

ภาคผนวก 27

บันทึกการประเมินการปฏิบัติงานของเรือที่ใช้ในโครงการฯ (SUPO)



SUPO/INTERMEDIATE INSPECTION

Marine Safety, Reliability and Efficiency (MSRE) Standardized OE Process – Chevron Marine Standard – Rev 2 – 24 May 2023

Requirement §2.0 Vessel Assurance

1	Inspection Details	
1001	Vessel Name	MICLYN ENERGY
1002	Inspection Date	20 August 2023
1003	Port of Inspection	Southern Jetty, Songkhla, Thailand.
1004	Inspectors Name	Capt. Nopporn Khempongphun
1005	Last OVIQ Inspection date	12/09/2022
1006	Date OVPQ Last Updated	Onboard edition 20/08/2023
1007	Master's Name	Capt. Santichai W.
1008	Scope of Work	Offshore Support Vessel, Geotechnical survey, Seismic survey and Accommodation/Flotel.
	Vessel Capability Variant Being Inspected	Comments
1009	Dynamic Positioning	No
1010	Cargo Operations, Crane Operations or Bunkering	Yes
1011	Spread Moorings	No
1012	Anchor Handling (AHTS) or Towing	No
1013	Crew Boats (Alucats, Petro-Craft & Surfers)	No
1014	Pipe Lay	No
1015	Ship Assist or Escort Tug	No
1016	Emergency Rescue or Response	No
1017	SEWOP (Lift Boats)	No
1018	Barge	No
1019	ABU	No
Inspection Instructions		
	<ul style="list-style-type: none"> • Prior to the inspection, an opening meeting is to be called to ensure that the vessel crew understand the purpose of this inspection. • Inspector to use this form to conduct the inspection. • Sections 1 through 7 shall be completed for all vessels. • The vessel capability variant will determine which parts of section 8 are to be completed. • Record all comments and dates as required. All information related to "No" responses above are to be noted in Observations section of inspection form. The inspector shall ensure that any applicable photographic evidence clearly captures the objective a "No" answer. • The inspection shall be conducted in an objective manner. • Capture any evidence as required – this may be done on any external device. • On completion of the inspection, the inspector is to advise the Master and the crew of all observations noted. This is to be done so verbally, do not leave a copy of the completed inspection on board. If required, the Master/Crew may make their own notes. • Once the inspector has access to the internet, follow the link provided on the original commissioning email and complete the inspection along with entering comments and uploading evidence as required. 	

2	General, Certification & Documentation	Yes	No	NA
2001	Does vessel have current certificates applicable for its size and registration?	Yes		
2002	Does the manning level meet or exceed that required by the local Port and Flag state and/or operations the vessel is engaged in?	Yes		
2003	Are crew certification originals and valid? Are crew Competency requirements as defined in section 3.2.2 of the Marine Standard met?	Yes		
2004	All crew have FFD (Fitness for Duty) / medical certificates?	Yes		
2005	Are project Specific Documents on board and understood including bridging documents?	Yes		
2006	Verify that the vessel holds ALL in-force BU Marine Notices, Guidelines, and latest Chevron Marine Standard.	Yes		
2007	Is the vessel equipped with the required navigational charts and publications for the area of operation?	Yes		
2008	Are the Master and Crew familiar with any local restrictions such as draft, no-go areas and reporting requirements?		No	
2009	Is there evidence of a risk assessment present for working the weather side of an offshore facility and is there evidence of this being communicated to the Designated MSRE Process Authority?	Yes		
2010	Are the Master and Crew familiar with Incident and NM reporting requirements?	Yes		
2011	Has the Master been briefed on the work-scope the vessel is being chartered for?	Yes		
2012	Cabotage / NIMASA Specific Requirements (NMA only)	Yes	No	NA
2013	Receipt for or carriage of Annual Waiver Certificate aboard for: - 1) Ownership - Required If Vessel Certificate of Registry does not state a Nigerian address. NB. Must hold an 'in-date' Annual Build Waiver.			N/A
2014	Receipt for or carriage of Annual Waiver Certificate aboard for: - 2) Manning – i.e. A waiver is required if any crew aboard (crewlist) are not Nigerian nationals NB. Vessel must hold an 'in-date' Waiver.			N/A
2015	Receipt for or carriage of Annual Waiver Certificate aboard for: - 1) Building – i.e., if vessel constructed outside Nigeria, then vessel must hold an 'in-date' Annual Building Waiver.			N/A
2016	Vessel Owning Company holds a valid NIMASA Registration Certificate & copy is carried aboard the vessel. This is an Annual Cert and is required to be carried aboard the vessel			N/A
General Comments: 2008: The passage plan was not "Berth to Berth".				

3	Inspection Close outs / Standards of Management & Culture	Yes	No	NA
3001	Are Open Deficiencies from the latest OVIQ Inspection Closed? Include a list with the status of all deficiencies.	Yes		
3002	Are Open Deficiencies from the latest SUPO Inspection Closed? Include a list with the status of all deficiencies.	Yes		
3003	Are Open Deficiencies from the latest Internal Audit Closed? Include a list with the status of all deficiencies.	Yes		
3004	Are all Incident and Near Miss Reports Closed out? Include a list of all Incidents and Near Misses recorded within the last 12 months.	Yes		
3005	Is the vessel's OVPQ up to date with the latest certification details?	Yes		
3006	Is a copy of the most recent Chevron Marine Standard onboard?	Yes		
General Comments: <ul style="list-style-type: none"> - SBU Marine Notices relating to hose transfer operations was aboard the vessel bridge. - Chevron Safety Briefcase information as soft files was up dated onboard. - The Corrective Action Plan for external/client/third-party audit findings, known as the Remedial Work Plan, was available onboard. It was verified that all items had been addressed and considered closed. - The Chevron's "CTEP Marine Safety and Operations Procedures Manual (CMSOPM) Rev. 05" was available on board. 				

4	Hazard Identification / Standards of Management & Culture – Bridge, Deck, Galley & Hull	Yes	No	NA
4001	Is the gangway adequately secured on board the vessel? Does inboard end of the gangway rests on or is flush with the top of the bulkwark, is a bulwark ladder provided? (Gangway shall not rest on ship rails unless it has been reinforced for that purpose) Is the gangway in good condition and certified? Is a life ring with a self-activating light and buoyant safety line attached and available adjacent to the gangway location?	Yes		
4002	Are walkways clear of tripping hazards?	Yes		
4003	Are clearances, pinch points, slips, trips and fall hazards highlighted (including guards)?	Yes		
4004	Is all Bridge Equipment including communication equipment in good working order?		No	
4005	Are handrail and ladders in good condition, clean and free from obstruction?	Yes		

4006	Are decks nonslip in relevant areas?	Yes		
4007	Are the stuffing tubes, sealants and bulkhead penetrations in good condition?	Yes		
4008	Are the Hull / deck openings, freeing ports and windows/port holes in good condition?	Yes		
4009	Is shell plating and internal structure joints in good condition?	Yes		
4010	Are the remote operated valves and controls in good condition and functioning?	Yes		
4011	Does the galley have adequate fire protection devices including the fire blanket?	Yes		
4012	Are Galley spaces, storerooms, fridges clean, neat and tidy? (Standard of housekeeping)	Yes		
4013	Are Drinking water facilities in good and hygienic condition?	Yes		
4014	Are Toilet/WC facilities in a good and hygienic condition?	Yes		
4015	Are living accommodations in good and hygienic condition? Is the lighting within the accommodation adequate?	Yes		
4016	Are deck machinery, wires, dogs, cleats, and roller fairleads etc. well-greased?		No	
4017	Are mooring ropes, wires and equipment records of inspection and maintenance available?	Yes		
4018	Are the WT doors and access hatches on weather decks in good condition?	Yes		

General Comments:

4004: AIS status was not updated.
4016: Two (2) portable grinders without safety guards.
4016: There chain hoist was overdue for annual inspection. Last done 23/04/2022.

5	Hazard Identification / Standards of Management & Culture – Engine Spaces	Yes	No	NA
5001	Are walkways clear of tripping hazards?	Yes		
5002	Are clearances, pinch points, slips, trips and fall hazards highlighted (including guards)?	Yes		
5003	Is the main propulsive machinery fully operational with no reported defects?	Yes		
5004	Is the steering gear fully operational?	Yes		
5005	Specify date of last Emergency Steering test.	28/02/2023		
5006	Are the generators fully operational with no reported defects?	Yes		
5007	Is the machinery and equipment reportedly free of intermittent faults?	Yes		
5008	Is Machinery Space pipe work in a satisfactory condition and free from temporary repairs?	Yes		
5009	Is the condition of the electrical wiring throughout the ship in a safe condition?	Yes		
5010	Is the lighting satisfactory?	Yes		
5011	Is machinery guarded where appropriate?	Yes		
5012	Are floor plates clean, properly secured and non-slip?	Yes		
5013	Are High Pressure Oil pipes secure and protectively sheathed?	Yes		
5014	Is exhaust pipe lagging satisfactory?	Yes		
5015	Are the bilges clean and bilge systems in good condition?	Yes		
5016	Is the emergency escape route well signed / unobstructed?	Yes		
5017	Are Stern Seals in good condition and free from any leaks?	Yes		
5018	Test the Emergency Fire Pump for satisfactory operation	Yes		
5019	Test the Emergency Generator for satisfactory operation	Yes		

General Comments:

6	Safety Management / Crew Involvement / Personal Protective Equipment / PMS	Yes	No	NA
6001	When was the last date Stop Work Authority used and re-enforced by Supervisors? Specify Date:	28/02/2023		
6002	When was the last JSA completed? Specify Date:	28/02/2023		
6003	Are Start Work Checks in Place?	Yes		
6004	Are proper & adequate Personal Protective Equipment provided (reserves for replacement & visitors)?	Yes		
6005	Are safety drills regularly carried out and recorded? Is there a drill schedule on board? Provide a copy.	Yes		
6006	Is LSA in survey and good visual condition? (liferafts, lifebuoys, PFD's, life jackets)	Yes		
6007	Is FFE in survey and good visual condition? (portable and fixed firefighting equipment)	Yes		
6008	Are there adequate medical facilities and supplies on board?	Yes		
6009	Is there a PMS on board? If yes, then provide latest weekly printout indicating all overdue and deferred work orders.	No		

6010	If vessel utilizes stand-by or back-down buoys, is a procedure, Risk Assessment, JSA in place?			N/A
6011	Are weather parameters including maximum limits for operation defined and known on board for the vessels work scope?	Yes		
General Comments:				
6009: Main Engine were overdue to overhaul at 30,000 hrs.				

