Form 3160-3 (June 2015) UNITED STATES DEPARTMENT OF THE IN BUREAU OF LAND MANAC APPLICATION FOR PERMIT TO DR	MAR 1 4 2019 TERIOR GEMENT RESIDENT ILARTESIA O.C.D. RESOLUTION	FORM AP OMB No. 1 Expires: Janu 5. Lease Serial No. NMNM132065 6. If Indian, Allotee or	PROVED 004-0137 ary 31. 2018 Tribe Name
1a. Type of work: 🔽 DRILL 🚺 REE	ENTER	7. If Unit or CA Agree	ment. Name and No.
1b. Type of Well: ✓ Oil Well Gas Well Other 1c. Type of Completion: Hydraulic Fracturing ✓ Sing	er gle Zone 🔄 Multiple Zone	8. Lease Name and We HI BOB FEDERAL	II NO.
2. Name of Operator MARSHALL & WINSTON INCORPORATED	14187	9. APJ-Well No. 30-00	5,64331
3a. Address 31 6 Desta Drive, Suite 3100 Midland TX 79705	b. Phone No. (include area code)	TIL Field and Pool, of	Exploratory
4. Location of Well (<i>Report location clearly and in accordance wit</i>	th any State requirements.*)	11. Sec. I. R. M. or B	Ik. and Survey or Area
At surface SWSE / 330 FSL / 1910 FEL / LAT 33.023994	4 / LONG -104.048204	SEC 87 T155 / R29E	/ NMP
At proposed prod. zone SWSE / 20 FSL / 2000 FEL / LAT	33.008725 / LONG -104.04854		
14. Distance in miles and direction from nearest town or post office 21 miles	e*	12. County or Parish CHAVES	13. State
15. Distance from proposed* 330 feet location to nearest groperty or lease line, ft. (Also to nearest drig, unit line, if any)	16. No of acres in lease 17. Spaci 1405.32 160	ng Unit dedicated to this	well
18. Distance from proposed location* 1 to nearest well, drilling, completed. 1250 feet applied for, on this lease, \hat{n} . 3	19. Proposed Depth 20/BLM. 3215 feet / 8623 feet FED: NM	/BIA Bond No. in file /B000807	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3802 feet	22 Approximate date work will start* 11/01/2018	23. Estimated duration30 days	
The following, completed in accordance with the requirements of C (as applicable)	Disport Oil and Gas Order No. 1. and the I	lydraulic Fracturing rule	per 43 CFR 3162.3-3
 Well plat certified by a registered surveyor. A Drilling Plan. A Surface Use Plan (if the location is on National Forest System SUPO must be filed with the appropriate Forest Service Office) 	 Lands, the Constant of the second second	ns unless covered by an e: mation and/or plans as m	cisting bond on file (see
25. Signature (Electronic Submission)	Name (Printed/Typed) Melanie Wilson / Ph: (575)914-14	51 D	ate 0/05/2018
Title (())			
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Ruben J Sanchez / Ph: (575)627-0	D250 0	ate 3/09/2019
Title Assistant Field Manager Lands & Minerals	Office BOSWELL		
Application approval does not warrant or certify that the applicant I applicant to conduct operations thereon. Conditions of approval, if any are attached.	holds legal or equitable title to those rights	in the subject lease whic	h would entitle the
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, mal of the United States any false, fictitious or fraudulent statements or	ke it a crime for any person knowingly and representations as to any matter within its	willfully to make to any jurisdiction.	⁷ department or agency
(Continued on page 2)	ED WITH CONDITIONS	*(Instr	uctions on page 2)
	al Date: 03/08/2019		Kial 2-1

Kup 3-18-19

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: 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.



The Privacy Act of 1974 and 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., 25 U.S.G. 396; 43 CFR \$160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM concets this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. 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 of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

SHL: SWSE / 330 FSL / 1910 FEL / TWSP: 15S / RANGE: 29E / SECTION: 8 / LAT: 33.023994 / LONG: -104.048204 (TVD: 0 fcet, MD: 0 fcet)
 PPP: NWNE / 330 FNL / 2000 FEL / TWSP: 15S / RANGE: 29E / SECTION: 17 / LAT: 33.022175 / LONG: -104.0484969 (TVD: 3215 fcet, MD: 3442 fcet)
 PPP: NWNE / 0 FNL / 2000 FEL / TWSP: 15S / RANGE: 29E / SECTION: 17 / LAT: 33.0231601 / LONG: -104.0484969 (TVD: 330 fcet MD: 330 feet)
 BHL: SWSE / 20 FSL / 2000 FEL / TWSP: 15S / RANGE: 29E / SECTION: 17 / LAT: 33.008725 / LONG: -104.0484969 (TVD: 330 fcet, MD: 3623 fcet)

BLM Point of Contact

Name: Meighan M Salas Title: Land Law Examiner Phone: 5756270228 Email: mmsalas@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Marshall & Winston Inc.
LEASE NO.:	NMNM-132065
WELL NAME & NO.:	HI BOB FEDERAL 1H
SURFACE HOLE FOOTAGE:	0330' FSL & 1910' FEL
BOTTOM HOLE FOOTAGE	0020' FSL & 2000' FEL Sec. 17, T. 15 S., R 29 E.
LOCATION:	Section 08, T. 15 S., R 29 E., NMPM
COUNTY:	Chaves County, New Mexico

Operator shall run an anti-collision report prior to drilling the wellbore due to the Prince Rupert Federal 3H (30-005-64241) and submit to the BLM.

A. DRILLING OPERATIONS 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)

Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201. During office hours call (575) 627-0272.

- 1. Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.
- 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. If the drilling rig is removed without approval an Incident of Non-Compliance will be written and will be a "Major" violation.
- 3. 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 is located, this does not include the dog house or stairway area.

4. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

B. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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 <u>8 hours</u>. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

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.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possibility of lost circulation in the Queen and San Andres formations.

- 1. The 13-3/8 inch surface casing shall be set at approximately 225 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. If salt is encountered, set casing at least 25 feet above the salt.
 - 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 is to include the lead cement slurry.
 - 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.

If water flow is encountered in the Queen, operator will run a 9-5/8" contingency.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

Cement to surface. If cement does not circulate, contact the appropriate BLM office.

4. 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.

C. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.
- 2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
 - a. For surface casing only: If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
- 3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. 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 when specified), 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).
 - b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 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 water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - c. 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.
 - d. The results of the test shall be reported to the appropriate BLM office.
 - e. 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.

f. 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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

JAM 030119

Engineer Worksheet

Roswell Field Office

2909 West Second Street

Roswell, NM 88201-2019

Tracking Number:	ATS-F	2010-19-06			County:	Chaves					
Company:	MARS	SHALL & WINSTO	N INC.		Well Name and	HI BOB FE	DERAL-IH				
Surface Hole Location:	330'/S	.& 1910'/E. SEC008	T015S, R0	29E	Bottom Hole Location:	20'/S.& 200	00'/E. SEC017 T015S, R029E				
Lease Number:	NMN	м	Prod Statu	1S:	······	Effective:					
Bond:			Bond #:			Potash:					
NOS Received:	NO		APD Reco	eived:	10-5-2018	10-Day LTR Sent:	10-24-2018				
Acreage:			Orthodox	:	No	COM Agr Required:	No				
Deficiencies No	ted:										
Form 3	160-3	Survey	/ Plat	Drilling	g Plan 🗌 Sur	face Plan	Bonding				
		Orig	inal Signatı	ıre	Operator Cert St	atement					
Other Deficincie	s:										
Adjudication Comments:											
GEO Report Completed	11-14-2	2018									
Technical Checklist											
Plat:	ok		Elevation:	3802							
Proposed Depth:	TVD:	3215	MD:	8623		- Targeted Formation:	Select				
Anticipated Wat Gas, Etc.:	er-Oil,	Expected fresh wate	er above 20	00 ft/ Oil-Gas: Yat	es, Queen. and San And	res.					
Casing/Cement Program:		Okay/Okay									
Bottom Hole Mud Weight	10.5		BHP:	1755.39	MASP: 1048.09	-					
		(e	🕽 Horizo	ntal 🔿 Direction	nal 🔿 Vertical 🔲	Re-entry					
Well Control Prog(BOP, ETC)	Approved for a 3M	BOP Syste	em	Mud Program:	Ok	_				
Test-Log-Cores Program:		DS,GR,MUDLOG									
H2S or Other Ha	zards:	H2S yes. Possibility	of lost cir	culation in the Qu	een and San Andres forr	nations.					
Water Basin:	Roswell	l									
Casings to Witness:			🖌 Su	rface 🔲 Interm	ediate Production		equired				
		Other Witne	\$\$								
Comments:						-					
Jennifer Sanchez		3-1-2019					· · ·				
Engineer		Date		Siganture	Adjudication	Date	Adjudicator Initials				

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PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME: MARSHALL & WINSTON LEASE NO.: NMNM-121949 WELL NAME & NO.: HI BOB FEDERAL 1H SURFACE HOLE FOOTAGE: [330] ' F [S] L [1910] ' F [E] L LOCATION: Section 8, T 15. S., R 29 E., NMPM COUNTY: Chaves County, New Mexico

1. GENERAL PROVISIONS

Approval of the APD does not warrant that any party holds equitable or legal title. Any request for a variance shall be submitted to the Authorized Officer on Sundry Notice (Form 3160-5).

For BLM's surface operating standards and guidelines, refer to: <u>The Gold Book</u>, Fourth Edition – Revised 2007. To obtain a copy free of charge contact the Roswell Field Office (575) 627-0272 or visit BLM on the web at:

http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html

All construction, operations, and reclamation shall follow the Onshore Oil and Gas Operations as described in the 43 CFR part 3160.

The Operator shall submit a Sundry Notice (Form 3160-5) to the Bureau of Land Management, Roswell Field Office (address above) for approval prior to beginning any new surface-disturbing activities or operations that are not specifically addressed and approved by this APD.

A site facility diagram and a site security plan shall be filed no later than 60 calendar days following first production (Onshore Order 3, Section III, I. and 43 CFR 3162.7-5).

2. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in

order to allow for an extension of 60 days beyond the expiration date of the APD (Filing of a Sundry Notice is required for this 60 day extension).

3. JURISDICTIONAL WATERS of the U.S.

The operator shall obtain appropriate permits from the U.S. Army Corps of Engineers prior to discharge or dredge and fill material into waters of the United States in accordance with Section 404 of the Clean Water Act. Contact The U.S. Army Corps of Engineers regulatory New Mexico Branch Office, 4101 Jefferson Plaza NE, Albuquerque, NM 87109-3435 at (505) 342-3678 or Email: <u>CESPA-RD-NM@usace.army.mil</u> if you have questions.

4. ARCHAEOLOGICAL, PALEONTOLOGICAL & HISTORICAL SITES

Any cultural and/or paleontological resource discovered inadvertently by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

5. HUMAN REMAINS AND OBJECTS OF CULTURAL PATRIMONY

The operator shall comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, funerary objects, sacred objects, and objects of cultural patrimony that are discovered inadvertently during project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes.

6. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations (access road and/or well pad). Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

7. CAVE AND KARST

Any Cave or Karst feature discovered by the operator or by any person working on the operator's behalf shall immediately report the feature to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. During drilling, previously unknown cave and karst features could be encountered. If a void is encountered while drilling and a loss of circulation occurs, lost drilling fluids can directly contaminate groundwater recharge areas, aquifers, and groundwater quality. Drilling operations can also lead to sudden collapse of underground voids.

To mitigate or lessen the probability of impacts associated with the drilling and production of oil and gas wells in karst areas, the guidelines listed in Appendix 3, Practices for Oil and Gas Drilling and Production in Cave and Karst Areas, as approved in the Roswell Resource Management Plan Amendment of 1997, page AP3-4 through AP 3-7 shall be followed.

A more complete discussion of the impacts of oil and gas drilling can be found in the *Dark* Canyon Environmental Impact Statement of 1993, published by the U.S. Department of the Interior, Bureau of Land Management.

8. CONSTRUCTION

NOTIFICATION: The BLM shall administer compliance and monitor construction of the access road and well pad. Notify Natural Resource Specialist, Ricky Flores at (575) 627-0339 or the Roswell Field Office at (575) 627-0272 <u>at least three (3) working days prior to</u> <u>commencing construction of the access road and/or well pad.</u>

A complete copy of the <u>approved</u> APD and the attached Conditions of Approval (COAs) shall be kept on the well's location for reference upon inspections.

Construction over and/or immediately adjacent to existing pipelines shall be coordinated, and in accordance with, the relevant pipeline companies' policy.

Any trench left open for (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, an agency approved monitor shall walk the entire length of the open trench and remove all trapped fauna. The bottom surface of the trench will be disturbed a minimum of 2 inches in order to arouse any buried fauna. All fauna will be released a minimum of 100 yards from the trench.

For trenches left open for (8) hours or more, earthen escape ramps (built at nor more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench. Structures will also be authorized within the trench. Metal structures will not be authorized. Structures used as escape ramps will be placed at no more than a 30 degree slope and spaced no more than 500 feet apart.

9. TOPSOIL:

When saturated soil conditions exist on access roads or location, construction shall be halted until soil material dries out or is frozen sufficiently for construction to proceed without undue damage and erosion to soils, roads and locations.

Topsoil shall be stripped following removal of vegetation during construction of well pads, pipelines, roads, or other surface facilities. This shall include all growth medium - at a minimum, the upper 2-6 inches of soil - but shall also include stripping of any additional topsoil present at a site, such as indicated by color or texture. Stripping depth may be specified during the onsite inspection. Stripped topsoil shall be stored separately from subsoil or other excavated material and replaced prior to interim seedbed preparation. No topsoil shall be stripped when soils are moisture-saturated or frozen below the stripping depth.

The topsoil will not be used to construct the containment structures or earthen dikes that are on the outside boundaries of the constructed well pad, tanks, and storage facilities.

Each construction area is site specific as to topsoil depth. It is the operator's responsibility to ensure that topsoil, caliche, or spoils are not mixed together.

(**Pads**): topsoil will be stripped and stored in separate piles from the spoils pile. They can be stored on opposite or adjacent sides. If topsoil and spoils must be stored on the same pad side together they shall be no closer than toe to toe, not overlapping. Each pile shall be kept within 30 feet of the pad's side. 100% of the topsoil will be used for both interim and final reclamation. 100% of topsoil will be respread over the disturbed areas during reclamation.

