Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE – *Other instructions on page 2.*

5. Lease Serial No.
NM91078

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
LENTINI 1 FEDERAL #1

2. Name of Operator
CHEVRON U.S.A. INC.

9. API Well No.
30-015-27533

3a. Address
15 SMITH ROAD
MIDLAND, TEXAS 79705

3b. Phone No. *(include area code)*
432-687-7375

10. Field and Pool or Exploratory Area
HERRADURA BEND; DELAWARE EAST

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
UL: D, SECTION 1, T-23S, R-28E, 500 FNL, & 400 FWL

11. County or Parish, State
EDDY COUNTY, NEW MEXICO

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

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

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

CHEVRON U.S.A. INC. INTENDS TO ADD ADDITIONAL PERFORATIONS IN THE BRUSHY CANYON FORMATION AND FRACTURE STIMULATE.

PLEASE FIND ATTACHED, THE INTENDED PROCEDURE, & WELLBORE DIAGRAMS.

DURING THE PROCEDURE WE PLAN TO USE THE CLOSED LOOP SYSTEM WITH A STEEL TANK AND HAUL TO THE REQUIRED DISPOSAL, PER THE OCD RULE 19.15.17.

Accepted for record
NMOCD 8/16/2013

RECEIVED
AUG 16 2013
NMOCD ARTESIA

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

Title REGULATORY SPECIALIST

Signature Denise Pinkerton

Date 07/30/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
AUG 16 2013
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved by

Title

Date

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

Office

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

(Instructions on page 2)

5 Workover/Completion Program

1. Workover / Completion Approval Form
2. Workover / Completion Program
3. Current/ Proposed Wellbore Diagram
5. H2S Radius of Exposure Calculations
4. Neutron-Density log dated 7/31/1993

Workover/ Completion Program

Date: 04/19/2013

Well:	Lentini 1 Federal #01
Reservoir/Field:	**Reservoir:** Brushy Canyon/ **Field - East** Herradura Bend
Surface Location:	Sec 01-23S-28E 500 FNL 400 FWL
GPS (NAD27) – (Long, Lat):	N 32° 20' 25.8", W -104° 2' 50.064" (NAD27)
API No:	30-015-27533
Cost Center:	UCKF10100
Chevron Ref. No.:	OV7884
WBS #:	**UWDPS-R3087**

Job: **Add additional Brushy Canyon (Delaware) perforations and sand frac.**

BRIEF BACKGROUND OF THE JOB:

Currently, the well is only perforated in a small portion of the Brushy Canyon formation. It is proposed to add two additional perforation depths in the Brushy Canyon formation [5,220'-5,254' (new) and 5,700'-5,724' (new)] by isolating the existing perforations of the Lentini 1 Federal #01, followed by sand fracturing the formation (with acid spearhead) to increase the production.

CURRENT HOLE CONDITION:

Total Depth: 6,400' PB: (6,295-6,311) PB - Fill (sand) GL: 3056' KB: +12'
PBTD: (6,311-6,400) PBTD- (Cement)

In one of the previous LOWIS Job management report (Jan 1997) plug back fill mentioned was 6,295'.

Casing Record:

8 $^{5}/_{8}$" 24#, K-55, set w/575 sks Class C cement. TOC-Surface (Circ 25 sks)

5 ½" 15.5# K-55, set w/1300 sks Class C cement. TOC - Surface, Circ 125 sks

Existing Perforations:

Brushy Canyon (Delaware): 5866'-5884' - Sep -93
Brushy Canyon (Delaware): 5888'-5898' - Sep -93
Brushy Canyon (Delaware): 5929'-5934' - Mar -99
Brushy Canyon (Delaware): 5942'-5947' - Mar -99
Brushy Canyon (Delaware): 5962'-5972' - Mar -99
Brushy Canyon (Delaware): 6021'-6028' - Aug -93
Brushy Canyon (Delaware): 6051'-6058' - Dec-03
Brushy Canyon (Delaware): 6117'-6128' - Aug -93
Brushy Canyon (Delaware): 6138'-6158' - Dec-03
Brushy Canyon (Delaware): 6177'-6179' - Dec-03

REGULATORY REQUIREMENTS:

Submit C-103 Notice of Intent & Subsequent Reports (to be completed by engineering staff)

Prepared by: Prasanna K Chandran (05/06/13) Reviewed by: Evan Asire (05/22/13)

PREWORK:

1. Utilize the rig move check list.
2. Check anchors and verify that a pull test has been completed in the last 24 months.
3. Ensure location of & distance to power lines is in ac cordance with MCA SWP. Complete an electrical variance and RUMS if necessary.
4. Ensure that location is of adequate build and construction.
5. Ensure that elevators and other lifting equipment are inspected. Calliper all lifting equipment at the beginning of each day or when sizes change.
6. When NU anything over and open wellhead (EPA, etc.) ensure the hole is covered to avoid dropping anything downhole.
7. For wells to be worked on or drilled in an H_2S field/area, include the anticipated maximum amount of H_2S that an individual could be exposed to along with the ROE calculations for 100 ppm and 500 ppm.
8. Ensure well is secure/shut in with blind rams between job stages (nothing in well).

PROCEDURE:

This procedure is meant to be followed. It is up to the WSM, Remedial Engineer and Production Engineer to make the decisions necessary to do SAFELY what is best for the well. In the extent that this procedure does not reflect actual operations, please contact RE, PE and Superintendent for MOC.

