

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☐ DRILL ☐ REENTER 1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other 1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No.
2. Name of Operator		9. API Well No. 30 015 48354 Purple Sage Wolfcamp
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
13. State		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

Application approval 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.
 Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)



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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

X Original Operator & OGRID No.: CHEVRON USA INC 4323
☐ Amended Date: 12/03/2019
Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – HHNM CTB 9 Train 2

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location	Footages	Expected MCF/D	Flared or Vented	Comments
HH SO 17 20 FED 003 301H	Pending	UL:N, Sec 8, T26S-R27E	244' FSL, 2284' FWL	2000	0	3 rd Bone Spring
HH SO 17 20 FED 003 302H	Pending	UL:N, Sec 8, T26S-R27E	169' FSL, 2283' FWL	2000	0	3 rd Bone Spring
HH SO 17 20 FED 003 401H	Pending	UL:N, Sec 8, T26S-R27E	269' FSL, 2284' FWL	2500	0	Wolfcamp A
HH SO 17 20 FED 003 402H	Pending	UL:N, Sec 8, T26S-R27E	219' FSL, 2284' FWL	2500	0	Wolfcamp A
HH SO 17 20 FED 003 403H	Pending	UL:N, Sec 8, T26S-R27E	194' FSL, 2283' FWL	2500	0	Wolfcamp A
HH SO 17 20 FED 003 404H	Pending	UL:N, Sec 8, T26S-R27E	144' FSL, 2283' FWL	2500	0	Wolfcamp A

Gathering System and Pipeline Notification

These wells will be connected to Chevron's HHNM CTB 9 (Train 2) production facility located in Sec 10, T26S, R27E, Eddy County, New Mexico during flowback and production. Gas produced from the production facility is dedicated to Enterprise GC, LLC (Enterprise) and will be connected to Enterprise's high pressure gathering system located in Eddy County, New Mexico. Produced gas will be processed at Enterprise's Orla, Texas gas plant located in Abstract 3895476, T&P RR Co Survey No. 30, Block 56 T2, Reeves County, Texas. Chevron periodically provides Enterprise a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Chevron and Enterprise have periodic conference calls to discuss changes to the drilling and completion schedules.

Flowback Strategy

After the fracture treatment/completion operations, wells will be turned to permanent production facilities. Wells will have temporary sand catchers (separators) that will be installed at the well location to prevent sand from getting into the flowlines. These sand separators will be blown down periodically which will result in minimal venting of gas. Gas sales will start as soon as the wells start flowing through the production facilities unless there are operational issues with Enterprise's system at that time. Based on current information, it is Chevron's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- NGL Removal – On lease and trucked from condensate tanks
 - Plants are expensive and uneconomical to operate when gas volume declines.
 - Any residue gas that results in the future may be flared.

Pad Summary: Package 15

The table below lists all the wells for the given pad and their respective name and TVD's (ft) for their production target intervals:

Well Name(s)	Target TVD	Formation Desc.
HH SO 17 20 FED 003 401H	9,083	WCA_TGT2
HH SO 17 20 FED 003 301H	8,713	TBS_TGT1
HH SO 17 20 FED 003 402H	8,957	WCA_TGT4
HH SO 17 20 FED 003 403H	9,118	WCA_TGT2
HH SO 17 20 FED 003 302H	8,741	TBS_TGT1
HH SO 17 20 FED 003 404H	8,975	WCA_TGT4

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

Elevation: 3254 ft

FORMATION	SUB-SEA TVD	TVD	MD	LITHOLOGIES	MIN. RESOURCES	PROD. FORMATION
Salado (SLDO) / Castile (CSTL)	2605	649	649	ANHY	N/A	
Lamar Lime (LMAR)	1152	2,102	2,102	SS	N/A	
Bell Canyon (BLCN)	1123	2,131	2,131	SS	N/A	
Cherry Canyon (CRCN)	300	2,954	2,954	SS	N/A	
Brushy Canyon (BRSC)	-782	4,036	4,036	SS	N/A	
Bone Spring (BSGL)	-2417	5,671	5,671	LS	N/A	
Avalon (AVLN)	-2544	5,798	5,798	SH	Oil	
1st Bone Spring (FBSG)	-3347	6,601	6,601	SH	Oil	
2nd Bone Spring (SBSG)	-3843	7,097	7,097	SH	Oil	
3rd BS Carb	-4982	8,236	8,236	LS	Oil	
3rd Bone Spring (TBSG)	-5211	8,465	8,481	LS	Oil	
TBS_TGT1	-5492	8,746	8,790	SH	Oil	
Wolfcamp (WFMP) A	-5547	8,801	8,859	SH	Oil	
WCA_TGT4	-5721	8,975	9,318	SH	Oil	Yes
TD		8,975	19,634	SH	Oil	

WELLBORE LOCATIONS	SUB-SEA TVD	RKB TVD	MD
SHL	3254	-	
KOP	-5148	8,402	8,418
FTP	-5721	8,975	9,318
LTP	-5721	8,975	19,329

2. ESTIMATED DEPTH OF WATER, OIL, GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas, or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Deepest Expected Base of Fresh Water		300
Water	Salado (SLDO) / Castile (CSTL)	649
Oil/Gas	Avalon (AVLN)	5,798
Oil/Gas	TBS_TGT1	8,465
Oil/Gas	Wolfcamp (WFMP) A	8,801

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT

Chevron will have a minimum of a 5,000 psi rig stack (see proposed schematic) for drill out below surface casing. The stack will be tested as specified in the attached testing requirements. Batch drilling of the surface, intermediate, and production will take place. A full BOP test will be performed per hole section, unless approval from BLM is received otherwise. Flex choke hose will be used for all wells on the pad (see attached specs and variance). BOP test will be conducted by a third party.

Chevron requests a variance to use a FMC Technologies UH-S Multibowl wellhead, which will be run through the rig floor on surface casing. BOPE will be nipped up and tested after cementing surface casing. Subsequent tests will be performed as needed, not to exceed 30 days. The field report from FMC Technologies and BOP test information will be provided in a subsequent report at the end of the well. Please see the attached wellhead schematic. An installation manual has been placed on file with the BLM office and remains unchanged from previous submittal. All tests performed by third party.

4. CASING PROGRAM

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	450'	17-1/2" to 16"	13-3/8"	54.5 #	J-55	BTC/STC	New
Intermediate	0'	2,150'	12-1/4"	9-5/8"	40#	L-80	BTC/LTC	New
Production	0'	8,465'	8-1/2"	7"	29.0 #	P110/TN110S	BLUE	New
Production Liner	8,165'	19,634'	6-1/8"	4-1/2"	11.6 #	P110/TN110S	W521	New

b. Casing design subject to revision based on geologic conditions encountered.

A "Worst Case" casing design for wells in a particular area is used below to calculate the Casing Safety Factors. If for any reason the casing design

c. for a particular well requires setting casing deeper than the following "worst case" design, then the Casing Safety Factors will be recalculated & sent to the BLM prior to drilling.

d. Chevron will fill casing at a minimum of every 20 jts (~840') while running for intermediate and production casing in order to maintain collapse SF.

SF Calculations based on the following "Worst Case" casing design:

Surface Casing:	450'	ftTVD
Intermediate Casing:	2,150'	ftTVD
Production Casing:	8,465'	ftTVD
Production Casing:	19,634'	ftMD

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension	Min SF Tri-Axial
Surface	1.79	5.19	6.03	2.22
Intermediate	1.46	2.41	4.29	1.79
Production	1.10	1.76	1.84	1.29
Production Liner	1.38	1.02	1.61	1.54

The following worst case load cases were considered for calculation of the above Min. Safety Factors:

Burst Design	Surf	Int	Prod	Prod Lnr
Pressure Test- Surface, Int, Prod Csg				
P external: Mud weight above TOC, PP below	X	X	X	X
P internal: Test psi + next section heaviest mud in csg				
Displace to Gas- Surf Csg	X			
P external: Mud weight above TOC, PP below				
P internal: Dry Gas from Next Csg Point				
Gas over mud (60/40) - Int Csg		X		
P external: Mud weight above TOC, PP below				
P internal: 60% gas over 40% mud from hole TD PP				
Stimulation (Frac) Pressures- Prod Csg			X	X
P external: Mud weight above TOC, PP below				
P internal: Max inj pressure w/ heaviest injected fluid				
Tubing leak- Prod Csg (packer at KOP)			X	X
P external: Mud weight above TOC, PP below				
P internal: Leak just below surf, 8.45 ppg packer fluid				
Collapse Design	Surf	Int	Prod	Prod
Full Evacuation				
P external: Mud weight gradient	X	X	X	X
P internal: none				
Cementing- Surf, Int, Prod Csg	X	X	X	X
P external: Wet cement				
P internal: displacement fluid - water				
Tension Design	Surf	Int	Prod	Prod
100k lb overpull	X	X	X	X

5. **CEMENTING PROGRAM**

Slurry	Type	Top	Bottom	Sacks	Yield (cu ft/sk)	Density (ppg)	%Excess Open Hole	Water gal/sk	Volume cuft	Additives
<u>Surface 13-3/8</u>										
Tail	Class C	0'	450'	353	1.33	14.8	50	6.36	469	Extender, Antifoam, Retarder
<u>Intermediate Csg 9-5/8</u>										
Lead	Class C	0'	1,150'	217	2.49	11.9	50	14.11	540	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	1,150'	2,150'	382	1.33	14.8	50	6.36	507	Extender, Antifoam, Retarder, Viscosifier
<u>Production 7"</u>										
Lead	Class C	0'	7,465'	881	2.2	11.9	100	12.18	1939	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	7,465'	8,465'	161	1.4	14.5	50	6.82	226	Extender, Antifoam, Retarder, Viscosifier
<u>Production Liner 4-1/2"</u>										
Lead	Class C	8,165'	17,759'	589	1.84	13.2	20	9.86	1084	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	17,759'	19,634'	98	2.16	15	20	9.22	212	Extender, Antifoam, Retarder, Viscosifier

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one solid body type centralizer on every joint in the lateral, then every other joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing and surface.

6. **MUD PROGRAM**

From	To	Type	Weight	Viscosity	Filtrate	Notes
0'	450'	Fresh water mud	8.3 - 9.1	28-30	N/C	
450'	2,150'	Brine	8.8 - 10.2	28-31	15-25	
2,150'	8,465'	WBM	8.8 - 9.6	50-70	15-25	
8,465'	19,634'	OBM	9.2 - 13.0	50-70	5-10	Due to wellbore stability, the mud program may exceed the MW weight window needed to maintain overburden of pore pressure.

