U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

01/13/2026

Well Name: TALCO STATE FED COM

Well Location: T26S / R35E / SEC 16 / NWNW / 32.0489112 / -103.3770293

County or Parish/State: LEA / NM

Well Number: 152H

Type of Well: CONVENTIONAL GAS WELL

Allottee or Tribe Name:

Lease Number: NMNM0448921A

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002551383

Operator: CIVITAS PERMIAN OPERATING LLC

Notice of Intent

Sundry ID: 2878439

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 10/14/2025

Time Sundry Submitted: 08:42

Date proposed operation will begin: 11/17/2025

Procedure Description: Civitas Permian Operating, LLC would like to request changes to the casing, cement, and mud program, offline cementing procedure, BOP testing procedures, and other variance requests. Please see the attached revised drill plan, production casing spec sheets, wellhead diagram and offline cementing procedure for detailed information.

NOI Attachments

Procedure Description

Talco_152H_Sundry_Attachment_v1_20251014084111.pdf

Conditions of Approval

Additional

Sec_16_26S_35E_NMP_Sundry_2878439_Talco_State_Fed_Com_152H_COAs_20251205122415.pdf

Released to Imaging: 1/13/2026 3:20:03 PM

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Operator: CIVITAS PERMIAN OPERATING LLC

Operator

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: CORY WALK

Signed on: OCT 14, 2025 08:41 AM

Name: CIVITAS PERMIAN OPERATING LLC

Title: Permitting Agent

Street Address: 5 CALIENTE ROAD SUITE 3A

City: SANTA FE **State:** NM

Phone: (505) 466-8120

Email address: AFMSS@PERMITSWEST.COM

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: CWALLS@BLM.GOV

Disposition: Approved

Disposition Date: 12/12/2025

Signature: 2878439

CONFIDENTIAL

Form 3160-5
(October 2024)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

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

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: NWNW / 595 FNL / 1212 FWL / TWSP: 26S / RANGE: 35E / SECTION: 16 / LAT: 32.0489112 / LONG: -103.3770293 (TVD: 0 feet, MD: 0 feet)

PPP: NENW / 47 FNL / 2071 FWL / TWSP: 26S / RANGE: 35E / SECTION: 16 / LAT: 32.0504116 / LONG: -103.3742583 (TVD: 11530 feet, MD: 11619 feet)

PPP: NESW / 2640 FSL / 1980 FWL / TWSP: 26S / RANGE: 35E / SECTION: 16 / LAT: 32.043309 / LONG: -103.374538 (TVD: 12023 feet, MD: 14455 feet)

BHL: SESW / 5 FSL / 1980 FWL / TWSP: 26S / RANGE: 35E / SECTION: 21 / LAT: 32.0215116 / LONG: -103.3745216 (TVD: 12010 feet, MD: 22391 feet)

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Civitas Permian Operating LLC
WELL NAME & NO.:	Talco State Fed Com 152H
LOCATION:	Sec 16-26S-35E-NMP
COUNTY:	Lea County, New Mexico

*Changes approved through engineering via **Sundry 27878439** on 12/5/2025. Any previous COAs not addressed within the updated COAs still apply.*

Create COAs

H_2S	Cave / Karst	Waste Prevention Rule
Not Reported	Low	APD Submitted Prior to 06/10/24

Potash	R-111-Q Design
None	

Wellhead	Casing	
Multibowl	3-String Well	
	☐ Liner ☐ Fluid Filled ☐ Casing Clearance	
☑ Flex Hose	**Cementing**	
☑ Break Testing	☐ DV Tool ☑ Bradenhead ☐ Echometer	
	☑ Offline Cement ☐ Open Annulus ☐ Pilot Hole	

Special Requirements

☑ Capitan Reef ☐ Water Disposal ☑ COM ☐ Unit

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H_2S) monitors shall be installed prior to drilling out the surface shoe. If H_2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **11-3/4** inch surface casing shall be set at approximately **1570** feet (a minimum of **70'** into the Rustler Anhydrite, above the salt, and below usable fresh water) 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 **8 hours** or **500 pounds compressive strength**, whichever is greater (including 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.

2. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is **cement to surface**. If cement does not circulate, see B.1.a, c-d above.
   - **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
     - Switch to freshwater mud to protect the Capitan Reef and use freshwater mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
     - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
   - **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry** due to the presence of cave/karst, Capitan Reef, or potash features.

Bradenhead Squeeze: Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

a. **First stage:** Operator will cement with intent to reach the top of the **Brushy Canyon**.
b. **Second stage:** Operator to squeeze and top-out. Cement to meet requirements listed for this casing string. If cement does not circulate see B.1.a, c-d above.

Operator has proposed to pump down **Surface X Intermediate 1** annulus. Submit results to the BLM. If cement does not tie-back into the previous casing shoe, a third stage remediation BH may be performed. The appropriate BLM office shall be notified.

- Operator shall run a CBL from TD of the **Intermediate 1** casing to tieback requirements listed above after the second stage BH to verify TOC.

3. The minimum required fill of cement behind the **5-1/2** inch **production** casing is at least **50 feet on top of Capitan Reef top or 200 feet into the previous casing, whichever is greater**. If cement does not circulate see B.1.a, c-d above.
    - If cement does not circulate to surface on the previous casing, this string must come to surface.
    - **Additional cement may be needed to meet tieback requirements.**
    - **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry** due to the presence of cave/karst, Capitan Reef, or potash features.

C. PRESSURE CONTROL

1. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** 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 43 CFR 3172 must be followed.

2. 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).

3. Break testing has been approved for this well ONLY on those intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)** If in the event break testing is not utilized, then a full BOPE test would be conducted.
    a. Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation. **BOPE Break Testing is NOT permitted to drill the production hole section.**
    b. While in transfer between wells, BOPE shall be secured by the hydraulic carrier or cradle.
    c. A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).

d. As a minimum, a full BOPE test shall be performed at 21-day intervals.
e. In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**. Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.

D. SPECIAL REQUIREMENT(S)

Communitization Agreement:

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, 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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in 43 CFR 3171 and 3172.
- 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.

Offline Cementing

Offline cementing has been approved for **all hole sections, excluding production.** Contact the BLM prior to the commencement of any offline cementing procedure.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

Contact Lea County Petroleum Engineering Inspection Staff:
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
    a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
    b. When the operator proposes to set surface casing with Spudder Rig
        i. Notify the BLM when moving in and removing the Spudder Rig.
        ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
        iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-Q potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification

matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. 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.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    v. 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.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
    ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
    iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the

pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

iv. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

v. The results of the test shall be reported to the appropriate BLM office.

vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

vii. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

DRILLING AND OPERATIONS PLAN

Civitas Permian Operating LLC

Section 1: Well Information

Well Name and Number: **Talco State Fed Com 152H**

Proposed TD (ft MD): 22315 Proposed TD (ft TVD): 11990

Section 2: Casing Design

String Type	Hole Size	Casing Size	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Weight (lbs/ft)	Grade	Joint Type	Pressure Test (psi)	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	14.75	11.75	surface	1,570	surface	1,568	42	J55	BTC		1.13	1.15	BUOY	1.80	BUOY	1.80
Intermediate	10.625	8.625	surface	5,429	surface	5,377	32	HCL80	BTC		1.13	1.15	BUOY	1.80	BUOY	1.80
Production	7.875	5.5	surface	22,315	surface	11,990	20	P110RY	GBCD		1.13	1.15	BUOY	1.80	BUOY	1.80
											Safety Factors will Meet or Exceed					

Centralization Plan: Surface casing: centralizers run on bottom 3 joints. On subsequent strings of casing centralizers will be run as needed to ensure effective cement placement and zonal isolation.

NMOCD Casing Information:	
Is casing new? If used, attach certification as required in 43 CFR 3172.	
Does casing meet API specifications? If no, attach casing specification sheet.	
Is premium or uncommon casing planned? If yes attach casing specification sheet.	
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	
Will intermediate pipe be kept at least 1/3 fluid filled until cement tops are verified? (collapse safety requirement)	
Capitan Reef:	
Is well located within Capitan Reef?	
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is proposed well within the designated four string boundary?	
R-111-Q and SOPA	
Is well located in R-111-Q and SOPA?	
Is the second string set 100' to 600' below the base of salt?	
SOPA but not R-111-Q	
Is well located in SOPA but not in R-111-Q?	
If yes, are the first 2 strings cemented to surface and third string cement tied back 500' into previous casing?	
High Cave / Karst	
Is well located in high Cave/Karst?	
If yes, are there two strings cemented to surface?	
If yes, is there a contingency casing if lost circulation occurs?	
Critical Cave / Karst	
Is well located in critical Cave/Karst?	
If yes, are there three strings cemented to surface?	

Section 3: Cement Program

String Type	Lead/Tail	Top MD	Density (ppg)	Quantity (sks)	Yield (ft^3/sks)	Excess (%)	Cement Type	Additives
Surface	Lead	0	13.5	640	1.72	100	Class C	Additives + LCM
Surface	Tail	1270	14.8	196	1.33	100	Class C	Additives + LCM
Intermediate	Lead	0	10.5	318	3.98	25	Class C	Additives + LCM
Intermediate	Tail	4429	13.2	226	1.61	25	Class C	Additives + LCM
Production	Lead	na	10.5	na	3.93	na	Class H	Additives + LCM
Production	Tail	10984	13.2	1636	1.44	20	Class H	Fluid Loss + Dispersant + Retarder + LCM

Cementing Procedure

Spacers will be used ahead of cement to ensure mud removal. Slurries will be designed to provide adequate compressive strength, fluid loss control, and bonding. Offline cementing may be performed on surface and intermediate casing strings when set above the Wolfcamp formation (variance request). BOPE will be installed and tested prior to drilling out the shoe, and cement job quality will be verified before resuming operations. This variance improves operational efficiency while maintaining full compliance with 43 CFR 3172 and BLM conditions of approval. If required to achieve top of cement on the intermediate casing, a second-stage cement job may be performed by bradenhead squeeze (variance request). This method will only be used as necessary to ensure zonal isolation and full compliance with 43 CFR 3172 and BLM conditions of approval. All WOC times will be 8 hours on surface and intermediate casing or until cement has reached 500 psi compressive strength, prior to resuming drilling or completion operations on the well.

