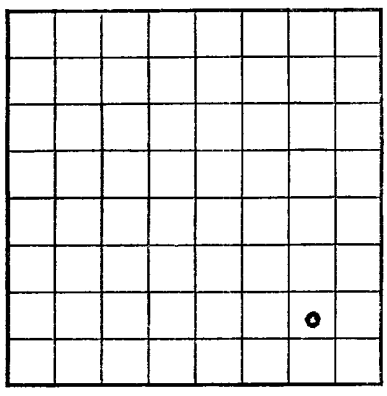
Budget Bureau No. 42-R355.2.
Approval expires 12-31-52.

Form 9-330

U. S. LAND OFFICE Santa Fe
SERIAL NUMBER 078039-A
LEASE OR PERMIT TO PROSPECT



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Southern Union Gas Company Address Burt Bldg., Dallas, Texas
Lessor or Tract Primo-Mudge Field Blanco State New Mexico
Well No. 1 Sec. 24 T. 32N R. 11W Meridian N.M.P.M. County San Juan
Location 990 ft. {N.} of S Line and 990 ft. {E.} of E Line of Section 24 Elevation 6352 DF (Derrick floor relative to sea level)

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.

Signed Van Thompson
Van Thompson
Title Manager Exploration Dept.

Date November 28, 1952

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

Commenced drilling April 18, 1951, 19 Finished drilling September 29, 1952, 19

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 4930 to 5000 No. 4, from
No. 2, from 5395 to 5550 No. 5, from
No. 3, from to No. 6, from

RECEIVED DEC 8 1952 OIL CON. COM. DIST. 3

IMPORTANT WATER SANDS

No. 1, from to No. 3, from
No. 2, from to No. 4, from

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
10-3/4	40.5		J-55	217.98'					Surface
7" OD	20#		J-55	4826'					Production
2" tubing	4.7#		J-55	5470'					

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
10-3/4	217'	200	Halliburton		
7"	4820'	232 from 4030' to 4820, also 185 sx from 2440' to 3223' by Halliburton also	Halliburton		

FOLD MARK

PLUGS AND ADAPTERS

Heaving plug—Material Length Depth set
Adapters—Material Size

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
		Nitro glycerine	19000	9/25/52	4865-5717	5717'
	Well tested 110 MCF before shot					

TOOLS USED

Rotary tools were used from 0 feet to 4820 feet, and from feet to feet
Cable tools were used from 4820 feet to 5717 feet, and from 4820 feet to 5565 feet

DATES

, 19 Put to producing October 31, 19 52

The production for the first 24 hours was barrels of fluid of which % was oil; % emulsion; % water; and % sediment.

Gravity, °Bé.

If gas well, cu. ft. per 24 hours 1780 MCF Gallons gasoline per 1,000 cu. ft. of gas

Rock pressure, lbs. per sq. in. 415# — Something wrong, and we plan to check further, and will advise.

EMPLOYEES

Dennam Drilling Company, Driller - Rotary; Carpenter-Tarrent Drlg. Co. Cable Tool, Driller
Southern Union Gas Co. Cable, Driller, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	244	244	Surface sand & rock
244	340	96	Sandy shale
340	460	120	Shale
460	900	440	Sand and shale
900	1100	200	Sandy shale
1100	1140	40	Sand
1140	1240	100	Sand and shale
1240	1260	20	Shale
1260	1360	100	Sand and shale
1360	1380	20	Shale w/trace of coal
1380	1480	100	Shale
1480	1500	20	Shale
1500	1630	130	Shale
1630	1650	20	Sand and shale
1650	1810	160	Shale - Top Kirtland 1710'-?
1810	1890	80	Sand and shale
1890	1930	40	Shale w/ stks. coal
1930	1970	40	Shale and sand
1970	2010	40	Shale w/stks of coal
2010	2040	30	Shale
2040	2200	160	Sandstone
2200	2350	150	Sand and shale
2350	2390	40	Sand and shale
2390	2410	20	Shale
2410	2440	30	Sand and shale
2440	2720	270	Sand