NOTE: Schedule Dickey Analytical to be present at Frac. (Rita Dickey) 432-553-2526

RIG UP WO UNIT/ PULL WELL EQUIPMENT OUT OF HOLE

1. MI & RU workover unit.
2. Verify that well does not have pressure or flow. If the well has pressure, note tubing and casing pressures on WellView report. Bleed down well and kill with cut brine, if necessary.
3. Unseat pump, POOH laying down rods and pump. Examine rods for wear/pitting/paraffin. Do not hot water unless necessary.
4. **Caliper elevators and tubular EACH DAY prior to handling tubing/tools and anytime size changes (Use elevator change out log as well). Note in JSA when and what items are callipered within the task step that includes that work.**
5. ND wellhead, unset TAC, NU BOP dressed with 2 $^{7}/_{8}$" pipe rams on top and blind rams on btm. POOH and LD 1 jt. PU 5 ½" 15.5# rated packer along with a joint of 2 $^{7}/_{8}$" tubing and set ~ @ 25', test BOP pipe rams to 250 psi/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
6. PU 1-2 joints of 2 $^{7}/_{8}$" tubing and tag for fill (TAC (5783'-57 85'), Top Perfs: 5,866', Bottom Perfs 6,179', EOT 6,257', last record ed fill: 6,295' -6,311' (Jan 1997- according to LOWIS) and PBT D: 6,311'-6,400' (Cement). TOH scanning and tallying 2 $^{7}/_{8}$" prod tubing; LD all jts. Note in WellView any drag or abnormalities while TOH. Secure well.

Stage – 1

SET CIBP AND ADDING PERFORATIONS: - (5,700'-5,724')

7. MIRU wireline unit. Install 5M lubricator and test against blind rams to 250/1000 psi for 5 minutes each. Bleed off pressure.

8. RIH with 4.625" gauge ring to 6000'. Note in WellView and contact RE if ring sets down, drags, or gets hung up inside 5 ½" casing.
9. RIH and set 5 ½" CIBP at 5,845' (approx 20' above top of existing perfs - 5866'). Correlate to GR on Neutron-Density log dated 7/31/1993. POOH.
10. Dump bail 10' of cement on top of CIBP. POOH.
11. Fill up csg and close blind rams. Pressure test 5 ½" csg dow n to CIBP to 250/500 psi for 5 min (Record csg test in WellView under Time Log and safety/inspections). Notify RE if p ressure doesn't hold. If casing leaks, PU 5 ½" te st packer on 2-7/8" 6. 5# L80 WS tbg [Utilize 2-7/8" production tbg pulled from well if you have at least enough yellow-band to get down to CIBP at 5,834' (~185 jts)] and isolate casing leak (Casing repair procedure to follow).
12. Establish radio silence and set up exclusion zone. GIH w/ 3 $^{3}/_{8}$" Predator with StimGun™ 80%, 5 Jspf, 30 deg phasing, 33-23-322T, 23 g charge perforating guns and perforate from 5,700'-5,724'. Correlate to GR on Neutron-Density log dated 7/31/1993.
13. POOH w/ perforating guns and verify that all shots were fired. ND Lubricator. RD and release electric line unit.
14. MIUL & strap ~165 jts 3 ½" 9.3# L80 tbg as frac string. Change out pipe rams to 3 ½". PU 5 ½" testing packer on one joint 3 ½" tubing and set @ 25'. Test BOP pipe rams to 250/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
15. PU/RIH with 10K 5 ½" AS-1X treating packer, on-off tool w/ 2.25 'F' hardened profile nipple and blast joint on 3½ " 9.3# L-80 workstring. Hydrotest tubing to 8,000 psi while RIH. Set packer at 5,110' (~ 110' above top proposed perfs at 5,220'-5,254'). Pressure test annulus/pkr to 500 psi. Nipple up 10K frac stack to BOP. Test frac valve to 8,000 psi.
16. RDMO pulling unit.

FRAC OPERATION:

Schedule Dickey Analytical to be present at Frac. (Rita Dickey) 432-553-2526

17. Prior to job, verify compatibilit y with Service Company of all frac flui ds to reservoir fluids at temperature of 135 ° F. Send results to Production and Remedial Engineers.
18. RU flowback crew if location permits. MIRU frac equipment. Conduct safety meeting and set up an exclusion zone. Install pop-off valves downstream of frac crew check valve with manually operated valve below pop-off. Test all service company pressure shutdowns on each pump truck and surface lines to 8,000 psi. **Set pop-off valve to 8,000 psi. Maximum surface pumping pressure of 8,000 psi. Install pop-off on 5 ½" x 3 ½" annulus and set to 500 psi. Pressure annulus to 300 psi and monitor during frac job.**
19. Establish pump rate into perforations with treated water. Complete sand fracture treatment as per attached frac procedure. **Ensure that the frac supervisor, treater, and all frac crew are aware that we want to purposely create a sand plug between the 2 stages of perfs (between 5,254' – 5,700').** Top of sand needs to be above 5,700' (between 50'-100' above top perf; approx. 5,650').
20. Monitor SIWHP@ 5, 10, 15 psi and make sure the sand plug is holding.

Stage – 2

ADDING PERFORATIONS: - (5,220'-5,254')

21. MI & RU Baker Atlas electric line unit. Install lubricator and test against blind rams to 250/1,000 psi.
22. GIH w/ 2" gauge ring and tag the top of sand. Notify RE if sand is not between the desired intervals.

23. Establish radio silence and set up exclusion zone. GIH w/ 1 $^{11}/_{16}$" gun 3 spf, 0 deg phasing, 6.5 g 42" EHD 35.21" TTP charge gun and perforate from 5,220'-5,254'. Correlate to GR on Neutron-Density log dates 7/31/1993.
24. GIH and shoot with 2" StimTube™ across new perfs 5,220' – 5,254'.
25. POOH/LD guns (check to make sure all shots fired). ND Lubricator. RD & release electric line unit.

FRAC OPERATION:

Schedule Dickey Analytical to be present at Frac. (Rita Dickey) 432-553-2526

26. MIRU frac equipment. Conduct safety meeting and set up an exclusion zone. Install pop-off valves downstream of frac crew check valve with manually operated valve below pop-off. Test all service company pressure shutdowns on each pump truck and surface lines to 8,000 psi. **Set pop-off valve to 8,000 psi. Maximum surface pumping pressure of 8,000 psi. Install pop-off on 5 ½" x 3 ½" annulus and set to 500 psi. Pressure annulus to 300 psi and monitor during frac job.**
27. Establish pump rate into perforations with treated water. Complete sand fracture treatment as per attached frac procedure. **DO NOT OVERDISPLACE (EVEN TO TOP PERF) UNDER ANY CIRCUMSTANCES**
28. Monitor SIWHP@ 5, 10, 15 psi.