7	Safe Deck & Personnel Transfer	Yes	No	N/A
7001	Is an effective stern protection system in place?			N/A
7002	If AHTS is used for cargo operations, has a Risk Assessment been conducted to mitigate crew & cargo exposure to elements, particularly working stern-to-weather?			N/A
7003	Is a 'Safe Deck' Procedure implemented and understood?	Yes		
7004	Is a vessel specific MOPO implemented and understood?	Yes		
7005	Is there is evidence of personnel transfer at sea? If so, does the vessel have a safe loading/landing zone clearly marked?	Yes		
7006	Confirm that the Crew & Passengers as applicable have received training in the method/mod of personnel transfer.	Yes		
7007	Are adequate PFDs for all personnel to be transferred provided?	Yes		
7008	Is a JSA conducted before any personnel transfer?	Yes		
7009	If Swing Rope Transfer is utilised, does the vessel have a suitable RA and Procedure.			N/A
7010	Is weather limit defined for various types of personnel transfer operations (Basket / FROG/Swing Rope)?	Yes		
General Comments:				

8	Vessel Capability - Dynamic Positioning	Yes	No	NA
8001	Does the vessel have a copy of most recent Annual DP trials details (within 1 year +/- 3 months of anniversary date)?			N/A
8002	Are all Category A recommendations closed?			N/A
8003	Does vessel have any pending Category B or C recommendations?			N/A
8004	Is Activity Specific Operating Guidelines (ASOG) or WSOG (MODU) limit setting agreement in place for current or intended operations?			N/A
8005	Verify that the DPO's are familiar with the ASOG / WSOG			N/A
8006	Verify that DP footprints are regularly recorded and compared against previous footprints and the DP Capability Plots?			N/A
8007	Is the crew familiar with the DP manual, FMEA & Proving Trials?			N/A
8008	Confirm that the vessel operates with OPEN Bus Tie. If not, then inform and seek guidance from the Designated MSRE Process Authority.			N/A
8009	Is there an Electronic Technician or Engineer on board with approved training on the DP system?			N/A
8010	Does the vessel have a Blackout Recovery procedure?			N/A
8011	State date of last Blackout Recovery desktop drill?			N/A
8012	Are vessel specific DP Field Arrival, Bridge 500m and E/R set up Checklists available and completed?			N/A
8013	Verify that the Field Arrival Trial has been completed? This is to be verified prior to first use of the vessel or at the discretion of the designated MSRE Process Authority.			N/A
8014	Verify the availability of the Independent Joystick			N/A
8015	Verify DP computers and Operating Stations are in good order.			N/A
8016	Verify that the DP controller was reset within the last 30 days			N/A
8017	Verify all Alarm and Warning Lights on the DP console for correct operation and indication			N/A
8018	Verify Heading limits and circle watch limits are not excessive. (3-5 degrees & 3 -5 m)			N/A
8019	Verify all Position Reference Systems are in good working order			N/A
8020	Verify that the DP Printer is operational.			N/A
8021	Verify settings on Gyro are correct – speed and latitude correction set to manual during DP ops?			N/A
8022	Verify all gyros are aligned and that the gyro error has been confirmed within the previous 6 months.			N/A
8023	Verify that the wind sensors functional and providing an online input into the DP system.			N/A
General Comments:				

8	Vessel Capability - Cargo Operations / Crane Operations / Bunkering	Yes	No	NA
8024	Is the lifting gear used in cargo handling colour coded in accordance with local or BU guidelines for the current year?			N/A
8025	Confirm that the vessel only utilizes ratchet type chain binders for securing of cargo?	Yes		
8026	Are the Master & Crew aware that selective unloading (cherry picking) is not permitted?	Yes		
8027	Verify if Cargo Handling is as per the OCIMF "Deck Cargo Handling on board Offshore Vessels" Information paper	Yes		
8028	Are MSDS available for any liquid products back loaded from offshore?	Yes		
8029	If carried confirm that hoses used for hazardous liquid transfers have a valid test certificate?		No	
8030	If carried, are all hoses fitted with sufficient floatation collars as per GOMO?	Yes		
8031	Confirm that the vessel has quick dry disconnect fittings (i.e., TODO, Avery Hardall, Klaw fittings) at the manifold for use in hazardous liquid transfers?	Yes		
8032	Confirm that the vessel has the correct WECO connections and adapters at the manifold.	Yes		
8033	Do cranes and other lifting equipment on board the vessel have current certification?	Yes		
8034	Check condition of the crane is in good order. Verify operation to check for seal leakages on crane rams.	Yes		
8035	Confirm Electronic Fuel monitoring system (EFMS) is in place, is non-by-passable, and operational?	Yes		
8036	If no EFMS in place, an operational and calibrated totalizer meter in fuel load and discharge system?	Yes		

General Comments:

8029: TODO, hoses Sunflex OSD250Oil suction 3" x 30m + Breakaway + 3"x 30m. The hose was transferred to ashore for annual service and hydro test.

8	Vessel Capability - Anchoring & Mooring System Design, Review & Safety Reinforcement (Vessels with Spread Moorings)	Yes	No	NA
8037	Are pre-move meetings conducted prior any anchor handling operations (weather, SWA, risk assessment...)?			N/A
8038	Are comprehensive JSA's implemented prior to any mooring activity?			N/A
8039	Minimum anchor and mooring clearances from sub-sea structures are known (set by BU) and accounted in the plan?			N/A
8040	Are special mitigation procedures available when anchor patterns call for crossing pipelines or cables?			N/A
8041	Are Marine Notices relating to offshore Mooring and Anchor handling located on board and contents known to crew?			N/A
8042	Verify if Wire Management plan is in place and date of last maintenance /Inspection/Last NDT or Destructive test			N/A

General Comments:

8	Vessel Capability - Anchor Handling (AHTS) & Towing Vessels only	Yes	No	NA
8043	In date, test certificates shall be held on board for all Tow Spread equipment in use.			N/A
8044	Tow log and tow spread maintenance program in place.			N/A
8045	Valid Bollard Pull Certificate of less than 5 years old issued /endorsed by an IACS Classification society.			N/A
8046	Winches have a quick release mechanism, and all have a documented functional testing regime.			N/A
8047	Are bridge team members fully familiar with the location and operation of the winch emergency release mechanism, its operation and controls? Instructions are to be clearly posted nearby to the release controls.			N/A
8048	Is Tow and work winch tension meter installed with a method of continuous recording and calibrated?			N/A
8049	All watertight doors, hatch openings and emergency escape entrances are marked 'close at sea' and all seals and locking dogs are in satisfactory condition.			N/A
8050	Confirm that the vessel has and operates with a clear deck policy during towing/anchor handling operations.			N/A
8051	Confirm that the vessel ensures all watertight openings requiring to be closed/sealed during towing/anchor handling operations are done so.			N/A
8052	Are work-wire / tow-wire terminations in good condition, properly terminated, steel ferrules, with swivels and associated jewellery? NB: Aluminium ferrules are not acceptable.			N/A
8053	Check that spooling gear is fitted and in good condition.			N/A
8054	Check the operability of mechanical stoppers. Ensure that the correct size of inserts is available for the intended work-scope.			N/A
8055	Check that the vessel has the correct size of chain handling gypsies (wildcats) fitted, suitable for the proposed scope of work			N/A
8056	Are there sufficient shackles, split pins and lead plugs on-board for the intended work scope?			N/A
8057	Is there welding and burning equipment available and are crew qualified to use it?			N/A

8058	Check condition of J-Hook and grapnel, type and SWL?			N/A
8059	The master understands the principles and the consequences of 'Girting'			N/A
8060	Vessel 'Gobbing' equipment is certified and MBL/SWL is the same as the tow wire and associated rigging			N/A
8061	Are tow and work wire terminations fitted with snub-nosed, pee-wee, type sockets (long bow spelter sockets not permitted)			N/A
8062	Verify if Wire Management plan is in place and date of last maintenance /Inspection/Last NDT or Destructive test			N/A
8063	List the date of last maintenance /Inspection/Last NDT or Destructive test			N/A
8064	Verify if Tow Assembly Management plan is in place and date of last maintenance /Inspection/Last NDT or Destructive test		N/A	
8065	List the date of last maintenance / Inspection / Last NDT or Destructive test of the Tow Assembly			N/A
8066	Is the length of work wire adequate for operating depth?		N/A	
8067	Confirm that no towing from hook (if fitted) is allowed			N/A
8068	Confirm tow bars, aft bulwarks, stern rail, stern roller are free of sharp edges / obstructions which could damage a tow wire or prevent it from free movement.			N/A
8069	Confirm that the use of polypropylene ropes for towing is not allowed			N/A
8070	Conduct brake slip test for towing and work winches			N/A
8071	On Terminal Export and Line Handling Tugs only, confirm the vessel is equipped with bow winch and associated equipment to safely tow from the bow.			N/A
General Comments:				

8	Vessel Capability - Crew boats (Alucats, Petro-Craft & Surfers)	Yes	No	NA
8072	Are passenger briefings carried out (safe boarding, disembarkation, and general safety)?			N/A
8073	Are adequate PFDs for all personnel to be transferred provided?			N/A
8074	Are fenders in a satisfactory condition?			N/A
8075	Is there a 30cm gap between the bow fender and boat landing ladder?			N/A
8076	Are searchlight/s available and in working order?			N/A
8077	Is a night vision camera available and in working order?			N/A
8078	Is air conditioning available and in working order?			N/A
8079	Are toilet facilities available and in working order?			N/A
8080	Are noise levels within the passenger cabin at an acceptable level?			N/A
8081	Are Crew boat Pilots aware of any local requirements for safe speed during hours of darkness?			N/A
8082	Are crew boat Pilots aware of the rules for entering 500m Exclusion/Safety Zones?			N/A
General Comments:				

8	Vessel Capability - Pipe Lay	Yes	No	NA
8083	Is there evidence that effective risk assessments are carried out for pipelay operations?			N/A
8084	Is the firing line hazard marking and restricted access managed effectively?			N/A
8085	Are firing line ventilation arrangements sufficient?			N/A
General Comments:				

8	Vessel Capability - Ship Assist/Escort Tug	Yes	No	NA
8086	Is there evidence that effective risk assessments are carried out for ship assist/escort tug operations?			N/A
8087	Is the length of tow line adequate for planned operation?			N/A

8088	Is the MBL of tow line and associated equipment adequate for rated Bollard Pull or expected tensions for the planned operation?			N/A
8089	Do short bow/snub nose type end fittings make up the tow wire terminations?			N/A
8090	Have Tow wires been re-terminated in the last 2 years?			N/A
8091	Are 'snap back' zones and hazards understood by crew?			N/A
8092	The master understands the principles and the consequences of 'Girting'			N/A
8093	Are in date test certificates held on board for all Tow Spread equipment in use?			N/A
8094	Valid Bollard Pull Certificate of less than 5 years old issued /endorsed by an IACS Classification society.			N/A
General Comments:				

8	Vessel Capability - Emergency Rescue & Response Vessel	Yes	No	NA
8095	Is there evidence that effective risk assessments are carried out for ERRV/Stand-By operations			N/A
8096	Are adequate PFDs provided and in satisfactory condition for all personnel to be transferred?			N/A
8097	Are qualified personnel onboard for FRC operations and has a drill been conducted in the preceding 3 months?			N/A
8098	Is the recovery time of a MOB during the last drill in accordance with the performance standards in the Safety Case if applicable?			N/A
8099	Is the Dacon scoop available and has a drill been conducted in the preceding 3 months?			N/A
General Comments:				

8	Vessel Capability - SEWOP (Lift Boats)	Yes	No	NA
8100	Is there documented evidence of NDT of the legs and racks, including lower terminus?			N/A
8101	Is there documented evidence of annual visual inspections of the legs, racks and pinions?			N/A
8102	Is their evidence that the vessel is following the content of any BU Marine Guidance Notes on SEWOP inspection guidelines?			N/A
8103	If non IACS Classed, are the NDT being conducted by an IACS Class approved company?			N/A
8104	If <300 GT, does inspection protocol meet ABS or USCG standards as outlined in Marine Standard and are these inspections being carried out by IACS Class surveyor			N/A
8105	Are intermediate welded sections visible on the leg pinion support brackets?			N/A
8106	Is their visual evidence of any dents or cracks to the leg structure, teeth, pinion tower?			N/A
8107	Confirm the Jacking assemblies/planetaries are in good order			N/A
8108	Are the legs and pinions sufficiently greased?			N/A
8109	Is an Original Equipment Manufacturer jacking system inspection report onboard that meets all of the minimum criteria as per the Chevron Marine Standard Non-Tankers and was it conducted within the last 12 months?			N/A
General Comments:				

