Total Exploration and Production Liban Sal

Block 4 (Lebanon) offshore exploration drilling

Commitments Register

80754

February 2020

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RSK GENERAL NOTES

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Title: Block 4 (Lebanon) offshore exploration drilling commitments register

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Total Exploration and Production Liban Sal

Block 4 (Lebanon) offshore exploration drilling EIA

Commitments Register

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UID	ESIA Section References (Aspect Codes)	Project Phases / Activity / Aspect	Receptors	Mitigation	Responsible Party (for implementation)	Project Documentation (environmental and social management plan, standards, ESMP matrix, etc)	Operation of a grievance procedure/mechanism	Incident reporting and investigation	Audits by the contractor	Performance monitoring
BIO-2	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Use of soft start procedures for VSP airguns.	Drilling and Acquisition Contractor	Environmental Standard				Y
BIO-3	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Use of trained MMOs during VSP operations for monitoring of mitigation exclusion zone (radius 500 m) and delay in start-up of airguns if cetaceans (or turtles) observed within zone.	Drilling and Acquisition Contractor	Environmental Standard				Y
BIO-4	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Use of PAM devices for cetacean detection prior to VSP operations during hours of darkness / reduced visibility.	Drilling and Acquisition Contractor	Environmental Standard				Y
BIO-5	MAE01; MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Water quality, air quality, UW noise; Archaeological and cultural resources	If a semi-submersible is selected impacts will be minimised by ROV survey of the seabed to select optimum anchor positions that avoid sensitive seabed features.	TEP Liban;	Drill Site Assessment				Y
CH-1	MAS02	MODU operations	Archaeological and cultural resources	Avoid existing known cultural heritage and archaeological sites and comply with their protection regimes according to regulatory requirements (Antiquities System Decision 166/1933 and Cultural properties Law 37/2008	TEP Liban;	Social Management Plan				Y
CH-2	MAS02	MODU operations	Fisheries; Archaeological and cultural resources; Benthos; Archaeological and cultural resources	Predrill wellsite assessments will be completed to provide high-resolution bathymetric and 3D/2D seismic data to identify seabed geohazards, habitat and, detect archaeological sites previously not detected; to inform avoidance measures and a wellsite free of geohazards.	TEP Liban; Drilling Contractor;	Drill Site Assessment; Company Rules				Y
CM-1	MAE02; MAE03; MAS02	Drilling of riserless top hole sections - discharge of cuttings and WBDFs; Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Nekton (fish); Water quality; Plankton; Cetaceans, turtles and seals; Fisheries	Barite will meet heavy metals concentration standards i.e. mercury <1 mg/kg and cadmium <3 mg/kg dry weight (total).	TEP Liban; Drilling Fluids Contractor	Scope of Work; Chemical Management Procedure				Y
CM-2	MAE02; MAE03; MAE05; MAS02; AE2; AE4; AE9; AE12.	Drilling of riserless top hole sections - discharge of cuttings and WBDFs; Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; Cementing discharges during drilling; MODU operations; Loss of chemical containment onboard MODU; Riser rupture, release of drilling fluid to sea; Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea; Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea.	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries; Seabed quality / composition; Benthos; Fisheries	Majority of chemicals proposed are HQ Band Gold; OCNS Group E; or PLONOR and; have characteristics of: lowest toxicity, lowest bioaccumulation potential and highest biodegradation. The only exception is BORE-HIB (OCNS Group D) which is used in small quantities.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Scope of Work; Contracts; Chemicals Management Plan; Company Rules				Y
CM-3	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	All chemicals will be packaged according to manufacturer's instructions.	Drilling Contractor; Supply Vessel Contractor;	Chemicals Management Plan; Company Rules				Y
CM-4	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	Labelling will comply with regulatory requirements in terms of format and composition.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan				Y
CM-5	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	Chemical products that are required at the MODU (and haven't been pre-mixed onshore) will be packed into mini containers, or open cargo carrying units (CCUs), that are certified and appropriately colour coded for safe transfer from jetty to supply vessel and supply vessel to MODU	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan				Y

