

Office
 District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III – (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM
 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

OIL CONSERVATION DIVISION
 1220 South St. Francis Dr.
 Santa Fe, NM 87505

WELL API NO. 30-025-54111
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Grayling 14 Fed Com
8. Well Number 606H
9. OGRID Number 330396
10. Pool name or Wildcat LUSK; BONE SPRING, EAST (41442)
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3627' GL

SUNDRY NOTICES AND REPORTS ON WELLS
 (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator
Avant Operating, LLC

3. Address of Operator
1515 Wynkoop Street, Suite 700. Denver, CO 80202

4. Well Location
 Unit Letter O : 803 feet from the S line and 1567 feet from the E line
 Section 14 Township 19S Range 32E NMPM County Lea

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
PULL OR ALTER CASING <input checked="" type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
DOWNHOLE COMMINGLE <input type="checkbox"/>	P AND A <input type="checkbox"/>
CLOSED-LOOP SYSTEM <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>
OTHER: <input type="checkbox"/>	OTHER: <input type="checkbox"/>

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Avant Operating, LLC is requesting to move the intermediate casing set depth down 400' to depth of 5,875' for the Grayling 14 Fed Com 606H well. The current 9-5/8" intermediate casing set depth is short of where we would like to be able to effectively isolate the Capitan reef before drilling the vertical section into the hydrocarbon formations. The Delaware formation top is 5,875' TVD, which is where we would like to update the casing set point. Verbal approval for this work was given by Long Vo on 12/20/2024, please see attached email correspondence as well as revised wellbore schematic and cement proposal.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE  TITLE Contract Regulatory Analyst DATE 12/23/2024

Type or print name Meghan Twele E-mail address: mtwele@outlook.com PHONE: 720-339-6880

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any):

mtwele@outlook.com

From: Vo, Long T <lvo@blm.gov>
Sent: Friday, December 20, 2024 3:21 PM
To: Sarah Ferreyros; Ryan Harris
Cc: Meghan Twele
Subject: Re: [EXTERNAL] Grayling 604H, 605H, 606H - Intermediate Casing Set Point

Yes, just the email. No need for the cementing update, cement per COA and adjust to surface based on volume calculations.

Regards,

Long Vo

Petroleum Engineer
Carlsbad Field Office
Land and Minerals
Bureau of Land Management
Department of Interior
575-988-5402 Cell

"Be the change that you wish to see in the world"-Gandhi

From: Sarah Ferreyros <sarah@avantnr.com>
Sent: Friday, December 20, 2024 2:04 PM
To: Vo, Long T <lvo@blm.gov>; Ryan Harris <ryan@avantnr.com>
Cc: Meghan Twele <Mtwele@outlook.com>
Subject: RE: [EXTERNAL] Grayling 604H, 605H, 606H - Intermediate Casing Set Point

Hi Long,

We will need to submit a sundry with this approval, correct? Will we need to attach the updated cement proposals?

Thank you!
Sarah

From: Vo, Long T <lvo@blm.gov>
Sent: Friday, December 20, 2024 9:50 AM
To: Ryan Harris <ryan@avantnr.com>
Cc: Sarah Ferreyros <sarah@avantnr.com>; Meghan Twele <Mtwele@outlook.com>
Subject: Re: [EXTERNAL] Grayling 604H, 605H, 606H - Intermediate Casing Set Point

Ryan,

You are approved to proceed, please adjust cement per COA requirements. All previous COAs still apply.

Regards,

Long Vo

Petroleum Engineer
Carlsbad Field Office
Land and Minerals
Bureau of Land Management
Department of Interior
575-988-5402 Cell

"Be the change that you wish to see in the world"-Gandhi

From: Ryan Harris <ryan@avantnr.com>
Sent: Friday, December 20, 2024 9:37 AM
To: Vo, Long T <lvo@blm.gov>
Cc: Sarah Ferreyros <sarah@avantnr.com>; Meghan Twele <Mtwele@outlook.com>
Subject: [EXTERNAL] Grayling 604H, 605H, 606H - Intermediate Casing Set Point

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good morning Long,

I noticed on the APD's for the mentioned wells that the 9-5/8" intermediate casing set depth is short of where we would like to be able to effectively isolate the capitan reef before drilling the vertical section into the hydrocarbon formations. The Delaware formation top is 5,875' TVD, which is where we would like to update the casing set point. Our rig move date to this location is set for the end of next week. Please reply if we are approved to move forward with this plan to move the intermediate casing set depth down 400' to 5,875' to be consistent with the previously approved Grayling 601H, 602H, 603H wells in the same section.

