

Well Index Sheet: ZANEGREY-1/ST1/ST2

Location	Latitude	38° 34' 31.64" S		Participating Interests		
	Longitude	147° 59' 16.27" E		Bass Strait Oil Company Ltd (Operator)	50%	
	UTM Co-ordinates (Zone 55S)	586,049.89m E 5, 729,856.42m N		Inpex Corporation	50%	
	Datum	AGD 84				
	Elevation	+21.5m				
	Water Depth	72.5m (MSL)				
Permit	VIC/P42		Primary Objective	Kingfish Fm (Nannygai Zone)		
Rig on Contract	27 th January 2005; 05:00 hours		Secondary Objective	Volador Fm (Roundhead Mbr)		
Spudded	29 th January 2005; 14:30 hours		Tertiary	Gurnard Fm		
Reached T.D.	10 th March 2005; 17:00 hours		Completion Details/Plugs			
Rig Released	18 th March 2005; 19:20 hours		Plug # 1	660 – 505m	42.8 bbls of 15.8 ppg Class G	
Structure Type		Faulted 4-way dip anticline		Plug # 2	370 – 270m	43 bbls of 15.8 ppg Class G
Rig	DOGC Semi-Submersible	"Ocean Patriot"		Plug # 3	160 - 100	30 bbls of 15.8 ppg Class G
Status	P & A	Non-commercial gas/condensate discovery		Casing Details		
Hole Size (mm)	660 x 914	445	311	Size (mm)	Wt (ppf)	Depth (m)
Depth (m)		325	328	508 x 762	133 x 330	127.8
Hole Size (mm)	311mm			340	68	1090.6
Depth (m)				244		2184
Hole Size (mm)	216mm					
Depth (m)						
Total Depth	3675mMD	3198.3mTVDSS				

Formation	Depth (mMD RT)	Depth (mTVD SS)	Thickness TVD (m)	TWT (ms)	Remarks
Gippsland Limestone (Seafloor)	94.0	72.5	1324.0	95	
Lakes Entrance Fm	1560.0	1396.5	797.5	1054	
Gurnard Fm	2513.3	2194.0	33.8	1612	
Kingfish Fm	2554.4	2227.8	815.3	1626	
Kate Shale	3508.1	3043.1	35.7	2058	
Volador Fm	3546.7	3078.8	119.5	2075	
Top Roundhead Mbr	3546.7	3078.8	32.2	2075	
Base Roundhead Mbr	3581.5	3111.0		2090	
TOTAL DEPTH	3675.0	3198.3		2131	Approx. TWT

WIRELINE LOGGING SUMMARY

RUN	TOOL STRING	INTERVAL (M)	BHT (C)/TIME SINCE CIRC.	PLAYBACK SCALES
1	DLL-MLL-MAC-ORIT-ZDL-CNL-DSL-TTRM	659 – 321.5m (MAC to 1983m & GR to 94m)	121.7 ^o C @ 3216.1mTVD RT / 16.63 Hrs	1:200 1:500
2	RCI-GR	3179 – 3185m; 3 P/T(2 good, 1 tight, 2 repeats); tool stuck at 3185m; stripped over cable and continued LWF; 3190-3622m; 29 P/T (26 good, 1 tight, 14 repeats) and 2 x 840cc samples @ 3307m. Rec. 115.68 litres gas & 124ml condensate & 140ml aqueous fluid (filtrate)	135.3 ^o C @ 3170.9mTVD RT / 72 Hrs	1:200 1:500

CORE SUMMARY

Core	Interval	Cut	Recovered	%
NO CONVENTIONAL CORES WERE CUT				

SIDEWALL CORES

SWC No.	DEPTH (mRT)	REC (cm)	Actual Lithology	SWC No.	DEPTH (mRT)	REC (cm)	Actual Lithology
NO SIDEWALL CORES WERE CUT							

WELL TESTING SUMMARY

DRILL STEM TESTS (DSTs) No DSTs were conducted								
Test No.	Formation	Perforation Interval (m)	Flow Min	Shut Min	Ship Psig	Fthp Psig	Chokes	Remarks