8	Vessel Capability - Barge	Yes	No	NA
8110	Load line and draught marks clearly visible			N/A
8111	Verify Hull condition, must be intact, minor indentations acceptable			N/A
8112	Tow bridle adequate, in good condition and spread fully certified with a functional retrieval winch.			N/A
8113	Manholes fully sealed and watertight			N/A
8114	Tank vents are self-sealing (float type with mesh). Floats to be tested as free			N/A
8115	Verify condition of specific build design access ladder on either side of the barge is in good condition			N/A

8116	Verify - fully functional port, starboard and aft navigation lights with adequate power source (Battery/Solar Power)			N/A
8117	Verify - navigational day shapes, mast and lanyard on board			N/A
8118	Check condition of mooring ropes/wires as acceptable			N/A
8119	Check that the barge's side rubbing band is in good condition without jagged edges and adequate fendering in place as applicable			N/A
8120	Is the barge equipped with a fit for purpose anchor and spread with a dedicated winch and means of emergency release?			N/A
8121	On barges without handrails is the edge highlighted with a contrasting colour to the rest of the deck?			N/A
8122	Is the working deck painted with non-slip paint?			N/A
8123	Check the cleanliness of the deck, (no remnants of previous cargoes)			N/A
8124	Internal Compartments are to be dry and free of hydrocarbons. Do NOT enter any compartment,			N/A
General Comments:				

8	Vessel Capability - ABU Specific Environmental	Yes	No	NA
8125	Does the vessel have asset (WHS / GOR / JANSZ) subsea infrastructure and pipelines included on vessel marine charts?			N/A
8126	Is the vessel working under the Gorgon DomGas operational area?			N/A
8127	If yes, has the vessel been provided with Bombora location data?			N/A
8128	If required, do crane operators meet the training and competency requirements of Unit of Competency – MASUP305A?			N/A
8129	Has the vessel completed pre-arrival reporting in accordance with the Australian Biosecurity Act 2015? i.e. Biosecurity Status Document from Department of Agriculture and Water Resources			N/A
8130	Spill kits adequately stocked, in good condition and available in proximity to where hazardous materials /chemicals are being stored/used?	Yes		
8131	If the vessel will be discharging via the Oily Water Separator - Is the OWS IMO compliant and maintenance is up to date.			N/A
8132	If the vessel be discharging via the Sewage Treatment Plant- Is the STP IMO compliant and maintenance is up to date.	Yes		
8133	If the vessel will be discharging food waste via a macerator- Is the macerator certified and maintenance of the macerator up to date?			N/A
8134	Is IAPP certification in place and IAPP record book and PMS maintenance for Engines and Incinerators up to date?	Yes		
8135	Does the vessel have a Waste / Garbage Management Plan and is it within its review date?	Yes		
8136	Are lidded bins provided in open areas of the vessel where waste has a risk of being blown to the ocean (e.g. general waste, loose plastic)?			N/A
8137	Are Waste receptacles labelled to identify waste stream, securely stored and contained?	Yes		
8138	Are hazardous wastes stored in designated waste storage areas with secondary containment for liquid waste?"			N/A
8139	Vessel light spill reduced at night including lights 'off' when not required.			N/A
8140	Internal and external lighting managed to reduce light spill and include, where practicable: • Manage bridge lighting • Close curtains and blinds at night • Remove unnecessary lighting • No decorative lighting • Shielded or mounted lighting as low as practicable • Direct lighting away from the coastline and beaches.			N/A
8141	Is the type of lighting least disruptive to marine turtles used on the vessel?			N/A
8142	Does the intended positioning/work scope of the vessel ensure that it will not be moored with lighting on within 1.5 km of turtle nesting beaches during the turtle nesting season from October to April each year at Wheatstone.			N/A
General Comments:				

OBSERVATIONS

Observation Number	Details	Action/ Due Date / Close out Remarks
2008	The passage plan was not "Berth to Berth".	22/08/2023
4004	AIS status was not updated.	22/08/2023
4016	Two (2) portable grinders without safety guards.	22/08/2023
4016	There chain hoist was overdue for annual inspection. Last done 23/04/2022.	22/08/2023
6009	Main Engine were overdue to overhaul at 30,000 hrs.	22/09/2023
8029	TODO, hoses Sunflex OSD250Oil suction 3" x 30m + Breakaway + 3"x 30m. The hose was transferred to ashore for annual service and hydro test.	22/08/2023

ภาคผนวก 28

รายงานการตรวจสอบสภาพท่อภายนอก (Pipeline/Riser Inspection)



Revision	Date	Reason for Issue/Change	CMOR #	Enter by
1	23-Mar-17	To initial jobcard of inspection program to JDE	NA	Napaporn C.
2	07-Sep-15	Update Template Inspection Jobcard	0707/17	Patiparn K.

FIELD: Benchamas WORK ORDER: 1202533
 PLATFORM: BEWB TAG/CIRCUIT NO: BE-8BEPLD1-PS
 REPRESENTATIVE OF: _____
 EQUIPMENT TYPE: () PVI () PPI () FHC ☒ RCI () BCI () OTHERS
 INSPECTION TYPE: ☒ ONSTREAM () FULL

JOB CARD NUMBER: 5Y RCI RISER ONSTREAM INSPECTION - PM
OPT. SEQUENCE: 10 5Y RCI RISER ONSTREAM INSPECTION PM - GOTAI
WORK CENTER: GOTAI
CREW SIZE DURATION EST. MAN-HRS **RESOURCE DESCRIPTIONS**
 3 4 12 ASSET INTEGRITY TEAM

MFGR, INDUSTRY REFERENCES AND ENGINEERING RECOMMENDATION:

- API-570
- API-RP-574
- ASME B31.4 / ASME B31.8

JOB INSTRUCTIONS

ASSET INTEGRITY TASKS:

1) PRE-REQUISITE TASKS:

- 1.1 OBTAIN WORK PERMIT, REVIEW HA/JSA AND CARRY OUT TOOLBOX MEETING.
- 1.2 COORDINATE WITH PRODUCTION TO PERFORM RISER CLOSE-UP INSPECTION.

COMPLETED
(YES) (NO)

☒ () REMARKS _____

☒ () REMARKS _____

2) RISER CLOSE-UP INSPECTION:

- 2.1 PERFORM VISUAL INSPECTION FOR EXTERNAL AND INTERNAL OF RISER.
- 2.2 DETERMINE THICKNESS, ACTUAL CORROSION RATE, REMAINING LIFE AND NEXT INSPECTION DUE DATE.

☒ () REMARKS Repaint

☒ () REMARKS _____

3) FINAL CHECK:

- 3.1 SIGN OFF WORK PERMIT AND CLOSE ITPM WORK ORDER.

☒ () REMARKS _____

CHECKLIST

ASSET INTEGRITY TASKS:

1) VISUAL:

- 1.1 OVERALL INTEGRITY.
- 1.2 PAINT PROTECTION

REQUIRED COMPLETED
(YES) (NO)

☒ () REMARKS Repaint

☒ () REMARKS _____

2) INSULATION CURRENT STATUS:

- 2.1 INSULATION REMOVAL
- 2.2 INSPECTION THROUGH WINDOW
- 2.3 JACKET VISUAL INSPECTION (INSULATION NOT REMOVED)

() Fully () Partial ☒ No insulation

() () REMARKS _____

() 100% () Partial

() () REMARKS _____

() () REMARKS _____

**3) CORROSION UNDER SUPPORT (CUS)**

3.1 CUS INSPECTION

☒ () REMARKS _____() 100% ☒ Partial

3.2 ADDITIONAL REQUIREMENT

☒ () REMARKS _____

Date Required _____

4) NDE

4.1 UT/UTM

☒ () REMARKS _____

4.2 PT

() ☒ REMARKS _____

4.3 MT

() ☒ REMARKS _____

4.4 RT

() ☒ REMARKS _____

4.5 OTHER NDEs

☒ () REMARKS VT

4.6 ADDITIONAL REQUIREMENT

() ☒ REMARKS _____

Date Required _____

5) ANOMALY IDENTIFICATION☒ () REMARKS Repaint**6) PHOTOGRAPHS**☒ () REMARKS _____**7) ADDITIONAL REQUIREMENTS**

7.1 SCAFFOLDING

() ☒ REMARKS _____

7.2 BLASTING

() ☒ REMARKS _____

7.3 SHUTDOWN

() ☒ REMARKS _____

7.4 ROPE ACCESS

☒ () REMARKS _____

7.5 OTHER REQUIREMENT

() ☒ REMARKS _____

Date Required _____

=====

COMMENT: Found Moderate corrosion on under support, pipe riser. / Repaint
Found Moderate to severe corrosion on support. / Repaint.

=====

INTEGRITY REPORT (IR): _____

EXAMINER: Athawat K / Chainarong T. DATE: 4-Feb-23SUPERVISOR: Chatchawan R DATE: 7 Feb 23.



Inspection and Test Plan (ITP) On Stream Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

Page No. : 1 of 5

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

Design	Oper.	Material:	API 5L X52	Thk:	12.7 mm
Pressure (psi)	1350	Required	Original Design Fluid:	3 Phase	
Temperature (°F)	200	Required	Current Fluid:	3 Phase	
Riser Type :		Insulation :	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	Type:	

Inspection Techniques/Work Scope:

- | | |
|---|------------------------------------|
| <input checked="" type="checkbox"/> Ext. VT | <input type="checkbox"/> Borescope |
| <input checked="" type="checkbox"/> UTM | <input type="checkbox"/> IRIS/RFT |
| <input type="checkbox"/> MT Ext. | <input type="checkbox"/> ET |
| <input type="checkbox"/> PT Ext. | <input type="checkbox"/> RT |

Detail :

- 1) Visual inspection for External corrosion along riser from block valve of Launcher/Receiver down to Riser section above water.

Criteria	Action When Find External Depth
$T_{\text{current}} > T_{\text{alert}}$	Thickness Guaging + Defect Sizing
$T_{\text{current}} \leq T_{\text{alert}}$	Grid-UTM + Extend 2" from Defect

Note : $T_{\text{alert}} = T_{\text{min}} + 0.2(T_{\text{nominal}} - T_{\text{min}})$

- 1.1) Visual inspection for External corrosion at Pressure containment part.
- 1.2) Visual inspection for Type of Clamp and Clamp/Support Condition.
- 1.3) Visual inspection for Corrosion Under Clamp/Support.
- 1.4) Visual inspection for External corrosion at Bolts/Nuts of Valve/Flange/Clamp.
- 1.5) Visual inspection for Rubber Condition.
- 2) UT at Corrosion Monitoring Points for Internal Corrosion.
- 2.1) Refer to DWG.1 sheet

Special Requirement:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Rope Access Required | REF: <u>Where Visual Inspection and UTM at high level</u> |
| <input type="checkbox"/> Scaffolding Required | REF: |
| <input checked="" type="checkbox"/> Insulation Removal | REF: <u>Where sign of corrosion under insulation observed</u> |
| <input type="checkbox"/> Cleaning Standard | REF: |

For VT :

Attachment:

- | | | |
|--|--|---|
| <input type="checkbox"/> P&ID | <input checked="" type="checkbox"/> Inspection Checklist | <input type="checkbox"/> Previous Ins. Report |
| <input checked="" type="checkbox"/> DWG. | <input type="checkbox"/> Baseline Measurement | <input type="checkbox"/> Integrity Work Request |
| <input type="checkbox"/> Other | | |

Approval:

By Inspector:	Name: <u>Athiwat K./Chaiyan R./Chainarong T.</u>	Date: <u>7-Feb-23</u>
By Authorized Inspector:	Name: _____	Date: _____
Acknowledged By:	Name: _____	Date: _____

Revision :

Date :

Inspection and Test Plan (ITP)

Chevron Thailand Exploration and Production Ltd.