(**Roads**): topsoil shall be stripped in such a way to follow the road's edge outside of the surfacing or drivable area. During final reclamation, after removal of surface material and recontouring, 100% of topsoil will be respread over the disturbed areas during reclamation. Vegetation in the topsoil will help hold re-seeding, moisture content, and reduce erosion.

10. WELL PAD SURFACING:

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational need. Surfacing of the well pad is not required. If the operator elects to surface the well pad, the surfacing material will be required to be removed at the time of reclamation.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattle guard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guard(s) that are in place and are utilized during lease operations. Gates or cattle guards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the authorized officer. A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

The operator shall notify the private surface landowner or the grazing allotment operator prior to crossing any fence(s). Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

11. PRODUCTION:

Storage ·

Fiberglass storage tanks are *not* permitted for the storage of production.

Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim reclamation and re-vegetation of the well location.

Containment Structures

All production facilities shall have a lined containment structure large enough to contain <u>110%</u> of the largest Tank (PLUS) 24 hours of production (43 CFR 3162.5-1) *Environmental Obligations*, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, <u>OIL GREEN</u> (Standard Environmental Color Chart June 2008).

Completion Report

In accordance with 43 CFR 3160, Form 3160-4 (Well Completion or Re-completion Report and Log) must be submitted to the Bureau of Land Management, Roswell Field Office within 30 days after completion of the well or producer. Copies of all open hole and cased hole logs, core descriptions, core analyses, well test data, geologic summaries, sample descriptions, formation test reports, stimulation reports, directional survey (if applicable), and all other surveys or data obtained and compiled during the drilling, completion, and/or work over operations, shall be included with Form 3160-4.

12. INTERIM RECLAMATION:

Reclamation earthwork for interim and/or final reclamation shall be completed within 6 months of well completion or well plugging (weather permitting), and shall consist of: 1) backfilling pits, 2) re-contouring and stabilizing the well site, access road, cut/fill slopes, drainage channels, utility and pipeline corridors, and all other disturbed areas, to approximately the original contour,

shape, function, and configuration that existed before construction (any compacted backfilling activities shall ensure proper spoils placement, settling, and stabilization, 3) surface ripping, prior to topsoil placement, to a depth of 18-24 inches deep on 18-24 inch centers to reduce compaction, 4) final grading and replacement of all topsoil so that no topsoil's remains in the stockpile, 5) seeding in accordance with reclamation portions of the APD and these COA's.

Any subsequent re-disturbance of interim reclamation shall be reclaimed within six (6) months by the same means described above.

Prior to conducting interim reclamation, the operator is required to:

- Submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.
- Contact BLM at least three (3) working days prior to conducting any interim reclamation activities, and prior to seeding.

During reclamation, the removal of caliche is important to increasing the success of re-vegetating the site. Removed caliche may be used in road repairs, fire walls or for building other roads and locations. In addition, in order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing re-vegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be re-vegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Use a certified noxious weed-free seed mixture. Use seed tested for viability and purity in accordance with State law(s) within nine months prior to purchase. Use a commercial seed mixture certified or registered and tagged in accordance with State law(s). Make the seed mixture labels available for BLM inspection.

SEE ATTACHED SEED MIX.		
WELL NAME	ECOSITE (ACCESS ROAD)	ECOSITE (PAD)
AJAX STATE COM #1H	SHALLOW SD-3	SHALLOW SD-3

13. SEED MIX:

14. FINAL ABANDONMENT:

A. Upon abandonment of the well a Notice of Intent for Plug and Abandonment describing plugging procedures. Followed within 30 days you shall file with this office, a Subsequent Report of Abandonment (Form 3160-5). To be included with this report is where the plugs were placed; volumes of cement used and well bore schematic as plugged.

- **B.** On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the Private Surface Land Owner agreements and a copy of the release is to be submitted upon abandonment.
- C. The Operator shall promptly plug and abandoned each newly completed, re-completed or producing well which is not capable of producing in paying quantities. No well may be temporarily abandoned for more than 30 days without prior approval from this office. When justified by the Operator, BLM may authorize additional delays, no one of which may exceed an additional 12 months. Upon removal of drilling or producing equipment form the site of a well which is to be permanently abandoned, the surface of the lands disturbed shall be reclaimed in accordance with an approved Notice of Intent for final reclamation.
- **D.** Final reclamation shall include: the removal of all solid waste, trash, surfacing materials, storage facilities and all other related equipment, flow lines, and meter housing, power poles, guy wires, and all other related power materials. All disturbed areas, i.e. cuts and fills, shall be recontoured to their original surroundings. 100% of topsoil shall be used to resurface all disturbed areas including access roads. A label of the seed mix used shall be submitted with the Final Abandonment Notice (FAN) for review once reclamation is complete.

15. PIPELINE PROTECTION REQUIREMENT:

Precautionary measures shall be taken by the operator during construction of the access road to protect existing pipelines that the access road will cross over. An earthen berm; 2 feet high by 3 feet wide and 14 feet across the access road travelway (2' X 3' X 14'), shall be constructed over existing pipelines. The operator shall be held responsible for any damage to existing pipelines. If the pipeline is ruptured and/or damaged the operator shall immediately cease construction operations and repair the pipeline. The operator shall be held liable for any unsafe construction operations that threaten human life and/or cause the destruction of equipment.

16. WILDLIFE PROTECTION MEASURES – Best Management Practices (BMPs)

COA/Stipulation for above ground pipelines

All pipelines laid on the surface will have sloped dirt berms built over them every 100 yards to allow reptiles, amphibians, small mammals, ground-dwelling birds and their broods access over them. Dirt berms should be no less than 12 inches in width and extend over all surface pipelines within the Right of Way. Berms should be maintained for the life of the project.

Wildlife Mortality - General

The operator will notify the Bureau of Land Management (BLM) authorized officer and nearest Fish and Wildlife Service (FWS) Law Enforcement office within 24 hours, if the operator discovers a dead or injured federally protected species (i.e., migratory bird species, bald or golden eagle, or species listed by the FWS as threatened or endangered) in or adjacent to a pit, trench, tank, exhaust stack, or fence. (If the operator is unable to contact the FWS Law Enforcement office, the operator must contact the nearest FWS Ecological Services office.)

1. Closed top tanks are required for any containment system. All tanks are required to have a closed top tank.

2. Chemical and Fuel Secondary Containment Systems

Chemical and Fuel Secondary Containment and Exclosure Screening – The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. Closed-top tanks are required for any secondary containment systems.

3. Open-Vent Exhaust Stacks

Open-Vent Exhaust Stack Exclosures – The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

17. WASTE, HAZARDOUS AND SOLID:

Waste materials produced during all phases of operation will be disposed of promptly in an approved manner so it will not impact the air, soil, water, vegetation or animals. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes and equipment. All liquid waste, completion fluids and drilling products associated with oil and gas operations will be contained and then removed and deposited in an approved disposal site. Portable toilets will remain on site throughout well pad construction, drilling and reclamation.

The operator and contractors shall ensure that all use, production, storage, transportation and disposal of hazardous materials, solid wastes and hazardous wastes associated with the drilling, completion and production of this well will be in accordance with all applicable existing or hereafter promulgated federal, state and local government rules, regulations and guidelines. All project related activities involving hazardous materials will be conducted in a manner to minimize potential environmental impacts. A file will be maintained onsite containing current Safety Data Sheets (SDS) for all chemicals, compounds and/or substances which are used in the course of construction, drilling, completion and production operations.

18. SURFACE WATER AND GROUNDWATER PROTECTION MEASURES – Best Management Practices (BMPs)\

A containment structure or earthen dike shall be constructed and maintained around the north, and east outside boundary of the well pad. The containment structure or earthen dike shall be constructed two (2) feet high (the containment structure or earthen dike can be constructed higher than the two (2) feet high minimum). The containment structure or earthen dike is required so that if a oilfield waste contaminant or product contaminant were leaked, spilled, and or released upon the well pad the oilfield waste contaminant from entering into the ephemeral drainage located north and east and downslope of the well pad location.



BUREAU OF LAND MANAGEMENT



Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Melanie Wilson

Title: Regulatory Analyst

Street Address: 106 W. Riverside Drive

City: Carlsbad

Zip: 88220

Signed on: 05/09/2018

Phone: (575)914-1461

Email address: nmogrservices@gmail.com

State: NM

State: OK

Field Representative

Representative Name: Eric Hanson

Street Address: PO Box 21468

City: Tulsa

Phone: (918)527-5260

Email address: erich@kfoc.net

Zip: 74121-1468



Section 1 - General

APD ID: 10400034188	Tie to previous NOS?	Submission Date: 10/05/2018
BLM Office: ROSWELL	User: Melanie Wilson	Title: Regulatory Analyst
Federal/Indian APD: FED	Is the first lease penetra	ted for production Federal or Indian? FED
Lease number: NMNM132065	Lease Acres: 1405.32	
Surface access agreement in place?	Allotted?	Reservation:
Agreement in place? NO	Federal or Indian agreen	nent:
Agreement number:		
Agreement name:		
Keep application confidential? YES		
Permitting Agent? YES	APD Operator: MARSHA	LL & WINSTON INCORPORATED
Operator letter of designation:		

Operator Info

Operator Organization Name: MARSHALL & WINSTO	N INCORPORATED
Operator Address: 6 Desta Drive, Suite 3100	7 im: 70705
Operator PO Box:	Zip. 79705
Operator City: Midland State: TX	
Operator Phone: (432)684-6373	
Operator Internet Address: sroberts@mar-win.com	
Section 2 - Well Information	
Well in Master Development Plan? NO	Mater Development Plan name:

	mater bevelopment Flan name.							
Well in Master SUPO? NO	Master SUPO name:							
Well in Master Drilling Plan? NO	Master Drilling Plan name:							
Well Name: HI BOB FEDERAL	Well Number: 1H	Well API Number:						
Field/Pool or Exploratory? Field and Pool	Field Name: ROUND TANK	Pool Name: SAN ANDRES						

Is the proposed well in an area containing other mineral resources? USEABLE WATER

Well Number: 1H

Describe other minerals:																		
Is the p	oropose	d well	in a H	elium	prod	uctio	n area?	N Use E	Existing W	ell Pa	3 ? NO	Ne	ew s	surface o	listur	bance	?	
Type of	f Well P	ad: SIN	IGLE '	WELL				Multi	Multiple Well Pad Name: Numb									
Well Cla	ass: HC	RIZON	ITAL					Numt	Number of Legs: 1									
Well Wo	ork Typ	e: Drill																
Well Ty	/pe: OIL	WELL											••					
Describ	be Well	Гуре:																
Well su	ib-Type:	EXPL	ORAT	ORY	(WILC	CAT))											
Describ	be sub-t	ype:							· · · ·	·		· .						
Distanc	Distance to town: 21 Miles Distance to nearest well: 1250 FT Distance to lease line: 330 FT																	
Reservoir well spacing assigned acres Measurement: 160 Acres																		
Well plat: HI_BOB_FED_1_C102_20180924145915.pdf																		
Well wo	Well work start Date: 11/01/2018 Duration: 30 DAYS																	
S	Section 3 - Well Location Table																	
Survey	Type: F	ECTA	NGUL	AR														
Describ	oe Surve	у Тур	e:															
Datum:	NAD83		· ·					Vertic	al Datum	NAVE	88							
Survey	numbe	: 18-12	223				•											
NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	DVT	
SHL 33 Leg #1	30 FSL	191 0	FEL	15S	29E	8	Aliquot SWSE	33.02399 4	- 104.0482 04	CHA VES	NEW MEXI CO	NEW MEXI CO	F	NMNM 132065	380 2	0	0	
KOP 33 Leg #1	30 FSL	191 0	FEL	15S	29E	8	Aliquot SWSE	33.02399 4	- 104.0483 204	CHA VES	NEW MEXI CO	NEW MEXI CO	F	NMNM 132065	954	284 8	284 8	
PPP 0 Leg #1	FNL	200 0	FEL	15S	29E	17	Aliquot NWNE	33.02316 01	- 104.0484 969	CHA VES	NEW MEXI CO	NEW MEXI CO	F	NMNM 121949	347 2	330	330	

Operator Name: MARSHALL & WINSTON INCORPORATED

Well Name: HI BOB FEDERAL

Well Number: 1H

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	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	DW	TVD
PPP Leg #1	330	FNL	200 0	FEL	15S	29E	17	Aliquot NWNE	33.02217 5	- 104.0485 02	CHA VES	NEW MEXI CO	NEW MEXI CO	F	NMNM 121949	587	344 2	321 5
EXIT Leg #1	100	FSL	200 0	FEL	15S	29E	17	Aliquot SWSE	33.00894 5	- 104.0485 39	CHA VES	NEW MEXI CO	NEW MEXI CO	F	NMNM 121949	587	854 3	321 5
BHL Leg #1	20	FSL	200 0	FEL	15S	29E	17	Aliquot SWSE	33.00872 5	- 104.0485 4	CHA VES	NEW MEXI CO	NEW MEXI CO	F	NMNM 121949	587	862 3	321 5

Page 3 of 3



Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1)" ⁽		1		$\alpha_{\rm MR}$	
2						$\frac{2}{2}$ $h = 0.00$	5.ú
3							· · · · · ·
4							* .
5							. <u></u>
6							
7	$\{i,j',j\} = \{i,j',j',j',j',j',j',j'\}$, ^a , ^a ≁a		$= \{ \phi_{0}, \phi_{1}, \dots, \phi_{d} \in \mathcal{O}_{d}^{d}, \phi_{1} \in \mathcal{O}_{d} \}$	й н _{и.} і

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M

Rating Depth: 12000

Equipment: A 3M system will be installed according to Onshore Order #2. No flex hose will be used.

Requesting Variance? NO

Verseen hypticard

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and 3000 psi high. The System may be upgraded to a higher pressure but still tested to the working pressure stated. If the system is upgraded all the components installed will be functional and tested.

