

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

**District II**  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720

**District III**  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-101  
Revised July 18, 2013

☐ AMENDED REPORT

**HOBBS OCD**

**SEP 11 2017**

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUG BACK, OR ADD A ZONE**

<sup>1</sup> Operator Name and Address <b>Owl SWD Operating, LLC</b> <b>8214 Westchester Dr., Ste. 850,</b> <b>Dallas, TX 75255</b>		<sup>2</sup> OGRID Number <b>308339</b> <sup>3</sup> API Number <b>30-025-42000</b>
<sup>4</sup> Property Code <b>315064</b>	<sup>5</sup> Property Name <b>Brininstool SWD</b>	<sup>6</sup> Well No. <b>3</b>

**<sup>7</sup> Surface Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
<b>M</b>	<b>19</b>	<b>23 S</b>	<b>33 E</b>		<b>784'</b>	<b>South</b>	<b>419'</b>	<b>West</b>	<b>Lea</b>

**<sup>8</sup> Proposed Bottom Hole Location**

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

**<sup>9</sup> Pool Information**

Pool Name <b>SWD; Devonian</b>	Pool Code <b>96101</b>
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**Additional Well Information**

<sup>11</sup> Work Type <b>N</b>	<sup>12</sup> Well Type <b>S</b>	<sup>13</sup> Cable/Rotary <b>R</b>	<sup>14</sup> Lease Type <b>F</b>	<sup>15</sup> Ground Level Elevation <b>3710'</b>
<sup>16</sup> Multiple <b>N</b>	<sup>17</sup> Proposed Depth <b>18500'</b>	<sup>18</sup> Formation <b>Devonian / Silurian</b>	<sup>19</sup> Contractor <b>Latshaw</b>	<sup>20</sup> Spud Date <b>10/15/2017</b>
Depth to Ground water <b>225'</b>		Distance from nearest fresh water well <b>&lt; 1 mile - 2620'</b>		Distance to nearest surface water <b>unknown</b>

☒ We will be using a closed-loop system in lieu of lined pits

**<sup>21</sup> Proposed Casing and Cement Program**


Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
<b>Surface</b>	<b>24.0"</b>	<b>20.0"</b>	<b>106.5# J-55 ST&amp;C</b>	<b>1300'</b>	<b>1471 sx 'C'</b>	<b>Circ. to Surf.</b>
<b>Intermediate</b>	<b>17.5"</b>	<b>13.375"</b>	<b>68.0# HPC-110 ST&amp;C</b>	<b>5150'</b>	<b>4233 sx 'C'</b>	<b>Circ. to Surf.</b>
<b>Production</b>	<b>12.25"</b>	<b>9.875"</b>	<b>62.8# P-110 BT&amp;C</b>	<b>12000'</b>	<b>2303 sx 'H'</b>	<b>Circ. to Surf.</b>

**Casing/Cement Program: Additional Comments**

<b>Liner</b>	<b>8.5"</b>	<b>7.0"</b>	<b>32.0#</b>	<b>11800'-17000'</b>	<b>726 sx 'H'</b>	<b>11800' TOL</b>
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**<sup>22</sup> Proposed Blowout Prevention Program**

Type	Working Pressure	Test Pressure	Manufacturer
<b>Double Blind Ram Hydraulic</b>	<b>5000 psi</b>	<b>8000 psi</b>	<b>TBD (Schaffer/Hydriil Equiv.)</b>

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.  
 I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.  
 Signature: 

Printed name: **Ben Stone**

Title: **Agent for Owl SWD Operating, LLC**

E-mail Address: **ben@sosconsulting.us**

Date: **9/08/2017**

Phone: **903-488-9850**

**OIL CONSERVATION DIVISION**

Approved By:

Title:

**Petroleum Engineer**

Approved Date: **09/11/17**

Expiration Date: **09/11/19**

Conditions of Approval Attached

**Owl SWD Operating, LLC  
Brininstool Ranch SWD Well No.3  
Section 19, Twp 23-S, Rng 33-E  
Lea County, New Mexico**

**Well Program - New Drill**

**Objective: Drill new well for commercial salt water disposal into the Devonian, Silurian and Ordovician formations. (Note: Ordovician might only be accessed for logging rathole, mudlogging and e-logging to determine final depths.) Expected Target: 17,250' to 18,250'.**

**I. Geologic Information - Devonian / Silurian Formations**

This area of the Devonian consists of dolomites with some cherty dolomites characterized by intercrystalline and vugular porosity. Additional porosity can be found when the well bore encounters detrital carbonates interspersed throughout.

