Form 3160-5 (June 2015) DE BU SUNDRY I Do not use this abandoned well	UNITED STATES PARTMENT OF THE D JREAU OF LAND MANA NOTICES AND REPO s form for proposals to I. Use form 3160-3 (A.	RECE NTERIOR GEMENJAN (RTS ON WE GRIMPTO FOR DI TOT SUCTOR	IVED 9 202 LLS possies	0 RTES	SIA	FORM 7 OMB NO Expires: Ja 5. Lease Serial No. MultipleSee At 6. If Indian, Allottee of	APPROVED 0. 1004-0137 nuary 31, 2018 tached r Tribe Name
SUBMIT IN 1	RIPLICATE - Other inst	tructions on p	age 2	\ \		7. If Unit or CA/Agree MultipleSee At	ement, Name and/or No. tached
1. Type of Well Gas Well Oth	er					8. Well Name and No. MultipleSee Atta	ched
2. Name of Operator OXY USA INCORPORATED	Contact: E-Mail: david_stev	DAVID STEW wart@oxy.com	ART			9. API Well No. MultipleSee At	tached
3a. Address 5 GREENWAY PLAZA SUITE HOUSTON, TX 77046-0521	3a. Address 3b. Phone No. (include 5 GREENWAY PLAZA SUITE 110 Ph: 432.685.5717 HOUSTON, TX 77046-0521 Fx: 436.855.5742 4. Location of Well (Footage Sec. T. R. M. or Supple) Description					10. Field and Pool or E PIERCE CROS	Exploratory Area SING-BONE SPRING
4. Location of Well <i>(Footage, Sec., T.</i> MultipleSee Attached				11. County or Parish, S EDDY COUNTY	State 1, NM		
12. CHECK THE AP	PROPRIATE BOX(ES)	TO INDICAT	E NAT	URE OF	NOTICE,	REPORT, OR OTH	IER DATA
TYPE OF SUBMISSION			Т	YPE OF	ACTION		
 Notice of Intent Subsequent Report Final Abandonment Notice 	 Acidize Alter Casing Casing Repair Change Plans Convert to Injection 	Deep Hydr New Plug Plug Plug	en aulic Frae Construc and Abar Back	cturing tion idon	 Product Reclam Recomp Tempor Water I 	ion (Start/Resume) ation blete arily Abandon Disposal	 Water Shut-Off Well Integrity Other Change to Original A PD
Attach the Bold the which the which following completion of the involved testing has been completed. Final Ab determined that the site is ready for fi OXY USA Inc. respectfully req following wells: 1. Width CC 6-7 Federal Com 2. Width CC 6-7 Federal Com 3. Width CC 6-7 Federal Com 4. Width CC 6-7 Federal Com	with be performed of provide operations. If the operation re andonment Notices must be fil nal inspection. uests the following bulk s #14H - 30-015-45573 - N #15H - 30-015-45575 - N #16H - 30-015-45575 - N #17H - 30-015-45629 - N	sults in a multiple soults in a multiple sundry change NMNM117551 NMNM077018 NMNM013996 NMNM013996	completion equirements s to the	approve	d APD's for rISDa	osequent reports must be new interval, a Form 316 n, have been completed a r the d Field O afor Con	A must be filed once and the operator has
See attached for the Amendeo	I Drill Plan with the follow	ving changes. d casing string	. see att	tached for updated			
cementing information. All Previous	(OAS St	ill App	hy.	See	- at	talled (COA.
14. I hereby certify that the foregoing is Com Name (Printed/Typed) DAVID ST	true and correct. Electronic Submission # For OXY US/ mitted to AFMSS for proc EWART	493865 verified A INCORPORAT cessing by PRIS	by the E ED, sen CILLA P Title	LM Well at to the (EREZ on SR. REC	Information Carlsbad 12/03/2019 GULATOR	n System (20PP0533SE) (ADVISOR	
Signature (Electronic S	ubmission)		Date	11/26/20)19		
	THIS SPACE FO	OR FEDERA	LORS	TATE	OFFICE U	SE	
Approved By_NDUNGU KAMAU_ Conditions of approval, if any, are attached certify that the applicant holds legal or equ which would entitle the applicant to condu Title 18 U.S.C. Section 1001 and Title 43 States any false, fictitious or fraudulent s	d. Approval of this notice does itable title to those rights in th ct operations thereon. U.S.C. Section 1212, make it a tatements or representations as	s not warrant or le subject lease a crime for any per s to any matter wit	TitlePE Office (son know hin its jur	TROLE	UM ENGIN	EER ake to any department or	Date 12/20/2019 agency of the United
(Instructions on page 2) ** BLM REV	SED ** BLM REVISE	D ** BLM RE	VISED	** BLM	REVISE /28/2	D** BLM REVISE	D **

Additional data for EC transaction #493865 that would not fit on the form

5. Lease Serial No., continued

NMNM117551 NMNM13996 NMNM77018

`,

.

