WA-315-P & WA-398-P

Browse Basin

Western Australia

2009 Poseidon 3D Marine Surface Seismic Survey

Interpretation Report

30th April 2012
ConocoPhillips (Browse Basin) Pty Ltd

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Introduction

The Poseidon 3D Marine Surface Seismic Survey (Poseidon 3D) was acquired during the period October 2009 to March 2010 within Browse Basin exploration permits WA-315-P and WA-398-P, operated by ConocoPhillips (Browse Basin) Pty Ltd (ConocoPhillips). The survey ingresses the adjacent WA-314-P, WA-30-R, WA-274-P and WA-411-P tenements. The survey area is located approximately 350km offshore north of Broome in Western Australia (Figure 1).

The primary objective of the Poseidon 3D was to provide subsurface coverage of the exploration permit WA-315-P and the northern portion of WA-398-P, where potential exploration prospects had been identified in Cretaceous and Jurassic formations, from interpretation of 2D and 3D seismic data recorded by earlier surveys. The Poseidon 3D completely covered the existing BKG06b 3D survey.

The Poseidon 3D was conducted by CGGVeritas using the seismic vessel Geowave Voyager. Following mobilisation of the vessel recording commenced on 3rd October 2009 and was completed on 3rd March 2010.

The Poseidon 3D covers an area of 2,828km2 (Figure 2) and consists of 172 prime sail lines and 21 orthogonal lines in the area adjacent to the Seringapatam reef (appendix 1). The survey was acquired with sail lines oriented 130° / 310°.

1 Acquisition

The 2,828km2 full fold Poseidon 3D was recorded using the following configuration:

Acquisition

Acquisition Direction:	130° / 310° prime /; 40°/220° Orthogonal
Lines Acquired:	172 Prime & 21 Orthogonal lines

Source

Type:	Bolt, Long-Life (LL) Airgun
Number of Sources:	2 (Flip Flop)
Source Type:	Bolt Airguns
Source Volume:	2 x 4100 cu in
Source Separation	37.5m
Source Depth:	6m +-0.5m
Source Pressure:	2000 psi -2%
Shot Point Interval:	18.75m

Cable

Type:	Sercel Sentinel Digital Solid Streamers
Number of Streamers:	10
Streamer Separation:	75m
Streamer Depth:	7m +- 1m
Streamer Length	6000m
Number of Channels	480

Source Inline Near Offset	80m
Group Length	12.5m

Recording Instrument

Type:	Sercel Seal
Record Length:	7050msec
Sample Rate:	Seismic: 2ms,
Lo-cut filter Hydrophone	3 Hz, 12dB/octave,
Hi-cut Filter Hydrophone	200 Hz, 370 dB/octave linear phase
Format	8058-SEGD rev 1 32 bit IEEE

The objective of the survey was to image the Middle Jurassic to Tertiary formations, at target depths of between 1500m and 5500m.

A more detailed account of the acquisition can be found in the “Field Report 3D Marine Seismic Survey Browse Basin, offshore Western Australia” Acquisition Report, prepared by CGGVeritas, a copy of which was previously submitted to the Western Australia Department of Mines and Petroleum (DMP).

2 Data Processing

The Poseidon 3D data was processed by CGGVeritas Pty Ltd in Perth, WA, between March 2010 and September 2010. The processing sequence is summarised below. A more detailed account of the processing can be found in the “Seismic Data Processing Report, Poseidon and BKG06b Marine 3D”, prepared by CGGVeritas Pty Ltd, a copy of which was previously submitted to the DMP.

1. Navigation reformat
2. Seismic data reformat to internal CGGVeritas format
    a. 50ms SEG-D Delay
    b. High Cut Anti-Alias (AA) filter prior to Resampling: 100Hz, 110dB/Oct
    c. Resample from 2ms to 4ms
    d. Cut Record Length to 7000ms
    e. De-bias and 3Hz, 18dB/Octave Butterworth low cut filter
    f. Navigation and Seismic Data merge
    g. Flag observer’s reports edits
3. Gun and Cable Static correction using real depths
4. Apply deterministic Zero phasing filter on 0.5 m cable depth increments
5. Apply Tidal Statics Correction
6. Reverse polarity to make trough an increase in impedance
7. Cascaded Swell Noise Attenuation (SNA)
    a. Sort to back-to-back Shot Points (SP)
    b. Two passes of SNA, splitting into separate frequency bands
8. Apply Shot point and Channel Edits
9. Linear Noise Attenuation
    a. K-notch anti-alias filter with NMO wrap-around
    b. Extrapolation of SPs in fx-y domain
    c. Extend record length to 12000ms
    d. Forward Tau-P transform (1200 P traces)
    e. Tau-P mute for linear noise attenuation
    f. Reverse Tau-P transform
10. Apply Tidal Statics Correction (Poseidon Only)

11. Linear Radon transform for residual linear noise attenuation
12. Trace drop to go from 6.25m Common Mid Point (CMP) spacing to 12.5m spacing (BKG06B-3D Only)
13. 3D Surface Related Multiple Elimination (SRME)
    a. Modelling
    b. Subtraction in the Shotpoint domain
14. Second order deconvolution in Tau-P domain
    a. Target window: 3800 – 5800ms
15. Shot-to-shot amplitude correction
    a. Filter Length: 5 shot points
16. Trace drop to go from 6.25m Common Mid Point (CMP) spacing to 12.5m spacing (Poseidon Only)
17. Normal Moveout (NMO) correction using manually picked stacking velocity field (1 x 1km) (Poseidon Only)
18. High Resolution Radon De-multiple on NMO corrected gathers:
    a. High Resolution Parabolic Radon in 2D CMP domain (DTMIN–2000ms, DTMAX 1200ms, DTCUT 300ms, DDT 20ms, start time 1.7* water-bottom with 300ms taper)
19. SEGY Output of 2D CMP Gathers
    a. Removal of NMO correction
    b. Removal of initial amplitude recovery
21. Sort to Offset Volumes
    a. Output of 80 75m offset volumes (160-234m….6085-6159m)
    b. First 3 offset volumes purposefully over-populated (1-422m, 235-434m, 310-446m)
22. Automatic Bispectral Pre-Stack Time Migration (PSTM) velocity analysis on a 25 x 250m interval
    a. PSTM of target velocity inlines
    b. Automatic bispectral velocity picking
    c. Smoothing of raw picks for PSTM algorithm
    d. Output of PSTM VRMS and ETA fields on a 500 x 500m grid
23. 3D Data regularization
    a. Regularization of the dataset along two directions using Fourier Reconstruction
24. Diffracted multiple attenuation
    a. Start time 4000ms and 1000ms taper
25. Frequency Dependent Offset Noise Attenuation
    a. Removal of initial amplitude recovery
    b. Spherical Divergence correction (V2/T) using PSTM VRMS field
    c. Phase Only Q Compensation with Q=135
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    b. 4km Half Aperture
27. Residual velocity analysis parameters on a 12.5 x 18.75m grid
    a. Offline Residual Radon de-multiple, with DTCUT 240ms
    b. Automatic Bispectral velocity picking
    c. Removal of any erroneous picks and a small smoothing operator
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30. Residual Hi-Resolution RADON de-multiple
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        i. DTMIN-1000ms, DTMAX2000, DTCUT160ms, DDT 20ms, start time 1.9 * water-bottom with 300ms taper

ii. DTMIN-1000ms, DTMAX2000ms, DTCUT100ms, DDT 20ms, start time 2.6 seconds with a 400 ms taper.

31. SEGY output of Final PSTM Bin Gathers
32. Final Angle Stacks
    a. Full Stack = 6 - 42˚
    b. Near Stack = 6 - 18˚
    c. Mid Stack = 18 - 30˚
    d. Far Stack = 30 - 42˚
33. SEGY output of Raw AVA Stacks
34. Post Stack processing
    a. Amplitude only Q Compensation
    b. Time Variant Scaling
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35. SEGY output of Final AVA Stacks
36. AVO Product generation
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    b. Product Stack
    c. Lambda-Rho Stack
    d. Fluid Factor Stack
    e. Intercept Stack
37. SEGY output of AVO Attribute Products

3 Regional Geological History

The Browse Basin is a northeast-southwest trending, Palaeozoic to Cainozoic depocentre located entirely in the offshore Timor Sea region off the coast of Western Australia. It extends over an area of approximately 140,000km^2 and contains in excess of 15km of sediments. The basin sits between the Scott Plateau and Argo Abyssal Plain to the northwest and the Kimberley Block to the southeast. It is also flanked by the Yampi - Leveque shelves to the southeast and is contiguous with the Rowley Sub-basin of the Roebuck Basin to the southwest and the Vulcan Sub-basin of the Bonaparte Basin to the northeast (Figure 3).

The basin has been divided into a number of structurally defined features (Figure 3). These include the Caswell and Barcoo Sub-basins, which form the main depocentres within the Browse Basin. The Seringapatam Sub-basin is a deepwater basin located to the northwest of the main depocentres.

The tectonostratigraphic framework for the Browse Basin has been defined by Struckmeyer et al (1998). The following is a summary of that work, supplemented with additional locally relevant information interpreted by ConocoPhillips.

Struckmeyer et al (1998) divided the basin development into six main phases. These phases represent a pattern of extension, thermal subsidence and inversion which have been repeated twice during the evolution of the basin (Blevin et al, 1998).

- Late Carboniferous to Early Permian extension
- Late Permian to Triassic thermal subsidence
- Late Triassic to Early Jurassic inversion
- Early to Middle Jurassic extension
- Late Jurassic to Cenozoic thermal subsidence
- Middle to late Miocene inversion

The Browse Basin commenced formation during the Late Carboniferous through to the Early Permian as a result of an extensional phase associated with the separation of Sibumasu from northwestern Australia. This resulted in the formation of a series of extensional intracratonic half grabens. Initial basin fill was dominated by fluvio-deltaics in the Carboniferous, grading to marine shales and limestones in the Lower Permian.

The basin then underwent a phase of thermal subsidence in the Late Permian continuing through to the Triassic. The Permian to Middle Triassic post rift sag phase resulted in deposition of shales, sands and carbonates of the Hyland Bay Formation and marine shales of the Mt Goodwin Formation. Regression in Middle to Late Triassic times saw shallow marine sands and carbonates deposited as part of the Osprey, Pollard, Challis and Nome Formations. A Stratigraphic Column of the Browse Basin is provided in Figure 4.

A period of increased tectonism commenced in the Late Triassic, with the initiation of the break-up of Australia from Argoland. Associated block faulting generated the dominant southwest-northeast trending structural grain and many of the present day basin elements, including the arcuate Buffon trend and the Scott Reef – Brecknock anticlinal trends (Figure 3).

The Early to Middle Jurassic extensional event resulted in widespread, small scale faulting and the collapse of Triassic anticlines. Extensional faulting was concentrated in the northeastern portion of the Caswell Sub-basin and along the outer margin of the Prudhoe Terrace (Struckmeyer et al, 1998). This event was also largely instrumental in defining the elements of the potential Jurassic and Triassic petroleum systems in the Caswell Sub-basin (Blevin et al, 1998). During this cycle of basin development up to 1.5km of section was deposited in the central Caswell Sub-basin. The section is comprised of a sequence of stacked fluvio-deltaic and shallow marine sands, shales and silts, with minor carbonate and volcanics that make up the Plover Formation.   This interval forms the primary reservoir exploration target within the Browse Basin and is likely to be one of the primary gas sources for the basin.

The base of the Plover Formation sequence is marked by a regional unconformity at the base of the *C.torosa* SP Zone (Triassic Unconformity). This unconformity marks the onset of an extensional regime in the Browse Basin. The top of the Plover Formation sequence is defined by an unconformity of Late Callovian age (base *W.digitata* D.Z).

Well data in the Browse Basin suggests that the Plover Formation is a fluvio-deltaic to marine system extending from lower delta plain to outer shelf. It would also appear that the sequence is transgressive overall, within which a series of prograding highstand parasequence sets are developed.

During the Early to Late Jurassic a major volcanic province was situated on the margin of the Browse Basin (Blevin et al, 1998). Evidence for this is common throughout the Triassic and Jurassic intervals penetrated.

Minor faulting occurred in the Late Jurassic to Early Cretaceous associated with Callovian break-up event along the northwest margin of Australia. This event was followed by a period of relative tectonic quiescence in the Browse Basin. Deposition in the Late Jurassic was comprised of a series of lower order transgressive-regressive sequences (Blevin et al, 1998). The initial deposition, post Callovian

Unconformity, was the transgressive deltaic to shallow marine sands of the Montara Formation (*R.aemula* DZ).

The top of the late Jurassic sequence is defined by the base of the Berriasian lowstand basin floor fan complex and occurs between the upper and lower *P.iehiense* DZ boundary (Blevin et al, 1998). The Berriasian basin floor fan system forms the primary reservoir for the Ichthys gas/condensate discovery in the Browse Basin. Interpreted lowstand fans have also been identified in Asterias 1 and Echuca Shoals 1.

An overall transgressive cycle commenced in the Early Cretaceous and peaked by the Mid-Turonian, with open marine conditions established throughout the basin by the Aptian. Increased accommodation space from Valanginian time (with the onset of break-up of Greater India) led to deeper water marine shales and sands in basinal areas and shallow marine siliclastics in shelfal regions (Echuca Shoals Formation). Full oceanic circulation prevailed in the Browse Basin from Base Aptian time, with breakup of Greater India and Antarctica and the flooding of the Scott Reef / Brecknock / Ashmore Platform areas (Jamieson Formation).

Bathurst Island Group (Woolaston, Gibson, Fenelon, and Puffin Formations) siliclastics and carbonates were deposited following maximum transgression in the late Cenomanian. Relative sea-level falls during the Campanian / Maastrichtian led to erosion of shelfal sediment and deposition of turbidite sands into basinal areas.

Basin infill in the early Tertiary (Bassett Formation) led to shallow marine sedimentation across most of the Browse Basin (Grebe and Prion Formations). Sea level fall in the Oligocene led to uplift, erosion and non-deposition. Post the Oligocene unconformity, there was accelerated subsidence in basinal areas and deposition of thick prograding carbonate wedges (Oliver and Barracouta Formations). Reefal build-ups are evident from Miocene to present day.

4 Data Interpretation

4.1 Seismic Data

The Poseidon 3D was the primary data set used in the interpretation. The 2D data in the area was used to tie into nearby wells and for regional mapping purposes. The 2D sets available to incorporate into the interpretation are given in Table 1.

2D Seismic Survey	Year	Prefix
Firetail 2d MSS (Woodside)	1998	98F
Enneida 2d MSS (Ampol Exploration)	1989	A89M
Eliza 2d MSS (Ampol Exploration)	1991	A91E
Sascha 2d MSS (Ampol Exploration)	1992	A92S
BE82A 2d MSS (Esso E & P)	1982	S82A
BE82B 2d MSS (Esso E & P)	1982	S82B
AGSO Browse Basin Tie	1993	119BBT
AGSO Browse Basin Tie Infill	1994	130BBTI
Caswell/Echuca 2d MSS (Woodside)	1984	84-

Summary of 2D Seismic Data in WA-315-P and WA-398-P

The existing BKG05a 3D seismic survey was also used in the regional evaluation. The BKG06b survey was superseded by the Poseidon survey.

The Poseidon 3D data has been processed to a polarity of SEG reverse (an increase in acoustic impedance across a boundary is a negative number and a trough). The 2D data has been balanced to match the Poseidon 3D polarity. The Poseidon 3D shows improved data quality over the existing 2D and 3D datasets. The Poseidon 3D data is considered of high quality.

4.2 Well Data and Well Ties

There are 4 wells located within the area of the Poseidon 3D, Poseidon 1, Poseidon 2, Kronos 1 and Torosa 1. Additional wells outside the survey were used to provide velocity and depth control.

Synthetic seismograms were generated using the compressional sonic log, density log and the checkshot/VSP information where available for all relevant wells.

4.3 Seismic Interpretation

Ten seismic horizons have been correlated throughout the 3D seismic grid. The mapped horizons are detailed below:

- Water bottom
- Top Oliver Fm
- Top Read Limestone Member
- Intra Oligocene Marker
- Top Dampier Limestone Member
- Top Heywood Limestone Member
- Top Johnson Formation
- Top Woolaston Formation
- Top Jamieson Formation
- Near Top Plover Formation

The majority of these horizons have been mapped to aid in both depth conversion and to highlight potential exploration targets (Figures 5 & 6). Time and depth structure maps have been created for each of the above horizons. The primary target horizon is considered the Near Top Plover Formation.

4.3.1 Water Bottom

The water bottom is gently sloping from approximately 420m in the eastern corner up to 1090m in the west of the survey area (Figures 7 and 8). There is an emergent present day reef, the Seringapatam Reef, which is located in the western portion of the survey. No seismic was acquired across this feature.

4.3.2 Tertiary

Six seismic horizons have been mapped and depth converted in the Tertiary (Figures 9-20).

- Top Oliver Fm
- Top Read Limestone Member
- Intra Oligocene Marker

- Top Dampier Limestone Member
- Top Heywood Limestone Member
- Top Johnson Formation

The Tertiary section in the Poseidon 3D area represents a package ~3km thick below the mudline dominated by carbonates / carbonate reefs and prograding carbonate and clastic complexes.