Estimated Formation Tops:

B/Fresh Water	400
T/Rustler	1283
T/Salado	1363
Delaware Sand	5142
Bone Spring	8778
Wolfcamp	12258
Strawn	14096
Atoka	14273
Morrow	15043
Middle Morrow	15393
Lower Morrow	15561
Woodford	15750
Devonian	17000
Silurian	17900
TD (Ordovician)	*18500

\*Please see narrative portion of drilling/pipe specs for TD options.

**2. Drilling Procedure**

- MIRU drilling rig and associated equipment. Set up H<sub>2</sub>S wind direction indicators; brief all personnel on Emergency Evacuation Routes.
- All contractors conduct safety meeting prior to current task. All equipment inspected daily. Repair / replace as required.
- Well spud operations commence.
- Mud logger monitoring returns; cuttings & waste hauled to specified facility. (Sundance, Lea County)
- After surface casing set/drilled; if H<sub>2</sub>S levels >20ppm detected, implement H<sub>2</sub>S Plan accordingly. (e.g., cease operations, shut in well, employ H<sub>2</sub>S safety trailer & personnel safety devices, install flare line, etc. - refer to plan.)
- Spills contained & cleaned up immediately. Repair or otherwise correct the situation within 48 hours before resuming operations. Notify OCD within 24 hours. Remediation started ASAP if required. Operator shall comply with 19.15.29 NMAC and 19.15.30 NMAC, as appropriate.

### Well Program - New Drill (cont.)

- g. Sundry forms filed as needed - casing, cement, etc. - operations continue to completion.

### 3. Casing program - Casing designed as follows:

STRING	HOLE SZ	DEPTH	CSG SZ	COND	WT/GRD	CLLPS/BR	TNSN
Surface	24.0"	0-1,300'	20.0"	New	106.5 lb. J/K-55	1.125/1.1	1.8
Intermediate	17.5"	0-5,150'	13.375"	New	68 lb. HPC-110	1.125/1.1	1.8
2nd Inter	12.25"	0-12,000'	9.875"	New	62.8 lb. P-110	1.125/1.1	1.8
Prod/ Liner*	8.5"	11,800'-17,000'	7.0"	New	32.0 lb. L-80 BT&C	1.125/1.1	1.8
Openhole*	5.875" hole	17,000'-18,500'	OH	n/a	n/a	n/a	n/a

#### Notes:

- ✓ On both Intermediate casing strings, the cement will be designed to circulate to surface. Both strings will have cement bond logs run (radial, CET or equivalent) to surface.
- ✓ While running all casing strings, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.
- ✓ \* Based on mudlogging and e-logs, 7.0" casing shoe may be set between 17,000' and 17,400'. Similarly, TD may be from 18,200' to 18,500' as determined by logging and suitable porosity has been exposed. IN ANY EVENT, maximum openhole interval would be from 17,000' to 18,500'.

### 4. Cementing Program:

**Surface** – LEAD 1255 sx (13.5#; 1.76 ft<sup>3</sup>/sk); TAIL 216 (14.8#; 1.34 ft<sup>3</sup>/sk) w/ 50 % excess; circulated to surface

**1st Intermediate** – LEAD 3763 sx (12.7#; 1.94 ft<sup>3</sup>/sk); TAIL 470 sx (14.8#; 1.33 ft<sup>3</sup>/sk) 50% excess; circulated to surface

**2nd Intermediate** – LEAD 2042 sx (11.9#; 2.45 ft<sup>3</sup>/sk); TAIL 261 sx (14.2#; 1.27 ft<sup>3</sup>/sk) 30% excess; circulated to surface.

