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**STATE OF NEW MEXICO**  
**ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT**  
**OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE  
 HEARING CALLED BY THE OIL  
 CONSERVATION DIVISION FOR  
 THE PURPOSE OF CONSIDERING:**

**CASE NO. 13767**  
**ORDER NO. R-12693**

**APPLICATION OF WESTERN MINERALS & OIL LTD. FOR APPROVAL OF  
 A PILOT PROJECT FOR THE PURPOSE OF DETERMINING PROPER WELL  
 DENSITY AND WELL LOCATION REQUIREMENTS IN THE SOUTH  
 BLANCO-PICTURED CLIFFS GAS POOL, SAN JUAN COUNTY, NEW  
 MEXICO**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on September 14, 2006, at Santa Fe, New Mexico, before Examiner William V. Jones.

NOW, on this 16<sup>th</sup> day of January, 2007, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

**FINDS THAT:**

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) Western Minerals & Oil LTD. ("Western" or "applicant") seeks authorization to implement an infill drilling (increased density) pilot project in order to determine the proper well spacing and well location requirements for the South Blanco-Pictured Cliffs Prorated Gas Pool (72439) in the San Juan Basin. The proposed pilot would consist of the following two existing wells, both located in one standard 160-acre gas spacing and proration unit ("GPU") comprised of the SW/4 of Section 24, Township 27 North, Range 8 West, NMPM, San Juan County, New Mexico:

(a) the Marron Well No. 1 (API No. 30-045-06310) located at an unorthodox gas well location 380 feet from the South line and 345 feet from the West line (Unit M) of Section 24; and

(b) the Marron Well No. 6 (API No. 30-045-21323) located at a

standard gas well location 1520 feet from the South line and 1670 feet from the West line (Unit K) of Section 24.

(3) The South Blanco-Pictured Cliffs Gas Pool is a prorated gas pool and subject to Division Rules 601 through 606. The pool is governed by special rules established by Division Order No. R-8170, as amended, which established the size of one GPU in the South Blanco-Pictured Cliffs Gas Pool at 160 acres and refers the well density requirements to general Division rules. Current Division rules prohibit drilling and producing more than one well on any 160-acre GPU.

(4) Division Rule 104.C.(3) requires that wells spaced on 160 acres be located no closer than 660 feet to the outer boundary of the unit nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary.

(5) The Marron Well No. 1 was drilled and completed in the South Blanco-Pictured Cliffs Gas Pool in 1953 and has produced approximately 1.309 BCF of gas from that pool;

(6) The Marron Well No. 6 was drilled and completed in the Blanco-Mesaverde Gas Pool in 1974. In August, 2005, it was recompleted in the South Blanco-Pictured Cliffs Gas Pool, and in January, 2006, the well was downhole commingled in the Blanco-Mesaverde and South Blanco-Pictured Cliffs Gas Pools (authorized by Aztec administrative order DHC-1817az). Western has reported total well production of 220 Mcfpd during 2006, or 170 Mcf gas per day from the Pictured Cliffs formation.

(7) The Marron Well No. 1 was shut-in after the Marron Well No. 6 was perforated in the Pictured Cliffs formation and has since been classified as a pressure observation well in the South Blanco-Pictured Cliffs Gas Pool. The last production before shut-in was approximately 35 Mcf of gas per day at 120-psi line pressure.

(8) The record in Division Case No. 13654 was made a part of this current case during the hearing. In Division Case No. 13654, presented on March 30, 2006, the applicant sought authorization to re-activate the Marron Well No. 1 and simultaneously dedicate the SW/4 of Section 24, Pictured Cliffs formation GPU to both the Marron Well No. 1 and the Marron Well No. 6. On May 31, 2006, the Division issued Order No R-12560, which denied Western's request for simultaneous dedication and approved the non-standard location for the Marron Well No 1. In its findings, the Division observed the following.

(a) The application lacked engineering drainage area data for the two wells including (i) the amount of expected reserves acceleration, (ii) the percentage of GPU reserves to be ultimately recovered by the Marron Well No. 6, and (iii) the amount of drainage expected across spacing unit boundaries in both directions, or in other words, the effect on correlative rights.

(b) After abandonment of the Marron Well No 6, the Marron Well No. 1 would likely be available to recover the remaining gas reserves within this GPU.

(c) Historically, infill drilling in pools such as this has been approved on a pool-wide basis, rather than a unit basis, thereby allowing all operators in the pool equal opportunity to develop their acreage.

(9) Western has provided proper notice in this case to all affected parties.

(10) The South Blanco-Pictured Cliffs Gas Pool is a large gas reservoir that encompasses all or parts of 27 townships in San Juan and Rio Arriba Counties, New Mexico. Division records show there are currently 1,243 active producing gas wells in the pool operated by 32 different operators. Burlington Resources Oil & Gas Company LP ("Burlington"), ConocoPhillips Company ("COP"), Energen Resources Corporation, and Elm Ridge Exploration Company LLC operate a combined 63 percent of total active wells in this pool. Burlington and COP together operate one third of all wells. Western operates at least 7 wells producing from this pool.