Section 4: Mud Program

Mud System Type: Closed Loop

Will an air or gas system be used? No

Describe what will be on location to control well or mitigate other conditions:

The necessary mud products for additional weight and fluid loss control will be on location at all times.

Describe the mud monitoring system utilized:

Losses or gains in the mud system will be monitored visually/manually as well as with an electronic PVT.

Circulating Medium Table:

Top Depth	Bottom Depth	Mud Type	Min. Weight	Max Weight
0	1570	Water Based Mud	8.4	8.8
1570	5429	Brine or Oil Based Mud	9.2	10.0
5429	22315	Brine or Oil Based Mud	9.0	10.5

Section 5: BOPE & Wellhead

Hole Section	Hole Size	Casing Size	Stack Size	MAASP (psi)	Min. Required WP	BOPE Type & Components	Test Pressures (psi)	Notes / Variance Reference
Int 1	10 5/8	8 5/8	13-5/8", 10M	700	5M	Annular, Blind Ram, Double Pipe Ram	250 / 5,000	Variance – 10M stack tested to 5M for this section; Variance – 5M Annular tested to 70% WP (3,500 psi)
Production	7 7/8	5 1/2	13-5/8", 10M	2704	10M	Annular, Blind Ram, Double Pipe Ram	250 / 10,000	Variance – 5M Annular tested to 70% WP (3,500 psi)

Testing Procedure:

The BOPE will be installed and tested on the surface casing and prior to drilling out each casing shoe. Tests will include a 250 psi low-pressure test and a high-pressure test to the required working pressure for each hole section. Due to MASP values lower than 5M, a variance is requested to test the installed 10M BOPE stack to 250 psi low and 5,000 psi high. For the production section the installed 10M BOP stack will be tested to 250 psi low and 10,000 psi high. A variance is also requested to utilize a 5M annular preventer and test to 70% of rated working pressure for both 5M and 10M sections which is consistent with guidance from the API (variance request). A variance is requested for break testing of BOPE on the intermediate section only . A variance is requested to utilize a coflexchoke line in place of a steel line. A variance is requested to utilize a multibowl wellhead system. The accumulator system will be sized to close the largest ram and annular preventers with 200 psi remaining. BOPE will be re-tested every 21 days as required by 43 CFR 3172. The remote kill line and 3rd choke (with remote control) will be installed as required.

Wellhead Information:

Manufacturer / Type	Multibowl
Pressure Rating	10M
Installation / Testing	Wellhead will be installed and tested by manufacturer's representative. Manufacturer representative shall install the test plug for the initial BOP test. For contingency top out cementing, wellhead has slot that will allow 1" string access to surface annulus.

Section 8: Geological Prognosis

Estimated Tops of Important Geological Markers:

Formation	TVD (ft)	MD (ft)	Lithologies	Mineral Resources	Producing Formation?
Rustler	1025	1052	Salt	Salt	No
Top Salt	1593	1620	Salt	Salt	No
Base Salt	4941	4968	Salt	Salt	No
DMG	5327	5354	Sandstone	None	No
Lamar	5342	5369	Sandstone	Hydrocarbon	No
Bell Canyon	5360	5387	Sandstone	Hydrocarbon	No
Ramsey Sand	5387	5414	Sandstone	Hydrocarbon	Yes
Cherry Canyon	6560	6587	Limestone	Hydrocarbon	Yes
Brushy Canyon	7797	7824	Sandstone	Hydrocarbon	Yes
Bone Spring Lime	9240	9267	Carbonate	Hydrocarbon	Yes
Upper Avalon	9268	9295	Carbonate	Hydrocarbon	Yes
Middle Avalon	9666	9693	Carbonate	Hydrocarbon	Yes
1st BS Sand	10506	10533	Sandstone	Hydrocarbon	Yes
2nd BS Carb	10672	10699	Carbonate	Hydrocarbon	Yes
2nd BS Sand	11020	11047	Sandstone	Hydrocarbon	Yes
3rd BS Carb	11504	11531	Carbonate	Hydrocarbon	Yes
3rd BS Sand	12145	12172	Sandstone	Hydrocarbon	Yes

Anticipated Bottom Hole Pressure:	**6547**	PSI
Anticipated Static Bottom Hole Temperature:	**192**	˚F
Anticipated Abnormal Pressure?	**No**	
Potential Hazards:	**None**	

Section 9: H2S

Anticipated concentration :	**0**	ppm
Depth of first occurance	**na**	ft TVD

Additional Comments:

H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. If Hydrogen Sulfide is encountered, measured amounts and formations will be reported to the BLM. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. See attached H2S Contingency Plan.

Section 10: Drilling Operations

Batch drilling may be conducted on this pad to improve operational efficiency. Surface and/or intermediate hole sections may be drilled and cased on multiple wells prior to proceeding with deeper drilling operations. Each casing string will be cemented and BOPE installed and tested on each well before drilling ahead. All wells will maintain full compliance with 43 CFR 3172 and applicable COAs Surface and intermediate casing will be cemented to surface, with offline cementing utilized on approved strings set above the Wolfcamp formation (variance). If required to achieve TOC, a second-stage cement job on the intermediate string may be performed by braidenhead squeeze through the casing (variance). Mud programs will be adjusted per hole section to maintain well control and borehole stability.

Section 11: Testing, Logging, Coring

All casing strings will be tested in accordance with 43 CFR 3172.
Casing strings will be pressure tested after cementing per 43 CFR 3172 and NMOCD requirements.
FIT/LOT will be performed at the surface and intermediate casing shoes to confirm integrity prior to drilling ahead.
GR will be run from surface to TD.
No cores or additional testing / logging planned.

Section 12: Variance Requests

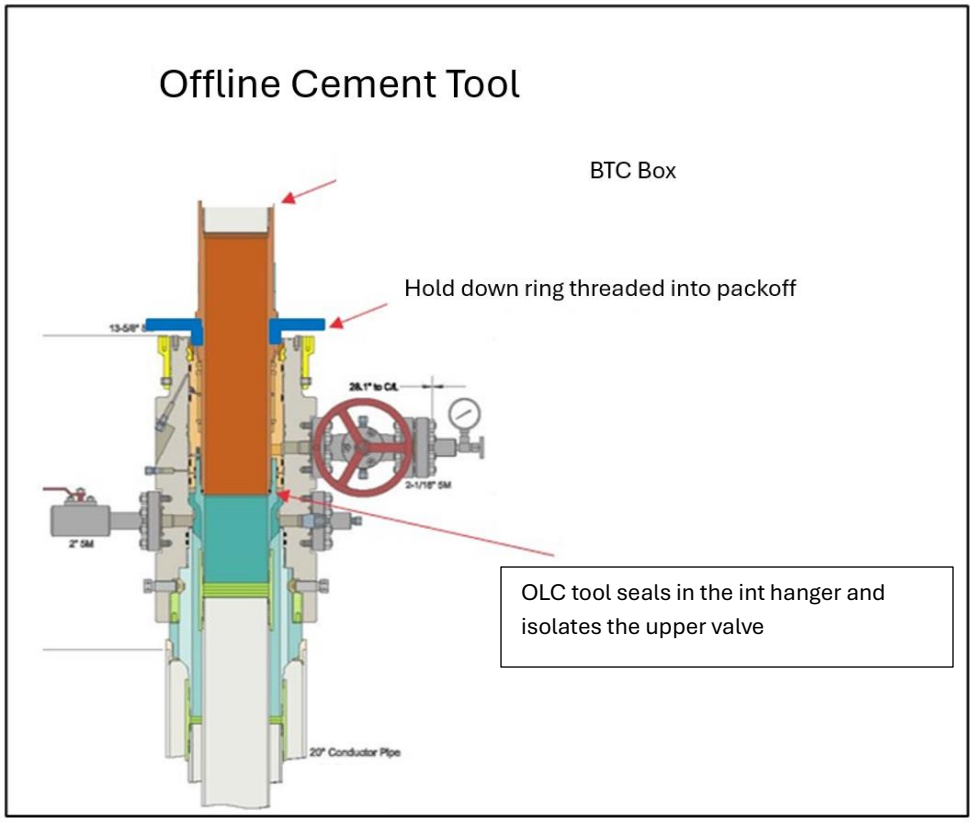
Var #	Type	Description of Request
1	**Offline Cementing**	Request to perform offline cementing of surface and intermediate casing when strings are set above the Wolfcamp formation. This allows rig operations to continue while cement sets. (see attached plan).
2	**Intermediate Second-Stage Bullheading**	Request to perform a second-stage cement job on intermediate casing by bullheading through the casing rather than circulating through drill pipe, if needed to achieve planned TOC.
3	**Coflex Choke Line**	Request to use a flexible choke line from the BOP to the choke manifold in place of rigid steel line, per manufacturer specifications.
4	**Break Testing**	Request to perform break testing of BOPE components on the intermediate hole section only, rather than full pressure tests, to verify integrity without over-testing.
5	**5M Test on 10M BOPE**	Request to test a 10,000 psi BOPE system to 5,000 psi for the intermediate hole section (MASP ~500 psi) rather than to full rating. Production section will be tested to 10,000 psi.
6	**Annular Test Pressure**	Request to test annular preventer to 70% of rated working pressure instead of full working pressure, consistent with API guidance.
7	**Multibowl Wellhead**	Request to utilize a multibowl wellhead system in lieu of a conventional wellhead.
8		
9		
10		

