

State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Susana Martinez**  
Governor

**Ken McQueen**  
Cabinet Secretary

**Matthias Sayer**  
Deputy Cabinet Secretary

**David R. Catanach, Division Director**  
Oil Conservation Division



April 25, 2017

Mr. Brian Wood  
Murchison Oil and Gas Inc.  
1100 Mira Vista Blvd  
Plano, TX 75093

**RE: Packer Setting Depth Exception**

Injection Authority: Amended Administrative Order SWD-1414 (dated June 16, 2013)

Permitted Interval: Delaware Mountain group; 5573 feet to 6512 feet

Jackson Unit SWD Well No. 6 (API 30-025-34623)

Unit H, Sec 21, T24S, R33E, NMPM, Lea County, New Mexico

Mr. Wood:

Reference is made to your request on behalf of Murchison Oil and Gas Inc (OGRID 15363; "Murchison") received by the Division on April 24, 2017, for the above named well. Murchison applied for exception for setting the packer within 100 feet of the top perforation in the injection interval.

It is our understanding that Murchison has maintained a previous packer setting depth of 5729 feet below surface or approximately 87 feet above the uppermost perforation of the injection well. Following the replacement of tubing and packer for the injection well, Murchison stated that the packer was set at 5733 feet below surface to obtain a proper seal for the tubing packer, which failed an MIT test. As a result, Murchison requests an exception for the current packer depth at 5651 feet below surface. This location of the packer is approximately 165 feet above the shallowest perforation at 5816 feet. Further, the injection interval from 5816 feet to 6512 feet is within the approved injection interval.

For the reasons stated in the application and because it appears that correlative rights are protected, waste will not occur and this modification will not endanger any fresh water aquifer or the environment, the exception is granted. The packer location within this well shall not be set higher than 165 feet above the current top perforation depth unless the operator receives written approval from the Division Director. The Division also stipulates that future repositioning of the packer will be restricted to depths below 5225 feet due to the current location of the top of cement for the 9<sup>5</sup>/<sub>8</sub>-inch casing.

Packer Setting Depth Exception  
Murchison Oil and Gas Inc.  
April 25, 2017  
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The Division Director may rescind this exception if it becomes apparent that the injected fluid is not being confined to the permitted interval or is endangering any fresh water aquifer.

Sincerely,



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**DAVID R. CATANACH**  
**Director**

DRC/mam

cc: Oil Conservation Division – Hobbs District Office  
New Mexico State Land Office – Oil, Gas, and Minerals  
Administrative Order SWD-1414  
Well File API 30-025-34623

**PERMITS WEST**, INC.  
PROVIDING PERMITS for LAND USERS  
37 Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

April 24, 2017

Michael McMillan  
NM Oil Conservation Division  
1220 S. St. Francis Dr.  
Santa Fe NM 87505

Dear Michael,

On behalf of Murchison Oil & Gas, Inc. (15363), I am requesting a minor modification of SWD-1414 for Murchison's Jackson Unit SWD 6 (30-025-34623). The well (in H-21-24s-33e) disposes into the SWD; Delaware (96100). Disposal was approved from 5573' to 6512'. Actual perforations are from 5816' to 6512' (see attached well bore diagram).

Packer was set at 5729' on August 15, 2013. The well passed a mechanical integrity test on August 22, 2013 and Bradenhead tests in 2015 and 2016.

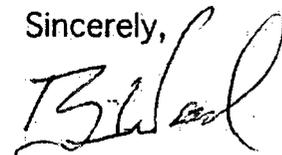
On or about February 28, 2017, the well developed communication between the tubing and casing. The well was shut-in and OCD Hobbs notified.

A workover started April 17, 2017. Tubing was pulled and the bottom 30 joints and packer were replaced. The new packer was set at 5733' (87' above the top perforation), pressure tested, and failed the test. The packer was next set at 5682' (134' above the top perforation), pressure tested, and again failed. The packer was then set at 5651' (165' above the top perforation), tested to 1500 psi for 15 minutes, and passed the test. Packer fluid was circulated and the well is now shut-in.