(over)

16—43094-2

FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION
2710	2820	110	Sand and shale
2820	2830	10	Shale
2830	2880	50	Sand
2880	2930	50	Sand and shale and coal
2930	2970	40	Sand
2907	3010	40	Shale and sand and coal
3010	3020	10	Coal
3020	3090	70	Coal and shale
3090	3100	10	Sand and shale
3100	3130	30	Sand, shale and coal
3130	3190	60	Sand
3190	3200	10	Sand, shale w/trace of coal
3200	3270	70	Sand and shale
3270	3330	60	Sand, shale and coal
3330	3350	20	Shale
3350	3360	10	Sand and shale
3360	4820	1360	Sand and shale
4820	4888	68	Sand
4888	4925	37	Sand and shale
4925	5009	84	Sand
5009	5163	154	Sand and shale
5163	5215	52	Shale
5215	5225	10	Coal
5225	5233	8	Shale ~~5233~~ ~~5260~~ ~~27~~
5233	5260	27	Sand
5260	5400	140	Sand and shale
5400	5510	110	Sand
5510	5717 TD	207	Sand and shale

Geological Tops:

Pictured Cliffs	3115'
Cliff House	4930'
Point Lookout	5395'

HISTORY OF OIL OR GAS WELL

16—43094-1 U. S. GOVERNMENT PRINTING OFFICE

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

Primo Oil Company, as operator, drilled this well down to a total depth of 5565', at which place tools were dropped and well was temporarily abandoned August 8, 1951.

Southern Union Gas Company took the well over and whipstocked around the tools and drilled it to a total depth of 5717', and completed as a gas well.

Drill Stem Test was made from 2974' to 3015'. Open 3 hours 35 minutes. Shut in 15 minutes. Strong blow of gas to surface when tool opened. Gauged 468 MCF at start, declining to light blow at end of test. Recovered 2510' GCM and H2O of which 810' was formation water. SIP 1400 PSI. BHP 1400 PSI.

Drill Stem test No. 2 3170' with packer set 3094'. Open 1 hour. Very light blow throughout test. Recovered 70' drilling fluid. SIP 1400 PSI. Flowing pressure was nil.

S A M P L E S

Southern Union Gas Company's Prince-Hodge No. 1
Location: 990' from S and E lines - Sec. 24, T-32-N, R-11-W

100-20	Fine to large sandstone clusters & xls; lots of lime
20-40	" " " " " and vry much Qtz xls
40-60	" " " " " " " " " "
60-80	" " " " " " " " " "
80-200	" " " " " " " " " "
200-20	" " " " " " " " " "
20-40	40% wh. xln med. ss, 60% choc. & gray vry soft shale
40-60	Tr. above 100% sndy shale, red gry & choc.
60-80	Top Halderman ?? 20% wh, veriag. sand; 80% choc sand
80-300	" " " " " " " " "
300-20	50% wh, grn vry fine grn ss; 50% choc shale
20-40	40% above, 60% choc sh (sndy)
40-60	40% above, 60% choc sh (silty)
60-80	10% wh and grn ss clstrs, tr red ss, 90% gry baky shale
80-400	Same as above - bad sample
400-20	30% wh & grn fn grned ss, 70% choc & gry sh
20-40	35% wh & grn fn grned ss, 65% choc & gry sh
40-60	60% lrge Qtz xls, 20% fne grned snd clstrs, 20% gry & choc sh
60-80	80% Qtz xls tr. Jasper, 20% blm & choc. crumbly shale
80-500	20% grn fng grn snd clsters, 10% choc sh, 70% Qtz xls
500-20	100% Qtz xls <u>lgrgs</u>
20-40	" " " "
40-60	85% Qtz xls, 15% gry soft shale
60-80	20% fn grned ss, 80% gry soft sh, Qtz xls
80-600	Bad sample
600-20	85% wh wl rndgd med. snd grnhh, 15% brn & gry baky sh
20-40	Tr. sndy, same as above
40-60	85% choc gry & grn baky sh, 15% drty fne snd
60-80	90% choc baky sndy sh, 10% grn sand
80-700	55% wh blk fne snd, 65% choc sndy sh
700-20	50% " " " " 50% " " "
20-40	20% " " " " 80% " " "
40-60	Tr. chalse, 25% wh blk fne snd, 75% choc sndy sh (silty)
60-80	60% wh & blk med grn ss bubbling; 40% (silty)
80-800	80% wh & blk med grn ss, 20% gry micaic sh
800-20	" " " " " " " " " "
20-40	Bad sample
40-60	75% wh & blk, sms grn med grn ss, 25% choc & gry sh
60-80	Bad sample
80-900	25% wh & blk med grn ss, 75% choc & gry sndy sh
900-20	15% wh & blk med grn ss, 85% choc & gry sndy sh
20-40	50% wh & blk med grn ss, 10% gry fng grn ss, 40% sndy sh
40-60	" " " " " ", 35% sndy sh
60-80	Tr. chalse, 75% wh & blk med grn ss, 25% choc blky sh

