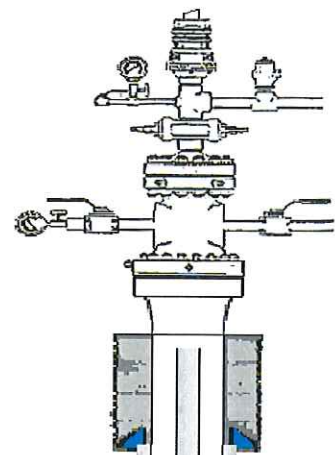


Appendix D: Proposed Waterflood Design

Appendix D, Figure 1: **Typical Water Injection Well Downhole Diagram**



Inhibited
Fluid in Tbg
Csg
Annulus

Coated
Tbg

On/Off
Tool
w/ Profile

Retreivable
Packer

~ 1300-1350 m HZTL Leg with frac ports

Well Name:		Legay Pierson HZTL Well		Date:	
Surf Loc:				UWI:	
Elevation: K.B.		KB to Grd:		PBD (MD):	
Elevation: G.L.:		KB to TF:		TVD: ~985	
				mKB	
				mKB	
Well Head and Casing Details					
Wellhead:	Streamflo/Crown 21000 Mpa				
Surface Casing:	219.1 mm x 35.72 kg/m, J-55, ST&C		~150 mKB		
Production	139.7 mm 23.07 kg/m, J-55, LT&C		~2500 mKB		
Plugs - Perforations - Treatment					
Perf/Frac		Zone		Remarks	
		Spearfish			
Item #	Downhole Description from bottom up			Length	Depth
	1 - 73mm Coated Pup Joint				
	1 - 177.8mm x 73.0 mm Coated Retreivable Injection Packer				
	1 - 177.8 mm x 73.0 mm On Off Tool w/57.2mm F Profile				
	Injection String of 73.0 mm Internally Coated Tbg				
No.	Rod String			Pump Details	
Remarks					

Appendix D: Figure 2

Pierson South ½ of Section 08-002-028W1

EOR Waterflood Project

Planned Corrosion Control Program **

Pipelines

- New High Pressure fiberglass pipeline from 09-32-001-28W1 battery site to injection well

Facilities

- 09-32-001-28W1 Water Plant and New Injection Pump Station
 - Plant piping – Fiberglass
 - Filtration – Currently designing
 - Pumping – Currently designing
 - Tanks – Internally coated

Injection Wellhead / Surface Piping

- Corrosion resistant valves and stainless steel and/ or internally coated steel surface piping

Injection Well

- Casing cathodic protection where required
- Wetter surfaces coated downhole packer
- Corrosion inhibited water in the annulus between tubing / casing
- Internally coated tubing surface to packer
- Surface freeze protection of annular master valve
- Corrosion resistant pipeline valve

Producing Wells

- Casing cathodic protection where required
- Downhole batch corrosion inhibition as required
- Downhole scale inhibitor injection as required

**subject to final design and engineering