

Pilbara Regional Waste Management Facility for Class IV Hazardous Waste

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Assets | Engineering | Environment | Noise | Spatial | Waste

Presentation Overview

- Project background
- Pre-construction Activities
- Detailed design of the Class IV cell
- Construction support
- Challenges



Project Background

- Onslow is a small town of less than 1,000 people
- Since the early 2000s, the Pilbara has experienced significant growth due to rapid expansion of the resources industry – mining and oil and gas sectors (now accounts for ~17% of national GDP)
- With deep water access and proximity to off-shore gas reserves, Onslow selected to support the development of the Ashburton North Strategic Industrial Area (ANSIA)
 - Chevron's Wheatstone Project (\$50 Billion capital investment)
- The old Onslow landfill; located close to town, reaching the end of its operation life, capped off and Shire currently shipping their waste to Tom Price (600km)
- State Development Agreements – provisions to improve infrastructure and critical services in Onslow to support expansion and entice future industrial development
- **Funding provided for the development of a new modern waste management facility – suitable to accept Class IV materials.**

Project Support & Services

- Project objectives
 - Waste services for Onslow (domestic and commercial generators)
 - Hazardous waste treatment form industrial generators from across the nationally important Pilbara & NW Australia
- PRWMF is an integrated facility consisting of:
 - Green waste processing area
 - C&D recycling area
 - Scrap metal stockpiling area
 - Liquid waste facility
 - Monocells for asbestos and tyres
 - Class IV landfill



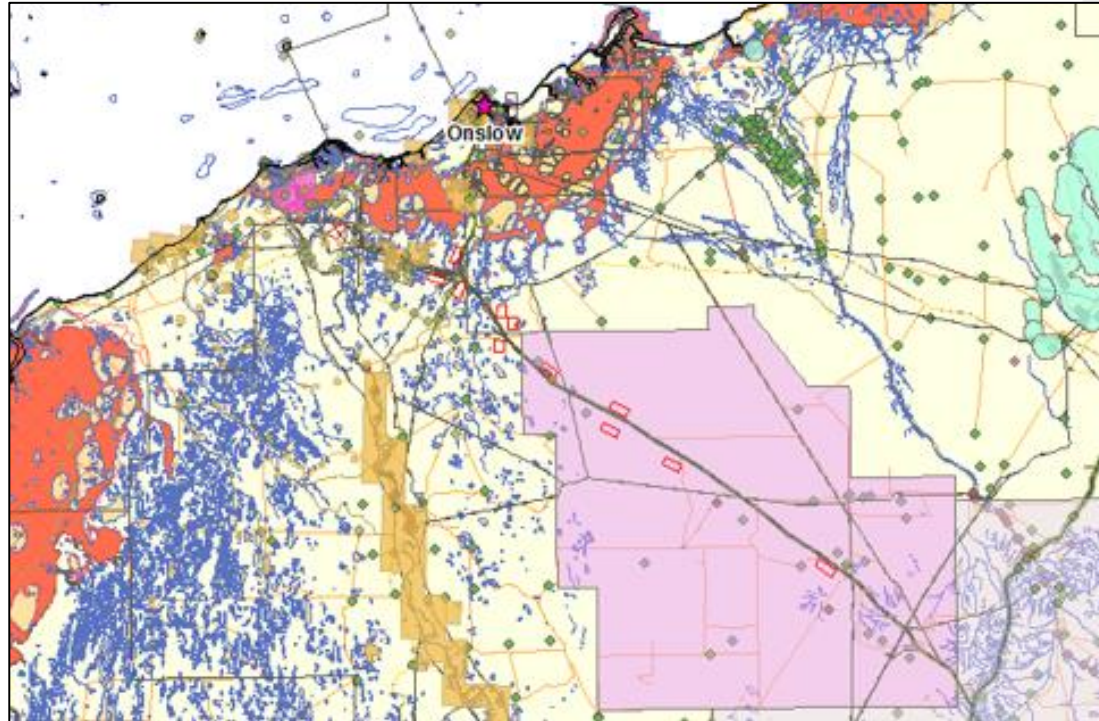
Project Funding

- Part funded by:
 - Shire of Ashburton
 - Grant funding from Federal Government Fund (BBRF)
 - Chevron