The Pliocene and Miocene section is represented by a aggradational carbonate shelf which has been affected my the Timor/Australia collision.. The modern day Seringapatam Reef which is in places emergent was initiated due to shelf edge inversion in the Miocene after the deposition of the Read Limestone Member. This major feature would have acted as a northeast to southwest barrier leading to initial onlap onto the uplifted Top Oliver Fm and back reef carbonate deposition down to the Intra Oligocene Marker. Lithologically the interval is dominated by shelfal carbonates (marl, calcilutites and calcarenites). The quiescent back reef area exhibits many patch and pinnacle reefs which may present exploration targets if there is an effective seal.

Outboard of the reef are the forereef deposits showing a thick progradation towards the northwest in the Oliver Formation. The Read Member to the Top Johnson Formation shows a system dominated by eustatic sea level changes with periods of progradation and aggradation and a backstepping, towards the basin margin shelf edge. The position of this shelf edge is attributable to the deeper northeast to southwest trending Jurassic aged faulting. To the distal northwestern portion of this system is represented by a condensed or thin section. Prospectivity in this section is limited due to the lack of an effective seal.

The Top Johnson represents the change from carbonate deposition to clastic sedimentation with low angle clinoforms thinning considerably to the northwest. The base of the Johnson is highly channelized and cuts down into the Cretaceous Woolaston Formation.

4.3.3 Cretaceous

Two seismic horizons have been mapped and depth converted in the Cretaceous (Figures 21-24).

- Top Woolaston Formation (h11)
- Top Jamieson Formation

The Top Jamieson Formation seismic event is a strong decrease in acoustic impedance and is a basin wide marker horizon. It marks the onset of overpressure in the area. Lithologically it is dominated by a thick sequence of marine shales, with minor sand development towards the base.

Numerous channel-like features are also identifiable on the surface of the Top Jamieson Formation (Figure 27 - 28).

In the Late Cenomanian/Turonian it is interpreted that a significant slide/slump movement occurred in a lower slope setting. This resulted in the undercompacted deepwater muds of the Jamieson Formation sliding downslope and away from the older horsts. The slide blocks moved cohesively leaving significant new topography in which the slide scars are interpreted as several hundred meters deep. The Poseidon 3D dataset provides good imaging of this section, allowing the detailed mapping of these features as ‘pseudo-channels’ (rather than genuine current cut channels). After their creation, which may have taken place over time rather than being formed during a single event, the channels were initially filled by claystone and calcilutite reworked from the surrounding seabed. During the late Cretaceous lowstand events the relative sea-level drops triggered the reworking of coarse clastics (‘stored’ near the coastline during the highstand phase) into the deepwater environment where they were ‘captured’ by these structurally formed topographic lows.

There are several well defined structural closures present at the Top Jamieson level but reservoir presence is considered a significant risk.

4.3.4 Near Top Plover Formation

The Near Top Plover Formation has been correlated with the nearby wells and is interpreted as an increase in acoustic impedance. The lithology above and below this boundary is interpreted as being variable, with the potential for sand on shale, shale on sand and shale on shale interface. This results in some variability of the seismic marker at the Near Top Plover Formation.

The Near Top Plover horizon is characterised by a significant increase in faulting (Figures 25 and 26). The faulting is normal and has resulted in a series of fault terraces and grabens. The faulting is interpreted as propagating from the deeper Triassic aged structuring and largely terminating within the lower portions of the overlying Cretaceous interval.

The Plover Formation is interpreted as a stacked sequence of fluvio–deltaic to shallow marine deposits immediately underlying the Callovian Unconformity. The Plover Formation forms one of the primary reservoir targets within the Browse and Bonaparte Basins.

Multiple three way fault dependent structures exist with the Poseidon 3D. To the southwest the Top Plover Fm rises up onto the Torosa high and the northwest the Top Plover drops down into a significant graben.

5 Depth Conversion

Time structure maps were depth converted using a layer-based approach that integrates both seismic stacking velocities and well-derived interval velocities. The Water Bottom time structure map was converted to depth using a time verses depth regression function using the available well data. Each of the other time structure maps was depth converted by first creating isochrons for the interval between each pair of time surfaces (e.g. Water Bottom to Top Oliver Formation isochron). Each isochron was transformed to an isopach using an interval velocity grid derived from stacking velocities calibrated to the interpolated instantaneous velocity between the top and base horizons. Final depth maps were generated for each horizon by building down from the Water Bottom and adding on each successive isopach. Well ties imposed during each step in the depth conversion process ensured consistency of the depth converted horizons with observations in the wells.

6 Prospects and Leads

The Poseidon 3D was acquired to better define exploration leads identified from pre-existing 2D seismic data. The leads were identified at both the Tertiary, Cretaceous and Jurassic levels. Poseidon 3D mapping and depth conversion has confirmed that there are significant closed structures within the Cretaceous and Jurassic intervals.

6.1.1 Tertiary Prospectivity

The Tertiary section is dominated by Carbonates and Carbonate buildups. Hydrocarbon migration from the mature Jurassic aged source kitchens in the grabens is a risk due to the thick regional Jamieson Formation seal. Top seal is the main issue in this Carbonate dominated system. There are no conventional three or four way dip closed structures. Prospects and leads would rely on a stratigraphic component. Play types would include buried carbonate build-ups or pinnacle reefs, truncated top lap sets, fore reef talus/fans, back reef pinch outs onto the flanks of reef structures.

6.1.2 Cretaceous Prospectivity

The Cretaceous section has a greater clastic content and has the potential to develop intra-formational seals. Significant channelling is evident in the Johnson and the Woolaston Formations. Play types include deep water turbidites at the break of slope outboard of the channels systems, sand filled channels with updip shaleouts and channel truncation plays. The Top Jamieson Formation (Figure 25 & 26) has two large four way dip closed structures. They have been penetrated by the existing wells but have not encountered reservoir. If reservoir quality sands exist within these greater structures then they would present a significant exploration target. Onlap of Woolason Formation Sandstones onto these highs could provide a stratigraphic trap sealed by intra formational shales. Migration into these sands would have to occur where the Jamison Formation is thinned across the major Jurassic/Early Cretaceous aged NW-SE trending faults.

6.1.3 Jurassic Prospectivity

The rifting event in the Middle to Late Jurassic has caused multiple three way fault dependent structures in the area of the Poseidon 3D (Figure 27 & 28). The Poseidon 1 well proved that this play type works within the Poseidon 3D area. The area has undergone complex multi-staged faulting which has influenced the presence of structures and also the facies distribution. Play types within this interval are the pre-rift fluvial deltaics, synrift shallow marine sandstones and post rift marine deep water and barrier fringing sandstones. Trap styles are predominantly structural but potential does exist for stratigraphic traps on the flanks of existing structures and alluvial/submarine fan deposition on the hanging wall of major horsts.

The rifting was associated with volcanism which may degrade the reservoir quality and occupy accommodation space preventing the deposition of sandstones.

7 Summary and Conclusion

The Poseidon 3D survey in WA-315-P and WA-396-P was successfully acquired, processed and interpreted over a period from October 2009 to June 2011.
The primary objective of the Poseidon 3D was to provide subsurface coverage of the southern portion of the exploration permit WA-315-P and the northern portion of WA-398-P, where potential exploration prospects had been identified within the Tertiary, Cretaceous and Jurassic formations.

The Poseidon 3D data quality is high and an improvement over the pre-existing 2D and 3D data. Imaging of the Tertiary and Cretaceous sequences has allowed an improved understanding of the geology of this area and identified new play types.

8 References

Blevin, J.E., Struckmeyer, H.I.M., Cathro, D.L., Totterdell, J.M., Boreham, G.J., Romine, K.K., Loutit, T.S. and Sayers, J., 1998. Tectonostratigraphic Framework and Petroleum Systems of the Browse Basin, North West Shelf., In PURCELL, P.G. & R.R. (Eds), 1998, The Sedimentary Basins of Western Australia 2: Proceedings of Petroleum Exploration Society of Australia Symposium, Perth, WA, 1998.

Struckmeyer, H.I.M., Blevin, J.E., Sayers, J., Totterdell, J.M., Baxter, K. and Cathro, D.L., 1998. Structural Evolution of the Browse Basin, North West Shelf; New Concepts from Deep–seismic Data, In PURCELL, P.G. & R.R. (Eds), 1998, The Sedimentary Basins of Western Australia 2: Proceedings of Petroleum Exploration Society of Australia Symposium, Perth, WA, 1998.

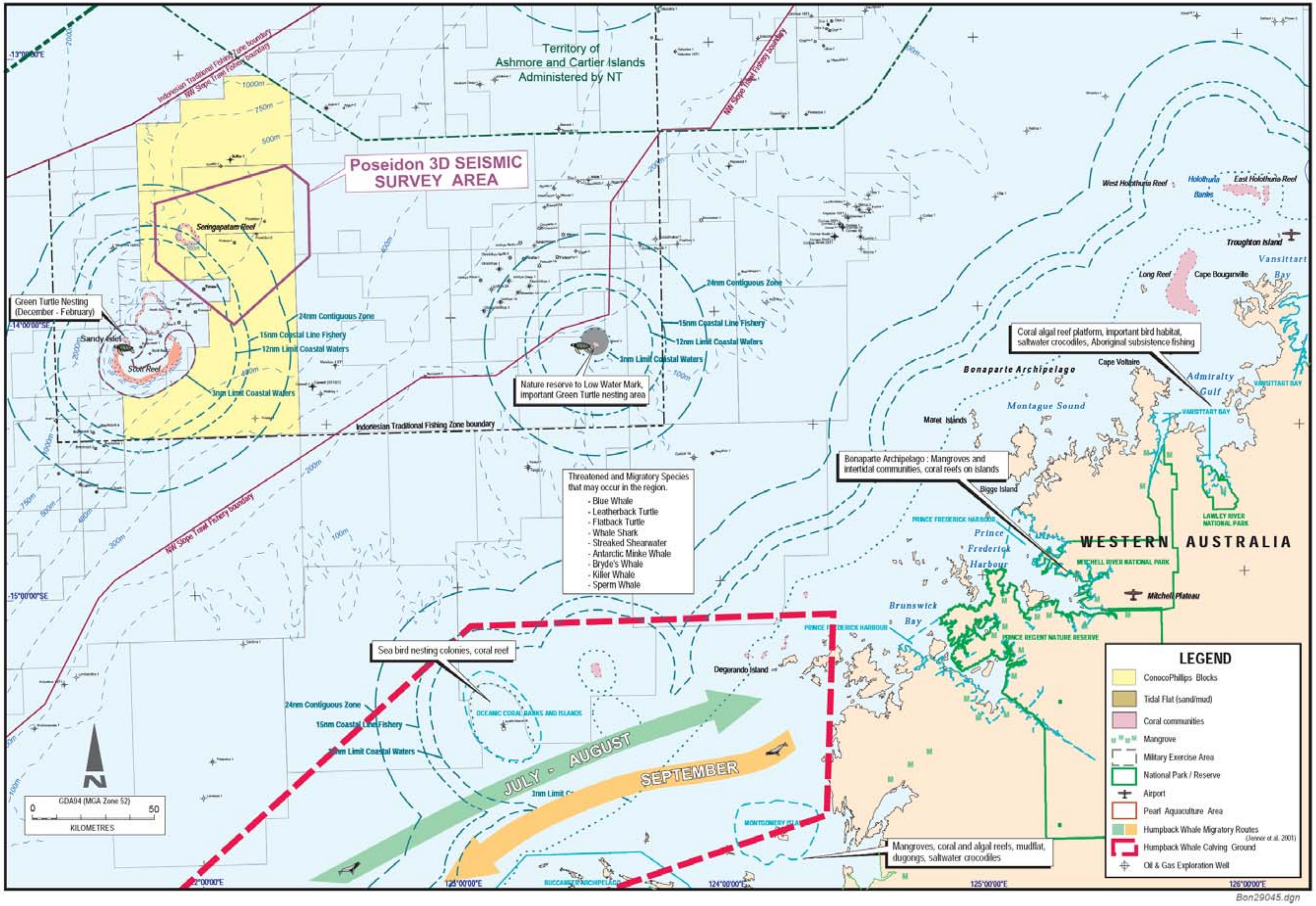


Figure 1 WA-314-P, WA-315-P, WA-398-P and the Poseidon 3D Seismic Survey Regional Location