Inspection and Test Plan (ITP) Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

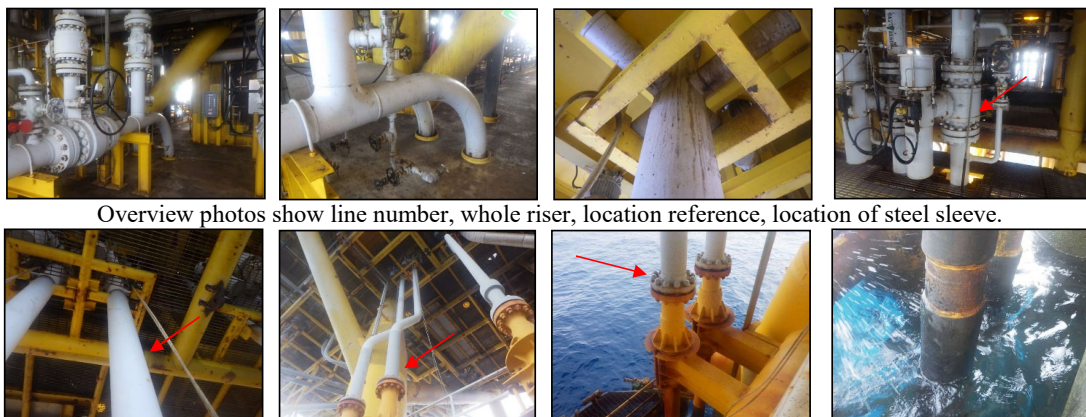
Plant ID : BEWB

Page No. : 2 of 5

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

- 1) Visual inspection for External corrosion along riser from block valve of Launcher/Receiver down to Riser section above water.



- 2) Visual inspection for External corrosion at Pressure containment part.

2.1) Any Paint damage found?

☒ Yes ☐ No

2.2) Any Metal loss found at Paint damage area?

☒ Yes ☐ No

2.3) If Metal loss found at Paint damage area:

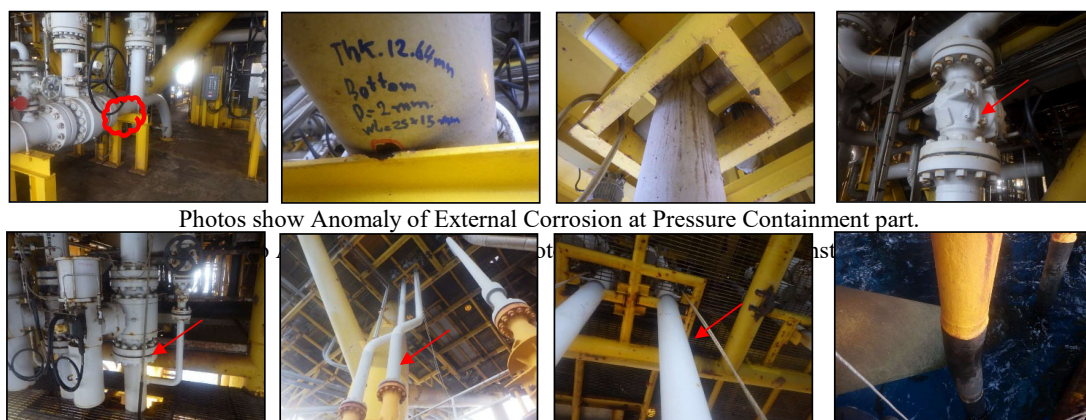
What is the Depth of Metal loss? (mm)

Corrosion Depth = 2 mm

2.4) If Metal loss is greater than Corrosion allowance:

What is the Dimension of Metal loss (width x length)? (mm x mm)

Area = 25x15 mm



Likelihood for External Corrosion at Pressure Containment part

☐

Revision :

Date :

Inspection and Test Plan (ITP)

Chevron Thailand Exploration and Production Ltd.



Inspection and Test Plan (ITP) Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

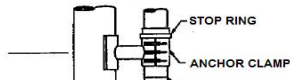
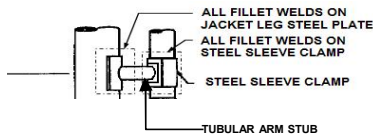
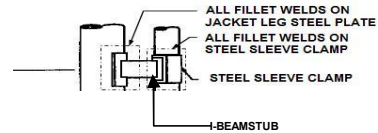
Page No. : 3 of 5

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

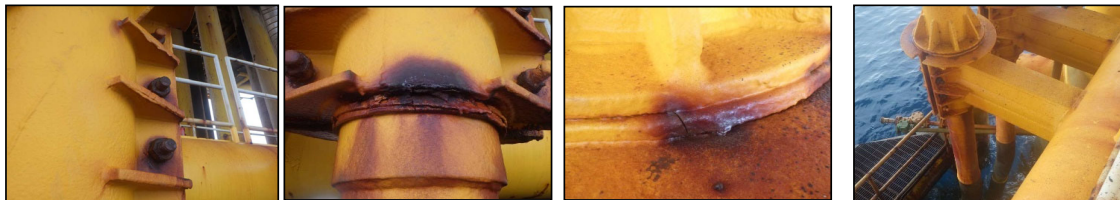
Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

3) Visual inspection for Type of Clamp and Clamp/Support Condition.

3.1) Please select Riser Type

☒ **Type1: Anchor clamp**☐ **Type2: No clamp found above water**☐ **Type 3 : Steel sleeve clamp and Tubular arm**☐ **Type 4 : Steel sleeve clamp and I-Beam**

- | | | | |
|--|---|--|------------------------------|
| 3.2) Is the clamp firmly secured to the structure? (except Type2) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3.3) Does it have Steel Sleeve under Clamp? (except Type2) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3.4) Is the Steel Sleeve in good condition, including Weld condition? (except Type2) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3.5) Does it have Rubber liner under Clamp? (only Type1) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3.6) Is Rubber liner in good condition? (only Type1) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3.7) Is the Stop ring in good condition, including Weld condition? (only Type1) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| 3.8) Any Breakage / Extreme Corrosion / Deformation of Clamp / Support? (except Type2) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |

Please describe condition: Found clamp and clamp/support were still in normal condition.**Likelihood for Clamp / Support condition**

Revision :

Date :

Inspection and Test Plan (ITP)
Chevron Thailand Exploration and Production Ltd.



Inspection and Test Plan (ITP) Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

Page No. : 4 of 5

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

4) Visual inspection for Corrosion Under Clamp/Support.

- 4.1) Any Sign of Corrosion or Paint Damage on Pressure Containment (Riser surface) Under Clamp/Support found? ☒ Yes ☐ No
(Reddish water from under Clamp/Suport with no Metal loss)
- 4.2) Any Suspected Metal loss or Significant Corrosion on Pressure Containment (Riser surface) Under Clamp/Support found? ☒ Yes ☐ No

Please describe condition: Found moderate to severe corrosion under support and support.**Likelihood for Corrosion Under Clamp / Support**

5) Visual inspection for External corrosion at Bolts/Nuts of Valve/Flange/Clamp.

- 5.1) Any Breakage / Extreme Corrosion / Deformation of Bolts / Nuts? ☐ Yes ☒ No

Please describe condition: Bolts/Nuts of Valve/Flange/Clamp were still in normal condition.**Likelihood for External Corrosion at Bolts/Nuts of Valve/Flange/Clamp**

Revision :

Date :

Inspection and Test Plan (ITP)

Chevron Thailand Exploration and Production Ltd.



Inspection and Test Plan (ITP) Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

Page No. : 5 of 5

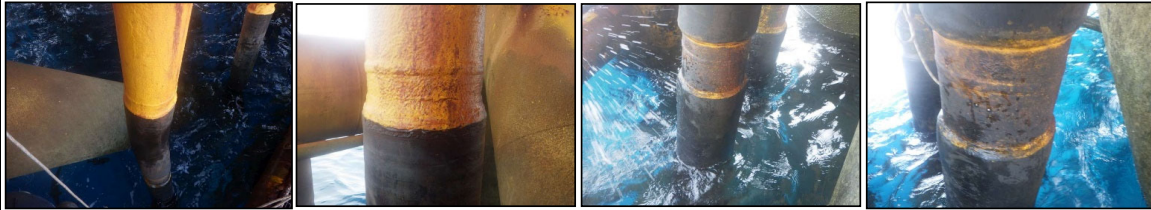
Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

6) Visual inspection for Rubber Condition.

- 6.1) Does it have Steel Sleeve under Rubber Sleeve? ☒ Yes ☐ No
- 6.2) Is the Steel Sleeve in good condition, including Weld condition? ☒ Yes ☐ No ☐ N/A
- 6.3) Does the Upper Edge of Rubber tightly seal to the Riser or Steel Sleeve? ☒ Yes ☐ No
- 6.4) Is the Upper Edge of Rubber properly Tapered? ☒ Yes ☐ No
- 6.5) Any Damage of Rubber found? ☐ Yes ☒ No
- 6.6) Does Damage of Rubber reach Pressure Containment or Steel Sleeve? ☐ Yes ☒ No
- If yes, does it reach Pressure Containment or Steel Sleeve? ☐ Pressure Containment ☐ Steel Sleeve

Please describe condition: Rubber were still in normal condition.

**Likelihood for Rubber Condition**

7) UT at Corrosion Monitoring Points for Internal Corrosion.

- 7.1) Any thickness is less than Minimum Required Thickness?
- At MAWP ☐ Yes ☒ No
- If yes: CML# or Point: _____ Dimension of Metal loss (W x L): _____
- At Operating Pressure or Structural Force ☐ Yes ☒ No
- If yes: CML# or Point: _____ Dimension of Metal loss (W x L): _____

Likelihood for External Corrosion at Bolts/Nuts of Valve/Flange/Clamp

8) Others

- 8.1) Any Temporary Repair registered? (e.g. Mechanical Clamp, Composite Wrap, Sleeve, Patching) ☐ Yes ☒ No
- 8.2) Any abnormal condition which is not specified in other items? ☐ Yes ☒ No

If yes, please describe: _____

Photos show Temporary Repair registered or Abnormal condition.
(If no Temporary Repair registered or Abnormal condition, no need to attach Photos.)

Revision :

Date :

Inspection and Test Plan (ITP)**Chevron Thailand Exploration and Production Ltd.**



Site Inspection Form Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

Page No. : 1 of 2

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

1) Visual inspection for External corrosion along riser from block valve of Launcher/Receiver down to Riser section above water.

2) Visual inspection for External corrosion at Pressure containment part.

2.1) Any Paint damage found?

☐ Yes ☐ No

2.2) Any Metal loss found at Paint damage area?

☐ Yes ☐ No

2.3) If Metal loss found at Paint damage area:

What is the Depth of Metal loss? (mm)

2.4) If Metal loss is greater than Corrosion allowance:

What is the Dimension of Metal loss (width x length)? (mm x mm)

3) Visual inspection for Type of Clamp and Clamp/Support Condition.

