

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, Division Director
Oil Conservation Division



August 12, 2018

Alberto Giussani Albert.Giussani@oxy.com
OXY USA Inc.
P.O. Box 2000
Levelland, Texas 79336

RE: Exception to Allow Compressive Strength Option per Rule 19.15.16.10 G(2) NMAC
OXY USA Inc.,
Bravo Dome Carbon Dioxide Gas Unit Well No. 181J, (API No. 30-021-20683)
Primary Cement Wait Time – Surface/Intermediate Casings
Harding County, New Mexico

Dear Sir:

Reference is made to your request on behalf of OXY USA Inc. (OGRID 16696; "OXY") received by the Division, dated July 25, 2018.

The data you have submitted indicate that cement compressive strength for the referenced casing under the best assumptions for the slurry, mixing, and hole conditions will likely achieve at least 500 psi compressive strength within 8 hours.

Based on the data supplied, you are hereby granted an exception to the mandatory 18 hour wait-on-cement time for the surface cement job on the referenced well and may use the method as detailed in Rule 19.15.16.10 G(2) NMAC to verify cement competency.

The other requirements of Rule 19.15.16 (G and H) remain in place, including the 8-hour stationary wait-on-cement, and detailed reporting on form C-103 of cementing details. In addition, the Division requires cement to be circulated on all surface casing strings.

The Division Director may rescind this exception if it becomes apparent that cement volume and quantity is not adequate and zonal isolation is not being achieved.

Sincerely,

HEATHER RILEY
Director

HR/wvjj

cc: Oil Conservation Division – Santa Fe
API: 30-021-20683



July 25, 2018

From: Alberto Giussani

Senior Engineering Advisor, Reservoir
OXY USA Inc.
P.O. Box 2000
Levelland, Texas 79336.

To: William V. Jones

District IV Supervisor
New Mexico Oil Conservation Division

SUBJECT: Exception to allow compressive strength option per Rule 19.15.16.10 G (2) NMAC
for well: BDCDGU 21 30 18 1 J, API: 30-021-20683, Harding County, New Mexico

Dear Sir:

OXY USA, Inc hereby requests an exception to rule paragraph (2) Subsection G, 19.15.16.10 NMAC. The exception to the rule would allow this well located in Harding County to be included in the 500 psi requirement option as described in paragraph (2).

Attached for your information are the current lab tests of the planned surface, intermediate and production tail slurries for the upcoming BDCDGU 2130 18 1 J well (API# 30-021-20683). Also included is a copy of the approved drilling permit in which all casings to be set are summarized.

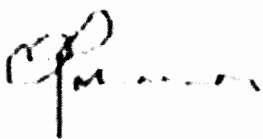
- For the tail slurry that will be located in the "zone of interest" of the surface casing string, the lab test indicates an 8 hours compressive strength of 546 psi and a 12 hours compressive strength of 830 psi.
- For the tail slurry that will be located in the "zone of interest" of the intermediate casing string, the lab test indicates an 8 hours compressive strength of 637 psi and a 12 hours compressive strength of 1307 psi.

- For the tail slurry that will be located in the “zone of interest” of the production casing string, the lab test indicates an 8 hours compressive strength of 1114 psi.
- We do not anticipate commencing testing operations prior to 9 hours after cement is in place.

If you should require any additional information regarding this request, please contact myself at the number below.

Thanks beforehand,

Regards,

A handwritten signature in black ink, appearing to read 'Al Giussani', with a stylized flourish at the end.

Alberto (Al) Giussani
Senior Engineering Advisor, Reservoir
OXY USA Inc.
Phone: Cellular: 806 638 1296

Jones, William V, EMNRD

From: Albert_Giussani@oxy.com
Sent: Wednesday, July 25, 2018 4:12 PM
To: Jones, William V, EMNRD
Subject: Request for exception to allow compressive strength option BDU 2130 181J well.
Attachments: Cement_TAIL_Surface Lab Report_Bravo Dome Well.pdf; Exception to allow compressive strength option BDU 2130 181J well.docx; Cement_TAIL_Intermediate Lab Report_Bravo Dome Wells.pdf; Cement_Production Lab Report_Bravo Dome Wells.pdf; BDU 21 30 18 1 J APPROVED DRILLING PERMIT.pdf

Mr. Jones ,

Please find the enclosed documents that address Oxy request for an exception to the WOC standard rules for Harding County.