A closed system will be used consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transporting of E&P waste will follow EPA regulations and accompanying manifests.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.

7. TESTING, LOGGING, AND CORING

The anticipated type and amount of testing, logging, and coring are as follows:

- a. Drill stem tests are not planned.
- b. The logging program will be as follows:

TYPE	Logs	Interval	Timing
Mudlogs	2 man mudlog	Surface casing shoe through prod hole TD	While drilling or circulating
LWD	MWD Gamma	Int. and Prod. Hole	While Drilling

- c. Conventional whole core samples are not planned.
- d. A directional survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

- a. No abnormal pressure or temperatures are expected. Estimated BHP is: 5,134 psi
- b. Hydrogen sulfide gas is not anticipated. An H2S Contingency plan is attached with this APD in the event that H2S is encountered

Chevron U.S.A. Inc. (CUSA)
SUNDRY ATTACHMENT: SPUDDER RIG

DATA OPERATOR NAME: Chevron U.S.A. Inc.

1. SUMMARY OF REQUEST:

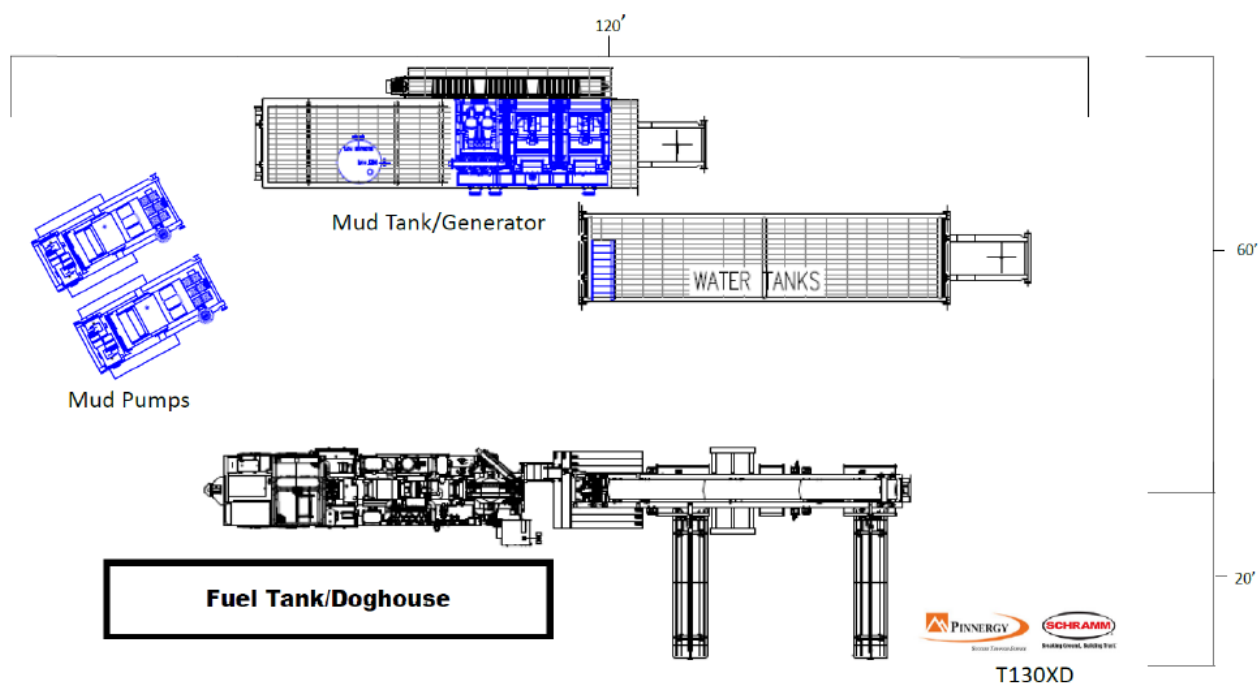
CUSA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

2. Description of Operations

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
 - a. After drilling the surface hole section, the spudder rig will run casing and cement following all the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
 - b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and then tested offline after the WOC time has been reached.
3. An abandonment cap at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on one wing-valve.
 - a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nipped up and tested on the wellhead before drilling operations resume on each well.
 - a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
 - b. The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.
7. CUSA will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, CUSA will secure the wellhead area by placing a guard rail around the cellar area.

Surface Rig Layout



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X Original Operator & OGRID No.: CHEVRON USA INC 4323
☐ Amended Date: 12/03/2019
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H₂S Preparedness and Contingency Plan Summary

HH SO 17 20 FED 003 301H, 302H, 401H, 402H, 403H & 404H

Training

MCBU Drilling and Completions H₂S training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of H₂S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H₂S, who are not required to perform work in H₂S areas, will be provided with an awareness level of H₂S training prior to entering any H₂S areas. At a minimum, awareness level training will include:

1. Physical and chemical properties of H₂S
2. Health hazards of H₂S
3. Personal protective equipment
4. Information regarding potential sources of H₂S
5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training, educational experience and/or work-related background.

Advanced Level H₂S Training

Employees and contractors required to work in areas that may contain H₂S will be provided with Advanced Level H₂S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H₂S training will include:

1. H₂S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H₂S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H₂S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H₂S environments. Note: Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures. Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H₂S training;
6. Proficiency examination covering all course material.

Advanced H₂S training courses will be instructed by personnel who have successfully completed an appropriate H₂S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.



H₂S Preparedness and Contingency Plan Summary

H₂S Training Certification

All employees and visitors will be issued an H₂S training certification card (or certificate) upon successful completion of the appropriate H₂S training course. Personnel working in an H₂S environment will carry a current H₂S training certification card as proof of having received the proper training on their person at all times.

Briefing Area

A minimum of two briefing areas will be established in locations that at least one area will be upwind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H₂S Equipment

Respiratory Protection

- a) Six 30 minute SCBAs – 2 at each briefing area and 2 in the Safety Trailer.
- b) Eight 5 minute EBAs – 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

Visual Warning System

- a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.
- b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

H₂S Detection and Monitoring System

- a) H₂S monitoring system (sensor head, warning light and siren) placed throughout rig.
 - Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
 - Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.



H₂S Preparedness and Contingency Plan Summary

Well Control Equipment

- a) Flare Line 150' from wellhead with igniter.
- b) Choke manifold with a remotely operated choke.
- c) Mud / gas separator

Mud Program

In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

- 1. Use of a degasser
- 2. Use of a zinc based mud treatment
- 3. Increasing mud weight

Public Safety - Emergency Assistance

<u>Agency</u>	<u>Telephone Number</u>
Lea County Sheriff's Department	575-396-3611
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Lea County Regional Medical Center	575-492-5000
Jal Community Hospital	505-395-2511
Lea County Emergency Management	575-396-8602
Poison Control Center	800-222-1222



H₂S Preparedness and Contingency Plan Summary

Chevron MCBU D&C Emergency Notifications

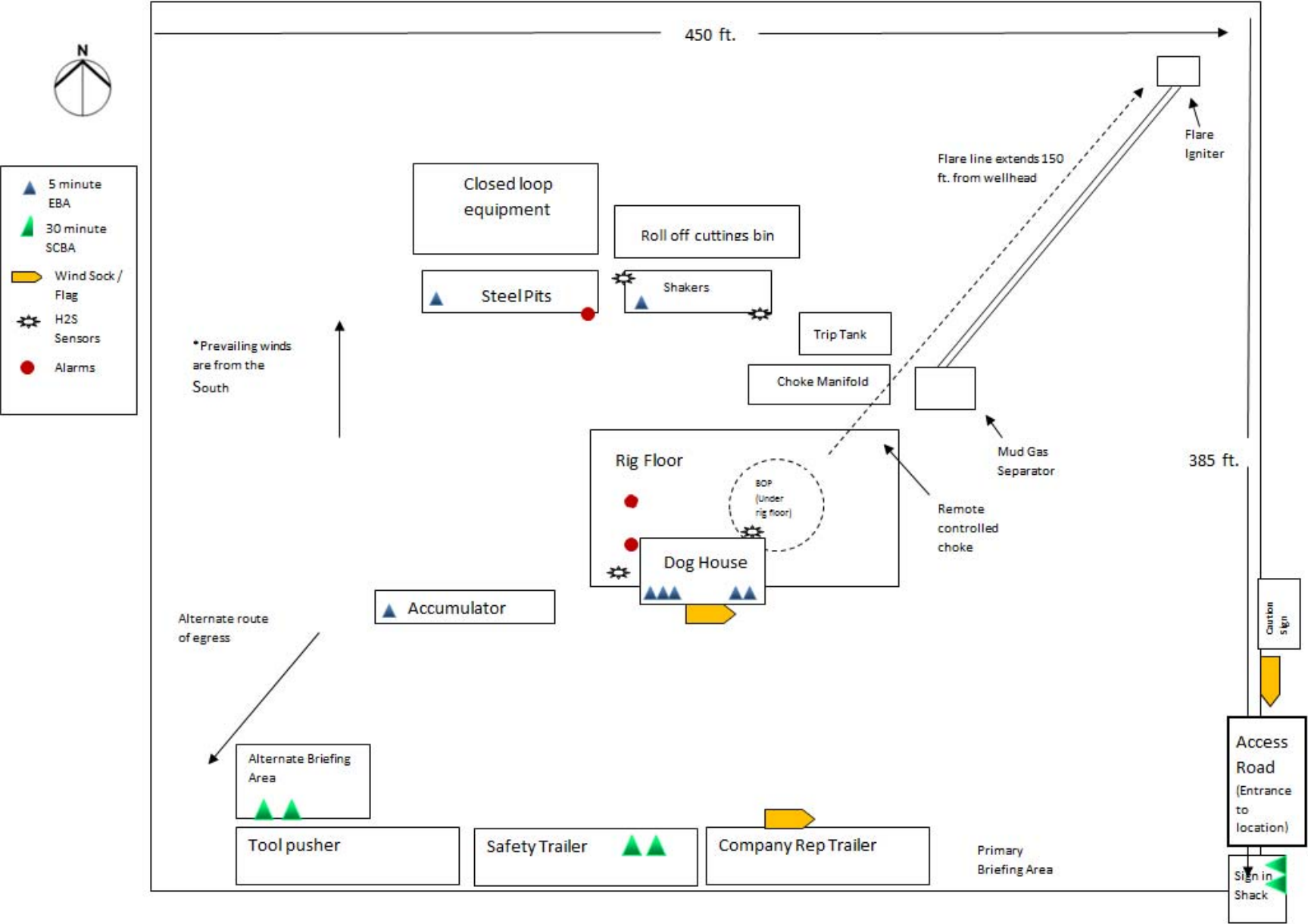
Below are lists of contacts to be used in emergency situations.