80-100	Bad Sample
1000-20	Bad Sample
20-40	20% wh blk fne grn ss, 60% med to large ss xls, 20% choc & gry sh
40-60	80% " " " " " " " " " " " " "
60-80	80% wh & blk fne grn ss, 10% grn vry fne ss, 10% choc sh
80-1100	80% wh & blk fne grn ss, 20% choc & gry sh
1100-20	70% wh crystalline sd, 10% grn sh, 10% red sh, 10% blk sh
20-40	60% brn sd, 20% gry sh, vry fractious, 15% grn sh, 5% kayeline
40-60	Tr. of Jasper, 50% gry sd, 30% gry fractious sh, 10% gry sh, tr lymonite
60-80	Tr. of Jasper, 40% gry sd, 40% gry fractious sh, 10% grn sh
1180-1200	Tr. of Jasper, 50% gry sd, (clusters) 30% gry & brn micasious sh, 20% grn sh, tr lymonite
1200-20	Tr. of Jasper, 40% gry sd, 50% gry & brn sh, 10% grn tr lymonite
20-40	30% brn sh, 35% wh to brn sd (clusters) 35% gry sh, tr Jasper.
40-60	60% grn micasious sh, tr of Jasper, tr wh limestone, 20% wh to brn ss, 10% brn to blk sh
60-80	Tr. Chalco, tr of Jasper, 65% wh sd crystals, 20% brn to gry sh, 15% grn sh, tr of limestone
1280-1300	Tr. Jasper, 40% wh sd crystals, 60% brn, gry & grn sh, gry being predominant, bad sample
1300-20	20% grn sdy sh, 60% gry dull sh, 20% wh to brn sd crystals, tr blk sh
20-40	Tr. Jasper, Chalco, 40% grn & wh limey sd, 40% wh sd, 20% gry & brn sh
40-60	Tr. stain, 35% wh sd clusters, 45% brn sh, 20% grn limey sh, tr blk sh
60-80	Tr. blk coal, tr chalco, 20% wh sd grns, 50% brn sh, 30% grn sh
1380-1400	Tr. lymonite, 25% wh sd grns, 70% brn & grn sh, grn being predominent
1400-20	80% brn & grn micasious sh, 20% wh to brn sd clusters, tr variegated sh
20-40	Tr. ss, 100% sh, gry, grn & brn, bad sample
40-60	Tr. ss, 40% grn sh, 50% brn sh, 10% gry sh, tr of chalco
60-80	Bad sample - 60% brn, 40% grn sh, tr wh ss
1480-1500	70% brn resinous sdy sh, 30% grn dull shale, tr of dead oil, tr sd clusters
1500-1520	20% wh sd clusters, 30% brn resinous sh, 25% grn limey sdy sh, 25% gry sh
10-20	60% choc sh, typical McDermit, 30% grn variegated sh, 10% wh ss clusters
20-30	35% choc, 50% grn variegated, tr Jasper, 10% wh ss, 5% gry sh
30-40	Tr. chalco, 40% choc sh, 5% bright red sh, 20% grn sh, 25% gry sh, tr. white ss clusters.
40-50	Tr. Chalco, 50% choc sh, 20% grn sh, 30% gry sh, tr ss
50-60	Bad sample, all galled. When washing out washed all sample away
60-70	75% grn sh, 20% choc sh, 5% gry sh
70-80	Bad sample, all galled
80-90	Tr. Jasper, 25% wh ss, 70% grn sh, 5% brn sh
1590-1600	30% grn sh, 40% choc, 30% red & gry mixed sh
1600-1610	40% choc, 30% grn, 30% gry sh
10-20	Bad sample, all galled
20-30	Bad sample, over-run with mud
30-40	30% choc, 40% grn, 20% wh sd stone cluster, 10% gry sh
40-50	40% wh ss clusters, 30% grn sh, 30% gry sh, tr choc sh
50-60	40% grn sh, 60% brn & choc sh, tr. grn sh & tr gry ss
60-70	50% Grn sh, 50% choc & gry sh, tr gry ss
70-80	30% Grn sh, 60% " " " " ss, dead oil
80-90	Tr. ss, 100% choc, grn & gry sh
1690-1700	Tr. ss, 100% choc, grn & gry sh with grn being predominate
1700-1710	Tr. ss, 30% red sh, similar to West Texas Permian sh, 70% grn, choc & gry sh, gry being predominate