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CM-6	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	MSDS will be present onboard the supply boat during transfer and on the MODU.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan				Y
CM-7	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	All personnel involved in the transfer and handling or all personnel who might be exposed to hazardous chemicals will be trained on the potential hazards involved.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan				Y
CM-8	MAE21; OAE05; AE2	Chemicals transfer and storage; Logistics base operation – chemicals management; Loss of chemical containment onboard MODU	None providing chemicals managed properly	Chemicals will be stored separately according to their potential hazard and compatibility.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor;	Chemicals Management Plan				Y
CM-9	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	A full register of all chemicals inventory and consumption records shall be maintained on each site.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Chemicals Management Plan				Y
CM-10	AE2	Loss of chemical containment onboard MODU	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Chemical storage onboard the MODU will be restricted.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Handling and Storage of Hazardous Materials; Rig Environmental Aspects and Impacts Register				Y
CM-11	AE3	Radioactive source lost in hole	Sediment quality / composition	Only sealed radioactive sources used.	Drilling Contractor	Contractor's Radiation Standard; Company Rules; Scope of Work				Y
DC-1	MAE01; MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Water quality, air quality, UW noise; Archaeological and cultural resources	A plugging and abandonment programme will be submitted to respective authorities as part of the Advanced Drilling Plan (ADP) before drilling begins.	TEP Liban;	Advanced Drilling Plan				Y
HSS-1	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Social Conditions (Road safety and congestion)	Speed restrictions will always be adhered to, these will be defined in a driving and transportation policy. Speed limits around Logistics Base will be 20 km/hour.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contract				Y
HSS-2	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Infrastructure (Road network)	A vehicle movement plan will be developed and implemented at the logistics base	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contract				Y
HSS-3	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Infrastructure (Road network)	Logistics contractor shall comply with driving and transportation policy requirements under the contract including speed limits and slow speeds when crossing villages etc.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contract				Y
HSS-4	AE1	Dropped Object from MODU (lifting)	Sediment quality/ composition; Benthos	Lifting equipment and cranes will be certified and be subject to a preventative maintenance programme.	TEP Liban; Drilling Contractor	Bridging Document; Scope of Work				Y
HSS-5	AE1	Dropped Object from MODU (lifting)	Sediment quality/ composition; Benthos	Crane operators will be certified.	TEP Liban; Drilling Contractor	Bridging Document; Scope of Work				Y
HSS-6	AE1	Dropped Object from MODU (lifting)	Sediment quality/ composition; Benthos	Lifting will be carried out in accordance with HSE bridging document agreed between Total E&P Liban and the drilling contractor.	TEP Liban; Drilling Contractor	Bridging Document; Scope of Work				Y
HSS-7	AE5	Shallow gas blowout, release of gas into water column during riserless operations	Air quality; Water quality; Sediment quality / composition; Benthos; Plankton; Fish; Fisheries; Shipping	First two sections of well will be drilled riserless. If shallow gas encountered, it will be released at seabed with no impact on MODU.	TEP Liban; Drilling Contractor	Drill Site Assessment				
HSS-8	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	Support vessel will be at well site providing security and safety (fire fighting, etc) and will alert any vessels on a collision course.	TEP Liban; Supply Vessel Contractor	Scope of Work				Y
HSS-9	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	There will be 24/7 radio communications and watches.	TEP Liban; Supply Vessel Contractor	Scope of Work				Y
HSS-10	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Selection procedure in place for certified helicopter contractor, and flying crew will be certified.	TEP Liban; Helicopter Contractor;	Company Rules; Scope of Work				Y