Section 13: List of Attachments

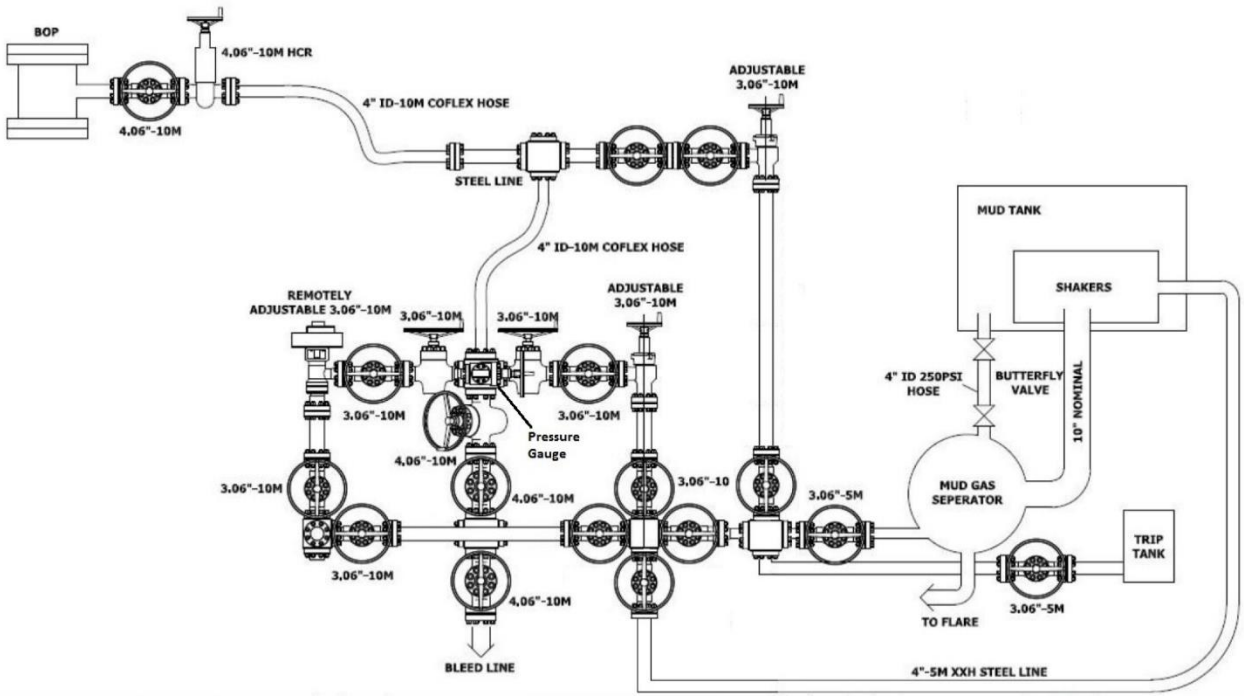
1	**Directional Plan**
2	**Offline Cementing and Well control attachment**
3	**H2S Contingency Plan**

Offline Cementing: Civitas requests a variance for the option to offline cement surface and intermediate casing strings set higher than Wolfcamp formations. To execute offline cement jobs safely, the following precautions and equipment are detailed below:

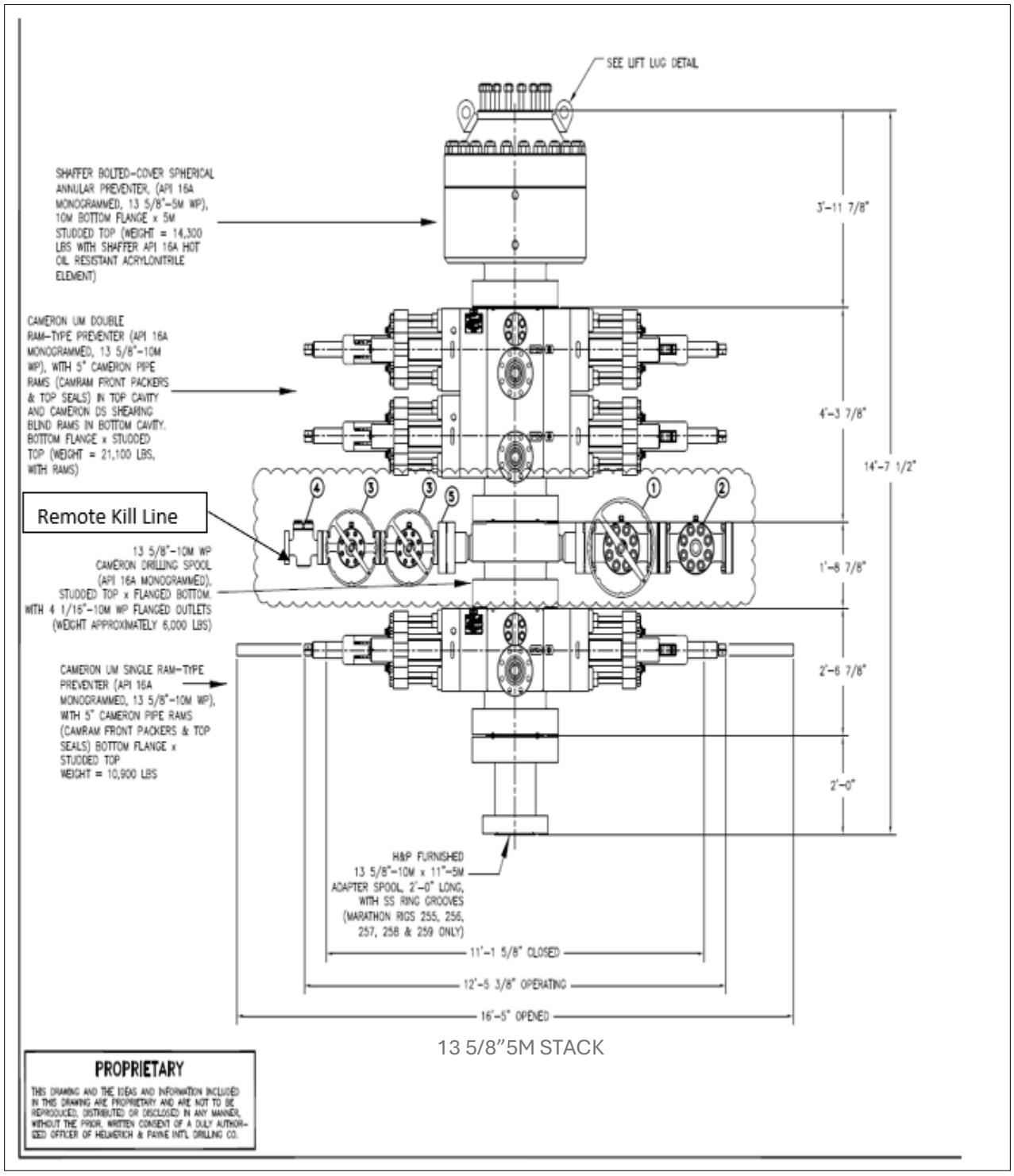
- For surface casing, no change to cement procedures to offline cement surface casing is anticipated.
- For intermediate casing, during the drilling of the intermediate hole section (all intermediate strings will be TD'd above the WCA top), hole conditions will be monitored and addressed to ensure for a successful casing run. In the event hole conditions change after running casing and/or the well is not in a static state, Civitas Resources can elect to pump the cement job online.
- Equipment for the offline cement job will include a tested/charted 5M working pressure dual manifold cement head system will be used with a standard offline cement tool that is packed off and tested through a port between the upper valve and packoff assembly (diagram below). Returns from the manifold will be taken to an auxiliary mud-gas separator during cement job. The operational scope is described in the following steps: the casing will be landed on the mandrel, pull tested, packoff installed and tested to 80% of collapse of casing on the top and bottom seals, nipple down BOP and install offline cement tool/manifold. The offline cement tool screws into the top of the packoff assembly. During the cement job, all returns will be taken through the A-Section valve (flanged). An example diagram of the tool is shown below:



