

**ASSET SUMMARY**



The Piper 'B' platform, installed in 1992, is located 119 miles (193km) North East of Aberdeen. It is an eight-legged fixed steel jacket supported platform, standing in an approximate water depth of 145m. The associated Piper field lies in block 15/17n of the UKCS and production commenced in February 1993. The platform receives fuel gas from the Frigg gas network.

The processing facilities of Piper 'B' separates production from the Piper, Saltire, Chanter, Iona and Tweedsmuir reservoirs into oil, natural gas liquids and dry gas. Chanter, Iona and Saltire are not currently producing. The platform processes oil and condensate for onward transportation to the Flotta Terminal.

**PIPELINES**

<b>Oil Export</b>	30" * 33.8km, joins main oil line to Flotta Pipeline 4.5km
<b>Gas Export</b>	16" * 1.8km + 18" * 53km, joins gas pipeline system to St Fergus Terminal and links in to the Claymore gas import pipeline
<b>Piper 'B' – Saltire</b>	40" * 7.4km Interfield Pipeline Bundle containing: <ul style="list-style-type: none"> <li>• 10" multi-phase oil/gas import from Saltire (OoS)</li> <li>• 16" water injection to Saltire (OoS)</li> <li>• 8" gas lift to Saltire (OoS)</li> <li>• Power supply is provided to Saltire (OoS)</li> </ul>
<b>MacCulloch Oil Pipeline</b>	10" * 35km (not in service)
<b>MacCulloch Gas Pipeline</b>	6" * 35km (not in service)

**ENTRY SPECIFICATION**

Subject to discussion and negotiation with the Flotta Terminal.

**EXIT SPECIFICATION**

<b>Crude Oil Export</b>	Set by Flotta Pipeline System entry requirements
<b>Gas Export</b>	Set by St Fergus entry requirements
<b>Produced Water</b>	< 30 mg/l oil in water

**GAS TREATMENT FACILITIES**

Gas originating from the Piper B and Tweedsmuir Oil Separation Systems undergoes compression and treatment processes to make it suitable for use as;

- Lift Gas for Piper and Tweedsmuir fields
- Platform fuel gas
- Export / sales gas

Gas treatment consists of sweetening, dehydration and NGL recovery. In gas sweetening, H<sub>2</sub>S/CO<sub>2</sub> are removed by passing gas against Amine solution in a contractor tower. The gas from the Piper and Tweedsmuir Oil Separation Systems is treated by dedicated gas sweetening systems. In gas dehydration, water is removed by adsorption onto a molecular sieve bed. Finally, NGLs are removed by cooling of the gas as it expands across Joule Thomson (J-T) valves.

Treated gas which is surplus to lift gas and fuel gas requirements is exported to onshore facilities.

## PRIMARY SEPARATION PROCESSING FACILITIES

### Piper

The Piper fluids are separated in the Piper Separator opening at a pressure of circa 9 barg at 70C. The oil phase is drawn from the separator by the Piper Booster Pumps and pumped via the Metering Package to the MOL Pumps pump the final production through the subsea pipeline to the Flotta Terminal.

Off-gas from the Piper Separator is cooled in the Piper Separator Gas Coolers resulting in some condensate and water drop-out. The condensate is removed in the Piper Condensate KO Drum and returned by the Piper LP Condensate Pumps to the Piper Separator. The off-gas from the Condensate KO Drum passes to the 1<sup>st</sup> stage gas compression facilities.

The produced water separated in the Piper separator is routed to the produced water clean-up facilities, comprising the Hydrocyclone Package and produced Water Degasser prior to discharge overboard.

### Tweedsmuir

Tweedsmuir fluid bulk gas / liquid separation occurs in the Slug Suppression System which operated at about 11 barg. The gas is routed via the Tweedsmuir Condensate KO Drum to the Trim Cooler for further water/condensate removal.

The liquids from the Slug Suppression System are routed via the Tweedsmuir Heater to the 3-phase Tweedsmuir Separator. The gas from the Tweedsmuir Separator flows to the Tweedsmuir KO Drum either directly or via Eductor. Eductor is used for pipeline depressurisation and Cold Restart.

Oil from the Tweedsmuir Separator is routed to the Crude Oil Booster Pump and is then metered and exported via the MOL Pumps to Flotta with the Piper oil.

Produced water from the Tweedsmuir Separator is passed through hydrocyclones and a degasser before being discharged overboard.

## CAPACITY PROJECTION

## AVAILABLE CAPACITY

> 25%

5% - 25%

< 5%

Description	Unit	Maximum Capacity	Projected Ullage (% of maximum capacity)				
			2021	2022	2023	2024	2025
Piper Separator	bpd	212,000	●	●	●	●	●
Tweedsmuir Separator	bpd	57,000	●	●	●	●	●
Oil Export	bpd	140,000	●	●	●	●	●
Piper Produced Water	Bpd	199,000	●	●	●	●	●
Tweedsmuir Produced Water	bpd	36,500	●	●	●	●	●
1 <sup>st</sup> Stage Compression	mmscfd	140	●	●	●	●	●
Piper Sweetening	mmscfd	140	●	●	●	●	●
Tweedsmuir Sweetening	mmscfd	54	●	●	●	●	●
2 <sup>nd</sup> Stage Compression	mmscfd	140	●	●	●	●	●
Gas Dehydration	mmscfd	108	●	●	●	●	●
NGL Recovery	mmscfd	108	●	●	●	●	●
3 <sup>rd</sup> Stage Compression	mmscfd	84	●	●	●	●	●
Power Generation	MW	66	●	●	●	●	●