Thank you,
Ryan Harris
Drilling & Completions Engineer
C: 406.853.6490



API: 30-025-54111

REGULATORY: BLM

PERMIT #



Grayling 14 Fed Com #606H

Bone Spring

Lea County, NM

AFE: NM0233

RIG: H&P 255

KB: 3652.5 (25.5')

GL: 3627'

WELLHEAD

13-3/8" x 9-5/8" x 5-1/2"

MNDS

SHL:

Sec. 14, T-19S, R-32E; 803 FSL, 1567 FEL

Lat: 32.655307, Long: -103.733392 (NAD83)

HOLE SIZE	MD	FORMATION	TVD	MUD	CASING	CEMENT	SPECIAL INSTRUCTIONS
SURFACE 17 1/2"	120	20" Conductor	120	SPUD MW 8.4 ppg	13 3/8 " 54.5# J-55 BTC +/- 10 Bowsprings	LEAD: 12.8 PPG Top of Lead: 0 50% Excess TAIL: 14.8 PPG Top of Tail: 852' 20% Excess	Circ cement to surface is a NMOCD requirement Casing must be set 25' into the Rustler MUD: Fresh water only
	1,127	Rustler	1,127	FRESH TD MW 10.1 ppg	1 20' pup jt 1 joint shoe track, prebucked		
	1,152	SURF CSG PT	1,152				
INTRM 12 1/4"	1,430	Solado	1,430	DRLOUT MW 10 ppg	SPLIT STRING 9 5/8 " 40# J-55 BTC 0' - 4000' +/- 24 Bowsprings	LEAD: 12.8 PPG Top of Lead: 0' 50% Excess TAIL: 14.8 PPG Top of Tail: 4711' 20% Excess	Circ cement to surface is a NMOCD requirement
	2,800	Yates	2,800		40# L-80 HC BTC 4000' - TD +/- 15 Bowsprings		
	3,550	Capitan Reef	3,550	BRINE TD MW 10.5 ppg	1 20' pup jt 1 joint shoe track, prebucked		
VERTICAL 8 3/4"	5,889	Cherry Canyon	5,875				
	5,889	Cherry Canyon	5,875				
	6,490	Brushy Canyon	6,457				
CURVE 8 3/4"	7,587	Bone Spring	7,500	DRLOUT MW 9.2 ppg	5 1/2 " 20# P-110 HC Intrepid SP 1 15' pup jt 2 20' Marker Jts +/- 61 Bowsprings +/- 28 Doublebows +/- 232 Solid Bodies		
	8,790	1st BS Sand	8,683	CUT BRINE KOP MW 9.5 ppg			
	9,547	2nd BS Sand	9,427	EOC CUT BRINE MW 9.5 ppg	Lat MW 9.5 ppg	OBM TD MW 9.8 ppg	
LATERAL 8 3/4"	10,359	KOP	10,212				21,048 ' MD
	10,372	3rd BS Sand	10,228				9,656 ' VS
	11,115	EOC	10,690				10,560 ' TVD
DIRECTIONAL PLAN				Lat. Azi = VS Azi. = 359.62° Est BHST = 183°F, Est BHCT = 166°F BHL: 100 FNL, 330 FEL			
MD	INC	INC	TVD	ANNOTATION	LEAD: 10.7 PPG Top of Lead: 0 50% OH Excess TAIL: 14.5 PPG Top of Tail (KOP): 10359' 20% Excess All aqueous fluids (spacer and disp) left inside or outside of pipe must have biocide & corrosion inhibitor	Expected Btm Hole Pressure 5068.8 psi	

PRELIMINARY

DIRECTIONS TO LOCAITON:

PROPOSAL#: 240126170015-C



CEMENT PROCEDURE & PROPOSAL

PREPARED FOR:

Mr. Braden Harris

EMAIL: braden@avantnr.com

PHONE NUMBER: 406-600-3310

Avant Natural Resources Grayling 14 Fed Com #606H

Lea County, NM

Rig: H&P 255

API Number: 30-025-54111

AFE Number: NM0233

Service Point

Odessa

1400 S JBS Parkway Odessa, TX 79766

432-701-8955

Technical Writer

Jonathan Smith

jonathan@wtcementers.com

432-701-3719

WTC Representative

Jon Reynolds

jon@wtcementers.com

432-257-1234

.Disclaimer Notice:

The ability of West Texas Cementers to complete this work is subject to the availability of the raw materials required to complete the job.

This information is presented in good faith, but no warranty is given by and West Texas Cementers LLC assumes no liability for advice or recommendations made concerning results to be obtained from the use of any product or service. The results given are estimates based on calculations produced by a computer model including various assumptions on the well, reservoir and treatment. The results depend on input data provided by the Operator and estimates as to unknown data and can be no more accurate than the model, the assumptions and such input data. The information presented is WTC LLC best estimate of the actual results that may be achieved and should be used for comparison purposes rather than absolute values. The quality of input data, and hence results, may be improved through the use of certain tests and procedures which West Texas Cementers LLC can assist in selecting. The Operator has superior knowledge of the well, the reservoir, the field and conditions affecting them. If the Operator is aware of any conditions whereby a neighboring well or wells might be affected by the treatment proposed herein it is the Operator's responsibility to notify the owner or owners of the well or wells accordingly. Prices quoted are estimates only and are good for 30 days from the date of issue. Actual charges may vary depending upon time, equipment, and material ultimately required to perform these services. Freedom from infringement of patents of West Texas Cementers LLC or others is not to be inferred.

