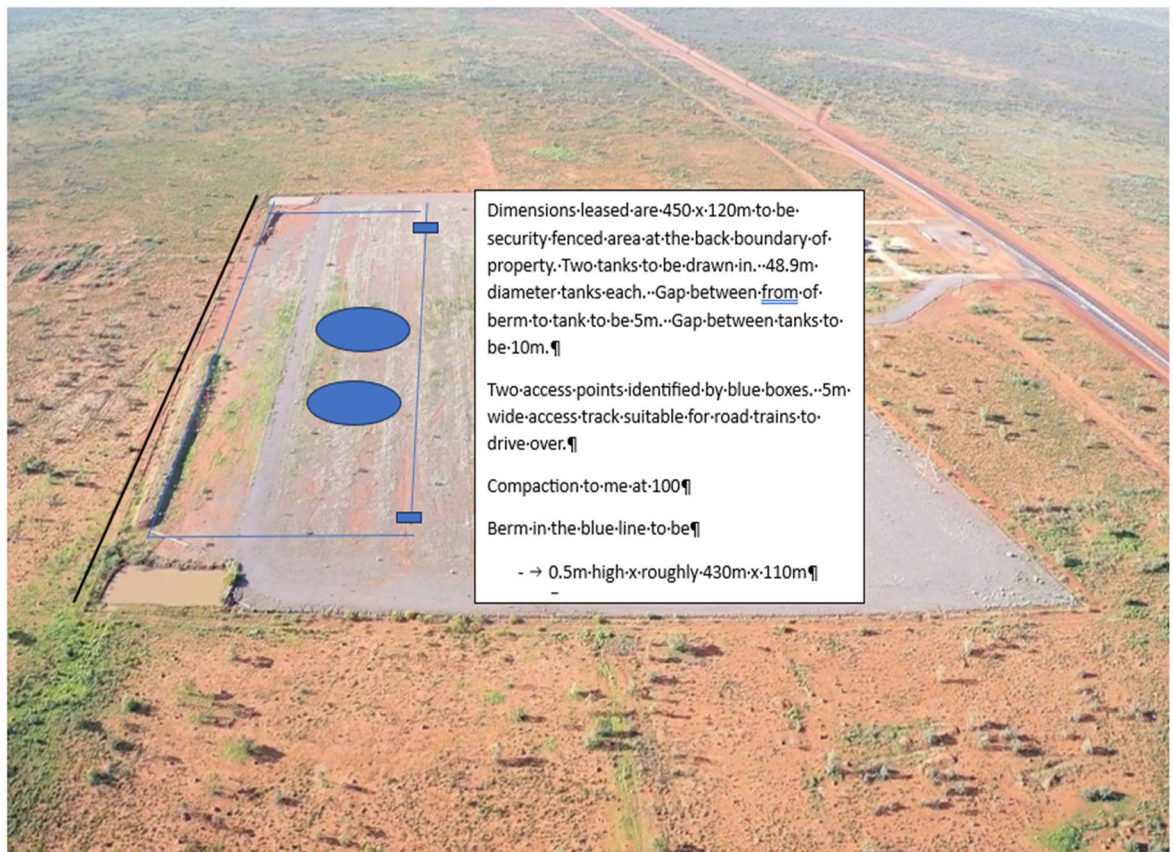
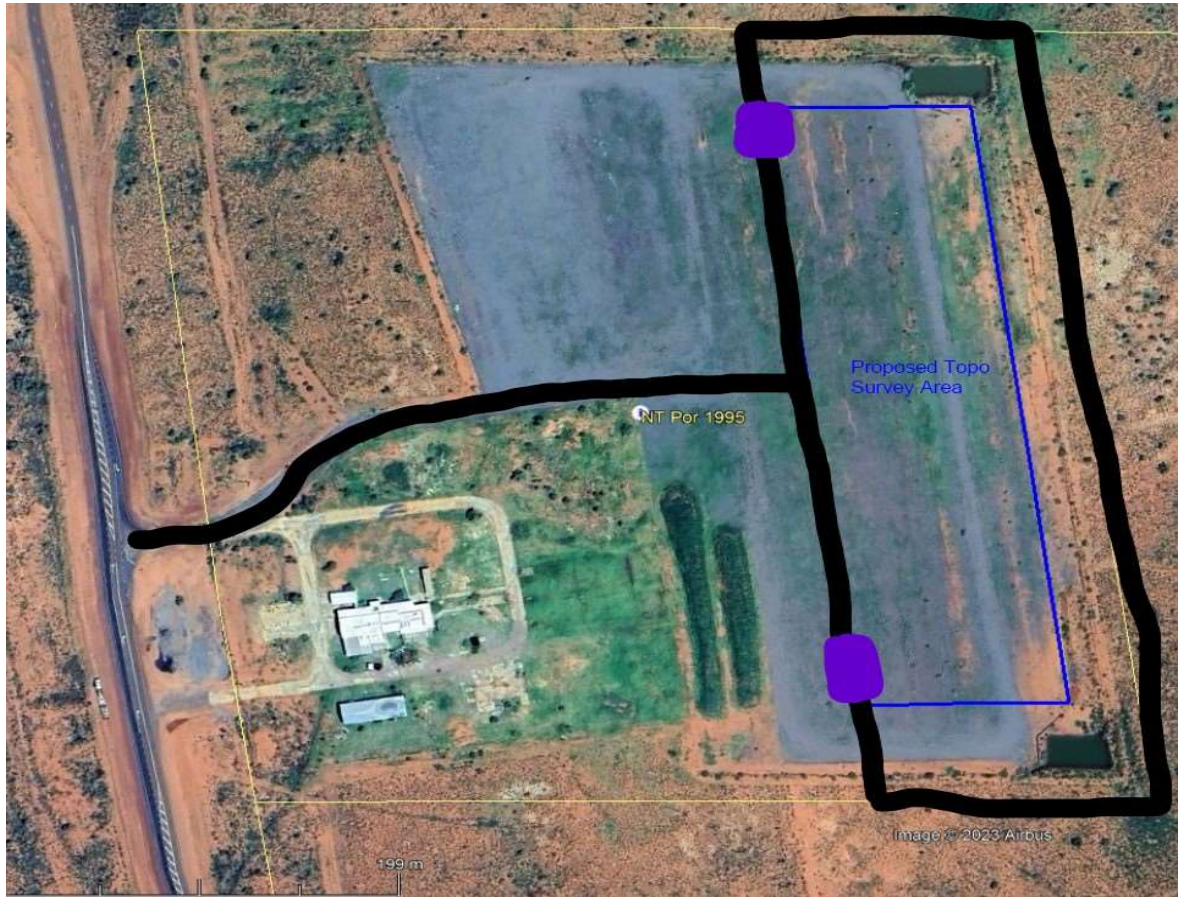