3.1) Please select Riser Type

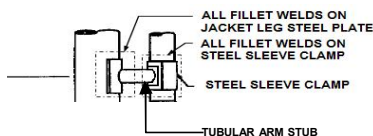
☐ **Type1: Anchor clamp**



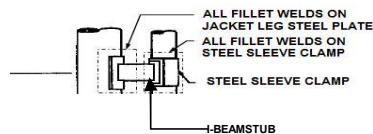
☐ **Type2: No clamp found above water**



☐ **Type 3 : Steel sleeve clamp and Tubular arm**



☐ **Type 4 : Steel sleeve clamp and I-Beam**



3.2) Is the clamp firmly secured to the structure? (except Type2)

☐ Yes ☐ No ☐ N/A

3.3) Does it have Steel Sleeve under Clamp? (except Type2)

☐ Yes ☐ No ☐ N/A

3.4) Is the Steel Sleeve in good condition, including Weld condition? (except Type2)

☐ Yes ☐ No ☐ N/A

3.5) Does it have Rubber liner under Clamp? (only Type1)

☐ Yes ☐ No ☐ N/A

3.6) Is Rubber liner in good condition? (only Type1)

☐ Yes ☐ No ☐ N/A

3.7) Is the Stop ring in good condition, including Weld condition? (only Type1)

☐ Yes ☐ No ☐ N/A

3.8) Any Breakage / Extreme Corrosion / Deformation of Clamp / Support? (except Type2)

☐ Yes ☐ No ☐ N/A

Please describe condition:

4) Visual inspection for Corrosion Under Clamp/Support.

4.1) Any Sign of Corrosion or Paint Damage on Pressure Containment (Riser surface) Under Clamp/Support found?

☐ Yes ☐ No

(Reddish water from under Clamp/Support with no Metal loss)

4.2) Any Suspected Metal loss or Significant Corrosion on Pressure Containment (Riser surface) Under Clamp/Support found?

☐ Yes ☐ No

Please describe condition:

Revision :

Date :

Inspection and Test Plan (ITP)

Chevron Thailand Exploration and Production Ltd.



Site Inspection Form Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

Page No. : 1 of 3

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)

Equipment Name : O-RISER, 8" GAS (B9150) AT BEWB

CORROSION CIRCUIT NO.

BEWB-CC-001-11

LINE NO. :

8"-P-CP1-1005

FIELD :

BENCHAMAS

PLATFORM :

BEWB

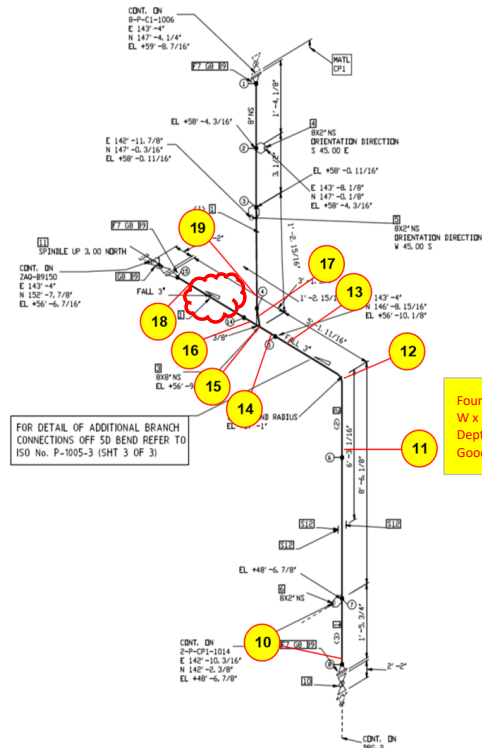
PAGE

1

OF 3

LINE DESCRIPTION

FROM BWD PLATFORM TO ZAQ-B9150/8"-P-C1-1006



DESIGN CODE : ASME B31.3

DESIGN PRESSURE : 1350 PSIG

DESIGN TEMPERATURE : 200 °F

MAX. OPERATING PRESSURE : PSIG

MAX. OPERATING TEMPERATURE : °F

To = Pipe Original Thickness (mm)

Tp = Minimum Required Thickness due to Internal Pressure (mm)

Ts = Minimum Required Thickness due to Structural Force (mm)

Tm = Maximum of Tp or Ts (mm)

NPS	TO	TP	TS	Tm
8"	0.500	0.283	0.110	0.2

Found Point "A" moderate corrosion on under support pipe riser.

W x L = 25x15 mm

Depth = 2 mm

Good Thk = 12.64 mm

DESIGN INFORMATION SHEET :

VISUAL INSPECTION
WALL THICKNESS MEASUREMENT

P&ID: D-COT-BEN-BWB-10-019.01 Rev.0

Chevron Thailand

Revision :

Date :

Inspection and Test Plan (ITP)

Chevron Thailand Exploration and Production Ltd.



Site Inspection Form Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB

Field : Benchamas

Plant ID : BEWB

Page No. : 2 of 3

Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)
Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

CORROSION CIRCUIT NO.	BEWB-CC-001-11	LINE No :	8"-P-CP1-1005	FIELD :	BENCHAMAS	PLATFORM :	BEWB	PAGE	2	OF	3																																																							
LINE DESCRIPTION FROM BWD PLATFORM TO ZAQ-B9150/8"-P-C1-1006																																																																		
<table border="1"><tr><td colspan="5">DESIGN CODE : ASME B31.8</td></tr><tr><td colspan="5">DESIGN PRESSURE : 1350 PSIG</td></tr><tr><td colspan="5">DESIGN TEMPERATURE : 200 °F</td></tr><tr><td colspan="5">MAX. OPERATING PRESSURE : PSIG</td></tr><tr><td colspan="5">MAX. OPERATING TEMPERATURE : °F</td></tr><tr><td colspan="5">To = Pipe Original Thickness (in)</td></tr><tr><td colspan="5">Tp = Minimum Required Thickness due to Internal Pressure (in)</td></tr><tr><td colspan="5">Ts = Minimum Required Thickness due to Structural Force (in)</td></tr><tr><td colspan="5">Tmax = Maximum of Tp or Ts (in)</td></tr><tr><td>NPS</td><td>TO</td><td>TP</td><td>TS</td><td>Tmax</td></tr><tr><td>8"</td><td>0.500</td><td>0.283</td><td>0.110</td><td>0.28</td></tr></table>												DESIGN CODE : ASME B31.8					DESIGN PRESSURE : 1350 PSIG					DESIGN TEMPERATURE : 200 °F					MAX. OPERATING PRESSURE : PSIG					MAX. OPERATING TEMPERATURE : °F					To = Pipe Original Thickness (in)					Tp = Minimum Required Thickness due to Internal Pressure (in)					Ts = Minimum Required Thickness due to Structural Force (in)					Tmax = Maximum of Tp or Ts (in)					NPS	TO	TP	TS	Tmax	8"	0.500	0.283	0.110	0.28
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Revision :

Date :

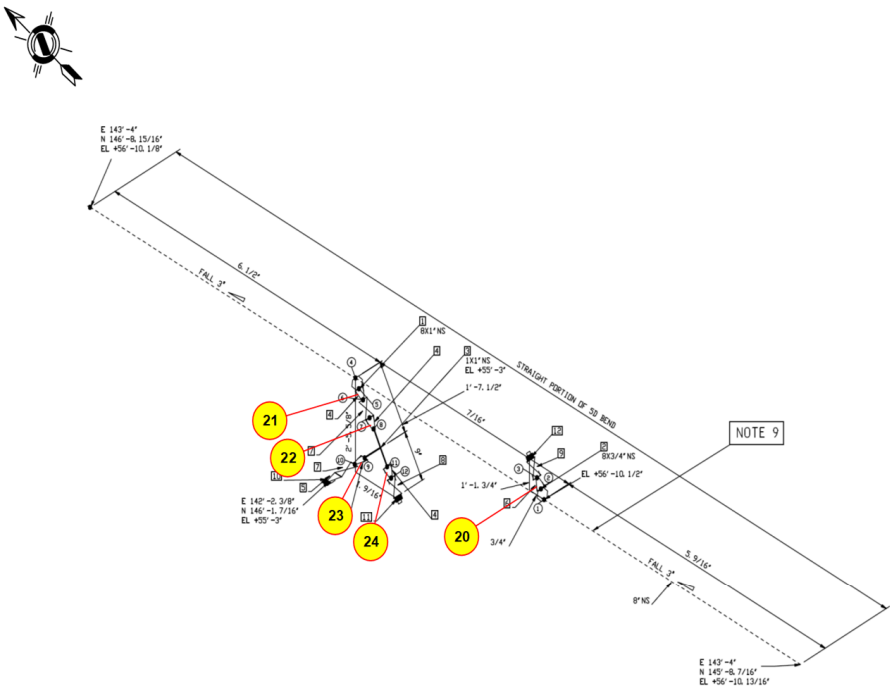

Inspection and Test Plan (ITP)
Chevron Thailand Exploration and Production Ltd.



Site Inspection Form Riser Topside

ITP No. : BE-8BEPLD1-RS-BEWB
Field : Benchamas
Plant ID : BEWB
Page No. : 3 of 3

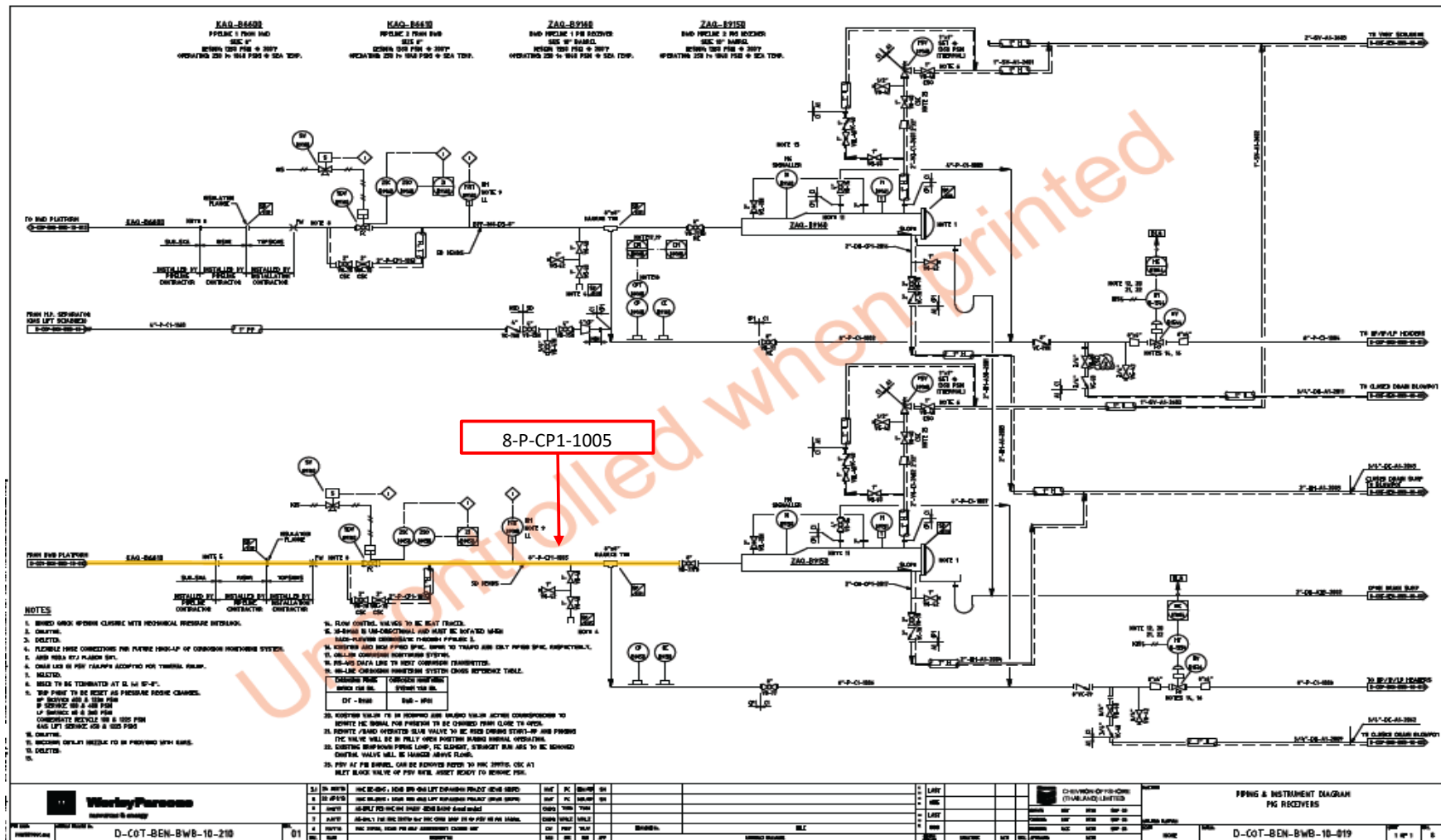
Equipment No. : BE-8BEPLD1-RS-BEWB AT Receiver Tag No. ZAQ-(B9150)
Equipment Name : O-RISER,8"GAS(B9150) AT BEWB

