Dongara Gas Field
Condensate Loading System
Environment Plan Bridging Document Summary

Upstream PS Controlled Document

No. 21/HSEQ/ENV/PL07SUM

Revision 1

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1 References

Document code	Title
21/HSEQ/ENV/PL03	Dongara Gas Field Environment Plan
21/HSEQ/ENV/PL06	Waitsia Gas Project Commissioning and Operations Environment Plan
21/OP/GO/PC30	DPF Condensate Load-in and HPF Water Unloading Procedure
21/OP/PS/PC40	Draining Storm Water from Process Plant Collection Points
21/SP/TRN/TM07	Onshore Perth Basin (30 Group) Tanker Loading CBTA – Training Module

2 Term definitions and abbreviations

Term or abbreviation	Definition
ALARP	As Low As Reasonably Practicable
CBTA	Competency Based Training Assessments
CLS	Condensate Loading System
DER	Department of Environment Regulation
DG	Dangerous Goods
DGF	Dongara Gas Field
DMP	Department of Mines and Petroleum
DPF	Dongara Production Facility
EP	Environment Plan
ERP	Emergency Response Plan
ESA	Environmentally Sensitive Area
GDE	Groundwater Dependent Ecosystem
JHA	Job Hazard Analysis
OSCP	Perth Basin Operations Oil Spill Contingency Plan
P&ID	Piping and Instrument Diagram
PEB	Petroleum Environment Branch
PTW	Permit to Work
Upstream PS	Upstream Production Solutions Pty Ltd
Waitsia Gas Project	XPF and associated infrastructure (wells, flowlines, pipelines PL111 and PL64)
XPF	Xyris Processing Facility

3 Contact Details

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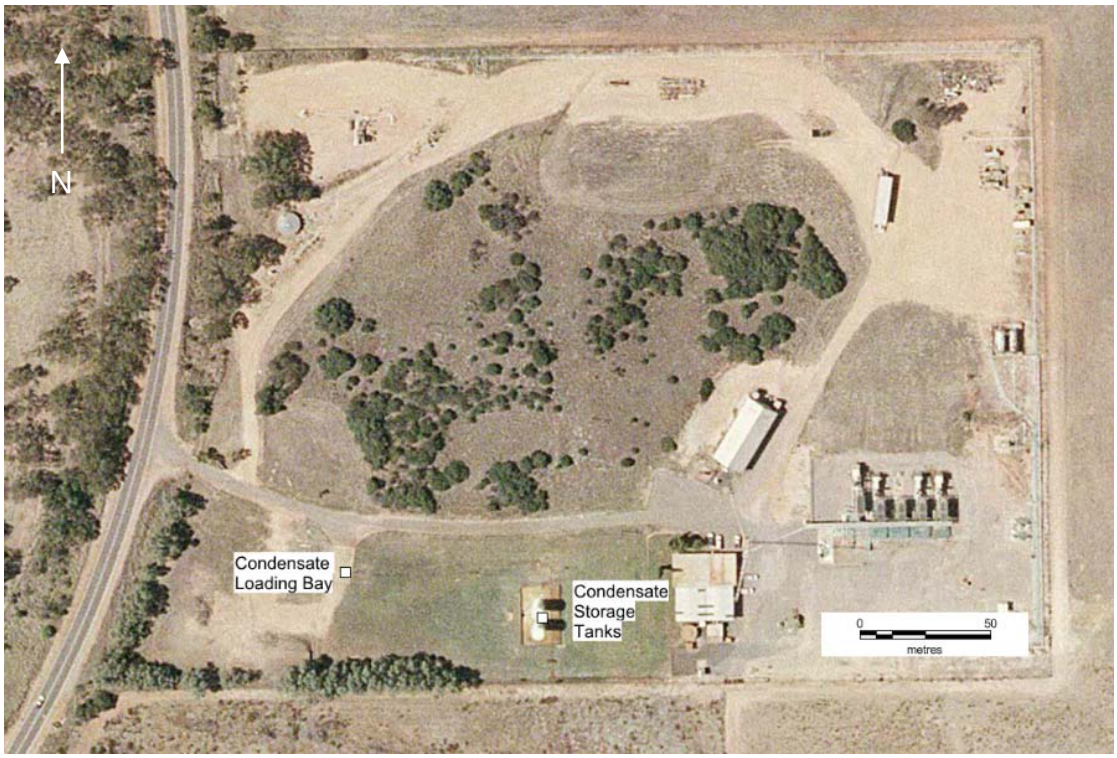
4 Location

The Dongara Gas Field (DGF) is located within onshore production licences L1 and L2 in the Mid West region of Western Australia; approximately 7 km east of Dongara, within the Shire of Irwin, and 350 km north of Perth.