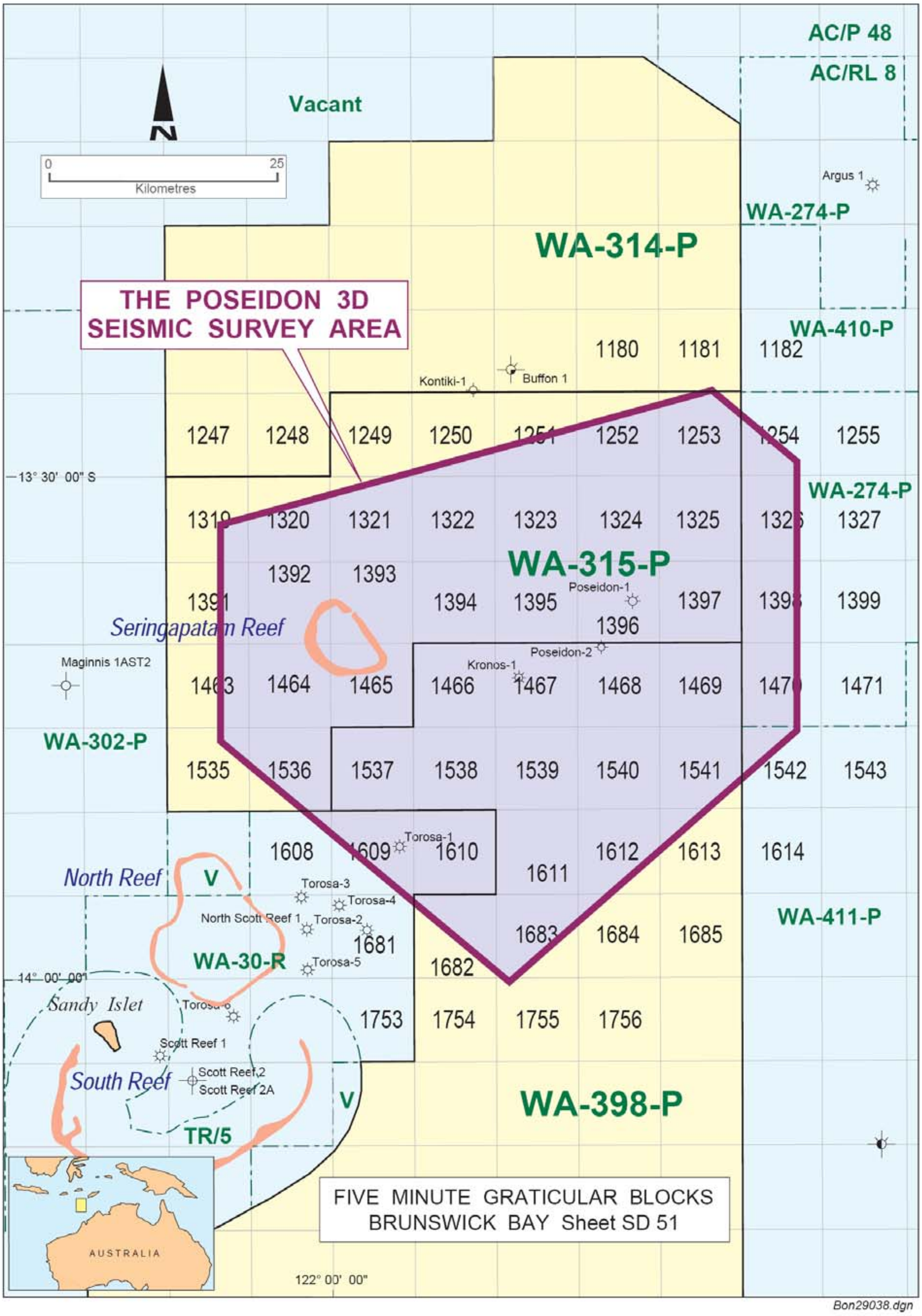


Figure 2 Poseidon 3D Seismic Survey Location Map

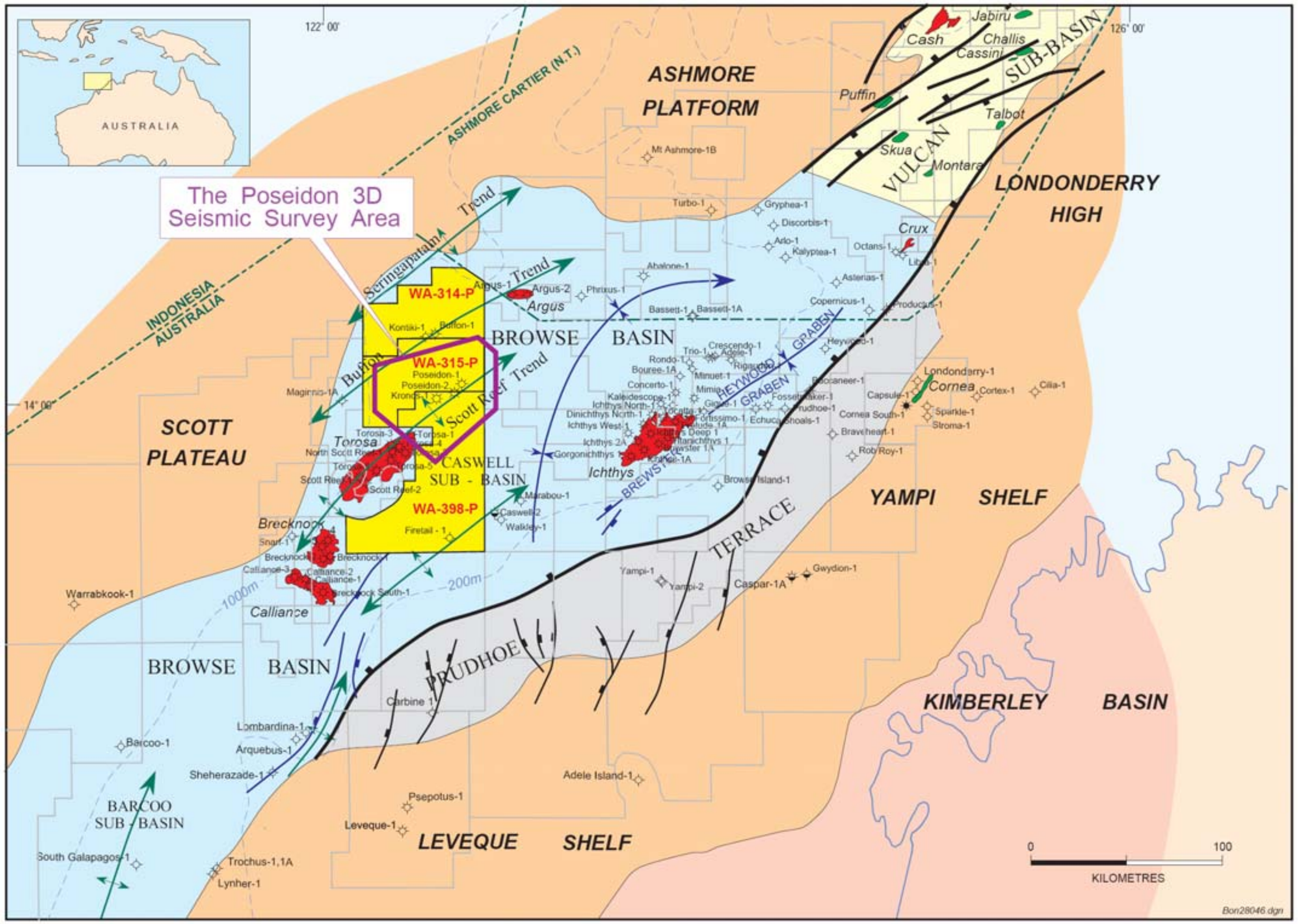


Figure 3 Regional Structural Elements Map (WA-314-P, WA-315-P and WA-398-P highlighted in yellow)

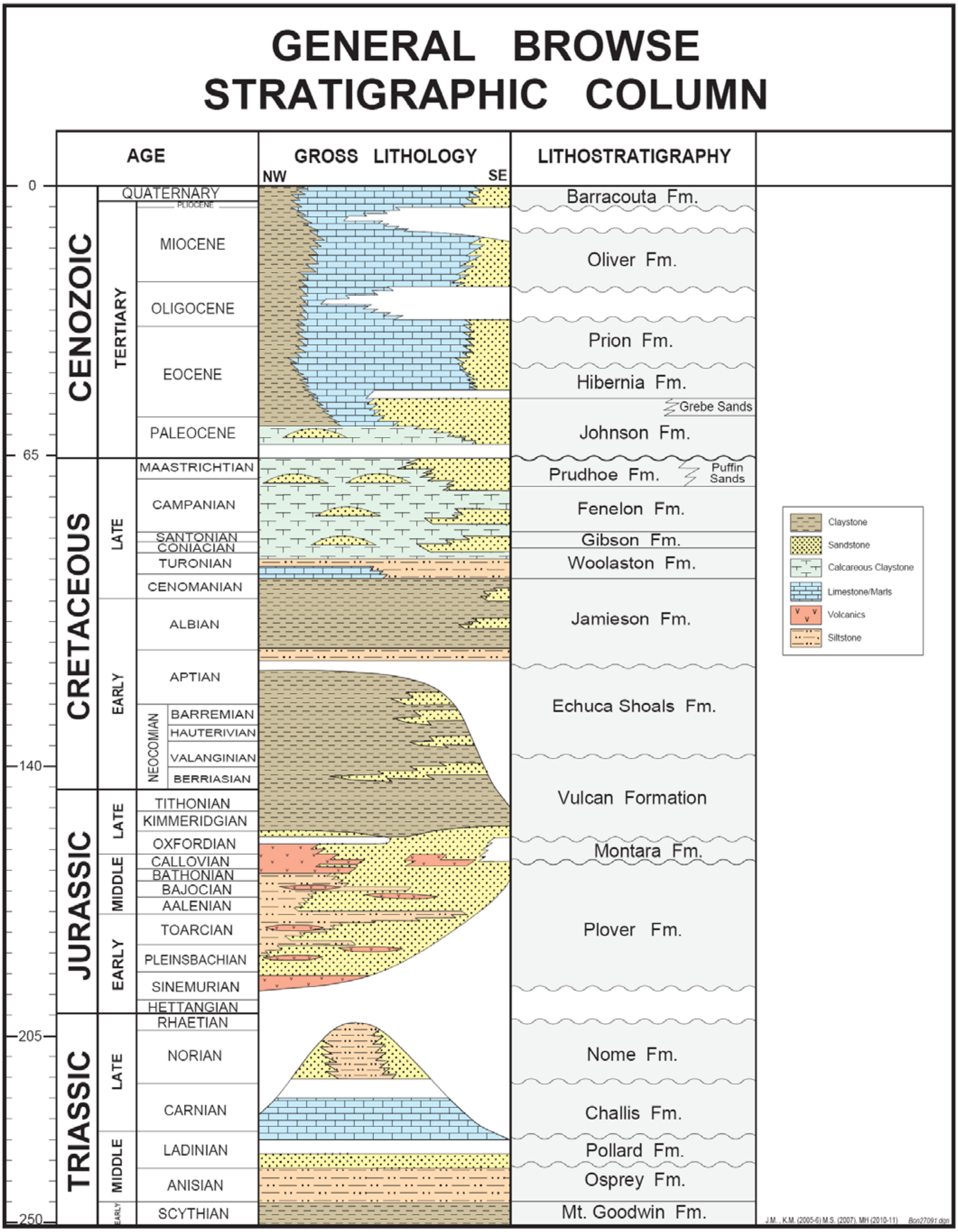


Figure 4 Stratigraphic Column

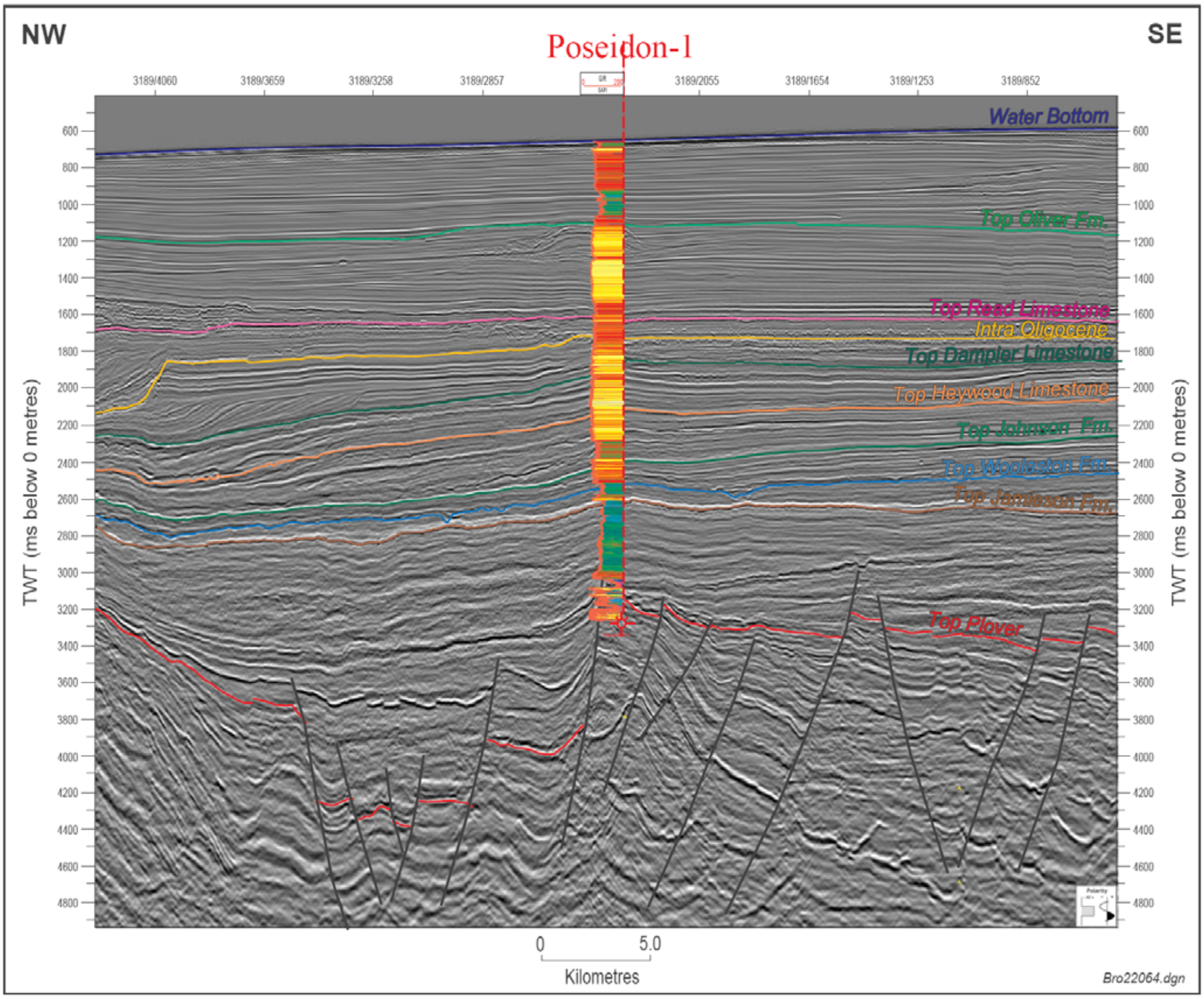


Figure 5 Poseidon 3D Inline 3189

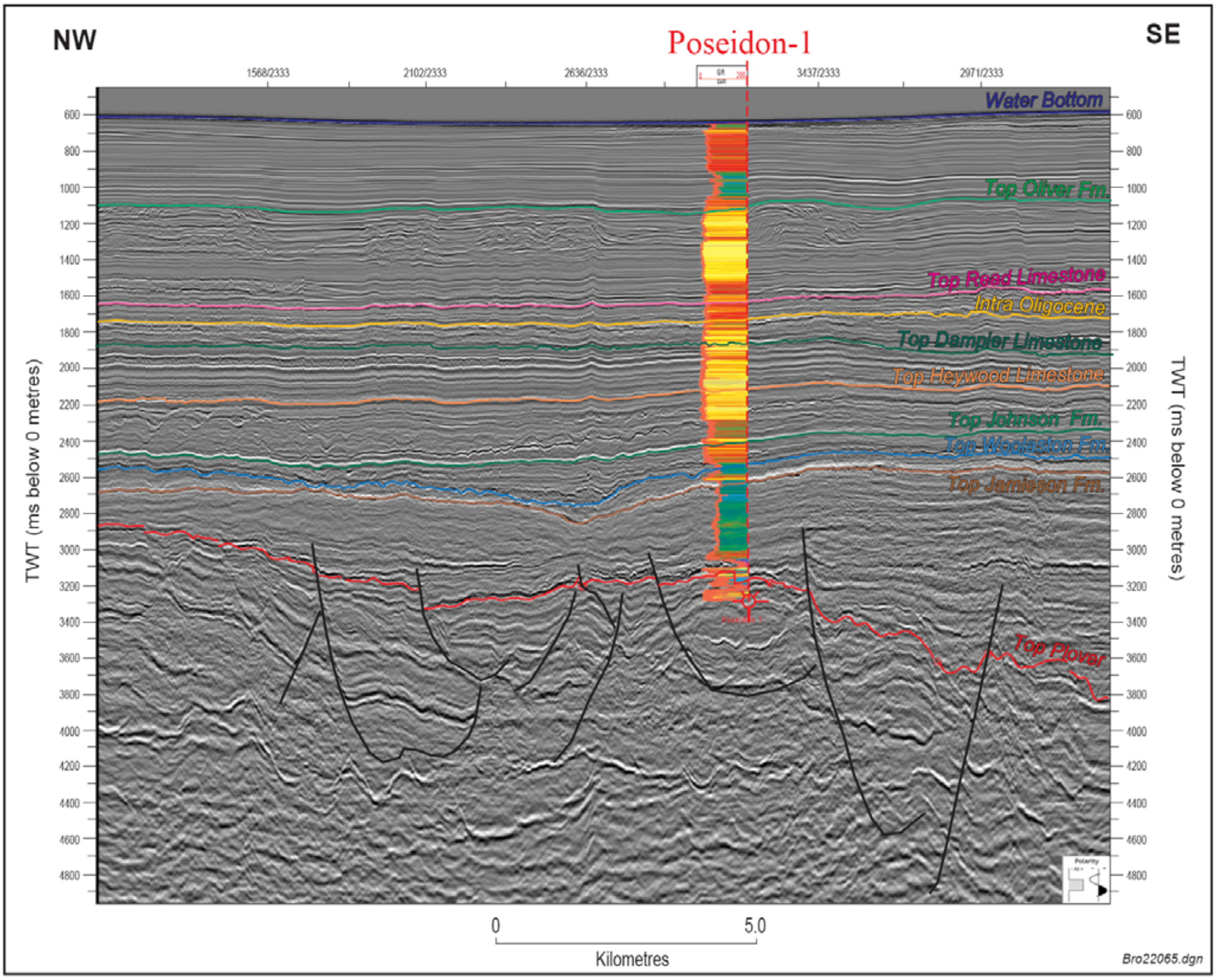


Figure 6 Poseidon 3D Xline 2333

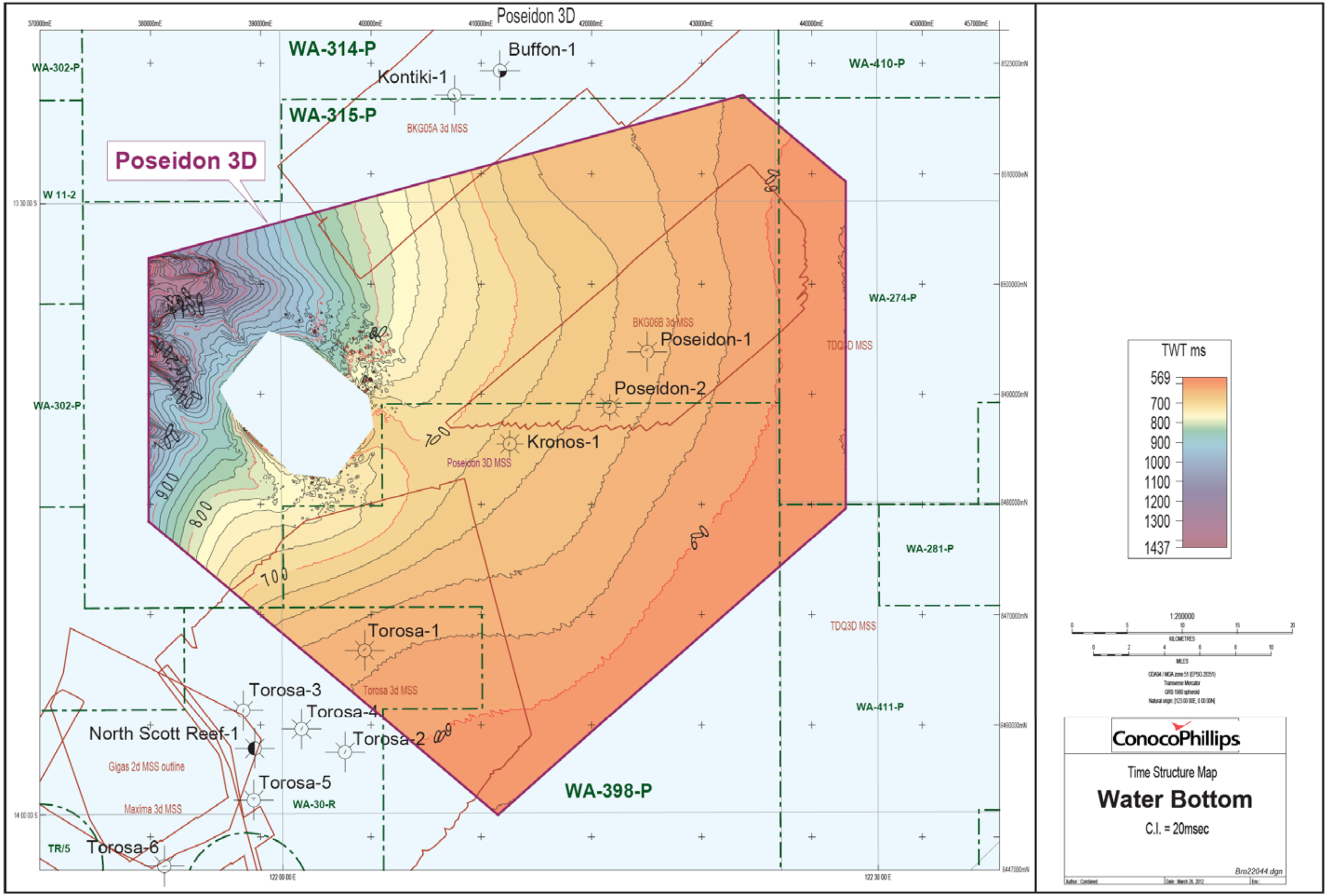


Figure 7 Water Bottom TWT map.