DRILLING SUMMARY

<p>ZaneGrey-1 operations commenced at 05:00 Hrs 27th January 2005 when towing of the Diamond Offshore General Company MODU "Ocean Patriot" commenced with two AHSV's (Far Grip & Pacific Wrangler) from the Apache Energy's Grayling-1 location. The MODU was towed to the ZaneGrey-1 location at an average speed of 6.1 k/hr (3.3 knots), a distance of 72km (39nm). The MODU arrived on location at 15:30 Hrs 27th January 2005 when anchor handling operations commenced, with first anchor down at 16:55 Hrs. Positioning the rig on location was completed by 04:20 Hrs 28th January 2005 at which time the rig was ballasted down to drilling draft at 23:00 Hrs. The final location for ZaneGrey-1 was confirmed as being 1.7m from the proposed location on a bearing of 216.2° Grid. The final fix for ZaneGrey-1 was:</p> <p style="margin-left: 40px;">Latitude: 38° 34' 31.64" S</p> <p style="margin-left: 40px;">Longitude: 147° 59' 16.27" E</p> <p style="margin-left: 40px;">Easting: 586,049.89m</p> <p style="margin-left: 40px;">Northing: 5, 729,856.42m</p> <p style="margin-left: 40px;">Rig Heading: 43.2° (True)</p> <p style="margin-left: 40px;">DATUM: AGD 84; Zone 55S; Central Meridian 147° East.</p> <p>Made up 914mm (36") BHA and ran in hole tagging seafloor at 94m corrected to Mean Sea Level (MSL). The water depth at MSL was recorded as 72.5mMMD RT, with a drill floor elevation of 21.5m. ZaneGrey-1 was spudded at</p>

14:30 hrs on 29th January 2005 with a 914mm (36") hole drilled from seafloor (94mMD RT) to a depth of 129.5mMD RT, pumping 200 bbl guar gum and 50 bbl hi-vis mud on connection. Conducted wiper trip to 96mMD RT. Pumped 200 bbl gel mud and dropped TOTCO survey and pulled out of hole. Made up 762mm (30") housing running tool to 762mm (30") casing and PGB in moonpool. Ran 762mm (30") casing with ROV assistance placing the shoe at 127.75mMD RT and which was cemented in place using 792 sacks (168 bbls) of cement slurry at 15.8 ppg, returns to seafloor.

Made up 406mm (16") BHA orienting mud motor and programming LWD tools. Ran in hole using ROV to assist entering the hole. Cement was tagged at 124.7mMD RT. Cleaned out shoe track and rathole from 124.7 to 129.5mMD RT. Continued drilling ahead to 486mMD RT at which point the well was kicked off. Directionally drilled from 486m to 1095mMD RT (section TD), building inclination to maximum 34.99° with an azimuth of 14.71° at 1080.74mMD RT. Pumped 150 bbl hi-vis pill and circulated this out of the hole. Pumped 1000 bbl hi-vis pill followed by 200 bbls of 9.6 ppg KCl mud. Pulled out of hole with 406mm (16") BHA and racked same prior to downloading LWD tools. Ran 340mm (13 3/8") casing, setting shoe at 1090.61mMD RT and cemented with 417 sacks (166 bbls) of 12.5 ppg lead slurry and 327 sacks (67 bbls) of 15.8 ppg tail slurry. No surface indication of top plug shearing. Displaced cement using rig pump, bumping plug early at 3862 strokes and 15858kPa (2300 psi). Ran BOP's and marine riser. Waited on weather for 22.5hrs before successfully landing BOP stack. Ran diverter and tested BOP's.