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HSS-11	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Helicopters will only operate within their weather limits and during daylight hours (except in case of MEDEVAC which is not restricted to daylight flights).	TEP Liban; Helicopter Contractor;	Company Rules; Scope of Work				Y
HSS-12	AE10	Loss of rig stability (rig capsize) with release of fuel inventory	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Marine crew will be certified.	Drilling Contractor	HSE Training Plan				Y
HSS-13	OAS01	Logistics base operations	Social Conditions (Security)	The logistics base operator will cooperate with General Security of the Port and regularly assess security risks through Security Plan as required under their contractual conditions with TEP Liban.	TEP Liban; Logistics Base Contractor;	Logistics Base Contract				
HSS-14	AE10	Loss of rig stability (rig capsize) with release of fuel inventory	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	MODU will only operate within weather limit.	TEP Liban; Drilling Contractor;	Riser Analysis; Rig Specifications; Bridging Document				Y
HSS-15	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Shipping	Ensure sea users are aware of drilling programme activities and presence of safety zone during mobilisation and demobilisation through a Notice to Mariners (The schedule of activities will be communicated to the Ministry of Public Works and Transport and the Lebanese Navy via the Lebanese Armed Forces (LAF) that issues information and instructions to mariners pertaining to shipping hazards and safety zones).	TEP Liban;	Social Management Plan				Y
HSS-16	OAS01	Logistics base operation	Tourism	Logistics base operator will be selected based on strict HSE criteria compliant with international regulations for oil and gas activities and applicable TOTAL E&P rules.	TEP Liban;	Company Rules; Scope of Work				
MR-1	MAE01; MAS01; MAS02; AE1	MODU mobilisation, installation, plug and abandonment and demobilisation; Drilling of riserless top hole sections - discharge of cuttings and WBDFs; MODU operations; Dropped Object from MODU (lifting).	Seabed quality / composition; Benthos; Sensitive seabed habitats; Water quality; air quality, UW noise; Archaeological and cultural resources	ROV survey will be conducted after drilling operations are complete to provide status of the seafloor condition around the wellsite.	TEP Liban	Advanced Drilling Plan			Y	Y
MR-2	MAE04; MAE16; MAE17	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions; Well test of possible future appraisal well.	Air quality; Climate change	Air emissions data (including GHG information) emissions data will be submitted to the MoE.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Pollution Prevention and Environmental Monitoring Plan			Y	Y
MR-3	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Reporting of marine mammal monitoring results and findings of real-time mitigation to ACCOBAMS.	TEP Liban; Drilling Contractor;	Pollution Prevention and Environmental Monitoring Plan			Y	Y
MR-4	MAE22	Logging using radioactive sealed sources (also applicable to onshore storage and transport of radioactive sealed sources)	None under normal operations	Radioactive sources will be managed in line with international regulations.	Drilling and Acquisition Contractor	Contractor's Radiation Standard; Company Rules; Scope of Work			Y	Y
MR-5	OAE01	Logistics base operation - emissions to air	Air quality; Climate change	Logistics base operator will monitor consumption of fuel in order to calculate air emission quantities.	TEP Liban; Logistics Base Contractor	Logistics Base Contract			Y	Y

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MR-6	OAE04	Logistics base operation – waste management	None providing waste managed properly	The logistics base contractor will ensure vehicles transporting hazardous wastes from site have appropriate certification / licence to transport wastes of the particular carried waste codes (R).	Logistics Base Contractor;	Waste Management Plan; IMDG			Y	Y
MR-7	OAE04	Logistics base operation – waste management	None providing waste managed properly	Waste Transfer Notes signed by all parties will be sent to TEP Liban by logistics base contractor and copies retained on site.	Logistics Base Contractor;	Waste Management ; Logistics Base Contract			Y	Y
MR-8	OAE05	Logistics base operation – chemicals management	None providing chemicals managed properly	A certified fire fighting and fire alarm system will be installed at the Logistics base chemical storage areas, with remote alarm control installed in the offices.	Logistics Base Contractor;	Logistics Base Contract; HSE Plan			Y	Y
MR-9	OAE05	Logistics base operation – chemicals management	None providing chemicals managed properly	Logistics base contractor will keep and maintain a register of dangerous and hazardous goods stored on location along with relevant copies of MSDS (Material Safety Data Sheets) and dangerous goods (DG) declarations.	Logistics Base Contractor;	Chemical Management Plan; Logistics Base Contract			Y	Y
MR-10	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Riser fatigue analysis will be carried out and riser joints fully inspected and changed if necessary.	Drilling Contractor	Riser Analysis			Y	Y
MR-11	AE4; AE10	Riser rupture, release of drilling fluid to sea; Loss of rig stability (rig capsize) with release of fuel inventory	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Daily metocean and weather forecast will be assessed during operations.	Drilling Contractor	Riser Analysis			Y	Y
MR-12	AE4; AE6	Riser rupture, release of drilling fluid to sea; Blowout – release of condensate and gas	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries; Air quality; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Rig acceptance audit will be carried out.	TEP Liban; Drilling Contractor;	Rig contract			Y	Y
MR-13	AE5	Shallow gas blowout, release of gas into water column during riserless operations	Air quality; Water quality; Sediment quality / composition; Benthos; Plankton; Fish; Fisheries; Shipping	ROV monitoring will be carried out during riserless operations.	TEP Liban; ROV Contractor;	Drilling Program			Y	Y
MR-14	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Pore pressure will be closely monitored (flow checks).	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules			Y	Y
MR-15	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Integrity of cementing operations will be checked.	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules			Y	Y