Murchison is requesting a permit modification to allow the packer to be set at 165' above the top perforation, instead of the standard maximum of 100'. Does this qualify for a minor modification?

Please call or e-mail ([brian@permitswest.com](mailto:brian@permitswest.com)) if you have any questions.

Sincerely,



Brian Wood

cc: Cooper & Cottrell

Jackson Unit #6 (Salt Water Disposal)  
 Johnson Ranch  
 Lea County, NM



GRC  
 Date: 4/20/17

Spud Date: 05/29/1999  
 Rig Release: 07/06/1999  
 Days to Drill: 38  
 Drilling Rig: Patterson Rig 10  
 Completion Date: 07/24/1999  
 TD - 13900 ft

GL = 3582 ft  
 KB = 3603 ft

API# 30-025-34623

**Surface Casing**  
 13 3/8" 68 lb/ft K-55  
 Setting Depth - 800.42 ft

**Cement**  
 Lead - 385 sx Class C w/ additives  
 Tail - 155 sx Class C  
 Circulate cement

**Intermediate Casing**  
 9 5/8" 40 lb/ft S-95, L-80, & N-80  
 Setting Depth - 5225.51 ft  
 Float Shoe - 1.47 ft  
 Shoe Joint(s) - 43.78 ft  
 Float Collar - 1.23 ft

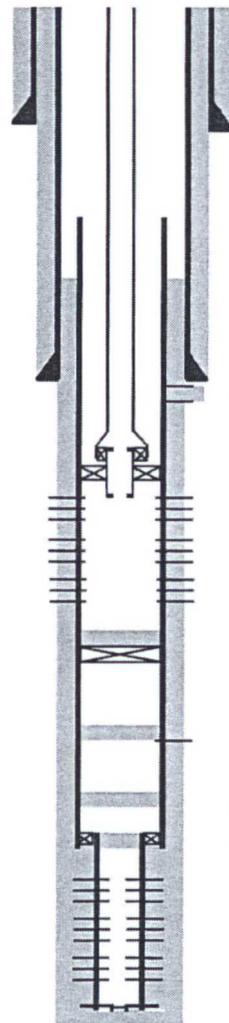
**Cement**  
 Lead - 1300 sx Interfill "C"  
 Tail - 250 sx Class C  
 Circulate cement

**Production Casing**  
 7" 29 lb/ft  
 Setting Depth - 12,607'

**Cement**  
 1010 sx  
 TOC 5066' by CBL

**Production Liner**  
 4 1/2" 15.1 lb/ft P-110  
 Liner Top - 12166 ft  
 Setting Depth - 13900 ft

**Cement**  
 245 sx Class H  
 TOC @ TOL



7" casing cut and pulled at 3519'  
 during original abandonment

Hole in casing 5237'-5301' squeezed 8/3/13

CIBP @ 6829' w/ 28' cement

35 sx cmt plug 6970'-7000'

7" casing cut at 7000' -  
 unable to pull

50 sx cmt plug 9122'-9222'

50 sx cmt plug 12,266'-12,466'

**Tubing Details**

Installation Date: 4/19/17

	Length	Top @
174 Jts 3-1/2", 9.3#/ft, L-80, IPC tubing	5629.56'	16.00'
On/Off Tool w/ 2.812" X profile	1.75'	5645.56'
AS1-X Packer, Ni plated, SS flow wetted	8.20'	5647.31'
3 1/2" IPC tail pipe pup	6.30'	5655.51'
2.812 XN profile nipple w/ 2.671" no go	0.97'	5661.81'
EOT		5662.78'

**Current Perfs:**

**Delaware**  
 5816-6512 (724 shots)  
 Total Shots - 724

**Abandoned perfs:**

**Wolfcamp A-Zone**  
 13166-13168 (5 shots)  
 13172-13174 (5 shots)  
 13221-13225 (9 shots)  
 13240-13242 (5 shots)  
 Total Shots - 024

**Wolfcamp B-Zone**  
 13298-13301 (7 shots)  
 13304-13307 (7 shots)  
 13331-13333 (5 shots)  
 13334-13336 (5 shots)  
 13357-13359 (5 shots)  
 Total Shots - 29