Wells/Facilities, continued

Agreement NMNM117551	Lease NMNM117551	Well/Fac Name, Number API Number WIDTH CC 6_7 FEDERAL COM 14360-015-45573-00-X1	Location Sec 6 T24S R29E 65FNL 1111FEL
NMNM77018	NMNM77018	WIDTH CC 6_7 FEDERAL COM 1530-015-45576-00-X1	32.254028 N Lat, 104.018829 W Lon Sec 6 T24S R29E 65FNL 1181FEL 32.254032 N Lat, 104.019058 W Lon
NMNM13996	NMNM13996	WIDTH CC 6_7 FEDERAL COM 1630-015-45575-00-X1	Sec 6 T24S R29E 170FNL 1425FWL 32.253815 N Lat. 104.027740 W Lon
NMNM13996	NMNM13996	WIDTH CC 6_7 FEDERAL COM 1730-015-45629-00-X1	Sec 6 T24S R29E 170FNL 1390FWL 32.253817 N Lat, 104.027851 W Lon

32. Additional remarks, continued

2. Request Bradenhead squeeze for the 2nd stage Intermediate casing with the Bradenhead CBL requirement. See attached for updated cementing information.

.

3. Request Offline Intermediate Casing/Cementing Variance, see attached.

4. Update BOP Break Testing Request, Information and Plan

Revisions to Operator-Submitted EC Data for Sundry Notice #493865

.

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM117551	NMNM117551 NMNM13996 NMNM77018
Agreement:		
Operator:	OXY USA INC. P.O. BOX 50250 MIDLAND, TX 79710 Ph: 432-685-5717	OXY USA INCORPORATED 5 GREENWAY PLAZA SUITE 110 HOUSTON, TX 77046-0521 Ph: 713.350.4816
Admin Contact:	DAVID_STEWART. SR. REGULATORY ADVISOR E-Mail: david_stewart@oxy.com Cell: 432-634-5688 Ph: 432-685-5717	DAVID STEWART SR. REGULATORY ADVISOR E-Mail: david_stewart@oxy.com Cell: 432.685.5717 Ph: 432.685.5717 Fx: 436.855.5742
Tech Contact:	DAVID STEWART SR. REGULATORY ADVISOR E-Mail: david_stewart@oxy.com Cell: 432-634-5688 Ph: 432-685-5717	DAVID STEWART SR. REGULATORY ADVISOR E-Mail: david_stewart@oxy.com Cell: 432.685.5717 Ph: 432.685.5717 Fx: 436.855.5742
Location: State: County:	NM EDDY	
Field/Pool:	PIERCE CANYON BONE SPRING	PIERCE CROSSING-BONE SPRING
Well/Facility:	WIDTH CC 6-7 FEDERAL COM 14H Sec 6 T24S R29E Mer NMP NENE 65FNL 1111FEL 32.254029 N Lat, 104.018831 W Lon	WIDTH CC 6_7 FEDERAL COM 14H Sec 6 T24S R29E 65FNL 1111FEL 32.254028 N Lat, 104.018829 W Lon WIDTH CC 6_7 FEDERAL COM 15H Sec 6 T24S R29E 65FNL 1181FEL 32.254032 N Lat, 104.019058 W Lon WIDTH CC 6_7 FEDERAL COM 16H Sec 6 T24S R29E 170FNL 1425FWL 32.253815 N Lat, 104.027740 W Lon WIDTH CC 6_7 FEDERAL COM 17H Sec 6 T24S R29E 170FNL 1305FWL 32.253817 N Lat, 104.027851 W Lon