**Prod Liner** – 726 sx (14.2#; 1.27 ft<sup>3</sup>/sk) 30% excess; TOC = 11,800' calc.

5. **Pressure Control** - BOP diagram is attached to this application. All BOP and related equipment shall comply with well control requirements as described NMOCD Rules and Regulations and API RP 53, Section 17. Minimum working pressure of the BOP and related equipment required for the drillout shall be 5000 psi. The NMOCD Artesia district office shall be notified a minimum of 4 hours in advance for a representative to witness BOP pressure tests. The test shall be performed by an independent service company utilizing a test plug (no cup or J-packer). The results of the test shall be recorded on a calibrated test chart submitted to the OCD district office. Test shall be conducted at:

- a. Installation;
- b. after equipment or configuration changes;
- c. at 30 days from any previous test, and;
- d. anytime operations warrant, such as well conditions



## **Well Program - New Drill (cont.)**

### **6. Mud Program & Monitoring** - Mud will be balanced for all operations as follows:

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
0-1300'	FW Spud Mud	8.5-9.2	70-40	20	12	NC	10.0
1300'-5150'	Brine Water	9.8-10.2	28-32	NC	NC	NC	10.0
5150'-12,000'	FW/Gel	8.7-9.0	28-32	NC	NC	NC	9.5-10.5
12,000'-17,000'	XCD Brine Mud	11.0-	45-48	20	10	<5	9.5-10.5
17,000'-18,500'	FW Mud	8.4-8.6	28-30	NC	NC	NC	9.5-10.5

Mud and all cuttings monitored w/ cuttings recovered for disposal. Returns shall be visually and electronically monitored. In the event of H<sub>2</sub>S, mud shall be adjusted appropriately by weight and H<sub>2</sub>S scavengers.

### **7. Auxiliary Well Control and Monitoring** – Hydraulic remote BOP operation, mudlogging to monitor returns.

**8. H<sub>2</sub>S Safety** - This well and related facilities are not expected to have H<sub>2</sub>S releases. However, there may be H<sub>2</sub>S in the area. There are no private residences or public facilities in the area but a contingency plan has been developed. Owl SWD Operating, LLC will have a company representative available to personnel throughout all operations. If H<sub>2</sub>S levels greater than 10ppm are detected or suspected, the H<sub>2</sub>S Contingency Plan will be implemented at the appropriate level.

H<sub>2</sub>S Safety - There is a low risk of H<sub>2</sub>S in this area. The operator will comply with the provisions of Onshore Oil and Gas Order #6.

- a) Monitoring - all personnel will wear monitoring devices.
- b) Warning Sign - a highly visible H<sub>2</sub>S warning sign will be placed for obvious viewing at the vehicular entrance point onto location.
- c) Wind Detection - two (2) wind direction socks will be placed on location.
- d) Communications - will be via cellular phones and/or radios located within reach of the driller, the rig floor and safety trailer when applicable.
- e) Alarms - will be located at the rig floor, circulating pump / reverse unit area and the flareline and will be set for visual (red flashing light) at 15 ppm and visual and audible (115 decibel siren) at 20 ppm.
- f) Mud program - If H<sub>2</sub>S levels require, proper mud weight, safe drilling practices and H<sub>2</sub>S scavengers will minimize potential hazards.
- g) Metallurgy - all tubulars, pressure control equipment, flowlines, valves, manifolds and related equipment will be rated for H<sub>2</sub>S service if required.

***The Owl SWD Operating, LLC H<sub>2</sub>S Contingency Plan will be implemented if levels greater than 10ppm H<sub>2</sub>S are detected.***

## **Well Program - New Drill (cont.)**

### **9. Logging, Coring and Testing** – Owl SWD Operating expects to run;

- a. CBL (Radial, CET or equivalent) on both intermediate casing strings.
- b. Standard porosity log suite from TD to approximately 15,000'.
- c. No corings or drill tests will be conducted. (The well may potentially be step rate tested in the future if additional injection pressures are required.)

### **10. Potential Hazards** - No abnormal pressures or temperatures are expected.

No loss of circulation is expected to occur with the exception of drilling into the target disposal zone. All personnel will be familiar with the safe operation of the equipment being used to drill this well.

The maximum anticipated bottom-hole pressure is 9300 psi and the maximum anticipated bottom-hole temperature is 199° F.