	Name	Title	Office Number	Cell Phone
1.	TBD	Drilling Engineer		
2.	TBD	Superintendent		
5.	Steve Hassmann	Drilling Manager	(713) 372-4496	832-729-3236
6.	Kyle Eastman	Operations Manager	TBD	281-755-6554
7.	TBD	D&C HES		
8.	TBD	Completion Engineer		



H₂S Preparedness and Contingency Plan Summary

Released to Imaging: 5/13/2021 2:40:06 PM



Received by OCD: 5/12/2021 9:08:26 AM



Chevron HH SO 17 20 FED 003 404H Rev0 kFc 25Nov19 Proposal Geodetic Report (Def Plan)



Report Date: November 27, 2019 - 06:06 AM
Client: Chevron
Field: NM Eddy County (NAD 27)
Structure / Slot: Chevron HH SO 17 20 FED 003 Pad / 404H
Well: HH SO 17 20 Fed 003 404H
Borehole: HH SO 17 20 Fed 003 404H
UWI / API#: Unknown / Unknown
Survey Name: Chevron HH SO 17 20 FED 003 404H Rev0 kFc 25Nov19
Survey Date: November 25, 2019
Tort / AHD / DDI / ERD Ratio: 114.655 ° / 11218.219 ft / 6.449 / 1.250
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 3' 0.13836", W 104° 12' 46.94447"
Location Grid N/E Y/X: N 381950.000 ftUS, E 537270.000 ftUS
CRS Grid Convergence Angle: 0.0638 °
Grid Scale Factor: 0.99991068
Version / Patch: 2.10.787.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.490 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB = 28ft
TVD Reference Elevation: 3282.000 ft above MSL
Seabed / Ground Elevation: 3254.000 ft above MSL
Magnetic Declination: 7.176 °
Total Gravity Field Strength: 998.4303mgm (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47720.147 nT
Magnetic Dip Angle: 59.640 °
Declination Date: November 25, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.0638 °
Total Corr Mag North->Grid North: 7.1122 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
	100.00	0.00	74.57	100.00	0.00	0.00	0.00	0.00	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
	200.00	0.00	74.57	200.00	0.00	0.00	0.00	0.00	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
	300.00	0.00	74.57	300.00	0.00	0.00	0.00	0.00	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
	400.00	0.00	74.57	400.00	0.00	0.00	0.00	0.00	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
13 3/8" Casing	450.00	0.00	74.57	450.00	0.00	0.00	0.00	0.00	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
Build 1.5"/100ft	500.00	0.00	74.57	500.00	0.00	0.00	0.00	0.00	381950.00	537270.00	N 32 3 0.14 W 104 12 46.94	
	600.00	1.50	74.57	599.99	-0.34	0.35	1.26	1.50	381950.35	537271.26	N 32 3 0.14 W 104 12 46.93	
Salado / Castile	649.04	2.24	74.57	649.00	-0.75	0.77	2.80	1.50	381950.77	537272.80	N 32 3 0.15 W 104 12 46.91	
	700.00	3.00	74.57	699.91	-1.35	1.39	5.05	1.50	381951.39	537275.05	N 32 3 0.15 W 104 12 46.89	
	800.00	4.50	74.57	799.69	-3.03	3.13	11.35	1.50	381953.13	537281.35	N 32 3 0.17 W 104 12 46.81	
	900.00	6.00	74.57	899.27	-5.39	5.57	20.17	1.50	381955.57	537290.17	N 32 3 0.19 W 104 12 46.71	
Hold	900.03	6.00	74.57	899.30	-5.39	5.57	20.17	1.50	381955.57	537290.17	N 32 3 0.19 W 104 12 46.71	
	1000.00	6.00	74.57	998.72	-8.08	8.35	30.25	0.00	381958.35	537300.24	N 32 3 0.22 W 104 12 46.59	
	1100.00	6.00	74.57	1098.17	-10.77	11.13	40.32	0.00	381961.13	537310.32	N 32 3 0.25 W 104 12 46.48	
	1200.00	6.00	74.57	1197.63	-13.47	13.91	50.40	0.00	381963.91	537320.40	N 32 3 0.28 W 104 12 46.36	
	1300.00	6.00	74.57	1297.08	-16.16	16.70	60.48	0.00	381966.70	537330.47	N 32 3 0.30 W 104 12 46.24	
	1400.00	6.00	74.57	1396.53	-18.85	19.48	70.55	0.00	381969.48	537340.55	N 32 3 0.33 W 104 12 46.12	
	1500.00	6.00	74.57	1495.98	-21.54	22.26	80.63	0.00	381972.26	537350.62	N 32 3 0.36 W 104 12 46.01	
	1600.00	6.00	74.57	1595.43	-24.23	25.04	90.71	0.00	381975.04	537360.70	N 32 3 0.39 W 104 12 45.89	
	1700.00	6.00	74.57	1694.89	-26.93	27.83	100.78	0.00	381977.82	537370.77	N 32 3 0.41 W 104 12 45.77	
	1800.00	6.00	74.57	1794.34	-29.62	30.61	110.86	0.00	381980.60	537380.85	N 32 3 0.44 W 104 12 45.66	
	1900.00	6.00	74.57	1893.79	-32.31	33.39	120.94	0.00	381983.39	537390.93	N 32 3 0.47 W 104 12 45.54	
	2000.00	6.00	74.57	1993.24	-35.00	36.17	131.01	0.00	381986.17	537401.00	N 32 3 0.49 W 104 12 45.42	
	2100.00	6.00	74.57	2092.69	-37.70	38.95	141.09	0.00	381988.95	537411.08	N 32 3 0.52 W 104 12 45.30	
Lamar Lime	2109.36	6.00	74.57	2102.00	-37.95	39.21	142.03	0.00	381989.21	537412.02	N 32 3 0.52 W 104 12 45.29	
9 5/8" Casing	2122.43	6.00	74.57	2115.00	-38.30	39.58	143.35	0.00	381989.57	537413.34	N 32 3 0.53 W 104 12 45.28	
Bell Canyon	2138.52	6.00	74.57	2131.00	-38.73	40.02	144.97	0.00	381990.02	537414.96	N 32 3 0.53 W 104 12 45.26	
	2200.00	6.00	74.57	2192.15	-40.39	41.74	151.17	0.00	381991.73	537421.15	N 32 3 0.55 W 104 12 45.19	
	2300.00	6.00	74.57	2291.60	-43.08	44.52	161.24	0.00	381994.51	537431.23	N 32 3 0.58 W 104 12 45.07	
	2400.00	6.00	74.57	2391.05	-45.77	47.30	171.32	0.00	381997.30	537441.30	N 32 3 0.60 W 104 12 44.95	
	2500.00	6.00	74.57	2490.50	-48.46	50.08	181.40	0.00	382000.08	537451.38	N 32 3 0.63 W 104 12 44.84	
	2600.00	6.00	74.57	2589.96	-51.16	52.86	191.47	0.00	382002.86	537461.46	N 32 3 0.66 W 104 12 44.72	
	2700.00	6.00	74.57	2689.41	-53.85	55.65	201.55	0.00	382005.64	537471.53	N 32 3 0.69 W 104 12 44.60	
	2800.00	6.00	74.57	2788.86	-56.54	58.43	211.63	0.00	382008.42	537481.61	N 32 3 0.71 W 104 12 44.48	
	2900.00	6.00	74.57	2888.31	-59.23	61.21	221.70	0.00	382011.20	537491.68	N 32 3 0.74 W 104 12 44.37	
Cherry Canyon	2966.05	6.00	74.57	2954.00	-61.01	63.05	228.36	0.00	382013.04	537498.34	N 32 3 0.76 W 104 12 44.29	
	3000.00	6.00	74.57	2987.76	-61.93	63.99	231.78	0.00	382013.99	537501.76	N 32 3 0.77 W 104 12 44.25	
	3100.00	6.00	74.57	3087.22	-64.62	66.77	241.86	0.00	382016.77	537511.83	N 32 3 0.80 W 104 12 44.13	
	3200.00	6.00	74.57	3186.67	-67.31	69.56	251.93	0.00	382019.55	537521.91	N 32 3 0.82 W 104 12 44.02	
	3300.00	6.00	74.57	3286.12	-70.00	72.34	262.01	0.00	382022.33	537531.99	N 32 3 0.85 W 104 12 43.90	
	3400.00	6.00	74.57	3385.57	-72.70	75.12	272.09	0.00	382025.11	537542.06	N 32 3 0.88 W 104 12 43.78	
	3500.00	6.00	74.57	3485.02	-75.39	77.90	282.16	0.00	382027.90	537552.14	N 32 3 0.91 W 104 12 43.67	
	3600.00	6.00	74.57	3584.48	-78.08	80.68	292.24	0.00	382030.68	537562.21	N 32 3 0.93 W 104 12 43.55	
Drop 1.5"/100ft	3645.51	6.00	74.57	3629.74	-79.31	81.95	296.83	0.00	382031.94	537566.80	N 32 3 0.95 W 104 12 43.49	
	3700.00	5.18	74.57	3683.97	-80.67	83.36	301.94	1.50	382033.36	537571.92	N 32 3 0.96 W 104 12 43.44	
	3800.00	3.68	74.57	3783.66	-82.66	85.42	309.40	1.50	382035.41	537579.37	N 32 3 0.98 W 104 12 43.35	
	3900.00	2.18	74.57	3883.53	-83.98	86.78	314.33	1.50	382036.77	537584.30	N 32 3 0.99 W 104 12 43.29	
	4000.00	0.68	74.57	3983.50	-84.62	87.45	316.74	1.50	382037.44	537586.71	N 32 3 1.00 W 104 12 43.26	
Hold Vertical	4045.54	0.00	74.57	4029.04	-84.69	87.52	317.00	1.50	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
Brushy Canyon	4052.50	0.00	74.57	4036.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4100.00	0.00	74.57	4083.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4200.00	0.00	74.57	4183.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4300.00	0.00	74.57	4283.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4400.00	0.00	74.57	4383.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4500.00	0.00	74.57	4483.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4600.00	0.00	74.57	4583.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4700.00	0.00	74.57	4683.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4800.00	0.00	74.57	4783.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	4900.00	0.00	74.57	4883.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5000.00	0.00	74.57	4983.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5100.00	0.00	74.57	5083.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5200.00	0.00	74.57	5183.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5300.00	0.00	74.57	5283.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5400.00	0.00	74.57	5383.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5500.00	0.00	74.57	5483.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5600.00	0.00	74.57	5583.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
Bone Spring	5687.50	0.00	74.57	5671.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5700.00	0.00	74.57	5683.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5800.00	0.00	74.57	5783.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
Avalon	5814.50	0.00	74.57	5798.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	5900.00	0.00	74.57	5883.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	6000.00	0.00	74.57	5983.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	6100.00	0.00	74.57	6083.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00 W 104 12 43.26	
	6200.00	0.00	74.57									