Water Bottom
Contour Interval = 20m

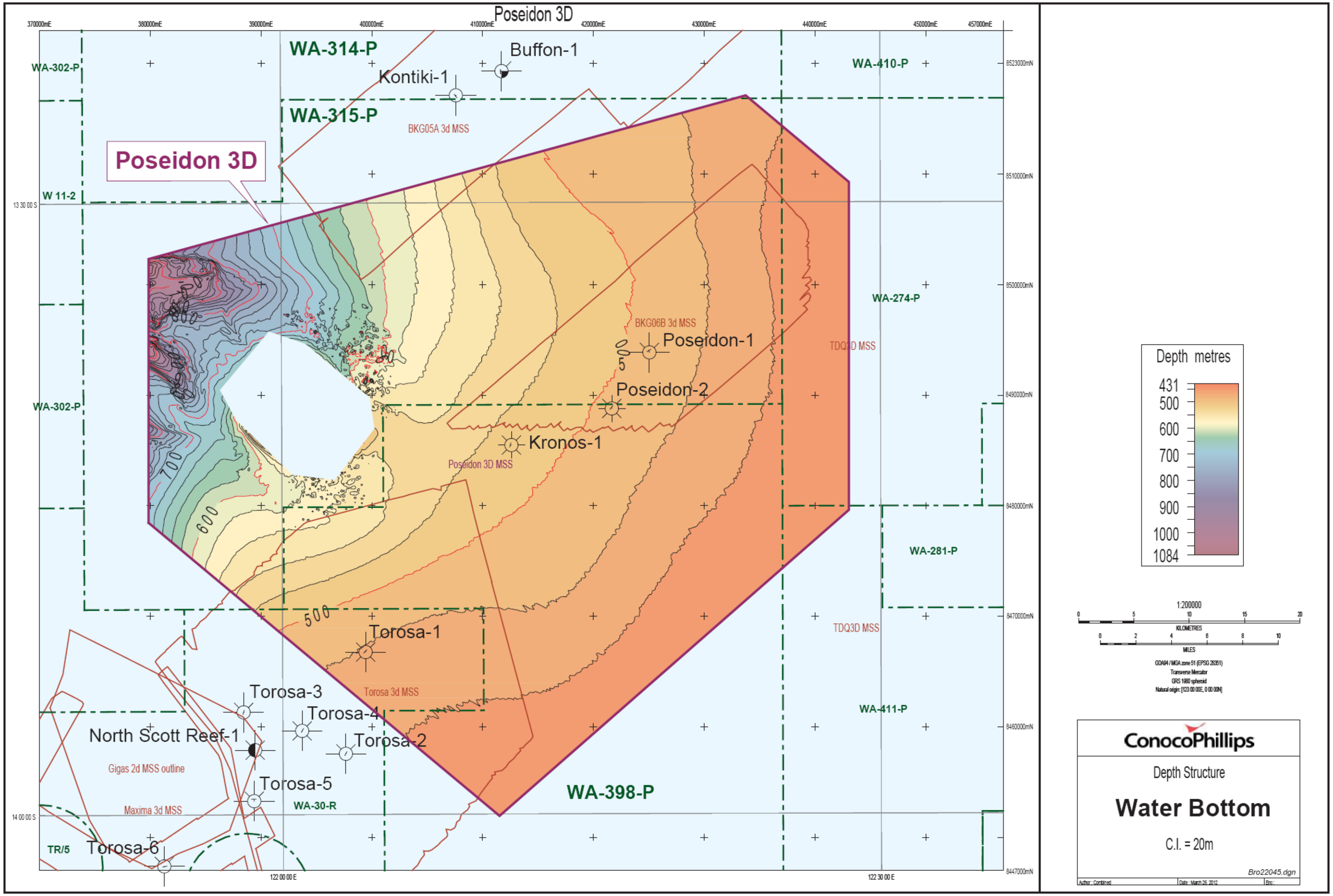


Figure 8 Water Bottom Depth Structure map.

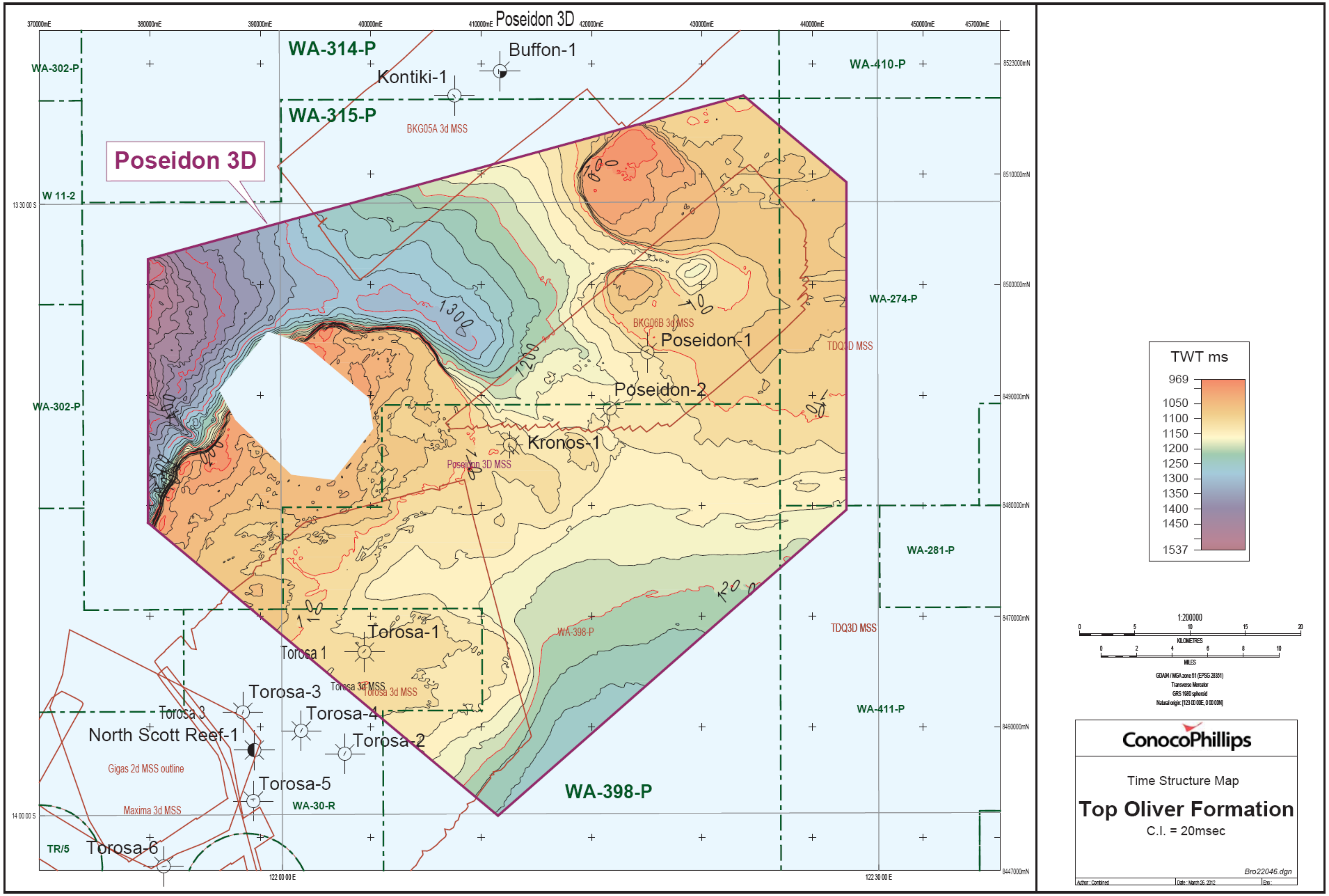


Figure 9 Top Oliver Formation TWT map.

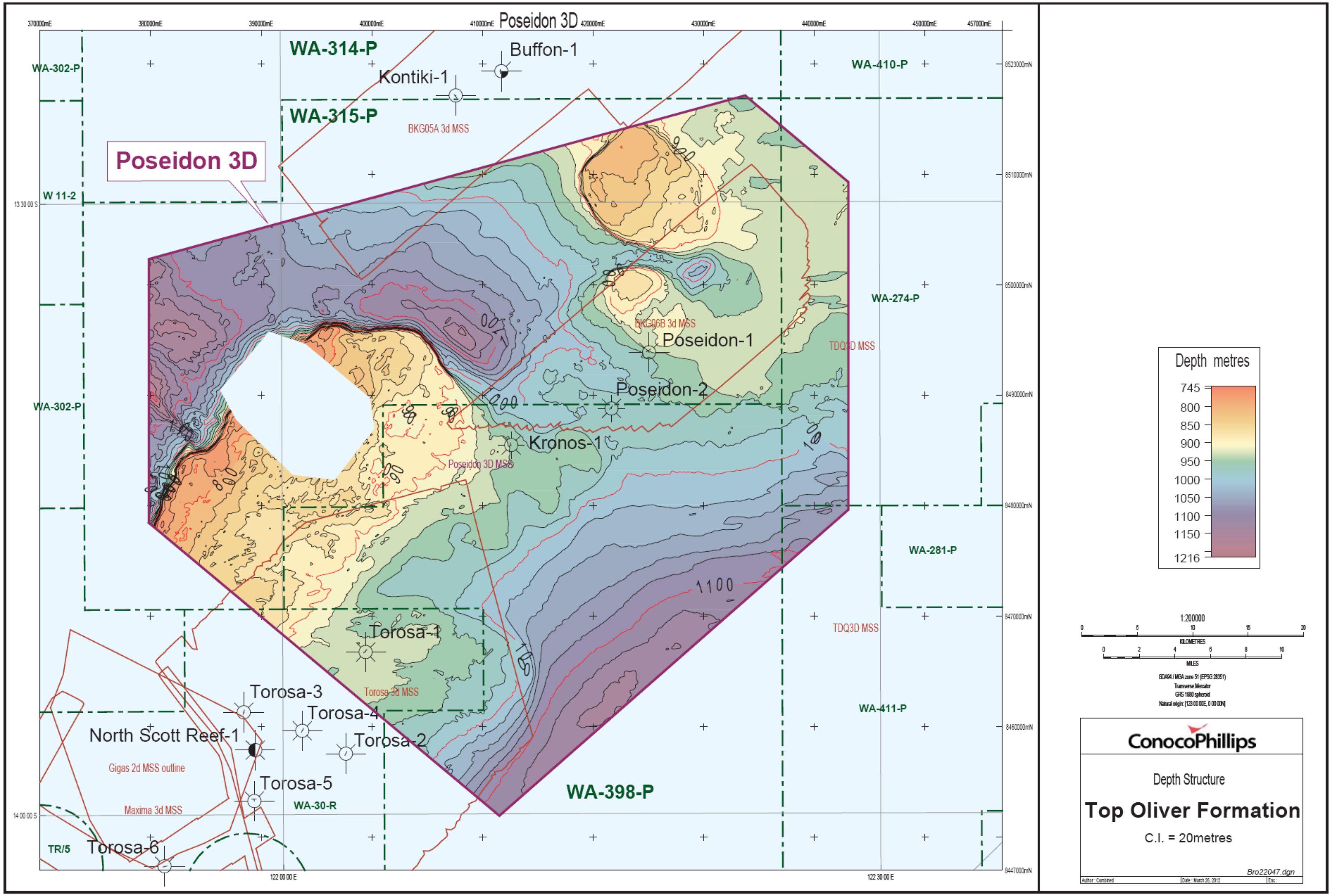


Figure 10 Top Oliver Formation Depth Structure map.

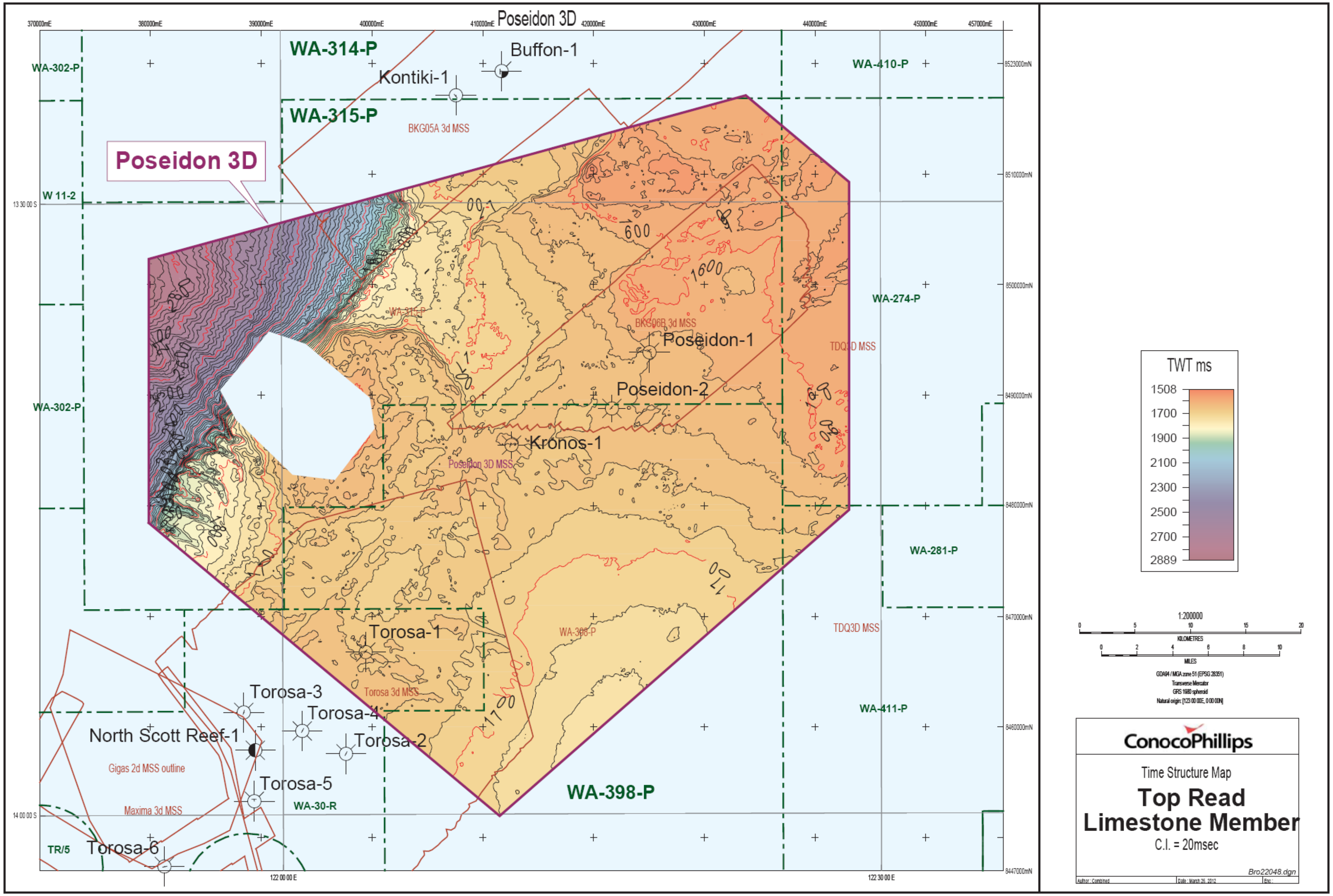


Figure 11 Top Read Limestone Member TWT map.