Choke Diagram Attachment:

Hi_Bob_Federal_1H_choke_manifold_20181207092831.pdf

BOP Diagram Attachment:

Hi_Bob_Federal_1H_BOPE_3M_20180921112104.pdf

Operator Name: MARSHALL & WINSTON INCORPORATED

Well Name: HI BOB FEDERAL

Well Number: 1H

Section 3 - Casing

Casing ID	string Type	Hole Size	Ssg Size	Condition	standard	apered String	op Set MD	sottom Set MD	op Set TVD	sottom Set TVD	op Set MSL	sottom Set MSL	atculated casing ength MD	Brade	Veight	oint Type	Collapse SF	Burst SF	oint SF Type	oint SF	sody SF Type	3ody SF
0	0	<u> </u>	0	0	٥ ٥	Γ	μ	ш	F	<u>m</u>	F	<u>m</u>	0 =	0	>	`	0	ш	ſ	ר	ш	<u> </u>
1	SURFACE	17.5	13.375	NEW	API	N	0	225	0	225			225	H-40	48	STC	8.56	11.5 6	DRY	6.35	DRY	6.35
2	INTERMED IATE	12.2 5	9.625	NEW	API	N	0	2800	0	2800			2800	L-80	40	LTC	2.4	7.5	DRY	6.5	DRY	6.5
3	PRODUCTI ON	8.75	5.5	NEW	API	N	0	8623	0	3215			8623	HCP -110	17	OTHER - GBCD	6.58	8.17	DRY	5.75	DRY	5.75

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Hi_Bob_Federal_1H_Casing_Assumptions_20181206073001.pdf

Casing Attachments

Casing ID: 2 String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Hi_Bob_Federal_1H_Casing_Assumptions_20181206073110.pdf

Casing ID: 3 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Hi_Bob_Federal_1H_5.5_17_HCP110_Data_Sheet_20181005063144.pdf

Hi_Bob_Federal_1H_Casing_Assumptions_20181206073129.pdf

			• •	!							
String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	225	250	1.34	14.8	335	100	Class C	Calcium Chloride

Section 4 - Cement

INTERMEDIATE	Lead	0	2800	540	1.97	12.9	1064	50	Class C	KolSeal
INTERMEDIATE	Tail	0	2800	200	1.32	14.8	264	50	Class C	none

Operator Name: MARSHALL & WINSTON INCORPORATED

Well Name: HI BOB FEDERAL

Well Number: 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	8623	510	2.11	12.5	1076	50	Class C	Kol Seal
PRODUCTION	Tail		0	8623	1350	1.41	14	1904	50	Class C	Kol Seal

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Top Depth	Bottom Depth	Mud Type	Min Weight (Ibs/gal)	Max Weight (Ibs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	Hd	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
2800	8623	OTHER : Cut Brine	10	10.5							
225	2800	OTHER : BRINE	8.7	9						-	
0	225	OTHER : FRESH WATER	9	9.6							

Circulating Medium Table

Operator Name: MARSHALL & WINSTON INCORPORATED

Well Name: HI BOB FEDERAL

Well Number: 1H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures: None planned

List of open and cased hole logs run in the well:

DS,GR,MUDLOG

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 1600

Anticipated Surface Pressure: 892.7

Anticipated Bottom Hole Temperature(F): 100

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Hi_Bob_Federal_1_H2S_Contingency_Plan_20181005080017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Hi_Bob_Federal_1H_Directional_Survey_20180926095135.pdf

Other proposed operations facets description:

Gas Capture Plan attached

Intermediate Casing Contingency Plan attached

Other proposed operations facets attachment:

Hi_Bob_Federal_1H_GCP_20180925125041.pdf

Other Variance attachment:

Hi_Bob_Federal_1H_Int_csg_contingency_20181005101447.pdf

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5M CHOKE MANIFOLD ARRANGEMENT





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MARSHALL & WINSTON INC. Hi Bob Federal 1H Casing Assumptions

													Anticipated	Max Pore			Body	Joint
		Casing	Weight				Hole	TVD	Mud	Mud Weight Hole	Depth	Fluid	Mud Weight	Pressure	Collapse	Burst	Tensile	Tensile
Interval	Length	Size	(#/ft)	Grade	Thread	Condition	Size	(ft)	Туре	Control		Loss	(ppg)	(psi)	(psi)	(psi)	Strength	Strength
Surface	225	13-3/8"	48	H40	STC	New	17-1/2"	225	FW	9.0 - 9.6	225'	NC	9.6	112	740	1730	352000	352000
* Intermediate	2800	9-5/8"	40	L80	LTC	New	12-1/4"	2800	Brine	8.7 - 9.0	2800'	NC	9.0	1310	3090	9860	727000	727000
Production	8623	5-1/2"	17	HPC110	GBCD	New	8-3/4"	3215	СВ	10.0 - 10.5	8623'	NC	10.1	1689	8580	10640	445000	445000

* Intermediate casing will only be run if water flow is encountered while drilling 8 3/4" hole.

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PRECISION Keeping You Connected. Precision Connections	BK				
5.5 in. 17 lb/ft HC-P11	10 with 6	5.05 in. (Coupling OD		NECTIONS
Pipe Body			Connection		
Nominal OD	5.500	inches	Coupling OD	6.050	inches
Nominal Weight	17.00	lb/ft	Coupling Length	8.250	inches
Wall Thickness	0.304	inches	Make Up Loss	4.125	inches
Plain End Weight	16.87	lb/ft	Critical Section Area	6.031	in²
Drift	4.767	inches	Internal Pressure Ratin	g 100%	
Nominal ID	4.892	inches	External Pressure Ratir	ig 100%	
Grade	HC-P110		Tension Efficiency	100%	
Min Yield	110,000	lbf/in²	Connection Strength	546	kips
Min Tensile	125,000	lbf/in²	Compression Efficienc	y 100%	
Critical Section Area	4.962	in²	Uniaxial Bend Rating	83.4	° / 100 ft
Pipe Body Yield Strength	546	kips	Min Make Up Torque	4,450	ft-lbs
Min Internal Yield Pressure	10,640	psi	Yield Torque	17,100	ft-lbs 🚺
Collapse Pressure	8,730	psi		4.1	
				V1.Z	//20/20

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MARSHALL & WINSTON INC. Hi Bob Federal 1H Casing Assumptions

													Anticipated	Max Pore		ľ i	Body	Joint
		Casing	Weight				Hole	TVD	Mud	Mud Weight Hole	Depth	Fluid	Mud Weight	Pressure	Collapse	Burst	Tensile	Tensile
Interval	Length	Size	(#/ft)	Grade	Thread	Condition	Size	(ft)	Type	Control		Loss	(ppg)	(psi)	(psi)	(psi)	Strength	Strength
Surface	225	13-3/8"	48	H40	STC	New	17-1/2"	225	FW	9.0 - 9.6	225'	NC	9.6	112	740	1730	352000	352000
* Intermediate	2800	9-5/8"	40	L80	LTC	New	12-1/4"	2800	Brine	8.7 - 9.0	2800'	NC	9.0	1310	3090	9860	727000	727000
Production	8623	5-1/2"	17	HPC110	GBCD	New	8-3/4"	3215	СВ	10.0 - 10.5	8623'	NC	10.1	1689	8580	10640	445000	445000

* Intermediate casing will only be run if water flow is encountered while drilling 8 3/4" hole.

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MARSHALL & WINSTON INC. Hi Bob Federal 1H Casing Assumptions

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													Anticipated	Max Pore			Body	Joint
		Casing	Weight				Hole	TVD	Mud	Mud Weight Hole	Depth	Fluid	Mud Weight	Pressure	Collapse	Burst	Tensile	Tensile
Interval	Length	Size	(#/ft)	Grade	Thread	Condition	Size	(ft)	Туре	Control		Loss	(ppg)	(psi)	(psi)	(psi)	Strength	Strength
Surface	225	13-3/8"	48	H40	STC	New	17-1/2"	225	FW	9.0 - 9.6	225'	NC	9.6	112	740	1730	352000	352000
* Intermediate	2800	9-5/8"	40	L80	LTC	New	12-1/4"	2800	Brine	8.7 - 9.0	2800'	NC	9.0	1310	3090	9860	727000	727000
Production	8623	5-1/2"	17	HPC110	GBCD	New	8-3/4"	3215	СВ	10.0 - 10.5	8623'	NC	10.1	1689	8580	10640	445000	445000

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* Intermediate casing will only be run if water flow is encountered while drilling 8 3/4" hole.

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CONTINGENCY PLAN

Marshall and Winston Inc.

Hi Bob Federal Lease

Section 8, Township 15-S, Range 29-E Chaves County, New Mexico

Prepared For: Date Prepared: Prepared By:

Marshall and Winston, Inc. September 28, 2018 INDIAN Fire & Safety, A DXP Company

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HYDROGEN SULFIDE CONTINGENCY PLAN

SCOPE

THIS CONTINGENCY PLAN ESTABLISHES GUIDELINES FOR THE PUBLIC, ALL COMPANY EMPLOYEES WHO'S WORK ACTIVITIES MAY INVOLVE EXPOSURE TO HYDROGEN SULFIDE (H2S) GAS.

OBJECTIVE

- 1. PREVENT ANY AND ALL ACCIDENTS, AND PREVENT THE UNCONTROLLED RELEASE OF HYDROGEN SULFIDE INTO THE ATMOSPHERE.
- 2. PROVIDE PROPER EVACUATION PROCEDURES TO COPE WITH EMERGENCIES.
- 3. PROVIDE IMMEDIATE AND ADEQUATE MEDICAL ATTENTION SHOULD AN INJURY OCCUR.

DISCUSSION

GEOLOGICAL PROGNOSIS

- IMPLEMENTATION:THIS PLAN WITH ALL DETAILS IS TO BE FULLY
IMPLEMENTED BEFORE DRILLING TO
PRODUCTION CASING POINT.
- EMERGENCY RESPONSETHIS SECTION OUTLINES THE CONDITIONSPROCEDURE:AND DENOTES STEPS TO BE TAKEN IN THE
EVENT OF AN EMERGENCY.
- EMERGENCY EQUIPMENT THIS SECTION OUTLINES THE SAFETY AND PROCEDURE: EMERGENCY EQUIPMENT THAT WILL BE REQUIRED FOR THE DRILLING OF THIS WELLS.
- TRAINING PROVISIONS: THIS SECTION OUTLINES THE TRAINING PROVISIONS THAT MUST BE ADHERED TO PRIOR TO DRILLING <u>TO PRODUCTION</u> <u>CASING POINT</u>.
- DRILLING EMERGENCYINCLUDED ARE THE TELEPHONE NUMBERSCALL LISTS:OF ALL PERSONS TO BE CONTACTEDSHOULD AN EMERGENCY EXIST.
- BRIEFING: THIS SECTION DEALS WITH THE BRIEFING OF ALL PEOPLE INVOLVED IN THE DRILLING OPERATION.

PUBLIC SAFETY:

CHECK LISTS:

GENERAL INFORMATION: A

STATUS CHECK LISTS AND PROCEDURAL CHECK LISTS HAVE BEEN INCLUDED TO INSURE ADHERENCE TO THE PLAN.

PUBLIC SAFETY PERSONNEL WILL BE MADE

AWARE OF THE DRILLING OF THIS WELL.

I: A GENERAL INFORMATION SECTION HAS BEEN INCLUDED TO SUPPLY SUPPORT INFORMATION.

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EMERGENCY PROCEDURES

- A. IN THE EVENT OF ANY EVIDENCE OF H2S LEVEL ABOVE 10 PPM, TAKE THE FOLLOWING STEPS:
 - 1. SECURE BREATHING EQUIPMENT.
 - 2. ORDER NON-ESSENTIAL PERSONNEL OUT OF DANGER ZONE.
 - 3. TAKE STEPS TO DETERMINE IF THE H2S LEVEL CAN BE CORRECTED OR SUPPRESSED AND, IF SO, PROCEED IN NORMAL OPERATION.
- B. IF UNCONTROLLABLE CONDITIONS OCCUR:
 - 1. TAKE STEPS TO PROTECT AND/OR REMOVE ANY PUBLIC IN THE DOWN-WIND AREA FROM THE RIG – PARTIAL EVACUATION AND ISOLATION. NOTIFY NECESSARY PUBLIC SAFETY PERSONNEL AND THE OCD OF NEW MEXICO.
 - 2. REMOVE ALL PERSONNEL TO A SAFE BREATHING AREA.
 - 3. NOTIFY PUBLIC SAFETY PERSONNEL OF THE SAFE AREA.
 - 4. PROCEED WITH BEST PLAN (AT THE TIME) TO REGAIN CONTROL OF THE WELL. MAINTAIN TIGHT SECURITY AND SAFETY PROCEDURES.
- C. RESPONSIBILITY:
 - 1. DESIGNATED PERSONNEL.
 - a. SHALL BE RESPONSIBLE FOR THE TOTAL IMPLEMENTATION OF THIS PLAN.
 - b. SHALL BE IN COMPLETE COMMAND DURING ANY EMERGENCY.

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- c. SHALL DESIGNATE A BACK-UP.
- d.

EMERGENCY PROCEDURES

*(Procedures are the same for both Drilling and Tripping)

ALL PERSONNEL:	1. 2. 3. 4.	ON ALARM, DON ESCAPE UNIT AND REPORT TO UP WIND BRIEFING AREA. CHECK STATUS OF PERSONNEL (BUDDY SYSTEM). SECURE BREATHING EQUIPMENT. AWAIT ORDERS FROM SUPERVISOR.
DRILLING FOREMAN:	1. 2.	REPORT TO UP WIND BRIEFING AREA. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH TOOL PUSHER OR DRILLER (BUDDY SYSTEM).
	3. 4.	DETERMINE H2S CONCENTRATIONS. ASSESS SITUATION AND TAKE CONTROL MEASURES.
TOOL PUSHER:	1. 2. 3. 4.	REPORT TO UP WIND BRIEFING AREA. DON BREATHING EQUIPMENT AND RETURN TO POINT OF RELEASE WITH DRILLING FOREMAN OR DRILLER (BUDDY SYSTEM). DETERMINE H2S CONCENTRATION. ASSESS SITUATION AND TAKE CONTROL MEASURES.
DRILLER:	1.	DON ESCAPE UNIT.
	2. 2	CHECK MONITOR FOR POINT OF RELEASE.
	э. Л	CHECK STATUS OF DEDSONNIEL (DI AN
	4.	ATTEMPT TO RESCUE, USE THE BUDDY SYSTEM).
	5.	ASSIGNS LEAST ESSENTIAL PERSON TO NOTIFY DRILLING FOREMAN AND TOOL PUSHER BY QUICKEST MEANS IN CASE OF THEIR ABSENCE
	6.	ASSUMES THE RESPONSIBILITIES OF THE DRILLING FORMAN AND TOOL PUSHER UNTIL THEY ARRIVE SHOULD THEY BE ABSENT.