10-20	30% grn sh, 10% bright red, 60% gry sh, probable top Kirtland
20-30	80% grn, tr bright red sh, 80% gry & tr of choc sh
30-40	15% grn, tr red sh, 85% gry & some brn sh
40-50	Tr. coal, 20% grn sh, 80% gry & brn sh
50-60	30% grn sh, 40% choc, 20% gry, 10% red, tr. buff sh
60-70	30% grn sh, 40% choc sh, 20% gry, 10% red, tr buff sh, excellent samples
70-80	30% grn sh, 35% chos sh, 25% gry sh, 10% red, trace buff ss & tr coal
80-90	30% grn sh, 40% chos sh, 20% gry sh, 15% wh ss clusters, tr of coal
1790-1800	Tr. of Chalco, 40% wh sd clusters, 20% grn sh, 30% choc sh, 10% gry sh. Somewhere between 70 and 1800 was the top of the Farmington sandstone
1800-1810	35% wh to gry sd clusters, 55% gry sh, 5% red & chos sh, 5% grn sh
10-20	75% wh to gry sd clusters, 15% gry sh, 5% red & choc sh, 5% grn sh Tr. of Chalco
20-30	35% wh to gry sd clusters, fne grained, 20% gry, 25% grn, 20% red & choc sh
30-40	30% wh to gry ss clusters, fne grnd, 50% gry sh, 15% grn, 5% red & choc Tr. of coal
40-50	30% wh to gry ss clusters, 40% grn sh, 10% gry, 20% red & choc sh
50-60	20% wh & grn & gry ss clusters, tr of aragonite, 50% gry sh, 20% grn sh, very blocky, 10% red & chos sh
60-70	20% wh to gry ss clusters, tr of aragonite, 60% gry sh, 10% grn, very blockey 10% red & choc sh
70-80	25% wh to gry ss clusters, tr of chalco, 30% gry sh, 30% grn sh, 15% choc & red sh
80-90	5% red & choc sh, 25% grn, 40% gry, 30% wh to brn ss clusters, med sized grns
90-1900	5% coal, 5% wh ss cluster, med grnd, 20% grn sh, 20% brn & choc sh, 50% gry sh
1900-10	Tr. of coal, 20% red & chos sh, 20% grn sh, 60% gry sh, vry micacious
10-20	Tr. of coal, 40% red & choc sh, 10% grn sh, 20% brn sh, 30% gry sh, vry micacious
20-30	50% red & chos sh, 20% grn, 30% gry sh, vry micaious
30-40	40% wh to gry sd clusters, med sized grn, 30% grn, 40% gry sh, 10% brn sh, vry rotten, almost a black
40-50	Bad sample
50-60	10% grn, 90% brn to gry, very rotten resinous looking sh, try lymonite
60-70	80% dk brn to gry sh, 10% red, tr of grn sh
70-80	Tr. of coal, tr of ss, 100% brn to gry, vry rotten, resinous looking sh, tr of grn sh
80-90	Same as above
90-2000	Tr. dead oil, 5% ss, 95% brn to gry sh, rotten, vry resinous, similar to that above
2000-10	5% coal, 10% wh, fne grained ss clusters, 35% grn sh, 50% brn to gry, rotten, vry resinous looking sh, similar to that above
10-20	Bad sample
20-30	Tr ss, 35% grn sh, 65% brn to gry, rotten, resinous sh, similar to above
30-40	Tr dead oil, 10% ss, 70% brn to gry sh, vry rotten, resinous looking, 20% grn sdy sh, vry, vry fne grns
40-50	80% wh to light grn ss clusters, tr dead oil, 10% gry sh, 10% red & choc sh, tr grn sh
50-60	Tr ss, 30% grn sh, 70% gry to brn, rotten, resinour sh, tr coal
60-70	60% ss, wh & grn variegated, vry fine grns, 20% grn sh, 20% gry sh
70-80	70% grn ss, vry fne grnd, 20% gry sh, 10% brn to red sh, tr Jasper tr petrified wood
80-90	90% grn to wh, vry fne grnd ss, 10% gry sh, tr choc sh