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
1st Bone Spring	6600.00	0.00	74.57	6583.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	6617.50	0.00	74.57	6601.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	6700.00	0.00	74.57	6683.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	6800.00	0.00	74.57	6783.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	6900.00	0.00	74.57	6883.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
2nd Bone Spring	7000.00	0.00	74.57	6983.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7100.00	0.00	74.57	7083.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7113.50	0.00	74.57	7097.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7200.00	0.00	74.57	7183.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7300.00	0.00	74.57	7283.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7400.00	0.00	74.57	7383.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7500.00	0.00	74.57	7483.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7600.00	0.00	74.57	7583.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7700.00	0.00	74.57	7683.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	7800.00	0.00	74.57	7783.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
3rd BS Carb	7900.00	0.00	74.57	7883.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	8000.00	0.00	74.57	7983.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	8100.00	0.00	74.57	8083.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	8200.00	0.00	74.57	8183.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	8252.50	0.00	74.57	8236.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
7" Casing	8300.00	0.00	74.57	8283.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
	8355.50	0.00	74.57	8339.00	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
KOP, Build 10"/100ft	8400.00	0.00	74.57	8383.50	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
3rd Bone Spring	8418.54	0.00	74.57	8402.04	-84.69	87.52	317.00	0.00	382037.51	537586.97	N 32 3 1.00	W 104 12 43.26
Wolfcamp A	8481.63	6.31	191.16	8465.00	-81.30	84.12	316.33	10.00	382034.11	537586.30	N 32 3 0.97	W 104 12 43.27
	8500.00	8.15	191.16	8483.22	-79.03	81.85	315.88	10.00	382031.84	537585.85	N 32 3 0.94	W 104 12 43.27
	8600.00	18.15	191.16	8580.48	-56.79	59.56	311.48	10.00	382009.56	537581.45	N 32 3 0.72	W 104 12 43.32
	8700.00	28.15	191.16	8672.31	-18.35	21.05	303.88	10.00	381971.05	537573.85	N 32 3 0.34	W 104 12 43.41
	8800.00	38.15	191.16	8755.93	35.13	-32.52	293.31	10.00	381917.48	537563.28	N 32 2 59.81	W 104 12 43.54
	8859.87	44.13	191.16	8801.00	73.69	-71.15	285.69	10.00	381878.86	537555.66	N 32 2 59.43	W 104 12 43.63
	8900.00	48.15	191.16	8828.80	102.02	-99.53	280.09	10.00	381850.48	537550.06	N 32 2 59.15	W 104 12 43.69
	9000.00	58.15	191.16	8888.71	180.28	-177.93	264.61	10.00	381772.08	537534.59	N 32 2 58.37	W 104 12 43.87
	9100.00	68.15	191.16	8933.82	267.54	-265.35	247.36	10.00	381684.68	537517.34	N 32 2 57.51	W 104 12 44.07
	9200.00	78.15	191.16	8962.78	361.15	-359.12	228.85	10.00	381590.91	537498.83	N 32 2 56.58	W 104 12 44.29
FIF GUSS Landing Point	9300.00	88.15	191.16	8974.70	458.25	-456.41	209.66	10.00	381493.64	537479.64	N 32 2 55.62	W 104 12 44.51
	9318.54	90.00	191.16	8975.00	476.41	-474.59	206.07	10.00	381475.45	537476.05	N 32 2 55.44	W 104 12 44.56
	9400.00	90.00	191.16	8975.00	556.18	-554.51	190.29	0.00	381395.54	537460.28	N 32 2 54.65	W 104 12 44.74
	9500.00	90.00	191.16	8975.00	654.11	-652.62	170.93	0.00	381297.44	537440.92	N 32 2 53.68	W 104 12 44.97
	9600.00	90.00	191.16	8975.00	752.05	-750.73	151.57	0.00	381199.34	537421.56	N 32 2 52.71	W 104 12 45.19
	9700.00	90.00	191.16	8975.00	849.98	-848.83	132.21	0.00	381101.24	537402.20	N 32 2 51.74	W 104 12 45.42
	9800.00	90.00	191.16	8975.00	947.91	-946.94	112.85	0.00	381003.15	537382.84	N 32 2 50.77	W 104 12 45.65
	9849.37	90.00	191.16	8975.00	996.25	-995.37	103.29	0.00	380954.72	537373.28	N 32 2 50.29	W 104 12 45.76
	9900.00	90.00	190.15	8975.00	1045.93	-1045.13	93.92	2.00	380904.96	537363.92	N 32 2 49.79	W 104 12 45.87
	10000.00	90.00	188.15	8975.00	1144.50	-1143.85	78.02	2.00	380806.25	537348.01	N 32 2 48.82	W 104 12 46.05
Hold	10100.00	90.00	186.15	8975.00	1243.61	-1243.07	65.57	2.00	380707.04	537335.57	N 32 2 47.84	W 104 12 46.20
	10200.00	90.00	184.15	8975.00	1343.11	-1342.66	56.59	2.00	380607.46	537326.59	N 32 2 46.85	W 104 12 46.30
	10300.00	90.00	182.15	8975.00	1442.90	-1442.51	51.10	2.00	380507.62	537321.09	N 32 2 45.86	W 104 12 46.37
	10400.00	90.00	180.15	8975.00	1542.86	-1542.48	49.09	2.00	380407.66	537319.08	N 32 2 44.87	W 104 12 46.39
	10449.37	90.00	179.16	8975.00	1592.22	-1591.85	49.38	2.00	380358.30	537319.38	N 32 2 44.39	W 104 12 46.39
	10500.00	90.00	179.16	8975.00	1642.86	-1642.47	50.12	0.00	380307.68	537320.12	N 32 2 43.88	W 104 12 46.38
	10600.00	90.00	179.16	8975.00	1742.85	-1742.46	51.58	0.00	380207.70	537321.58	N 32 2 42.89	W 104 12 46.37
	10700.00	90.00	179.16	8975.00	1842.85	-1842.45	53.04	0.00	380107.71	537323.04	N 32 2 41.91	W 104 12 46.35
	10800.00	90.00	179.16	8975.00	1942.85	-1942.44	54.50	0.00	380007.73	537324.49	N 32 2 40.92	W 104 12 46.34
	10900.00	90.00	179.16	8975.00	2042.85	-2042.43	55.96	0.00	379907.75	537325.95	N 32 2 39.93	W 104 12 46.32
MP, Turn 2"/100ft	11000.00	90.00	179.16	8975.00	2142.85	-2142.42	57.42	0.00	379807.77	537327.41	N 32 2 38.94	W 104 12 46.31
	11100.00	90.00	179.16	8975.00	2242.85	-2242.41	58.88	0.00	379707.79	537328.87	N 32 2 37.95	W 104 12 46.29
	11200.00	90.00	179.16	8975.00	2342.84	-2342.40	60.34	0.00	379607.81	537330.33	N 32 2 36.96	W 104 12 46.27
	11300.00	90.00	179.16	8975.00	2442.84	-2442.39	61.79	0.00	379507.83	537331.79	N 32 2 35.97	W 104 12 46.26
	11400.00	90.00	179.16	8975.00	2542.84	-2542.38	63.25	0.00	379407.85	537333.25	N 32 2 34.98	W 104 12 46.24
	11500.00	90.00	179.16	8975.00	2642.84	-2642.37	64.71	0.00	379307.87	537334.71	N 32 2 33.99	W 104 12 46.23
	11600.00	90.00	179.16	8975.00	2742.84	-2742.36	66.17	0.00	379207.89	537336.17	N 32 2 33.00	W 104 12 46.21
	11700.00	90.00	179.16	8975.00	2842.84	-2842.35	67.63	0.00	379107.91	537337.62	N 32 2 32.01	W 104 12 46.20
	11800.00	90.00	179.16	8975.00	2942.83	-2942.34	69.09	0.00	379007.93	537339.08	N 32 2 31.02	W 104 12 46.18
	11900.00	90.00	179.16	8975.00	3042.83	-3042.33	70.55	0.00	378907.95	537340.54	N 32 2 30.03	W 104 12 46.16
MP, Turn 2"/100ft Hold	12000.00	90.00	179.16	8975.00	3142.83	-3142.31	72.01	0.00	378807.97	537342.00	N 32 2 29.04	W 104 12 46.15
	12100.00	90.00	179.16	8975.00	3242.83	-3242.30	73.4					