If you have any questions please drop me an email or call me

Thank you

Al.

HALLIBURTON

Permian Basin, Odessa

Surface

Lab Results – Tail Cement

Job Information

Request/Slurry	2487516/3	Rig Name	Trinidad 435	Date	JUL/19/2018
Submitted By		Job Type	Surface Casing	Bulk Plant	
Customer	Occidental Petroleum Corp	Location	Harding	Well	Bravo Dome Unit 2130 181J

Well Information

Casing/Liner Size	13.375 in	Depth MD	1400 ft	BHST	35°C / 95°F
Hole Size	17.5 in	Depth TVD	1400 ft	BHCT	29°C / 85°F

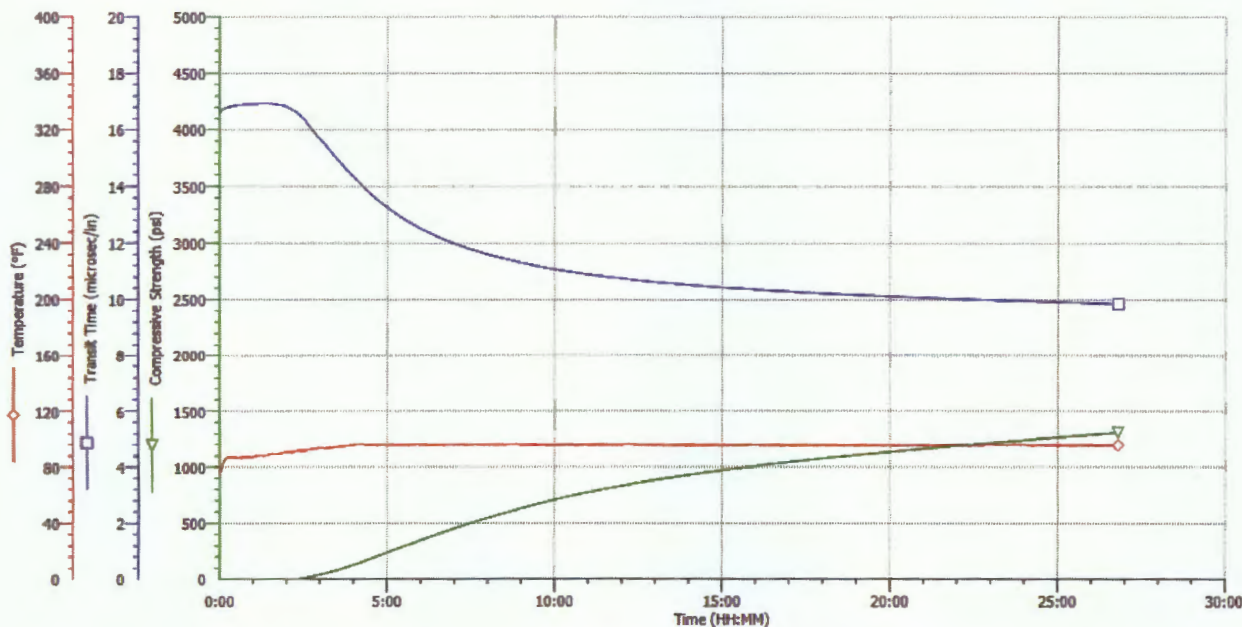
Cement Information - Tail Design

Conc	UOM	Cement/Additive	Cement Properties		
		HalCem	Slurry Density	14.8	lbm/gal
100	% BWOC	Cemex Premium Plus C	Slurry Yield	1.348	ft ³ /sack
6.52	gal/sack	Heated Fresh Water	Water Requirement	6.516	gal/sack
1	% BWOC	CaCl ₂ (Calcium Chloride)			
		94-97 % Salt			

Pilot Test Results Request ID 2487516/3

UCA Comp. Strength

End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	1000 psi(hh:mm)	8hr CS (psi)	12 hr CS (psi)	24 hr CS (psi)	End CS (psi)	End Time (hrs)
95	4000	3:09	3:44	7:31	15:48	546	830	1238	1307	27



These are draft results and have not been approved for final use.