2090-2100	85% grn to wh, vry fne grnd ss, 15% gry sh, tr dead oil, tr coal
2100-10	85% wh to light grn, vry fne grnd ss, 5% brn, rotten ss clusters, 10% gry & chec sh
10-20	80% multi-colored, vry fne grnd ss clusters, tr brn rotten ss clusters, 20% choc & gry sh
20-30	75% wh to multi-colored, vry fne grnd, ss clusters, 25% choc & gry sh
30-40	90% wh to multi-colored, vry fne grnd ss clusters, 10% choc & gry sh, vry blocky
40-50	80% wh to multi-colored, vry fne grnd ss clusters, 20% choc & gry sh
50-60	75% wh to multi-colored, vry fne grnd ss clusters, 25% choc & gry sh
60-70	60% wh to multi-colored ss, vry fne grnd clusters, 40% choc & gry sh
70-80	5% lime, 30% wh to multi-colored ss clusters, vry fne grnd, 15% choc sh, tr gry sh
80-90	Tr limestone, 30% wh ss clusters, med grns, 50% brn & grn ss clusters, vry fne grnd, 20% choc & gry sh
90-2200	90% brn & grn, rotten ss clusters, vry fne grnd, 10% choc & gry sh, blocky
2200-10	Tr. lime, 25% wh ss cluster, med grnd, 60% brn sdy sh, vry fne grnd, 15% choc sh, tr gry shy sd
10-20	Tr. limestone, 30% wh to grn ss clusters, fne grnd, 60% brn sdy sh, 10% choc & tr of grn sh
20-30	Bad sample, too much coal
30-40	25% wh, med size ss clusters, 60% brn sdy sh, 15% choc sh, tr grn sh, tr buff ss, vry, vry, minute sized grns.
40-50	Bad sample
50-60	15% wh ss clusters, medium size grns, 75% brn sdy sh, 10% gry sh, tr gr sh
60-70	15% wh ss clusters, med grnd, 75% brn sh, vry rotten, 10% gry sh, tr gr sh
70-80	20% wh ss clusters, med grnd, 60% brn sh, 20% gry sh, tr grn sh
80-90	Bad sample
90-2300	Bad sample
2300-2330	Have been lost or misplaced
2330-40	Tr ss clusters, 30% brn to grn sdy sh, 70% gry to brn sh
40-50	Tr ss clusters, 40% brn to grn sdy sh, 60% gry to vry dk brn rotten sh
50-60	50% wh to dk brn multi-colored, med grnd ss clusters, 50% gry sh, micacious, tr choc sh
60-70	30% multi-colored ss clusters, med grnd, 70% gry to dk brn, rotten sh
70-80	10% wh ss clusters, 30% brn to grn shaley sd, med sized grns, 60% gry & choc sh
80-90	Same as above
90-2400	10% wh ss clusters, med size grns, 35% brn to grn shaley sd, vry small grns, 55% gry sh, tr choc sh
2400-10	Tr. coal, 15% wh ss clusters, 35% brn & grn shaley sd, vry minute sized grns, 60% gry sh, tr chec sh
10-20	35% wh ss clusters, 35% brn & grn shaley sd, minute sd grns, 30% gry & choc sh
20-30	Same as above
30-40	Tr. coal, 20% wh ss clusters, med sized grns, 60% brn, grn & gry shaley sd, 20% gry and choc sh
40-50	60% wh ss clusters, med size grns, 40% brn & grn & gry shaley sand, tr gry & sh
50-60	25% wh ss clusters, med size grns, 45% grn to wh ss clusters, vry minute in size, 30% gry & choc sh, both vry micacious

