, slightly speckled with coal flakes and clayey, fair porosity, friable, slightly micaceous and speckled with chert grains in part. Some coal and carbonaceous shale.
4850	4935	Sandstone, white to light gray, slightly salt and pepper with speckled chert and coal grains, fine-medium, angular and subround grains, fair-good porosity, soft, friable. Good massive reservoir sand. No show. Abundant coal (50%) cave? in samples. Sandstone is slightly more coarse near base to contain weak white clay as cement.
4935	4950	Coal, subbit and bit, hard and soft coal.
4950	4960	Shale, medium-khaki gray, soft, silty.
4960	4980	Sandstone, white - salt and pepper, as above; with shale, as above, and coal; sand and coal caving.
4980	5000	As above, with trace shale, dark gray, fissile, soft, finely micaceous.
5000	5030	Sandstone, medium gray, clayey, soft, poor porosity, with dark gray, fissile shale.
5030	5120	Sandstone, white and salt and pepper, fine-angular grain, soft, fair-good porosity, no show; some dark gray shale. Trace coarse quartz (1-2 mm) at base.
5120	5190	Siltstone, medium grain, micaceous, clayey, hard, some dark gray, fissile shale. Some sandstone, white and salt and pepper, hard, tight, fine-medium, angular, grains.
5190	5200	Shale, dark gray, fissile, flaky.
5200	5220	Siltstone and sandstone, as above, hard, limy, tight, poor porosity, some dark gray shale.
5220	5230	Siltstone, medium gray, hard.
5230	5240	Sandstone, white and salt and pepper, fine-medium grain, abundant loose, coarse grain, clear quartz, grains.
5240	5280	Siltstone - Sandstone, medium gray, hard, tight, fine grain; some loose quartz grain, as above, with shale, silty, soft, micaceous (green).
5280	5300	Sandstone, light gray, salt and pepper, fine grain, fair-poor porosity, with shale, medium gray, silty, micaceous, some dark gray shale.
5300	5340	Sandstone and shale, as above, sandstone very micaceous, fair porosity, abundant, loose, coarse, subround, translucent quartz grain. Sandstone and shale intercalated.
5340	5390	Sandstone and shale, as above, sandstone more dark gray.



5390	5500	Shale, dark gray, fissile, soft, with medium gray, silty, shale.  Abundant caving sandstone, loose quartz, coal, sandstone, and shale from Fort Union, Wasatch and Lance.
5500	5515	Shale, dark gray-black, silty, finely micaceous; trace hard, medium gray-light gray sandstone.
5515	5602	Shales, as above, dark gray-black, fissile, abundant recirculated material, poor samples.
5590	5600	No samples - lost circulation.  Lewis sand pay - 5602.
5602	5619	Sandstone, clear and white, loose, medium-coarse grain; trace salt and pepper, fine grain, sandstone; trace mica. No sample up until interval 5610-5615.
5619	5639	Shales, dark gray-black, hard, carbonaceous, fissile.
5639	5661	Sandstone, as above, white and clear and translucent, loose medium coarse, angular quartz grains. Some cement grains. Trace friable white and salt and pepper sandstone.
5661	5665	Shale, dark gray-black, as above.
5665	5670	Sandstone, as above.
5670	5675	Shale, as above.
5675	5746	Sandstone, as above, loose, clear and translucent, angular-medium coarse quartz sand. Appears as a large massive bench, excellent porosity, no show.
5746	5775	Sandstone, white and salt and pepper, consolidated, friable and firm, fine-medium, angular grain, very slightly micaceous, clay (white) and calcite cement. With trace loose sandstone, as above.
5775	5785	Sandstone, loose, unconsolidated, clear quartz, as above.
5825	5900	Shale, dark gray-black, and gray-green, fissile and waxy, finely micaceous.
5900	5910	No sample. Bypass shaker.
5910	5915	Shale, dark gray-black, hard, fissile. Trace hard, calcareous and carbonaceous, tight, sandstone.
5915	5945	Sandstone, clean, white, loose quartz sand; medium-coarse, angular grains. No show. Trace mica. Poorly sorted sandstone.
5945	5950	Shale, dark gray-black, fissile.
5950	5990	Sandstone, as above, loose quartz sand.
5990	6200	Shale, dark gray-black, fissile, very finely micaceous, marine.
6200	6210	Sandstone, clear, loose, quartz sand, medium coarse angular grains. No show. With shale, as above.
6210	6230	Shale, dark gray-black, fossiliferous, marine.
6230	6240	Shale, as above, trace sandstone, gray, slightly carbonaceous and calcareous, no show, tight.
6240	6300	Shale, dark gray-black, fissile. Appears to be more sandstone by drill rate.
6300	6310	No sample.