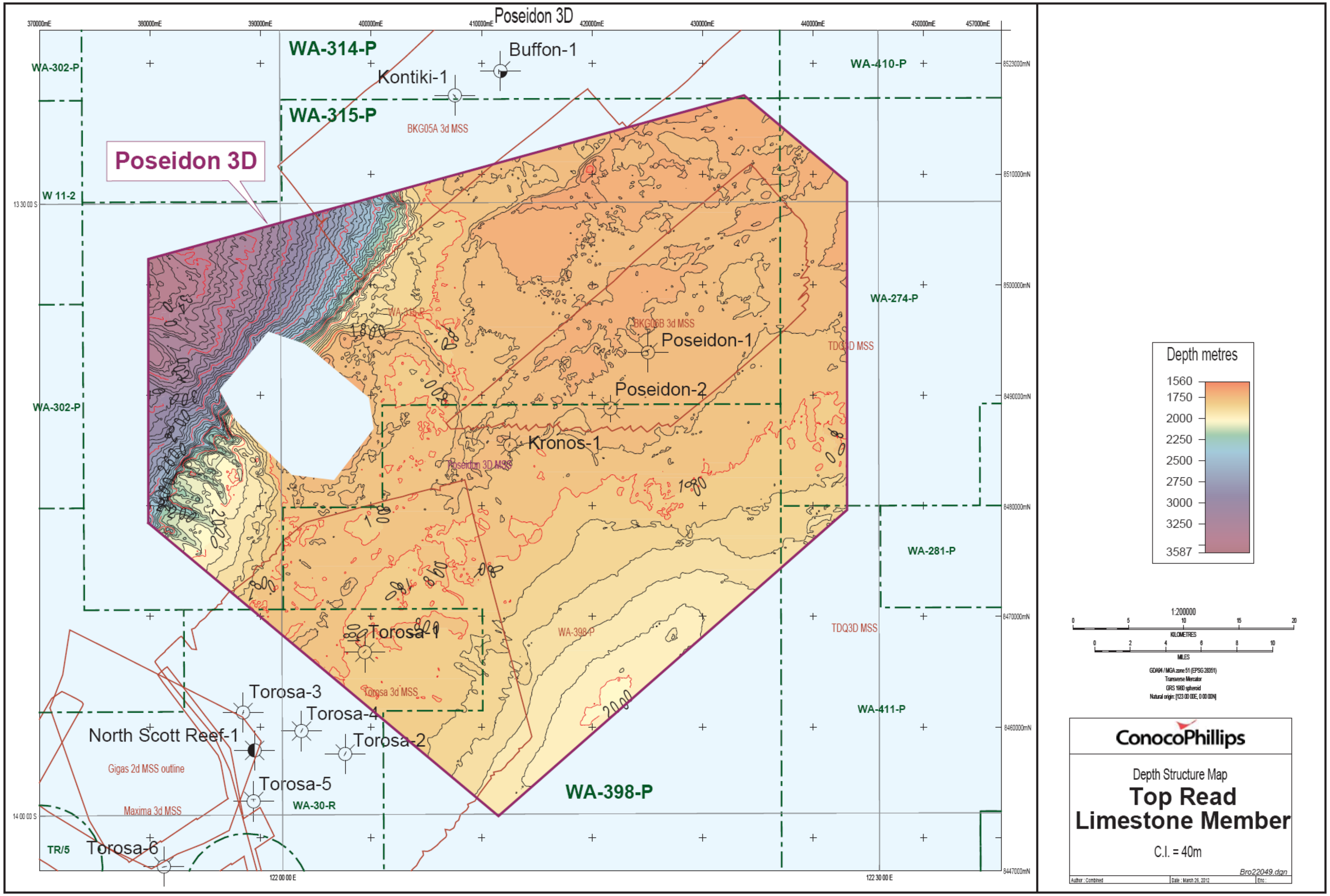


Figure 12 Top Read Limestone Member Depth Structure map.

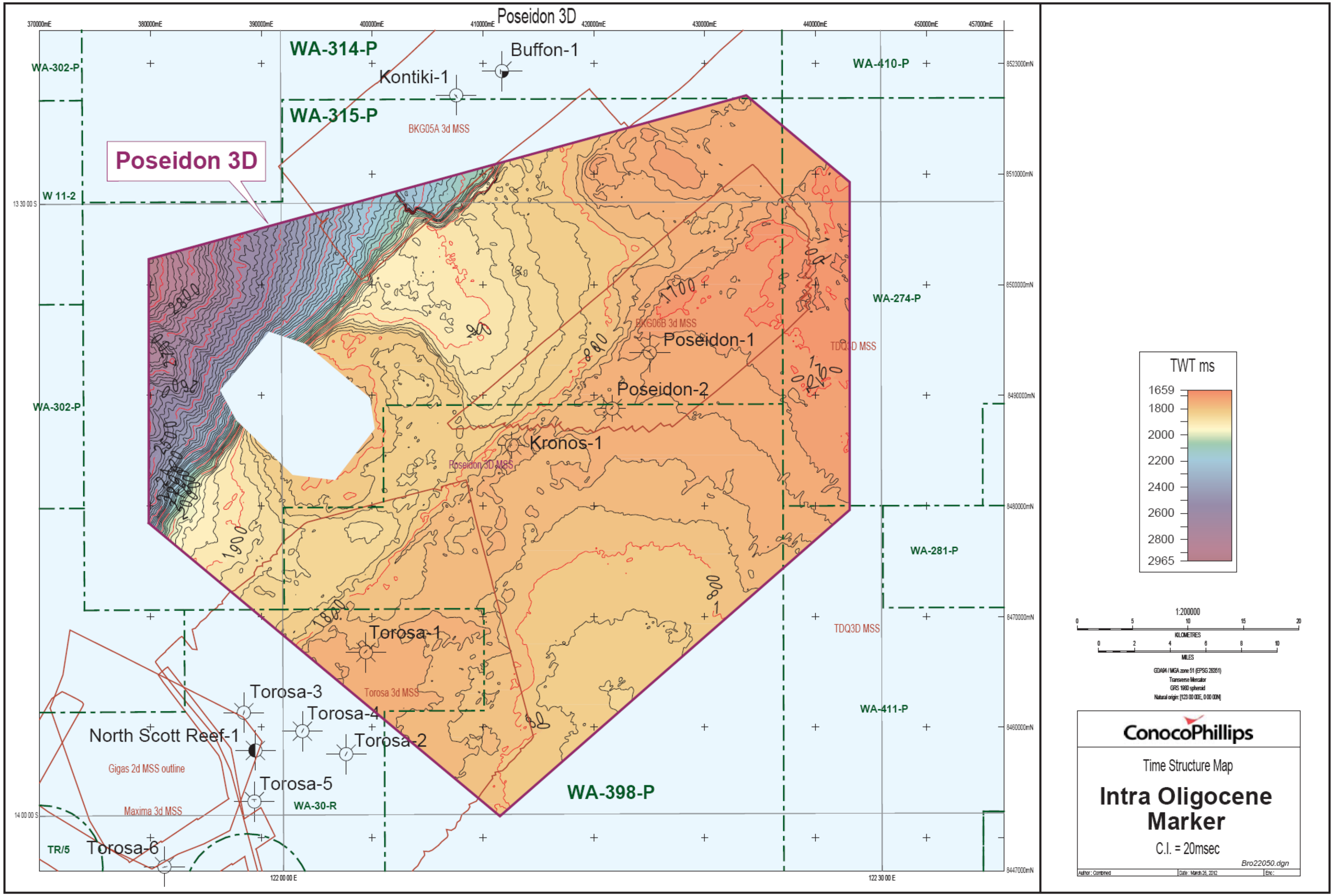


Figure 13 Intra Oligocene Marker TWT map.

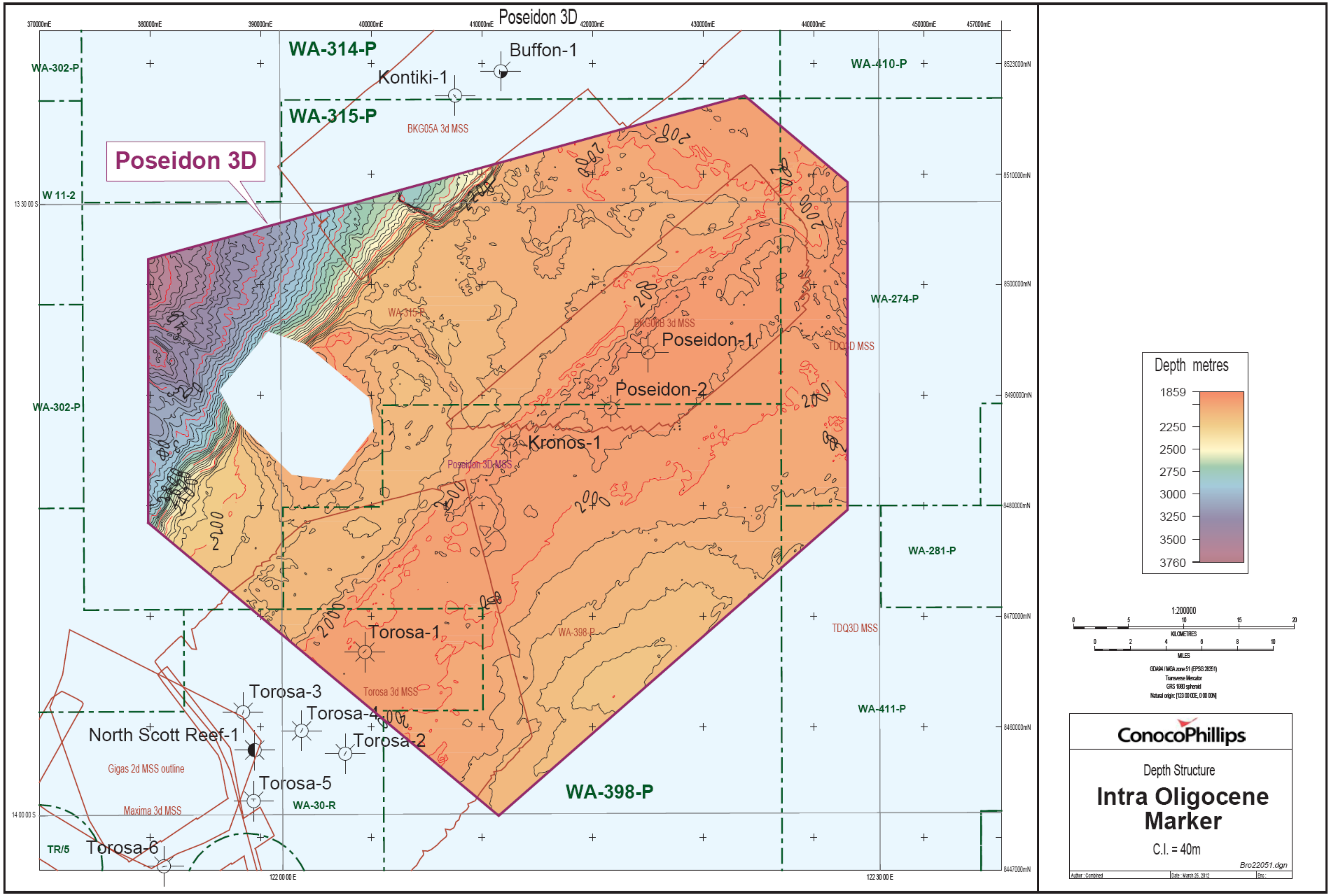


Figure 14 Intra Oligocene Marker Depth Structure map.