10M Choke Layout

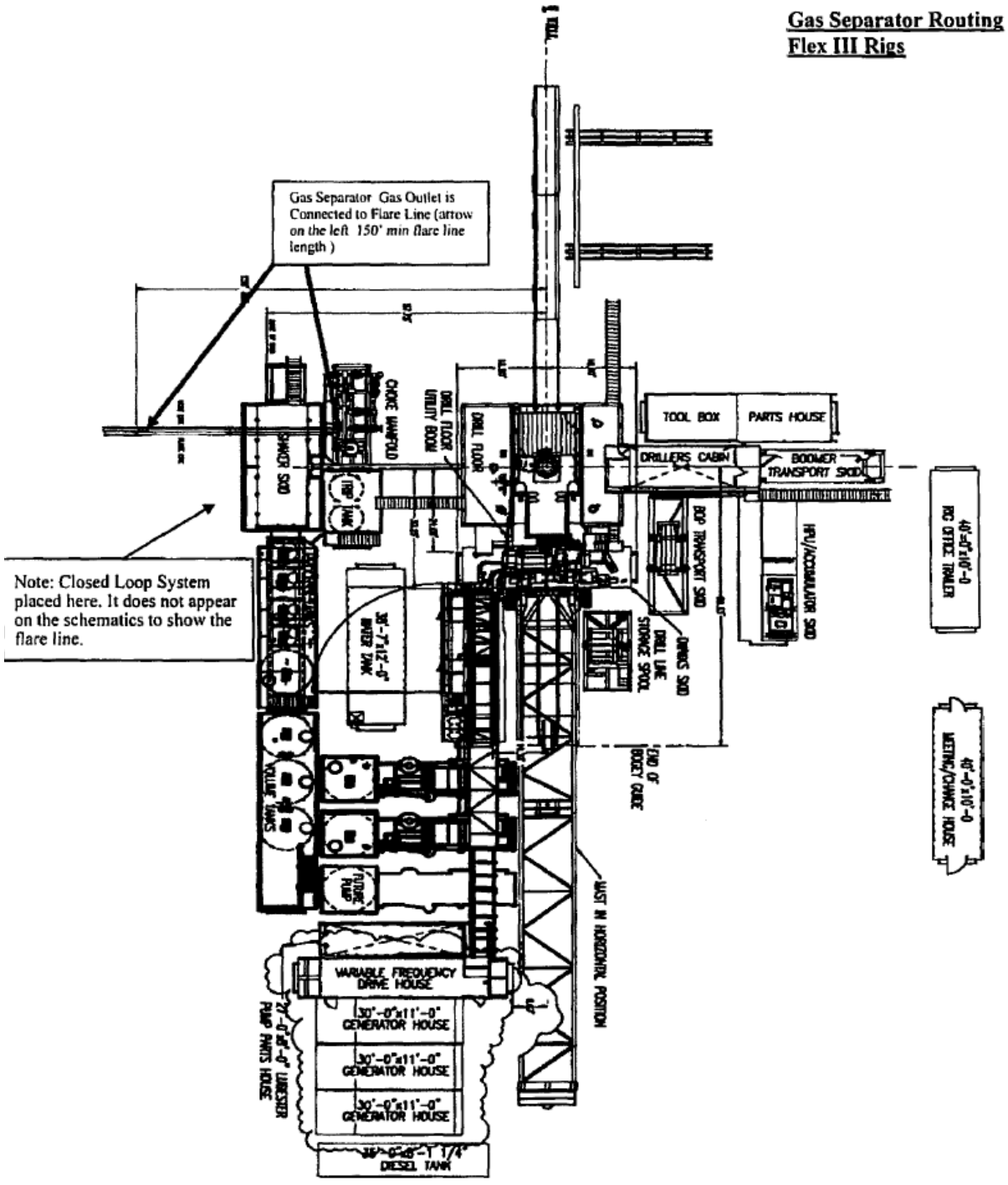


10M BOP Stack

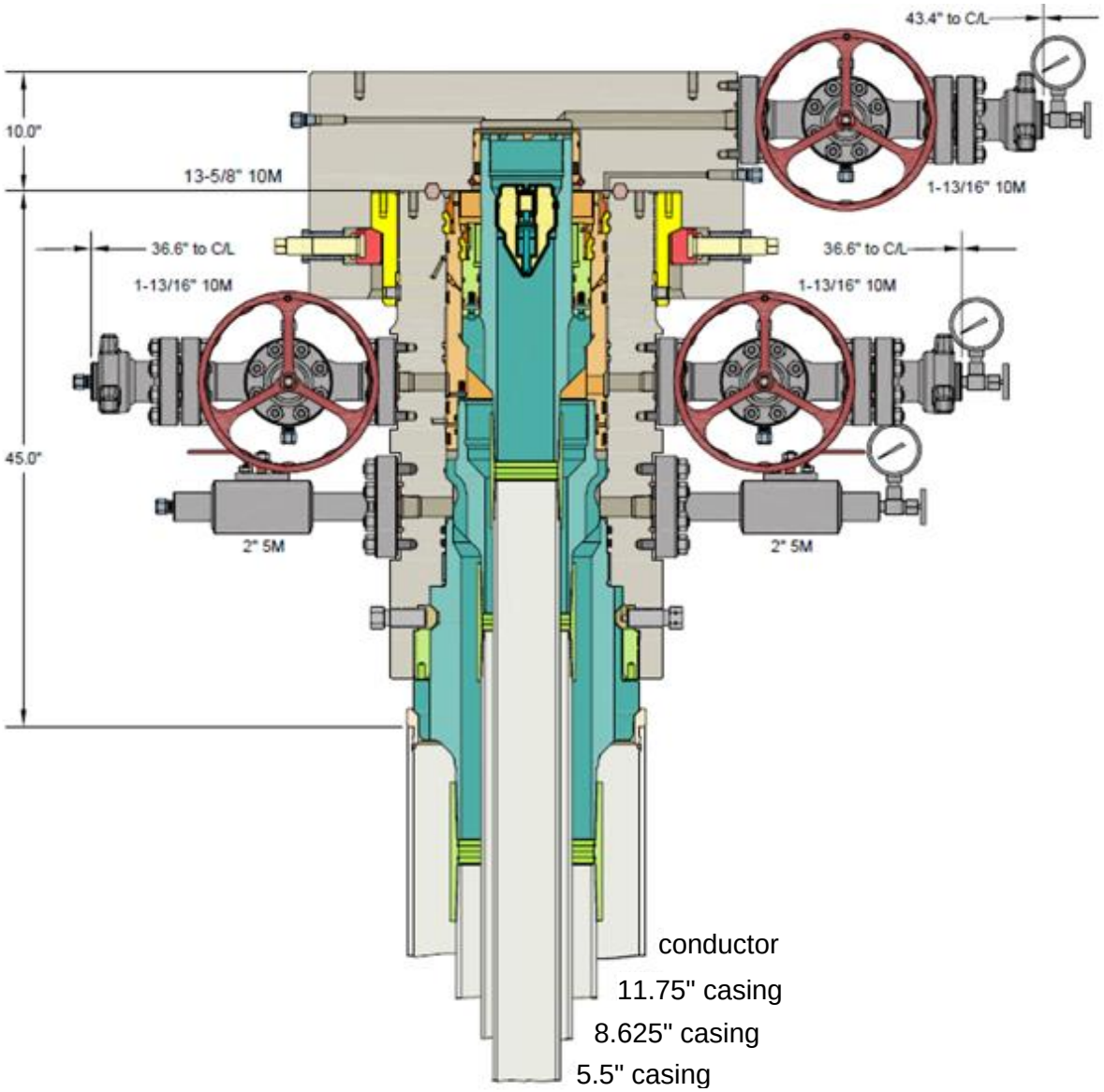


13 5/8"5M STACK

Gas Separator Routing
Flex III Rigs



Multi-bowl Wellhead Design



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GB Connection Performance Properties Sheet

Rev. 0 (04/29/2025)

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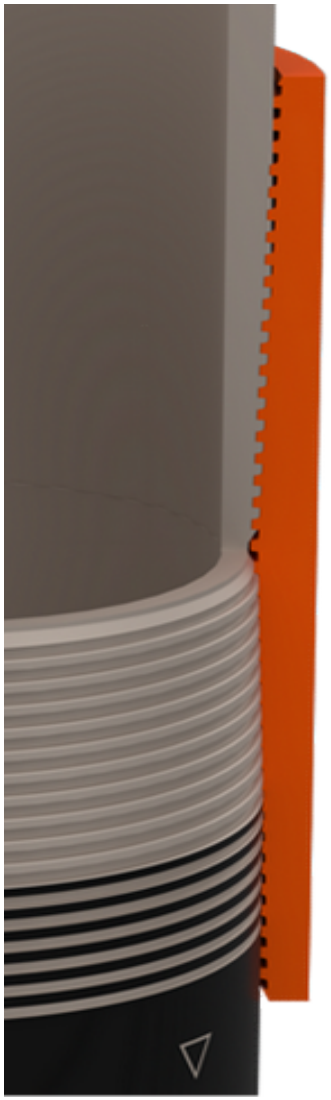


Casing: 5.5 OD, 20 ppf
Casing Grade: Benteler P110 RY (95% RBW)

Connection: GB CD Butt 6.300
Coupling Grade: API P-110

PIPE BODY GEOMETRY					
Nominal OD (in.)	5 1/2	Wall Thickness (in.)	0.361	Drift Diameter (in.)	4.653
Nominal Weight (ppf)	20.00	Nominal ID (in.)	4.778	API Alternate Drift Dia. (in.)	N/A
Plain End Weight (ppf)	19.83	Plain End Area (in.^{2})	5.828		

PIPE BODY PERFORMANCE**					
Material Specification	Benteler P110 RY (95% RBW)	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Collapse		**Tension**		**Pressure**	
API (psi)	11,106	Pl. End Yield Str. (kips)	641	Min. Int. Yield Press. (psi)	13,720
High Collapse (psi)	-	**Torque**		**Bending**	
		Yield Torque (ft-lbs)	74,420	Build Rate to Yield (°/100 ft)	91.7

GB CD Butt 6.300 COUPLING GEOMETRY					
Coupling OD (in.)	6.300	Makeup Loss (in.)	4.2500		
Coupling Length (in.)	8.500	Critical Cross-Sect. (in.^{2})	8.527		

GB CD Butt 6.300 CONNECTION PERFORMANCE RATINGS/EFFICIENCIES					
Material Specification	API P-110	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Tension		**Efficiency**		**Bending**	
Thread Str. (kips)	667	Internal Pressure (%)	100%	Build Rate to Yield (°/100 ft)	80.0
Min. Tension Yield (kips)	891	External Pressure (%)	100%	**Yield Torque**	
Min. Tension Ult. (kips)	1,013	Tension (%)	100%	Yield Torque (ft-lbs)	31,180
Joint Str. (kips)	667	Compression (%)	100%		
		Ratio of Areas (Cplg/Pipe)	1.46		

MAKEUP TORQUE					
Min. MU Tq. (ft-lbs)	10,000	Max. MU Tq. (ft-lbs)	20,000	Running Tq. (ft-lbs)	See GBC RP
				Max. Operating Tq. (ft-lbs)*	29,620

Units: US Customary (lbm, in., °F, lbf)
1 kip = 1,000 lbs
* See Running Procedure for description and limitations.
See attached: Notes for GB Connection Performance Properties.
GBC Running Procedure (GBC RP): www.gbconnections.com/resources/running-procedures/
Blanking Dimensions: www.gbconnections.com/resources/documentation/#blanking-dimensions
Connection yield torque rating based on physical testing or extrapolation therefrom
** Casing properties applicable to Benteler P110 RY (95% RBW) grade with min. yield 110 ksi.