(11) Burlington and COP jointly supplied a letter to the Division stating:

(a) because of low well productivity and low remaining reserves in the GPU, Burlington and COP are not concerned in this case about correlative rights;

(b) Burlington and COP do not oppose this application, but also do not consider this proposed pilot as needed because of other existing pilots; and

(c) if this application is approved, reservoir and surface pressure data should be obtained and made a part of the record.

(12) At the hearing, the applicant presented schematics of regional and local production and cumulative data, which showed parallel production trends going basically from northwest to southeast. It also presented a cross-section with electric logs with the Pictured Cliffs top marked on the logs. Western's expert engineering witness believes this SW/4 of Section 24 is an ideal candidate for an infill pilot because it contains one well (Marron Well No. 1) in a relatively lower producing area of the pool as well as another well (Marron Well No. 6) in the better area to the northeast. Western intends, among other things, to watch gas production plots for signs of interference between wells.

(13) Western's expert witness testified that there may be areas within the South Blanco-Pictured Cliffs Gas Pool where infill drilling may be appropriate and necessary in order to effectively and efficiently drain 160 acres and this proposed pilot will aid in determining those areas.

(14) After reviewing the evidence presented in this case, the Examiner has concluded the following:

(a) The ultimate decision to allow infill drilling in this Pictured Cliffs reservoir should insure protection of correlative rights, prevent waste of gas resources and drilling of unnecessary wells, and should also consider the effects of increased surface disturbances caused by this drilling.

(b) Infill drilling in this pool should not be done piecemeal, else correlative rights of other operators or mineral interest owners in the pool may be violated and the surface may be impacted without first considering the effects.

(c) This pool is very large and likely contains a variety of reservoir characteristics. Data gathered to support infill drilling must be statistically representative to be useful.

(d) The operators of the majority of the wells in this pool should ideally gather the data and do the studies or at least support any proposed data gathering by minority operators. Burlington and COP are majority owners in this pool, and do not consider this pilot to be needed.

(e) Western intends to resume production from both wells simultaneously and look for interference, primarily using decline curve analysis. Any determination from examining decline plots will not be usable without a detailed geologic study correlating sands within the Pictured Cliffs in this general area and between these two wells. The study should also consider the vertical proximity of the Fruitland Coals and the reach of hydraulic fracturing. Geologic data from electric logs are available in this area, but Western did not present testimony from a geologist at the hearing.

(f) In addition to geologic and decline curve analysis, pressure and permeability data should be compared between these two wells and ideally from wells surrounding this GPU. Western did report that the Marron Well No. 1 is currently shut-in and is being used as a pressure observation well with 180-psi surface pressure. However, Western has had adequate time to obtain permeability and pressure data from downhole pressure tests on its two wells, but did not mention any during the hearing or propose gathering any.

(g) The Pictured Cliffs within the Marron Well No. 6 is downhole commingled with the Point Lookout member of the Mesaverde formation. To utilize these two wells in this GPU as a useful pilot, the Mesaverde formation perforations should optimally be isolated during the period of the test so both wells produce only from the Pictured Cliffs. This was not proposed by Western

and could possibly result in waste of gas reserves from the Mesaverde formation.

(h) The Marron Well No. 1, being at a non-standard location, is not representative of well locations within most GPUs in the South Blanco-Pictured Cliffs Gas Pool.

(15) Western's proposed pilot does not appear to be necessary and would not be useful in deciding the optimum well density and optimum well locations within the South Blanco-Pictured Cliffs Gas Pool.

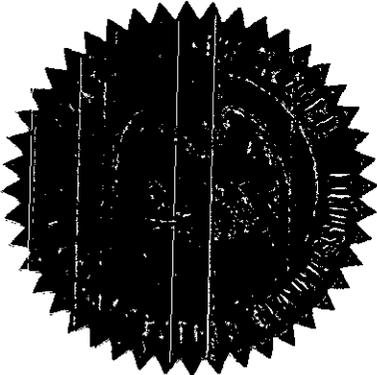
(16) Western's proposal to install a two well, 160-acre pilot within the South Blanco-Pictured Cliffs Gas Pool should be denied.

**IT IS THEREFORE ORDERED THAT:**

(1) The proposal of Western Minerals & Oil LTD. ("Western") to implement an infill drilling two well pilot project within a standard 160-acre gas spacing and proration unit within the South Blanco-Pictured Cliffs Prorated Gas Pool comprised of the SW/4 of Section 24, Township 27 North, Range 8 West, NMPM, San Juan County, New Mexico, is hereby denied.

(2) Jurisdiction is hereby retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



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STATE OF NEW MEXICO  
 OIL CONSERVATION DIVISION

MARK E. FESMIRE, P.E.  
 Director