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MR-16	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	BOP and well control equipment testing will be conducted.	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules			Y	Y
MR-17	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	All spills in Lebanese waters will be reported to the Joint Maritime Operations Chamber (JMOC).	TEP Liban	Oil Spill Contingency Plan		Y	Y	Y
MR-18	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Transboundary impacts will be communicated to Lebanese authorities so that they can notify and consult with potentially affected neighbouring countries.	TEP Liban	Oil Spill Contingency Plan		Y	Y	Y
MR-19	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	MODU position and 500 m exclusion zone will be notified to the authorities.	TEP Liban; Supply Vessel Contractor;	Stakeholder Engagement Plan			Y	Y
MR-21	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Plankton; Nekton (fish); Tourism - logistics base located close to yachting club; Cetaceans turtles and seals; Sediment quality / composition; Benthos; Fisheries	Transfer hoses will have valve fittings that allow spill free connection and disconnection.	Logistics Base Contractor;	MGO Contract			Y	Y
MR-22	AE9; AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea; Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Water quality; Tourism - logistics base located close to yachting club; Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Certified and pressure tested transfer hoses will be used that are visually inspected before use.	Logistics Base Contractor;	MGO Contract			Y	Y
MR-23	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Tourism - logistics base located close to yachting club	Periodic inspections of oil spill kits and restocking of kits will be carried out by the logistics base contractor.	Logistics Base Contractor;	Industry best practice			Y	Y
PE-1	MAE17	Well test of possible future appraisal well	Air quality; Climate change	A permit will be obtained from the Ministry of Energy and Water for flaring during well test (R) and TEP Liban will inform the MoE for environmental clearance.	TEP Liban	Advanced Drilling Plan				Y
PE-2	MAE22	Logging using radioactive sealed sources (also applicable to onshore storage and transport of radioactive sealed sources)	None under normal operations	A permit will be obtained by the Contractor for the import, storage, use and export of radioactive materials from the Lebanese Atomic Energy Commission, a department of the Ministry of Public Health.	Drilling and Acquisition Contractor	Scope of Work				Y

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PL-1	OAE04	Logistics base operation – waste management	None providing waste managed properly	Hazardous waste storage area will be designed as follows: Storage on an impervious surface connected to a drainage and collection system and/or in a bunded area; Storage area equipped with suitable fire-fighting equipment and spillage recovery equipment such as shovels and absorbent materials; Restricted/controlled area and access to the storage site.	Logistics Base Contractor;	Waste Management Plan; Logistics Base Contract				Y
PL-2	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Upfront analysis of metocean data will be carried out in order to adapt riser equipment.	Drilling Contractor	Riser Analysis				Y
PL-3	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Drilling fluid weight and properties will be controlled.	TEP Liban; Drilling Fluids Contractor	Drilling Program; Company Rules				Y
PL-4	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Well shut in and well control procedure will be in place.	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules; DrillSafe Audit Report				Y
PL-5	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Helideck will meet CAP 437 specs for lights, illumination, marking, net, dimension, integrity, certification.	TEP Liban; Helicopter Contractor;	Helicopter Contract; Company Rules				Y
PP-1	MAE02; MAS02	Drilling of riserless top hole sections - discharge of cuttings and WBDFs; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Nekton (fish)	Seawater used for drilling the 36" well section.	TEP Liban; Drilling Fluids Supervisor	Advanced Drilling Plan; Drilling Program				Y
PP-2	MAE05	Cementing discharges during drilling	Seabed quality / composition; Benthos	Discharge of cement to seabed only from 20" casing.	TEP Liban; Drilling Fluids Supervisor	Drilling Program				Y
PP-3	MAE05	Cementing discharges during drilling	Seabed quality / composition; Benthos	Careful monitoring of cement discharges using an ROV to ensure discharges are kept to a minimum.	TEP Liban; Drilling Fluids Supervisor	Drilling Program				Y
PP-4	MAE06; MAS02	Pipe dope discharges during drilling; MODU operations	Water quality; Plankton; Nekton (fish)	A pipe dope product that is heavy metal free will be selected for the drilling operations.	TEP Liban; TRS Contractor	TRS Contract & Scope of Work				Y
PP-5	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Drainage water from process areas will go to closed drains and only water from non-process areas to open drains.	Drilling Contractor; Supply Vessel Contractor;	Contractor's Hazard Register				Y
PP-6	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Deck drainage (clean drains) will only be discharged to sea as long as no visible sheen is observable (sea surface monitored during discharge).	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register				Y
PP-7	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Bilge water will be treated and discharged in accordance with MARPOL 73/78 Annex I, with discharge automatically stopped if effluent exceeds 15 ppm of oil (special area requirements for Mediterranean Sea, ships of >400 gross tonnage).	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register				Y
PP-8	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Slop water will be treated onboard the MODU in a slop treatment unit. The separated drilling fluids and slops will be sent to shore for treatment / disposal and the separated water discharged to sea providing the oil in water content does not exceed 15 ppm.	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register				Y