Site Selection & Investigations

- Detailed Site Selection works undertaken commencing with geo-spatial (constraints) mapping exercise
- 15 sites identified and assessed via Multi-Criteria Analysis
- Due to cyclonic zone, detailed hydrology modelling done on top 3 Sites
- Site 10 selected as the Preferred



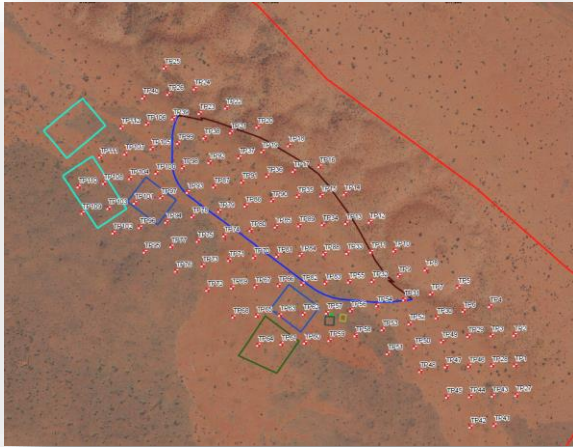
Location and Site Description

- Approx 40 km south of Onslow
- 400 hectares (ha)
- Large sand ridge (30m high and 3 km long)
- Remaining area predominantly flat