Made up 311mm (12 1/4") BHA orienting mud motor and programming LWD tools. Ran in hole to 251mMD RT, shallow pulse tested the LWD tools. LWD tools failed shallow pulse test. Performed 4,500 psi connector test. Pulled out of the hole laid out LWD tools and picked up new LWD tools. Ran in hole and successfully shallow pulse tested LW tools. Continued to run in hole tagging cement at 1058.77mMD RT. Drilled cement, shoe track and shoe from 1058.77 to 1095mMD RT and then 3m of new hole to 1098mMD RT. Circulated hole clean and conducted Formation Integrity Test (FIT) with 1.03sg (8.6 ppg) mud against lower pipe rams to 815 psi (1.6 SG) equivalent. Directionally drilled ahead to 2103mMD RT. Incident with top drive system caused a stand of drill pipe to bend. This stand was racked back and the motor alignment cylinder on the top drive system was replaced. Pulled out of hole inspecting all drill pipe on the way out. On surface the LWD pulser was changed out and the bend in the motor adjusted. Surface tested MWD, motor and adjustable gauge stabiliser. Ran in the hole to the 340mm (13 3/8") casing shoe. Circulated and conditioned the mud. Continued to run in the hole having to wash and ream down from 1916 to 2103mMD RT due to tight hole. Drilled ahead to 2702mMD RT and due difficult drilling with high torque on bottom, the BHA was pulled out of the hole to be changed. On surface the motor was laid out to run in hole with a rotary drilling assembly. Ran in hole having to wash and ream from 1767 to 2702mMD RT due to tight hole. Drilled ahead from 2702 to 2725mMD RT. Repaired swivel packing and pumps. Drilled ahead from 2725 to 2772mMD RT which was reached at 09:00 hrs on the 11th February 2005. Pulled out of the hole performing a short wiper trip from 1968mMD RT back to bottom due to tight hole conditions. Pulled out of hole racking back BHA in the derrick. ROV observed traces of fluid seeping from the wellhead.

Ran 244mm (9 5/8") casing down to 1776mMD RT (127 joints). Unable to wash through this point, so 127 mm (5") drill pipe handling gear was rigged up. Circulated and reamed from 1776 to 1778mMD RT. Casing was then pulled out of the hole. Ran in hole with a 311mm (12 1/4") rotary clean out assembly. Washed and reamed down from 1777 to 2284mMD RT. Circulated and back reamed out of the hole from 2284 to 1740mMD RT. Circulated bottoms up and commenced washing and reaming back in the hole to 2283mMD RT. Circulated while raising the mud weight to 1.20sg (10.0ppg). Washed and reamed back into the hole to 2735mMD RT. Circulated hole clean and pulled out of hole. Ran 244mm (9 5/8") casing down to 2194mMD RT washing down past tight spots. Unable to get casing beyond this depth, so 8 joints were pulled back out of the hole and the casing hanger was run. The casing shoe was set at 2184mMD RT and cemented with 321 sacks (128 bbls) of 12.5 ppg lead slurry and 249 sacks (51 bbls) of 15.8 ppg tail slurry. No surface indication of top plug shearing. Top and bottom plugs were observed shearing, however plug being bumped was not observed.

Made up 216mm (8 1/2") BHA orienting mud motor and programming LWD tools. Ran in hole to 251mMDRT, successfully shallow pulse tested the LWD tools. Continued to run in hole tagging the float at 2158mMD RT. Drilled float, plugs, cement and shoe track from 2158 to 2184mMD RT. Drilled to 2192mMD RT and then washed down to 2260mMD RT (in the original 311mm (12 1/4") hole). Circulated hole clean and pulled into the shoe conducting a Formation Integrity Test (FIT) with 1.1sg (9.2 ppg) mud resulting in an FIT of 1.65sg (13.7ppg). Pulled out of the hole to set a kick off plug. Pumped a 54m (203 sacks) balanced cement plug. At this point ZaneGrey-1ST1 was commenced. Ran in hole with 216mm (8 1/2") BHA and tagged firm cement at 2184mMDRT. Time drilled to kick off well and directionally drilled ahead to 3107mMDRT at which point the BHA was pulled out of the hole due to poor rate of penetration. On surface it was found that the bit, motor bit box and motor drive shaft were left in the hole. An 80m (97sacks) balanced plug was set from 3106 to 3026mMDRT to kick off and sidetrack around the fish. At this point ZaneGrey-1ST2 was commenced. Ran in hole with 216mm (8 1/2") BHA washing and reaming from 2996 to 3075mMD RT with no hard cement being tagged. Eventually tagged the fish at 3107mMD RT and pulled out of the hole to set another cement plug. A 160m (195sacks) balanced plug was set from 3106 to 2946mMD RT. The bend on the motor was increased to 1.5° and the bit changed to aid kick off. Unable to kick off due to cement not being hard enough. Attempted to open hole sidetrack. This BHA was then pulled out of the hole and the bit and BHA changed to aid kicking off. This new BHA was then run in the hole and the cement was still not hard enough to sidetrack. This BHA