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PP-9	MAE12; MAS02	Uplift and discharge of cooling water from MODU; MODU operations	Water quality; Plankton; Nekton (fish)	Discharge of cooling water will comply with allowable limits in Decision No. 8/1/2001 (maximum temperature of wastewater discharge to sea 35 °C) and TOTAL / World Bank requirement that temperature increase shall not exceed a maximum of 3 °C, 100 m away from the discharge point	Drilling Contractor	Rig Environmental Aspects and Impacts Register				Y
PP-10	MAE13; MAS02	Discharge of ballast from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	MODU will carry out internal ballasting for a large proportion of its operations with no discharge of ballast water to sea.	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register				Y
PP-11	MAE13; MAS02	Discharge of ballast from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish); Fisheries	Any ballast water exchange will be carried out in compliance with the 'International Convention for the Control and Management of Ships' Ballast Water and Sediments 2014' (R).	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register				Y
PP-12	MAE13; MAS02	Discharge of ballast from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Ballast water on drillship and support/supply vessels will be segregated and will not come into contact with oil and chemicals.	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register				Y
PP-13	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Fisheries	All operational discharges from MODU will be in accordance with the requirements of MARPOL 73/78 (R).	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register; Pollution Prevention and Environmental Monitoring Plan				Y
PP-14	MAE15	Operation of incinerator onboard MODU	Air quality; Climate change	Any onboard incineration will be carried out in compliance with the requirements of MARPOL 73/78 Annex XI Chapter 3, regulation 16 – Shipboard Incineration (R). There will be no incinerator onboard the MODU for well B4-1. If future exploration / appraisal wells are drilled using a MODU with onboard incinerator TEP Liban will inform the MoE for environmental clearance.	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan				Y
PP-15	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Atmospheric emissions on the MODU and support / supply vessels will be controlled in accordance with MARPOL 73/78 Annex VI (R).	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan; Environmental Management				Y
PP-16	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Sulphur content of marine fuel oil used onboard vessels will not exceed 0.5% by mass (unless vessels have scrubbers fitted) in line with MARPOL 2020 requirements (R).	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-17	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	All machinery, equipment and installations will comply with generally accepted standards in the international petroleum industry, will be of proper construction, and kept in good working order.	Drilling Contractor; Supply Vessel Contractor;	Scope of Work; Environmental Management				Y
PP-18	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Fuel efficiency measures shall be taken into account in the selection of MODU, support / supply vessels and helicopters.	Drilling Contractor; Supply Vessel Contractor;	Company Rules; Call for Tenders				Y
PP-19	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Supply vessels transfers to the MODU will be optimised and the support vessel will drift around the MODU to minimise engine use.	Drilling Contractor; Supply Vessel Contractor;	PSV Contract				Y
PP-20	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Ozone depleting substances and all products listed in the Montreal Protocol - CFCs, HCFCs and Halons, will be prohibited except for essential use, under derogation (R).	TEP Liban; Drilling Contractor; Supply Vessel Contractor	Pollution Prevention and Environmental Monitoring Plan; Contractors Scopes of Work				Y