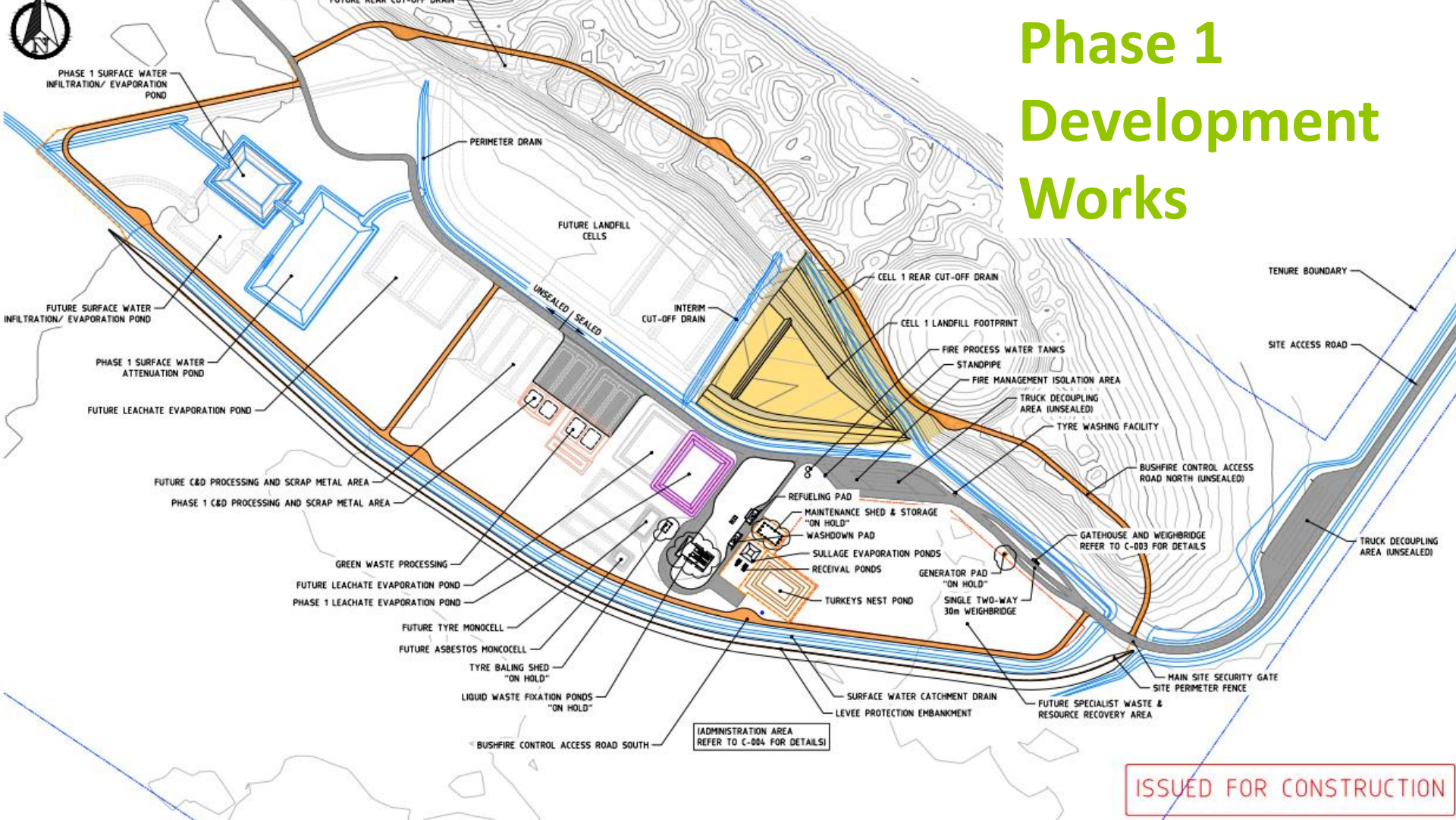


Site Investigations & Approvals

- Talis geotechnical engineers and hydrogeologists undertook the extensive site investigations including trial pits, borehole and pumping tests
- Shallow pindan sand layer overlying the siltcrete / sandstone caused refusals which altered original design to shift landfill against the ridge
- Variety of Environmental Approvals secured for the construction – EPA Referral, DWER Works Approval, Clearing Permit – community consultation throughout