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HALLIBURTON

Permian Basin, Artesia

INTERMEDIATE

Lab Results - Tail

Job Information

Request/Slurry	2481786/1	Rig Name	Trinidad 435	Date	JUL/19/2018
Submitted By		Job Type	Intermediate Casing	Bulk Plant	
Customer	Occidental Petroleum Corp.	Location	Harding	Well	Bravo Dome Unit 2130 181J

Well Information

Casing/Liner Size	8.625 in	Depth MD	2670 ft	BHST	46°C / 120°F
Hole Size	10.625 in	Depth TVD	2670 ft	BHCT	34°C / 93°F

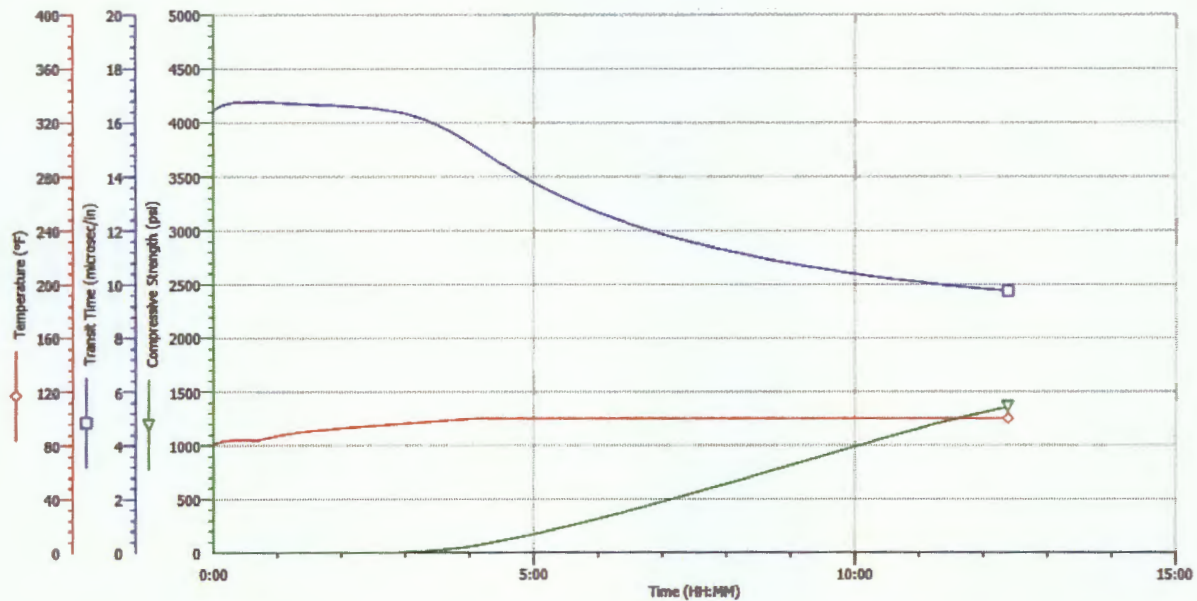
Cement Information - Tail Design

Conc	UOM	Cement/Additive	Cement Properties		
		HalCem C	Slurry Density	14.8	lbm/gal
100	% BWOC	Cemex Premium Plus C	Slurry Yield	1.404	ft ³ /sack
6.58	gal/sack	Heated Fresh Water	Water Requirement	6.581	gal/sack
1	lb/sk	LAP-1 (Powdered Latex)			
0.5	% BWOC	CFR-3 (PB)			
5	lb/sk	Microbond			
0.2	% BWOC	Econolite (Powder - PB)			