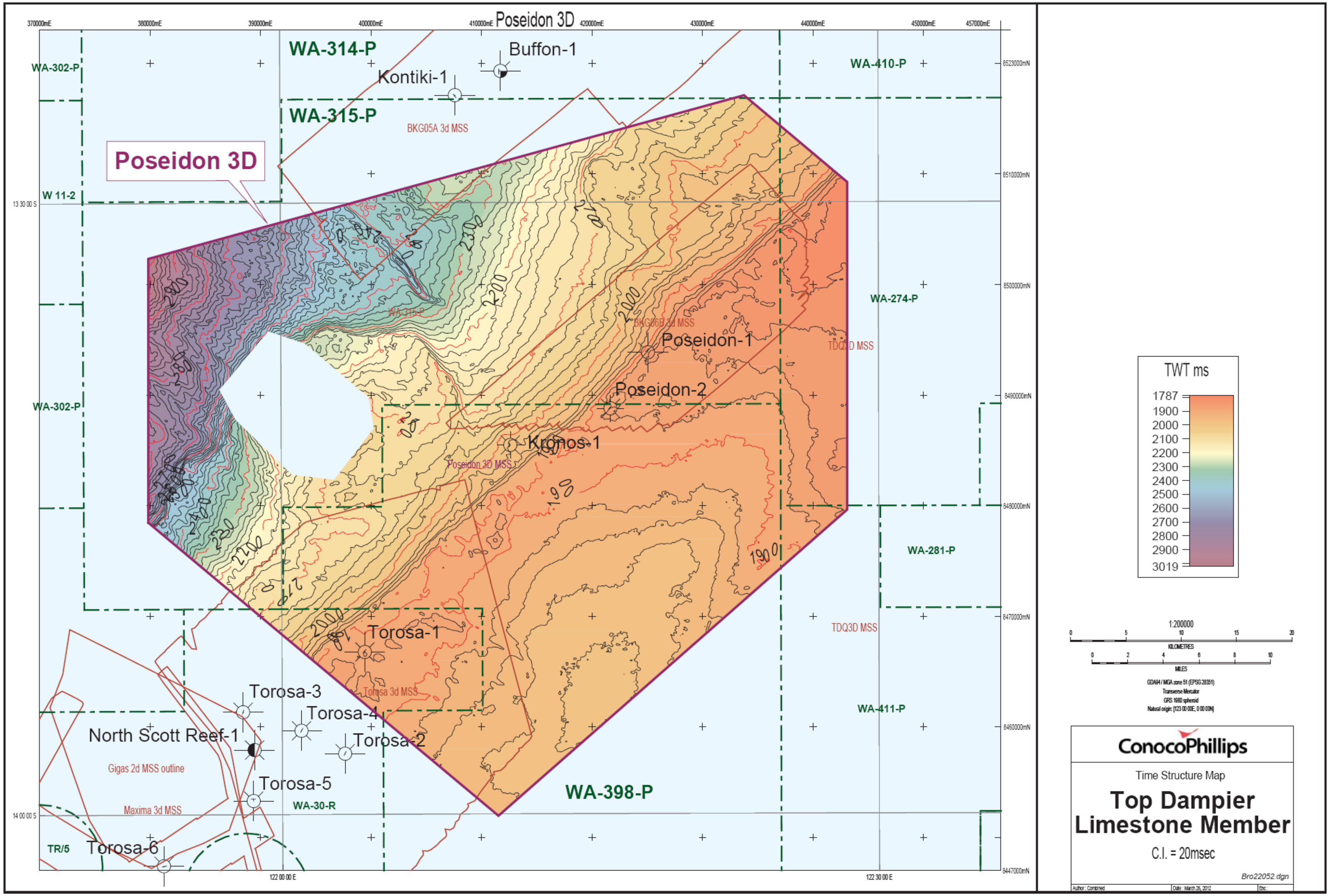


Figure 15 Top Dampier Limestone Member TWT map

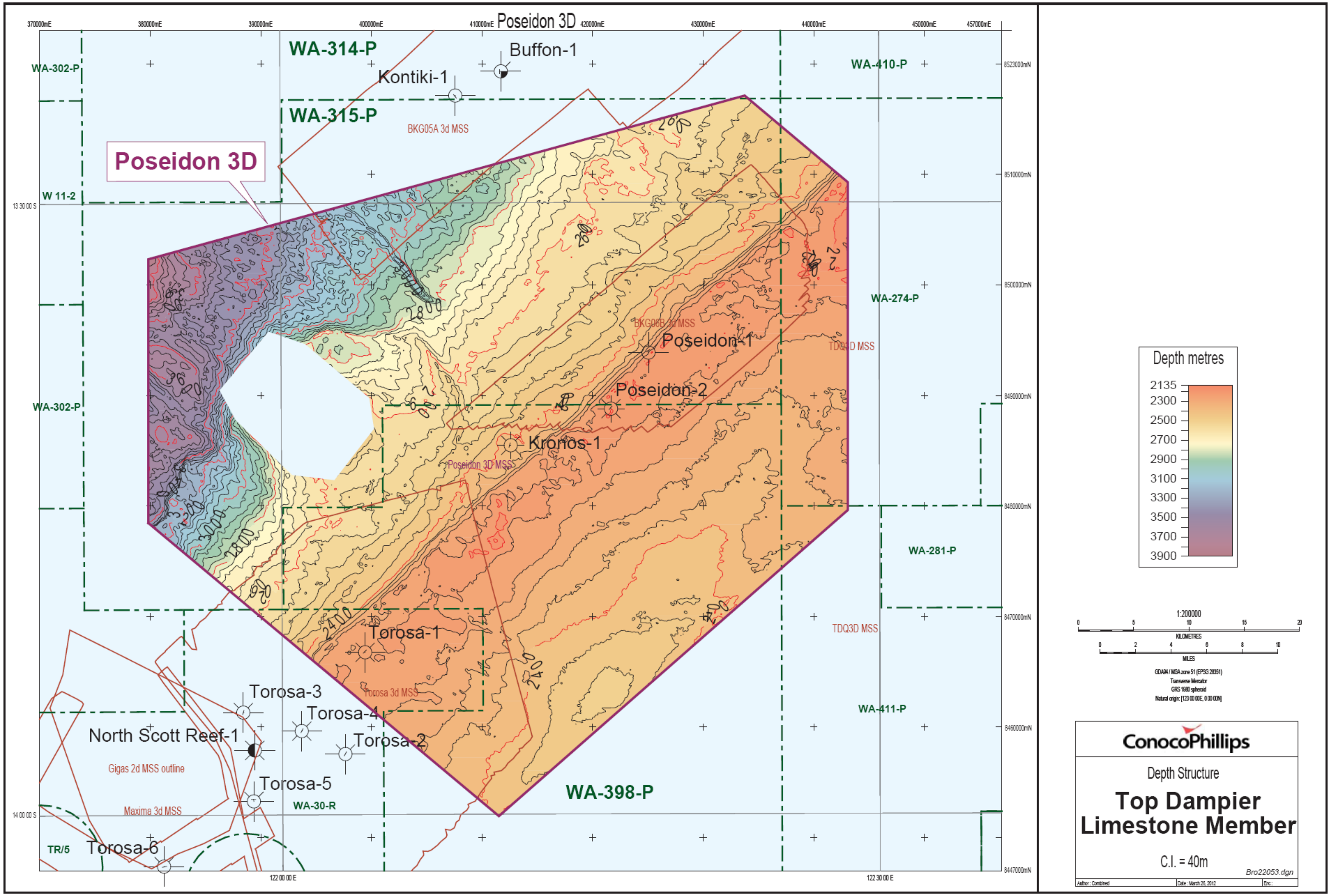


Figure 16 Top Dampier Limestone Member Depth map

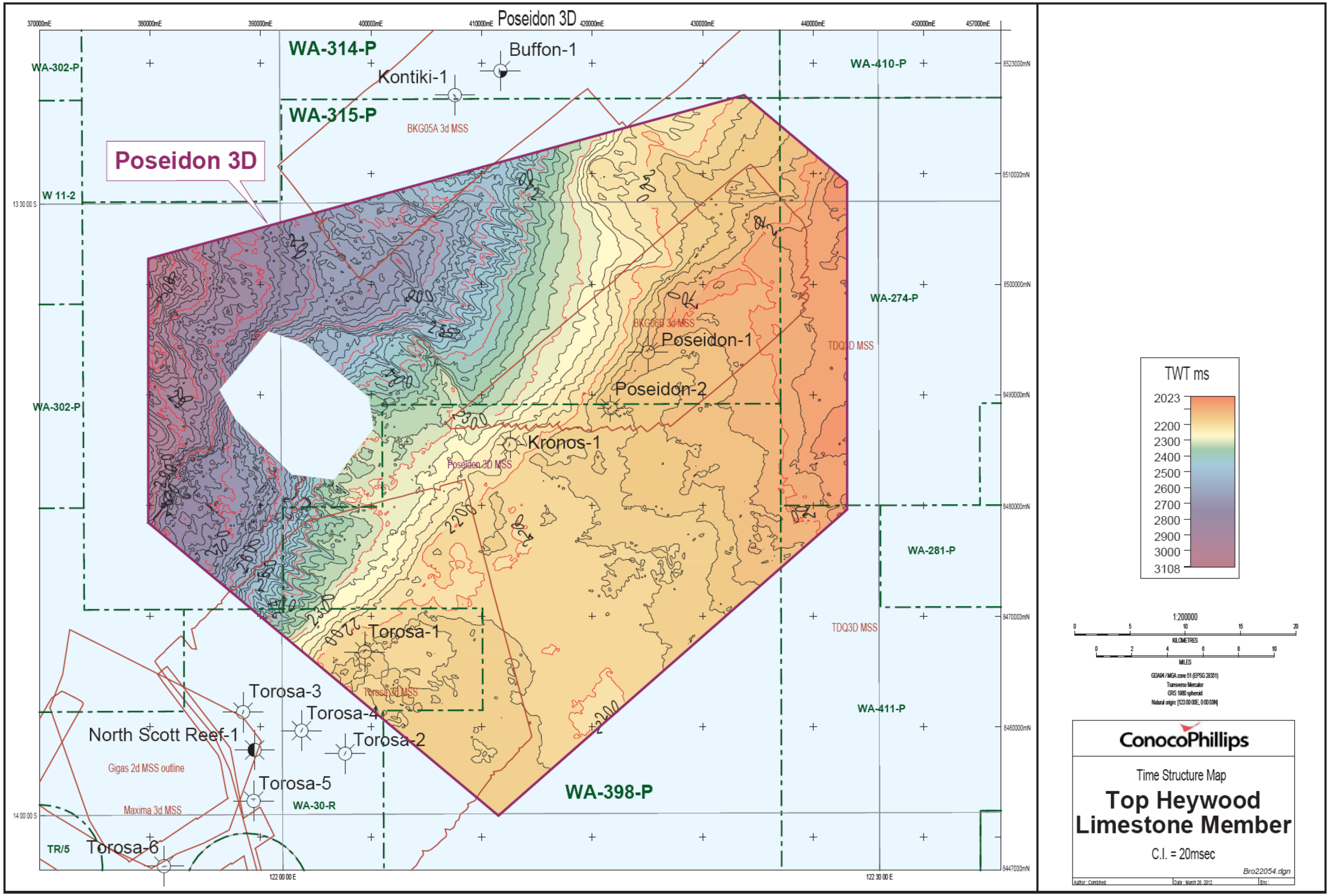


Figure 17 Top Heywood Limestone Member TWT map

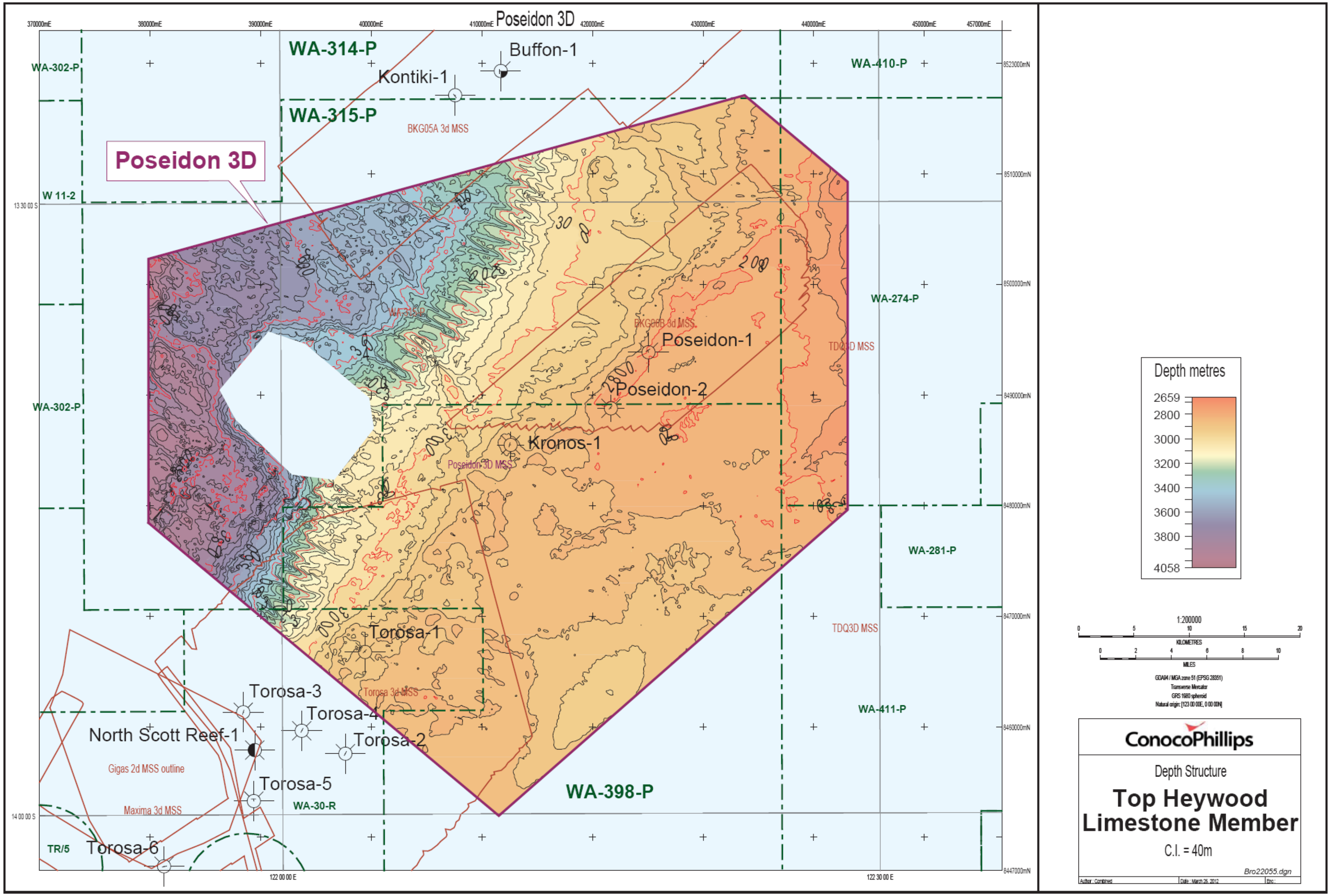


Figure 18 Top Heywood Limestone Depth Structure map

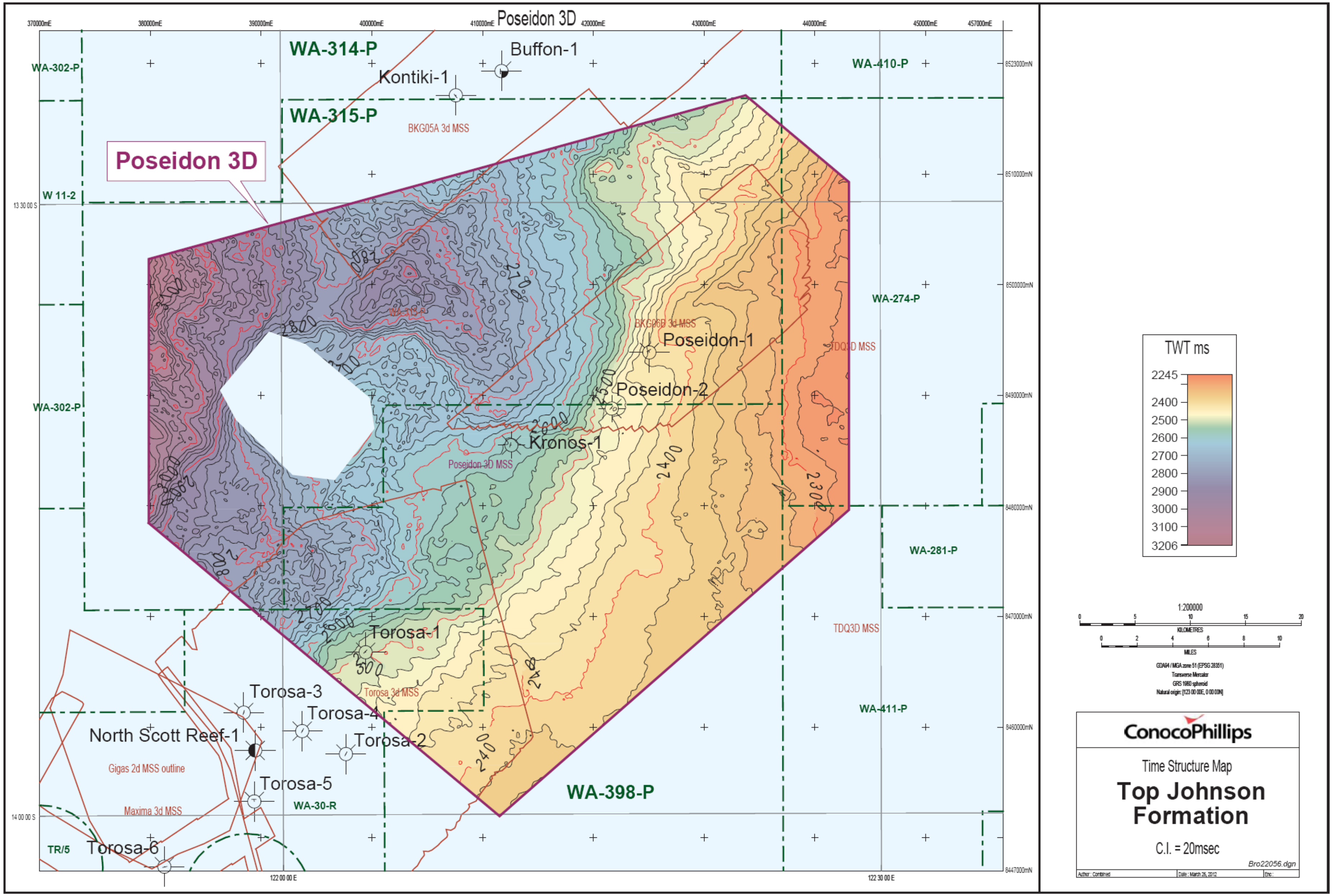


Figure 19 Top Johnson Formation TWT map

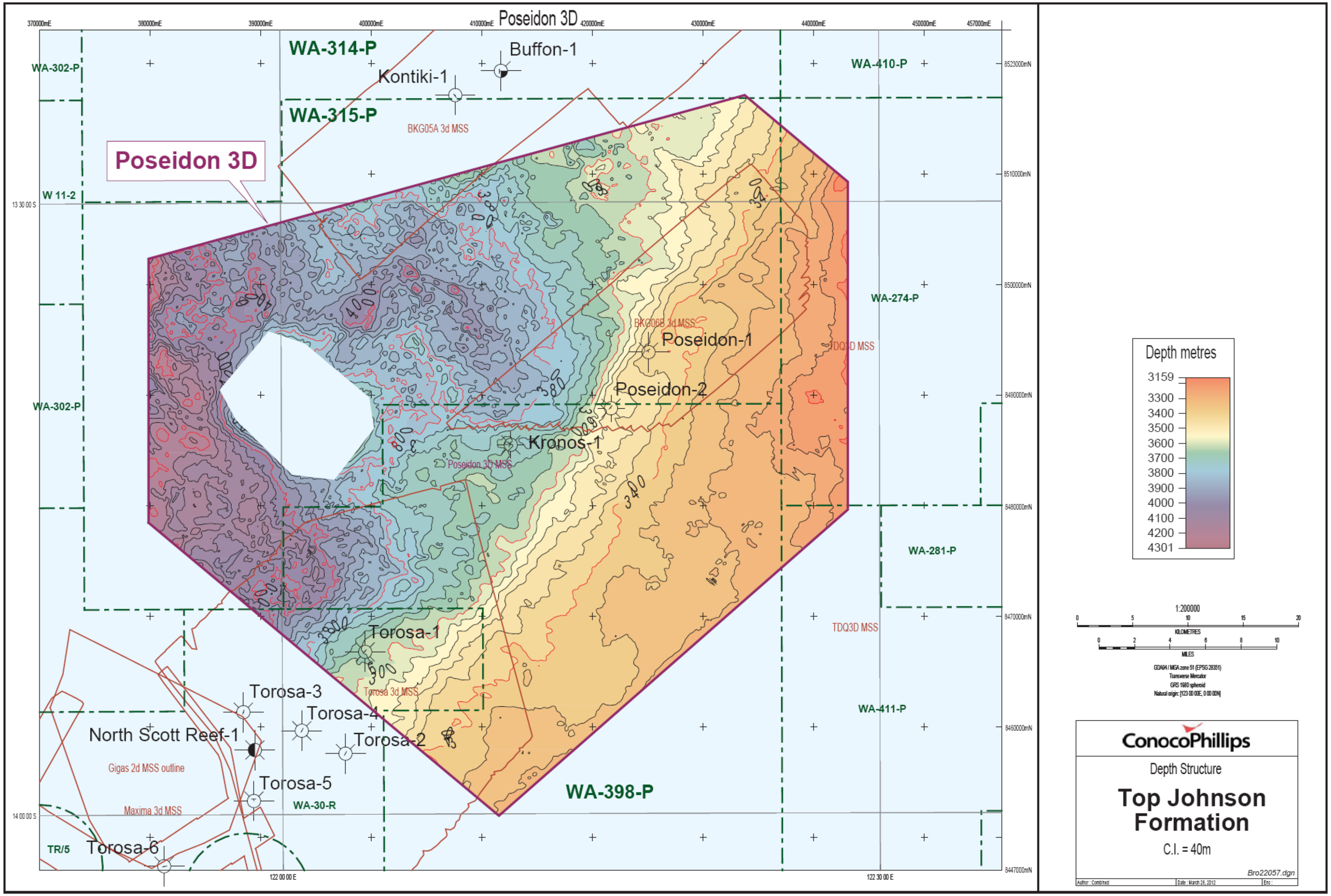