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	15900.00	90.00	179.82	8975.00	7042.77	-7042.06	111.17	0.00	374908.59	537381.16	N 32 1 50.45	W 104 12 45.74
	16000.00	90.00	179.82	8975.00	7142.77	-7142.06	111.49	0.00	374808.59	537381.48	N 32 1 49.46	W 104 12 45.74
	16100.00	90.00	179.82	8975.00	7242.76	-7242.06	111.81	0.00	374708.60	537381.80	N 32 1 48.47	W 104 12 45.74
	16200.00	90.00	179.82	8975.00	7342.76	-7342.06	112.12	0.00	374608.61	537382.11	N 32 1 47.48	W 104 12 45.74
	16300.00	90.00	179.82	8975.00	7442.76	-7442.06	112.44	0.00	374508.62	537382.43	N 32 1 46.49	W 104 12 45.73
	16400.00	90.00	179.82	8975.00	7542.76	-7542.06	112.76	0.00	374408.63	537382.75	N 32 1 45.50	W 104 12 45.73
	16500.00	90.00	179.82	8975.00	7642.76	-7642.05	113.07	0.00	374308.64	537383.06	N 32 1 44.51	W 104 12 45.73
	16600.00	90.00	179.82	8975.00	7742.76	-7742.05	113.39	0.00	374208.65	537383.38	N 32 1 43.52	W 104 12 45.73
	16700.00	90.00	179.82	8975.00	7842.76	-7842.05	113.71	0.00	374108.66	537383.70	N 32 1 42.53	W 104 12 45.73
	16800.00	90.00	179.82	8975.00	7942.75	-7942.05	114.02	0.00	374008.67	537384.01	N 32 1 41.54	W 104 12 45.72
	16900.00	90.00	179.82	8975.00	8042.75	-8042.05	114.34	0.00	373908.68	537384.33	N 32 1 40.55	W 104 12 45.72
	17000.00	90.00	179.82	8975.00	8142.75	-8142.05	114.66	0.00	373808.69	537384.65	N 32 1 39.57	W 104 12 45.72
	17100.00	90.00	179.82	8975.00	8242.75	-8242.05	114.98	0.00	373708.70	537384.97	N 32 1 38.58	W 104 12 45.72
	17200.00	90.00	179.82	8975.00	8342.75	-8342.05	115.29	0.00	373608.71	537385.28	N 32 1 37.59	W 104 12 45.71
	17300.00	90.00	179.82	8975.00	8442.75	-8442.05	115.61	0.00	373508.72	537385.60	N 32 1 36.60	W 104 12 45.71
	17400.00	90.00	179.82	8975.00	8542.74	-8542.05	115.93	0.00	373408.73	537385.92	N 32 1 35.61	W 104 12 45.71
	17500.00	90.00	179.82	8975.00	8642.74	-8642.05	116.24	0.00	373308.74	537386.23	N 32 1 34.62	W 104 12 45.71
	17600.00	90.00	179.82	8975.00	8742.74	-8742.05	116.56	0.00	373208.75	537386.55	N 32 1 33.63	W 104 12 45.70
	17700.00	90.00	179.82	8975.00	8842.74	-8842.05	116.88	0.00	373108.76	537386.87	N 32 1 32.64	W 104 12 45.70
	17800.00	90.00	179.82	8975.00	8942.74	-8942.05	117.19	0.00	373008.77	537387.18	N 32 1 31.65	W 104 12 45.70
	17900.00	90.00	179.82	8975.00	9042.74	-9042.05	117.51	0.00	372908.78	537387.50	N 32 1 30.66	W 104 12 45.70
	18000.00	90.00	179.82	8975.00	9142.73	-9142.05	117.83	0.00	372808.79	537387.82	N 32 1 29.67	W 104 12 45.69
	18100.00	90.00	179.82	8975.00	9242.73	-9242.05	118.15	0.00	372708.80	537388.13	N 32 1 28.68	W 104 12 45.69
	18200.00	90.00	179.82	8975.00	9342.73	-9342.05	118.46	0.00	372608.81	537388.45	N 32 1 27.69	W 104 12 45.69
	18300.00	90.00	179.82	8975.00	9442.73	-9442.05	118.78	0.00	372508.82	537388.77	N 32 1 26.70	W 104 12 45.69
	18400.00	90.00	179.82	8975.00	9542.73	-9542.05	119.10	0.00	372408.83	537389.09	N 32 1 25.71	W 104 12 45.68
	18500.00	90.00	179.82	8975.00	9642.73	-9642.04	119.41	0.00	372308.84	537389.40	N 32 1 24.72	W 104 12 45.68
	18600.00	90.00	179.82	8975.00	9742.72	-9742.04	119.73	0.00	372208.85	537389.72	N 32 1 23.73	W 104 12 45.68
	18700.00	90.00	179.82	8975.00	9842.72	-9842.04	120.05	0.00	372108.86	537390.04	N 32 1 22.74	W 104 12 45.68
	18800.00	90.00	179.82	8975.00	9942.72	-9942.04	120.36	0.00	372008.86	537390.35	N 32 1 21.75	W 104 12 45.68
	18900.00	90.00	179.82	8975.00	10042.72	-10042.04	120.68	0.00	371908.87	537390.67	N 32 1 20.76	W 104 12 45.67
	19000.00	90.00	179.82	8975.00	10142.72	-10142.04	121.00	0.00	371808.88	537390.99	N 32 1 19.77	W 104 12 45.67
	19100.00	90.00	179.82	8975.00	10242.72	-10242.04	121.32	0.00	371708.89	537391.30	N 32 1 18.78	W 104 12 45.67
	19200.00	90.00	179.82	8975.00	10342.71	-10342.04	121.63	0.00	371608.90	537391.62	N 32 1 17.79	W 104 12 45.67
	19300.00	90.00	179.82	8975.00	10442.71	-10442.04	121.95	0.00	371508.91	537391.94	N 32 1 16.81	W 104 12 45.66
LTP Cross	19329.66	90.00	179.82	8975.00	10472.37	-10471.70	122.04	0.00	371479.26	537392.03	N 32 1 16.51	W 104 12 45.66
	19400.00	90.00	179.82	8975.00	10542.71	-10542.04	122.27	0.00	371408.92	537392.26	N 32 1 15.82	W 104 12 45.66
	19500.00	90.00	179.82	8975.00	10642.71	-10642.04	122.58	0.00	371308.93	537392.57	N 32 1 14.83	W 104 12 45.66
	19600.00	90.00	179.82	8975.00	10742.71	-10742.04	122.90	0.00	371208.94	537392.89	N 32 1 13.84	W 104 12 45.66
HH SO 17 20 FED 003 404H - PBHL	19634.95	90.00	179.82	8975.00	10777.65	-10776.98	123.01	0.00	371174.00	537393.00	N 32 1 13.49	W 104 12 45.66

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 3 *** 3-D 97.071% Confidence 3.0000 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	28.000	1/100.000	30.000	30.000		B001Mb_MWD+HRGM-Depth Only	HH SO 17 20 Fed 003 404H / Chevron HH SO 17 20 FED 003 404H Rev0 kFc 25Nov19
	1	28.000	19634.945	1/100.000	30.000	30.000		B001Mb_MWD+HRGM	HH SO 17 20 Fed 003 404H / Chevron HH SO 17 20 FED 003

Summary of Changes to APD Submission

Chevron respectfully request to vary from the Onshore Order 2 where it states:

“(A full BOP Test) shall be performed: when initially installed and whenever any seal subject to test pressure is broken.”

We propose to perform a “break test” on the BOP when able to finish the next hole section within 21 days of the previous full BOP test. Upon the first nipple up of the pad a full BOP test will be performed. The break test will consist of a 250 psi low / $\geq 5,000$ psi high (10 min ea.) test against the connection that was broken when skidding the rig (between the BOP and the wellhead). Time between full BOP tests will never surpass 21 days. A break test will not be performed on our last production hole section. A break test will only be performed on operations where BLM documentation states a 5M or less BOP can be utilized.

See figure below where skid sequence shows all possible skids between wells where break test may occur. (see underlined skid order number)

HH SO Package 15 Pad							
Hole Section	HH SO 17 20 FED 003 401H	HH SO 17 20 FED 003 301H	HH SO 17 20 FED 003 402H	HH SO 17 20 FED 003 403H	HH SO 17 20 FED 003 302H	HH SO 17 20 FED 003 404H	Drilling Fluids
Target	WCA_TGT2	TBS_TGT1	WCA_TGT4	WCA_TGT2	TBS_TGT 1	WCA_TGT 4	
SURF	1	2	3	4	5	6	Spud Mud
INT	7	<u>9</u>	<u>11</u>	<u>13</u>	<u>15</u>	<u>17</u>	Brine/ OBM
PROD	8	10	12	14	16	18	Brine/ OBM
PROD Liner	19	20	21	22	23	24	OBM

ONSHORE ORDER NO. 1
Chevron USA
HH SO 17 20 FED 003 404H
Eddy County, NM

CONFIDENTIAL -- TIGHT HOLE
DRILLING PLAN
PAGE: 3

5. CEMENTING PROGRAM

Slurry	Type	Top	Bottom	Sacks	Yield (cu ft/sk)	Density (ppg)	%Excess Open Hole	Water gal/sk	Volume cuft	Additives
<u>Surface 13-3/8</u>										
Tail	Class C	0'	450'	353	1.33	14.8	50	6.36	469	Extender, Antifoam, Retarder
<u>Intermediate Csg 9-5/8</u>										
Lead	Class C	0'	1,150'	217	2.49	11.9	50	14.11	540	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	1,150'	2,150'	382	1.33	14.8	50	6.36	507	Extender, Antifoam, Retarder, Viscosifier
<u>Production 7"</u>										
Lead	Class C	0'	7,465'	881	2.2	11.9	100	12.18	1939	Extender, Antifoam, Retarder, Viscosifier
Tail	Class C	7,465'	8,465'	161	1.4	14.5	50	6.82	226	Extender, Antifoam, Retarder, Viscosifier
<u>Production Liner 4-1/2"</u>										
Lead	Class C	8,165'	17,759'	589	1.84	13.2	20	9.86	1084	Extender, Antifoam, Retarder, Viscosifier
Tail	Acid Sol Class H	17,759'	19,634'	98	2.16	15	20	9.22	212	Extender, Antifoam, Retarder, Viscosifier

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. Production casing will have one solid body type centralizer on every joint in the lateral, then every other joint to KOP. Bowspring type centralizers will be run from KOP to intermediate casing and surface.

6. MUD PROGRAM

From	To	Type	Weight	Viscosity	Filtrate	Notes
0'	450'	Fresh water mud	8.3 - 9.1	28-30	N/C	
450'	2,150'	Brine	8.8 - 10.2	28-31	15-25	
2,150'	8,465'	WBM	8.8 - 9.6	50-70	15-25	
8,465'	19,634'	OBM	9.2 - 13.0	50-70	5-10	Due to wellbore stability, the mud program may exceed the MW weight window needed to maintain overburden of pore pressure.

A closed system will be used consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toilet and then hauled to an approved sanitary landfill.

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations. And transporting of E&P waste will follow EPA regulations and accompanying manifests.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume. When abnormal pressures are anticipated -- a pit volume totalizer (PVT), stroke counter, and flow sensor will be used to detect volume changes indicating loss or gain of circulating fluid volume.

A weighting agent and lost circulating material (LCM) will be onsite to mitigate pressure or lost circulation as hole conditions dictate.