60-70	25% wh as clusters, med size grns, 45% grn to wh as clusters, vry minute in size, 30% gry & choc sh, both vry siesacious
70-80	10% wh med sized grn as clusters, 65% grn to wh, vry minute grns, 35% gry sh
80-90	Tr. coal, tr limonite, tr wh as clusters, med sized grns, 75% grn to wh as clusters, vry minute size grns, 25% gry & choc sh, mostly choc
90-2500	Same as above - bad sample
2500-10	Bad sample
10-20	70% wh as clusters, med sized grns, 15% grn sh, 5% choc sh, 10% gry sh
20-30	75% wh as clusters, med sized grns, 15% grn sh, 10% gry sh, tr coal
30-40	85% wh, grn & brn as, little bit below med in size, 10% grn, 5% gry sh
40-50	75% wh, grn & brn as, sub-medium sized grains, 10% grn, 10% gry, 5% choc sh
50-60	90% wh, grn & brn as, sub-med sized grns, 5% grn, 5% gry, tr choc sh
60-70	Tr. dead oil, tr coal, 80% brn & grn as clusters, med sized grns, 15% grn sh, 5% gry shale, tr dead oil
70-80	Tr. dead oil, tr coal, 80% wh & grn as clusters, 15% gry sh, tr gr sh
80-90	Good staining, tr coal, 80% wh to grn as clusters, 15% gry sh, tr grn sh
90-2600	Goodstaining in samples, tr coal, 75% wh to brn & grn as clusters, med sized grains, 20% gry sh, 5% choc sh
2600-10	65% grn to brn as clusters, med size grns, 20% gry sh, 15% grn sh, tr. dead stain
10-20	Tr. dead oil, 75% brn to grn as clusters, med size grns, 15% grn sh 10% gry sh
20-30	90% grn to brn as clusters, med size grns, 10% grn & choc, vry good stain in samples
30-40	85% greenish to brn as clusters, med size grns, 10% grn & choc sh, good stain, 5% coal
40-50	Same as above
50-60	Bad sample
60-70	Tr. aragonite, 70% wh, grn & brn as clusters, sub-med sized grns, 30% gry blockey shale
70-80	Tr. aragonite, 40% wh, grn, brn as clusters, sub-med sized grns, 30% gry sh, 30% grn sh, tr coal
80-90	Tr. stain, 40% wh, grn, brn as clusters, sub-med sized grns, 40% gry sh, 20% grn sh, tr coal
90-2700	Tr. stain, 35% wh, grn, brn as clusters, sub-med sized grains, 40% gry sh, 25% choc sh, tr. grn sh
2700-10	Tr. stain, 40% wh, grn, brn as clusters, 40% gry sh, 20% choc sh, tr rd sh
10-20	Tr. stain, 40% wh, grn, brn as clusters, sub-med size grns, 40% gry sh, 20% choc, tr of grn.
20-30	Tr. stain, 40% wh, grn, brn, as clusters, sub-med size grns, 40% gry sh, 20% choc sh, 5% coal
30-40	Tr. stain, 40% wh, grn, brn as clusters, sub-med size grns, 40% gry sh, 20% choc sh, tr coal
40-50	Tr. stain, tr lime, 30% wh, grn, brn as clusters, 40% gry sh, 30% choc sh, tr coal
50-60	Tr. stain, 30% wh, grn & brn as clusters, sub-med size grns, 35% gry sh, 30% choc to dk brn, vry rotten sh, 5% coal
60-70	Tr. stain, 30% wh, grn & brn as clusters, sub-med size grns, 35% gry sh, 30% choc to dk brn sh, tr coal
2800-10	5% limestone, 25% wh, grn, brn as clusters, 50% gry shale, 25% choc to drk brn rotten shale, tr of coal
10-20	Same as above
20-30	15% wh, grn, brn as clusters, med size grns, 70% gry sh, blockey, 15% choc to dk brn rotten sh, tr coal