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EMERGENCY PROCEDURES

DERRICK MAN FLOOR MAN #1 FLOOR MAN #2	1.	WILL REMAIN IN BRIEFING AREA UNTIL INSTRUCTED BY SUPERVISOR.
MUD ENGINEER:	1. 2.	REPORT TO BRIEFING AREA. WHEN INSTRUCTED, BEGIN CHECK OF MUD FOR PH AND H2S LEVEL. (GARETT GAS TRAIN.)
SAFETY PERSONNEL:	1.	MASK UP AND CHECK STATUS OF ALL PERSONNEL AND SECURE OPERATIONS AS INSTRUCTED BY DRILLING FOREMAN AND REPORT TO BRIEFING AREA.

TAKING A KICK

WHEN TAKING A KICK DURING AN H2S EMERGENCY, ALL PERSONNEL WILL FOLLOW STANDARD BOP PROCEDURES AFTER REPORTING TO BRIEFING AREA AND MASKING UP.

OPEN-HOLE LOGGING

ALL UNNECESSARY PERSONNEL STAY OFF THE RIG FLOOR. DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD MONITOR CONDITION, ADVISE STATUS AND DETERMINE NEED FOR USE OF AIR EQUIPMENT.

RUNNING CASING OR PLUGGING

FOLLOWING THE SAME "TRIPPING" PROCEDURE AS ABOVE, DRILLING FOREMAN AND SAFETY PERSONNEL SHOULD DETERMINE IF ALL PERSONNEL HAVE ACCESS TO PROTECTIVE EQUIPMENT.

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IGNITION PROCEDURES

THE DECISION TO IGNITE THE WELL IS THE RESPONSIBILITY OF COMPANY FOREMAN. IN THE EVENT HE IS INCAPACITATED, IT BECOMES THE RESPONSIBILITY OF THE CONTRACT RIG TOOL PUSHER. THE DECISION SHOULD BE MADE ONLY AS A LAST RESORT AND IN A SITUATION WHERE IT IS CLEAR THAT:

- 1. HUMAN LIFE AND PROPERTY ARE ENDANGERED.
- 2. THERE IS NO HOPE CONTROLLING THE BLOWOUT UNDER THE PREVAILING CONDITIONS AT THE WELL.

NOTIFY THE DISTRICT OFFICE IF TIME PERMITS, BUT DO NOT DELAY IF HUMAN LIFE IS IN DANGER.

INITIATE FIRST PHASE OF EVACUATION PLAN.

IGNITION PROCEDURES

INSTRUCTIONS FOR IGNITING THE WELL

- 1. TWO PEOPLE ARE REQUIRED FOR THE ACTUAL IGNITING OPERATION. THEY MUST WEAR SELF-CONTAINED BREATHING UNITS AND HAVE SAFETY ROPE ATTACHED. ONE MAN (TOOL PUSHER OR SAFETY ENGINEER) WILL CHECK THE ATMOSPHERE FOR EXPLOSIVE GASES WITH THE EXPLOSIMETER. THE OTHER MAN (DRILLING FOREMAN) IS RESPONSIBLE FOR IGNITING THE WELL.
- 2. PRIMARY METHOD TO IGNITE: 25 MM FLARE GUN WITH RANGE OF APPROXIMATELY 500 FEET.
- 3. IGNITE UP WIND AND DO NOT APPROACH ANY CLOSER THAN IS WARRANTED.
- 4. SELECT THE IGNITION SITE BEST FOR PROTECTION, AND WHICH OFFERS AN EASY ESCAPE ROUTE.
- 5. BEFORE FIRING, CHECK FOR PRESENCE OF COMBUSTIBLE GAS.
- 6. AFTER LIGHTING, CONTINUE EMERGENCY ACTION AND PROCEDURE AS BEFORE.
- 7. ALL UNASSIGNED PERSONNEL WILL LIMIT THEIR ACTIONS TO THOSE DIRECTED BY THE DRILLING FOREMAN.

<u>REMEMBER</u>: AFTER WELL IS IGNITED, BURNING HYDROGEN SULFIDE WILL CONVERT TO SULFUR DIOXIDE, WHICH IS ALSO HIGHLY TOXIC. <u>DO NOT ASSUME</u> <u>THE AREA IS SAFE AFTER THE WELL IS IGNITED.</u>

TRAINING REQUIREMENTS

WHEN WORKING IN AN AREA WHERE HYDROGEN SULFIDE GAS (H2S) MIGHT BE ENCOUNTERED, DEFINITE TRAINING REQUIREMENTS MUST BE CARRIED OUT. ALL COMPANIES WILL INSURE THAT ALL PERSONNEL AT THE WELL SITE WILL HAVE HAD ADEQUATE TRAINING IN THE FOLLOWING:

- 1. HAZARDS AND CHARACTERISTICS OF H2S.
- 2. PHYSICAL EFFECTS OF HYDROGEN SULFIDE ON THE HUMAN BODY.
- 3. TOXICITY OF HYDROGEN SULFIDE AND SULFUR DIOXIDE.
- 4. H2S DETECTION.
- 5. EMERGENCY RESCUE.
- 6. RESUSCITATORS.
- 7. FIRST AID AND ARTIFICIAL RESPIRATION.
- 8. EFFECTS OF H2S ON METALS.
- 9. LOCATION SAFETY.

SERVICE COMPANY AND VISITING PERSONNEL

- A. EACH SERVICE COMPANY THAT WILL BE ON THIS WELL WILL BE NOTIFIED IF THE ZONE CONTAINS H2S.
- B. EACH SERVICE COMPANY MUST PROVIDE FOR THE TRAINING AND EQUIPMENT OF THEIR EMPLOYEES BEFORE THEY ARRIVE AT THE WELL SITE.
- C. EACH SERVICE COMPANY WILL BE EXPECTED TO ATTEND A WELL SITE BRIEFING.

EMERGENCY EQUIPMENT REQUIREMENTS

1. <u>SIGNS</u>

A. ONE SIGN LOCATED AT LOCATION ENTRANCE WITH THE FOLLOWING LANGUAGE:

CAUTION – POTENTIAL POISON GAS HYDROGEN SULFIDE NO ADMITTANCE WITHOUT AUTHORIZATION

2. WIND SOCK – WIND STREAMERS

- A. ONE 36" (IN LENGTH) WIND SOCK LOCATED AT PROTECTION CENTER, AT HEIGHT VISIBLE FROM RIG FLOOR.
- B. ONE 36' (IN LENGTH) WIND SOCK LOCATED AT HEIGHT VISIBLE FROM PIT AREAS.

3. <u>HYDROGEN SULFIDE DETECTOR AND ALARMS</u>

- A. H2S MONITORS WITH ALARMS WILL BE LOCATED ON THE RIG FLOOR, AT THE BELL NIPPLE, AND AT THE FLOW LINE. THESE MONITORS WILL BE SET TO ALARM AT 10 PPM WITH RED LIGHT, AND TO ALARM AT 15 PPM WITH RED LIGHT AND AUDIBLE ALARM.
- B. H2S MONITOR TESTER.
- 4. <u>CONDITION FLAGS</u>

A. ONE EACH OF GREEN, YELLOW, AND RED CONDITION FLAGS TO BE DISPLAYED TO DENOTE CONDITIONS.

GREEN – NORMAL CONDITIONS YELLOW – POTENTIAL DANGER RED – DANGER, H2S PRESENT

B. CONDITION FLAG SHALL BE POSTED AT LOCATION SIGN ENTRANCE.

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EMERGENCY EQUIPMENT REQUIREMENTS

5. AUXILIARY RESCUE EQUIPMENT

- A. STRETCHER
- B. 100' LENGTH OF 5/8" NYLON ROPE.

6. <u>MUD INSPECTION DEVICES</u>

GARRETT GAS TRAIN, OR HACH TESTER FOR INSPECTION OF SULFIDE CONCENTRATION IN MUD SYSTEM.

7. FIRE EXTINGUISHER

ADEQUATE FIRE EXTINGUISHERS SHALL BE LOCATED AT STRATEGIC LOCATIONS.

8. BLOW OUT PREVENTION EQUIPMENT

THE WELL SHALL HAVE HYDRAULIC BOP EQUIPMENT FOR THE ANTICIPATED BHP OF 1500 PSI. EQUIPMENT IS TO BE TESTED ON INSTALLATION.

9. <u>COMBUSTIBLE GAS DETECTOR</u>

THERE SHALL BE ONE COMBUSTIBLE GAS DETECTOR ON LOCATION AT ALL TIMES.

10. <u>BOP TESTING</u>

BOP AND CHOKE LINE AND KILL LINE WILL BE TESTED.

11. AUDIO SYSTEM

RADIO COMMUNICATION WILL BE AVAILABLE AT THE RIG.

- A. RIG FLOOR OR TRAILER
- B. VEHICLE

12. SPECIAL CONTROL EQUIPMENT

- A. HYDRAULIC BOP EQUIPMENT WITH REMOTE CONTROL ON GROUND.
- B. ROTATING HEAD

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EMERGENCY EQUIPMENT REQUIREMENTS

13. EVACUATION PLAN

EVACUATION ROUTES SHOULD BE ESTABLISHED PRIOR TO SPUDDING EACH WELL AND DISCUSSED WITH ALL RIG PERSONNEL.

14. DESIGNATED AREA

- A. **PARKING AND VISITOR AREA:** ALL VEHICLES ARE TO BE PARKED AT A PREDETERMINED SAFE DISTANCE FROM THE WELLHEAD. THIS WILL BE THE DESIGNATED SMOKING AREA.
- B. TWO BRIEFING AREAS ON EITHER SIDE OF THE LOCATION AT THE MAXIMUM ALLOWABLE DISTANCE FROM THE WELL BORE SO THEY OFFSET PREVAILING WINDS PERPENDICULARLY, OR AT A 45-DEGREE ANGLE IF WIND DIRECTION TENDS TO SHIFT IN THE AREA.
- C. PROTECTION CENTERS OR IF A MOVABLE TRAILER IS USED, IT SHOULD BE KEPT UPWIND OF EXISTING WINDS. WHEN WIND IS FROM THE PREVAILING DIRECTIONS, BOTH PROTECTION CENTERS SHOULD BE ACCESSIBLE.

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	STATUS CHECK LIST
NOTE:	ALL ITEMS ON THIS LIST MUST BE COMPLETED BEFORE DRILLING TO PRODUCTION CASING POINT .
1.	SIGN AT LOCATION ENTRANCE.
2.	TWO (2) WIND SOCKS LOCATED AS REQUIRED.
3.	TWO (2) 30-MINUTE POSITIVE PRESSURE AIR PACKS ON LOCATION FOR RIG PERSONNEL AND/OR MUD LOGGERS.
4.	AIR PACK INSPECTED FOR READY USE.
5.	CASCADE SYSTEM AND HOSE LINE HOOK-UP.
6.	CASCADE SYSTEM FOR REFILLING AIR BOTTLES.
7.	SAFE BREATHING AREAS SET UP.
8.	CONDITION FLAG ON LOCATION AND READY FOR USE.
9.	H2S DETECTION SYSTEM HOOKED UP.
10.	H2S ALARM SYSTEM HOOKED UP AND READY.
11 .	OXYGEN RESUSCITATOR ON LOCATION AND TESTED FOR USE.
12.	STRETCHER ON LOCATION AT SAFETY TRAILER.
13.	1 – 100' LENGTH OF NYLON ROPE ON LOCATION.
14.	ALL RIG CREW AND SUPERVISORS TRAINED AS REQUIRED.
15.	ALL OUTSIDE SERVICE CONTRACTORS ADVISED OF POTENTIAL H2S HAZARD ON WELL.
16.	NO SMOKING SIGN POSTED.

CHECKED BY:	DATE:	
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PROCEDURAL CHECK LIST

PERFORM EACH TOUR:

- 1. CHECK FIRE EXTINGUISHERS TO SEE THAT THEY HAVE THE PROPER CHARGE.
- 2. CHECK BREATHING EQUIPMENT TO ENSURE THAT IT HAS NOT BEEN TAMPERED WITH.
- 3. MAKE SURE ALL THE H2S DETECTION SYSTEM IS OPERATIVE.

PERFORM EACH WEEK:

1. CHECK EACH PIECE OF BREATHING EQUIPMENT TO MAKE SURE THAT DEMAND REGULATOR IS WORKING. THIS REQUIRES THAT THE BOTTLE BE OPENED AND THE MASK ASSEMBLY BE PUT ON TIGHT ENOUGH SO THAT WHEN YOU INHALE, YOU RECEIVE AIR.

- 2. BLOW OUT PREVENTER SKILLS.
- 3. CHECK SUPPLY PRESSURE ON BOP ACCUMULATOR STAND BY SOURCE.
- 4. CHECK ALL SKA-PAC UNITS FOR OPERATION: DEMAND REGULATOR, ESCAPE BOTTLE AIR VOLUMES, SUPPLY BOTTLE OF AIR VOLUME.
- 5. CHECK BREATHING EQUIPMENT MASK ASSEMBLY TO SEE THAT STRAPS ARE LOOSENED AND TURNED BACK, READY TO PUT ON.
- 6. CHECK PRESSURE ON BREATHING EQUIPMENT AIR BOTTLES TO MAKE SURE THEY ARE CHARGED TO FULL VOLUME.
- 7. CONFIRM PRESSURE ON ALL SUPPLY AIR BOTTLES.
- 8. PERFORM BREATHING EQUIPMENT DRILLS WITH ON-SITE PERSONNEL.
- 9. CHECK THE FOLLOWING SUPPLIES FOR AVAILABILITY.
- A. EMERGENCY TELEPHONE LIST.

GENERAL EVACUATION PLAN

THE DIRECT LINES OF ACTION PREPARED BY **DXP** / **INDIAN FIRE & SAFETY, INC.** TO PROTECT THE PUBLIC FROM HAZARDOUS GAS SITUATIONS ARE AS FOLLOWS:

1. WHEN THE COMPANY APPROVED SUPERVISOR (DRILLING FOREMAN, CONSULTANT, RIG PUSHER, OR DRILLER) DETERMINES THE H2S GAS CANNOT BE LIMITED TO THE WELL LOCATION AND THE PUBLIC WILL BE INVOLVED, HE WILL ACTIVATE THE EVACUATION PLAN. ESCAPE ROUTES ARE NOTED ON AREA MAP.

