

**APPLICATION FOR PERMIT TO DRILL
OCS-G 31376, WELL NO. 001STOOBPOO
EUGENE ISLAND AREA BLOCK 290**

GENERAL DRILLING PERMIT:

- Drive 30" x 1" wall drive pipe to $\pm 465'$ MDITVD ($\pm 180'$ BML), with mud line ring od 26-1/2" 10 at $\pm 30'$ BML.
- RU gas detector, PVT and all monitoring equipment required by the BSEE. Install plus 10 valve.
- Install rental 30" diverter flange. NU 29-1/2" 500 psi rental diverter system and function test.
- Drill a 26" hole to $\pm 1500'$ MDITVD. Run MWD/LWD to verify shallow gas. Circulate and condition hole and spot pill prior to POOH to run 20" casing.
- Run and cement 20" 94# J-55 Buttress casing at $\pm 1500'$ MDITVD. Open wash ports and run 2 strings of tubing to clean cement above mudline equipment or 30' BML with ligna/mud water.
- In the event of shallow gas detected the following precautions will be taken.

Gas Flow Mitigation:

TXI Lightweight cement, a fine grind, highly reactive cement with a relatively high strength to slurry weight ratio will be utilized. GasStop EXP will be added to the slurry to achieve a fluid loss of <50mls and 0% free water. The addition of GasStop EXP also will increase the zero gel time and reduce the transition time to less than 45min as per current recommended practices for preventing gas migration when cementing.

- Install 20" - 3000 psi starting head. NU 29-1/2" 500 psi rental diverter. Test diverter and conductor casing to 250 psi. Run wear bushing.
- PU 17-1/2" bit and MWD. Drill shoe joint and 10' of new formation. Test 20" shoe to 11.0 ppg EMW.
- Drill a 17-1/2" hole to $\pm 4500'$ MD/TVD using MWD/LWD to verify shallow gas. Circulate and condition hole and spot pill prior to POOH.
- Run and cement 13-3/8" 68# K-55 Buttress casing at $\pm 4500'$ MDITVD. Open wash ports, run tubing and circulate to clean cement out of annulus or circulate out annulus using ligna/mud water to 30' BML.
- In the event of shallow gas detected the following precautions will be taken.

Gas Flow Mitigation:

TXI Lightweight cement, a fine grind, highly reactive cement with a relatively high strength to slurry weight ratio will be utilized. GasStop EXP will be added to the slurry to achieve a fluid loss of <50mls and 0% free water. The addition of GasStop EXP also will increase the zero gel time and reduce the transition time to less than 45min as per current recommended practices for preventing gas migration when cementing.

- Install 13-5/8" - 5000 psi head. NU 13-5/8" BOP's. Test annular to 250 psi low and 3500 psi high. Test pipe rams and blind/shear rams to 250 psi low and 5000 psi high. Test 13-3/8" casing to 2600 psi. Run wear bushing.
- PU 12-1/4" bit and MWD Resistivity/Gamma. Drill shoe joint and 10' of new formation. Test 13-3/8" shoe to 15.0 ppg EMW.
- Drill 12-1/4" hole to $\pm 12,000'$ MD/TVD. Circulate and condition hole and spot pill prior to POOH.
- Run and cement 9-5/8" 53.5# Q-125 LTC casing at $\pm 12,000'$ MDITVD.
- Install 11" - 10,000 psi head. NU 13-5/8" BOP's. Test annular to 250 psi low and 3500 psi high. Test pipe rams and blind/shear rams to 250 psi low and 7000 psi high. Test 9-5/8" casing to 7000 psi. Run wear bushing.
- PU 8-1/2" bit, MWD Resistivity/Gamma and directional tools. Drill shoe joint and 10' of new formation. Test 9-5/8" shoe to 17.5 ppg EMW.
- Drill 8-1/2" hole to projected TO of $\pm 14,727'$ MD/14,500'TVD. Circulate and condition mud prior to POOH.
- Log as per geologist instructions.