was then pulled out of the hole a sidetracking bit was placed in the BHA. The well was successfully kicked off with this BHA and then this BHA was pulled out of the hole. A conventional directional BHA was then run in the hole and drilled to 3162 mMD RT at which point the top drive system (TDS) on the rig failed. A short trip to the casing shoe was performed and the TDS was repaired for the next three days. After repairing the TDS the BHA was tripped back to bottom and drilled ahead to well TD at 3675mMD RT which was reached at 17:00 hrs on the 10th March 2005. The BHA was then pulled out of hole.

Rigged up BakerAtlas for running wireline logs and ran the following logs; RUN#1: DLL-MLL-MAC-ORIT-ZDL-CNL-DSL-TTRM over the interval 3764 to 2184m with MAC pulled through casing to 1983m and GR through casing to 94mMD RT and RUN#2: RCI-GR over the gross interval 3179.6 to 3622.8mMD RT for pressures and samples; while logging with the RCI-GR tool string, the tool became stuck at 3185mMD RT and unable to free; pulled 80% of weak point and tool came out of rope socket; rigged down BakerAtlas. Tensioned wireline and cut cable. Made up and tested wireline surface latching equipment. RIH with 86mm (3 3/8") grapple on drill pipe, stripping over wireline to top of 'fish'; circulated above and latched onto 'fish'; rigged up for 'logging while fishing' and resumed RCI-GR programme on drill pipe; RCI tool failure occurred when on depth at 3627m due to overheating of electronics in gamma ray, resulting in no further communications with the tool; aborted remainder of tests and POOH with wireline tool on drill pipe; rigged down BakerAtlas.

Commenced plug and abandonment operations at 15:30 Hrs 14th March 2005. Picked up and ran in hole with 73mm (2 7/8") tubing cement stinger on 127mm (5") drill pipe to 3390 mMD RT and pumped 30 bbls of 15.8 ppg Class G cement slurry setting Plug#1 from 3350mMD RT to 3250mMD RT. Tagged top of cement plug at 3203mMDRT with 0.9Mt (2klbs) Pulled out of hole to 2230mMDRT and pumped 30 bbls of 15.8 ppg Class G cement slurry setting Plug#2 from 2230mMDRT to 2130mMD RT. Tagged top of cement Plug#2 at 2153mMD RT with 0.9Mt (2klbs). Pulled out of hole. Cut 244mm (9 5/8") casing, retrieving and laying out same. Picked up 340mm (13 3/8") bridge plug and ran in hole to 176mMD RT and set same. Displaced the hole to 1.15sg (9.6ppg) inhibited mud. Set cement Plug#3 from top of the bridge plug to 125mMD RT. Picked up wellhead jetting tool and ran in hole to clean stack and wellhead. Pulled riser and BOP's and secured same. Picked up 508mm x 762mm (20" x 30") spear and cutting assembly and ran in hole stabbing into 18 3/4" wellhead and cut 508mm (20") casing at 96.42mMD RT and pulled out of hole with casing cut-off stub and housing. Re-dressed spear and RIH, stabbing into 762mm (30") housing, cutting 762mm (30") casing at 95.94mMD RT. Conducted final seabed survey.

Commenced anchor handling operations at 03:40 Hrs 18th March 2005. Last anchor racked at 19:20 Hrs 18th March 2005 and the rig released to Woodside Energy Ltd. Total time on ZaneGrey-1/ST1/ST2 location was 50.52 days.

GEOLOGICAL SUMMARY

ZaneGrey-1 was spudded at 14:30 hrs on 29th January 2005 and penetrated a sedimentary section ranging in age from Tertiary to Late Cretaceous (Maastrichtian). The stratigraphic section encountered was essentially as predicted with all of the formation tops close to their prognosis. A comparison of the Actual and Predicted section drilled in ZaneGrey-1/ST1/ST2, including a brief summary of drilling and formation evaluation data is included in Enclosure 2 in the Well Completion Report – Interpretive Data. The geological formations and data encountered for each hole section are discussed below.