The DGF Condensate Loading System (CLS) is located within the Dongara Production Facility (DPF) (Figure 1) at:

Zone	Easting	Northing
MGA 50	306,491mE	6,761,271mN

Figure 1 - DGF CLS within the DPF



Source: Upstream PS, May 2016

5 Timeframe

Upgrades to the existing DGF CLS are scheduled for July 2016 with first operations planned from August 2016.

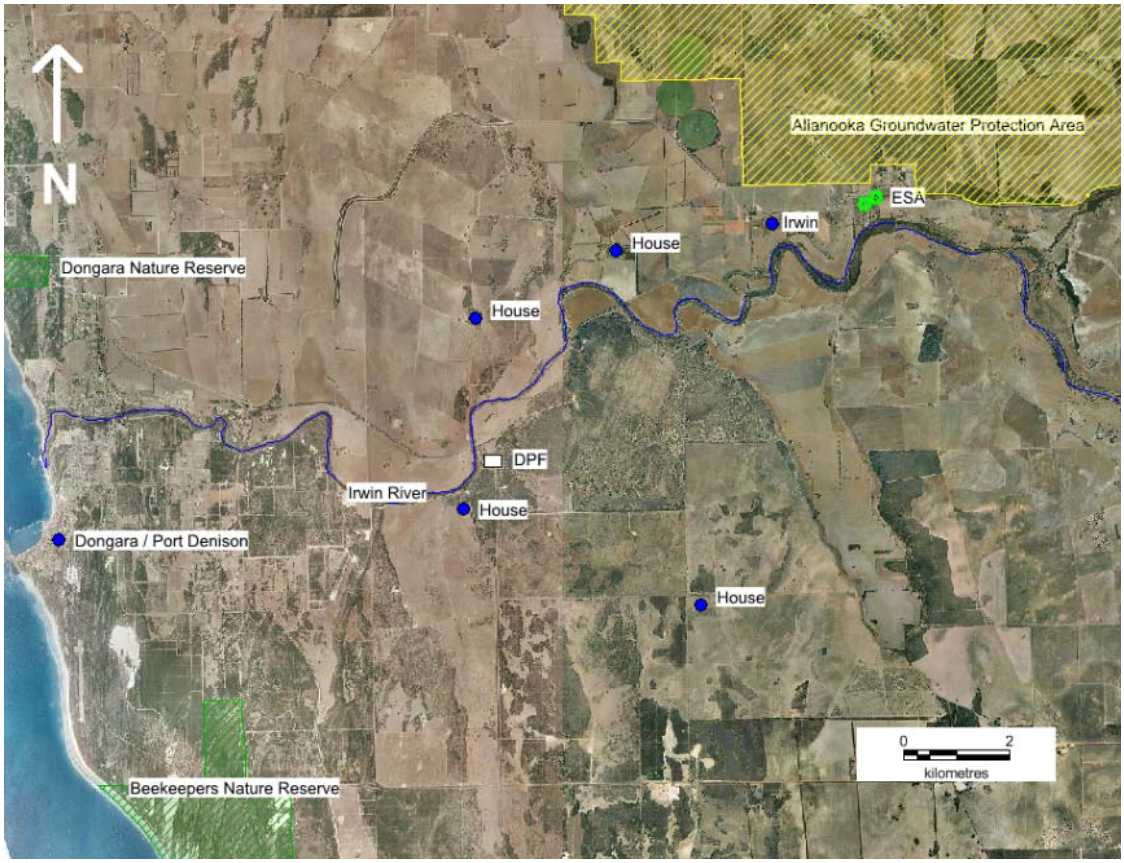
6 Description of the Environment

A detailed description of the environment in the DGF is included in Section 5 of the DGF Environment Plan (EP) [21/HSEQ/ENV/PL03]. A summary of the environment surrounding DPF is included in Table 1. Figure 2 indicates sensitive receptors with respect to DPF.