30-40 Tr. limestone, 70% wh to brn as clusters, 25% gry sh, 5% brn rotten sh, a tr of coal

40-50 Tr. limestone, 75% wh to grn to brn as crystals, 20% gry sh, 5% brn to dk choc, vry rotten sh, tr coal

50-60 85% wh as grns, 15% gry sh, tr coal

60-70 Tr. limestone, 80% wh, grn, brn as clusters, med size grns, 20% gry blockey sh

70-80 Tr. limestone, 90% wh, grn, brn as clusters, med sized grns, 10% gry sh, blockey & micaceous

80-90 30% wh to grn to brn as clusters, 20% gry sh, 25% brn to dk rotten almost black sh, vry blockey, 25% coal

90-2900 40% wh, grn, brn as clusters, med size grns, 10% gry sh, 15% brn to black rotten coalified sh, 35% coal

2900-10 50% wh, grn, brn as clusters, med size grns, 10% gry wh, 15% brn to blk coalified, rotten sh, 25% coal

10-20 75% wh, & black, slat & peper as clusters, small grns, some grn included in the clusters, 15% gry sh, 5% red sh, 5% coal

20-30 Tr. limestone, 75% wh & black as clusters, some gr included in clusters 10% gry sh, 5% choc, 10% coal

30-40 Tr limestone, 80% wh & blk as clusters, 10% gry, tr c oo, 10% coal

40-50 Tr limestone, 60% black & wh as clusters, med size grns, 15% gry sh, 5% choc sh, 20% coal

50-60 70% salt & pepper, however this sample was mostly brn, rotten, as clusters, sd grns being a little larger than they have been, 5% gry sh, 15% choc sh, 10% coal

60-70 55% brownish as clusters, a little larger than med size grns, 10% gry sh, 20% choc sh, 15% coal

Circulated 30 minutes at 2970 - very good stain, flaculation in bucket 85% dark brown to coalified shale, 15% brown sandstone.

70-80 60% brn, rotten ss, med size grns, 5% gry sh, tr choc, 35% coal

80-90 Flaculation in the pit, 40% brn, rotten ss, med size grns, tr gry sh, 20% choc sh, 40% coal

2990-3000 35% brn, vry rotten, med size ss, tr gry sh, 25% choc sh, 35% coal

3000-10 Pits flaculating very tremendously, rainbow on the pits at the stopping of pump, 20% coal, 20% brn to dk mottled ss, 15% wh salt & pepper ss, 35% brn to blk rotten sh, 10% gry blockey sh, tr grn sh

10-20 Pits flaculating, rainbow, 80% coal, 20% wh salt & pepper ss, tr brn to dk mottled ss, tr gry sh, tr chert

20-30 Pits flaculating, 50% coal, 20% brn to blk sh, 30% brn to grn to wh salt & pepper ss, tr gry sh

30-40 Trace gry sh, 35% coal, 25% brn to blk rotten sh, 30% brn to wh salt & pepper ss, 10% grn, vry fne grnd ss, good flaculations in pit, rainbow on pit, tr dead oil