The Miocene to Pliocene Gippsland Limestone was encountered at seafloor (covered by a veneer of Recent sediments) at 94mMD RT (-72.5mTVDSS), the upper part of which down to a depth of 1095mMD RT was drilled riserless in the 914mm (36") and 406mm (16") hole sections with the benefit of LWD gamma ray and resistivity. The 406mm (16") hole section was directionally drilled below 486mMD RT, reaching a deviation/azimuth of some 34°/15.1° by 1009mMD RT. Intermediate 340mm (13 3/8") casing was subsequently run to 1090.61mMD RT and the BOP's and marine riser nipped-up. The 311mm (12 1/4") hole was drilled with the benefit of LWD gamma ray, resistivity and directional control to 2772.5mMD RT in the ZaneGrey-1 wellbore before setting an intermediate string of 244mm (9 5/8") casing to 2184.1mMD RT, abandoning some 588m of drilled hole and commencing ZaneGrey-1ST1 and sidetracking in 216mm (8 1/2") hole from 2190mMD RT to 3107mMD RT. This hole section was also drilled with the benefit of LWD gamma ray, resistivity and directional control. After losing a "fish" in the hole at 3107mMD RT, commenced ZaneGrey-1ST2 from 3075mMD RT and drilled 216mm (8 1/2") hole to total depth at 3675mMD RT (-3198.3mTVDSS). The main 216mm (8 1/2") hole section to total depth was wireline logged after reaching TD and this provides the depth control for the stratigraphic sub-divisions included herein, in combination with LWD logs in the upper hole sections, together with the assistance of biostratigraphic control.

The lower part of the Gippsland Limestone below 1095mMD RT consists of argillaceous calcilitite with calcisiltite and minor calcarenite. The base Gippsland Limestone/Top Lakes Entrance Formation is identified at 1560mMD RT (-1396.5mTVDSS). It was encountered 11.5 metres low to prognosis, based upon the appearance of calcareous claystone and marl in the section. The Oligocene to early Miocene Lakes Entrance Formation consists of

interbedded calcareous claystone and claystone with minor marl, sandstone and siltstone.

The Middle Eocene Gurnard Formation, a tertiary objective, was intersected at 2513.3mMD RT (2194.0mTVVDSS), 10m low to prediction and consists of calcareous claystone, claystone, argillaceous sandstone, siltstone and greensand. All lithologies are generally rich in glauconite. The Paleocene to Early Eocene Kingfish Formation was intersected at 2554.4mMD RT (-2227.8mTVVDSS), 9.2m high to prognosis. The sequence consists of interbedded quartzose sandstone, siltstone and claystone with common thin coal beds.

While drilling the Kingfish Formation at a depth of 3107mMD RT, the BHA parted, leaving the bit and bottom of the motor in the hole. After setting cement above the 'fish', the well was sidetracked from a depth of 3075mMD RT and ZaneGrey-1ST2 commenced and drilling resumed in 216mm (8 ½") hole through the Kingfish Formation.

The hydrocarbon zone, approximately equivalent to the Nannygai zone of interpreted hydrocarbons in the Nannygai-1 well was intersected at 3304mMD RT (2855.5mTVD SS). The Early Paleocene Kate Shale was intersected at 3508.1mMD RT (-3043.1mTVVDSS), 1.9m high to prognosis. The Kate Shale consists predominantly of claystone grading to silty claystone with rare accessory glauconite and minor argillaceous sandstone.