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

,

OPERATOR'S NAME:	Ovy USA Incornorated
LEASE NO .	NMNM117551
WELL NAME & NO	Width CC 6. 7 Federal Com 1/H
SUPFACE HOLE FOOTACE.	65'/N & 1111'/W
BOTTOM HOLE FOOTAGE.	$\frac{00}{10} \frac{111}{8} 11$
DOTTOM HOLE FOOTAGE	$20/5 \approx 940/W$
LUCATION:	Ethe Courte New Maria
COUNTY:	Eddy County, New Mexico
OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM077018
WELL NAME & NO.:	Width CC 6_7 Federal Com 15H
SURFACE HOLE FOOTAGE:	65'/N & 1181'/E
BOTTOM HOLE FOOTAGE	20'/S & 2260'/E
LOCATION:	Section 6, T24S, R29E, NMPM
COUNTY:	Eddy County, New Mexico
	· /
OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM013996
WELL NAME & NO.:	Width CC 6 7 Federal Com 16H
SURFACE HOLE FOOTAGE:	170'/N & 1425'/W
BOTTOM HOLE FOOTAGE	20'/S & 1700'/W
LOCATION:	Section 6, T24S, R29E, NMPM
COUNTY:	Eddy County, New Mexico
OPERATOR'S NAME:	Oxy USA Incorporated
LEASE NO.:	NMNM013996
WELL NAME & NO.:	Width CC 6 7 Federal Com 17H
SURFACE HOLE FOOTAGE:	170'/N & 1390'/W
BOTTOM HOLE FOOTAGE	20'/S & 330'/W
LOCATION:	Section 6, T24S, R29E, NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	^C Yes	· No	
Potash	• None	Secretary	C R-111-P
Cave/Karst Potential	CLow	Medium	C High
Cave/Karst Potential	Critical		
Variance	None	Flex Hose	C Other
Wellhead	Conventional	C Multibowl	Both
Other	☐ 4 String Area	Capitan Reef	└ WIPP
Other	Fluid Filled	Cement Squeeze	F Pilot Hole
Special Requirements		IF COM	└ Unit

All previous COAs still apply.

A. CASING

- 1. The 10-3/4 inch surface casing shall be set at approximately 400 feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of <u>8</u>
 <u>hours</u> or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

- 2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. Excess cement calculates below 25%, additional cement might be required.

In <u>Medium Cave/Karst Areas</u> if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 7-5/8" X 10-3/4" annulus. <u>Operator must run</u> <u>a CBL / Echo-meter from TD of the 7-5/8" casing to surface. Submit results to</u> <u>BLM.</u>

- 3. The minimum required fill of cement behind the 5 $1/2 \times 4 1/2$ inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
 - OXY has the option to run production casing with DQX, SF TORQ, and/or DQW TORQ connections to accommodate hole conditions or drilling operations.

B. PRESSURE CONTROL

- 1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

- 1. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

C. SPECIAL REQUIREMENT (S)

Offline Cementing

• Contact the BLM prior to the commencement of any offline cementing procedure.

BOP Break Testing Variance

- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer prior to the commencement of any BOP Break Testing operations.
- A full BOP test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOP test will be required.

Communitization Agreement

• The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

OTA12192019

OXY USA Inc. – Width CC 6-7 Federal Com 14H-15H-16H-17H – Amended Drill Plan 96 291

This is a bulk sundry request for the Width CC 6-7 Federal #14H, but includes the wells listed below.

API#	Well'Name	Lease Serial #
3001545573	Width CC 6-7 Federal Com 14H	NMNM117551
3001545576	Width CC 6-7 Federal Com 15H	NMNM077018
3001545575	Width CC 6-7 Federal Com 16H	NMNM013996
3001545629	Width CC 6-7 Federal Com 17H	NMNM013996

1. Casing Program

All wells require changing production casing to a 5-1/2" x 4-1/2" tapered long string.

										Buoyant	Buoyant
TT 212 Ctars (22.1)	- Casing In	terval	Csg. Size	Weight	i nuto		5.4	SF.	() () () () () () () () () () () () () (Body SF	Joint SF
noie Size (iii)	From (ft)	To (ft)	(in)	(lbs)	Grade	County -		Collapse	OL DALL	Tension	Tension
6.75	0	7517	5.5	20	P-110	DQX		1.125	1.2	1.4	1.4
6.75	7517	17911	4.5	13.5	P-110	DQX		1.125	1.2	1.4	1.4
								SF Value	s will meet o	or Exceed	

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

*Oxy requests the option to run production casing with DQX, SF TORQ, and/or DQW TORQ connections to accommodate hole conditions or drilling operations.