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

Drilling Plan Data Report

05/10/2021

APD ID: 10400052818

Submission Date: 12/31/2019

Highlighted data
reflects the most
recent changes

Operator Name: CHEVRON USA INCORPORATED

Well Name: HH SO 17 20 FED 003

Well Number: 404H

[Show Final Text](#)

Well Type: CONVENTIONAL GAS WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
620280	CASTILE	3251	649	649	ANHYDRITE, SALT	NONE	N
620297	LAMAR	1149	2102	2102	LIMESTONE, SHALE	NONE	N
620281	BELL CANYON	1120	2131	2131	LIMESTONE, SANDSTONE	NONE	N
620283	CHERRY CANYON	297	2954	2954	LIMESTONE, SANDSTONE, SILTSTONE	NONE	N
620284	BRUSHY CANYON	-785	4036	4036	LIMESTONE, SANDSTONE, SHALE	NONE	N
620285	BONE SPRING LIME	-2420	5671	5671	SHALE, SILTSTONE	NONE	N
620295	AVALON SAND	-2547	5798	5798	SHALE	NONE	N
620287	BONE SPRING 1ST	-3350	6601	6601	SANDSTONE, SHALE	NONE	N
620288	BONE SPRING 2ND	-3846	7097	7097	SANDSTONE, SHALE	NONE	N
620291	BONE SPRING 3RD	-4985	8236	8236	LIMESTONE, SANDSTONE, SHALE	NONE	N
620290	BONE SPRING 3RD	-5214	8465	8481	LIMESTONE, SANDSTONE, SHALE	NONE	N
620294	WOLFCAMP	-5550	8801	8859	LIMESTONE, SANDSTONE, SHALE	NONE	N
620298	WOLFCAMP	-5724	8975	19634	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention



H₂S Preparedness and Contingency Plan Summary

HH SO 17 20 FED 003 301H, 302H, 401H, 402H, 403H & 404H

Training

MCBU Drilling and Completions H₂S training requirements are intended to define the minimum level of training required for employees, contractors and visitors to enter or perform work at MCBU Drilling and Completions locations that have known concentrations of H₂S.

Awareness Level

Employees and visitors to MCBU Drilling and Completions locations that have known concentrations of H₂S, who are not required to perform work in H₂S areas, will be provided with an awareness level of H₂S training prior to entering any H₂S areas. At a minimum, awareness level training will include:

1. Physical and chemical properties of H₂S
2. Health hazards of H₂S
3. Personal protective equipment
4. Information regarding potential sources of H₂S
5. Alarms and emergency evacuation procedures

Awareness level training will be developed and conducted by personnel who are qualified either by specific training, educational experience and/or work-related background.

Advanced Level H₂S Training

Employees and contractors required to work in areas that may contain H₂S will be provided with Advanced Level H₂S training prior to initial assignment. In addition to the Awareness Level requirements, Advanced Level H₂S training will include:

1. H₂S safe work practice procedures;
2. Emergency contingency plan procedures;
3. Methods to detect the presence or release of H₂S (e.g., alarms, monitoring equipment), including hands-on training with direct reading and personal monitoring H₂S equipment.
4. Basic overview of respiratory protective equipment suitable for use in H₂S environments. Note: Employees who work at sites that participate in the Chevron Respirator User program will require separate respirator training as required by the MCBU Respiratory Protection Program;
5. Basic overview of emergency rescue techniques, first aid, CPR and medical evaluation procedures. Employees who may be required to perform "standby" duties are required to receive additional first aid and CPR training, which is not covered in the Advanced Level H₂S training;
6. Proficiency examination covering all course material.

Advanced H₂S training courses will be instructed by personnel who have successfully completed an appropriate H₂S train-the-trainer development course (ANSI/ASSE Z390.1-2006) or who possess significant past experience through educational or work-related background.



H₂S Preparedness and Contingency Plan Summary

H₂S Training Certification

All employees and visitors will be issued an H₂S training certification card (or certificate) upon successful completion of the appropriate H₂S training course. Personnel working in an H₂S environment will carry a current H₂S training certification card as proof of having received the proper training on their person at all times.

Briefing Area

A minimum of two briefing areas will be established in locations that at least one area will be upwind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated upwind briefing areas for instructions.

H₂S Equipment

Respiratory Protection

- a) Six 30 minute SCBAs – 2 at each briefing area and 2 in the Safety Trailer.
- b) Eight 5 minute EBAs – 5 in the dog house at the rig floor, 1 at the accumulator, 1 at the shale shakers and 1 at the mud pits.

Visual Warning System

- a) One color code sign, displaying all possible conditions, will be placed at the entrance to the location with a flag displaying the current condition.
- b) Two windsocks will be on location, one on the dog house and one on the Drill Site Manager's Trailer.

H₂S Detection and Monitoring System

- a) H₂S monitoring system (sensor head, warning light and siren) placed throughout rig.
 - Drilling Rig Locations: at a minimum, in the area of the Shale shaker, rig floor, and bell nipple.
 - Workover Rig Locations: at a minimum, in the area of the Cellar, rig floor and circulating tanks or shale shaker.



H₂S Preparedness and Contingency Plan Summary

Well Control Equipment

- a) Flare Line 150' from wellhead with igniter.
- b) Choke manifold with a remotely operated choke.
- c) Mud / gas separator

Mud Program

In the event of drilling, completions, workover and well servicing operations involving a hydrogen sulfide concentration of 100 ppm or greater the following shall be considered:

- 1. Use of a degasser
- 2. Use of a zinc based mud treatment
- 3. Increasing mud weight

Public Safety - Emergency Assistance

<u>Agency</u>	<u>Telephone Number</u>
Lea County Sheriff's Department	575-396-3611
Fire Department:	
Carlsbad	575-885-3125
Artesia	575-746-5050
Lea County Regional Medical Center	575-492-5000
Jal Community Hospital	505-395-2511
Lea County Emergency Management	575-396-8602
Poison Control Center	800-222-1222



H₂S Preparedness and Contingency Plan Summary

Chevron MCBU D&C Emergency Notifications

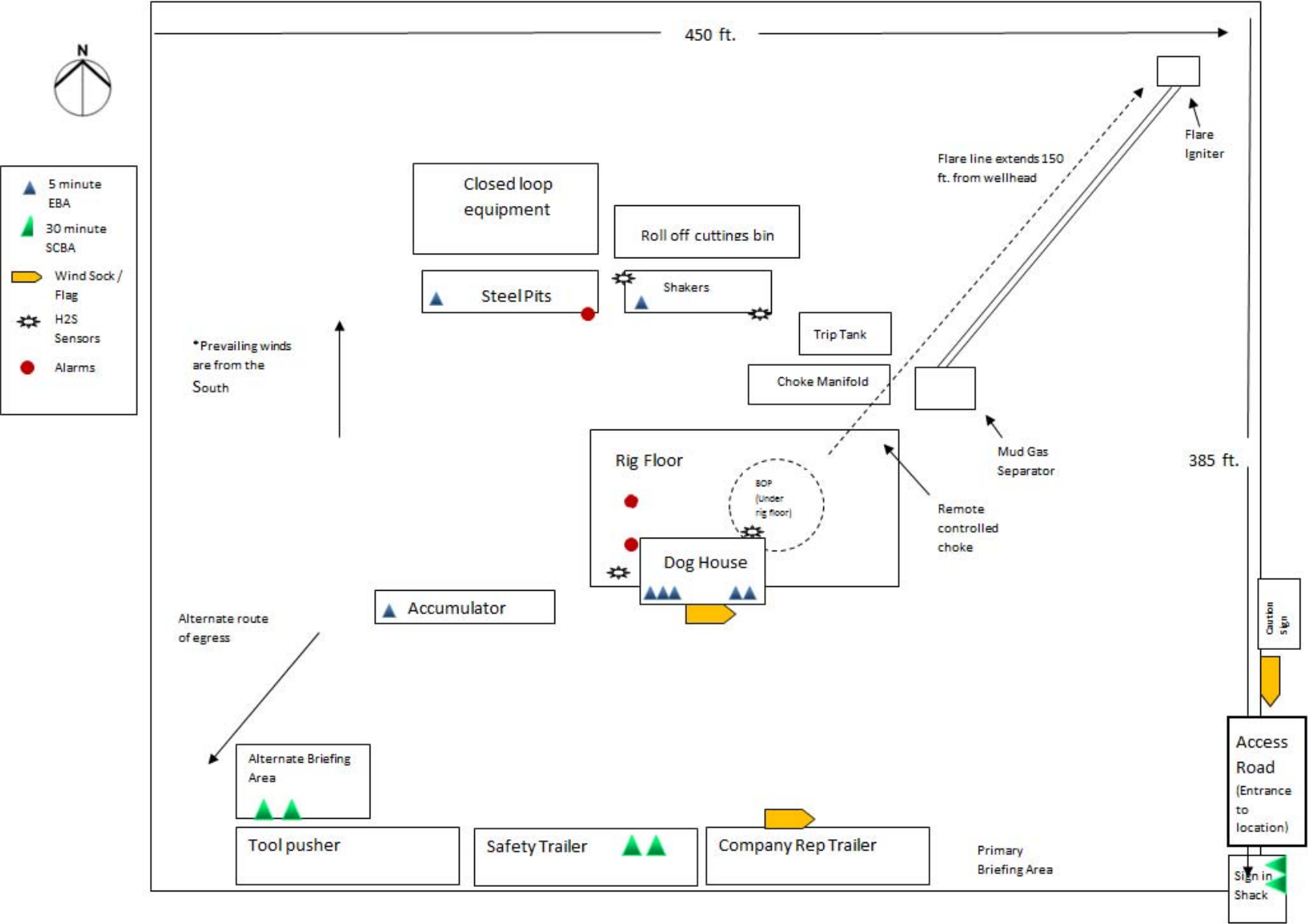
Below are lists of contacts to be used in emergency situations.

	Name	Title	Office Number	Cell Phone
1.	TBD	Drilling Engineer		
2.	TBD	Superintendent		
5.	Steve Hassmann	Drilling Manager	(713) 372-4496	832-729-3236
6.	Kyle Eastman	Operations Manager	TBD	281-755-6554
7.	TBD	D&C HES		
8.	TBD	Completion Engineer		



H₂S Preparedness and Contingency Plan Summary

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BLOWOUT PREVENTER SCHEMATIC

Operation:

Intermediate & Production

Minimum System operation pressure

5,000 psi

Minimum Requirements

Closing Unit and Accumulator Checklist

The following item must be performed, verified, and checked off at least once per well prior to low/high pressure testing of BOP equipment. This must be repeated after 6 months on the same well.

