

36-32-4E

GEOLOGICAL DEPARTMENT
SOUTHWESTERN GAS COMPANY
INDEPENDENCE, KANSAS

LOG OF WELL

Company Empire Gas Farm Mary Keithley Well No. 1
 (Drillers Log: KGS-DRL)
 State Kansas County Cowley S. 36 T. 32 R. 4
 Commenced Drilling 3-1-17 Completed 3-31-17 Elev. _____
 Shot _____ Qts. from _____ to _____ I. P. _____ R. P. _____
 Casing: 20' 12 1/2" Casing: 445' 10" Casing: 875' 8"
 Casing: 1403' 6-5/8" Casing: 1480' 5-3/16" Casing: _____
 Tubing _____ Caged at _____ Packer at _____
 Contractor Moorhead & Co.

surface	3	slate	710
clay	15	lime	718
shell lime	25	slate	825
lime	30	sand	862 HFW
slate	75	slate	875
lime	90	lime	877
slate	129 water	slate	895
slate red	135 90 ft.	lime	912
lime	165	slate	948
slate red	175	lime	956
lime	222 water 210	slate	975
lime	290 water 280	lime broken	1007
lime	300	sandy shale	1034
slate red	310	slate	1100
slate	326	sand	1121 HFW
lime	330	slate	1130
slate	368	lime	115
slate red	385	slate	1200
slate	400	lime	1206
sand	425 little gas	slate	1235
slate	430	lime	1272
lime	465	slate	1295
slate	475	lime	1321
slate red	490	slate	1325
lime	542	broken lime	1353
slate	555	lime	1398
lime	565	slate	1403
slate	570	lime	1407
lime	580	slate	1428
slate	615	sand	1452 oil gas &
slate red	620	slate	1462 water
shale	642 little gas	lime	1472
sand	652 643	sand	1476
slate	669	slate	1483
sand	677 big gas 670	sand	1513 (over)

LOCATION

N			
S			

.....Ft. from North Line of qr. sec.

.....Ft. from South Line of qr. sec.

.....Ft. from East Line of qr. sec.

.....Ft. from West Line of qr. sec.

slate
sand

1516 slight show
1530 oil
HPW 1513

TEST

Through	Pitot Tube Test of 192.....		 192..... Open Gauge Test Shows
	Used	Mercury	Water	
... In Tubing	Reading			
... In Casing	Vol. Cu. Ft.		 Lbs.



32 Plotted 36

Mary Keithley. No. 1.
Section 36, Township 32, Range 4,
Cowley County, Kansas.

Elevation 1205'.

Surface	black	soft	3	3
Clay	yellow	soft	12	15
Lime-shell	blue	soft	10	25
Lime	grey	hard	5	30
Slate	blue	soft	45	75
Lime	blue	hard	15	90
Slate	blue	soft	39	129-water 90 feet.
Slate	red	soft	6	135
Lime	white	hard	30	165
Slate	red	soft	10	175
Lime	gray	hard	47	222-water 210'
Slate	blue	soft	68	290-water 280'
Lime	blue	hard	10	300
Slate	red	soft	10	310
Slate	blue	soft	16	326
Lime	grey	hard	4	330
Slate	blue	soft	38	368
Slate	red	soft	17	385
Slate	white	soft	15	400
Sand	grey	soft	25	425-little gas
Slate	blue	soft	5	430
Lime	grey	hard	35	465
Slate	white	soft	10	475
Slate	red	soft	15	490
Lime	grey	hard	52	542
Slate	blue	soft	13	555
Lime	blue	hard	10	565
Slate	blue	soft	5	570
Lime	grey	hard	10	580
Slate	white	soft	35	615
Slate	red	soft	5	620
Shale	blue	soft	22	642-little gas at 643'
Sand	grey	soft	10	652
Slate	blue	soft	17	669
Sand	grey	soft	8	677-big gas at 670'
Slate	blue	soft	33	710
Lime	grey	hard	8	718
Slate	blue	soft	107	825
Sand	grey	soft	37	862-Hole full of water
Slate	blue	soft	13	875
Lime	grey	hard	2	877
Slate	blue	soft	18	895
Lime	brown	hard	17	912
Slate	blue	soft	36	948
Lime	grey	hard	8	956
Slate	blue	soft	19	975
Lime, broken	light	soft	32	1007
Shale, sandy	blue	soft	27	1034
Slate	blue	soft	66	1100
Sand	grey	soft	21	1121-hole full of water
Slate	blue	soft	9	1130
Lime	brown	hard	45	1175
Slate	blue	soft	25	1200
Lime	grey	hard	6	1206
Slate	blue	soft	29	1235
Lime	white	hard	37	1272
Slate	blue	soft	23	1295
Lime	white	hard	26	1321
Slate	blue	soft	4	1325
Lime, broken	blue	soft	28	1353
Lime	brown	hard	45	1398
Slate	black	soft	5	1403
Lime	brown	hard	4	1407
Slate	blue	soft	21	1428
Sand	white	soft	24	1452-oil, gas, & water
Slate	blue	soft	10	1462-water
Lime	brown	hard	10	1472
Sand	white	hard	4	1476
Slate	light	soft	7	1483
Sand	white	hard	30	1513
Slate	blue	soft	3	1516-slight show oil
Sand	blue	hard	14	1530-hole full water