RIG DOWN AND MOVE OUT FRAC CREW

29. RDMO frac crew. Shut in at least 24 hours to allow sand to cure and X-linked fluids to break.
30. Flow back well through choke manifold until well dies. Bring well on at 20 bbls/hr and bring up to 50 bbls/hr over the first 12 hours. Continue flowing until well is dead or returns can be put into the flowline.
31. MIRU pulling unit. Test 3 ½" pipe rams to 500 psi against packer.
32. ND frac valve, release packer, and circulate kill weight fluid. POOH and lay down 5 ½" packer and 3½ " WS.

CLEAN OUT HOLE

33. Close Blind rams. Change 3 ½" to 2 $^{7}/_{8}$" pipe rams. Open blind rams. PU/RIH and set 5 ½" 15-17# rated packer @ ~ 25' to test 2 $^{7}/_{8}$" pipe rams to 250 psi / 1,000 psi. Release and LD packer.
34. MIRU power swivel, reverse unit and form air unit. TIH w/ 4 $^{3}/_{4}$" milltooth tri-cone bit and 4 3 ½" drill collars on 2 $^{7}/_{8}$" 6.5# L-80 worksting. Clean out sand and wellbore to new PB depth at 5,835' (or Minimum 50' below bottom perf at 5724'). **Continue to supplemental procedure and in accordance with the attached SOG**

PREP FOR RIG DOWN AND OVER TO PRODUCTION

35. TOOH to 5215' and close the pipe rams.
36. Bullhead scale inhibitor into perfs per Chemical rep recommendation. Flush scale inhibitor per Chemical rep recommendation. SI to soak overnight.
37. POOH laying down workstring. Secure well.
38. PU and RIH with production tubing as per ALNC Planner recommendation.
39. ND BOP, set TAC per ALNC Planner recommendation and NU WH.
40. RIH with rods, weight bars and pump per ALNC Planner recommendation. RDMO pulling unit
41. Turn well over to production (see contacts on first page of procedure).

FOAM / AIR CLEANOUT PROCEDURE

- This procedure is an addition to the original procedure.

1. Install flowback manifold with two chokes. All components on flowback manifold must be rated to at least 5,000 psi. If possible, flowback manifold components should be hydrotested before delivery. Hardline pipes from 2" casing valve to manifold to half pit with gas buster.
2. Install flowback tank downwind from rig.
3. Position Air unit upwind from Rig next to water tanks. Have vacuum truck on standby to empty halfpit. (if needed)
4. RIH with 4 $^{3}/_{4}$" MT bit, four (3 ½") drill collars on 2 $^{7}/_{8}$" 6.5# L-80 WS.
5. NU stripper head with **NO Outlets** (Check stripper cap for thread type - course threads preferred). **Stripper head to be stump tested to 1,000 psi before being delivered to rig**. Check chart or test at rig.
6. RU foam air unit. Make quality foam on surface before going down hole with foam/air. Install flapper float at surface before beginning to pump. Break circulation with foam/air. Evacuate fluid from well.

Pump high quality foam at all times. Do not pump dry air at any time. Fluid injection rates will generally be above 12 gallons per minute

Whenever there is pressure on the stripper head, have a dedicated person continuously monitor pressure at choke manifold and have a dedicated person at accumulator ready to close annular BOP in case stripper leaks. Do not allow pressure on stripper head to exceed 500 psi. If pressure cannot be controlled below 500 psi, stop pumping, close BOP and bleed off pressure.

7. Clean out fill to **5835'** with low RPM's rotation and circulation, always keep pipe moving. Short trips can be beneficial to hole cleaning. Circulate well clean for at least 1 hour at the end of the day and pull up above the perforations before shut down for night. If the foam/air unit goes down, pull above the perforations.
8. When tripping out of hole, have special float bleed off tool available to relieve trapped pressure below float.

Ensure that high quality, stiff foam is pumped while circulating the fill. Stiff foam is required to prevent segregation while circulating. Monitor flow and pressures carefully when cleaning out.

Before rigging up power swivel to rotate, carefully inspect Kelly hose to ensure that it is in good condition. Ensure that swivel packing is in good condition.

Continue on with original procedure for completion.

Lentini 1 Federal #01 (Brushy Canyon- Delaware) (Current Wellbore Diagram)

Eunice FMT - FLD-EAST HERRADURA BEND

Well Data

Well Type	Well #	API No.	Reservoir
Oil	Lentini 1 Federal #01	30-015-27533	Brushy Canyon
First Completed	**Cost Center**	**Chevron Ref. No.**	**WBS #**
6-Aug-93	UCKF10100	OV7884	
Plug Back Depth (ft)	**Total Depth (ft)**	**Production Method**	**Status**
(6,295-6,311) PB - Fill (sand) (6,311-6,400) PBTD- (Cement)	6,400	Rod Pump	Online

Location: 500 FNL 400 FWL

Field	County	State	Township
FLD-EAST HERRADURA BEND	Eddy	New Mexico	23S
Range	**Section**	**GPS (NAD27) - (Long, Lat)**	
28E	1	N 32° 20' 25.8", W -104° 2' 50.064" (NAD27)	

Wellhead and Tree Data

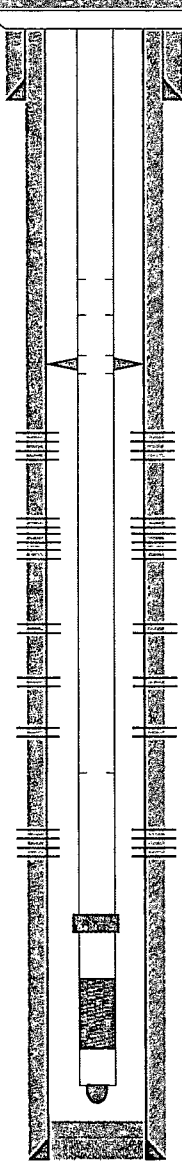
Item	Maker	Type	Size (in)	Part No.	Rating (psi)