6310	6330	Trip sample: Sandstone, clear, loose, quartz sand, medium-angular grains.
6330	6360	Sandstone, as above, loose pink, red, orange and clear quartz, with black chert grains, very unconsolidated.  Lost circulation.
6360	6400	Shale, dark gray-black, fissile, marine.
6400	6450	Shale, as above, trace large coarse quartz grains, subround-angular. Trace siltstone, green-gray and gray; trace some medium brown oxidized hard shale.
6450	6460	As above, trace perfectly rounded, 3 mm, pyrolusite ball.
6460	6470	As above, trace sandstone, carbonaceous and white, tight, fine-angular grains.
6470	6500	As above, trace margasitic sandstone.
6500	6540	Shale, as above, trace some loose sandstone.
6540	6646	Shale, dark gray-black, fossiliferous, marine; trace clayey, gray, siltstone.
6646	6650	Sandstone, loose, clear, quartz, medium-coarse, angular, quartz grains. No show.
6650	6680	Siltstone marker, sandstone, white, salt and pepper and siltstone, fine-angular grains, very hard, tight, calcareous, some dark chert and quartz grains.
6680	6690	Shale, as above, dark gray-black.
6690	6700	Sandstone, loose, angular, medium, quartz grains.
6700	6710	Shale, black, fissile.
6710	6720	Shale, light gray, slightly coaly, bentonitic, waxy, bentonite marker bed.
6720	6730	Shale, black, fossiliferous, some sandstone, as above, cave.  Lost circulation 6726'.
6730	6880	Shale, black, fossiliferous.
6880	6890	Shale, as above, some sand, loose quartz, medium angular grains (50%).
6890	7010	Shale, dark gray-black, fissile, hard.
7010	7070	Shale, as above, trace loose quartz sand.
7070	7080	Circulated sample - drilling break; sandstone, white, fine-angular grains, with shale, as above, no show. Trace bentonitic, gray, soft, shale.
7080	7190	Shale, black, very silty, hard, granular texture.
7190	7220	Shale, dark gray, hard, limey, silty.
7220	7250	Shale, black, silty, finely micaceous.
7250	7300	Sandstone, 10-15-20%, white-light gray, very limey, hard, tight, no show. Trace coaly shale, with shale, black, as above, slightly spotted mineral fluorescence in sand.



Mesaverde-sandstone tongue

7300	7310	Sandstone, white and salt and pepper, fine-angular grains, calcareous and friable, fair-good to excellent porosity, good beach sand.
7310	7325	Sandstone, as above, loose, excellent porosity.
7325	7390	Shale, black, hard, brittle, fine micaceous.
Top Mesaverde - William Fork Formation - 7390		
7390	7405	Sandstone, very limey, dark gray-medium brown, fine grain, limestone texture, hard, brittle, very calcareous, spotted mineral stain.
7405	7410	Shale, black, trace loose, fine grain sandstone.
7410	7430	Limestone, sandstone, medium gray brown, fine grain, limey texture, tight, some spotted mineral fluorescence, with shale, as above, and trace coal and marcasite.
7430	7442	Sandstone, white and salt and pepper, very fine grain, soft, friable in part, fair porosity, some hard, limey, sandstone. Trace coal. Circulated out. No show.
7442	7448	Sandstone, limey, hard, tight, with shale, black.
7448	7482	Sandstone, clean white and salt and pepper, fine-angular grain, very friable to firm, fair- good porosity.
7482	7492	Sandstone, as above, more limey, hard, tight. With shale, black.
7492	7510	Sandstone, white and salt and pepper, limey, firm, poor-fair porosity. No show.
7510	7520	Shale, black, fissile, hard.
7520	7550	Sandstone, very carbonaceous, dark gray, slightly glauconitic, tight, fine grain; with shale, black.
7550	7555	Circulated break; coal, peat, dark gray-brown, very soft.

Samples examined by:

C. M. Connelly