Figure 20 Top Johnson Formation Depth Structure map

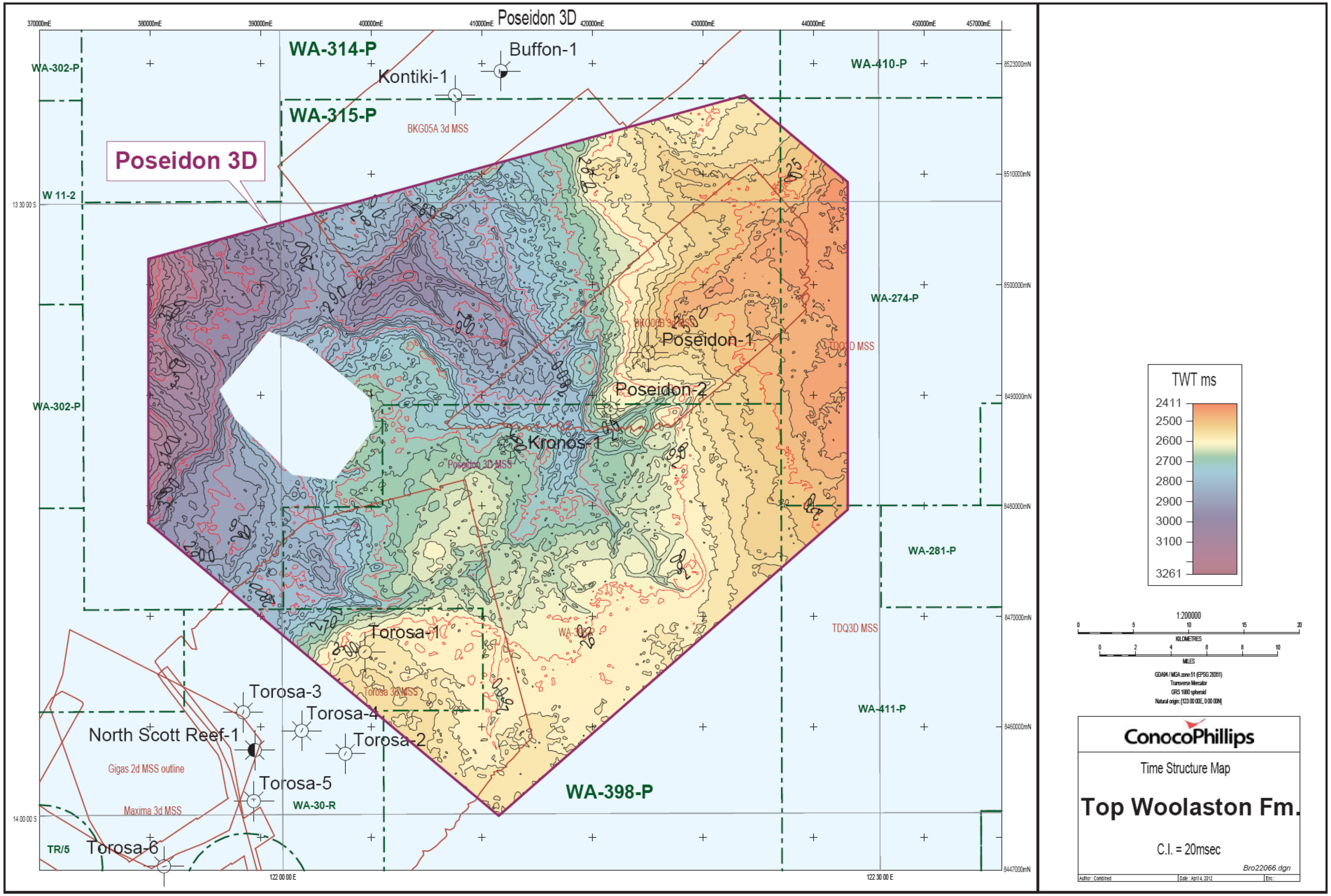


Figure 21 Top Woolaston Formation TWT map

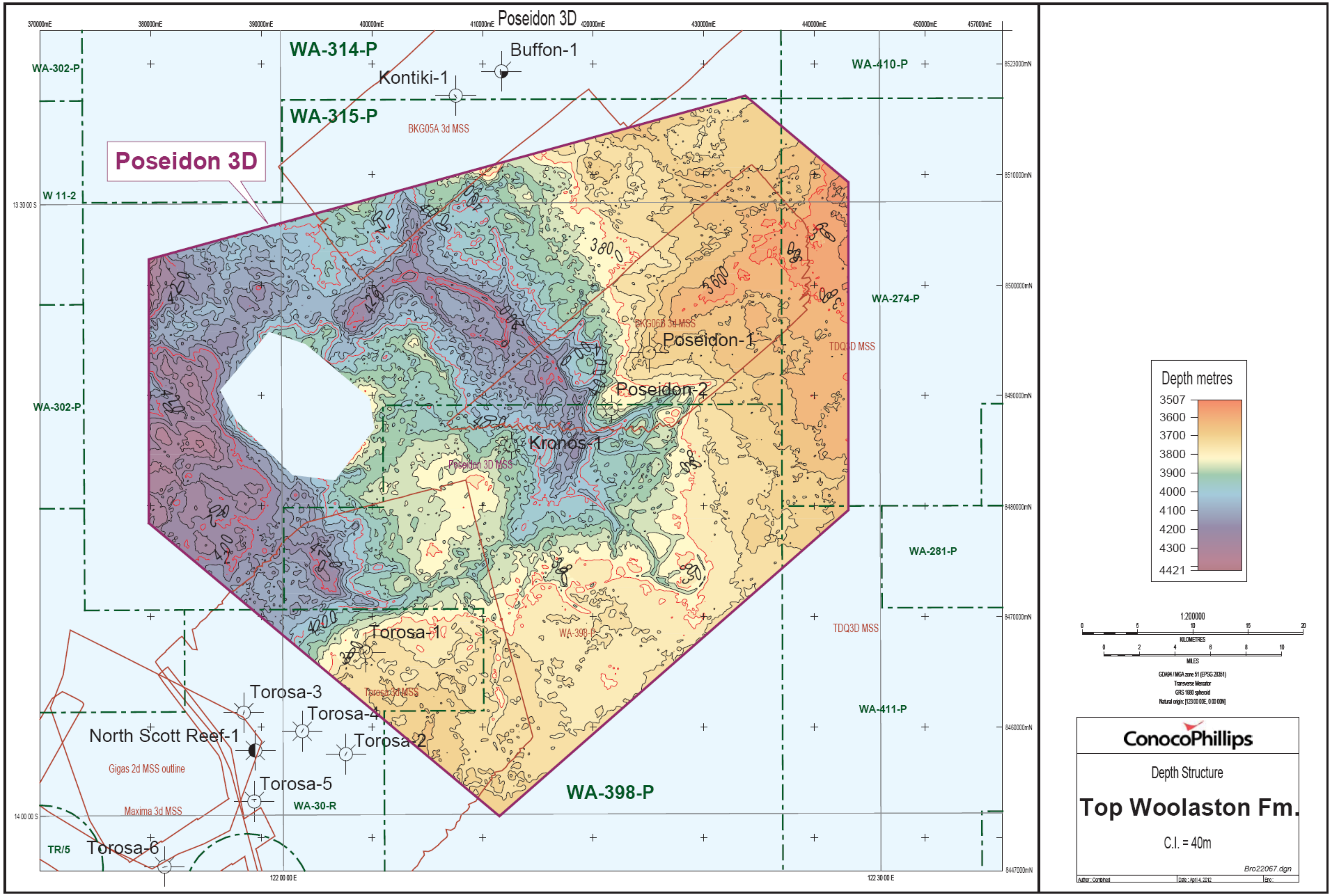


Figure 22 Top Woolaston Formation Depth Structure map

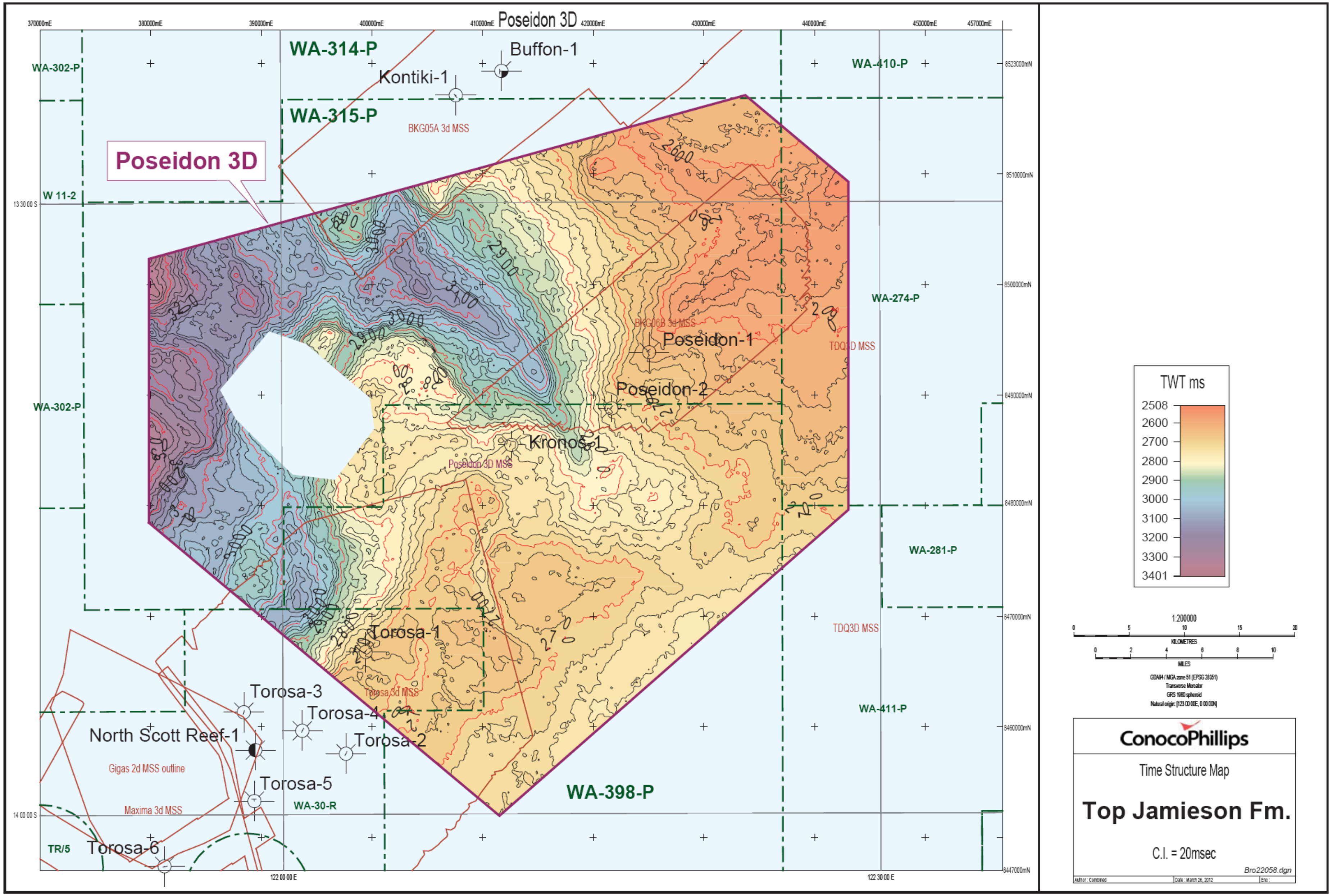


Figure 23 Top Jamieson Formation TWT map

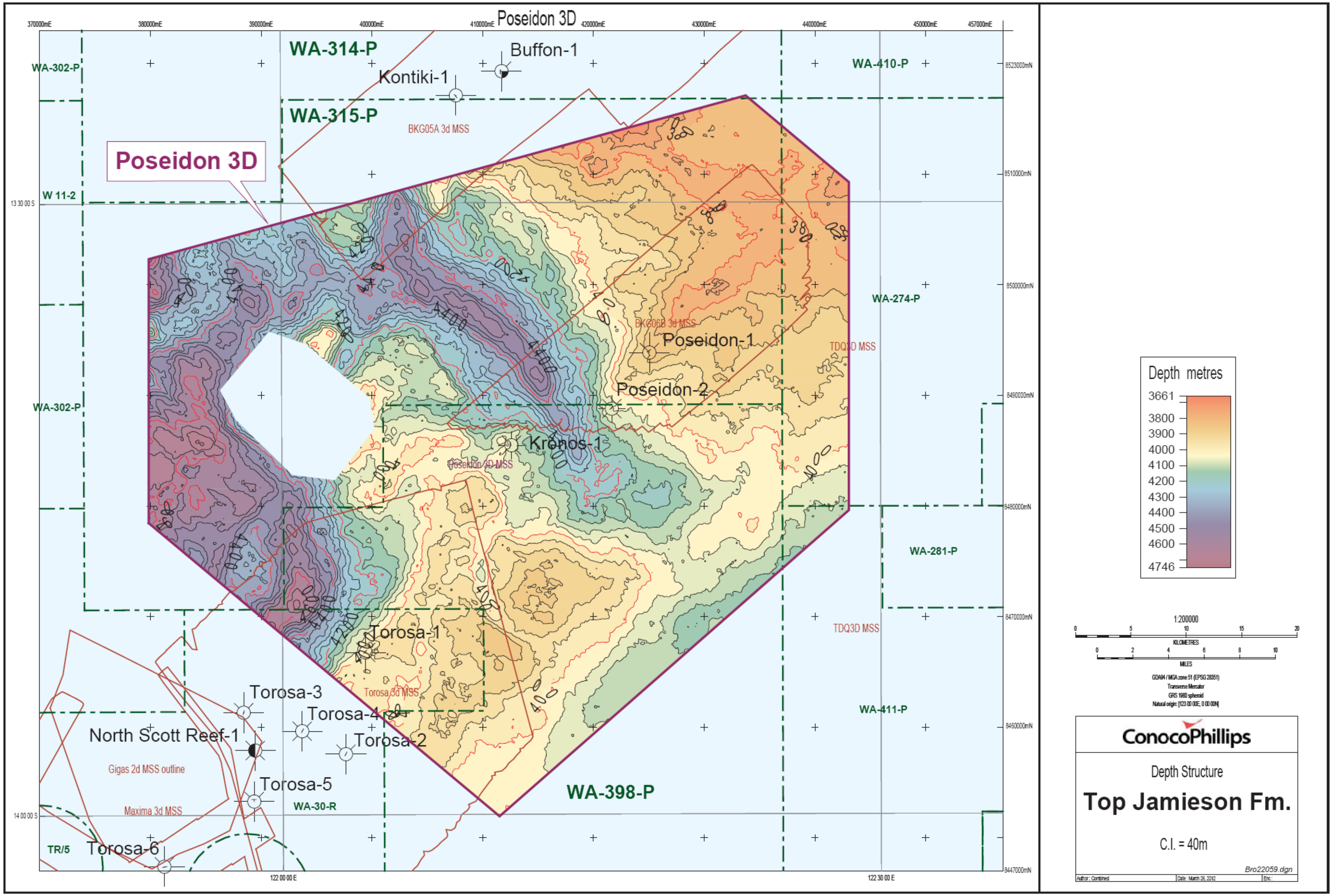


Figure 24 Top Jamieson Formation Depth Structure map

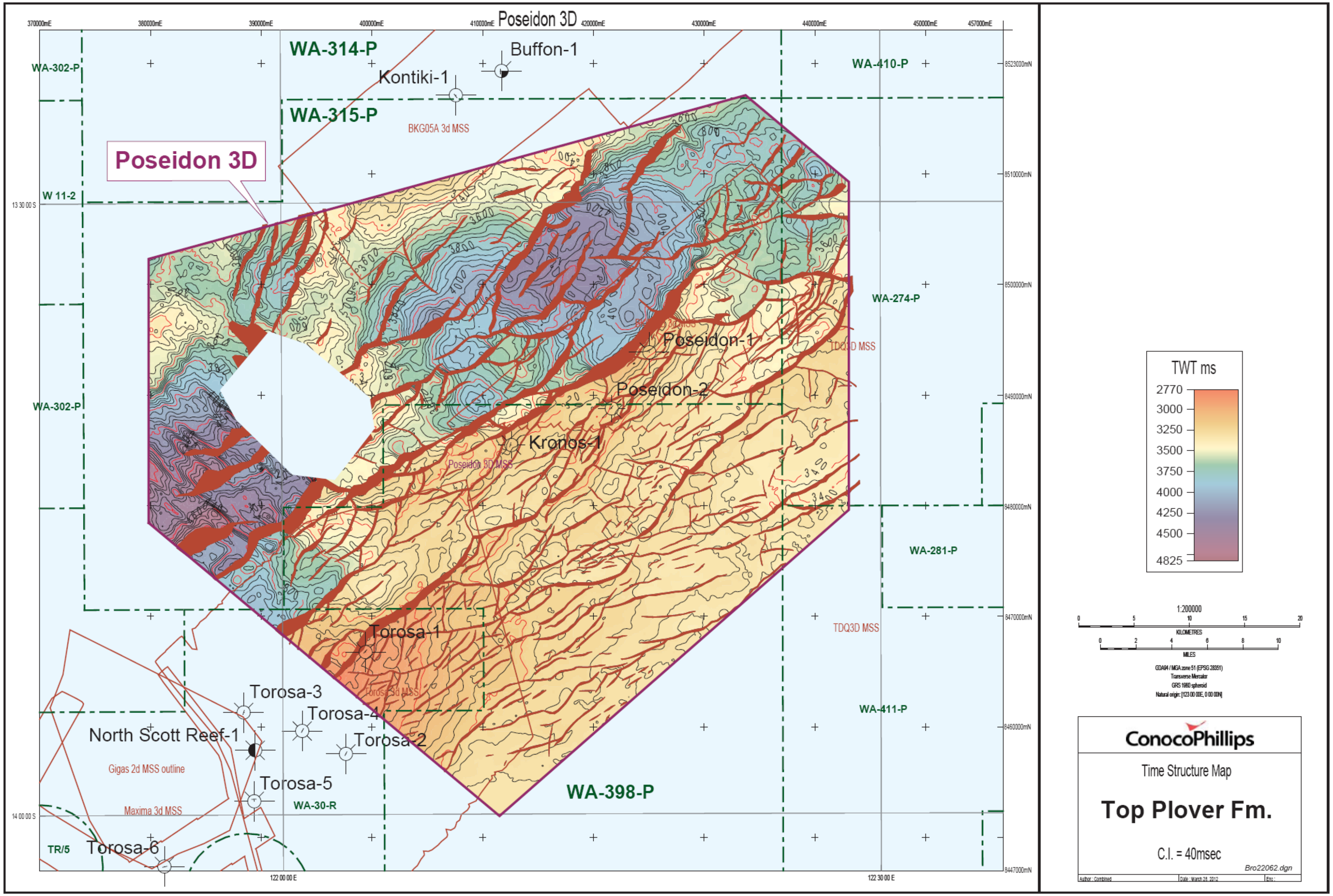


Figure 25 Near Plover Formation TWT map