Casing and Liner Data

Size (in)	Wt (lb/ft)	Grade	Top MD (ft)	Bottom MD (ft)	Bottom TVD (ft)	TOC
8 5/8	23	M-50	12	514		Surface
5 1/2	15.5	K-55	12	6,400		Surface

Tubing Data

Size (in)	Wt (lb/ft)	Grade	Conn	Top (ft)	Bottom MD (ft)	Bottom TVD (ft)	Comments
2 7/8	6.5	J-55		12	5,717		T&C External Upset
2 7/8	6.5	J-55		5,717	5,721		T&C External Upset
2 7/8	6.5	J-55		5,721	5,783		T&C External Upset
2 7/8	6.5	J-55		5,785	6,135		T&C External Upset
2 7/8	6.5	J-55		6,135	6,200		T&C Ext Upset,TK-99
2 7/8	6.5	J-55		6,201	6,205		T&C External Upset
2 7/8	6.5	J-55		6,225	6,257		T&C Ext Upset, w/dump valve



MDBRT (ft)	TVDBRT (ft)	Description	Min ID (")	Max OD (")	Drift (")	Length	Comments	
12								
514		Hole Size:12 1/4", 8 5/8" Csg, 24#, K-55, set w/575 sks Class C cement	8.097	9.625	7.972	502	(12-514) TOC-Surface, Circ 25 sks	(Surface Casing info.) (Cement Info.)
5,717		2 7/8", J-55 Tbg, 6.5#, T&C External Upset	2.394	3.5	2.347	5705	Joints: 181, (12-5717)	(Production Tbg Info.)
5,721		2 7/8", J-55 Tbg, 6.5#, T&C External Upset	2.394	3.5	2.347	4	Joints: 1, (5717-5721)	(Production Tbg Info.)
5,783		2 7/8", J-55 Tbg, 6.5#, T&C External Upset	2.394	3.5	2.347	62	Joints: 2, (5721-5783)	(Production Tbg Info.)
5,785		Tubing Anchor/Catcher				2	Quantity: 1, (5783-5785)	(Production Tbg Info.)
		Perforation Data- Sep-93 Perfs: (ft) / Zone / Status 5866'-5884' / Brushy Canyon / Open 5888'-5898' / Brushy Canyon / Open					2 spf, 120 deg 10 2 spf, 120 deg	(Perforation info.) Current
		Perforation Data- Mar-99 Perfs: (ft) / Zone / Status 5929'-5934' / Brushy Canyon / Open 5942'-5947' / Brushy Canyon / Open 5962'-5972' / Brushy Canyon / Open					5 4 spf 5 4 spf 10 4 spf	(Perforation info.) Current
		Perforation Data- Aug-93 Perfs: (ft) / Zone / Status 6021'-6028' / Brushy Canyon / Open					7 2 spf	
		Perforation Data- Dec-03 Perfs: (ft) / Zone / Status 6051'-6058' / Brushy Canyon / Open					7	(Perforation info.) Current
		Perforation Data- Aug-93 Perfs: (ft) / Zone / Status 6117'- 6128' / Brushy Canyon / Open					11 1 spf, 12 holes	
6,135		2 7/8", J-55 Tbg, 6.5#, T&C External Upset	2.394	3.5	2.347	350	Joints: 11, (5785-6135)	(Production Tbg Info.)
		Perforation Data- Dec-03 Perfs: (ft) / Zone / Status 6138'-6158' / Brushy Canyon / Open 6177'-6179' / Brushy Canyon / Open					20 2	(Perforation info.) Current
6,200		2 7/8", J-55 Tbg, 6.5#, T&C External Upset Internal Plastic Coating TK-99	2.394	3.5	2.347	65	Joints: 2, (6135-6200)	(Production Tbg Info.)
6,201		Seat Nipple - Heavy Duty (2.875)				1	Quantity: 1, (6200-6201)	(Production Tbg Info.)
6,205		2 7/8", J-55 Tbg, 6.5#, T&C External Upset 4" tubing sub	2.394	3.5	2.347	4	Joints: 1, (6201-6205)	(Production Tbg Info.)
6,225		Cavins Desander (Sand Sep) 2 7/8"				20	Quantity: 1, (6205-6225)	(Production Tbg Info.)
6,257		2 7/8", J-55 Tbg, 6.5#, T&C External Upset w/dump valve				32	Joints: 1, (6225-6257)	
6,295		PB Fill (6,295-6,311)-Jan 1997(Accordn. to LOWIS)					No Latest info available	
6,311		Plug Back Total Depth					(Cement-6,311-6,400)	
6,400		Hole Size: 7 7/8", 5 1/2" Csg , 15.5#,K-55 set w/1300 sks Class C cement	4.900	5.713	4.825	6,388	Hydril 521 TOC-Surface, Circ 125 sks	(Production Csg info.) (Cement Info.)
6,400		TD						

This wellbore diagram is based on the most recent information regarding wellbore configuration and equipment that could be found in the Midland Office well files and computer databases as of the update date below. Verify what is in the hole with the well file in the Eunice Field Office. Discuss w/WTD Engineer, WO Rep, DS, ALS, & FS prior to rigging up on well regarding any hazards or unknown issues pertaining to the well.

