

Assessment of P&A Wells Within 1/4 Mile of Proposed CBM Well

February 7, 2018

Operator: BP America Production Company

Proposed Well: Secord 17U 34-6 #2 (API Pending)

Location: Sec 17, T34N, R06W

Based on a review of COGCC records, the following well(s) were identified as plugged and abandoned within ¼ mile of our proposed well.

Well Name: Glaser Et Al 1-19U (API 05-067-06541)

Location: NWSW Sec 17, T34N, R06W

Drilled By: Natomas North America, Inc.

Operator Name: Apache Corporation

Date Plugged: June 1988

Note: The well number is 1-19U in the COGCC database despite permit documents showing a well number of 1-17U in agreement with the well's location in Section 17U.

The subject well was drilled to a TD of 8217' in 1981. The well was originally completed with the equipment summarized in the table below. Note that only the number of sacks used to cement the casing was reflected in the records. As a result, TOC for the surface and production strings was calculated assuming Class B neat cement with a yield of 1.15 cu. ft./sk, and a gauge hole.

Casing String	Hole Size (in)	Casing Type	Top (ft)	Bottom (ft)	TOC (ft)	TOC Depth Method	Install Date
Surface	12-1/4"	9-5/8" H-40; 32.3 ppf	0	572	Surface	Calc - obs full returns (550 sx)	1981
Production	7-7/8"	4-1/2" N-80; 11.6 ppf	0	8217	ST 1 – 6097'; ST 2 – 3493'; ST 3- 1355'	Calc - 3 stage job – obs full returns on each (1 st 420sx; 2 nd 470sx w/DV @5866'; 3 rd 405sx w/DV@ 3399')	1981

The well was completed in the Dakota with perforations from 8039' – 8126' and was fracture stimulated. The well was temporarily abandoned and was never produced.

The well was plugged and abandoned in June 1988. Tubing was pulled and a cast-iron bridge plug was set at 8000' with 2 sx dump bailed on top. 50 sx Class B cement was

squeezed down the bradenhead and an additional 75 sx was pumped after bleeding off pressure. The casing was cut 4' below GL and a 10 sx cement plug was set. A dry-hole marker was installed on the 9-5/8" casing.

In addition, a visual inspection of the former Glaser Et Al 1-19U well location was conducted by BP personnel on January 31, 2018. There was no evidence of a P&A marker and there were no signs of soil staining or impacted vegetation.

Based on our review of available records and the assumptions stated above, it appears the subject well has been constructed and abandoned in a manner which provides sufficient isolation above the Fruitland Coal behind the production casing (Fruitland top est. @ ~2892' based on Secord #1 offset).



Figure 1 – Glaser Et Al 1-19U Location

Well Name: Spring Creek 1-17 (API 05-067-05645)

Location: SWSW Sec 17, T34N, R06W

Drilled By: Consolidated Oil and Gas, Inc.

Operator Name: Consolidated Oil and Gas, Inc.

Date Plugged: August 1960

The subject well was drilled to a TD of 8282' in 1958. The well was originally completed with the equipment summarized in the table below. TOC for the surface strings was calculated assuming Class B cement with 2% CaCl (yield of 1.15 cu. ft./sk), and a gauge hole.

Casing String	Hole Size (in)	Casing Type	Top (ft)	Bottom (ft)	TOC (ft)	TOC Depth Method	Install Date
Surface	12-1/4"	10-3/4" H-40; 32.75 ppf	0	275	0 (200sx)	Calc	1958
Intermediate	9-7/8"	7-5/8" J-55; 26.4 ppf	0	3492	1910 (350sx)	Temperature Log	1958
Production Liner	6-5/8"	5-1/2" J-55; 15.5 & 17 ppf	3298	8281	4710 (450 sx)	Temperature Log	1958

The well was initially a dual completion in the Dakota and Mancos/Mesa Verde/Lewis. The Dakota was perforated from 8068' – 8262' with a production packer set at 8000'. The Mesa Verde, Mancos and Lewis were perforated from 4702' – 6128'. All zones were fractured stimulated. The well was producing an excessive amount of water.

A workover was performed to attempt to identify and shut-off the source of water flow. The completion was pulled and the packer at 8000' was drilled and pushed to 8255'. The Dakota perforations were swab tested with a bridge plug and packer. The results showed no appreciable change in water production between intervals, so behind pipe water channeling was suspected. The packer was pulled to 7969' and the Dakota perforations were squeezed with 50 sx. After the squeeze, the packer was released and there were indications of possible behind pipe communication between the Dakota and Mesa Verde. The packer was set at 6040' and the Mesa Verde perforations were swabbed and produced water. A subsequent casing pressure test with the packer set at 6177' below all MV perms indicated the squeeze had isolated all Dakota perms confirming water production was the result of behind pipe channeling. Additional swab testing of the Mesa Verde and Mancos perforations was performed and the results indicated the water was either coming from the Mancos perforations or from some formation exposed behind pipe between the Dakota and the Mancos. A cement retainer was set at 5818' and 150 sx of cement were squeezed into the Lower Mesa Verde and Mancos perforations (100 sx in 1st stage and 50 sx in 2nd stage). The squeeze packer was reset at 5814' and 50 additional sx were pumped. The packer was inadvertently cemented in the hole. Several attempts

were made to retrieve the packer but it could not be retrieved. Tubing was shot off and pulled from 5151'. Operations were discontinued.