- ☐ Precharge pressure for each accumulator bottle must fall within the range below. Bottles may be further charged with nitrogen gas only. Tested precharge pressures must be recorded for each individual bottle and kept on location through the end of the well. Test will be conducted prior to connecting unit to BOP stack.
- | Check one that applies | Accumulator working pressure rating | Minimum acceptable operating pressure | Desired precharge pressure | Maximum acceptable precharge pressure | Minimum acceptable precharge pressure |
|--------------------------|-------------------------------------|---------------------------------------|----------------------------|---------------------------------------|---------------------------------------|
| ☐ | 1500 psi | 1500 psi | 750 psi | 800 psi | 700 psi |
| ☐ | 2000 psi | 2000 psi | 1000 psi | 1100 psi | 900 psi |
| ☐ | 3000 psi | 3000 psi | 1000 psi | 1100 psi | 900 psi |
- ☐ Accumulator will have sufficient capacity to open the hydraulically-controlled choke line valve (if used), close all rams, close the annular preventer, and retain a minimum of 200 psi above the maximum acceptable precharge pressure (see table above) on the closing manifold without the use of the closing pumps. This test will be performed with test pressure recorded and kept on location through the end of the well
- ☐ Accumulator fluid reservoir will be double the usable fluid volume of the accumulator system capacity. Fluid level will be maintained at manufacturer's recommendations. Usable fluid volume will be recorded. Reservoir capacity will be recorded. Reservoir fluid level will be recorded along with manufacturer's recommendation. All will be kept on location through the end of the well.
- ☐ Closing unit system will have two independent power sources (not counting accumulator bottles) to close the preventers.
- ☐ Power for the closing unit pumps will be available to the unit at all times so that the pumps will automatically start when the closing valve manifold pressure decreases to the pre-set level. It is recommended to check that air line to accumulator pump is "ON" during each tour change.
- ☐ With accumulator bottles isolated, closing unit will be capable of opening the hydraulically-operated choke line valve (if used) plus close the annular preventer on the smallest size drill pipe within 2 minutes and obtain a minimum of 200 psi above maximum acceptable precharge pressure (see table above) on the closing manifold. Test pressure and closing time will be recorded and kept on location through the end of the well.
- ☐ Master controls for the BOPE system will be located at the accumulator and will be capable of opening and closing all preventer and the choke line valve (if used)
- ☐ Remote controls for the BOPE system will be readily accessible (clear path) to the driller and located on the rig floor (not in the dog house). Remote controls will be capable of closing all preventers.
- ☐ Record accumulator tests in drilling reports and IADC sheet

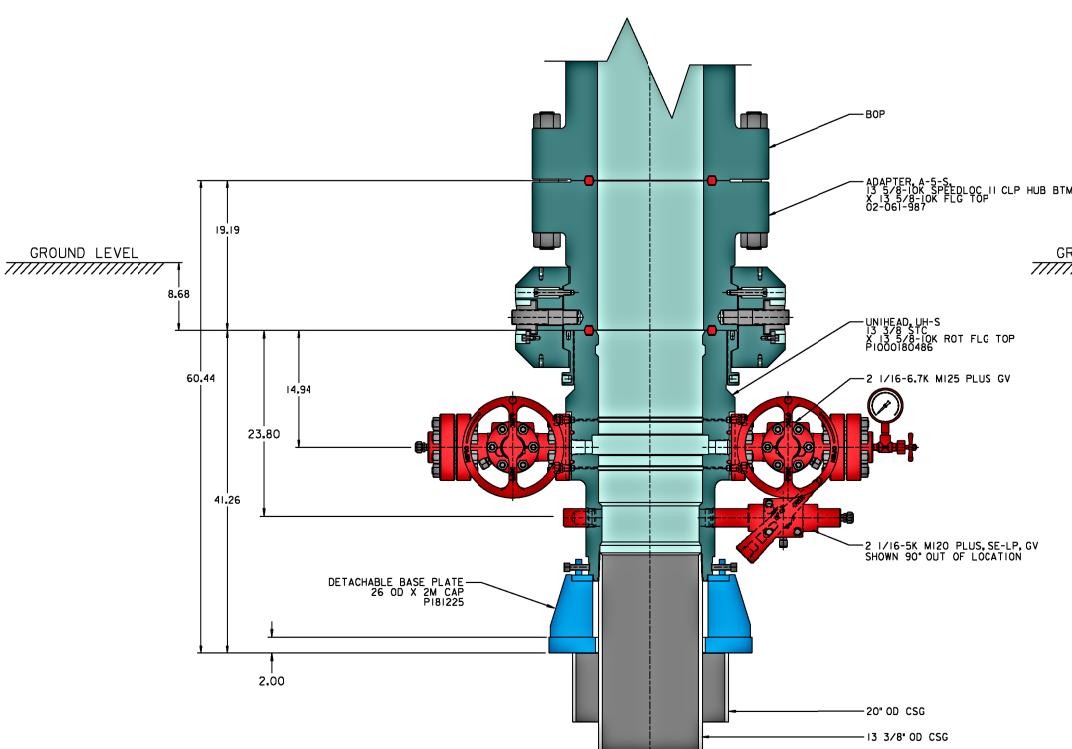
BOPE 5K Test Checklist

The following items must be checked off prior to beginning test:

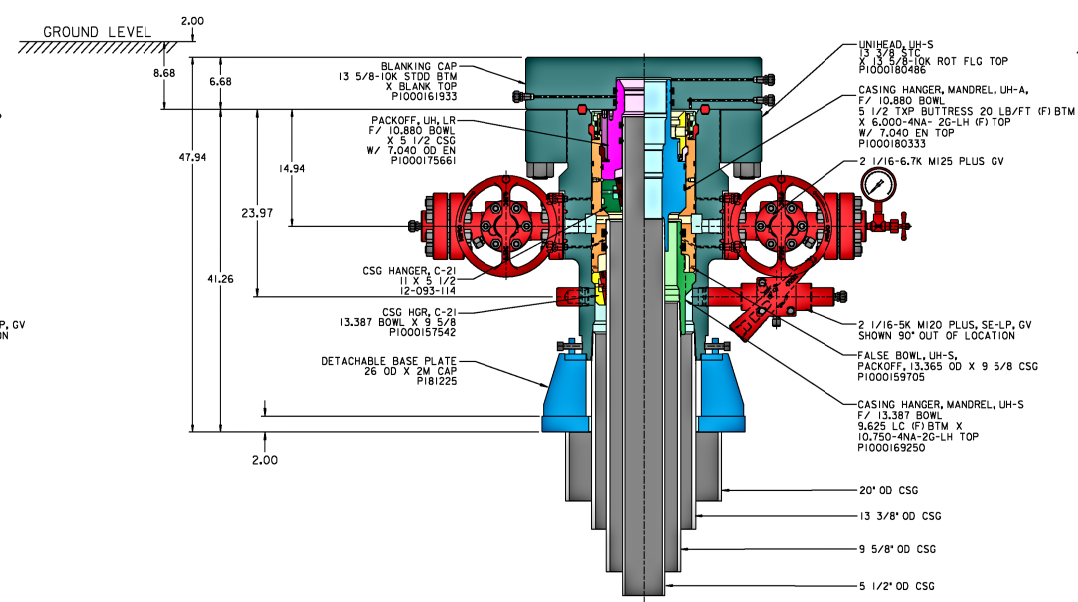
- ☐ BLM will be given at least 4 hour notice prior to beginning BOPE testing.
- ☐ Valve on casing head below test plug will be open.
- ☐ Test will be performed using clear water.

The following items must be performed during the BOPE testing:

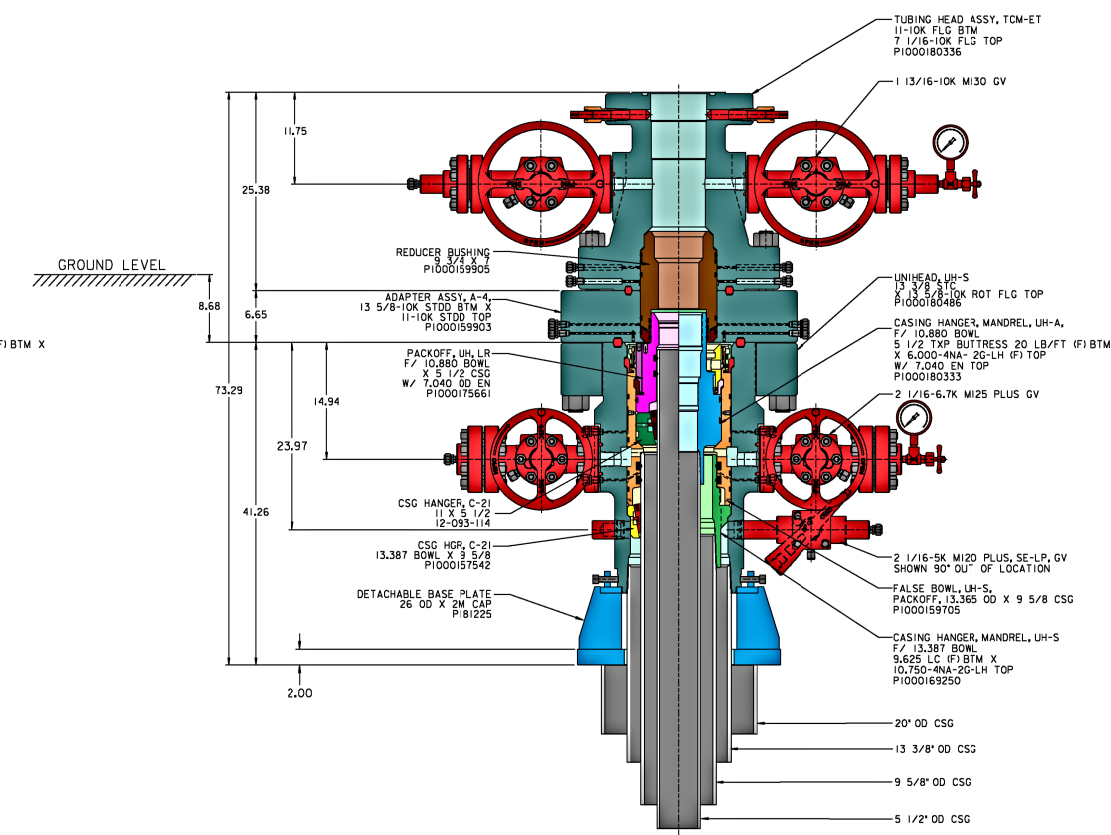
- ☐ BOPE will be pressure tested when initially installed, whenever any seal subject to test pressure is broken, following related repairs, and at a minimum of 30 day intervals. **Test pressure and times will be recorded by a 3rd party on a test charge and kept on location through the end of the well.**
- ☐ Test plug will be used.
- ☐ Ram type preventer and all related well control equipment will be tested to 250 psi (low) and 5,000 psi (high).
- ☐ Annular type preventer will be tested to 250 psi (low) and 3,500 psi (high).
- ☐ Valves will be tested from the working pressure side with all downstream valves open. The check valve will be held open to test the kill line valve(s).
- ☐ Each pressure test will be held for 10 minutes with no allowable leak off.
- ☐ Master controls and remote controls to the closing unit (accumulator) must be function tested as part of the BOPE test.
- ☐ Record BOP tests and pressures in drilling reports and IADC sheet.