Prepared by: Prasanna Kumar Chandran | Checked By: | 30-Apr-13 | Version: 1

Lentini 1 Federal #01 (Brushy Canyon- Delaware) (Proposed Wellbore Diagram)

Eunice FMT - FLD-EAST HERRADURA BEND

Well Data

Well Type	Well #	API No.	Reservoir
Oil	Lentini 1 Federal #01	30-015-27533	Brushy Canyon
First Completed	**Cost Center**	**Chevron Ref. No.**	**WBS #**
6-Aug-93	UCKF10100	OV7884	
Plug Back Depth (ft)	**Total Depth (ft)**	**Production Method**	**Status**
(6,295-6,311) PB - Fill (sand) (6,311-6,400) PBTD- (Cement)	6,400	Rod Pump	Online

Location: 500 FNL 400 FWL

Field	County	State	Township
FLD-EAST HERRADURA BEND	Eddy	New Mexico	23S
Range	**Section**	**GPS (NAD27) - (Long, Lat)**	
28E	1	N 32° 20' 25.8", W -104° 2' 50.064" (NAD27)	

Wellhead and Tree Data

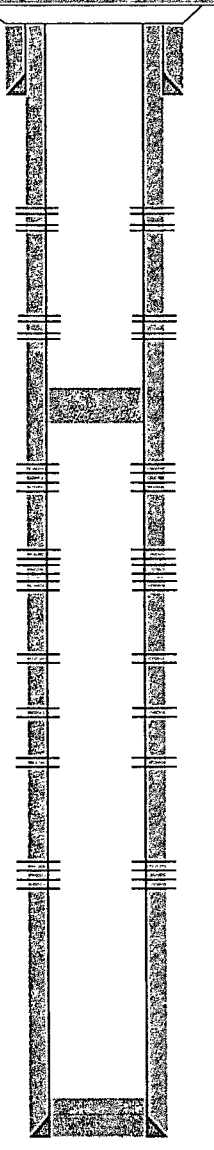
Item	Maker	Type	Size (in)	Part No.	Rating (psi)

Casing and Liner Data

Size (in)	Wt (lb/ft)	Grade	Top MD (ft)	Bottom MD (ft)	Bottom TVD (ft)	TOC
8 5/8	23	M-50	12	514		Surface
5 1/2	15.5	K-55	12	6,400		Surface

Tubing Data

Size (in)	Wt (lb/ft)	Grade	Conn	Top (ft)	Bottom MD (ft)	Bottom TVD (ft)	Comments
2 7/8	6.5	J-55		12	5,717		T&C External Upset
2 7/8	6.5	J-55		5,717	5,721		T&C External Upset
2 7/8	6.5	J-55		5,721	5,783		T&C External Upset
2 7/8	6.5	J-55		5,785	6,135		T&C External Upset
2 7/8	6.5	J-55		6,135	6,200		T&C Ext Upset,TK-99
2 7/8	6.5	J-55		6,201	6,205		T&C External Upset
2 7/8	6.5	J-55		6,225	6,257		T&C Ext Upset, w/dump valve



MDBRT (ft)	TVDBRT (ft)	Description	Min. ID (in)	Max OD (in)	Drift (in)	Length	Comments	
12								
514		Hole Size:12 1/4", 8 5/8" Csg, 24#, K-55, set w/575 sks Class C cement	8.097	9.625	7.972	502	(12-514) TOC-Surface, Circ 25 sks	(Surface Casing info.) (Cement Info.)
		Perforation Data- Proposed						
		Perfs: (ft) / Zone / Status						
5,220		5220 - Top / Brushy Canyon / Proposed						(Perforation info.)
5,254		5254 - Bottom / Brushy Canyon / Proposed				34		Proposed
		Perforation Data- Proposed						
		Perfs: (ft) / Zone / Status						(Perforation Info.)
5,700		5700 - Top / Brushy Canyon / Proposed						Proposed
5,724		5724 - Top / Brushy Canyon / Proposed				24		
5,834								
5,844		Dump 10' of cement				10		Proposed
		Set CIBP @ 5,844'				2		Proposed
		Perforation Data- Sep-93						(Perforation info.)
		Perfs: (ft) / Zone / Status						
		5866'-5884' / Brushy Canyon / Open				6	2 spf, 120 deg	Current
		5888'-5898' / Brushy Canyon / Open				10	2 spf, 120 deg	
		Perforation Data- Mar-99						(Perforation info.)
		Perfs: (ft) / Zone / Status						
		5929'-5934' / Brushy Canyon / Open				5	4 spf	Current
		5942'-5947' / Brushy Canyon / Open				5	4 spf	
		5962'-5972' / Brushy Canyon / Open				10	4 spf	
		Perforation Data- Aug-93						
		Perfs: (ft) / Zone / Status						
		6021'-6028' / Brushy Canyon / Open				7	2 spf	
		Perforation Data- Dec-03						(Perforation info.)
		Perfs: (ft) / Zone / Status						Current
		6051'-6058' / Brushy Canyon / Open				7		
		Perforation Data- Aug-93						
		Perfs: (ft) / Zone / Status						
		6117'- 6128' / Brushy Canyon / Open				11	1 spf, 12 holes	
		Perforation Data- Dec-03						(Perforation info.)
		Perfs: (ft) / Zone / Status						Current
		6138'-6158' / Brushy Canyon / Open				20		
		6177'-6179' / Brushy Canyon / Open				2		
6,295		PB Fill (6,295-6,311)-Jan 1997(Accordn. to LOWIS)					No Latest info available	
6,311		Plug Back Total Depth					(Cement-6,311-6,400)	
6,400		Hole Size: 7 7/8", 5 1/2" Csg , 15.5#,K-55	4.900	5.713	4.825	6,388	Hydril 521	(Production Csg info.)
		set w/1300 sks Class C cement					TOC-Surface, Circ 125 sks	(Cement Info.)
6,400		TD						

This wellbore diagram is based on the most recent information regarding wellbore configuration and equipment that could be found in the Midland Office well files and computer databases as of the above date before. Verify what is in the hole with the well file in the Eunice Field Office. Discuss w/ WTG Engineer, WO Rep, OS, A1S, & FS prior to rigging up on well regarding any hazards or unknown issues pertaining to the well.