2. "COMPANY MAN" OR DESIGNEE WILL NOTIFY LOCAL GOVERNMENT AGENCY THAT A HAZARDOUS CONDITION EXISTS AND EVACUATION NEEDS TO BE IMPLEMENTED.

3. COMPANY SAFETY PERSONNEL THAT HAVE BEEN TRAINED IN THE USE OF H2S DETECTION EQUIPMENT AND SELF-CONTAINED BREATHING EQUIPMENT WILL MONITOR H2S CONCENTRATIONS, WIND DIRECTIONS, AND AREA OF EXPOSURE. THEY WILL DELINEATE THE OUTER PERIMETER OF THE HAZARDOUS GAS AREA. EXTENSION TO THE EVACUATION AREA WILL BE DETERMINED FROM INFORMATION GATHERED.

4. LAW ENFORCEMENT PERSONNEL (STATE POLICE, POLICE DEPT., FIRE DEPT., AND SHERIFF'S DEPT.), WILL BE CALLED TO AID IN SETTING UP AND MAINTAINING ROAD BLOCKS. ALSO, THEY WILL AID IN EVACUATION OF THE PUBLIC IF NECESSARY.

IMPORTANT: LAW ENFORCEMENT PERSONNEL WILL NOT BE ASKED TO COME INTO A CONTAMINATED AREA. THEIR ASSISTANCE WILL BE LIMITED TO UNCONTAMINATED AREAS. CONSTANT PHONE CONTACT WILL BE MAINTAINED WITH THEM.

5. AFTER THE DISCHARGE OF GAS HAS BEEN CONTROLLED, COMPANY SAFETY PERSONNEL WILL DETERMINE WHEN THE AREA IS SAFE FOR RE-ENTRY.

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EMERGENCY ACTIONS

WELL BLOWOUT – IF EMERGENCY

- 1. EVACUATE ALL PERSONNEL IF POSSIBLE.
- 2. IF SOUR GAS EVACUATE RIG PERSONNEL.
- 3. IF SOUR GAS EVACUATE PUBLIC WITHIN 3000 FT RADIUS OF EXPOSURE.
- 4. DON SCBA AND RESCUE ANY PERSON(S) OVER COME BY H2S.
- 5. CALL 911 FOR EMERGENCY HELP (FIRE DEPT AND AMBULANCE) AND NOTIFY SR. DRILLING FOREMAN AND DISTRICT FOREMAN.
- 6. GIVE FIRST AID.

PERSON DOWN LOCATION/FACILITY

- 1. IF IMMEDIATELY POSSIBLE, CONTACT 911. GIVE LOCATION AND WAIT FOR CONFIRMATION.
- 2. DON SCBA AND RESCUE PERSON(S) "DOWN" FROM H2S.
- 3. REMOVE TO FRESH AIR.
- 4. REMOVE OUTTER CLOTHING (GAS IS TRAPPED IN CLOTHING)
- 5. IF CPR IS NEEDED, REMEMBER THE VICTIM INHALED H2S, HE WILL ALSO EX-HALE H2S.

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EMERGENCY PHONE LIST

GOVERNMENTAL AGENCIES

Chaves County Sheriff's Office Non emergency	575-624-6500	911
<u>Fire Department</u> Roswell - Non-emergency	575-624-6800	911
State Police Department - Roswell Non-emergency	575-622-7200	911
Hospital Lovelace Regional - Roswell	575-627-7000	
Bureau of Land Management	575-887-6544	
New Mexico Oil Conservation	575-393-6161	
Indian Fire & Safety, Inc 24 Hour Emergency & Haz Mat	575-393-3093 800-530-8693	

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EMERGENECY CONTACT LIST

Marshall and Winston.

Office		432-684-6373
Todd Passmore	Operations Manager	432-894-0165
Travis Flemmons	Operations Superintendent	575-631-0906
Stephen Garcia	Onsite Operations Consultant	806-790-8286

Indian Fire & Safety, Inc. 3317 W. County Road 505-393-3093 - office 800-530-8693 – toll free 505-392-6274 – fax

Personnel Contact List

Cell Phone

1

Melvin Scott	575-602-8924	Dispatch
Joe Spurgeon	806-215-1087	General Manager
Scott Dudenhoeffer	575-631-9753	Operations Manager
Sam Abney	575- 631-9712	Senior Supervisor
Fabian Lopez	575-513-4688	Weekend on call

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TOXIC EFFECTS OF HYDROGEN SULFIDE

HYDROGEN SULFIDE IS EXTREMELY TOXIC. THE ACCEPTABLE CEILING CONCENTRATION FOR EIGHT-HOUR EXPOSURE IS 10 PPM, WHICH IS .001% BY VOLUME. HYDROGEN SULFIDE IS HEAVIER THAN AIR (SPECIFIC GRAVITY – 1.192) AND COLORLESS. IT FORMS AN EXPLOSIVE MIXTURE WITH AIR BETWEEN 4.3 AND 46.0 PERCENT BY VOLUME. HYDROGEN SULFIDE IS ALMOST AS TOXIC AS HYDROGEN CYANIDE AND IS BETWEEN FIVE AND SIX TIMES MORE TOXIC THAN CARBON MONOXIDE. TOXICITY DATA FOR HYDROGEN SULFIDE AND VARIOUS OTHER GASES ARE COMPARED IN TABLE I. PHYSICAL EFFECTS AT VARIOUS HYDROGEN SULFIDE EXPOSURE LEVELS ARE SHOWN IN TABLE II.

TABLE I TOXICITY OF VARIOUS GASES

COMMON	CHEMICAL	SPECIFIC	THRESHOLD	HAZARDOUS	LETHAL
NAME	FORMULA	GRAVITY	LIMIT	LIMIT	CONCENTRATION
		(SC=1)	(1)	(2)	(3)
HYDROGEN	HCN	0.94	10 PPM	150 PPM/HR	300 PPM
CYANIDE					
HYDROGEN	H2S	1.18	10 PPM	250 PPM/HR	600 PPM
SULFIDE					
SULFUR	SO2	2.21	5 PPM	-	1000 PPM
DIOXIDE					
CHLORINE	CL2	2.45	1 PPM	4 PPM/HR	1000 PPM
CARBON	CO	0.97	50 PPM	400 PPM/HR	1000 PPM
MONOXIDE					
CARBON	CO2	1.52	5000 PPM	5%	10%
DIOXIDE					
METHANE	CH4	0.55	90,000 PPM	COMBUSTIBLI	E ABOVE 5% IN AIR

1) THRESHOLD LIMIT – CONCENTRATION AT WHICH IT IS BELIEVED THAT ALL WORKERS MAY BE REPEATEDLY EXPOSED DAY AFTER DAY WITHOUT ADVERSE EFFECTS.

2) HAZARDOUS LIMIT – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

3) LETHAL CONCENTRATION – CONCENTRATION THAT WILL CAUSE DEATH WITH SHORT-TERM EXPOSURE.

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TOXIC EFFECTS OF HYDROGEN SULFIDE

TABLE IIPHYSICAL EFFECTS OF HYDROGEN SULFIDE

		CONCENTRATION	PHYSICAL EFFECTS
PERCENT (%)	<u>PPM</u>	GRAINS	
		<u>100 STD. FT3*</u>	
0.001	<10	00.65	Obvious and unpleasant odor.
0.002	10	01.30	Safe for 8 hours of exposure.
0.010	100	06.48	Kill smell in $3 - 15$ minutes. May sting eyes and throat.
0.020	200	12.96	Kills smell shortly; Stings eyes and throat.
0.050	500	32.96	Dizziness; Breathing ceases in a few minutes; Needs prompt artificial respiration.
0.070	700	45.36	Unconscious quickly; Death will result if not rescued promptly.
0.100	1000	64.30	Unconscious at once; Followed by death within minutes.

*AT 15.00 PSIA AND 60'F.

USE OF SELF-CONTAINED BREATHING EQUIPMENT

1. WRITTEN PROCEDURES SHALL BE PREPARED COVERING SAFE USE OF SCBA'S IN DANGEROUS ATMOSPHERE, WHICH MIGHT BE ENCOUNTERED IN NORMAL OPERATIONS OR IN EMERGENCIES. PERSONNEL SHALL BE FAMILIAR WITH THESE PROCEDURES AND THE AVAILABLE SCBA.

2. SCBA'S SHALL BE INSPECTED FREQUENTLY AT RANDOM TO INSURE THAT THEY ARE PROPERLY USED, CLEANED, AND MAINTAINED.

- 3. ANYONE WHO MAY USE THE SCBA'S SHALL BE TRAINED IN HOW TO INSURE PROPER FACE-PIECE TO FACE SEAL. THEY SHALL WEAR SCBA'S IN NORMAL AIR AND THEN WEAR THEM IN A TEST ATMOSPHERE. (NOTE: SUCH ITEMS AS FACIAL HAIR {BEARD OR SIDEBURNS} AND EYEGLASSES WILL NOT ALLOW PROPER SEAL.) ANYONE THAT MAY BE REASONABLY EXPECTED TO WEAR SCBA'S SHOULD HAVE THESE ITEMS REMOVED BEFORE ENTERING A TOXIC ATMOSPHERE. A SPECIAL MASK MUST BE OBTAINED FOR ANYONE WHO MUST WEAR EYEGLASSES OR CONTACT LENSES.
- 4. MAINTENANCE AND CARE OF SCBA'S:

A. A PROGRAM FOR MAINTENANCE AND CARE OF SCBA'S SHALL INCLUDE THE FOLLOWING:

- 1. INSPECTION FOR DEFECTS, INCLUDING LEAK CHECKS.
- 2. CLEANING AND DISINFECTING.
- 3. REPAIR.
- 4. STORAGE.

B. INSPECTION; SELF-CONTAINED BREATHING APPARATUS FOR EMERGENCY USE SHALL BE INSPECTED MONTHLY FOR THE FOLLOWING PERMANENT RECORDS KEPT OF THESE INSPECTIONS.

- 1. FULLY CHARGED CYLINDERS.
- 2. REGULATOR AND WARNING DEVICE OPERATION.
- 3. CONDITION OF FACE PIECE AND CONNECTIONS.
- 4. ELASTOMER OR RUBBER PARTS SHALL BE STRETCHED OR MASSAGED TO KEEP THEM PLIABLE AND PREVENT DETERIORATION.
- D. ROUTINELY USED SCBA'S SHALL BE COLLECTED, CLEANED AND DISINFECTED AS FREQUENTLY AS NECESSARY TO INSURE PROPER PROTECTION IS PROVIDED.

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USE OF SELF-CONTAINED BREATHING EQUIPMENT

5. PERSONS ASSIGNED TASKS THAT REQUIRES USE OF SELF-CONTAINED BREATHING EQUIPMENT SHALL BE CERTIFIED PHYSICALLY FIT FOR BREATHING EQUIPMENT USAGE BY THE LOCAL COMPANY PHYSICIAN AT LEAST ANNUALLY.

- 6. SCBA'S SHOULD BE WORN WHEN:
 - A. ANY EMPLOYEE WORKS NEAR THE TOP OR ON TOP OF ANY TANK UNLESS TEST REVEALS LESS THAN 10 PPM OF H2S.
 - B. WHEN BREAKING OUT ANY LINE WHERE H2S CAN REASONABLY BE EXPECTED.
 - C. WHEN SAMPLING AIR IN AREAS TO DETERMINE IF TOXIC CONCENTRATIONS OF H2S EXISTS.
 - D. WHEN WORKING IN AREAS WHERE OVER 10 PPM H2S HAS BEEN DETECTED.
 - E. AT ANY TIME THERE IS A DOUBT AS TO THE H2S LEVEL IN THE AREA TO BE ENTERED.

H2S CONTINGENCY PLAN

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<u>RESCUE</u> FIRST AID FOR H2S POISONING

DO NOT PANIC!

REMAIN CALM – THINK!

- 1. HOLD YOUR BREATH. (DO NOT INHALE FIRST; STOP BREATHING.)
- 2. PUT ON BREATHING APPARATUS.
- 3. REMOVE VICTIM(S) TO FRESH AIR AS QUICKLY AS POSSIBLE. (GO UP-WIND FROM SOURCE OR AT RIGHT ANGLE TO THE WIND. NOT DOWN WIND.)
- 4. START ARTIFICIAL RESPIRATIONS (CPR) IF NEEDED. AVOID INHALING ANY TOXIC GAS DIRECTLY FROM THE VICTIM'S LUNGS.
- 5. PROVIDE FOR PROMPT TRANSPORTATION TO THE HOSPITAL, AND CONTINUE GIVING ARTIFICIAL RESPIRATION IF NEEDED.
- 6. HOSPITAL(S) OR MEDICAL FACILITIES NEED TO BE INFORMED, BEFORE-HAND, OF THE POSSIBILITY OF H2S GAS POISONING – NO MATTER HOW REMOTE THE POSSIBILITY IS.
- 7. NOTIFY EMERGENCY ROOM PERSONNEL THAT THE VICTIM(S) HAS BEEN EXPOSED TO H2S GAS.

BESIDES BASIC FIRST AID, EVERYONE ON LOCATION SHOULD HAVE A GOOD WORKING KNOWLEDGE OF ARTIFICIAL RESPIRATION, AS WELL AS FIRST AID FOR EYES AND SKIN CONTACT WITH LIQUID H2S. EVERYONE NEEDS TO MASTER THESE NECESSARY SKILLS.

(22)

Marshall & Winston, Inc.