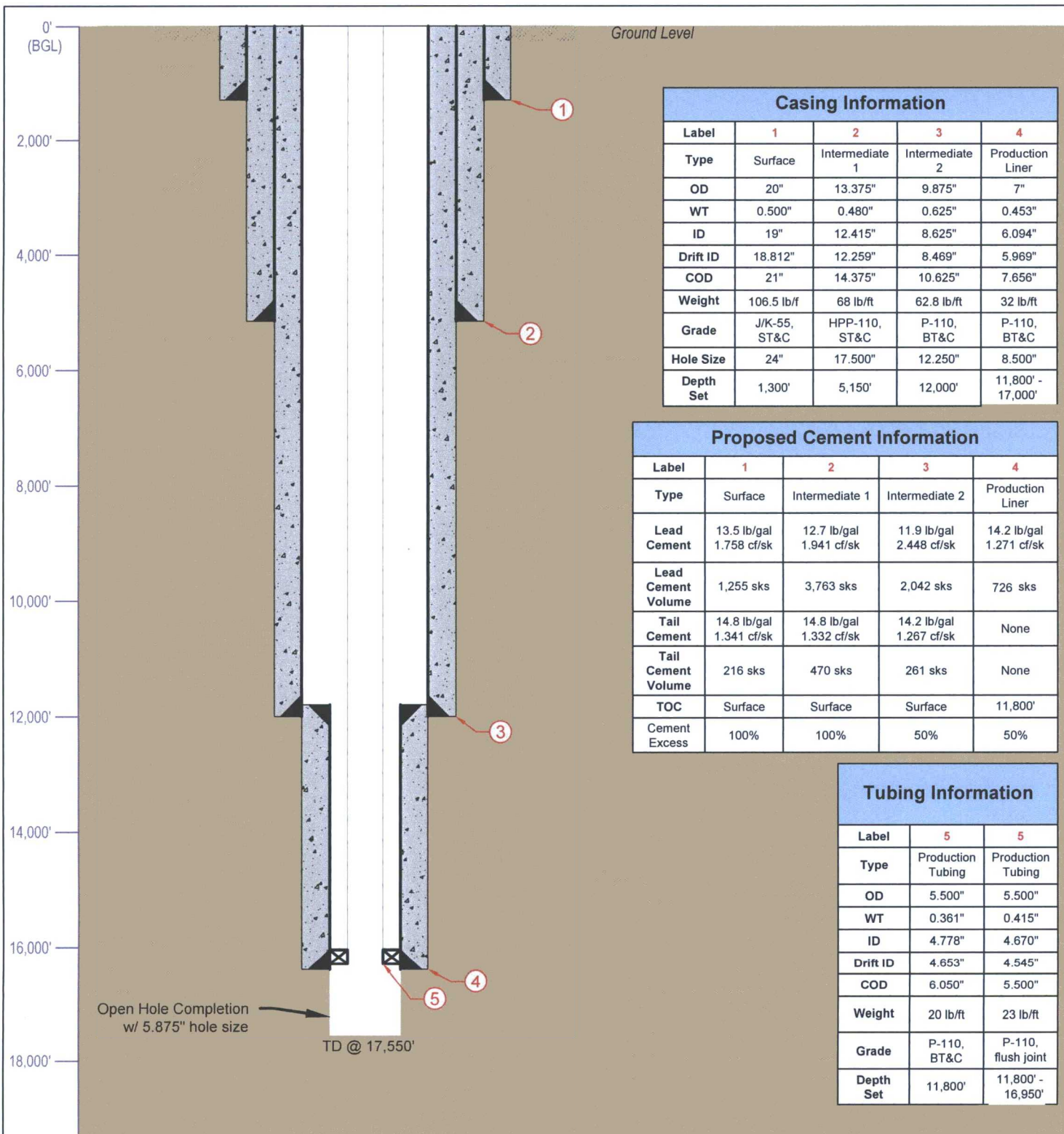
**11. Waste Management** - All drill cuttings and other wastes associated with and drilling operations will be transported to the Lea County Sundance facility (or alternate), permitted by the Environmental Bureau of the New Mexico Oil Conservation Division.