PRINTED

12/23/2024 9:35

VERSION: v0.29

Avant Natural Resources
Grayling 14 Fed Com #606H
Lea County, NM
Rig: H&P 255

Surface



PROPOSAL#: 240126170015-C

WELL INFORMATION						
MUD	8.4# Fresh Water					
PREVIOUS PIPE	20" 94# CSG to 120					
OPEN HOLE	17.5" OH to 1152					
CASING/INJECTION	13.375" 54.5# J-55/BTC to 1152					
MD	1152					
EST BHST/BHCT	90-F / 82-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	120	19.124	13.375		0.1815	21.8
Lead	732	17.5	13.375	50%	0.1856	135.8
Tail	300	17.5	13.375	20%	0.1485	44.5
SHOE JOINT	40	13.375	12.615		0.1546	6.2
FLUIDS						
SPACER						
Fresh Water						
VOLUME	20-bbl					
Lead						
35% M_Poz+65% Class C+4% Gel+5% SALT+0.1% SMS+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	505-SX					158.3-bbls
DENSITY	12.8-ppg					
YIELD	1.76-cf/sx					
MIX WATER	9.16-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					

Avant Natural Resources
Grayling 14 Fed Com #606H
Lea County, NM
Rig: H&P 255

Surface



PROPOSAL#: 240126170015-C

Tail		
	100% Class C+1% CaCl2+0.005GPS NoFoam V1A	
VOLUME	215-SX	50.9-bbls
DENSITY	14.8-ppg	
YIELD	1.33-cf/sx	
MIX WATER	6.34-gps	
TOP OF CEMENT	852-ft	
EXCESS	20%	
DISPLACEMENT		
	Displacement	
VOLUME	171.9-bbl	

Avant Natural Resources
Grayling 14 Fed Com #606H
Lea County, NM
Rig: H&P 255

Intermediate



PROPOSAL#: 240126170015-C

WELL INFORMATION						
MUD	10.5# Brine					
PREVIOUS PIPE	13.375" 54.5# CSG to 1152					
OPEN HOLE	12.25" OH to 5889					
CASING/INJECTION	9.625" 40# J55/L80 HC/BTC to 5889					
MD	5889					
TVD	5875					
EST BHST/BHCT	127-F / 111-F (0.8-F/100-FT)					
NOTES	Standby charges start after WTC has been on location for more than 4-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	1152	12.615	9.625		0.0646	74.4
Lead	3559	12.25	9.625	50%	0.0837	297.8
Tail	1178	12.25	9.625	20%	0.0669	78.8
SHOE JOINT	40	9.625	8.835		0.0758	3.0
FLUIDS						
SPACER						
Fresh Water						
VOLUME	25-bbl					
Lead						
35% M_Poz+65% Class C+4% Gel+5% SALT+0.1% SMS+0.15% R-1300+0.25PPS Pol-E-Flake+0.005GPS NoFoam V1A						
VOLUME	1190-SX					
DENSITY	12.8-ppg					
YIELD	1.76-cf/sx					
MIX WATER	9.16-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					
373-bbbls						

Avant Natural Resources
Grayling 14 Fed Com #606H
Lea County, NM
Rig: H&P 255

Intermediate



PROPOSAL#: 240126170015-C

Tail		
100% Class C+5% SALT+0.4% FR-5+0.005GPS NoFoam V1A		
VOLUME	340-SX	83-bbls
DENSITY	14.8-ppg	
YIELD	1.37-cf/sx	
MIX WATER	6.49-gps	
TOP OF CEMENT	4711-ft	
EXCESS	20%	
DISPLACEMENT		
Displacement		
VOLUME	443.5-bbl	