CORROSION CIRCUIT NO.	BEWB-CC-001-11	LINE NO.	8"-P-CP1-1005	FIELD :	BENCHAMAS	PLATFORM :	BEWB	PAGE	3	OF	3															
LINE DESCRIPTION FROM BWD PLATFORM TO ZAQ-B9150/8"-P-C1-1006																										
																										
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<table border="1"><thead><tr><th>NPS</th><th>TO</th><th>TP</th><th>TS</th><th>TM</th></tr></thead><tbody><tr><td>0.75"</td><td>0.218</td><td>0.035</td><td>0.071</td><td>0.071</td></tr><tr><td>1"</td><td>0.250</td><td>0.043</td><td>0.071</td><td>0.071</td></tr></tbody></table>												NPS	TO	TP	TS	TM	0.75"	0.218	0.035	0.071	0.071	1"	0.250	0.043	0.071	0.071
NPS	TO	TP	TS	TM																						
0.75"	0.218	0.035	0.071	0.071																						
1"	0.250	0.043	0.071	0.071																						
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P&ID:D-COT-BEN-BWB-10-019 Rev.0																										
																										

Revision :

Date :

Inspection and Test Plan (ITP)
Chevron Thailand Exploration and Production Ltd.



INPUT

Pipe Spec.

Pipeline or Riser

Riser ▼

Nom. Diameter

8 ▼

Inches

Design Pressure, P

1,350

psig

Design Temperature

200

F

Corrosion Inspection Result

Readed Thickness, t

0.500

Inch

(t around the pitting or on for general corrosion)

Corrosion Depth, d

0.197

Inch

Corrosion Length, L

63.000

Inch

PIPELINE DATA

Service :

3 Phases ▼

Material

API 5L X52 ▼

Tensile Strength

70,000

ksi

Yield Streghth

52,000

ksi

Outside Diameter, D

8.625

Inch

Temperature Factor, T

1

Nom. Thickness

0.875

Inch

Logitudinal Joint Faction, E

1

Corrosion Allowance, C

-

Inch

Location Factor, F

0.5

Mill Tolerance

12.5%

CALULATION FOR MINIMUM REQUIRED WALL THICKNESS , T

As Designed Pressure:

$$t = \frac{P D}{2 S F E T}$$

Minimum Required Wall Thickness:

0.224

Inch

Chevron Thailand Exploration & Production Ltd

2023 Offshore Pipeline External Inspection

8in BEPLG1 Pipeline Survey

23009_CTEP_BOL_RPT_005

Acceptance Signatures

.....
Beacon Offshore Limited
Mr Wilfred Yii Ying Sin
Inspection Controller 3.4U

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Mr Jerome Pawlak
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- APPENDIX 01. ANOMALY REPORTS
- APPENDIX 02. MASTER ANOMALY LISTING
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- APPENDIX 04. ALL EVENT LISTINGS
- APPENDIX 05. CROSSING EVENT LISTING
- APPENDIX 06. CATHODIC PROTECTION REPORT
- APPENDIX 07. PIPELINE CHARTS

ABBREVIATIONS

Term	Meaning
ABD	As-built difference, discrepancy
ABR	Abrasion
ADM	Anode Damage
ADP	Anode Depletion
BOL	Beacon Offshore Limited
BUR	Burial
C – O	Calculated minus observed
CAL	Calibrations
CD	Chart Datum
CG	Centre of Gravity
COD	Coating damage
COR	Corrosion
CP	Cathodic Potential
CPR	Low CP reading
CRP	Common Reference Point
CSR	Client Site Representative
CTD	Conductivity-Temperature-Depth
CTDS	Conductivity, Temp, Density and Salinity
CVI	Close Visual Inspection
DBM	Metallic Debris
DBN	Non-Metallic Debris
DCC	Distance Cross Course
DGNSS	Differential Global Navigation Satellite System
DGPS	Differential Global Positioning System
DHSS	Dual Head Scanning Sonar
DP2	Dynamic Positioning system 2
DPR	Daily Progress Report
EFG	Electric Field Gradient
EL	Elevation
FG	Fishing Gear
FJ	Field Joint
FS	Freespan
G	Grid (Heading)
GVI	General Visual Inspection
HDOP	Horizontal Dilution of Precision
HiPAP	High Precision Acoustic Positioning
HLM	Highland Maritime Co., Ltd.
HPR	Hydro-acoustic Position Reference
HSE	Health, Safety and Environment
IAW	In Accordance With
IDC	Internal Documents Control
iNav	REACH rig master navigation suite including the hardware installation
JDA	Joint Development Area
Km	Kilometre

Term	Meaning
KP	Kilometre Post
LAC	Lack of Access for Inspection
LAT	Lowest Astronomical Tide
LEK	Leak
LI	Lack of Integrity
MDGPS	Multi-Differential Global Positioning System
MGR	Marine Growth
MIS	Missing parts
mm	Millimetres
MOV	Relative Movement or vibration
MRU	Motion Reference Unit
MSL	Mean Sea Level
MSV	Multi-Support Vessel
mV	Millivolt
OTH	Other Anomaly
PDOP	Position Dilution of Precision
PLEM	Pipeline End Manifold
PPP	Precise Point Positioning
PPS	Pulse Per Second
CTEP	CHEVRON Thailand Exploration & Production
QA	Quality Assurance
QC	Quality Control
REM	Repair/ Remedial
RFS	Riser freespan
RMS	Root Mean Square
RO	Reference Object
ROV	Remotely Operated Vehicle
RTK	Real-time Kinematics
SBES	Single Beam Echo Sounder
SD	Standard Deviation
SOW	Scope of Work
SSIV	Sub Sea Isolation Valve
T	True (Heading)
USBL	Ultra-Short Baseline
UTC	Universal Time Co-ordinated
UTM	Universal Transverse Mercator
WDF	Weld defects
WGS	World Geodetic System
WGS84	World Geodetic System 1984
WI	Work Instruction
WOC	Waiting on Tide/Current
WOW	Standby on Weather
WP	Waypoints
WROV	Work Class Remotely Operated Vehicle

1 EXECUTIVE SUMMARY

This final report details the 8in BEPLG1 pipeline survey which was carried out in descending KP (opposite direction of flow) from BEWA to BEWG on 4 November 2023.

The survey commenced at the BEWA riser tie-in flange along the 8in BEPLG1 pipeline and ended at the BEWG riser tie-in flange.

Table 1 - 8in BEPLG1 pipeline survey details

Start Date	End Date	Length
4 Nov 2023	4 Nov 2023	6.231 km

Diameter	From:	BEWA riser tie-in flange			To:	BEWG riser tie-in flange	
	Easting	Northing	KP	Easting	Northing	KP	
8"	749566.39 m	1163539.89 m	6.228	746071.54 m	1168326.58 m	-0.003	

Coordinate system: Indians 1975

1.1 GENERAL CONDITION

The pipeline survey of the 8in BEPLG1 from BEWA to BEWG riser tie-in flange confirmed the as-laid route with no significant deviation observed. The as-found pipeline was found to be in good general condition with no significant damage observed along the length of the pipe.

1.2 FREESPAN STATUS

A total of one hundred-sixteen (116) freespans were recorded along the length of the pipeline, none of which exceeded the operational free span criteria.

1.3 PIPELINE FEATURES



A total of nineteen (19) pipeline features were recorded along the pipeline, all of which were found to be in general good condition.

BEWA riser and spool tie-in flanges exhibits cathodic potential readings more negative than -1050 mV and flagged as anomalous.

1.4 ANODE CONDITION

Sixty-six (66) anodes were visible along the pipeline.

- Forty-three (43) were assessed with less than 25% of depletion
- Ten (10) were assessed between 25% to 50% of depletion
- Eleven (11) were assessed more than 75% of depletion, and reported as anomalous
- Two (2) anodes were in full burial

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2 INTRODUCTION

This section summarises the project location, work scope and technical details of the 8in BEPLG1 pipeline.

2.1 PROJECT OVERVIEW

Chevron Thailand Exploration & Production Ltd (CTEP) contracted Beacon Offshore Ltd. to perform the 2023 subsea external pipeline survey & platform jacket structure in Gulf of Thailand.

Beacon Offshore supplied

- ROV and inspection personnel
- ROV equipment and Digital video recording and eventing hardware and software

Beacon Offshore subcontracted

- Reach Subsea Pte. Ltd. supplying project survey equipment and personnel.
- ISES Technical Services Pte. Ltd. supplying cathodic potential equipment and personnel.

The MV Beacon Altair was chartered to conduct the operations using the Triton XLR work class ROV and Cougar Observation Class ROV.

Inspection tasks were performed as per the requirements outlined within the document: **2023 Offshore Pipeline External & Platform Jacket Structure Inspection – Work Package for 2023 Campaign** as issued by CTEP. All seabed and pipeline data and video were collected and processed using EIVA and VisualSoft software suites.

The routine inspection videos (media accompanying this report) were recorded in Windows Media Audio/Video file format (.asf) and supplied on external hard disk storage devices which are accessible via the supplied Visual Review software.

The KP system used for the survey is based on the pipeline as laid route line supplied by CTEP

All coordinates, unless otherwise stated, are in reference to Indian 1975 Grid Projection.

All times are Bangkok Local Time and are based on Time Zone GMT + 7:00.



This final report details the results of the 8in BEPLG1 pipeline survey conducted on 4 November 2023

2.2 SCOPE OF WORK AND WORK COMPLETED

A general visual survey was required to determine the external condition of the pipelines as per workscope document **2023 Offshore Pipeline External & Platform Jacket Structure Inspection – Work Package for 2023 Campaign**.

The purpose of this pipeline survey is to detect obvious damage or defects which are visible without prior cleaning, such as:

- Damaged, dented, buckled or bent pipeline sections/ valves / appurtenances
- Evidence of movement of pipelines from their original locations
- Pipeline leakage
- Corrosion of exposed metal areas
- Damaged anodes
- Damaged field joint fills
- Unsupported lengths of pipe
- Significant debris and damage or abrasion caused debris
- Lack of adequate cathodic protection

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Summary of the basic work scope and completions are tabulated in Table 2 - Work scope and completion summary.