**12. Anticipated Start Date** - Upon approval of all permits for SWD, operations would begin within 30 days. Completion of the well operations will take six to seven weeks. Installation of the tank battery, berms, plumbing and other and associated equipment would be occurring during the same interval. In any event, it is not expected for the construction phase of the project to last more than 60 days, depending on availability of contractors and equipment. At the time of this submittal, and subject to the availability of the drilling contractor, the anticipated start date is:

**October 15, 2017.**

**13. Configure for Salt Water Disposal** – Subsequent to SWD permit approval from OCD and prior to commencing any work, an NOI sundry(ies) will be submitted to configure the well for SWD and will detail the completion workover including all work otherwise described above, any change to the procedure noted herein and to perform mechanical integrity pressure test per BLM and OCD test procedures. (Notify BLM and NMOCD 24 hours prior.) The casing/tubing annulus will be monitored for communication with injection fluid or loss of casing integrity. Anticipated daily maximum volume is 25,000 bpd and average of 15,000 bpd at a maximum surface injection pressure of 3200 psi (0.2 psi/ft to uppermost injection interval, i.e., casing shoe). If satisfactory disposals rates cannot be achieved at default pressure of .2 psi/ft, Owl Oil and Gas, LLC will conduct a step-rate test and apply for an injection pressure increase 50 psi below parting pressure.





<div>LONQUIST &amp; CO. LLC</div> <div>PETROLEUM ENGINEERSENERGY ADVISORS</div> <div>AUSTIN HOUSTONWICHITA CALGARY</div>	OWL SWD Operating, Inc	Brininstool SWD No. 3	
	Country: USA	State/Province: New Mexico	County/Parish: Lea
	Survey/STR:	Site:	Status: To Be Drilled
	API No.:	Field:	Ground Elevation:
	Texas License F-8952	State ID No.:	Project No:
3345 Bee Cave Road, Suite 201 Austin, Texas 78746 Tel: 512.732.9812 Fax: 512.732.9816	Drawn: MMC	Reviewed: RSC	Approved: SLP
	Rev No:	Notes: Devonian completion with a 9.875" Intermediate 2 casing.	

APD Calculation Summary  
C295:K384.

2nd Dia	20	surface csg in a	24	inch hole.	Design Factors			SURFACE	
	Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight
	"A"	106.50	K 55	ST&C	6.93	1.13	0.88	1,300	138,450
	"B"							0	0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 1,120				Tail Cmt	does not	circ to sfc.	Totals:	1,300 138,450
	Comparison of Proposed to Minimum Required Cement Volumes								
	Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
	Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
	24	0.9599	1471	2496	1327	88	10.13	1620	2M
	Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.								

3rd Dia	#N/A	13 3/8	casing inside the	20	#N/A	Design Factors			INTERMEDIATE
	Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	Weight
	"A"	68.00	HPP 110	ST&C	#N/A	#N/A	#N/A	5,150	350,200
	"B"							0	0
	w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	5,150 350,200
	The cement volume(s) are intended to achieve a top of				0	ft from surface or a		1300	overlap.
	Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
	Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
	17 1/2	0.6946	4233	7930	#N/A	#N/A	10.29	4092	5M
	#N/A								

4th Dia	9 7/8	casing inside the	13 3/8	-	Design Factors			PRODUCTION	
	Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	Weight
	"A"	62.80	p 110	BUTT	2.10	1.53	1.32	12,000	753,600
	"B"							0	0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 2,640							Totals:	12,000 753,600
	The cement volume(s) are intended to achieve a top of				0	ft from surface or a		5150	overlap.
	Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
	Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
	12 1/4	0.2866	2303	5330	#N/A	#N/A	10.80	5593	10M
	Class 'H' tail cmt yld > 1.20				MASP is within 10% of 5000psig, need exrta equip?				

5th Dia	7	Liner w/top @	11800	-	Design Factors			LINER	
	Segment	#/ft	Grade	Coupling	Body	Collapse	Burst	Length	Weight
	"A"	32.00	P 110	BUTT	1.95	1.17	1.27	4,600	147,200
	"B"							0	0
	w/8.4#/g mud, 30min Sfc Csg Test psig: 992							Totals:	4,600 147,200
	The cement volume(s) are intended to achieve a top of				11800	ft from surface or a		200	overlap.
	Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd
	Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE
	8 1/2	0.1268	691	878	595	48	10.80		0.422
	Capitan Reef est top XXXX.				MASP is within 10% of 5000psig, need exrta equip?				