DRILLING MODE



CAPPING MODE



COMPLETION MODE

6650 PSI UH-S
CHEVRON
20 X 13 3/8 X 9 5/8 X 5 1/2

PRIVATE AND CONFIDENTIAL		DESCRIPTION		DRAWN BY: T. PHAM		DATE: 03-07-17		TechnipFMC	
UNLESS OTHERWISE AGREED TO IN WRITING, THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF TECHNIPFMC AND MAY NOT BE REPRODUCED, USED, DISCLOSED, OR MADE PUBLIC IN ANY MANNER PRIOR TO EXPRESS WRITTEN AUTHORIZATION BY TECHNIPFMC. THIS DOCUMENT IS ACCEPTED BY RECIPIENT PURSUANT TO AGREEMENT TO THE FOREGOING, AND SHALL BE RETURNED UPON DEMAND.		SURFACE WELLHEAD LAYOUT, UH-S, 20 X 13 3/8 X 9 5/8 X 5 1/2 CSG PROGRAM, CHEVRON, ODESSA		DRAFTING CHECK: Z. MARQUEZ		DATE: 03-07-17		SHEET SIZE: NA	
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				APPROVED BY: J. GARZA		DATE: 08-25-17		DRAWING NUMBER: DM100233441	

BLOWOUT PREVENTER SCHEMATIC

Operation:

Intermediate & Production Drilling Operations

Minimum System operation pressure

5,000 psi

BOP Stack

Part	Size	Pressure Rating	Description
A	13-5/8"	N/A	Rotating Head/Bell nipple
B	13-5/8"	5,000	Annular
C	13-5/8"	10,000	Blind Ram
D	13-5/8"	10,000	Pipe Ram
E	13-5/8"	10,000	Mud Cross
F	13-5/8"	10,000	Pipe Ram

Kill Line

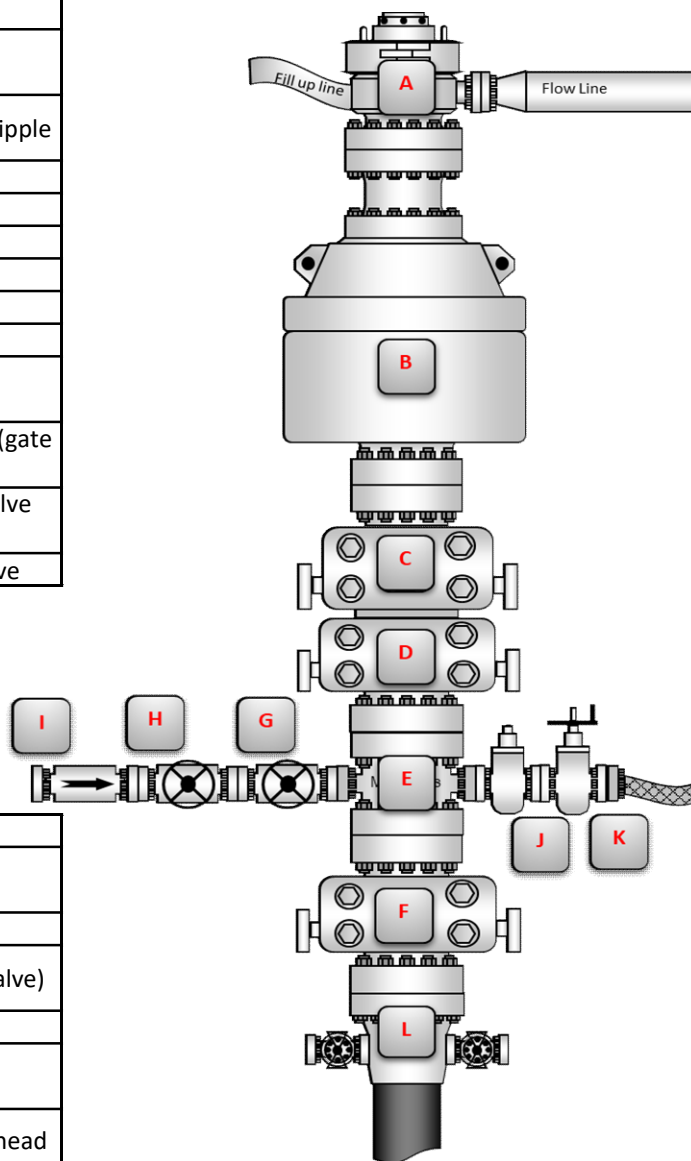
Part	Size	Pressure Rating	Description
G	2"	10,000	Inside Kill Line Valve (gate valve)
H	2"	10,000	Outside Kill Line Valve (gate valve)
I	2"	10,000	Kill Line Check valve

Choke line

Part	Size	Pressure Rating	Description
J	3"	10,000	HCR (gate valve)
K	3"	10,000	Manual HCR (gate valve)

Wellhead

Part	Size	Pressure Rating	Description
L	13-5/8"	5,000	FMC Multibowl wellhead



BOP Installation Checklist: The following items must be verified and checked off prior to pressure testing BOP equipment

The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.

All valves on the kill line and choke line will be full opening and will allow straight flow through.

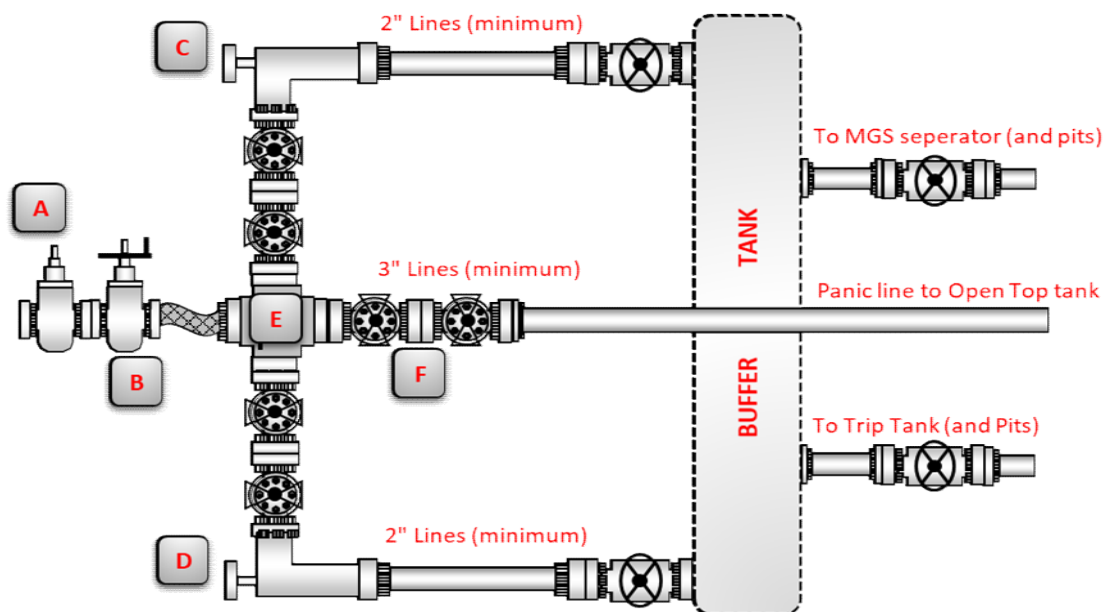
Manual (hand wheels) or automatic locking devices will be installed on all ram preventers. Hand wheels will also be installed on all manual valves on the choke and kill line.

A valve will be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve will remain open unless accumulator is inoperative.

Upper kelly cock valve with handle will be available on rig floor along with saved valve and subs to fit all drill string connections in use.

CHOKE MANIFOLD SCHEMATIC

Operation:		Intermediate & Production	
Minimum System operation pressure		5,000 psi	
<u>Choke Manifold</u>			
Part	Size	Pressure Rating	Description
A	3"	10,000	HCR (remotely operated)
B	3"	10,000	HCR (manually operated)
C	2"	10,000	Remotely operated choke
D	2"	10,000	Adjustable choke
E	3"	10,000	Crown valve with pressure gage
F	3"	10,000	Panic line valves



Choke Manifold Installation Checklist: The following items must be verified and checked off prior to pressure testing BOP equipment

The installed BOP equipment meets at least the minimum requirements (rating, type, size, configuration) as shown on this schematic. Components may be substituted for equivalent equipment rated to higher pressures. Additional components may be put into place as long as they meet or exceed the minimum pressure rating of the system.

Adjustable chokes may be remotely operated but will have backup hand pump for hydraulic actuation in case of loss of rig air or power.

Flare and panic lines will terminate a minimum of 150' from the wellhead. These lines will terminate at a location as per approved APD.

All valves (except chokes) on choke line, kill line and choke manifold will be full opening and will allow straight through flow. This excludes any valves between the mud gas separator and shale shakers.

All manual valves will have hand wheels installed.

Flare systems will have an effective method for ignition.

All connections will be flanged, welded or clamped

If buffer tank is used, a valve will be used on all lines at any entry or exit point to or from the buffer tank.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 27923

COMMENTS

Operator:	CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	OGRID:	4323	Action Number:	27923	Action Type:	FORM 3160-3
Created By	Comment					Comment Date			
kpickford	KP GEO Review 5/13/2021					05/13/2021			

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State of New Mexico
Energy, Minerals and Natural Resources
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CONDITIONS

Action 27923

CONDITIONS OF APPROVAL

Operator:	CHEVRON U S A INC	6301 Deauville Blvd	Midland, TX79706	OGRID:	4323	Action Number:	27923	Action Type:	FORM 3160-3
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OCD Reviewer	Condition
kpickford	Notify OCD 24 hours prior to casing & cement
kpickford	Will require a File As Drilled C-102 and a Directional Survey with the C-104
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system