2. Cementing Program

API#	Well Name	 Lease Serial #
3001545573	Width CC 6-7 Fed Com 14H	NMNM117551

OXY requests a change to the intermediate cement job for the Width CC 6-7 Federal Com 14H to include the two stage bradenhead cement job. The Width CC 6-7 Federal Com 15H, 16H, 17H have already been approved.

Casing String	# Sks	Wt. (Ib/gal)	Yīd: . (ff3/sack) ,	H20 (gal/sk)	500#. Comp. Strength (hours)	Slurry Description
Intermediate 1st Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 1st Stage (Tail)	268	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Intermediate 2nd Sta	ige (Tail Slurr	y) to be pumpe	ed as Bradenh	ead Squeeze f	from surface, o	lown the Intermediate annulus
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	622	12.9	1.92	10.41	23:10	Class C Cement, A ccelerator

7630/17912 73809/2130psi 400'smf. 6967' Int

7621

Casing String	Top (ft)	Bottom (ft)	% Excess
Intermediate 1st Stage (Lead)	N/A	N/A	N/A
Intermediate 1st Stage (Tail)	5056	6967	5%
Intermediate 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate 2nd Stage (Tail)	0	5056	10%

All wells will need to pump more volume for the production cement jobs due to the tapered string.

Casing String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	<u>H20</u> (gal/šk)	500# Comp Strength (hours)	Slurry Description.
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	1330	13.2	1.38	6.686	3:39	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top (ft)	Bottom (ft)	% Excess
Production (Lead)	. N/A	N/A	N/A
Production (Tail)	6467	17911	20%

*OXY requests a variance to cement the 9-5/8" and/or 7-5/8" intermediate casing strings offline, see attached for additional information.

Bradenhead CBL - OXY requests permission to adjust the CBL requirement after bradenhead cement jobs, on 7-5/8" intermediate casings, as per the agreement reached in the OXY/BLM meeting on September 5, 2019.

Three string wells:

- 1. CBL will be required on one well per pad
- 2. If the pumped volume of cement is less than permitted in the APD, BLM will be notified and a CBL may be run
- 3. Echometer will be used after bradenhead cement job to determine TOC before pumping top-out cement

3. Pressure Control Equipment

API#	WellName	Lease Serial #
3001545573	Width CC 6-7 Fed Com 14H	NMNM117551

Updating Width 14H BOP table to reflect same info as Width 15H-17H.

BOP installed and tested before drilling which hole?	Size?	Miñ: Required WP		Туре		Tested to:
		3M	1	nnular	~	70% of working pressure
0.875" Holo	17 5/0"		B	ind Ram 🖌		
9.873 1010	13-5/6	214	Р	ipe Ram '		250 mai / 2000 mai
		5101	Do	Double Ram 🖌	250 psi / 5000 psi	
			Other*			250 psi / 3000 psi 70% of working
		3M	1	Annular	~	70% of working pressure
6.75" Holo	17.5/01		B	ind Ram	✓	
0.75 11016	010-010	214	Pipe Ram		250 pci / 2000 pci	
		5101	Do	uble Ram	230 psi / 3000 psi	250 psi / 5000 psi
			Other*			

BOP Break Testing Request

OXY requests permission to adjust the BOP break testing requirements as per the agreement reached in the OXY/BLM meeting on September 5, 2019.

BOP break test under the following conditions:

- 1. After a full BOP test is conducted
- 2. When skidding to drill an intermediate section where ICP is set into the third Bone Spring or shallower.
- 3. When skidding to drill a production section that does not penetrate into the third Bone Spring or deeper.

If the kill line is broken prior to skid, two tests will be performed.

- 1. Wellhead flange, co-flex hose, kill line connections and upper pipe rams
- 2. Wellhead flange, HCR valve, check valve, upper pipe rams
- If the kill line is not broken prior to skid, only one test will be performed.