Hi Bob Federal #1H Chaves County, New Mexico Job No: WT-18-*** Rig: N/A







Survey Report

Company: Project: Site: Well: Wellbore: Design:	Marshall & Wi Chaves Coun Hi Bob Federa #1H Planning Lateral 1r0	nston, Inc. ty, New Mexico al #1H		Local Co TVD Ref MD Refe North Ro Survey Databas	o-ordinate Re ference: erence: eference: Calculation M re:	ference: ethod:	Site Hi Bob Fe Well @ 3827. Well @ 3827. Grid Minimum Curv EDMRESTOR	ederal #1H 30usft (Assum 30usft (Assum vature ED	ed 25'KB) ed 25'KB)
Project	Chaves C	ounty, New Me	kico						
Map System: Geo Datum: Map Zone:	US State F North Ame New Mexic	Plane 1983 rican Datum 198 o Eastern Zone	33	Syster	n Datum:		Mean Sea Le	vel	
Site	Hi Bob Fe	ederal #1H						•	
Site Position: From: Position Uncer	Map rtainty:	2.00 usft	Northing: Easting: Slot Radius:	7: _ 62	36,384.80 usft 28,727.90 usft 13-3/16 "	Latitude Longituc Grid Cor	: de: nvergence:		33° 1' 26.380 N 104° 2' 53.535 W 0.16 °
Well	#1H								
Well Position	+N/-S +E/-W	0.00 usfi 0.00 usfi	Northing: Easting:		736,384.0 628,727.9	30 usfi 90 usfi	Latitude: Longitude:		33° 1' 26.380 1 104° 2' 53.535 V
Position Uncer	rtainty	2.80 usf	Wellhead E	levation:	0.0	00 usfl	Ground Level	:	3,802.30 us
Wellbore	Planning								
Magnetics	Model	Name	Sample Date	Dec	lination (°)	Di	ip Angle (°)	Field	Strength (nT)
		MVHD	10/1/2018		7.45		60.71	48,	236.30241691
Design Audit Notes: Version: Vertical Sectio	Lateral 1r n:	0 Depth F	Phase: From (TVD)	PROTOTY	íPE ·	Fie On Dept +E/-₩	ih: [Direction	0.00
	•		usπ) 0.00	(usn C	()).00	(usπ) 0.00		(°) 18	0.91
Survey Tool Pr From (usft)	rogram To (usft)	Date 9/25 Survey (Wel	/2018 Ibore)		Tool Name		Description		
0	.00 8,623.	08 Lateral 1r0 (F	Planning)		MWD+HDGM	1	OWSG MWD	+ HDGM	
Planned Surve	y								
Measuro Depth (usft)	ed Inclinatio (°)	n Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 100 200 300 400	.00 0. .00 0. .00 0. .00 0. .00 0.	00 0.00 00 0.00 00 0.00 00 0.00 00 0.00 00 0.00 00 0.00 00 0.00	0 0.00 100.00 200.00 300.00 400.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000
500 600 700 800 900	.00 0. .00 0. .00 0. .00 0. .00 0.	00 0.00 00 0.00 00 0.00 00 0.00 00 0.00	500.00 600.00 700.00 800.00 900.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000

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Survey Report

Company:	Marshall & Winston, Inc.	Local Co-ordinate Reference:	Site Hi Bob Federal #1H
Project:	Chaves County, New Mexico	TVD Reference:	Well @ 3827.30usft (Assumed 25'KB)
Site:	Hi Bob Federal #1H	MD Reference:	Well @ 3827.30usft (Assumed 25'KB)
Well:	#1H	North Reference:	Grid
Wellbore:	Planning	Survey Calculation Method:	Minimum Curvature
Design:	Lateral 1r0	Database:	EDMRESTORED
r · -			

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Section (usft)	Rate (°/100ft)	Rate (°/100ft)	Rate (°/100ft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.000	0.000	0.000
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.000	0.000	0.000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.000	0.000	0.000
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.000	0.000	0.000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.000	0.000	0.000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.000	0.000	0.000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.000	0.000	0.000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.000	0.000	0.000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.000	0.000	0.000
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.000	0.000	0.000
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.000	0.000	0.000
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.000	0.000	0.000
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.000	0.000	0.000
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.000	0.000	0.000
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.000	0.000	0.000
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0 000	0 000	0 000
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0 000	0.000	0.000
2,000.00	0.00	0.00	2 700 00	0.00	0.00	0.00	0.000	0.000	0.000
2 800 00	0.00	0.00	2 800 00	0.00	0.00	0.00	0.000	0.000	0.000
2 848 44	0.00	0.00	2,000.00	0.00	0.00	0.00	0.000	0.000	0.000
KOP-Build	16º/100'	0.00	2,040.44	0.00	0.00	0.00	0.000	0.000	0.000
2,850.00	0.25	198.90	2,850.00	0.00	0.00	0.00	16.000	16.000	0.000
2,875.00	4.25	198.90	2,874.98	-0.93	-0.32	0.94	16.000	16.000	0.000
2,900.00	8.25	198.90	2,899.82	-3.51	-1.20	3.52	16.000	16.000	0.000
2,925.00	12.25	198.90	2,924.42	-7.71	-2.64	7.75	16.000	16.000	0.000
2,950.00	16.25	198.90	2,948.64	-13.53	-4.63	13.61	16.000	16.000	0.000
2,975.00	20.25	198.90	2.972.38	-20.94	-7.17	21.05	16.000	16.000	0.000
3,000.00	24.25	198.90	2,995.52	-29.89	-10.23	30.05	16.000	16.000	0.000
3.025.00	28.25	198.90	3.017.93	-40.35	-13.82	40.57	16.000	16.000	0.000
3.050.00	32.25	198.90	3.039.52	-52.26	-17 89	52 54	16 000	16 000	0 000
3,075.00	36.25	198.90	3,060.19	-65.57	-22.45	65.92	16.000	16.000	0.000
3,100.00	40.25	198.90	3.079.81	-80.21	-27 46	80 64	16 000	16 000	0 000
3 125 00	44 25	198.90	3 098 32	-96 11	-32.91	96.62	16,000	16,000	0.000
3 150 00	48.25	198.90	3 115 60	_113 20	-38.76	113.80	16,000	16,000	0.000
3 175 00	52.25	108.00	3 131 58	-131 38	-44.08	132.07	16,000	16,000	0.000
3 200 00	56.25	108.00	3 146 10	-150.57	-11.50	151.07	16.000	16,000	0.000
3,200.00	50.25	190.90	5,140.15	-150.57	-01.00	131.37	10.000	10.000	0.000
3,223.44	60.00	198.90	3,158.56	-169.40	-58.00	170.30	15.999	15.999	0.000
Build/Turn	16°/100'								
3,225.00	60.21	198.74	3,159.34	-170.68	-58.43	171.58	16.008	13.210	-10.429
3,250.00	63.53	196.22	3,171.13	-191.70	-65.05	192.71	16.000	13.305	-10.080
3,275.00	66.90	193.84	3,181.61	-213.62	-70.92	214.72	16.000	13.472	-9.510
3,300.00	70.30	191.58	3,190.73	-236.32	-76.04	237.50	16.000	13.607	-9.042
3,325.00	73.73	189.41	3,198.45	-259.70	-80.37	260.94	16.000	13.716	-8.664
3,350.00	77.18	187.32	3,204.72	-283.64	-83,88	284.93	16.000	13.801	-8.365

Survey Report

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Company:	Marshall & Winston, Inc.	Local Co-ordinate Reference:	Site Hi Bob Federal #1H	
Project:	Chaves County, New Mexico	TVD Reference:	Well @ 3827.30usft (Assumed 25'KB)	
Site:	Hi Bob Federal #1H	MD Reference:	Well @ 3827.30usft (Assumed 25'KB)	
Well:	#1H	North Reference:	Grid	
Wellbore:	Planning	Survey Calculation Method:	Minimum Curvature	
Design:	Lateral 1r0	Database:	EDMRESTORED	

Planned Survey

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3.375.00	80.65	185.29	3.209.53	-308.02	-86.57	309.35	16.000	13.865	-8,138
3,400.00	84.13	183,29	3,212,84	-332.72	-88.43	334.08	16.000	13,911	-7.977
3,425.00	87.61	181.32	3,214.64	-357.63	-89.43	359.01	16.000	13.938	-7.878
3,442.13	90.00	179.98	3,215.00	-374.75	-89.62	376.13	16.000	13.949	-7.839
LP-Hold 90)°Inc@179.98°.	Azm							
3,500.00	90.00	179.98	3,215.00	-432.62	-89.60	433.99	0.001	0.001	0.000
3,600.00	90.00	179.98	3,215.00	-532.62	-89.57	533.98	0.000	0.000	0.000
3,700.00	90.00	179.98	3,215.00	-632.62	-89.54	633.97	0.000	0.000	0.000
3,800.00	90.00	179.98	3,215.00	-732.62	-89.50	733.95	0.000	0.000	0.000
3,900.00	90.00	179.98	3,215.00	-832.62	-89.47	833.94	0.000	0.000	0.000
4,000.00	90.00	179.98	3,215.00	-932.62	-89.44	933.93	0.000	0.000	0.000
4,100.00	90.00	179.98	3,215.00	-1,032.62	-89.41	1,033.91	0.000	0.000	0.000
4,200.00	90.00	179.98	3,215.00	-1,132.62	-89.37	1,133.90	0.000	0.000	0.000
4,300.00	90.00	179.98	3,215.00	-1,232.62	-89.34	1,233.89	0.000	0.000	0.000
4,400.00	90.00	179.98	3,215.00	-1,332.62	-89.31	1,333.87	0.000	0.000	0.000
4,500.00	90.00	179.98	3,215.00	-1,432.62	-89.27	1,433.86	0.000	0.000	0.000
4,600.00	90.00	179.98	3,215.00	-1,532.62	-89.24	1,533.85	0.000	0.000	0.000
4,700.00	90.00	179.98	3,215.00	-1,632.62	-89.21	1,633.83	0.000	0.000	0.000
4,800.00	90.00	179.98	3,215.00	-1,732.62	-89.17	1,733.82	0.000	0.000	0.000
4,900.00	90.00	179.98	3,215.00	-1,832.62	-89.14	1,833.81	0.000	0.000	0.000
5,000.00	90.00	179,98	3,215.00	-1,932.62	-89.11	1,933.80	0.000	0.000	0.000
5,100.00	90.00	179.98	3,215.00	-2,032.62	-89.07	2,033.78	0.000	0.000	0.000
5,200.00	90.00	179.98	3,215.00	-2,132.62	-89.04	2,133.77	0.000	0.000	0.000
5,300.00	90.00	179.98	3,215.00	-2,232.62	-89.01	2,233.76	0.000	0.000	0.000
5,400.00	90.00	179.98	3,215.00	-2,332.62	-88.97	2,333.74	0.000	0.000	0.000
5,500.00 ·	90.00	179.98	3,215.00	-2,432.62	-88.94	2,433.73	0.000	0.000	0.000
5,600.00	90.00	179.98	3,215.00	-2,532.62	-88.91	2,533.72	0.000	0.000	0.000
5,700.00	90.00	179.98	3,215.00	-2,632.62	-88.87	2,633.70	0.000	0.000	0.000
5,800.00	90.00	179.98	3,215.00	-2,732.62	-88.84	2,733.69	0.000	0.000	0.000
5,900.00	90.00	179.98	3,215.00	-2,832.62	-88.81	2,833.68	0.000	0.000	0.000
6,000.00	90.00	179.98	3,215.00	-2,932.62	-88.77	2,933.66	0.000	0.000	0.000
6,100.00	90.00	179.98	3,215.00	-3,032.62	-88.74	3,033.65	0.000	0.000	0.000
6,200.00	90.00	179.98	3,215.00	-3,132.62	-88.71	3,133.64	0.000	0.000	0.000
6,300.00	90.00	179.98	3,215.00	-3,232.62	-88.67	3,233.62	0.000	0.000	0.000
6,400.00	90.00	179.98	3,215.00	-3,332.62	-88.64	3,333.61	0.000	0.000	0.000
6,500.00	90.00	179.98	3,215.00	-3,432.62	-88.61	3,433.60	0.000	0.000	0.000
6,600.00	90.00	179.98	3,215.00	-3,532.62	-88.57	3,533.58	0.000	0.000	0.000
6,700.00	90.00	179.98	3,215.00	-3,632.62	-88.54	3,633.57	0.000	0.000	0.000
6,800.00	90.00	179.98	3,215.00	-3,732.62	-88.51	3,733.56	0.000	0.000	0.000
6,900.00	90.00	179.98	3,215.00	-3,832.62	-88.47	3,833.55	0.000	0.000	0.000
7,000.00	90.00	179.98	3,215.00	-3,932.62	-88.44	3,933.53	0.000	0.000	0.000
7,100.00	90.00	179.98	3,215.00	-4,032.62	-88.41	4,033.52	0.000	0.000	0.000
7,200.00	90.00	179.98	3,215.00	-4,132.62	-88.37	4,133.51	0.000	0.000	0.000
7,300.00	90.00	179.98	3,215.00	-4,232.62	-88.34	4,233.49	0.000	0.000	0.000