Table 2 - Work scope and completion summary

Component	Task Details	Completion
8in BEPLG1	Whole Pipeline - ROV/CP survey	100 %

2.3 FIELD LOCATION

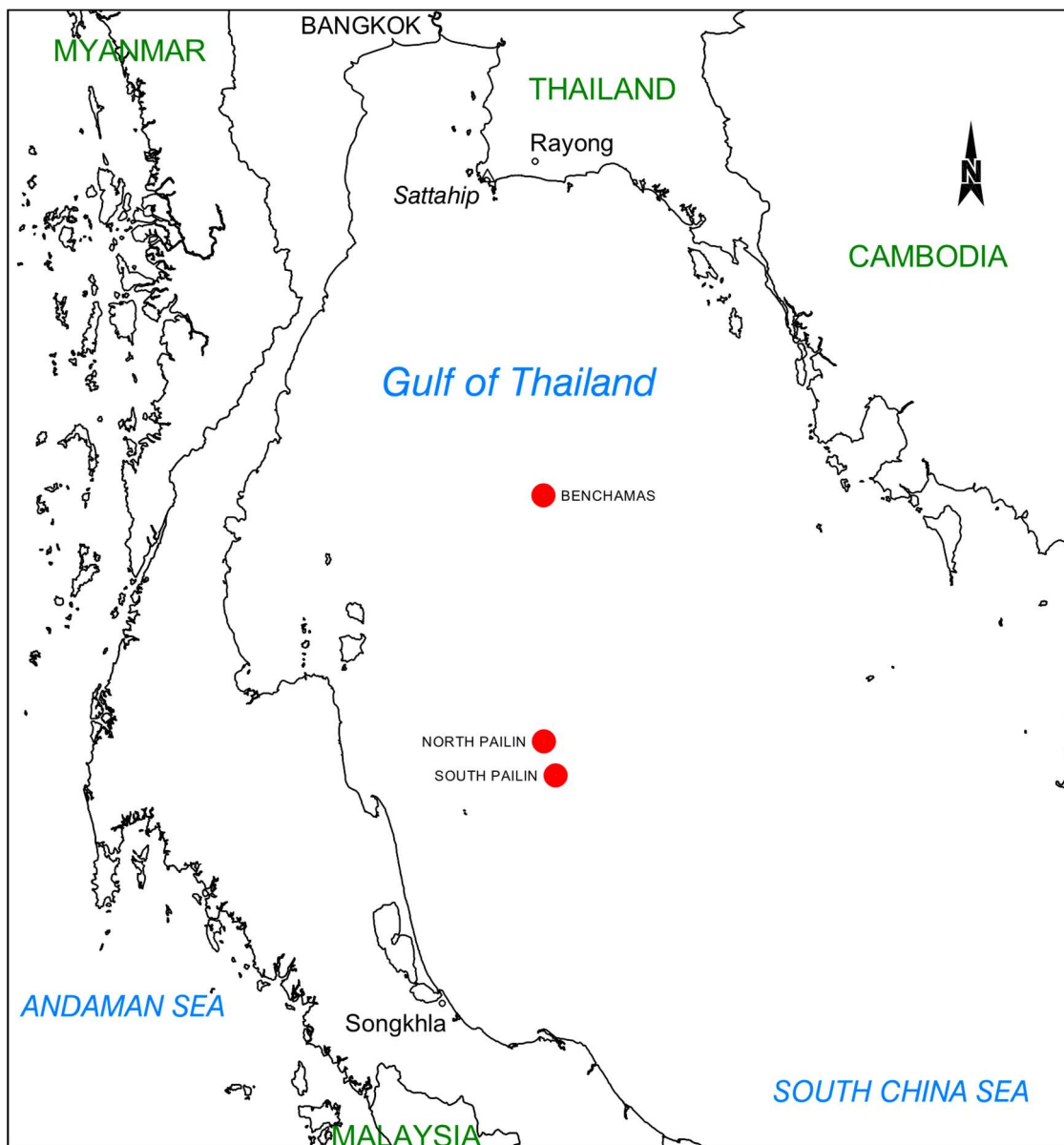


Figure 1 - Chevron Field Location

2.4 PIPELINE TECHNICAL DETAILS

The 8in BEPLG1 pipeline is an infield gas pipeline from PACPP to PAPLJ-Y2.

Table 3 – 8in BEPLG1 Pipeline Parameters

General Data			
Owner	Chevron Thailand Exploration & Production Ltd		
Name	8in BEPLG1		
Originate From	BEWG		
Terminate At	BEWA		
Pipeline Outside Diameter (in)	8		
Pipeline Wall Thickness (in)	0.500		
Pipe Grade	API 5L X52		
Service	3-phase		
Anti-Corrosion Coating			
Material	FBE		
Thickness (mm)	0.8		
Concrete Coating			
Thickness (mm)	None		
Route Length (Approximately) km	6224.6		
Allowable Free Span	Pipe Diameter (in)	Allowable Freespan	
		Oil/ Gas/ Cond Line (m)	WI Line (m)
	6	70	25
	8	80	35
	10	90	40
	12	80	50
	16	70	60
	18	80	70
	20	80	80
	24	90	90

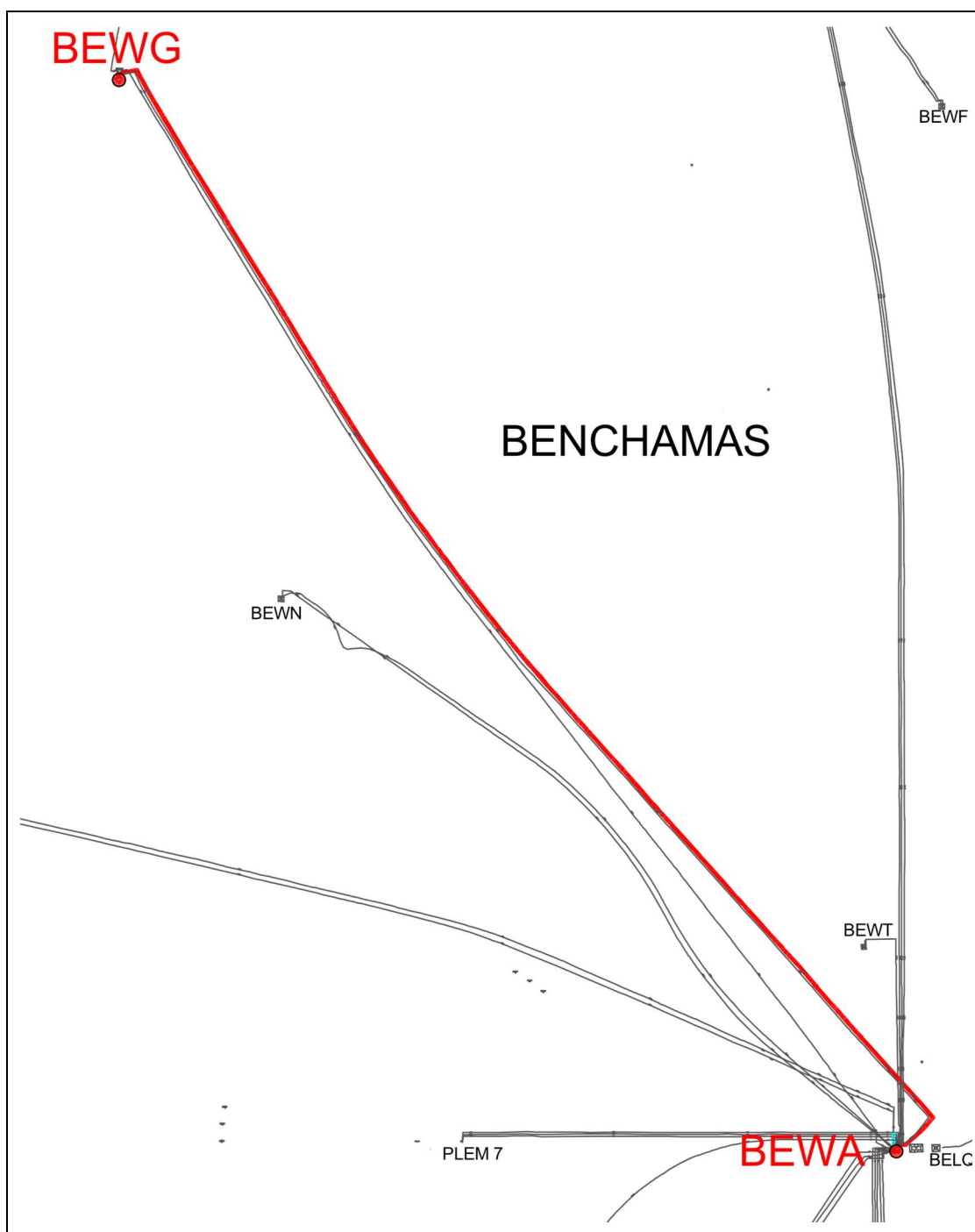


Figure 2- Location of 8in BEPLG1 pipeline

3 ANOMALIES

This section summarises the anomaly criteria and anomalies recorded during the pipeline survey of the 8in BEPLG1 pipeline.

3.1 ANOMALY CRITERIA

Anomalies are classified based on Chevron's criteria as detailed in Section 6.12: Anomaly Criteria in 2023 Offshore Pipeline External & Platform Jacket Structure Inspection Work Package.

Table 4 – Anomaly Weighting (Criticality)

4 Immediate Remedy of remove as soon as possible.
3 Significant Monitor, remedy or remove as soon as possible.
2 Insignificant Monitor, remedy or remove as convenient.
1 Good Condition For information only or to update as-built data, records or drawings.

3.2 ANOMALY COUNT

Three (3) anomalies were recorded during the pipeline survey of the 8in BEPLG1 pipeline as summarized in Table 5 – Anomaly Count below.

1. Eleven (11) instances of over 75% depleted anodes were found between KP 0.025 to KP 0.460 on the pipeline are consolidated into a single anomaly report, **8"BEPLG1/001**
2. Fourteen (14) instances of anomalous cathodic potential readings obtained on the tie-in flanges at the expansion loop tie-in spools of BEWA. The contact readings acquired were more than -1050 mV and all these findings are consolidated into single anomaly report, **8"BEPLG1/003**
3. Unsupported riser spool at BEWA, with the resultant freespan length of 23 m, anomaly report **8"BEPLG1/004**

Refer to Appendix 01 – Anomaly Reports for full details.

Table 5 – Anomaly Count

Anomaly Class	Anodes	CP	Crossing	Damage	Debris	Freespan	Supports	Unsupported Riser tube-turn / Spool	Other	Sub Total
1. Good condition										0
2. Insignificant										0
3. Significant	1	1						1		3
4. Immediate										0
Total	1	1	0	0	0	0	0	1	0	3

4 INSPECTION RESULTS

This report section contains detailed results for the pipeline survey of the 8in BEPLG1 in-field pipeline. The riser approach pool sections are detailed discrete sub-sections.

4.1 PIPELINE GVI

The pipeline survey commenced at the BEWA riser tie-in flange, with an established start datum point of KP 6.228. The survey was conducted in descending KP, with a survey end point of KP -0.003 at the BEWG riser tie-in flange.

The pipeline was observed to be in general good condition and seated firmly on the seabed. No damage or movement was observed during the survey of the pipeline.

Table 6 – Overall pipeline support status

Surveyed Pipeline Length	Freespan	Full Burial	Supported / Partial Burial
6,231 m	2,003.2 m 32.1 %	357.6 m 5.7 %	3,870.2 m 62.2 %

*Total length of cumulative freespan and burial lengths inclusive of spools.
BEWG riser tie-in flange to BEWA riser tie-in flange length.*

4.1.1 FREESPAN

A total of one hundred and eighty (180) freespans were recorded along the length of the pipeline, none of which exceeded the operational free span criteria. The longest freespan reported was 45.4 m and a maximum height above the seabed of 1.11 m was recorded.

Freespans are summarized in Table 7 – Freespan length summary. For anomalous freespans criteria, refer to '2023 Pipeline External & Platform Jacket Structure Inspection – Work Package for 2023 Campaign, Table 6-3: Pipeline Freespan Criteria - updated criteria from 2019 pipeline freespan study'. For complete freespan listings refer to Appendix 03 Freespan Listings.