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PP-22	MAE17	Well test of possible future appraisal well	Air quality; Climate change	If flaring is the sole option available for the disposal of well test fluids, only the minimum volume of hydrocarbons required for the test will be flowed and the well test duration will be reduced to the extent practical.	TEP Liban; Drilling Contractor;	Drilling Program of Appraisal Well; Company Rules; Scope of Work				Y
PP-23	MAE17	Well test of possible future appraisal well	Air quality; Climate change	An efficient well test flare burner head equipped with an appropriate combustion enhancement system (e.g. “evergreen burners” type) will be selected to minimise incomplete combustion, black smoke, and hydrocarbon fallout to the sea.	TEP Liban; Drilling Contractor;	Drilling Program of Appraisal Well; Company Rules; Scope of Work				Y
PP-24	MAE17	Well test of possible future appraisal well	Air quality; Climate change	Whenever possible, the liquid phase of the separator shall be re-injected into the process lines or stored in appropriate tanks, and only the gaseous phase shall be burned.	TEP Liban; Drilling Contractor;	Drilling Program of Appraisal Well; Company Rules; Scope of Work				Y
PP-25	MAE20; MAS02	Light spill from MODU; MODU operations	Seabirds; Fish; Cetaceans turtles and seals	Light spill will be reduced by shielding lights and pointing lights directly at the work area (directional alignment).	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-26	MAE20; MAS02	Light spill from MODU; MODU operations	Seabirds; Fish; Cetaceans turtles and seals	Area and work lighting will be limited to the amount and intensity necessary to maintain worker safety.	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-27	MAE21; AE2	Chemicals transfer and storage; Loss of chemical containment onboard MODU.	None providing chemicals managed properly	All chemicals will be held in secure and leak-proof containers suitably labeled to indicate the nature of the substance and risk involved.	Drilling Contractor; Supply Vessel Contractor	Contractor's Chemical Management Plan				Y
PP-31	OAE01	Logistics base operation - emissions to air; Logistics base operation	Air quality; Climate change	Generators at the logistics base will be operated according to manufacturer’s instructions to operate in most energy efficient manner.	Logistics Base Contractor;	Logistics Base Contract				Y
PP-32	OAE01; OAS01; OAS02	Logistics base operation; Transport of materials to / from the logistics base (vessel and vehicle activity)	Air quality; Climate change; Public Health (Air Quality)	Low sulphur fuel to be used at the logistics base where practicable.	TEP Liban; Logistics Base Contractor;	Industry best practice				Y
PP-33	OAE02	Logistics base operation - discharge of drainage water	Water quality	Site drainage from the logistics base will only be permitted from non-contaminated areas.	Logistics Base Contractor;	Industry best practice				Y
PP-34	OAE02	Logistics base operation - discharge of drainage water	Water quality	For areas at the logistics base where there is the potential for spillages, and contaminated runoff, containment will be in place.	Logistics Base Contractor;	Logistics Base Contract				Y
PP-35	OAE03	Logistics base operation - noise generation	Terrestrial ecology	Equipment at the logistics base will be well maintained and individual mitigation measures applied if noise levels are higher than maximum allowable noise levels (where feasible).	Logistics Base Contractor;	Logistics Base Contract				Y
PP-36	OAE04	Logistics base operation – waste management	None providing waste managed properly	Waste collection and temporary storage at logistics base will be designed to minimise the risk of escape to the environment (for example by particulates, infiltration, runoff or odors).	Logistics Base Contractor;	Logistics Base Contract				Y
PP-37	OAE04	Logistics base operation – waste management	None providing waste managed properly	Wastes will be stored in areas of the logistics base that minimise the risk of accidental loss of confinement or leaching (bunded areas). All effluents from waste storage areas will be collected and disposed of appropriately.	Logistics Base Contractor;	Logistics Base Contract				Y
PP-38	OAE05	Logistics base operation – chemicals management	None providing chemicals managed properly	The chemical storage areas at the logsitics base will be designed to avoid leak or spillage to the environment. They will have adequate ventilation and shall be protected from rainfall and direct sunlight.	Logistics Base Contractor;	Chemical Management Plan; Logistics Base Contract				Y
PP-39	OAS01; OAS02	Logistics base operation; Transport of materials to / from the logistics base (vessel and vehicle activity)	Public Health (Air Quality)	Compliance with Lebanese maximum emission limits (Decision 8/1/2001) at the logistics base.	TEP Liban; Logistics Base Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-40	OAS01; OAE01	Logistics base operation - emissions to air	Public Health; Air Quality	Any transfer of dry bulk from the drilling fluids mixing plant dry bulk silos will be carried out with the use of a dust collector unit to minimise dust migration to the surrounding environment	TEP Liban; Logistics Base Contractor;	LMP and Cementing Contractors				Y
PP-41	OAS01	Logistics base operation	Public Health (Air borne noise)	At present the layout of the logistics base is not finalised. During the final design of the layout equipment which has the highest source noise levels will be located as far from the closest residential properties as possible.	TEP Liban; Logistics Base Contractor;	Logistics Base Contract				Y
PP-42	OAS01	Logistics base operation	Public Health (Air borne noise)	Noise monitoring will be carried out at the logistics base to determine if noise mitigation measures shall be applied (where feasible).	TEP Liban; Logistics Base Contractor;	Logistics Base Contract				Y
PP-43	OAS01; OAS02	Logistics base operation; Transport of materials to / from the logistics base.	Public Health (Air borne noise)	Airborne noise levels from the logistics base will comply with Lebanese maximum allowable noise levels (Decision 52/1/96) at the Logistics base fenceline.	TEP Liban; Logistics Base Contractor;	Logistics Base Contract				Y
PP-44	AE2	Loss of chemical containment onboard MODU	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Suitable and certified CCUs (Cargo Carrying Unit) will be used for chemicals transfer; they will be checked visually for integrity at logistics base before transfer offshore.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Chemical Management Plan				Y