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Survey Report

Company:Marshall & WProject:Chaves CoundSite:Hi Bob FederWell:#1HWellbore:PlanningDesign:Lateral 1r0		Winsto unty, N eral #'	on, Inc. New Mexico 1H	5		Local Co- TVD Refe MD Refer North Ref Survey Ca Database	ordinate Re rence: ence: erence: alculation N :	eference: Nethod:	Site Hi Bob Federal #1H Well @ 3827.30usft (Assumed 25'KB) Well @ 3827.30usft (Assumed 25'KB) Grid Minimum Curvature EDMRESTORED			
Planned Su	rvey			·	· · · ·							• · · · · · · · · · · · · · · · · · · ·
Meas Dej (us	sured oth sft)	Inclina (°)	tion	Azimuth (°)	Vertic Dept (usfi	al h)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,4 7,5 7,6	00.00 600.00 600.00	9	90.00 90.00 90.00	179.9 179.9 179.9	98 3,21 98 3,21 98 3,21	5.00 5.00 5.00	-4,332.62 -4,432.62 -4,532.62	-88.31 -88.27 -88.24	4,333.48 4,433.47 4,533.45	0.000 0.000 0.000	0.000 0.000 0.000	0.000 0.000 0.000
7,7 7,8	00.00	ŝ	90.00 90.00	179.9	98 3,21 98 3,21	5.00 5.00	-4,632.62 -4,732.62	-88.21 -88.17	4,633.44 4,733.43	0.000	0.000	0.000
7,9 8,0 8,1 8,2 8,3	00.00 00.00 00.00 00.00 200.00	9 9 9 9	00.00 00.00 00.00 00.00 00.00	179.9 179.9 179.9 179.9 179.9	98 3,21 98 3,21 98 3,21 98 3,21 98 3,21 98 3,21	5.00 5.00 5.00 5.00 5.00 5.00	-4,832.62 -4,932.62 -5,032.62 -5,132.62 -5,232.62	-88.14 -88.11 -88.07 -88.04 -88.01	4,833.41 4,933.40 5,033.39 5,133.37 5,233.36	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000
8,4 8,5 8,6 8,6 PBH	00.00 00.00 00.00 23.08		00.00 00.00 00.00 00.00	179.9 179.9 179.9 179.9	98 3,21 98 3,21 98 3,21 98 3,21	5.00 5.00 5.00 5.00	-5,332.62 -5,432.62 -5,532.62 -5,555.70	-87.97 -87.94 -87.91 -87.90	5,333.35 5,433.34 5,533.32 5,556.40	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
Design Targ	ets											
Target Name - hit/miss - Shape	e s target	Dip A (°	ngle)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northi (usft	ing E	asting (usft)	Latitude	Longitude
PBHL - Hi Bo - plan hit - Point	ob Fed # s target	1 center	0.00	0.00	3,215.00	-5,555	.70 -87.9	0 730,8	329.10 6	28,640.00	33° 0' 31.410 N	104° 2' 54.744 W
LTP - Hi Bob - plan mi - Point	Fed #1	H get cent	0.00 ter by	0.00 0.03usft at	3,215.00 8543.08usf	-5,475. t MD (32	.70 -87.9 215.00 TVD, -	0 730,9 5475.70 N,	909.10 6 -87.93 E)	28,640.00	33° 0' 32.202 N	104° 2' 54.742 W
FTP - Hi Bot - plan mi - Point	> Fed #1 sses targ	⊢ get cenl	0.00 er by t	0.00 0.13usft at	3,215.00 3729.48usf	-662. t MD (32	.10 -89.4 215.00 TVD, -	0 735,7 662.10 N, -8	722.70 6 39.53 E)	28,638.50	33° 1' 19.831 N	104° 2' 54.606 W
Plan Annota	tions						·····					
	Measu Dep (ust	ıred th t)	Vert De (us	tical pth sft)	Locai +N/-S (usft)	Coordi	nates +E/-W (usft)	Comme	nt			
		2848 3223 3442 8623		2848 3159 3215 3215	-16 -37 -555	0 9 5 6	0 -58 -90 -88	KOP-Bui Build/Tur LP-Hold PBHL	ild 16°/100' 'n 16°/100' 90°Inc@179	9.98°Azm		
Checked I	 Зу:					Appro	oved Bv:		. <u></u>		Date:	· · · · · · · · · · · · · · · · · · ·
						••					<u> </u>	





ENERGY SERVICES LLC

Service Order for Job:	J00011155		Call Out S	Sheet Number:	CALL00009833	41 1
Date of Job:	04-Oct-2018			New Well:	New Well	
District:	Artesia			Well #:	Hi Bob 17 Feder	al 1H
Time Well Ready:	11:31 am			County:	Chaves	
Ready to Pump:	11:31 am			State	New Mexico	
Customer:	Marshall and Winston				08 45- 00-	
DV Tool:				Legal Location:	08 15s 29e	
Job Stage Number:	1			Field:		
Treat Dawre				Description:	Intermediate 9 5/	/8
Freat Down:				API#:		
Head & Manifold	a 5/8 Intermediate			Salesman:	Kurt Crowe	
Hole Size:	12.25		Contact Persor	VCompanyman:	Stephen Garcia	
Well MD:	2800		c	ontact Number:	806-790-8286	
Well TVD:	2800			Email:		
BHST:	102			Rig Contractor:		
BHP:				Dia Number		
внст.				Kiy Number:		
Max Allowed Breesures				Rig Phone:		
wax Alloweu Fressure.	1500		Max Allowed	ł Ann Pressure:		
Casing / Tubing			· · · · · · · · · · · · · · · · · · ·			
String Type	Depth	Size	Weight	Grad	10	Thread
Casing	2800	9 5/8	36	N80)	8rd
leh Ture	Prostan					
Job Type	Gaising		Service Supe	rvisor:		
Sks/Gals.	Cemen	t Type/Additives	Tractor T	railer	Equipment	Operators
740.00 Pound 740.00 Saak	PF424 Water Gelling	J Agent, per lb				
2 030 00 Bound	DE20 Reptabile Fute	JAID/CUIT)				
1,015,00 Pound	PF20 Demonite Exte	nder, per Ib (601b/cu it)				
1,630,00 Pound						
216.00 Pound	PE45 Defeamer Anti					
68.00 Pound	PE29 Cellonhane El:	akes per lb				
	1 / 20 Octophane / A	ikes, per io				
Cement Recipe 2800' of 9 5/8 casing						
Test Lines 20bbl Gelled Water (11 10bbls Fresh Water	0# PF424)					
Lead: 540sks C+4%PF +0.4#/skPF45(Defoame Den 12 9 Vield 1 97	20(Bentonite Gel)+2%P er) H2O 10 668	F1(Calcium Chloride)+3#/sl	kPF42(Kolseal)+0.12	25#/skPF29(Cellof	lake)	
PF903 - 94	120 10.000					
PF20 - 3.76 PF1 - 1.88 PF42 - 3				·		
PF29 - 0.125 PF45 - 0.4						
Tail: 200sks C Neat Den 14.8 Yield 1.32	h2O 6.304					
PF903 - 94						

9 5/8 H, M, QC, S and top plug 200# Sugar 110# PF424 !

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 APD ID: 10400034188
 Submission Date: 10/05/2018
 Set approximation

 Operator Name: MARSHALL & WINSTON INCORPORATED
 Description

 Well Name: HI BOB FEDERAL
 Well Number: 1H
 Show Final Text

 Well Type: OIL WELL
 Well Work Type: Drill
 Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Hi_Bob_Federal_1H_Existing_Roads_Map_20180917121412.pdf

Existing Road Purpose: ACCESS, FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

 Will new roads be needed? YES

 New Road Map:

 New Road Map:

 Hi_Bob_Federal_1H_Proposed_Road_Map_201809171538.pdf

 New road type: RESOURCE

 Length: 118
 Feet

 Width (ft.): 25

 Max slope (%): 2
 Max grade (%): 2

 Army Corp of Engineers (ACDE) permit required? NO

 ACOE Permit Number(s):

 New road access erosion construction requirements and regular maintenance would alleviate potential impacts to the access road from water erosion damage.

 New road access plan or prolie prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: MARSHALL & WINSTON INCORPORATED

Well Name: HI BOB FEDERAL

Well Number: 1H

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: Native caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description: Material will be obtained from BLM caliche pit in SWNE Section 34-T15S-R29E or BLM pit in SENE Section 1-T16S-R30E

Onsite topsoil removal process: The top 6 inches of topsoil is pushed off and stockpiled along the side of the location. An approximate 150' X 150' area is used within the proposed well site to remove caliche. Subsoil is removed and stockpiled within the pad site to build the location and road. Then subsoil is pushed back in the hole and caliche is spread accordingly across proposed access road.

Access other construction information:

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Proposed access road will be crowned and ditched and constructed of 6 inch rolled and compacted caliche. Water will be diverted where necessary to avoid ponding, maintain good drainage, and to be consistent with local drainage patterns.

Road Drainage Control Structures (DCS) description: The ditches will be 3' wide with 3:1 slopes

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Hi_Bob_Federal_1H_1_Mile_Wells_Map_20180917121739.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: This location will act as the CTB for the lease in the future. Initial battery will include 250# 2-phase separator, 6' x 20' Heater treater, 4 500bbl steel tanks and 2 500 bbl fiberglass tanks set on the north or south side of location.
Operator Name: MARSHALL & WINSTON INCORPORATED Well Name: HI BOB FEDERAL Well Number: 1H

Section 5 - Location and Types of Water Supply Water Source Table Water source use type: INTERMEDIATE/PRODUCTION CASING Water source type: OTHER Describe type: BRINE WATER

Source longitude:

Source longitude:

Describe transportation land ownership:

Describe transportation land ownership:

Source volume (acre-feet): 32.223274

Source volume (acre-feet): 2.577862

Source latitude: Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: OTHER

Water source volume (barrels): 20000

Source volume (gal): 840000

Water source use type: OTHER, STIMULATION, SURFACE CASING Water source type: OTHER

Describe type: FRESH WATER

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: OTHER

Water source volume (barrels): 250000

Source volume (gal): 10500000

Water source and transportation map:

Hi_Bob_Federal_1H_Water_Source_Map_20181005075832.pdf

Water source comments: Water source transportation land ownership is a mixture of Federal, State and County. New water well? NO

New Water We	ell Info
Well latitude:	Well Longitude:

Well datum:

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Well Name: HI BOB FEDERAL

Well Number: 1H

Well casing inside diameter (in.):

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing outside diameter (in.):

New water well casing?

Drilling method:

Grout material:

Casing length (ft.):

Well Production type:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: On site caliche will be used for construction if sufficient. In the event insufficient quantities of caliche are available onsite, caliche will be trucked in from BLM's caliche pit in SWNE Section 34-T15S-R29E or SENE Section 1-T16S-R30E.

Well casing type:

Used casing source:

Casing top depth (ft.):

Completion Method:

Drill material:

Grout depth:

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and cuttings

Amount of waste: 4000 ... barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling fluids will be stored safely and disposed of properly

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: COMMERCIAL

FACILITY

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: SEWAGE

Waste content description: Human waste and grey water

Amount of waste: 1000 gallons

Waste disposal frequency : One Time Only

Safe containment description: Waste material will be stored safely and disposed of properly

Safe containmant attachment:

Well Name: HI BOB FEDERAL

Well Number: 1H

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Trucked to an approved disposal facility.

Waste type: GARBAGE

Waste content description: Miscellaneous trash

Amount of waste: 500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Trash produced during drilling and completion operations will be collected in a trash container and disposed of properly Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: COMMERCIAL FACILITY Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cutting	gs Area
Cuttings Area being used? NO	
Are you storing cuttings on location? YE	S
Description of cuttings location Cuttings v	vill be stored in roll off bins
Cuttings area length (ft.)	Cuttings area width (ft.)
Cuttings area depth (ft.)	Cuttings area volume (cu. yd.)
Is at least 50% of the cuttings area in cut?	?
WCuttings area liner	

Cuttings area liner specifications and installation description

Well Number: 1H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Hi_Bob_Federal_1H_Well_Pad_Layout_20180925140248.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name:

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: During construction proper erosion control methods will be used to control erosion, runoff and siltation of the surrounding area.

Drainage/Erosion control reclamation: Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area

Well pad proposed disturbance (acres): 2.066	Well pad interim reclamation (acres): 0.5165	Well pad long term disturbance (acres): 1.5495
Road proposed disturbance (acres): 0.067665	Road interim reclamation (acres): 0.040599	Road long term disturbance (acres): 0.027066
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 0	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 0
Other proposed disturbance (acres): 0	Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 2.133665	Total interim reclamation: 0.557099	Total long term disturbance: 1.576566

Disturbance Comments:

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations

Well Name: HI BOB FEDERAL

Well Number: 1H

Soil treatment: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites. **Existing Vegetation at the well pad:** Shinnery oak; topsoil is sandy.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Refer to "Existing Vegetation at the well pad'

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: N/A

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table Seed type: Seed name: Source name: Source phone: Seed cultivar: Seed use location:

PLS pounds per acre:

Seed source:

Source address:

Proposed seeding season:

Well Name: HI BOB FEDERAL

Well Number: 1H

Seed S	Summary	Total pounds/Acre:
Seed Type	Pounds/Acre	

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: No invasive species present. Standard regular maintenance to maintain a clear location and road.

Weed treatment plan attachment:

Monitoring plan description: Identify areas supporting weeds prior to construction; prevent the introduction and spread of weeds from construction equipment during construction; and contain weed seeds and propagules by preventing segregated topsoil from being spread to adjacent areas. No invasive species present. Standard regular maintenance to maintain a clear location and road.

Monitoring plan attachment:

Success standards: To maintain all disturbed areas as per Gold Book standards

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: NEW ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

Well Name: HI BOB FEDERAL

Well Number: 1H

State Local Office:	
Military Local Office:	
USFWS Local Office:	
Other Local Office:	
USFS Region:	
USFS Forest/Grassland:	USFS Ranger District:

Fee Owner: Zach Osborne

Fee Owner Address: Bogle Ranch

Phone: (575)365-6927

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Surface use and compensation agreement dated October 29, 2018 between Bogle Limited Company and Marshall & Winston, Inc. Surface Access Bond BLM or Forest Service:

Email:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Well Name: HI BOB FEDERAL

Well Number: 1H

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner Address: Bogle Ranch

Fee Owner: Zach Osborne

Phone: (575)365-6927

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Surface use and compensation agreement dated October 29, 2018 between Bogle Limited Company and Marshall & Winston, Inc. Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? YES

Use APD as ROW? YES

ROW Applications

ROW Type(s): 281001 ROW - ROADS

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Onsite conducted 04/24/18 with BLM rep, Harley Davis and Marshall & Winston rep, Todd Passmore.