GBCONNECTIONS

ENGINEERING THE RIGHT CONNECTIONS

GB Connections LLC - Notes for Connection Performance Properties

Rev. 3 (Feb. 2024)

ENGINEERING THE RIGHT CONNECTIONS™

1. The data provided in GB Connections LLC ("GBC") - Notes for Connection Performance Properties ("Notes"), and in GBC - Running Procedures for Casing ("Running Procedures"), are for general informational purposes only and do not constitute professional advice. The GBC Notes and Running Procedures and are intended to be, and should be, supplemented with the professional judgment of qualified personnel selected by the Buyer and/or User ("Customer") for specific applications. These Notes should not be relied upon for any specific application, including those applications in which the Customer requires modifications to GBC's standard product specifications.
2. The professional judgment of qualified personnel selected by the Customer should be utilized for all aspects of a specific application, including but not limited to, the well design, selection of suitable materials for site-specific well conditions, field handling, deployment, and all other well operations, including any casing and/or connection related issues that may occur during and after rotating operations.
3. GBC Terms and Conditions of Sale are incorporated herein by reference and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. These Notes do not negate or otherwise modify GBC Terms and Conditions of Sale, including those Warranties found in Paragraph 10 ("Warranty; Disclaimer").
4. All dimensions shown are nominal. Plain end weight is calculated in accordance with API TR 5C3. Performance properties are empirical, based on nominal dimensions, minimum material yield and ultimate strengths, and calculated in general accordance with industry standard formula(s) assuming uniaxial loading. All properties are calculated with material strengths at room temperature. **NOTE: Material properties change with temperature.**
5. Joint strength is the lesser of pipe thread strength and minimum coupling tension as calculated in accordance with API TR 5C3. Tensile efficiency is calculated using coupling strength based on ultimate material strength per API TR 5C3 divided by plain end yield strength of the casing. **Minimum Coupling Tension based on material yield strength is provided for information only**. Performance values presented for tension do not account for failure by pull-out (which can occur unexpectedly under certain circumstances), effects of internal and external pressure, thermally induced axial loads, casing curvature (bending), and/or other static and dynamic loads that may occur singularly or in combination during downhole deployment and with subsequent well operations.
6. Drift diameters are based on Standard and Alternate drift sizes per API 5CT. Drift diameters are not specified for API 5L pipe. Drift diameters shown on the Performance Property Sheets for GBC connection products represent the diameter of the drift mandrel used for end-drifting after coupling buck on. When shown, the alternate drift diameter is used for end drifting. Drift testing is performed in accordance with currently applicable API Specifications.
7. Minimum Internal Yield Pressure Performance values for Casing (API 5CT), Line Pipe (API 5L), and mill casing proprietary grades are based on API TR 5C3 formulas and assume 87.5% minimum wall thicknesses unless otherwise noted. Minimum Internal Yield Pressure efficiency for GBC is the lesser of the Minimum Internal Yield Pressure of the coupling and Leak Resistance divided by pipe body Minimum Internal Yield Pressure (all based on API TR 5C3 formulas). GBC products typically demonstrate pressure resistance exceeding the mating pipe body with a pressure efficiency > 100%. Certain casing size, weight, grade, and connection combinations may have gas pressure efficiency < 100% and will be so noted. Pressure efficiency can only be achieved when connections are properly assembled in strict accordance with GBC Running Procedures, which may be accessed at: www.gbconnections.com/pdf/RP-GB-DWC-Connections.pdf.
8. Compression efficiency of the Casing/Connection combinations does not consider the axial load that causes pipe body buckling. The compressive load that causes buckling is usually less than the pipe body compressive yield strength and is dependent on many factors including, but not limited to, string length (or slenderness ratio; L/D), thermally induced axial loads, and annular clearance that may (or may not) lend side support to the casing string.
9. Bending values assume a constant radius of curvature where the casing is in uniformly intimate contact with the wall of the wellbore (i.e. when the upset at the coupling OD is small compared with wellbore wall irregularities). When the radius of curvature is not constant due to large wellbore wall irregularities or where there is not uniformly intimate contact with the wellbore wall, varying trajectory, micro doglegs, wash-outs, rock ledges, and other downhole conditions, unpredictable and unquantifiable excessive bending stresses can occur that may be detrimental to casing and connection performance.
10. Fatigue failures are a function of material properties, stress range, and number of stress reversal cycles. API 5CT, API 5L, and mill proprietary casing/coupling materials have a finite fatigue life. Higher stress ranges yield lower fatigue life. So, as a general rule of thumb, casing should never be rotated at higher RPMs than needed for task accomplishment. For the same stress range, casing rotated at 25 RPMs will generally last 4 times longer (more rotating hours) than casing rotated at 100 RPMs. However, with fatigue, there are opportunities for unexpected higher stress reversal levels (cycles) associated with vibration, thermally induced axial loads, and bending (see above) in addition to all other stress reversals imparted during running, rotating, reciprocating, pressure testing, pumping, etc. The extent and quality of the cement job is also a factor. Under aggressive, high-volume, multi-stage hydraulic fracturing operations, the casing string (including the connections) is severely taxed such that local stress range(s) and actual number of applied cycles cannot be precisely determined without full string instrumentation.
11. External pressure efficiency (expressed in percent) is the ratio of the lesser of Minimum Internal Yield Pressure and Leak Resistance for coupling (calculated per API TR 5C3) divided by the API collapse rating of the casing. External pressure efficiency has not been verified by testing and does not consider other applied loads. External pressure efficiency does not account for any high collapse rating that may be shown on GBC Performance Property Sheets.
12. **Maximum Makeup Torque is provided for guidance only**. Customer assumes all risks associated with casing and connection related issues that occur during and after rotating operations and should rely upon the professional judgment of qualified personnel to address casing and connection related issues that occur during and after rotating operations for specific applications. This value is not the same as the Connection Yield Torque shown. Connection Yield Torque is the lowest yield torque rating for the critical cross-section of pipe body, connector body, pin nose, and the threadform load flank bearing area. Connection Yield Torque does not consider radial buckling of the pipe or connection due to excessive jaw pressure during torque application. Torque in connections can increase or decrease over that applied at makeup (connection tightening/loosening) with rotating and stimulation operations due to slip-stick, shock loads, bending, tight spots, vibration(s), temperature, and other downhole factors that may occur individually or in combination.
13. **Every GBC connection requires the proper amount and distribution of thread compound to all pin and coupling threads and careful field make up in strict accordance with GBC Running Procedures to provide expected levels of performance in service**. GBC Running Procedures may be accessed at: www.gbconnections.com/pdf/RP-GB-DWC-Connections.pdf.
14. Reactions among water, drilling muds and other fluids, and chemicals introduced by Customer with downhole formation fluids may result in an environment detrimental to casing and connection performance. Customer should carefully consider all aspects of the string design including material compatibility with respect to possible corrosion, sour conditions, possible reaction(s) among user introduced water and chemicals (liquids and solids) with in situ geochemistry and other factors that may result in unexpected casing and/or connection failure at or below published ratings.
15. These Notes and the Performance Properties described herein, as well as the Running Procedures and the information contained therein, are subject to change without notice. The Notes and the Running Procedures are not controlled documents. These Notes are provided on an "as is" basis, no warranty, express or implied, is given, and GBC does not assume any liability or responsibility for the information contained herein. Anyone making use of the information contained in the Notes or Running Procedures does so at their own risk and assumes any and all liability from such use.
16. Customer is advised to obtain the current GBC Performance Property Sheet for each GBC connection product purchased, which are available on a product-by-product basis, at GBC's website: www.gbconnections.com.

Limitations:

All sales made by GBC are subject to its Terms and Conditions of Sale, which are incorporated herein by reference, and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. By using the GBC Notes and/or the GBC Running Procedures, or upon the purchase of any GBC product(s), Customer warrants, represents and agrees that it has utilized its own knowledge, skill, and judgment, and determined that the GBC product(s) purchased is fit for its intended service, purpose, and use. Customer warrants, represents and agrees that it has read and understands the GBC Terms and Conditions of Sale and agrees to be bound thereby.

OVERVIEW

This field running procedure applies to makeup of **GB *Drilling with Casing*** (GB DwC) Connections which include GB CD, GB CDE, GB CD RDB, GB CD RDB WS, GB CD EHTQ and GB CD Slim Hole Connections with GB Butt (Buttress), GB 4P, and GB 3P thread forms. All GBC Connections are suitable for ***Running*** (standard casing applications), ***Rotating*** (to aid string advancement), ***Drilling*** (Drilling with Casing/Drilling with Liners), and with a special mandrel, ***Driving***. This procedure also applies to the legacy GB Connections known as GB Butt and GB 3P.

Numerous factors impact the makeup torque of Buttress (GB Butt) and Modified Buttress Threads (such as GB 4P and GB 3P). Some of these factors include but are not limited to: allowable threading tolerances, joint characteristics (OD, straightness, hooked ends, and weight), vertical alignment (derrick, top drive, and elevator alignment relative to rotary table), thread compound (type, amount, and distribution), snub line (location and orientation), distance between tongs and backups, temperature/weather, equipment type, efficiencies (electrical, hydraulic, and mechanical), grips/dies (type, condition, orientation, location, contact area, and grip distribution), measurement equipment, gauge calibration, personnel, etc. The nature of these types of connections makes it impossible to provide makeup torque values that will yield proper power tight makeup on every rig under all circumstances with the wide variety of existing connection makeup equipment.

This procedure has been designed to determine the ***Running Torque*** required for proper power tight makeup of GB Connections under the circumstances and with the actual equipment, set up conditions, weather, etc. that exist at the time of running. With proper execution of this procedure, GB Connections will be properly and consistently assembled.

LIMITATIONS

GB Connections LLC (“GBC”) provides the data and information in this Running Procedure for general informational purposes only in order to provide the User with basic recommended practices. This GBC Running Procedure does not constitute professional advice. This GBC Running Procedure is intended to be, and should be, supplemented with the professional judgment of qualified personnel selected by the Buyer and/or User for specific applications, including the observation of actual makeups throughout the casing run. **Every GBC Connection requires the proper amount and distribution of thread compound to all pin and coupling threads and careful field make up in strict accordance with this Running Procedure to provide expected levels of performance in service**

No structural component can perform satisfactorily if not properly prepared and assembled prior to placing it in service in a downhole environment. In the field, the USER has complete control over proper application of thread compound and field makeup. Therefore, the USER is ultimately responsible for the resulting performance downhole if the User does not follow the professional judgment of qualified personnel, the designer/manufacturer procedures, and/or basic industry best-practices on the rig floor.

The GBC Terms and Conditions of Sale are incorporated herein by reference and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. This Running Procedure does not negate or otherwise modify GBC Terms and Conditions of Sale. All sales made by GBC are subject to its Terms and Conditions of Sale, which are incorporated herein by reference, and may be accessed at: www.gbconnections.com/pdf/Terms-and-Conditions.pdf. By using this GBC Running Procedure, Buyer and/or User warrants, represents and agrees that it has utilized its own knowledge, skill, and judgment and determined that the GBC product(s) is fit for its intended service, purpose, and use. Buyer and/or User warrants, represents and agrees that it has read and understands the GBC Terms and Conditions of Sale and agrees to be bound thereby.