Pilot Test Results Request ID 2481786/1

UCA Comp. Strength

End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	8hr CS (psi)	12 hr CS (psi)	End CS (psi)	End Time (hrs)
100	4000	3:55	4:25	7:10	637	1307	1358	12



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Permian Basin, Artesia

Lab Results – Primary Cement

PRODUCTION CASING

Job Information

Request/Slurry	2489966/1	Rig Name	Trinidad 435	Date	JUL/19/2018
Submitted By		Job Type	Intermediate Casing	Bulk Plant	
Customer	Occidental Petroleum Corp.	Location	Harding	Well	Bravo Dome Unit 2130 181J

Well Information

Casing/Liner Size	5.5 in	Depth MD	3030 ft	BHST	49°C / 120°F
Hole Size	7.875 in	Depth TVD	3030 ft	BHCT	35°C / 95°F

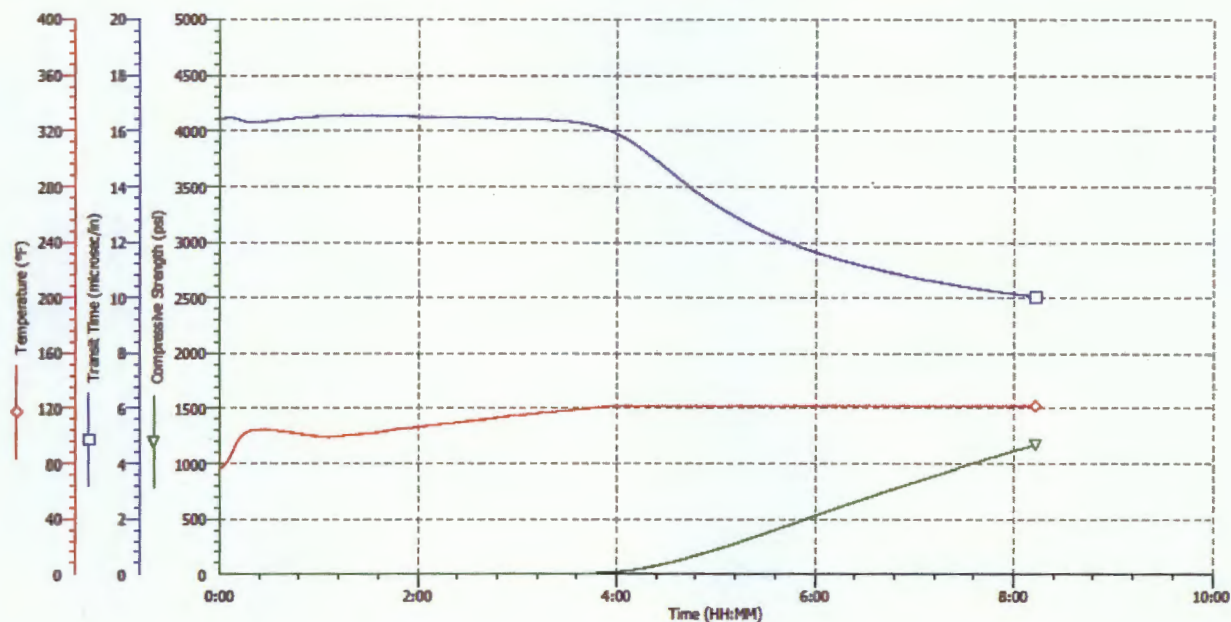
Cement Information - Primary Design

Conc	UOM	Cement/Additive	Cement Properties		
		VersaCem H	Slurry Density	16.2	lbm/gal
100	% BWO	Cement Blend	Slurry Yield	1.10	ft ³ /sack
4.56	gal/sack	Heated Fresh Water	Water Requirement	4.56	gal/sack
0.3	lb/sk	LAP-1 (Powdered Latex)			
0.5	lb/sk	D-Air 5000			
0.5	lb/sk	CFR-3 (PB)			

Pilot Test Results Request ID 2489966/1

UCA Comp. Strength

End Temp (degF)	Pressure (psi)	50 psi (hh:mm)	100 psi (hh:mm)	500 psi (hh:mm)	1000 psi (hh:mm)	8hr CS (psi)
120	4000	4:15	4:32	5:55	7:34	1114