Prepared by: Prasanna Kumar Chandran | Checked By: | 30-Apr-13 | Version: 1

Workover/ Completion Program

Date: 04/19/2013

Well:	Lentini 1 Federal #01
Reservoir/Field:	**Reservoir:** Brushy Canyon/ **Field - East** Herradura Bend
Surface Location:	Sec 01-23S-28E 500 FNL 400 FWL
GPS (NAD27) – (Long, Lat):	N 32° 20' 25.8", W -104° 2' 50.064" (NAD27)
API No:	30-015-27533
Cost Center:	UCKF10100
Chevron Ref. No.:	OV7884
WBS #:	**UWDPS-R3087**

Job: **Add additional Brushy Canyon (Delaware) perforations and sand frac.**

BRIEF BACKGROUND OF THE JOB:

Currently, the well is only perforated in a small portion of the Brushy Canyon formation. It is proposed to add two additional perforation depths in the Brushy Canyon formation [5,220'-5,254' (new) and 5,700'-5,724' (new)] by isolating the existing perforations of the Lentini 1 Federal #01, followed by sand fracturing the formation (with acid spearhead) to increase the production.

CURRENT HOLE CONDITION:

Total Depth: 6,400' PB: (6,295-6,311) PB - Fill (sand) GL: 3056' KB: +12'
PBTD: (6,311-6,400) PBTD- (Cement)

In one of the previous LOWIS Job management report (Jan 1997) plug back fill mentioned was 6,295'.

Casing Record:

8 $^{5}/_{8}$" 24#, K-55, set w/575 sks Class C cement. TOC-Surface (Circ 25 sks)

5 ½" 15.5# K-55, set w/1300 sks Class C cement. TOC - Surface, Circ 125 sks

Existing Perforations:

Brushy Canyon (Delaware): 5866'-5884' - Sep -93
Brushy Canyon (Delaware): 5888'-5898' - Sep -93
Brushy Canyon (Delaware): 5929'-5934' - Mar -99
Brushy Canyon (Delaware): 5942'-5947' - Mar -99
Brushy Canyon (Delaware): 5962'-5972' - Mar -99
Brushy Canyon (Delaware): 6021'-6028' - Aug -93
Brushy Canyon (Delaware): 6051'-6058' - Dec-03
Brushy Canyon (Delaware): 6117'-6128' - Aug -93
Brushy Canyon (Delaware): 6138'-6158' - Dec-03
Brushy Canyon (Delaware): 6177'-6179' - Dec-03

REGULATORY REQUIREMENTS:

Submit C-103 Notice of Intent & Subsequent Reports (to be completed by engineering staff)

Prepared by: Prasanna K Chandran (05/06/13) Reviewed by: Evan Asire (05/22/13)

PREWORK:

1. Utilize the rig move check list.
2. Check anchors and verify that a pull test has been completed in the last 24 months.
3. Ensure location of & distance to power lines is in ac cordance with MCA SWP. Complete an electrical variance and RUMS if necessary.
4. Ensure that location is of adequate build and construction.
5. Ensure that elevators and other lifting equipment are inspected. Calliper all lifting equipment at the beginning of each day or when sizes change.
6. When NU anything over and open wellhead (EPA, etc.) ensure the hole is covered to avoid dropping anything downhole.
7. For wells to be worked on or drilled in an H_2S field/area, include the anticipated maximum amount of H_2S that an individual could be exposed to along with the ROE calculations for 100 ppm and 500 ppm.
8. Ensure well is secure/shut in with blind rams between job stages (nothing in well).

PROCEDURE:

This procedure is meant to be followed. It is up to the WSM, Remedial Engineer and Production Engineer to make the decisions necessary to do SAFELY what is best for the well. In the extent that this procedure does not reflect actual operations, please contact RE, PE and Superintendent for MOC.

NOTE: Schedule Dickey Analytical to be present at Frac. (Rita Dickey) 432-553-2526

RIG UP WO UNIT/ PULL WELL EQUIPMENT OUT OF HOLE

1. MI & RU workover unit.
2. Verify that well does not have pressure or flow. If the well has pressure, note tubing and casing pressures on WellView report. Bleed down well and kill with cut brine, if necessary.
3. Unseat pump, POOH laying down rods and pump. Examine rods for wear/pitting/paraffin. Do not hot water unless necessary.
4. **Caliper elevators and tubular EACH DAY prior to handling tubing/tools and anytime size changes (Use elevator change out log as well). Note in JSA when and what items are callipered within the task step that includes that work.**
5. ND wellhead, unset TAC, NU BOP dressed with 2 $^7/_8$" pipe rams on top and blind rams on btm. POOH and LD 1 jt. PU 5 ½" 15.5# rated packer along with a joint of 2 $^7/_8$" tubing and set ~ @ 25', test BOP pipe rams to 250 psi/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
6. PU 1-2 joints of 2 $^7/_8$" tubing and tag for fill (TAC (5783'-57 85'), Top Perfs: 5,866', Bottom Perfs 6,179', EOT 6,257', last record ed fill: 6,295' -6,311' (Jan 1997- according to LOWIS) and PBT D: 6,311'-6,400' (Cement). TOH scanning and tallying 2 $^7/_8$" prod tubing; LD all jts. Note in WellView any drag or abnormalities while TOH. Secure well.

Stage – 1

SET CIBP AND ADDING PERFORATIONS: - (5,700'-5,724')

7. MIRU wireline unit. Install 5M lubricator and test against blind rams to 250/1000 psi for 5 minutes each. Bleed off pressure.