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PP-45	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	BOP auto shear function will be in place in order to reduce volume of drilling fluids released from the well during accidental event.	TEP Liban; Drilling Contractor	Riser Analysis; Drilling Program; Company Rules				Y
PP-46	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Riser emergency disconnect sequence will be tested.	TEP Liban; Drilling Contractor	Riser Analysis; Drilling Program; Company Rules				Y
PP-47	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Any dispersant usage will be approved in advance by the MoE.	TEP Liban; Drilling Contractor	Oil Spill Contingency Plan				Y
PP-48	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Helicopter transportation will be restricted to daylight hours except for possible Medevac	TEP Liban; Helicopter Contractor;	Helicopter Contract				Y
PP-49	AE9	Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Marine diesel transfer will start in daylight hours only.	Drilling Contractor; Supply Vessel Contractor;	MGO Contract				Y
PP-50	AE9	Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Transfer hoses will be self floating or equipped with floating device to limit the risk of sinking and potential rupture with vessel's propeller.	Drilling Contractor; Supply Vessel Contractor;	MGO Contract				Y
PP-51	AE9; AE12	Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Water quality; Plankton; Nekton (fish); Tourism - logistics base located close to yachting club; Cetaceans turtles and seals; Sediment quality / composition; Benthos; Fisheries	Vessels will have a Shipboard Oil Pollution Emergency Plan (SOPEP) in line with MARPOL requirements.	Drilling Contractor; Supply Vessel Contractor	SOPEP (Shipboard Oil Pollution Emergency Plan); Scope of Work				Y
PP-52	OAE01; OAS02; AE8; AE10	Logistics base operation - emissions to air; Transport of materials to / from the logistics base (vessel and vehicle activity); Helicopter crash on MODU deck – release of aviation fuel to sea; Loss of rig stability (rig capsize) with release of fuel inventory	Air quality; Climate change; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Planned, preventive maintenance as per manufacturer's recommendation will be mandatory for all equipment.	TEP Liban; Drilling Contractor; Logistics Base Contractor; Helicopter Contractor;	Rig Maintenance Manual; Scope of Work				Y
PP-53	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Tourism - logistics base located close to yachting club	Oil spill kits and chemical spill kits will be available on the logistics base and clearly marked.	Logistics Base Contractor	Logistics Base Contract				Y
PP-54	AE2	Loss of chemical containment onboard MODU	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Spill kits will be available onboard MODU and supply vessels; personnel will be trained in use of spill kits.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Chemical Management Plan				Y