The well was plugged and abandoned in August 1960. The 7-5/8" casing was cut and pulled from 1859'. Cement plugs were set from 1825'-1865' (15sx) and from 255'-275' (10 sx). A 5 sx plug was set at surface and a marker was installed.

In addition, a visual inspection of the former Spring Creek 1-17 well location was conducted by BP personnel on January 31, 2018. There was no evidence of a P&A marker and there were no signs of soil staining or impacted vegetation.

Based on our review of available records and the assumptions stated above, it appears the subject well has been constructed and abandoned in a manner which provides sufficient isolation above the Fruitland Coal behind the production casing (Fruitland top @ ~2952' in this well).



Figure 2 – Spring Creek 1-17 Location

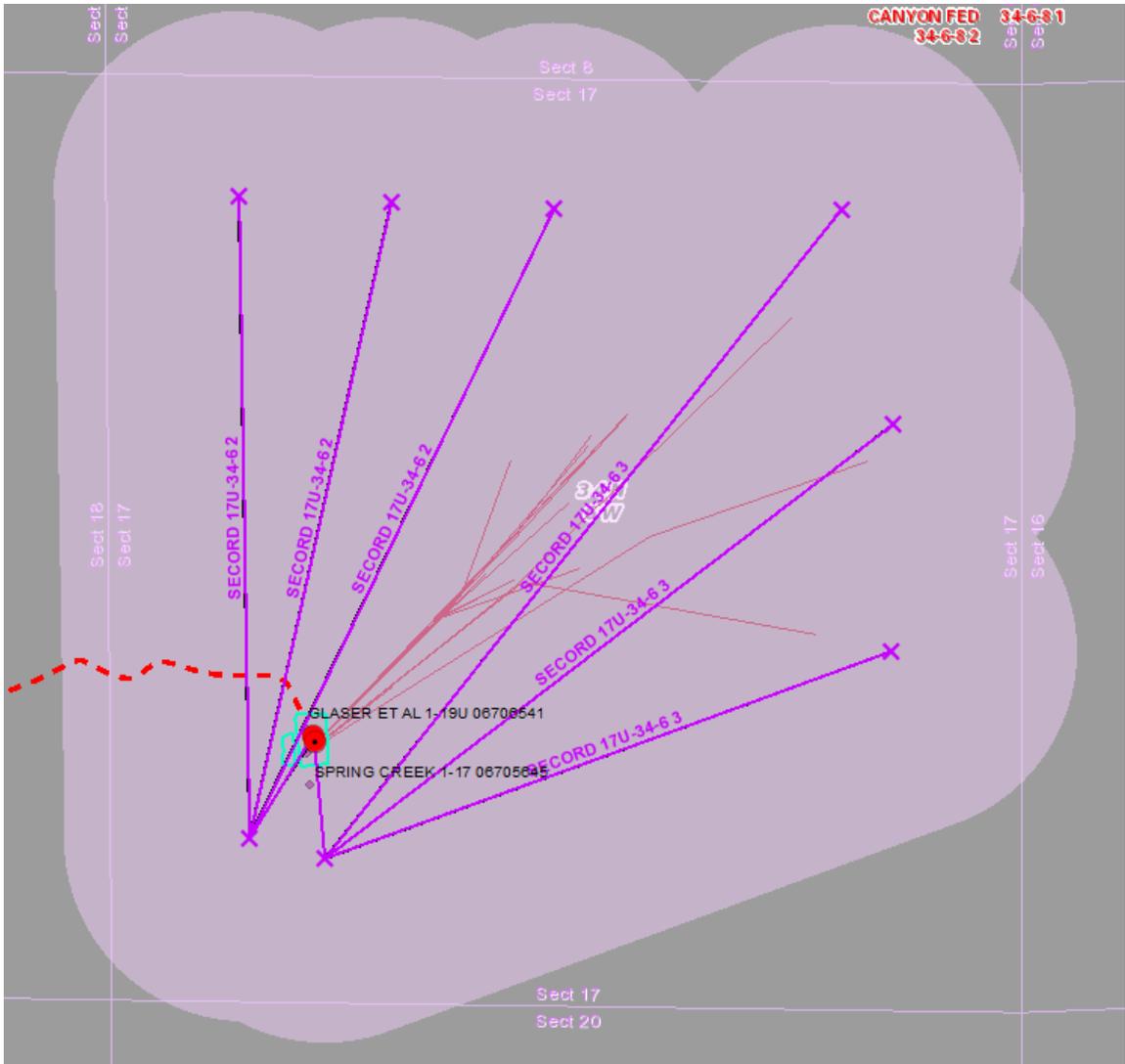


Figure 3 – Secord Offset Map