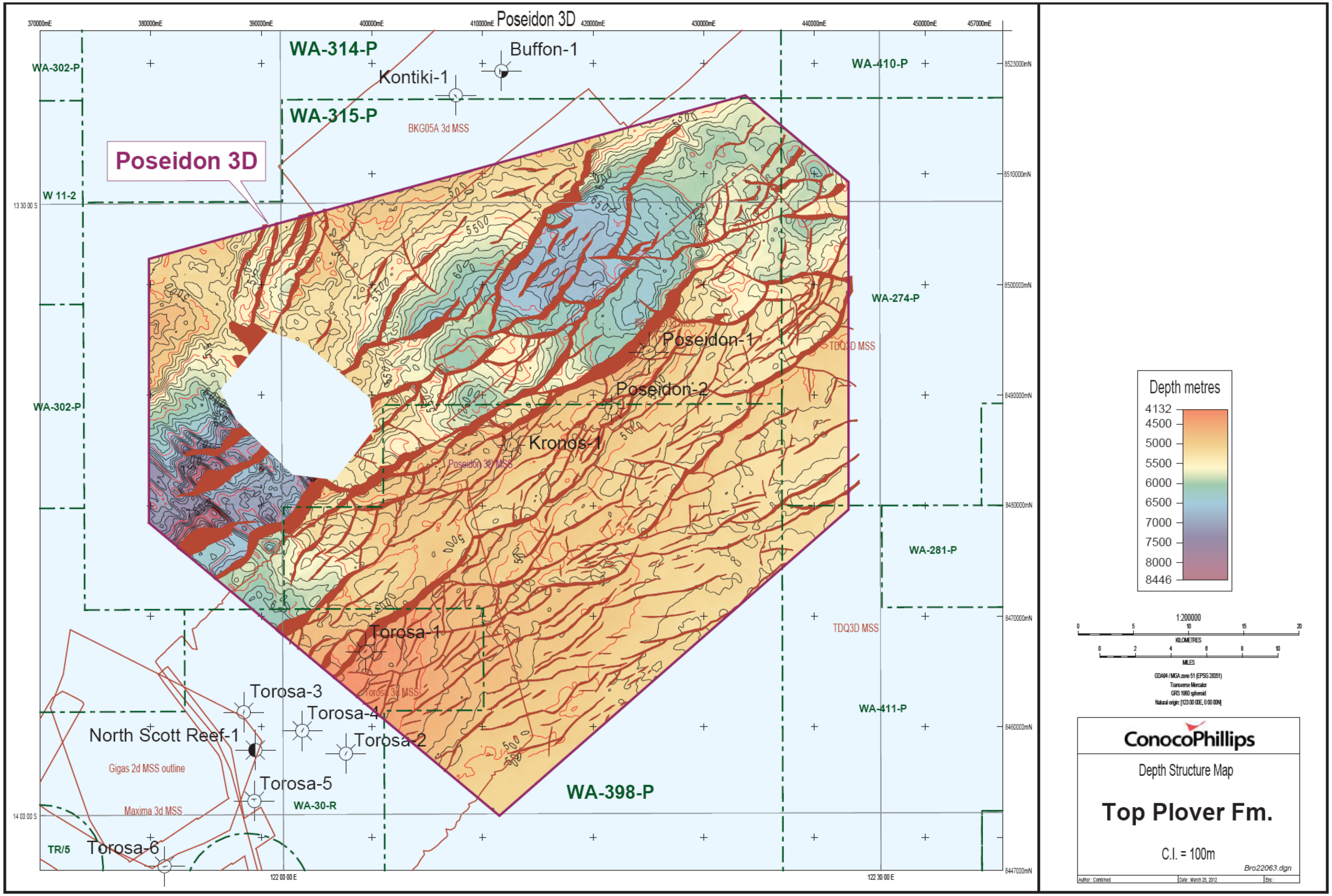


Figure 26 Near Plover Formation Depth Structure map

Top Johnson Formation
Coherency Attribute Channel Features

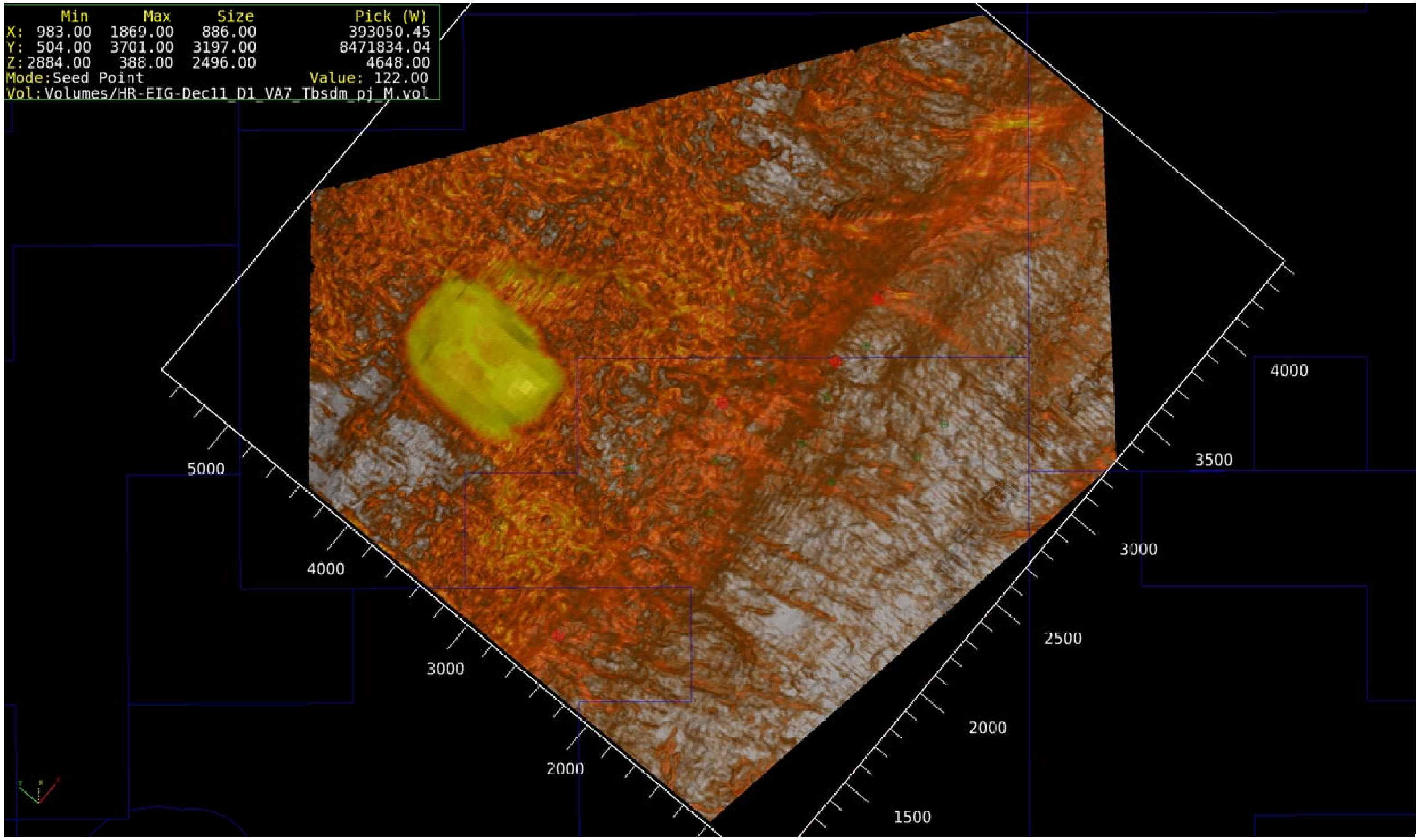


Figure 27 Top Johnson Formation Eigen Coherency Channel Features

Top Woolaston Formation Channel Features

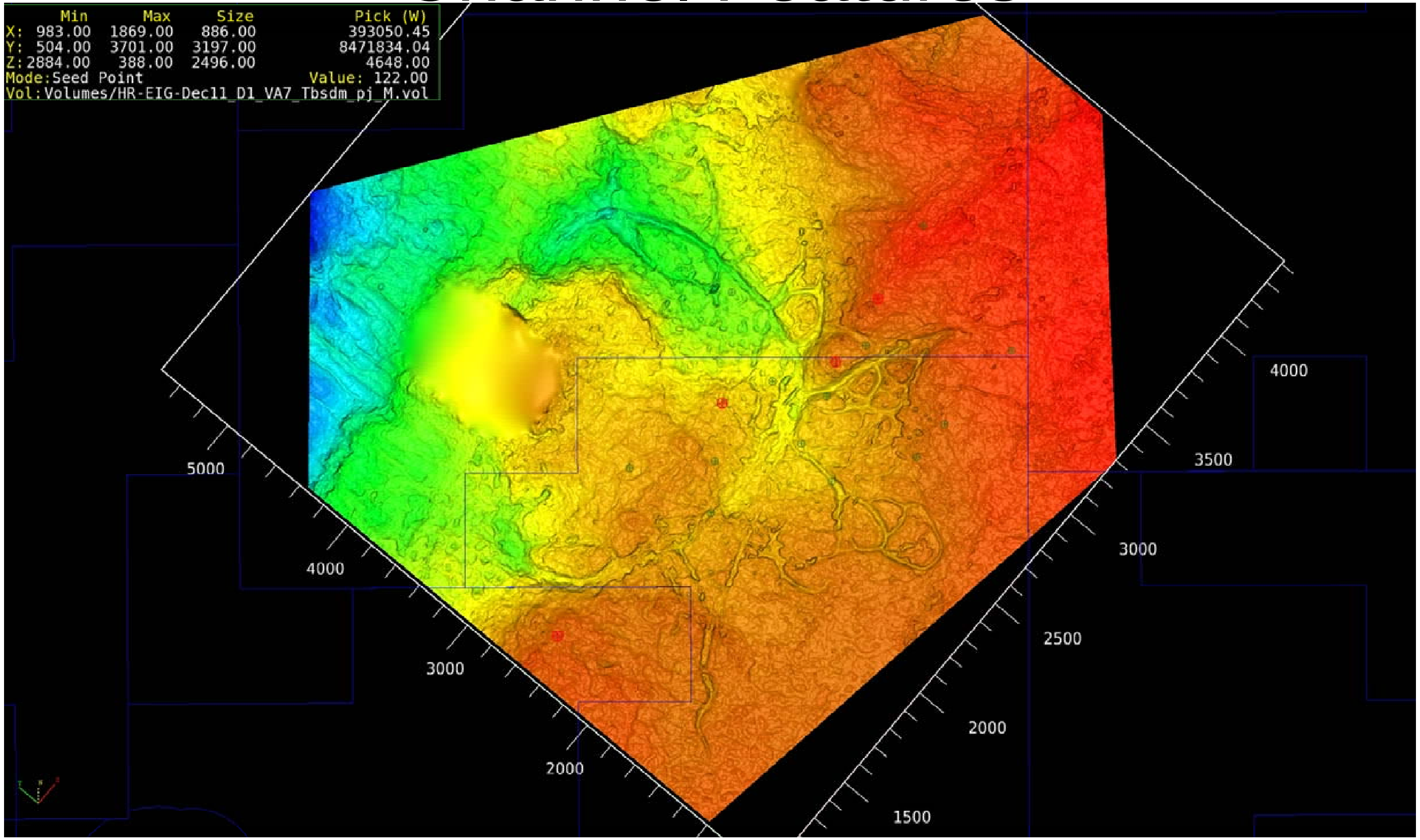
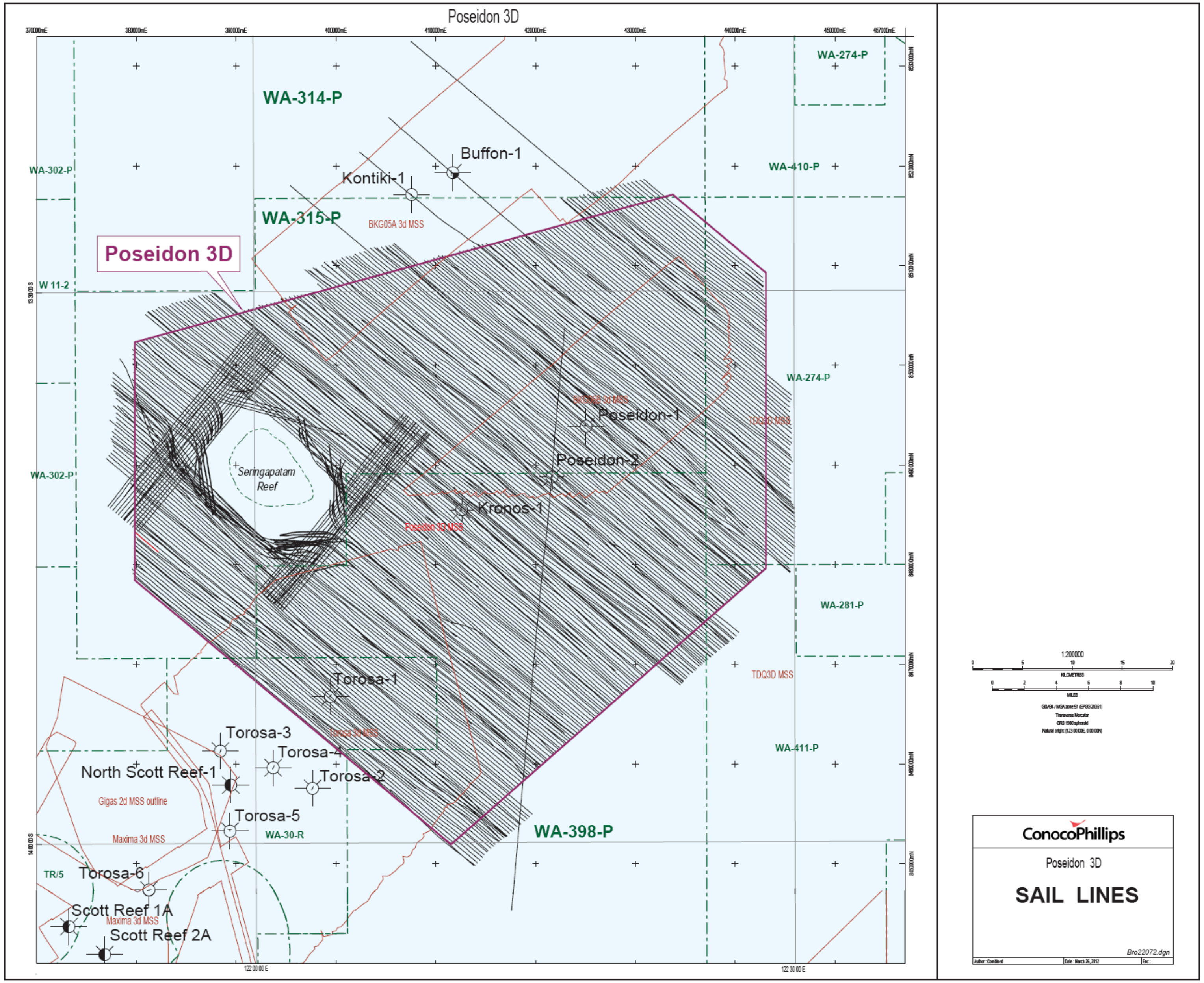


Figure 28 Top Woolaston Formation Channel Features



Appendix I Poseidon 3D Sail Lines