40-50 10% coal, pits flaculating, rainbow, 70% brn to blk rotten sh, 20% wh to dk brn salt & pepper ss, tr jasper

3050 - circulated 30 minutes - 30% coal, 40% brn to blk rotten shale, 20% brown mottled sandstone, 10% white very fine grained sandstone, trace grey shale

50-60 40% coal, 20% brn to blk sh, 10% gry sh, 15% brn mottled sandstone, 15% wh, vry fne grn ss, tr jasper

60-70	50% coal, 25% brn to blk rotten sh, tr gry sh, 15% brn mottled ss, 10% wh, vry fne grnd ss
70-80	Same as above
80-90	30% wh salt & pepper sd, med size grns, 20% brn & gry sh, 25% coal, 25% brn mottled ss, med size grns
3090-3100	40% wh variegated sd, med size grns, 40% brn to gry sh, 20% coal, tr brn mottled, med sized ss
3100-10	40% wh multi-colored ss, 40% coal, 20% gry & grn sh
10-20	60% wh multi-colored ss, typical Pictured Cliff - Schlumberger log shows Top of Pictured Cliff to be 3112, med sized grns in the sd, 20% coal, 20% coal, 20% gry blockey sh
20-30	Same as above
30-40	70% wh multi-colored med size grn ss, 10% coal, 20% gry sh, tr gr sh
40-50	80% wh ss clusters, med size grns, 20% gry sh, tr grn sh
50-60	60% wh ss clusters, med size grns, 40% gry & choc sh, both blockey, tr grn sh
60-70	85% wh med size grn ss clusters, 15% gry sh, tr coal
80-90	60% wh ss clusters, 40% gry & choc sh, tr coal.
90-3200	40% wh ss clusters, grns are diminuating, showing base of P.C. vry near, 60% gry & choc sh, both blockey, tr of coal
3200-10	15% wh ss clusters, 35% brn, vry fne, rotten ss clusters, 50% gry & choc sh, tr coal
10-20	Tr wh ss clusters, typical P.C., 30% brn, vry fne, rotten ss, 70% gry & choc sh, tr blk sh, vry rotten
20-30	10% vry fne white ss clusters, 20% brn to gry shaley sd, 70% gry to blk sh, tr choc sh
30-40	Same as above
40-50	40% brn to gry shaley sd, 50% gry to blk sh, vry rotten, 10% coal
50-60	30% vry fne wh to brn ss, 20% coal 50% gry to brn to blk sh, vry vry rotten
60-70	Bad sample
70-80	35% vry fne wh to brn ss, 20% coal, 45% gry, brn to blk rotten sh
90-3300	80% vry fne grnd wh ss, 20% coal, tr gry sh
3300-10	65% wh, vry fne grned ss, 15% grn sh, 20% coal
10-20	60% coal, 20% brn, med sized ss grns, 20% gry & grn sh
20-30	60% brn, vry fne, ss clusters, 10% coal, 30% gry & dk grn sh, vry blockey and micaceous
30-40	20% wh salt & pepper ss cluster, these are probably caving from up above, 30% vry fne brn, vry fne grnd, ss, 50% gry and dk grn sh
40-50	Tr. wh ss, typical P. C., droppings from above, 40% vry fne grnd brn ss, 50% gry & dk grn sh, both blockey & micaceous, 10% coal
50-60	Tr. wh, typical P.C., ss, caving from above, 50% vry fne grnd brn ss clusters, 10% coal, 40% gry & dk grn sh, blockey & micaceous
60-70	Same as above
70-80	" " " Tr. light grn sh almost a sdy sh
80-90	90% light to dk multi-colored ss, grn size vry varied, 40% gry sh, 10% coal
90-3400	80% brn, vry fne, multi-colored ss, 20% gry sh, tr of coal
3400-10	Tr. wh ss, 50% brn to grn, vry fne grnd ss clusters, 30% gry to blk rotten sh, 20% coal
10-20	Same as above
20-30	60% brn to blk sdy sh, 40% gry sh, tr coal
30-40	70% brn, vry fne sdy sh, 30% gry sh