8. RIH with 4.625" gauge ring to 6000'. Note in WellView and contact RE if ring sets down, drags, or gets hung up inside 5 ½" casing.
9. RIH and set 5 ½" CIBP at 5,845' (approx 20' above top of existing perfs - 5866'). Correlate to GR on Neutron-Density log dated 7/31/1993. POOH.
10. Dump bail 10' of cement on top of CIBP. POOH.
11. Fill up csg and close blind rams. Pressure test 5 ½" csg dow n to CIBP to 250/500 psi for 5 min (Record csg test in WellView under Time Log and safety/inspections). Notify RE if p ressure doesn't hold. If casing leaks, PU 5 ½" te st packer on 2-7/8" 6. 5# L80 WS tbg [Utilize 2-7/8" production tbg pulled from well if you have at least enough yellow-band to get down to CIBP at 5,834' (~185 jts)] and isolate casing leak (Casing repair procedure to follow).
12. Establish radio silence and set up exclusion zone. GIH w/ 3 $^{3}/_{8}$" Predator with StimGun™ 80%, 5 Jspf, 30 deg phasing, 33-23-322T, 23 g charge perforating guns and perforate from 5,700'-5,724'. Correlate to GR on Neutron-Density log dated 7/31/1993.
13. POOH w/ perforating guns and verify that all shots were fired. ND Lubricator. RD and release electric line unit.
14. MIUL & strap ~165 jts 3 ½" 9.3# L80 tbg as frac string. Change out pipe rams to 3 ½". PU 5 ½" testing packer on one joint 3 ½" tubing and set @ 25'. Test BOP pipe rams to 250/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
15. PU/RIH with 10K 5 ½" AS-1X treating packer, on-off tool w/ 2.25 'F' hardened profile nipple and blast joint on 3½ " 9.3# L-80 workstring. Hydrotest tubing to 8,000 psi while RIH. Set packer at 5,110' (~ 110' above top proposed perfs at 5,220'-5,254'). Pressure test annulus/pkr to 500 psi. Nipple up 10K frac stack to BOP. Test frac valve to 8,000 psi.
16. RDMO pulling unit.

FRAC OPERATION:

Schedule Dickey Analytical to be present at Frac. (Rita Dickey) 432-553-2526

17. Prior to job, verify compatibilit y with Service Company of all frac flui ds to reservoir fluids at temperature of 135 ° F. Send results to Production and Remedial Engineers.
18. RU flowback crew if location permits. MIRU frac equipment. Conduct safety meeting and set up an exclusion zone. Install pop-off valves downstream of frac crew check valve with manually operated valve below pop-off. Test all service company pressure shutdowns on each pump truck and surface lines to 8,000 psi. **Set pop-off valve to 8,000 psi. Maximum surface pumping pressure of 8,000 psi. Install pop-off on 5 ½" x 3 ½" annulus and set to 500 psi. Pressure annulus to 300 psi and monitor during frac job.**
19. Establish pump rate into perforations with treated water. Complete sand fracture treatment as per attached frac procedure. **Ensure that the frac supervisor, treater, and all frac crew are aware that we want to purposely create a sand plug between the 2 stages of perfs (between 5,254' – 5,700')**. Top of sand needs to be above 5,700' (between 50'-100' above top perf; approx. 5,650').
20. Monitor SIWHP@ 5, 10, 15 psi and make sure the sand plug is holding.

Stage – 2

ADDING PERFORATIONS: - (5,220'-5,254')

21. MI & RU Baker Atlas electric line unit. Install lubricator and test against blind rams to 250/1,000 psi.
22. GIH w/ 2" gauge ring and tag the top of sand. Notify RE if sand is not between the desired intervals.

23. Establish radio silence and set up exclusion zone. GIH w/ 1 $^{11}/_{16}$" gun 3 spf, 0 deg phasing, 6.5 g 42" EHD 35.21" TTP charge gun and perforate from 5,220'-5,254'. Correlate to GR on Neutron-Density log dates 7/31/1993.
24. GIH and shoot with 2" StimTube™ across new perfs 5,220' – 5,254'.
25. POOH/LD guns (check to make sure all shots fired). ND Lubricator. RD & release electric line unit.

FRAC OPERATION:

Schedule Dickey Analytical to be present at Frac. (Rita Dickey) 432-553-2526

26. MIRU frac equipment. Conduct safety meeting and set up an exclusion zone. Install pop-off valves downstream of frac crew check valve with manually operated valve below pop-off. Test all service company pressure shutdowns on each pump truck and surface lines to 8,000 psi. **Set pop-off valve to 8,000 psi. Maximum surface pumping pressure of 8,000 psi. Install pop-off on 5 ½" x 3 ½" annulus and set to 500 psi. Pressure annulus to 300 psi and monitor during frac job.**
27. Establish pump rate into perforations with treated water. Complete sand fracture treatment as per attached frac procedure. **DO NOT OVERDISPLACE (EVEN TO TOP PERF) UNDER ANY CIRCUMSTANCES**
28. Monitor SIWHP@ 5, 10, 15 psi.

RIG DOWN AND MOVE OUT FRAC CREW

29. RDMO frac crew. Shut in at least 24 hours to allow sand to cure and X-linked fluids to break.
30. Flow back well through choke manifold until well dies. Bring well on at 20 bbls/hr and bring up to 50 bbls/hr over the first 12 hours. Continue flowing until well is dead or returns can be put into the flowline.
31. MIRU pulling unit. Test 3 ½" pipe rams to 500 psi against packer.
32. ND frac valve, release packer, and circulate kill weight fluid. POOH and lay down 5 ½" packer and 3½ " WS.

CLEAN OUT HOLE

33. Close Blind rams. Change 3 ½" to 2 $^{7}/_{8}$" pipe rams. Open blind rams. PU/RIH and set 5 ½" 15-17# rated packer @ ~ 25' to test 2 $^{7}/_{8}$" pipe rams to 250 psi / 1,000 psi. Release and LD packer.
34. MIRU power swivel, reverse unit and form air unit. TIH w/ 4 $^{3}/_{4}$" milltooth tri-cone bit and 4 3 ½" drill collars on 2 $^{7}/_{8}$" 6.5# L-80 workstring. Clean out sand and wellbore to new PB depth at 5,835' (or Minimum 50' below bottom perf at 5724'). **Continue to supplemental procedure and in accordance with the attached SOG**

PREP FOR RIG DOWN AND OVER TO PRODUCTION

35. TOOH to 5215' and close the pipe rams.
36. Bullhead scale inhibitor into perfs per Chemical rep recommendation. Flush scale inhibitor per Chemical rep recommendation. SI to soak overnight.
37. POOH laying down workstring. Secure well.
38. PU and RIH with production tubing as per ALNC Planner recommendation.
39. ND BOP, set TAC per ALNC Planner recommendation and NU WH.
40. RIH with rods, weight bars and pump per ALNC Planner recommendation. RDMO pulling unit
41. Turn well over to production (see contacts on first page of procedure).