1. Wellhead flange, co-flex hose, check valve, upper pipe rams

Updating BOP Break Testing Verbiage for all wells:

3 Drilling Plan

OXY USA Inc. – Width CC 6-7 Federal Com 14H-15H-16H-17H – Amended Drill Plan

	Hole		Shoe Depth			Mud	Shell
Ŵell	Siże	Casing String	(TVD)	Formation	Intermediate/Production	Weight	Test
WIDTH CC 6-7 FED						9.0 -	
COM 14H	9.875"	26.4# - 7.625"	6,967	Bone Spring	Intermediate	9.5	No
WIDTH CC 6-7 FED		20# - 5.5" x		1 st Bone		8.6 -	
COM 14H	6.75"	13.5# - 4.5"	7,650	Spring	Production	9.5	Yes
WIDTH CC 6-7 FED						9.0 –	
COM 15H	9.875"	26.4# - 7.625"	6,967	Bone Spring	Intermediate U	9.5	No
WIDTH CC 6-7 FED		20# - 5.5" x		1 st Bone		8.6 –	
COM 15H	6.75"	13.5# - 4.5"	7,650	Spring	Production	9.5	No
WIDTH CC 6-7 FED					10796/5144	9.0 -	
COM 16H	9.875"	26.4# - 7.625"	6,967	Bone Spring	Intermediate 10 784	9.5	No
WIDTH CC 6-7 FED		20# - 5.5" x		1 st Bone	5328 01	8.6 -	
COM 16H	6.75"	13.5# - 4.5"	7,650	Spring	Production /2/>>>	9.5	Yes
WIDTH CC 6-7 FED					7650 1802-4:	9.0 -	
COM 17H	9.875"	26.4# - 7.625"	6,967	Bone Spring	Intermediate	9.5	No
WIDTH CC 6-7 FED		20# - 5.5" x		1 st Bone		8.6 –	
COM 17H	6.75"	13.5# - 4.5"	7,650	Spring	Production	9.5	No

OXY USA Inc. APD Attachment Offline Cementing

OXY respectfully requests a variance to cement the 9-5/8" and/or 7-5/8" intermediate casing strings offline.

The summarized operational sequence will be as follows:

- 1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).
- 2. Land casing.
- 3. Fill pipe with kill weight fluid, and confirm well is static.
 - a. If well is not static notify BLM and kill well.
 - b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
- 4. Set and pressure test annular packoff.
- 5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed.
- 6. Skid rig to next well on pad.
- 7. Confirm well is static before removing cap flange.
- 8. If well is not static notify BLM and kill well prior to cementing or nippling up for further remediation.
- 9. Install offline cement tool.
- 10. Rig up cement equipment.
 - a. Notify BLM prior to cement job.
- 11. Perform cement job.
- 12. Confirm well is static and floats are holding after cement job.
- 13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

PERFORMANCE DATA

5.500 in

TMK UP SF TORQ[™] Technical Data Sheet

Tubular Parameters

Size	5.500	in
Nominal Weight	20.00	lbs/ft
Grade	P110 HC	
PE Weight	19.81	lbs/ft
Wall Thickness	0.361	in
Nominal ID	4.778	in
Drift Diameter	4.653	in
Nom. Pipe Body Area	5.828	in²

Connection Parameters

	I	Υ
Make-Up Torques		
5	l 	I
Uniaxial Bending	83	°/ 100 f
Collapse Pressure	12,780	psi
Min. Internal Yield Pressure	12,640	psi
Yield Load In Tension	576,000	lbs
Compression Efficiency	90.0	%
Tension Efficiency	90.0	%
Critical Section Area	5.875	in²
Make-Up Loss	5.823	lin
Connection ID	4.734	lin
Connection OD	5.777	in

Min. Make-Up Torque	15,700	ft-lbs
Opt. Make-Up Torque	19,600	ft-lbs
Max. Make-Up Torque	21,600	ft-lbs
Operating Torque	29,000	ft-lbs
Yield Torque	36,000	ft-lbs

Printed on: February-22-2018

NOTE:

The content of this Technical Data Sheet is for general information only and does not guarantee performance or imply fitness for a particular purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. Information that is printed or downloaded is no longer controlled by TMK IPSCO and might not be the latest information. Anyone using the information herein does so at their own risk. To verify that you have the latest TMK IPSCO technical information, please contact TMK IPSCO Technical Sales toll-free at 1-888-258-2000.