DEFINITIONS

1. Minimum Makeup (MU) Torque: Connections must have at least this amount of torque applied and clearly exhibit shoulder engagement with a delta torque spike.
2. Shoulder Torque: MU torque required to achieve shoulder engagement.
3. Running Torque: Developed at start of casing run per GBC Running Procedure and once established, used for the rest of the joints in the string, using data established with progression of the casing run. The ***Running Torque*** may be adjusted during the casing run as needed to stay within parameters defined here. The ***Running Torque*** will likely vary with each job due to the factors listed in the Overview section.
4. Delta Torque: Difference between ***Shoulder Torque*** and final makeup (or dump) torque.
5. Maximum Makeup (MU) Torque: **Maximum Makeup Torque provided herein is for guidance only.** Customer should rely upon the professional judgment of its qualified personnel to address casing and connection related issues that occur during and after rotating operations for specific applications. This value is not the same as the Connection Yield Torque shown. Connection Yield Torque is the lower yield torque rating for the critical cross-section of pipe body, connector body, pin nose, and the threadform load flank bearing area. Connection Yield Torque does not consider radial buckling of the pipe or connection due to excessive jaw pressure during torque application. Torque in connections can increase or decrease over that applied at makeup (connection tightening/loosening) with rotating and stimulation operations due to slip-stick, shock loads, bending, tight spots, vibration(s), temperature, and other downhole factors that may occur individually or in combination. Final assembly torque including shoulder engagement shall not exceed the ***Maximum MU Torque*** shown on size, weight, and grade-specific GB Performance Property Sheets at the beginning of a casing run when establishing the ***Running Torque***. In the unlikely event that ***Running Torque*** determined by the procedure meets or exceeds the ***Maximum MU Torque***, call GB Connections for assistance.
6. Yield Torque: Torque that causes yielding in the connection (usually yielding of the pin nose). ***Yield Torque*** rating does **NOT** consider the torque that may radially buckle the pipe body at the grip points. ***Yield Torque*** values for the pipe body and connection are based on nominal dimensions and minimum material yield strength.
7. Maximum Operating Torque: The ***Maximum Operating Torque*** shown on the GB Connections Performance Property Sheets includes a 5% safety factor on ***Yield Torque***. As such, it represents the ***limiting torque spike*** that can be applied to the connection during rotating operations. The ***Maximum Operating Torque*** is **NOT** the ***Maximum MU Torque*** and **MAY NOT BE** a sustainable rotating torque. Operating at the ***Maximum Operating Torque*** for any length of time may damage connections due to likely random, unexpected torque spikes that occur during rotating operations. USER should carefully consider this value to determine if a higher Safety Factor on ***Yield Torque*** is more suitable for the project-specific application.

   As a general rule of thumb, rotating RPMs and Torque should be *"walked up"* to determine the minimum needed for task accomplishment. Additional information on best practices for rotating casing can be found at http://www.gbconnections.com/pdf/White-Paper-Rotating-Casing.pdf.

KEY INFORMATION

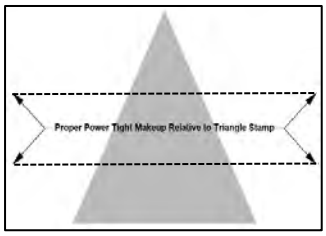
Thread Compound: Best-O-Life 2000, Best-O-Life 2000 Arctic Grade (AG), API Modified, API Modified Hi-Pressure, or any industry recognized equivalent to these products. Thread compound may also be referred to as "dope". User should avoid products that include Metal Free (MF) in the product name. Tool joint compounds are **expressly forbidden** for makeup of any GBC Connections. **Thread compound shall be applied to all pin and box threads** as described here.

Torque Values: ***Minimum and Maximum MU Torque*** values are provided on individual GB Connections Performance Property Sheets available at the following link: http://www.gbconnections.com

Continuous Makeup: Makeup of GB Connections **SHALL START AND CONTINUE WITHOUT STOPPING** until full power tight makeup is achieved.

Makeup Speed: Use of high gear at **no more than 40 RPMs** is permissible once proper starting thread engagement has occurred. **THE FINAL TWO (2) FULL TURNS, AT A MINIMUM, SHALL BE COMPLETED IN LOW GEAR AT LESS THAN 10 RPMS**.

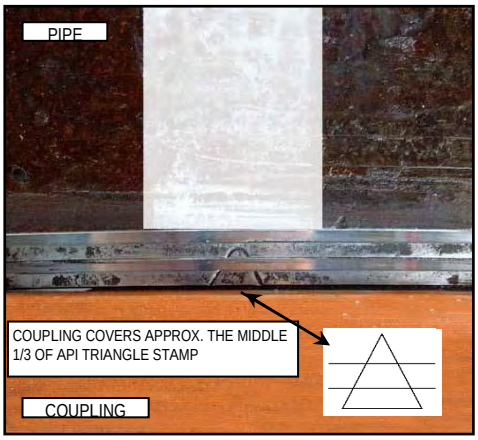
Pin Nose Engagement: Pin nose engagement is indicated by a spike on an analog torque gauge or a sharp vertical spike on a torque vs. turn plot. As a secondary check, proper power tight makeup is achieved when the coupling covers approximately the **middle third of the API Triangle Stamp** on the pin (see graphic). The triangle will be stamped on the pin member and indicated by a white locator stripe.



Acceptance Criteria: All GB Connections must exhibit shoulder engagement (achieve pin-to-pin or pin-to-shoulder engagement) with a: (1) ***Delta Torque*** ranging between 10% and 50% of majority of the previously recorded ***Shoulder Torques*** and (2) final torque not exceeding the ***Running Torque*** as established in this procedure. Outlier joints that require additional attention would be an exception to ***Maximum MU Torque*** limit as discussed under Comments, Troubleshooting.

It is imperative that the following procedure be executed carefully at the beginning of every casing run to determine the ***Running Torque*** (torque to be used for the rest of the string). Torque values established on an individual casing run are never transferrable to other runs.

The ***Running Torque*** is determined while running the first 10 joints after joints assembled with threadlocking compounds are made up. Sometimes more than the first 10 joints will be needed to establish the ***Running Torque*** due to erratic results and/or other run-specific conditions. The ***Running Torque*** may have to be re-established or adjusted during the casing run under certain conditions[1] and observations. Use the size-specific GBC Connections Performance Property Sheets (http://www.gbconnections.com) for the ***Minimum*** and ***Maximum MU Torque*** values.



Connections shall be made up until shoulder engagement with ***Delta Torque*** between 10% and 50% of the ***Shoulder Torque*** (not to exceed the ***Maximum MU Torque***, see procedure below) using the ***Running Torque*** value established in this procedure. The ***Maximum MU Torque*** at the beginning of the casing run for establishing the ***Running Torque*** shall be limited to the value shown on the applicable GBC Connections Performance Property Sheet. The ***Running Torque*** shall be used thereafter and throughout the run as the limiting makeup torque value. The ***Maximum MU Torque*** on the GBC Performance Property Sheet value is given as a practical limit for avoidance of thread galling, connection damage, and possible tube damage due to excessive jaw pressure that can occur with application of extreme makeup torque. Contact GB

[1] Examples include but are not limited to more than an occasional low or high ***Delta Torque***, string of mixed mills, equipment change, large temperature change, and wobbling or noticeable vibration when joint is turning.

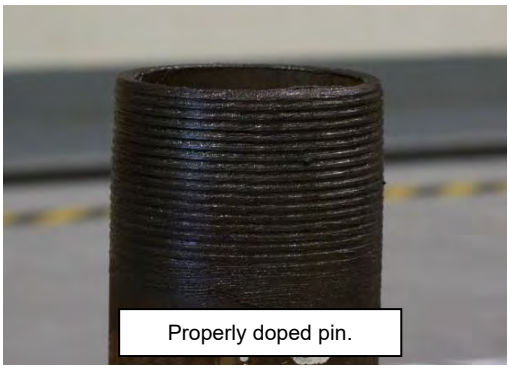
Connections if more than the ***Maximum MU Torque*** value is required for shoulder engagement and/or final makeup, or if torque exceeding the ***Maximum Operating Torque*** value is required for the intended service.

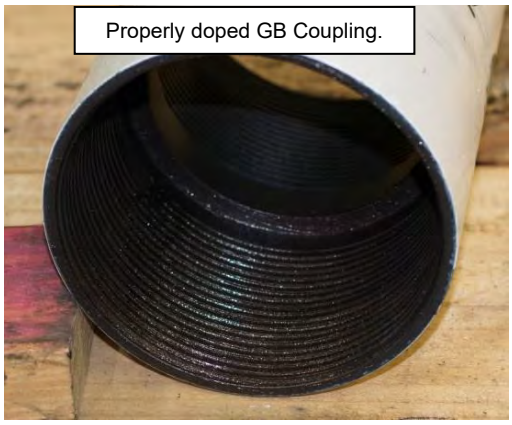
PROCEDURE FOR ESTABLISHING AND USING THE ***RUNNING TORQUE***

1. Remove coupling thread protectors only after casing is set in V-Door.
2. ***Always apply fresh thread compound to coupling threads and internal shoulder (where applicable).*** See Comment No. 1 (below) for discussion on proper amount of thread compound.
3. Remove pin thread protectors only after joint is raised in the derrick. Visually inspect pin threads for sufficient thread compound as described in Comment No. 1; ***add fresh compound to pin threads and pin nose***.
4. Fresh thread compound should **NEVER** be added on top of dope contaminated with dust, dirt, and/or debris. Threads observed to have contaminated thread compound shall be thoroughly cleaned and dried before applying fresh thread compound.
5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus ***Delta Torque***. Record the ***Shoulder Torque*** observed for the first 10 joints (excluding threadlocked accessory joints). The ***Running Torque*** is (a) the ***Minimum MU Torque*** shown on the GB Connections Performance Property Sheets ***or*** (b) the ***Maximum Shoulder Torque*** recorded from the first 10 makeups + 20%, ***whichever is higher*** (rounded to the next highest 500 ft-lbs.) ***Delta Torque*** should Primarily be between 10% and 50% of the ***Shoulder Torque. Running Torque*** shall not exceed the ***Maximum MU Torque.*** When making up the initial joints for establishing the ***Running Torque*** carefully watch the torque gauge for the ***Shoulder Torque*** and try to manually shut down the tongs before reaching ***Maximum MU Torque*** shown on the GB Connections Performance Property Sheets. Alternately, the dump valve should be set to 80% of the ***Maximum MU Torque*** during this initial process.
6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the ***"Running Torque"*** established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established ***Running Torque*** is achieved.
7. All connections made up with the established ***Running Torque*** should achieve shoulder engagement with the reasonable amount of ***Delta Torque***. Carefully watch for the spike on the torque gauge during each make up to verify shoulder engagement. As a ***secondary*** verification, randomly check the makeup position relative to the API Triangle Stamp during the run. Proper power tight makeup position is achieved when the coupling covers the middle 1/3 of the API Triangle Stamp on the pin (see accompanying photo).
8. All connections should achieve shoulder engagement with at least 10% ***Delta Torque*** before the ***Maximum MU Torque*** is achieved.