The well reached TD within the Volador Formation at 3675mMD RT (-3198.3mTVVDSS), which was reached at 20:34 Hrs 11th October 2004. Baker Atlas wireline logs were run at this depth. The primary wireline log recorded was the DLL-MLL-MAC-DSL-ZDL-CN-TTRM-4401 which was logged from 659m to 321.5mMD RT, after which the GR-MAC was logged up through casing to the seafloor, although the acoustic signal deteriorated towards the seafloor. This log represents the primary depth control for ZaneGrey-1/ST1/ST2. TD was shallow to driller's TD by 1m owing to possible fill on bottom and the 340mm (13 3/8") casing shoe was found 0.25m shallower than driller's depth. The second logging run was with the RCI-GR tool for formation pressures and samples, which was logged over the gross interval 3179.6 to 3622.8mMD RT; while logging with the RCI-GR tool string, the tool became stuck at 3185mMD RT and unable to free; pulled 80% of weak point and tool came out of rope socket; rigged down BakerAtlas. Tensioned wireline and cut cable. Made up and tested wireline surface latching equipment. RIH with 86mm (3 3/8") grapple on drill pipe, stripping over wireline to top of 'fish'; circulated above and latched onto 'fish'; rigged up for 'logging while fishing' and resumed RCI-GR programme on drill pipe; RCI tool failure occurred when on depth at 3627m due to overheating of electronics in gamma ray, resulting in no further communications with the tool; aborted remainder of tests and POOH with wireline tool on drill pipe; rigged down BakerAtlas.

Total gas, chromatographic breakdown of the ditch gas and trip gas was recorded from 1095 m to 3675 mMD RT throughout the 311mm (12 ¼") and 216mm (8 ½") hole sections, the results of which are included herein as Appendix 10. Trace to minor amounts of total gas consisting predominantly of methane (C₁), together with trace to minor amounts of ethane (C₂), propane (C₃) and butane (iC₄ & nC₄) was recorded upon commencement of first drilling returns in the 311mm (12 ¼") hole section below 1095mMD RT. Below approximately 1800m MD RT, nil to trace amounts of pentane (iC₅ & nC₅) were also recorded. Background gas levels remained at these levels throughout the remainder of the 311mm (12 ¼") hole section to section TD at 2772m MD RT in ZaneGrey-1. Maximum gas recorded in ZaneGrey-1 was 1.0% total gas which consisted of 11000ppm (C₁), 266ppm (C₂), 108ppm (C₃), 26ppm (iC₄) and 16ppm (nC₄). A number of slightly higher levels of total gas to 1.07% were recorded between 1800m and 2034m MDRT, however the chromatograph was malfunctioning during these intervals and no chromatographic data was recorded. The 244mm (9 5/8") casing was subsequently set at 2184.1m MD RT after failing to reach section TD and ZaneGrey-1ST1 was commenced in sidetrack hole at this depth in 216mm (8 ½") hole.

Background gas levels were moderately uniform throughout the drilling of ZaneGrey-1ST1 over the gross interval 2184-3107m MD RT and consisted of trace to minor amounts of total gas, composed mainly of methane (C₁) and ethane (C₂) along with low levels of propane (C₃), butane (iC₄ & nC₄) and pentane (iC₅ & nC₅). Maximum gas recorded in ZaneGrey-1ST1 was 1.59% total gas at 2751m MD RT and consisted of 6895ppm C₁, 2036ppm C₂, 71ppm C₃, 177ppm iC₄, 255ppm nC₄ and 910ppm iC₅.

ZaneGrey-1ST2 commenced after kicking off in 216mm (8 ½") hole at 3075m MD RT. Background gas levels recorded initially were low to moderate and locally increased in response to the volume of coal being cut in the stratigraphic section. Background levels consisted of trace to minor amounts of C₁ to C₅ from 3075m to 3306m MD RT. Below this depth, a prominent gas peak of 18.08% total gas (above a background of 0.5%) was recorded over the interval 3306-3319m MD RT and consisted of 84,479ppm C₁, 11,492ppm C₂, 6,960ppm C₃, 84ppm iC₄, 1,517ppm nC₄, 639ppm iC₅ and 542ppm nC₅. The centre of the gas peak occurred at 3314m MD RT in association with a sandstone that exhibited nil direct fluorescence, however displayed a slow, faint bluish yellow cut fluorescence with a faint patchy bluish yellow residual ring fluorescence. An isotube gas sample was also collected from this gas peak, however at the time of writing this report, no further analyses have been attempted on this sample.

Below 3319m to total depth at 3675m MD RT, gas levels were moderately uniform and consisted of low to minor

amounts of total gas consisting of C₁-C₅. No further significant gas peaks were recorded.