Table 1 - Description of the Environment

Aspect	Detail
Climate	Mediterranean climate characterised by seasonal patterns of hot, dry summers and mild, wet winters
Soils	Sandy, well drained soils consisting of calcareous and siliceous sand underlain by aeolianite, which is often exposed
Surface water	Irwin River (200 m west)
Groundwater	Groundwater level is approximately 10 m below ground surface The nearest Groundwater Dependent Ecosystem (GDE) is located >10km SE of DPF
Conservation Areas	DPF is not located in the vicinity of conservation estate (Redbook Area, Environmental Sensitive Area (ESA) or Nature Reserve)
Vegetation	DPF is cleared around process equipment with firebreaks surrounding the facility, vegetated bushland 100 m from CLS No ecological communities of national or state significance are known to occur within the area
Fauna	Facility is fenced to prevent fauna access Invertebrates known to occur within DPF and reptiles have been observed CLS operations will not impact on significant fauna habitat
Aboriginal Heritage	No areas of cultural heritage significance within 5 km of DPF
European Heritage	No areas of European heritage significance within 5 km of DPF
Socio-economic	Dongara 7 km west Land use surrounding DPF is cattle grazing Nearest residence 1 km southwest of DPF Dongara is the centre for a long standing oil and gas industry

Figure 2 - Sensitive receptors with respect to DPF



Source: Upstream PS, May 2016

7 Description of the Activity

A detailed description of DGF is included in Section 4 of the DGF EP [21/HSEQ/ENV/PL03].

The existing CLS allows condensate to be loaded from two 159 kL vertical tanks to 30 kL dangerous goods (DG) licenced road tankers via a bunded centrifugal pump to a dry break loadout on a concrete bunded loadout bay. Bunding around the condensate storage tanks is pre-fabricated concrete slab walls capable of holding the full contents of one of the tanks. Tank and load-out bunding is connected via the closed drain system to the water collection tank.

AWE propose to upgrade the CLS to allow for load-in of condensate from Xyris Processing Facility (XPF) as part of the Waitsia Gas Project. The transport of the condensate from XPF by 17 kL tanker is managed under the Waitsia Gas Project Commissioning and Operations EP [21/HSEQ/ENV/PL06]. The condensate load-in activities will be managed under the DGF EP. Condensate storage and load-out will continue to be managed under the DGF EP.

The Piping and Instrument Diagram (P&ID) for the upgraded CLS is presented in Appendix A. The CLS upgrade includes:

- Pneumatic Condensate Load-in Pump located (on cleared area) adjacent to the existing loading bay, positioned inside a dedicated new 1 m x 1 m x 100 mm concrete designed to AS1940 and inspected daily from the access road. The loading bay and pump bund drains are isolatable and connected to the existing DPF drain system
- Instrument air connection for new pneumatic pump
- Interconnecting pipework on inlet and outlet of load-in pump to existing load-out line
- Isolation valve on the end of the load-in/out line at tanker connection

- Isolation valve on the loadout bay bund drain to the water collection tank

Adjusted operation of the system will be in accordance with the applicable load-in / load-out procedure.

The CLS upgrade construction is planned to occur in July 2016. Condensate load-in from XPF will commence following commissioning of the Waitsia Gas Project in August 2016. The load-in activities will be conducted approximately weekly for a period of two years. Load-out frequency compared to existing DGF operations will increase to approximately quarterly. Historically the load-out bay was used 12 to 24 times per year and has been maintained without modification since then. All loading activities will be supervised and undertaken during daylight hours only.

8 Environmental Risk Assessment and Management

The risks and impacts associated with DGF operations managed to as low as reasonably practicable (ALARP) are included in the DGF EP [21/HSEQ/ENV/PL03 Appendix A.5]. There are no additional risks or impacts additional to those identified above or beyond the accepted DGF EP (Rev 0) accepted 21 March 2014.