Minimum Yield	110.000	psi
Minimum Tensile	125,000	psi
Yield Load	641,000	lbs
Tensile Load	728,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	12,780	psi

P110 HC

20.00 lbs/ft



PERFORMANCE DATA

TMK UP TORQ[™] DQW Technical Data Sheet

Tubular Parameters

Size	5.500	in
Nominal Weight	20.00	lbs/ft
Grade	P110 CY	
PE [`] Weight	19.81 [°]	lbs/ft
Wall Thickness	0.361	in
Nominal ID	4.778	in '
Drift Diameter	4.653	in
Nom. Pipe Body Area	5.828	in²

Connection Parameters

Connection OD	6.050	in
Connection ID	4.778	in
Make-Up Loss	4.324	in
Critical Section Area	5.828	in²
Tension Efficiency	100.0	%
Compression Efficiency	100.0	%
Yield Load In Tension	641,000	lbs
Min. Internal Yield Pressure	12,640	psi
Collapse Pressure	11,110	psi
Uniaxial Bending	92	°/ 100 ft

Make-Up Torques

Min. Make-Up Torque	14,000	ft-lbs
Opt. Make-Up Torque	16,000	ft-lbs
Max. Make-Up Torque	18,000	ft-lbs
Operating Torque	36,800	ft-lbs
Yield Torque	46,000	ft-lbs

Minimum Yield 110,000 psi Minimum Tensile 125,000 psi Yield Load 641,000 lbs 729,000 Tensile Load lbs Min. Internal Yield Pressure 12,640 psi 11,110 Collapse Pressure psi



Printed on: March-05-2019

NOTE:

The content of this Technical Data Sheet is for general information only and does not guarantee performance or imply fitness for a particular purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. Information that is printed or downloaded is no longer controlled by TMK IPSCO and might not be the latest information. Anyone using the information herein does so at their own risk. To verify that you have the latest TMK IPSCO technical information, please contact TMK IPSCO Technical Sales toll-free at 1-888-258-2000.



5.500 in

20.00 lbs/ft

P110 CY

TECHNICAL DATA SHEET TMK UP TORO® DOW™ 4.5 X 13.5 P110 CY

Nominal OD, (inch)	4.500
Wall Thickness, (inch)	0.290
Pipe Grade	P110 CY
Coupling	Regular
Coupling Grade	P110 CY
Drift	Standard
CONNECTION PARAMETERS	
Connection OD (inch)	5.250
Connection ID, (inch)	3.920
Make-Up Loss, (inch)	3.846
Connection Critical Area, (sq inch)	3.836
Yield Strength in Tension, (klbs)	422
Yeld Strength in Compression, (klbs)	422
Tension Efficiency	100%
Compression Efficiency	100%
Min. Internal Yield Pressure, (psi)	12 410
Collapse Pressure, (psi)	10 690
Uniaxial Bending (deg/100ft)	112.1

IPE	BODY	PROPERTIES	
-----	------	------------	--

PIPE BODY PROPERTIES	
PE Weight, (lbs/ft)	13.05
Nominal Weight, (bs/ft)	13.50
Nominal ID, (inch)	3.920
Drift Diameter, (inch)	3.795
Nominal Pipe Body Area, (sq inch)	3.836
Yield Strength in Tension, (klbs)	422
Min. Internal Yield Pressure, (psi)	12 410
Collapse Pressure, (psi)	10 690
Minimum Yield Strength, (psi)	110 000
Minimum Tensile Strength, (psi)	125 000

			Interna	i pressure		
	100% VM	E			\subseteq	
	SAL MA		Alde 1	Constant Bat		
Compression						Tansloning
			123			
	1			5.5 B 55	1.1.1	
		1. 1. 1. 1			1.1	
			and the second	100% A	PI 5C3 / ISO	
						· · ·



MAKE-UP TORQUES

TUBULAR PARAMETERS

Optimum Make-Up Torque, (T-ID)
Maximum Make-Up Torque, (ft-lb)
Operating Torque, (ft-lb)
Yield Torque, (ft-lb)





12 000

13 000 14 000

19 200 24 000

NOTE: The sontent of this Technical Data Sheet is for general information only and does not guarantee performance or imply finess of the sontextual purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. This information supersele all good vestores for this connection information and operation parameters. This information supersele all good vestores for this connection information and operation parameters. This information supersele all good vestores for this connection information used or downloaded is no longer controlled by TAH: and might not be the later technical information used in downloaded is no longer controlled by TAH: and might not be that it is consection information before controlled by TAH: and might not be that it is consection information used set of their own its H + (495) 7/5-76-00 Enables@atm-group.com) and T7K PSCD in North Ard report 18 + (495) 7/5-76-00 Enables@atm-group.com) and T7K PSCD in North Ard report 18 + (495) 7/5-76-00 Enables@atm-group.com).

Print date: 09/17/2019 17:26