Other SUPO Attachment





	🔆 CO2, Plugged	CO2 New	T. CO2 Cancelled	井 CO2 Adive	Miscellaneous	Well Locations - Large Scal	
	Gas, Temporarily Abandoned	Cas, Plugged	Gas. New	Gas. Cancelled, Never Drilled	Gas Active	a 👾 CO2, Temporaily Abandoned	
	 Oil, Active 	, D Injection. Temporarily Abandoned	D Injection, Plugged	D Injection, New	D Injection, Cancelled	D Injection, Active	
	- Salt Water Injection, Cancelled	▲ Salt Water Injection, Active	 Oil, Temporarily Abondoned 	 Oil, Plugged 	Oil, New	 Oil, Cancelled 	
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Hi Bob Federal 1H 1-Mile Wells



SECTION 8, TOWNSHIP 15 SOUTH, RANGE 29 EAST, N.M.P.M., CHAVES COUNTY NEW MEXICO







Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO **Produced Water Disposal (PWD) Location:** PWD surface owner: Lined pit PWD on or off channel: Lined pit PWD discharge volume (bbl/day): Lined pit specifications: Pit liner description: Pit liner manufacturers information: Precipitated solids disposal: Decribe precipitated solids disposal: Precipitated solids disposal permit: Lined pit precipitated solids disposal schedule: Lined pit precipitated solids disposal schedule attachment: Lined pit reclamation description: Lined pit reclamation attachment: Leak detection system description: Leak detection system attachment: Lined pit Monitor description: Lined pit Monitor attachment: Lined pit: do you have a reclamation bond for the pit? Is the reclamation bond a rider under the BLM bond? Lined pit bond number: Lined pit bond amount: Additional bond information attachment:

PWD disturbance (acres):

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

PWD disturbance (acres):

PWD disturbance (acres):

Injection well type:

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location: PWD surface owner: Surface discharge PWD discharge volume (bbl/day): Surface Discharge NPDES Permit? Surface Discharge NPDES Permit attachment: Surface Discharge site facilities information: Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location: PWD surface owner: Other PWD discharge volume (bbl/day): Other PWD type description: Other PWD type attachment: Have other regulatory requirements been met? Other regulatory requirements attachment: Injection well name:

Injection well API number:

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PWD disturbance (acres):

PWD disturbance (acres):

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

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000807

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Bond Info Data Report

03/11/2019

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

SURFACE USE AGREEMENT

Bogle Limited Company, LLC of P.O. Box 460, Dexter, New Mexico 88230, hereinafter referred to as "Grantor" (whether one or more) do hereby grant unto Marshall & Winston, Inc. of P.O. Box 50880, Midland, Texas 79710-0880, hereinafter referred to as "Grantee", its successors and assigns, the rights and privileges to use Grantor's lands located in Chaves County, New Mexico, hereinafter called the "Subject Property" as may be necessary or convenient for Grantee's operations under the terms and provisions contained in this Agreement which shall supersede all prior agreements, whether oral or written, unless a prior Agreement is specifically referenced within this Agreement. Execution of this Agreement is made without prejudice as to the rights of the Grantee pursuant any existing oil and gas lease covering the Subject Property and nothing herein shall be construed to lessen or alter Grantee's rights under any such oil and gas lease and shall also waive all rights, causes of action, claims or damages to which the Grantor might otherwise be entitled pursuant to the New Mexico Surface Owner's Protection Act, 70-12 et al, NMSA 1978. Grantor agrees that the damages described hereunder will constitute all damages to which the Grantor is entitled to receive or claim and that in consideration of the amounts paid hereunder, Grantor releases and waives any additional claims for damages as to the Subject Property outside of the terms and conditions of the Agreement. Grantee's rights under this Agreement shall be in addition to, and shall not diminish, any of Grantee's rights under its oil and gas leases covering all or any portion of the Subject Property. As noted above, Grantor owns both Fee Surface and Grazing Lease Surface lands, said Grazing Lease surface being held under the State of New Mexico G0-2366. Any differences in compensation regarding the land clarifications are noted in the appropriate spaces in this agreement.

Grantor and Grantee knowing and willfully agree to the following:

I. <u>Notice:</u> Prior to initial entry upon the land for activities that do not disturb the surface, including inspections, staking, surveys, measurements and general evaluation of proposed routes and sites for Oil and Gas Operations (as defined by the New Mexico Surface Owner's Protection Act, 70-12 et al, NMSA 1978), Grantee shall provide at least twenty-four (24) hours' notice by mail, email, telephone, or personal contact with the Grantor.

No less than twenty days before first entering the surface of the land to conduct Oil and Gas Operations, Grantee shall, by mail, email, telephone, or personal contact with Grantor, give notice of the planned Oil and Gas Operations (hereinafter 'Operations Notice').

Any offer of compensation in this agreement is not an acceptance of liability for any provisions detailed in this Agreement or the Operations Notice, which may occur over the course of operations upon Subject Property.

The Operations Notice shall be given to the Grantor at the address shown by the records of the County Clerk at the time the notice is given. If legal title and equitable title are not held by the same person, Operations Notice shall be given to both the holder of legal title and to the holder of equitable title at the addresses shown by the records of the County Clerk at the time the Operations Notice is given. Operations Notice shall be given only once and shall only provide information known to the operator at the time of the Operations Notice.

The Operations Notice shall include: 1) sufficient disclosure of the planned Oil and Gas Operations to enable the Grantor to evaluate the effect of the operations on the property; 2) a copy of the Surface Owners Protection Act; 3) the name, address, telephone number and, if available, facsimile number an electronic mail address of the Grantee and the Grantee's authorized representative; and 4) an offer of compensation, which is described in this Agreement.

In this Agreement, Grantee has made an offer of compensation to the Grantor for damages sustained by the Grantor, as applicable, for loss of agricultural production and income, lost land value, lost use of and lost access to the Grantors' land and lost value of improvements caused by Oil and Gas operations. The payments contemplated by this Agreement only cover land affected by Oil and Gas Operations or infrastructure work such as construction roads, pipelines and power lines. The offer of compensation shall be based upon information available at the time of the offer.

Drill site Location: Grantee shall pay Grantor the cash sum of \$5,500 on State Grazing Lease lands for each drill site location and \$12,500 for each standard 300 foot by 300 foot drill site location on Fee lands plus an additional \$0.15 per square foot for any location larger than 300 foot by 300 foot , which Grantor constructs and utilizes for a re-entry of a plugged and/or abandoned well or for the drilling of a new oil and/or gas or injection well(s) located on the Subject Property. This amount shall represent surface damages for the reasonable use of the surface of the land for the drill site location, including, without limitation, the drill site reserve pit. Any injury or damage occurring to groundwater, lands adjacent to the drill site location, other lands owned by Grantor or damage to any cattle as a result of the operations of Grantee is not hereby covered.

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III. <u>Pits</u>: Grantee shall pay Grantor the cash sum of \$6,000 on State Grazing Lease lands for each frac pit location and \$12,500 for each frac pit location on Fee lands, plus an additional \$0.15 per foot on any location with an area larger than 4 acres on the Fee land. All pits used by the Grantee shall be lined with plastic material of sufficient thickness to prevent the escape of saltwater and other materials on or into the Subject Property. If within one-quarter (1/4) mile of a water source, Grantee shall fence off tank batteries, pumping units and frac pits. If livestock enter upon the drill site location and ingest oil, or become otherwise injured as a direct result of Grantee insufficiently fencing off the locations, Grantee shall be liable to Grantor for such damages.

- IV. <u>Caliche and Water for Operations:</u> Grantee agrees to purchase and pay Grantor the cash sum of \$0.75 per barrel for water from the Grantor's wells for drilling and completion operations, provided Grantor's water wells are capable of supplying the quantity of water required for its operations. Grantee shall furnish all necessary equipment for pumping, metering and delivery of the water to the well and shall obtain the necessary permit(s) from the New Mexico State regulatory office with jurisdiction for the same. No fresh water from beneath the Land shall ever be used for secondary or repressor operations (or any like operations) by Grantee. Grantee agrees to purchase caliche owned by Grantor for the construction or modification of drill site locations or access roads built on the land from the Grantor at a rate of \$5.50 per cubic yard, provided the caliche is of the quality and quantity required for the Grantee's operations.
- V. <u>Completion of Drilling Operations:</u> It is Grantee's plan to use a closed loop system in the drilling of wells, which does not require a reserve pit. However, if for any reason(s) Grantee is required to use a reserve pit, upon completion of the drilling operations, the reserve pit will be allowed to

evaporate until dry, after which all plastic and contents of the pit shall be removed and disposed of off-site of the Subject Property. Clean margins will be established both horizontally and vertically in the removal of the reserve pit. The reserve pit shall be backfilled with the top layer containing topsoil 3' in depth. Grantee agrees to purchase topsoil owned by the Grantor from the Grantor at a rate of \$3.50 per cubic yard to back fill the reserve pit if necessary. The pit shall be leveled, leaving such land suitable for replanting. Rocks larger than 3' in diameter will be buried below ground level. After the above procedures are completed, Grantee shall reseed the reserve pit area with native grass seed. Grantee will cooperate as to the type and quantity of seed to be planted and the time and technique of planting the seed.

- VI. <u>Non Productive Well:</u> In the event a well drilled under this agreement is not completed as a producing well or the well is no longer able to produce and considered depleted and is plugged and abandoned, Grantee shall, within six (6) months, remove all equipment an any other items of equipment used directly or indirectly by Grantee as it pertains to the well drilled by it on the Subject Property and restore the site as set out below in Item IX. If Grantee should fail to remove all such equipment within said six (6) months and if Grantee fails to remove same within fifteen (15) days after Grantor's written notice specifying such failure to remove same, Grantor, at their option, shall be entitled, but not obligated, to remove all or any part of same and dispose of it without further notice.
- VII. Lost Livestock Value/Fire Damage: In the event of any accident caused by Grantee's operations which results in the death of livestock, Grantee agrees to pay Grantor, or the owner of the livestock, the market value of the livestock as of the date of death. Grantee shall agree to compensate Grantor for any fire damage caused by Oil and Gas Operations on the Subject Property. The exact amount of compensation shall be determined by multiplying the actual number of acres which suffer fire damage by \$35.00 per acre, in addition to the replacement costs of any improvements to the lands (i.e. fencing).
- VIII. <u>New Roadway/Pipe Line/Power Line Construction:</u> Grantor shall grant the right to Grantee to construct new roadways on the Subject Property. Grantee shall compensate Grantor for use of existing roads and for new roads constructed on Subject Property for which Grantor may prove loss of access or loss of the Subject Property. Compensation shall be \$40.00 per rod for damages for new roads and \$15.00 per rod for damages for existing roads on Fee Surface lands and \$15.00 per rod for new roads only on State Grazing Lease lands, a rod being equal to sixteen and one-half feet (16.5'). Grantee shall have the right to construct (including the right to place materials suitable for roadway construction in the oilfield), use, maintain, inspect, repair and operate new roadways, not to exceed fourteen feet (14') in width. Said fourteen feet is to be measured from edge to edge of road surface constructed by Grantee. Grantee shall also have the right to clear and use up to an additional four feet (4') on each side of an existing roadway surface for the construction and maintenance of bar ditches and other water diversions, as well as an additional ten feet (10'), limited to one side of an existing roadway, for turnouts as may be required for every 1,000' of an existing roadway.

Grantor shall grant the right to construct, use, maintain, inspect, repair and operate pipelines and power lines of the Subject Property. Grantee shall compensate Grantor for new pipelines or power lines constructed on the Subject Property for which Grantor may prove lost access or lost use of the Subject Property.

<u>State Grazing Lease Surface:</u> Grantee shall pay \$5.00 per rod for buried pipelines and \$20.00 per rod for any surface pipeline that remains unburied for a period longer than 90 days from completion of construction

<u>Fee Surface</u>: A one-time payment of \$70.00 per rod per surface disturbance for all buried pipelines. Multiple lines may be laid at one time in a single ditch/right of way and only constitutes one surface disturbance. If, however, further surface disturbance is required to bury additional lines or upgrade an existing line at a later date, compensation is required for the additional surface disturbance at the same rate of \$70.00 per rod. A one-time payment of \$40.00 per rod for any surface pipeline that remains unburied for a period longer than 90 days from completion of construction.

The land used for pipelines shall not exceed a temporary width of fifty feet (50') during construction and a permanent width of twenty feet (20') following construction.

For power line damages, Grantee shall compensate Grantor at a rate of \$10.00 per rod.

- IX. <u>Reclamation:</u> Grantee shall reclaim the surface property to standards used and approved by the NMOCD at the time of this Agreement. Additional requirements posed by the NMOCD at the time of closure shall not create Grantee liability to Grantor beyond that stated in this Agreement. Further, once NMOCD has released the financial assurance required with said agency for operations, Grantor and all his successors and assignees agree to indemnify and hold Grantee free and harmless against any and all loss, damage claims and suits resulting from reclamation or closure processes on the surface property.
- X. <u>Indemnification:</u> Grantee, its contractors, agents and assigns do hereby covenant and agree to indemnify and hold Grantor free and harmless against any and all loss, damage, claims, demands and suits which Grantor may suffer as a result of Grantee's operations hereunder, excluding any loss, damage, claim, demands or suits resulting from the negligence or willful misconduct of Grantor.
- XI. <u>Payments:</u> In the event of a change of ownership relating to the Subject Property, Grantee shall not be bound by the same until it is furnished with satisfactory evidence in recordable form of said change of ownership. Further, Grantor acknowledges and accepts that the provisions of this Agreement, including the payments made hereunder, are covenants which touch and concern the Subject Property, and that none of the rights or obligations contained herein may be severed from the ownership of the Subject Property. All payments made hereunder by Grantee shall always and only be payable to the respective owner(s) of the Subject Property.
- XII. <u>Confidentiality:</u> Grantor hereby warrants and represents that Grantor shall not disclose or publish in any form or fashion the amounts or details of the agreement reached between the parties herein, it being understood that such warranty and representation forms part of the consideration of this Agreement.

STATE OF NEW MEXICO	ş
	ş
COUNTY OF EDDY	ş

This instrument was acknowledged before me this 12^{-12} day of <u>November</u>, 2018 by Stuart Bogle, as COO for Bogle Limited Company, LLC on behalf of said company.

Notary Public My Lon-issing Expires : 0/3/2021

STATE OF TEXAS	5
	ş
COUNTY OF MIDLAND	ş

This instrument was acknowledged before me this <u>2914</u> day of <u>OUOUC</u> 2018 by Tom M. Brandt, as President of Marshall & Winston, Inc., a Nevada Corporation, on behalf of said corporation.

MELANIE AIGUIER Notary Public, State of Texas ID# 12979614-9 My Commission Expires APRIL 24, 2022

Notary Public, State of Texas

TO HAVE AND TO HOLD said Surface Use Agreement and the rights and privileges granted hereunder unto the said Grantee, its successors and assigns, for so long as the same shall be useful, necessary, or convenient for the above named purposes by Grantee. This agreement may be assigned in whole by Grantee. Any assignee shall be bound by and subject to the terms and provisions of this Surface Use Agreement. Execution of this document shall operate as a knowing and specific waiver to all provisions of the New Mexico Surface Use Agreement will be the exclusive remedy between the parties as to the damages to the Subject Property attributable to Grantee's Oil and Gas Operations on the Subject Property.

The terms, conditions and provisions hereof shall extend to and by binding upon the heirs, executors, administrators, persona representatives, successors and assigns or the parties hereto.

EXECUTED this 29th day of October 2018.

Grantor:

Grantee:

BOGLE LIMITED COMPANY, LI

Stuart Bogle, COO

MARSHALL & WINSTON, INC.

Tom M. Brandt, President