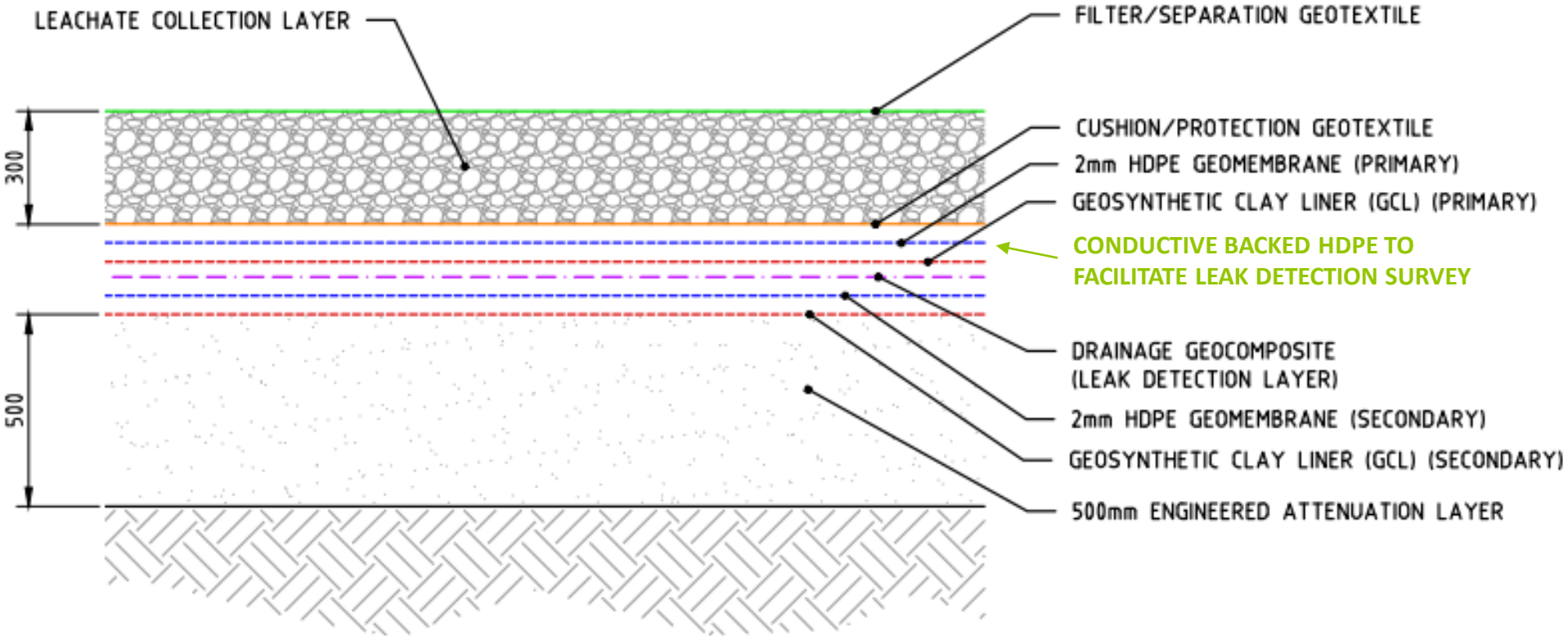
Phase 1 Development Works



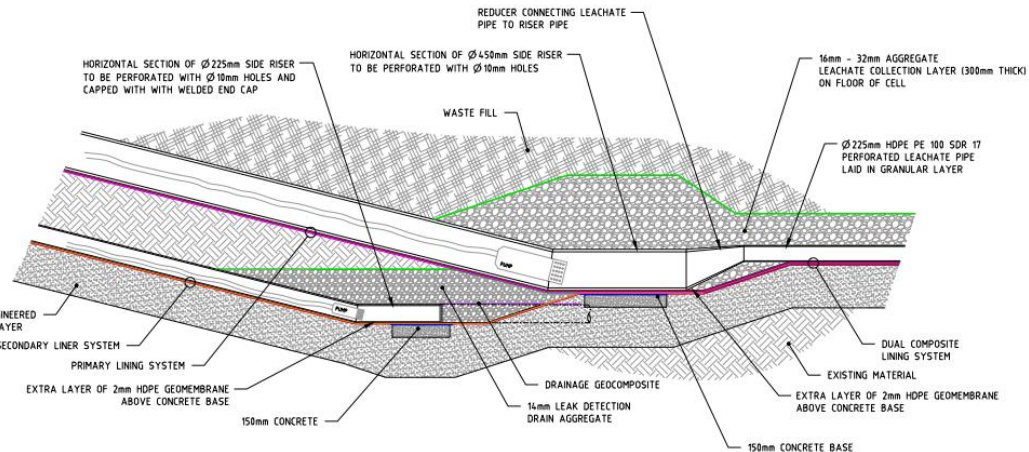
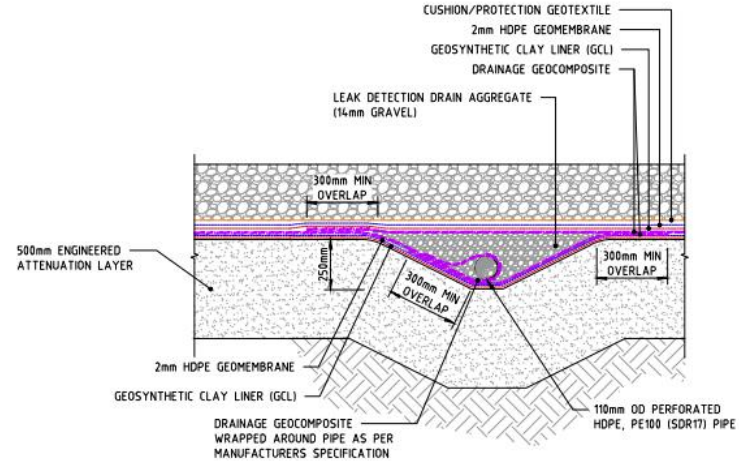
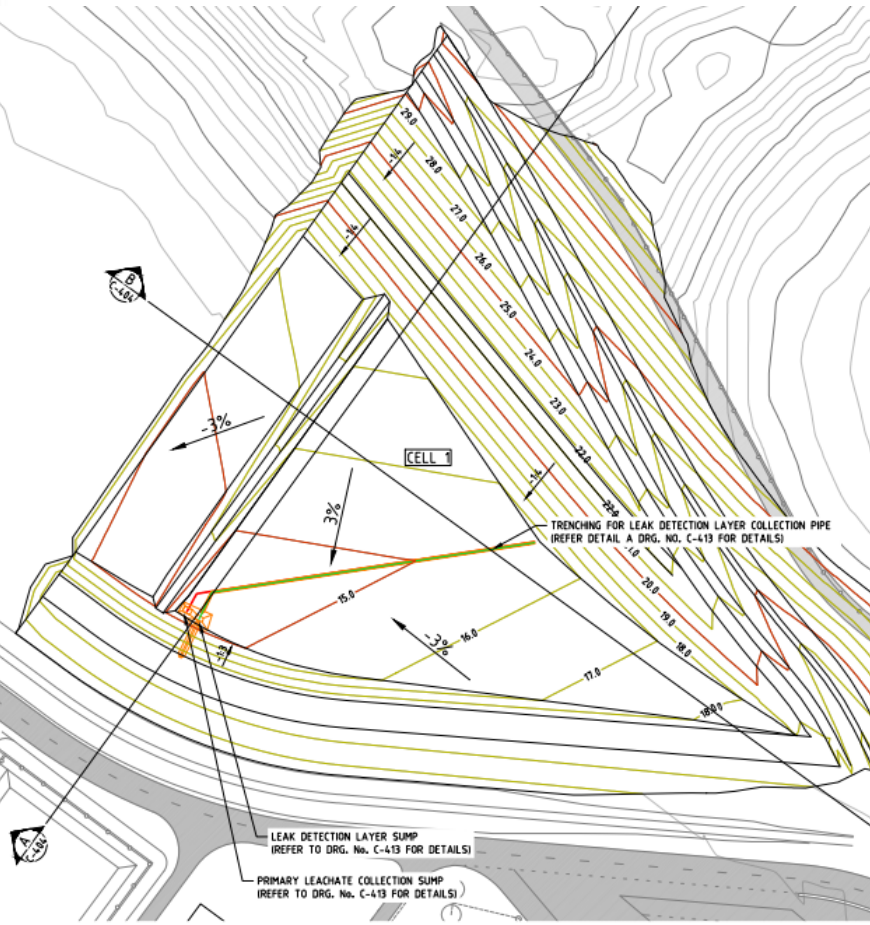
ISSUED FOR CONSTRUCTION



Design of basal liner



Leak Detection Layer



Construction Support

- Talis assisted the Shire with the procurement of Early Works and the Phase 1 Contract Works
- Talis performed the Superintendent role for the project
- Talis undertook full time CQA supervision and validation of the as-constructed works
- Talis performed the leak detection survey on the Secondary (lower) HDPE Layer. The survey on bare liner using arc testing method as installation progressed
- Enabled repairs to be undertaken prior to installation of overlying layers
- Final leak detection survey by Geotest following aggregate placement





Challenges

- Obtaining support to construct the facility in a proposed National Park and securing the relevant approvals
- Onslow is the cyclone highway of North West Australia – ensuring suitable stormwater management
- Remote regional area with high cost for in-situ concrete saw several TQs requesting substitution for precast concrete
- Covid-19 challenges
 - broke at contract negotiation stage, contingency plans written into Contract
 - no in-factory sampling of geosynthetics – managed remotely
 - half of lining crew's staff return to family overseas, never to return.
 - mining sector projects in pipeline prior to Covid-19 restrictions
- Lining in the summer months – temperatures of 45°C so reverted to night works



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