COMMENTS, TROUBLESHOOTING

1. GB Connections are thread compound friendly. Thread compounds shall be handled, mixed, and applied in strict accordance with the manufacturer's instructions. **THREAD COMPOUND SHALL BE APPLIED TO BOTH PIN AND COUPLING THREADS AND OPPOSING PIN NOSE OR SHOULDER AREA OF EVERY CONNECTION**. Thread compound "transfer" between pin and coupling will not provide proper sealing mechanism for the connection to function properly. Sufficient thread compound has been applied when all threads (pin and coupling), pin nose, and coupling ID surfaces are completely covered **WITH NO GAPS OR BARE SPOTS**. The thread form should be discernible beneath the compound, i.e. when the thread valleys appear half full. Be generous with the thread compound; but avoid over-doping to the point where ***excessive*** amounts are squeezed out during assembly. Use of a mustache brush is the preferred method for applying and distributing thread compounds to GB Connections.


Properly doped pin.


Properly doped GB Coupling.

2. If threads are cleaned on racks, new dope shall be applied in a light, even coat to both pin and coupling threads. See Comment No. 1 above for description of sufficient thread compound. Clean thread protectors shall be re-applied to freshly doped pin and coupling threads unless the casing run is imminent (no more than a few hours) to avoid contaminating exposed thread compound.

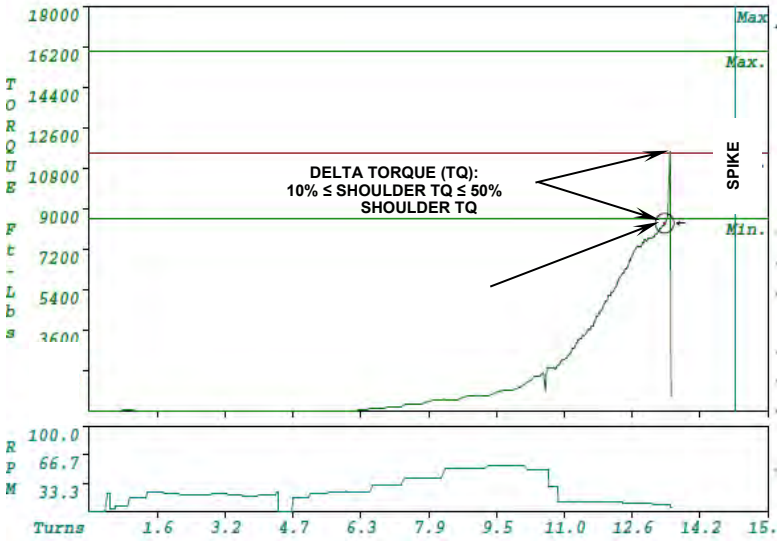
3. All connections should achieve shoulder engagement before reaching the "***Running Torque***" value determined by this procedure. Any connection that does not achieve a clear spike/shoulder engagement at the established "***Running Torque***" value shall be visually inspected for position relative to the API Triangle Stamp.

   a) If the coupling is shy of the API Triangle Stamp Base, the connection shall be broken out, cleaned and inspected visually for thread damage, re-doped, and made-up again (or laid down if threads are damaged). Connections **SHALL NEVER** be backed up a couple of turns and remade. They shall be completely broken out, cleaned and inspected as described above.

   b) If the coupling is at or covers the API Triangle base but does not land in approximately the middle third of the API Triangle Stamp, add additional torque to achieve shouldering and finish the makeup. It is common to see high torque (possibly exceeding the ***Maximum MU Torque***) to initiate connection turning. This is acceptable as long as the torque drops off once movement starts and then spikes with shoulder engagement. If acceptable makeup doesn't occur with one additional torque application, the connection shall be broken out (as described in 3a above).

   c) Any connection not properly assembled (i.e. not meeting the acceptance criteria) in two (2) attempts (provided threads pass a visual inspection each time) is reject and shall be laid down.

4. At the established ***Running Torque***, the connections will generally shoulder with ***Delta Torque*** between 10% and 50%. High interference connections will tend to have a higher ***Shoulder Torque*** and less ***Delta Torque*** (at least 10% of the ***Shoulder Torque*** is required). Low interference connections will tend to have lower ***Shoulder Torque*** and more ***Delta Torque***. In general, GB Connections makeup consistently but will vary due to any of the factors enumerated in the second paragraph of the Overview section of this procedure. However, wide variability on more than a few joints should be investigated for a root cause and, if necessary, a new ***Running Torque*** should be adjusted as described below.



If a connection appears to have shouldered but doesn't have at least 10% ***Delta Torque***, the position relative to the API Triangle Stamp should be checked. In just about every instance, the position will have covered the triangle base, so additional torque can be added to complete the makeup as discussed in 3.b) above. Expect an instantaneous spike with showing more than 50% ***Delta Torque*** with application of additional torque. Under this condition, this makeup is acceptable.

Similarly, random connections here and there with more than 50% ***Delta Torque*** is generally not cause for concern. However, if overshooting the 50% maximum ***Delta Torque*** target occurs frequently, then the established ***Running Torque*** value should be walked down in 500 ft-lbs. to 1,000 ft-lbs. increments until connection makeup routinely falls in line with the stated acceptance criteria.

5. ***Torque vs. Turn monitoring systems are recommended for field makeup of GB Connections.*** While Torque vs. Turn plots provide good information about makeup, they **SHALL NOT BE SUBSTITUTED FOR DIRECT VISUAL OBSERVATION OF THE CONNECTION DURING ASSEMBLY**. There is no second chance to watch field assembly of a connection. Torque vs. Turn plots can always be viewed for verification purposes once a makeup is finished. When available, torque vs. turn plots shall finish with a clearly defined spike as shown in the graphic above. The general character of torque vs. turn plots for good makeups will become evident after the first ten (10) makeups (again, more may be necessary due to rig and/or equipment-specific conditions). Any makeup that results in a plot that is "out-of-character"[2] when compared with most plots from previous good makeups should be checked carefully. Torque vs. Time is not recommended unless it supplements the Torque vs. Turn Data.

   When using Torque vs. Turn monitoring equipment, GB recommends setting a reference torque value of 500 ft-lbs. or 10% of the minimum makeup torque (whichever is lower) to help normalize the turns-to-power-tight variability in the Tq-Tn graphs. Setting a reference torque normalizes field stab variability resulting in more consistency in the Tq-Tn data. Plot scales should be set so data spans at least 2/3 of the turns scale on each plot (15 turns will usually be sufficient at the start and can be reduced based on data from the first few joints). **UNDER NO CIRCUMSTANCE SHOULD MAKEUP BE STARTED UNTIL THE MONITORING SYSTEM IS READY TO RECORD DATA**.

6. Occasionally the mill side of a GB Connection may turn during field makeup. When observed, the makeup should continue without stopping per this procedure. It may be helpful to scribe a vertical line across the coupling-pipe

[2] An "out-of-character" plot may initiate with a high torque, show significantly steeper slope from the start of makeup, wide torque undulations as makeup progresses, no clearly defined spike, insufficient/inconsistent turns, etc.

interface to aid estimation of mill side turning if it is observed with some frequency. The amount of mill side turn should be carefully observed and estimated. If the mill side turns less than ½ turn and all other aspects of the makeup are good, the connection is acceptable. If the mill side turns more than ½ turn, troubleshooting should be initiated. Pay particular attention to amount and distribution of thread compound, vertical alignment, weight of joint, hooked end on pipe, and other possible factors that may contribute to possible high torque during field makeup. Counting turns can help to estimate if coupling will need to be stopped to avoid over rotation. It should be noted that mill side turning during field makeup occurs occasionally and should not be concerning. Frequent or persistent mill side turning is a symptom that needs troubleshooting and appropriate corrective action.

7. A double wrap of the pick-up sling should be used when raising casing into the derrick when lifting subs, single joint, side-door, or slip elevators are not being used.
8. Higher torque may be needed to achieve proper connection position when threadlock compounds are applied. User is advised to carefully follow the manufacturer's instructions with respect to mixing, application, temperature, and time. Torque ranges with threadlock compounds cannot be estimated due to many variables including but not limited to temperature, time, connection tolerances, and surface finish. In these cases, carefully monitor makeup to be sure shouldering occurs. The only exception to proper positioning is with float equipment (float shoe and float collar) that will be assembled with a threadlocking compound. In this case, makeup close to the base of API Triangle Stamp is considered satisfactory.
9. Manual and automated dump valves can overshoot the established ***Running Torque*** due to several factors. Slightly overshooting the ***Running Torque*** is not cause for concern as long as the final "dump" torque is not excessive, and the equipment used is generally consistent joint-to-joint. Overshooting the ***Running Torque*** with a final makeup speed greater than 10 RPMs is risky and potentially harmful to the connection as discussed below.
10. Attached is a "Worksheet for determining GB Connections ***Running Torque*** at the beginning of a Casing Run" for use at the start of any casing run using GB Connections. GB recommends that this worksheet be filled out and maintained with the casing run records.

MAKEUP SPEED

To reiterate: Use of high gear at no more than 40 RPMs is permissible once proper starting thread engagement has occurred. **THE FINAL TWO (2) FULL TURNS, AT A MINIMUM, SHALL BE COMPLETED IN LOW GEAR AT LESS THAN 10 RPMS**. Be sure that the final 2 turns occur after the tong speed has slowed completely to less than 10 RPMs.