SURVEY REPORT

For:	Hydrera	Report date:	5/09/2023
		Our job ref:	2023-0357
Attention:	Eddie Pigeon	Your ref:	Tennant Creek – Tank Survey
Project description:	Detail Survey of Parts of NT Por 1995, 23545 Stuart Hwy, Warumungu (Approx 16km north of Tennant Creek)	Survey Brief Completed:	
		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Project Manager:	Alan Thorpe	Project Surveyors:	Michael Burgmeier
Start date:	23/08/2023	End date:	25/08/2023
Equipment used:	<input checked="" type="checkbox"/> RTK GPS <input type="checkbox"/> Digital Level <input type="checkbox"/> Scanner <input type="checkbox"/> Static GPS <input type="checkbox"/> RC Hydro Vessel <input type="checkbox"/> Service Locating <input checked="" type="checkbox"/> Total Station <input type="checkbox"/> UAV <input type="checkbox"/> Other:		
Instrument details:			
<i>Date of Last Calibration</i>	Is equipment calibration current <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> N/A		
	Asset #	Model #	Serial #
08/03/2023	CS000970	Leica TS13	3267171
09/06/2023	CS000608	Leica GS15	1507533
09/06/2023	CS000820	Leica GS16	3713943
Deliverables:	<input checked="" type="checkbox"/> Drawings <input type="checkbox"/> Plots <input checked="" type="checkbox"/> Site Images <input checked="" type="checkbox"/> This Report		
Project datum:	Horizontal: MGA 94 Zone 53	Vertical: AHD	
Extra documents attached	HSE (Appropriate to site): <input checked="" type="checkbox"/> Take 5 <input type="checkbox"/> SWMS <input type="checkbox"/> Other	RPAS Flight Documentation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not Applicable	

Summary of works conducted:

- Established MGA94 Zone 53 datum and AHD datum on site.
- Locate sufficient cadastral marks shown on survey plan S85/85A to re-establish the boundaries.
- Established three (3) additional survey control marks suitable for future construction.
- Undertook a detail survey for design purposes as per extents below in a 10m grid at the proposed tank location and in a 20m grid in the remaining part. The survey includes the access road as per clients mark up.



Methodology:

RTK GPS methodology has been used carry out detail survey and Total Station methodology used to provide consistent levels for additional survey control marks for future construction set-out.

Design of the proposed tank compound was undertaken using standard design drawings provided by Hydrera and in consultation with Eddie Pigeon and Jeremy Phillips.

Survey control:

Existing Survey Control on MGA 94 Zone53 datum has been identified, checked and used as follows:

Point#	Easting	Northing	RL	Description
CRM A835098	418152.253	7841789.889	356.119	OCP (datum)
CRM S93036008	418556.624	7839990.06	349.694	OP (disturbed)
CRM S16500006	417527.747	7845682.755	337.412	SIP with concrete collar (checked)

Additional GPS-Static observations on datum point A835098 was undertaken to support the adopted datum.

Additional Survey Control has been established as follows for future construction set-out purposes:

Point#	Easting	Northing	RL	Description
CS01	418482.362	7842089.075	356.448	Spike
CS02	418623.512	7842081.531	355.696	Spike
CS03	418444.985	7842232.838	354.647	Spike

Underground services:

Two (2) comms marker posts have been located along the western boundary of NT Por 1995. Approximate position of U/G comms line has been determined using parameters documented on the marker posts.

Noteworthy aspects of survey and site conditions:

The client advised prior going to site to use bolt cutters to cut the padlock on the gate to gain access to the area of interest within NT Por 1995. The padlock could not be cut and part of the wire fence (north of access gate) was therefore cut to gain access. The client was informed about the access procedure via a phone call on Thursday 24/08/2023.

Additional information has been attached for your reference: Yes No

Survey report and deliverables have been prepared and approved by the following:

Prepared by Project Surveyor:	Michael Burgmeier	Approved by Project Manager/Supervisor:	Alan Thorpe
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