Table - 2 Risk Assessment Table

Risk identification			Risk treatment (Existing Safeguards / Management Methods)	Post treatment risk assessment		
Aspect	**Source of Risk**	**Potential Environmental Impact**		**Consequence**	**Likelihood**	**Risk Ranking**

Condensate load-in / load-out Management (DPF)	Transfer and Handling of liquids	• Loss of containment
		• Spills – potential for condensate spillage outside secondary containment (human error / equipment Failure)
		• Venting
			• Condensate tank provided with secondary containment (concrete bund) designed in accordance with AS1940
			• Concrete bunded loading bay at Dongara Production Facility (DPF) (trafficable curbing, draining to drainage sump, isolation valve to drain line, integrity of pad ensured) designed to AS1940
			• Quarter turn valve at the loading bay which is required to be closed after any loading activity (load-in or load-out) to provide additional isolation over gate valve and drybreak
			• Procedure in place to check at least weekly and before every transfer activity and if necessary maintain capacity of permanent bunds, e.g. pump out to remove accumulated rainwater [21/OP/PS/PC40]
			• Handling procedures implemented to mitigate risk of spills to land or water
			• Spill kit (180 L) located at the loading bay during transfer activities
			• Workforce training conducted in chemical handling, spill response and recovery procedures
			• Emergency Stop mechanism for loading activities
			  • Load-in pump – control mechanism on pump (at loading bay)
			  • Load-out pump – start/stop button (at loading bay)
			• Monthly workplace inspections
			• Environmental audits
			• Pump maintenance procedures as per MEX Maintenance Policies 807 (6 monthly) and 1071 (4 yearly)
			• Hydrocarbon Hose Inspection and Testing undertaken annually by external provider in accordance with MEX Maintenance Policy 1094
				MAJOR (4)	VERY UNLIKELY (B)	MEDIUM (8)

Risk identification			Risk treatment (Existing Safeguards / Management Methods)	Post treatment risk assessment		
Aspect	Source of Risk	Potential Environmental Impact		Consequence	Likelihood	Risk Ranking
			• DPF Condensate Load-in and HPF Water Unloading Procedure" [21/OP/GO/PC30] outlines the management of loading condensate from XPF into the vertical storage tanks at DPF • Fenced facilities • Preparedness for a spill scenario as documented in the Perth Basin Operations Oil Spill Contingency Plan (OSCP) • Drybreak at tanker to hose connection point • RapidInduct Perth Basin induction covers handling of liquids and the three Cs of spill management • Onshore Perth Basin Tanker Loading Competency Based Training Assessments (CBTA) [21/SP/TRN/TM07] requires operators to demonstrate an understanding of the hazards and requirements during tanker loading activities • All loading activities supervised by tanker driver and Upstream PS • Drip tray utilised during transfer operations • Loading activities to be managed under a Upstream PS Permit to Work (PTW) with a Job Hazard Analysis (JHA) undertaken/reviewed prior to loading activities • Emergency Response Plan (ERP) includes loss of containment and road tanker incident • A loading related emergency drill will be conducted within 6 months of first load-in activity			

9 Implementation Strategy

The implementation strategy outlined in the accepted EP [21/HSEQ/ENV/PL03] Section 8 is applicable to the proposed activity. The aspects include

- Systems, practices and procedures
- Roles and responsibilities
- Training
- Monitoring, audit and review of environmental performance
- Emergency and oil spill response
- Maintenance of quantitative records
- Reporting on environmental performance

There are no additional risks or impacts above or beyond the accepted DGF EP [21/HSEQ/ENV/PL03 Rev 0] accepted 21 March 2014.

10 Consultation

The upgrades to the CLS are required as part of the Waitsia Gas Project and the extensive stakeholder consultation as part of this project is documented in the Waitsia Gas Project Commissioning and Operations Environment Plan [21/HSEQ/ENV/PL06]. AWE has consulted Department of Mines and Petroleum (DMP) Petroleum Environment Branch (PEB) and Department of Environment Regulation (DER) on this specific activity.

The AWE Mid West website (www.awemidwest.com.au) covering its Perth Basin activities is an additional method for AWE to communicate with stakeholders on a continuing basis. The website includes project specific pages as well as blogs highlighting updates and responding to particular topics of interest to our stakeholders. It also includes an option to subscribe to news feeds and to contact AWE for additional information.

AWE will continue to consult with stakeholders in accordance with the arrangements described in Section 10 of the DGF EP.