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District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3470 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011
Permit 254349

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address OXY USA INC P.O. Box 4294 Houston, TX 77210-4294		2. OGRID Number 16696
4. Property Code 27111		3. API Number 30-021-20683
5. Property Name BRAVO DOME CARBON DIOXIDE GAS UNIT		6. Well No. 181J

7. Surface Location									
UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
J	18	21N	30E	J	1780	S	2296	E	Harding

8. Proposed Bottom Hole Location									
UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
J	18	21N	30E	J	1780	S	2296	E	Harding

9. Pool Information	
96010	96010

Additional Well Information				
11. Work Type New Well	12. Well Type CO2	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 5378
16. Multiple N	17. Proposed Depth 2800	18. Formation Tubb	19. Contractor	20. Spud Date 8/1/2018
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☐ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program						
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	14.75	11.75	47	1400	600	0
Int1	10.625	8.625	32	2660	350	0
Prod	7.875	5.5	20	2785	480	0

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program			
Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	3000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input checked="" type="checkbox"/> if applicable. Signature: _____ Printed Name: Electronically filed by KELLEY MONTGOMERY Title: Manager Regulatory Email Address: kelley_montgomery@oxy.com Date: 7/2/2018	OIL CONSERVATION DIVISION Approved By: William V Jones Title: OCD District IV Supervisor Approved Date: 7/16/2018 Expiration Date: 7/16/2020 Conditions of Approval Attached
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District I
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District III
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Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 96010	Pool Name BRAVO DOME CARBON DIOXIDE GAS 640
Property Code 27111	Property Name BRAVO DOME CARBON DIOXIDE GAS UNIT	Well Number 181
OGRIID No. 16696	Operator Name OXY USA INC.	Elevation 5377.8

Surface Location

U/L or lot no.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
J	18	21 NORTH	30 EAST, N.M.P.M.		1780'	SOUTH	2296'	EAST	HARDING

Bottom Hole Location If Different From Surface

U/L or lot no.	Section	Township	Range	Lot Idn.	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres		Joint or Infill	Consolidation Code	Order No.					

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p>(NAD 83)</p> <p>18</p> <p>SURFACE LOCATION NEW MEXICO EAST NAD 1983 Y=1836871.02 US FT X=703516.78 US FT LAT: N 36° 02' 49.45" LONG: W 103° 47' 04.95"</p> <p>1</p> <p>2296'</p> <p>1780'</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or leased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Sharon Wyatt</i> 6/18/18 Signature Date Sharon Wyatt Printed Name sharon_wyatt@oxy.com E-mail Address</p>
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>DATE OF SURVEY: JUNE 2, 2018 Signature and Seal of Professional Surveyor <i>Terry J. Neal</i> 6/18/2018 Certificate Number 15079</p>

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 254349

PERMIT COMMENTS

Operator Name and Address: OXY USA INC [16696] P.O. Box 4294 Houston , TX 77210-4294	API Number: 30-021-20683
	Well: BRAVO DOME CARBON DIOXIDE GAS UNIT #181J

Created By	Comment	Comment Date
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Conditions

Permit 254349

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: OXY USA INC [16696] P.O. Box 4294 Houston , TX 77210-4294	API Number: 30-021-20683 Well: BRAVO DOME CARBON DIOXIDE GAS UNIT #181J
-----------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------

OCD Reviewer	Condition
wvjones	Pit construction and closure must satisfy all requirements of your approved plan.
wvjones	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
wvjones	If using a pit for drilling and completion operations, must have an approved pit from prior to spudding the well.
wvjones	Deviation survey must be certified and submitted. Directional survey if the well deviates more than rules allow. Gas Capture Plan is required per the new rule. Frac disclosure must be submitted if the well is hydraulically fractured. Surface Casing must circulate with cement. Stage Tools must be reported if used. Report all water zones and all lost circulation zones. The Operator is to notify NMOCD by sundry (Form C-103 within 10 days of the well being spud. If intermediate or production casin