No evidence of direct sample fluorescence was observed in cuttings during the drilling of ZaneGrey-1 over the gross interval 1095-2772.5mMD RT. The only sample show recorded in ZaneGrey-1/ST-1 occurred at a depth of 2960mMD RT (~ 2559m TVDSS) in which a coal displayed nil direct fluorescence, however it exhibited a very slow yellowish-blue cut with a bright, solid bluish yellow residual cut fluorescence. This show represents the shallowest recording of any evidence of possible hydrocarbons recorded in the ZaneGrey well. The only sample show associated with reservoir sandstone occurred in ZaneGrey-1/ST-2 where aggregates of sandstone over the interval 3300–3310mMD RT (~2854-2863m TVDSS) exhibited slow, faint bluish yellow cut fluorescence and faint patchy bluish yellow residual cut fluorescence. The only other sample shows evident during the drilling of ZaneGrey-1/ST-2, also occurred in association with coals over the gross interval 3092-3470m MDRT (~2671-3008m TVDSS). These shows typically consisted of very slow yellowish blue cut fluorescence with a bright, solid bluish yellow residual cut fluorescence. Trace evidence of amber also occurred in association with coal and sandstone aggregates which exhibited bright yellow white direct fluorescence and nil cut fluorescence.

Wireline log interpretation of ZaneGrey-1/ST2 over the target interval indicated the potential presence of a thin hydrocarbon column (1.3 – 2.5 m) within the upper portion of the target interval from 3305.7 – 3308 mKB (2880 – 2882 mTVD). Average porosity in this interval is 17%, and average water saturation is interpreted to be between 53 and 63% (depending on the resistivity device used). Elevated gas chromatograph readings were recorded across this interval, with minor fluorescence shows as described above.

Based on the results from the initial wireline log analysis, RCI pressure data was acquired through adjacent water sands and through the target interval, and light hydrocarbons were successfully recovered using RCI sampling within the upper portion of the target interval at a measured depth of 3307 mKB. There is no data to determine if the in-situ fluids are fully saturated or not, however PVT compositional simulation indicates that the saturation point of the fluid is very close to the existing reservoir pressure. This data is supportive, but not in itself proof of a down dip oil leg.

The absence of a definable hydrocarbon pressure gradient from RCI pressure data, in combination with the thin pay zone identified from log analysis supports the theory that ZG-1ST2 has intersected the very base of a rich gas-condensate accumulation, with a gas-water contact very close to 3307 mKB (or 2882 mTVD). Depth uncertainty should be considered, however from the RCI data, the LKG is at 2881.5 mTVD, whilst the most likely HKW is 2883.4 mTVD. Wireline log interpretation indicates possible net pay down to 2882 mTVD.

Based on the available data, a gas-condensate hydrocarbon accumulation would seem to exist up-dip from the ZG-1ST2 intersection, and a well which intersected the reservoir higher up the same structure should produce hydrocarbons. There is no direct evidence in the well to support hydrocarbons below the lowest net pay interpretation (2882 mTVD).

While it is possible that the 'live oil shows' interpreted in the offset Nannygai-1 well do represent a downdip oil leg to this reservoir, it is considered unlikely given the available data. Given that the reservoir in Nannygai-1 is some 30 m downdip from the ZaneGrey-1ST2 intersection, the target sand would have to be under-pressured in order to show the pressures observed in ZaneGrey-1ST2. Also a 30m hydrocarbon column (if present) should have provided enough buoyancy to give higher oil saturations than those observed in ZaneGrey-1ST2. This interpretation also seems to contradict the indirect evidence of water from the failed RCI sampling attempts.

ZaneGrey-1/ST1/ST2 was plugged and abandoned as a non-commercial gas condensate discovery and the rig released to Woodside Energy Ltd at 19:20 Hrs 18th March 2005. Total time on ZaneGrey-1/ST1/ST2 location was 50.52 days. A composite well log of the lithology intersected in ZaneGrey-1/ST1/ST2 is included as Enclosure 1 in the ZaneGrey-1/ST1/ST2 Well Completion Report – Interpretive Report.