Table 7 – Freespan length summary

Freespan Length	Max Height	Count
> 0 m to 15 m	1.01 m	139
> 15 m to 30 m	1.12 m	28
> 30 m to 50 m	0.83 m	13
> 50 m to 70 m	N/A	0
> 70 m (anomalous freespan length)	N/A	0
TOTAL		180

4.1.2 BURIAL

Forty-six (46) instances of full burial were identified along the length of the pipeline, with the longest length of 29.0 m. For complete burial listings refer to Appendix 04 All Event Listings.

4.1.3 DEBRIS

Seven (7) items of debris were evented;

- Six (6) of which were non-metallic debris, mainly fishing nets
- One (1) metallic debris was logged.
- None (0) of the debris were deemed anomalous

4.1.4 CATHODIC PROTECTION AND ANODE SURVEY

The contact cathodic potential readings obtained ref. Ag/AgCl indicate the pipeline is protected against external corrosion.

Anomalous contact cathodic potential readings were obtained from the BEWA riser and expansion loop spool tie-in flanges, ranging from -1069 mV to -1105 mV. The readings are consistent with the expected behaviour for the installed aluminium alloy anodes. Refer to anomaly report **8"BEPLG1/003** in Appendix 01.

Contact CP readings are tabulated in Table 8 – . For full results, refer to sub-contractor ISES's cathodic protection report in Appendix 06.

Table 8 – Summary of contact CP readings

Component (s)	KP		Contact CP Reading	
	Lower	Upper	Minimum	Maximum
8" BEPLG1 Anodes	KP -0.003	KP 6.228	-1006 mV	-1096 mV
BEWG Riser & Spool associated tie-in flanges	KP -0.003	KP 0.121	-1005 mV	-1010 mV
BEWA Riser & Spool associated tie-in flanges	KP 6.004	KP 6.228	-1069 mV	-1105 mV

Sixty-six (66) half-shell anodes were recorded along the pipeline route;

- Forty-three (43) were assessed with depletion condition less than 25%, and appeared active and secure.
- Ten (10) were assessed with depletion between 25% to 50%, and appeared active and secure.
- Eleven (11) were assessed with depletion more than 75%, which deemed anomalous during the assessment. Refer to anomaly report **8"BEPLG1/001** in Appendix 01 for details.
- Two (2) anodes were reported in burial, they were located by the remnant oxide material lying on seabed.

For full results, refer to Appendix 06 Cathodic Protection Report.

4.1.5 BEWG RISER AND EXPANSION LOOP SPOOL TIE-IN FLANGES

Four (4) tie-in flanges were found at the BEWG riser and expansion loop spools.

All four (4) of the tie-in flanges were appeared to be in general good condition, with no damage, loose fittings, misalignment or leaks were observed.

Contact CP potential readings acquired from the flanges of -1005 mV to -1010 mV.

The BEWG riser spool was observed in suspension after the swam neck and made contact with seabed at KP 0.021, resulting a freespan length of 23m and a maximum height of 1.1m. No movement observed. Refer to anomaly report **8"BEPLG1/004** for details.



Figure 3 – BEWG Riser Tie-in Flange KP -0.001
(Top View)



Figure 4 – BEWG Riser Tie-in Flange KP -0.001
(Side View)



Figure 5 – BEWG Spool Tie-in Flange KP 0.057
(Top View)



Figure 6 – BEWG Spool Tie-in Flange KP 0.057
(Side View)



*Figure 7 – BEWG Spool Tie-in Flange KP 0.094
(Top View)*



*Figure 8 – BEWG Spool Tie-in Flange KP 0.094
(Top View)*



*Figure 9 – BEWG Sealine Tie-in Flange KP 0.122
(Top View)*



*Figure 10 – BEWG Sealine Tie-in Flange KP 0.122
(Side View)*

4.1.6 BEWA RISER AND EXPANSION LOOP SPOOL TIE-IN FLANGES

Seven (7) tie-in flanges were found at the BEWA riser and expansion loop tie-in spool.

All seven (7) of the tie-in flanges were appeared to be in general good condition, with no damage, loose fittings, misalignment or leaks were observed.

Contact CP potential readings acquired from the flanges of -1069 mV to -1105 mV, which are outside the acceptable range of the cathodic potential values and flagged as anomalous. No visible coating damage, blistering or cracking was observed. Refer to anomaly report **8"BEPLG1/003** in Appendix 01 and ISES's cathodic report in Appendix 06.

The BEWA riser spool was observed in contact with seabed, right after the swam neck at the riser tie-in flange. No movement observed.



*Figure 11 – BEWA Riser Tie-in Flange KP 6.227
 (Top View)*



*Figure 12 – BEWA Riser Tie-in Flange KP 6.227
 (Side View)*



*Figure 13 – BEWA Spool Tie-in Flange KP 6.186
 (Top View)*



*Figure 14 – BEWA Spool Tie-in Flange KP 6.186
 (Side View)*



*Figure 15 – BEWA Spool Tie-in Flange KP 6.147
 (Top View)*



*Figure 16 – BEWA Spool Tie-in Flange KP 6.147
 (Side View)*



Figure 17 – BEWA Spool Tie-in Flange KP 6.110
 (Top View)



Figure 18 – BEWA Spool Tie-in Flange KP 6.110
 (Side View)



Figure 19 – BEWA Spool Tie-in Flange KP 6.073
 (Top View)



Figure 20 – BEWA Spool Tie-in Flange KP 6.073
 (Side View)



Figure 21 – BEWA Spool Tie-in Flange KP 6.036
 (Top View)



Figure 22 – BEWA Spool Tie-in Flange KP 6.036
 (Side View)



Figure 23 – BEWA Sealine Tie-in Flange KP 6.004
(Top View)

Figure 24 – BEWA Spool Tie-in Flange KP 6.004
(Side View)

4.1.7 CROSSINGS

10” BEPLT Pipeline Crossing KP 6.213

The 10” BEPLT was recorded crossing over the 8” BEPLG2 at KP 6.213, with 2.2 m clearance estimated between the bottom of pipeline BEPLT and of the top of BEPLG1 pipeline.

No movement was observed on either pipeline at the crossing point.



Figure 25 – Depth of 8” BEPLG1 pipeline at crossing point

Figure 26 – Depth of 10” BEPLT pipeline at crossing point

12" BEPLB3 Pipeline Crossing KP 5.813

The 12" BEPLB3 was recorded crossing under the 8" BEPLG2 at KP 5.813, with Linkloc mattress and sand bags covering 12" BEPLB3 pipeline at the crossing point. The gap separation between top of BEPLB3 pipeline and of the bottom of BEPLG1 pipeline was unable to be assessed due to the presence of the Linkloc mattress and sand bags.



Figure 27 – 12" BEPLB2 pipeline Crossing under 8" BEPLG1 at KP 5.813 (View from top)

Figure 28 – 12" BEPLB2 pipeline Crossing under 8" BEPLG1 at KP 5.813 (View from north)

12" BEPLB2 Pipeline Crossing KP 5.803

The 12" BEPLB2 was recorded crossing under the 8" BEPLG1 at KP 5.803, with Linkloc mattress and sand bags covering 12" BEPLB2 pipeline at the crossing point. The gap separation between top of BEPLB2 pipeline and of the bottom of BEPLG1 pipeline was unable to be assessed due to the presence of the Linkloc mattress and sand bags.



Figure 29 – 12" BEPLB2 pipeline Crossing under 8" BEPLG1 at KP 5.803 (View from top)

Figure 30 – 12" BEPLB2 pipeline Crossing under 8" BEPLG1 at KP 5.803 (View from north)

12" BEPLB1 Pipeline Crossing KP 5.792

The 12" BEPLB1 was recorded crossing under the 8" BEPLG2 at KP 5.792, with Linkloc mattress and sand bags covering 12" BEPLB1 pipeline at the crossing point. The gap separation between top of BEPLB1 pipeline and of the bottom of BEPLG1 pipeline was unable to be assessed due to the presence of the Linkloc mattress and sand bags.



Figure 31 – 12" BEPLB1 pipeline Crossing under 8" BEPLG1 at KP 5.792 (View from south east)

Figure 32 – 12" BEPLB1 pipeline Crossing under 8" BEPLG1 at KP 5.792 (View from north)

10" BEPLT Pipeline Crossing KP 5.775

The 10" BEPLT was recorded crossing over the 8" BEPLG1 at KP 5.775, with 1.7 m clearance estimated between the bottom of BEPLT pipeline and of the top of BEPLG1 pipeline.

No movement was observed on either pipeline at the crossing point.



Figure 33 – 10" BEPLT pipeline Crossing Over 8" BEPLG1 at KP 5.775 (view from south)

Figure 34 – 10" BEPLT pipeline Crossing Over 8" BEPLG1 at KP 5.775 (view from south east)

6" BEWLG Crossing KP 0.061

The 6" BEWLG was recorded crossing over the 8" BEPLG1 at KP 0.063, with 0.4 m clearance estimated between the bottom of BEWLG pipeline and of the top of BEPLG1 pipeline.

No movement was observed on either pipeline at the crossing point.



*Figure 35 – 6" BEWLG Crossing Over 8" BEPLG1 at KP 0.063
 (View from south)*

*Figure 36 – 6" BEWLG Crossing Over 8" BEPLG1 at KP 0.063
 (View from north)*

4.1.8 PIPELINE SUPPORT

Four (4) pipeline supports were encountered along the surveyed length of the pipeline, of which one (1) was not providing adequate support; none of them which were classified as anomalous based on the resultant freespan length. Refer to Appendix 03 for details.



QHSE (IMS) Management System
Beacon Offshore Ltd.
Thailand

Chevron Thailand Exploration & Production Ltd

2023 Offshore Pipeline External Inspection

8in BEPLG2 Pipeline Survey

23009_CTEP_BOL_RPT_004

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Briding Document (Chevron and Shelf Drilling)

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1.0 Introduction

1.1 Purpose

The purpose of the HES Bridging Document is to document agreements and clarify expectations between Chevron and Shelf Drilling regarding the primacy and implementation of the Chevron Operational Excellence Management System (OEMS) requirements with Shelf Drilling's Safety Management System (SMS) for the contracted scope of work (Table 1).

The HES Bridging Document is also used to demonstrate that interfaces between Chevron's OEMS and Shelf Drilling's SMS have been evaluated and reviewed by all affected parties. It is not intended to replace the HES related Attachment in the contract; rather, it is designed to supplement it.

The implementation of agreements determined within this document allows the management of workforce safety and health, process safety, reliability, and integrity, environmental efficiencies, security and stakeholder needs to ultimately deliver OE performance.

In the event of a conflict between the processes and procedures of Chevron and Shelf Drilling, the default position shall be that procedures which are more stringent take precedence.

These expectations are met by;

- Conducting a gap assessment between applicable Chevron's OEMS requirements and Shelf Drilling's SMS.
- Developing a mitigation plan to address identified gaps.
- Ensuring roles, responsibilities and competencies of key personnel are clearly defined and communicated.
- Defining assurance, verification and validation (V&V) activities to assure safeguards are in place and functioning.
- Ensuring local legislative and industry requirements are met or exceeded.

1.2 Scope

The scope of this document covers the contracted services between Chevron and Shelf Drilling as identified in Table 1.

Table 1: Contracted Services

Contracted Service Scope	Contract Number
Drilling Unit, Ancillary Equipment and Personnel	Rig "Chao Phraya" – 1235832 Rig "Krathong" – 1235834
Rig Rental Service Supporting Asset Retirement Activities	Rig "Scepter" - 1735026 Rig "Enterprise" – 1779186