Making up connections at RPM exceeding those listed above may result in unsatisfactory connection performance downhole. Risks associated with excessive makeup RPMs are common for any connection with internal pin nose engagement. High speed makeup can:

1. Impart an unnecessary impulse load at nose contact. Certain materials are more susceptible to cracking under sudden or instantaneously applied loads.
2. Inhibit efficient movement of and trap thread compound under high pressure causing additional and unquantifiable high hoop stresses in the connection.
3. Result in significant overshoot of established dump torque value due to equipment latency between signal and equipment shut down resulting in higher but unknown actual final torque value. Excessive overshoot can result in pin nose yielding.

PROCEDURE SUMMARY

1. Remove coupling protectors after casing is set in V-Door and apply fresh thread compound to coupling threads.

2. Raise joint in derrick, remove pin protectors, and apply fresh thread compound to pin threads and pin nose.
3. Carefully stab pin into coupling and makeup to pin nose engagement. Try to stop makeup without exceeding the ***Maximum MU Torque*** (shown on GB Connections Performance Property Sheets). Carefully watch for and note the ***Shoulder Torque***.
4. Record ***Shoulder Torque*** and Final Torque values, and position relative to API Triangle Stamp for first ten (10) connections, more if necessary due to run/rig-specific conditions.
5. The ***Running Torque*** is (a) the ***Minimum MU Torque*** shown on the GB Connections Performance Property Sheet or (b) the maximum torque required for shoulder engagement + 20% ***Delta Torque*** determined from the first 10 makeups, ***whichever is higher***. Use the attached Worksheet to record this data and determine the ***Running Torque***.
6. Make up the rest of the string at the ***Running Torque*** determined in the previous step verifying each connection has shouldered with between 10% and 50% ***Delta Torque***. Small incremental adjustments to the established Running Torque (500 to 1,000 ft-lbs) are advised if delta torques routinely fall short of the 10% requirement or routinely exceed the 50% requirement.

NOTES:

- *This procedure summary is not a substitute for the comprehensive procedure provided above and does not apply to threadlock connections.*

DO's and DONT's

1. **DO** check vertical alignment.
2. **DO** apply thread compound to all pin and coupling threads, pin nose and coupling shoulder area.
3. **DO** establish the ***Running Torque*** in accordance with GB Procedures.
4. **DO** make adjustments to ***Running Torque*** if indicated by inconsistent makeups during the casing run.
5. **DO** check every makeup for a clear indication of shouldering with a minimum ***Delta Torque*** ≥ 10% of the ***Shoulder Torque***.
6. **DO** reject any coupling that is not properly made up after two (2) attempts.
7. **DO** carefully stab pins into coupling (use a stabbing guide for casing smaller than 9 5/8" OD).
8. **DO** finish the makeup with at least two (2) full turns in low gear at 10 RPMs or less.
9. **DO** make up every connection continuously to pin nose engagement without stopping.
10. **DO** make note of anything that occurs with any connection makeup such as backup grips slipped, connection inspected and remade, etc.
11. **Do** check out every connection that appears out of character relative to the population. An example would be a connection that is completed with significantly fewer turns than most others. Check the triangle stamp and record position and take corrective action if needed.
12. **DO** add torque to any connection that appears to achieve pin nose engagement but not 10% delta torque.

13. **DO** adjust the ***Running Torque*** up or down in increments to achieve consistent ***Delta Torque*** between 10% and 50%.
14. **Do** make note of any anomaly during any connection makeup, such as backups slipped, mill side turned, etc.
15. **DO** minimize the weight on the connection, i.e. weight neutral, during break out as much as possible to minimize thread galling.
16. **Do** Reduce RPM's on any join racking around in the derrick during make up. Erratic joint movement wile rotating may contribute or cause thread galling during make-up.
17. **DO NOT** over dope.
18. **DO NOT** exceed the ***Maximum MU Torque*** as shown on the GB Connections Performance Property Sheets during assembly.
19. **DO NOT** make up any misaligned connection.
20. **DO NOT** exceed 40 RPMs in high gear and 10 RPMs in low gear for the final two (2) full turns.
21. **DO NOT** remove pin thread protectors until pipe is hanging in the derrick.
22. **DO NOT** ever back a connection up a couple of turns and remake. Any connection requiring this type of attention **SHALL** be broken out completely, cleaned, visually inspected, and if OK, re-doped and remade.
23. **DO NOT** hesitate to contact GB Connections with questions before and during any casing run.

RECOMMENDED EQUIPMENT

- Stabbing Guide
- Mustache Brush
- Torque vs. Turn Monitoring Equipment or Dump Valve

Worksheet for determining GB Connection Running Torque at the beginning of a Casing Run

Ignore joints that are assembled with threadlock compounds. See "Addendum Procedure for GB Connections Assembled with Threadlocking Compounds" available at www.gbconnections.com.

Pertinent Excerpt from GB Running Procedure

5. Stab the pin carefully into the coupling of the joint hanging in the rotary table. A stabbing guide is recommended to protect the pin nose and leading thread from physical damage that may contribute to thread galling. Make up each connection until shoulder engagement plus Delta Torque. Record the Shoulder Torque observed for the first 10 joints (excluding threadlocked accessory joints). The Running Torque is (a) the Minimum MU Torque shown on the GB Connections Performance Property Sheets or (b) the Maximum Shoulder Torque recorded from the first 10 makeups + 20%, whichever is higher (rounded to the next highest 500 ft-lbs.) Delta Torque should be between 10% and 50% of the Shoulder Torque. Running Torque shall not exceed the Maximum MU Torque. When making up the initial joints for establishing the Running Torque carefully watch the torque gauge for the Shoulder Torque and try to manually shut down the tongs before reaching Maximum MU Torque shown on the GB Connections Performance Property Sheets. Alternately, the dump valve should be set to **80% of the Maximum MU Torque** during this initial process.

6. After the first 10 makeups (more if necessary due to conditions at the time of the run), use the "Running Torque" established in Step 5 for the remainder of the string. A dump valve is strongly recommended to stop makeup once the established Running Torque is achieved.

Casing Data		Comment
OD (in)		See GBC Performance Property Sheet
Weight (ppf)		See GBC Performance Property Sheet
Grade		See GBC Performance Property Sheet
Min MU Torque (ft-lbs)		See GBC Performance Property Sheet
Max MU Torque (ft-lbs)		See GBC Performance Property Sheet
Max Operating Torque (ft-lbs)		The Maximum Operating Torque is **NOT** the Maximum Makeup Torque and is **NOT** a sustainable rotating torque. Operating at the Maximum Operating Torque for any length of time will likely damage the connection.

Notes	Joint No.	Shoulder Torque (ft-lbs)	Final Torque (ft-lbs)	Triangle Stamp Position Sketch (△)
Required	1			
Required	2			
Required	3			
Required	4			
Required	5			
Required	6			
Required	7			
Required	8			
Required	9			
Required	10			
Optional	11			
Optional	12			
Optional	13			
Optional	14			
Optional	15			
Max. Shoulder Torque				
A Max. Shoulder Torque + 20%				
B Min. Makeup Torque (from GB Conn. Data Sheet)				
Running Torque (ft-lbs)		-	**A** or **B**, whichever is **greater**.	

Optional joints should be added if there is wide variability in shoulder torques recorded during the initial 10 joints. Judgement should be used to determine if more than 10 joints are needed for the purpose of establishing the Running Torque and, if so, how many more should be added.

Wide variations in Shoulder Torque during the first ten (10) joints suggest other issues requiring attention such as poor alignment, improper amount and distribution of thread compound, etc. Refer to 2nd paragraph of GB Running Procedure for possible contributing factors to aid troubleshooting.

GB Connections
950 Threadneedle, Suite 130
Houston TX 77079
Toll Free: 1-888-245-3848
Main: 713-465-3585
Fax: 713-984-1529

For Techincal Information, contact:

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Cell 713-562-0050

GBCONNECTIONS
ENGINEERING THE RIGHT CONNECTIONS

Product Specification Sheet

BENTELER makes it happen

P110 RY 95% RBW 5.5" OD 19.83 Lbs/ft 0.361" WT

Pipe	**Product Type**	**Grade**	**Diameter (in)**	**Weight (lb/ft)**	**Wall Thickness (in)**
			Nominal	**Plain-End (PE)**	**Nominal**
	Casing	P110 RY	5.5	19.83	0.361

Performance Data	**Finish Type**	**Yield Strength (psi)**		**Tensile Strength (psi)**	
		Minimum	**Maximum**	**Minimum**	**Maximum**
	Plain End (PE)	110000	125000	125000	No Max

Elongation (%)	**Hydro Pressure (psi)**	**Drift Size (in)**	**Collapse Rating (psi)**	**Pipe Burst Pressure (psi)**
Minimum	**Minimum**	**Minimum**	**Minimum**	**Minimum**
13	10000	4.653	11106	13720

Pipe Body Yield (lbs)	**Joint Strength (lbs)**	**Make Up Loss (in)**	**Make-Up Torque (ft-lbs)**
Minimum	**Calculated**	**Minimum**	**Optimal**
640779	N/A	N/A	N/A

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. restricted

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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

Operator: Civitas Permian Operating, LLC 555 17th Street Denver, CO 80202	OGRID: 332195
	Action Number: 542572
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
matthew.gomez	No additives containing PFAS chemicals will be added to the drilling fluids or completion fluids used during drilling, completions, or recompletions operations.	1/13/2026
matthew.gomez	Prior to production of this well a change to the well name/number is required to comply with the OCD well naming convention.	1/13/2026
matthew.gomez	If cement does not circulate to surface on any string, a Cement Bond Log (CBL) is required for that string of casing. If a CBL is unable to indicate sufficient cement coverage due to a lighter cement, a USI log may also be required. If strata isolation is not achieved, remediation will be required before further operations may commence.	1/13/2026
matthew.gomez	All conducted logs must be submitted to the OCD.	1/13/2026
matthew.gomez	Cement must be in place for at least eight hours and achieve a minimum compressive strength of 500 PSI before performing any further operations on the well.	1/13/2026
matthew.gomez	Notify the OCD 24 hours prior to casing & cement.	1/13/2026
matthew.gomez	Additional cement may be required to achieve strata isolation and sufficient tieback.	1/13/2026
matthew.gomez	All previous COA's still apply.	1/13/2026