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GENERAL DRILLING PERMIT CONTINUED:

- If well is commercial follow steps below:
 - A. Run and cement 7-5/8" liner 39# P-110 STL liner using landing collar, float collar, float shoe and liner hanger with annulus pack-off. The above will provide three barriers exceeding requirements of CFR 250.420(b)(3).
 - B. Cement 7-5/8" liner with 340 cf of cement. Bump plug with 1500 psi.
 - C. Set liner pack-off. Test liner and pack-off to 2000 psi.
- Completion procedure to follow.
- If well is non-commercial, plug and abandon in accordance with 30 CFR, Part 250.1710 through 250.1717.

DRILLING MUD PROGRAM:

<u>Depth (TVD)</u>	<u>Mud Weight</u>	<u>Type Mud</u>	<u>Minimum Reserve Quantities To Be Maintained On Board</u>
0' - 1,500'	9.0	WBM	1000 sxs Barite 200 sxs Gel
1,500' - 4,500'	09.0- 09.6	WBM	653 sxs Barite 200 sxs Gel
4,500' - 12,000'	09.6- 12.5	WBM Non-Dispersed	863 sxs Barite 200 sxs Gel
12,000' - 14,500'	12.5-16.0	WBM Non-Dispersed	863 sxs Barite 200 sxs Gel

Storage Capacity of Rig: Active Mud/Reserve Mud- See Specifications
Dry Mud/Bulk Storage - See Specifications
Sacked Mud & Cement- See Specifications

Transportation Time for Delivery of Supplies - ±6 hours

Rate and Method of Disposal: Drilling cuttings and water-base mud will be discharged overboard at rates not to exceed EPA's NPDES General Permit GMG290129 limitations. Any oil contaminated cuttings or oil-based mud will be transported to shore for proper disposal.

<u>Casing Size</u>	<u>Collapse</u>	<u>Tension</u>	<u>Burst</u>	<u>Maximum Surface Pressure</u>	<u>Pressure Test Rate</u>	<u>Shoe Test</u>
30" x 1"	1.10	1.10	1.10	Will not be S.I.	NA	
20"	1.47	9.94	3.08	0685	0250 psi	11.0
13-3/8"	1.22	4.24	1.17	2947	2600 psi	15.0
9-5/8"	2.35	3.03	1.36	9135	7000 psi	17.5
7-5/8"	1.24	10.78	1.38	9135	2000 psi	N/A
					TOL	

These are minimum design factors. Actual safety factors will be at least these values.
All zones containing oil, gas and/or fresh water will be protected with casing and cement.

CEMENT PROGRAM:

<u>Hole Size</u>	<u>Casing</u>	<u>Depth (TVO)</u>	<u>Cement Volumes (Cu. Ft.)</u>
26"	20"	1,500'	3000 Cu. Ft.
17-1/2"	13-3/8"	4,500'	4070 Cu. Ft.
12-1/4"	9-5/8"	12,000'	2500 Cu. Ft.
8-1/2"	7-5/8"	14,500'	0340 Cu. Ft.

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BOP PROGRAM:

Interval	Equipment	Test Pressure
Drive Pipe	1 Annular Preventer with Diverter System	Function Test
Conductor	1 Annular Preventer With Diverter System	250 psi
Surface	1 Annular Preventer 2 Pipe Rams, 1 Blind/Shear Ram	250 psi/3500 psi 250 psi/5000 psi
Production	1 Annular Preventer 2 Pipe Rams, 1 Blind/Shear Ram	250 psi/3500 psi 250 psi/7000 psi
Production Liner	1 Annular Preventer 2 Pipe Rams, 1 Blind/Shear Ram	250 psi/3500 psi 250 psi/7000 psi

TESTING PROGRAM:

Casing	Pressure Test Rate
20"	250 psi
13-3/8"	2600 psi
9-5/8"	7000 psi
7-5/8"	2000 psi
	TOL

LOGGING PROGRAM:

Depth (TVD)	Type
14,500'	MWD-Resistivity/Gamma

GEOLOGIC DATA:

Formation	Depth (TVD)
15,000' Sand	13,900'

Drill Pipe 5" 19.5# S-135