FOAM / AIR CLEANOUT PROCEDURE

- This procedure is an addition to the original procedure.

1. Install flowback manifold with two chokes. All components on flowback manifold must be rated to at least 5,000 psi. If possible, flowback manifold components should be hydrotested before delivery. Hardline pipes from 2" casing valve to manifold to half pit with gas buster.
2. Install flowback tank downwind from rig.
3. Position Air unit upwind from Rig next to water tanks. Have vacuum truck on standby to empty halfpit. (if needed)
4. RIH with 4 $^{3}/_{4}$" MT bit, four (3 ½") drill collars on 2 $^{7}/_{8}$" 6.5# L-80 WS.
5. NU stripper head with **NO Outlets** (Check stripper cap for thread type - course threads preferred). **Stripper head to be stump tested to 1,000 psi before being delivered to rig**. Check chart or test at rig.
6. RU foam air unit. Make quality foam on surface before going down hole with foam/air. Install flapper float at surface before beginning to pump. Break circulation with foam/air. Evacuate fluid from well.

Pump high quality foam at all times. Do not pump dry air at any time. Fluid injection rates will generally be above 12 gallons per minute

Whenever there is pressure on the stripper head, have a dedicated person continuously monitor pressure at choke manifold and have a dedicated person at accumulator ready to close annular BOP in case stripper leaks. Do not allow pressure on stripper head to exceed 500 psi. If pressure cannot be controlled below 500 psi, stop pumping, close BOP and bleed off pressure.

7. Clean out fill to **5835'** with low RPM's rotation and circulation, always keep pipe moving. Short trips can be beneficial to hole cleaning. Circulate well clean for at least 1 hour at the end of the day and pull up above the perforations before shut down for night. If the foam/air unit goes down, pull above the perforations.
8. When tripping out of hole, have special float bleed off tool available to relieve trapped pressure below float.

Ensure that high quality, stiff foam is pumped while circulating the fill. Stiff foam is required to prevent segregation while circulating. Monitor flow and pressures carefully when cleaning out.

Before rigging up power swivel to rotate, carefully inspect Kelly hose to ensure that it is in good condition. Ensure that swivel packing is in good condition.

Continue on with original procedure for completion.

Lentini 1 Federal 1
30-015-27533
Chevron U.S.A. Inc.
August 16 2013
Conditions of Approval

Notify BLM at 575-361-2822 a minimum of 24 hours prior to commencing work.

Work to be completed by November 16, 2013.

1. **Operator shall tag cement plug at 6,295' and top with an additional 100' of Class C cement.**

2. **Operator shall set a CIBP at 5,845' and place 15' of Class C cement on top. Tag required.**

3. **Must conduct a casing integrity test before perforating and fracturing. Submit results to BLM. The CIT is to be performed on the production casing to max treating pressure. Notify BLM if test fails.**

4. **If CIT passes, work is approved as proposed by operator.**

5. Before casing or a liner is added or replaced, prior BLM approval of the design is required. Use notice of intent Form 3160-5.

6. Surface disturbance beyond the originally approved pad must have prior approval.

7. Closed loop system required.

8. All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of work over 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.

9. Operator to have H2S monitoring equipment on location.

10. A minimum of a 2000 (2M) BOP to be used. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the size of the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 Attachment I (2M Diagrams of Choke Manifold Equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2.

11. Subsequent sundry required detailing work done and completion report. Operator to include well bore schematic of current well condition when work is complete.

12. See attached general requirements

JAM 081613

BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220
575-234-5972

General Requirements for Plug back

Failure to comply with the following Conditions of Approval may result in a Notice of Incidents of Noncompliance (INC) in accordance with 43 CFR 3163.1.

1. Plugging operations shall commence within **ninety (90)** days from this approval.

If you are unable to plug back the well by the 90th day provide this office, prior to the 90th day, with the reason for not meeting the deadline and a date when we can expect the well to be plugged back. Failure to do so will result in enforcement action.

2. **Notification: Contact the appropriate BLM office at least 24 hours prior to the commencing of any plug back operations. For wells in Eddy County, call 575-361-2822.**

3. Blowout Preventers: A blowout preventer (BOP), as appropriate, shall be installed before commencing any plugging operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,090 feet; a 3M system for a well not deeper than 13,636 feet; and a 5M system for a well not deeper than 22,727 feet.

4. Mud Requirement: Mud shall be placed between all plugs. Minimum consistency of plugging mud shall be obtained by mixing at the rate of 25 sacks (50 pounds each) of gel per 100 barrels of **brine** water. Minimum nine (9) pounds per gallon.

5. Cement Requirement: Sufficient cement shall be used to bring any required plug to the specified depth and length. Any given cement volumes on the proposed plugging procedure are merely estimates and are not final. Unless specific approval is received, no plug except the surface plug shall be less than 25 sacks of cement. Any plug that requires a tag will have a minimum WOC time of 4 hours.

In lieu of a cement plug across perforations in a cased hole (not for any other plugs), a bridge plug set within 50 feet to 100 feet above the perforations shall be capped with 25 sacks of cement. **Before pumping cement on top of CIBP, tag will be required to verify depth. Based on depth, a tag of the cement may be deemed necessary.**

Unless otherwise specified in the approved procedure, the cement plug shall consist of either **Neat Class "C"**, for up to 7,500 feet of depth or **Neat Class "H"**, for deeper than 7,500 feet plugs.

6. Subsequent Plug back Reporting: Within 30 days after plug back work is completed, file one original and three copies of the Subsequent Report, Form 3160-5 to BLM. The report should give in detail the manner in which the plug back work was carried out, the extent (by depths) of cement plugs placed, and the size and location (by depths) of casing left in the well. **Show date work was completed.**

7. Trash: All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.