Avant Natural Resources
Grayling 14 Fed Com #606H
Lea County, NM
Rig: H&P 255

Production



PROPOSAL#: 240126170015-C

WELL INFORMATION						
MUD	9.8# OBM					
PREVIOUS PIPE	9.625" 40# CSG to 5889					
OPEN HOLE	8.75" OH to 20048					
CASING/INJECTION	5.5" 20# P-110-HC/GBCD to 20048					
MD	20048					
TVD	10560					
EST BHST/BHCT	183-F / 183-F (0.97-F/100-FT)					
KOP	10359					
NOTES	Standby charges start after WTC has been on location for more than 8-hrs.					
VOLUMES						
FLUID NAME	LENGTH (ft)	OD (in.)	ID (in.)	XS (%)	FACTOR (bbl/ft)	VOLUME (bbl)
Lead	5889	8.835	5.5		0.0464	273.5
Lead	4470	8.75	5.5	50%	0.0675	301.6
Tail	9689	8.75	5.5	20%	0.0540	523.0
SHOE JOINT	80	5.5	4.778		0.0222	1.8
FLUIDS						
SPACER						
Wt. Spacer 37.04GPB Water+8PPB PolyScrub 4320+106.59PPB Barite+1GPB HoleScrub 4311+1PPB R-1300						
VOLUME	40-bbl					
DENSITY	10.3-ppg					
Lead						
100% ProLiteM+5PPS Plexcrete STE+2% SMS+0.65% R-1300+0.2% FL-24+3PPS Gilsonite+0.005GPS NoFoam V1A						
VOLUME	985-SX					
DENSITY	10.7-ppg					
YIELD	3.28-cf/sx					
MIX WATER	20.11-gps					
TOP OF CEMENT	Surface					
EXCESS	50%					
	575.4-bbls					

575.4-bbls

Avant Natural Resources
Grayling 14 Fed Com #606H
Lea County, NM
Rig: H&P 255

Production



PROPOSAL#: 240126170015-C

Tail		
50% M_Poz+50% Class H+5% SALT+0.75% FR-5+0.5% FL-24+0.005GPS NoFoam V1A		
VOLUME	2670-SX	523.1-bbls
DENSITY	14.5-ppg	
YIELD	1.1-cf/sx	
MIX WATER	4.42-gps	
TOP OF CEMENT	10359-ft	
EXCESS	20%	
DISPLACEMENT		
Fresh Water+ 0.25GPT Plexicide 24L+1GPT Corplex		
VOLUME	442.8-bbl	
DENSITY	8.34-ppg	

CHEMICAL DESCRIPTIONS		
CHEMICAL NAME	CODE	DESCRIPTION
B_Poz	WTC228	Poz - Fly Ash, Extender
Class H	WTC101	API Cement
Class C	WTC100	API Cement
M_Poz	WTC280	Poz - Fly Ash, Extender
ProLiteM		Blended Based Cement
Plexcrete SFA	WTC129	Cement Strength Enhancer
Gel	WTC102	Extender
Micro Crystal	WTC212	Cement Strength Enhancer
Micro Shell	WTC209	Cement Strength Enhancer
WTC1	WTC250	Extender
Plexcrete STE	WTC127	Cement Strength Enhancer
FAR-2	WTC260	Cement Strength Enhancer
Gypsum	WTC111	Free Water Control, Extender
CaCl2	WTC112	Accelerator
SMS	WTC115	Free Water Control, Extender
RCKCAS-100	WTC276	Free Water Control, Anti-Settling Agent
SA-1	WTC264	Free Water Control, Extender
R-33	WTC243	Lignosulfonate Retarder
R-1300	WTC201	Low Temperature Retarder
R-1201	WTC253	Lignosulfonate Retarder
FR-5	WTC258	Lignosulfonate Retarder
C-37	WTC224	Dispersant, Friction Reducer
FL-24	WTC277	Fluid Loss (polymers/copolymers - 300-F max)
EC-10	WTC120	Expanding Agent
Gas Bond	WTC126	Gas Migration Control (Hydrogen Generating)
Gilsonite	WTC003	Premium Lost Circulation Material, Free Water Control
Pol-E-Flake	WTC106	Lost Circulation Material
Web Seal	WTC133	Premium Fiber Lost Circulation Material
Zone Seal	WTC207	Premium Lost Circulation Material
NoFoam V1A	WTC105	Liquid Defoamer
Water		Fresh Water
PolyScrub 4320	WTC232	Spacer Gelling Agent
Barite	WTC116	Weighting Agent
HoleScrub 4311	WTC281	Surfactant
HoleScrub 4305	WTC213	Surfactant
HoleScrub 4308	WTC215	Surfactant
Soda Ash	WTC164	pH Control
R-1300	WTC201	Low Temperature Retarder
SuspendaCem 6302	WTC005	Free Water Control, Anti-Settling Agent
Sugar	WTC119	Retarder
AI-1, Acid Inhibitor	WTC015	Corrosion Inhibitor
Plexcide 24L	WTC166	Biocide
Corplex	WTC134	Corrosion Inhibitor
Clay Max	WTC096	KCL Substitute
Zone Seal	WTC207	Premium Lost Circulation Material

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 414779

CONDITIONS

Operator: Avant Operating, LLC 1515 Wynkoop Street Denver, CO 80202	OGRID: 330396
	Action Number: 414779
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	If cement is not circulated to surface during cementing operations, a Cement Bond Log (CBL) is required.	12/27/2024