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PP-55	AE4; AE5; AE6; AE7; AE8' AE10; AE11	Riser rupture, release of drilling fluid to sea; Shallow gas blowout, release of gas into water column during riserless operations; Shallow gas blowout, release of gas into water column during riserless operations; Blowout – release of condensate and gas; Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser; Helicopter crash on MODU deck – release of aviation fuel to sea; Loss of rig stability (rig capsize) with release of fuel inventory; Earthquake resulting in loss of well integrity and release of hydrocarbons to sea.	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries; Air quality; Shipping; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources; Sensitive marine habitats (offshore); Coastal habitats	An Oil Spill Contingency Plan (OSCP), Blowout Contingency Plan (BOCP), and Emergency Response Plan (ERP) will be developed and implemented for project. The OSCP will align with the 'National Oil Spill Contingency Plan (NOSCP) in Lebanese Waters' (2017) and will be communicated to the LPA. In the event that a subsequent exploration / appraisal well is drilled in the Block 4 priority area, in a location closer to shore than well B4-1, TEP Liban will carry out further spill modelling and submit the results in a Notification of Change Report to the authorities.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Helicopter Contractor	OSCP, BOCP, ERP as a part of Company Management System				Y
PP-57	MAE08	Discharge of sanitary waste from MODU and support / supply vessels	Nekton (fish)	Both the MODU and support / supply vessels will have an International Sewage Pollution Prevention Certificate in line with MARPOL 73/78 Annex IV.	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Monitoring Plan				Y
PP-58	MAE11	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels.	Water quality; Plankton; Nekton (fish)	The MODU and support/supply vessels (more than 400 gross tonnage) will have an International Oil Pollution Prevention Certificate, will maintain an Oil Record Book, and will have an approved Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with MARPOL 73/78 Annex I (R).	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-59	MAE13	Discharge of ballast from MODU and support / supply vessels	Water quality; Plankton; Nekton (fish)	The MODU and support / supply vessels will have an onboard Ballast Water Management Plan, keep a record of all ballast water exchange operations in a Ballast Water Record Book, and have an International Ballast Water Management Certificate.	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-61	MAE16	MODU and support / supply vessel / helicopter transfer / plant operation resulting in air emissions	Air quality; Climate change	The MODU and support/supply vessels (more than 400 gross tonnage) will obtain an International Air Pollution Prevention Certificate in accordance with MARPOL 73/78 Annex VI	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan				Y
PP-62	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Public Health	Compliance with the regulatory requirements, including, but not limited to requirements of PAR, OPRL, EPA and MoE decision No. 52/1/1996, National maximum allowable noise levels and the permissible noise exposure standards.	Logistics Base Contractor;	Logistics Base Contract				Y
RA-1	AE3	Radioactive source lost in hole	Sediment quality / composition	Logging operations carried out by a certified team.	Drilling and Acquisition Contractor	Scope of Work; Company Rules; Contractor Standards				Y
RA-2	AE3	Radioactive source lost in hole	Sediment quality / composition	Best efforts will be made to retrieve the source – fishing equipment will be available on site. Failing this, section where radioactive source lost will be cemented up.	Drilling and Acquisition Contractor	Scope of Work; Company Rules; Contractor Standards				Y
SA-1	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	All vessels fitted with navigational aids, communication systems and follow specified shipping routes and speed restrictions.	Supply Vessel Contractor;	As per Port Authorities				Y
SA-2	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	Follow communication from Port Authorities, who are responsible for Port operations up to the quay line.	Supply Vessel Contractor;	As per Port Authorities				Y
SA-3	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	Supply vessels will have designated mooring jetty at the onshore logistics base reducing interference with other non-project vessels using the Port.	Supply Vessel Contractor;	Logistics Base Contract				Y
SA-4	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	The supply vessel movements and the likely duration of their activities will be communicated to the port maritime authorities.	Supply Vessel Contractor;	Company Rules; Scope of Work				
SCM-1	OAS01	Logistics base operation	General economy (employment and service provision)	Contractors will be encouraged to consider the use of local labour and to advertise any Project related vacancies locally.	TEP Liban; Logistics Base Contractor	Social Management Plan				Y

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SCM-2	OAS01	Logistics base operation	General economy (employment and service provision)	Preferential treatment will be given to the procurement of Lebanese originating goods and services; PAR Article 157 right holder shall ensure that operator gives preferential treatment to the procurement of Lebanese originating goods and services when such goods and services are internationally competitive with respect to quality, availability, price and performance.	TEP Liban; Logistics Base Contractor	Social Management Plan				Y
SCM-3	OAS01	Logistics base operation	Education and Training	PAR Article 155 the right holder and contractor shall give priority to training of Lebanese in order to facilitate the employment of Lebanese at all level or right holders/contractor's organisation.	TEP Liban; Logistics Base Contractor	Social Management Plan				Y
SOC-1	OAE03; MAS01; OAS01; OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Fisheries; Public Health; Social Conditions (Road safety and congestion); Infrastructure (Road network)	Project will implement a grievance mechanism; the grievance mechanism will be clearly communicated to relevant stakeholders.	TEP Liban; Logistics Base Contractor	Social Management Plan	Y			Y
SOC-2	OAE06; OAS03	Helicopter transfers to Beirut International Airport; Support activities (Helicopter transfer)	Sensitive coastal habitats; Terrestrial ecology; Seabirds	Avoidance of low flight directly over internationally recognised and proposed conservation areas and over local communities and popular beaches, in the vicinity of the airport, if safe and practical to do so (subject to Lebanese Air Force approval).	Helicopter Contractor; RHIA	Social Management Plan; Helicopter Contract				Y
SOC-3	MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Shipping	Adherence to existing shipping corridors with known buffer zones and standard operating procedures as stipulated in in UNCLOS.	TEP Liban; Port Authorities	Social Management Plan; As per Port Authorities				Y
SOC-4	MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Shipping	Ensure sea users are aware of drilling programme activities and presence of safety zone during mobilisation and demobilisation through a Notice to Mariners (The schedule of activities will be communicated to the Ministry of Public Works and Transport and the Lebanese Navy via the Lebanese Armed Forces (LAF) that issues information and instructions to mariners pertaining to shipping hazards and safety zones).	TEP Liban;	Stakeholder Engagement Plan; As per Port Authorities				Y
SOC-5	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Fisheries	Operators will submit Safety Zone Authorisation to the authorities for approval prior to drilling activities.	TEP Liban;	Social Management Plan; Stakeholder Engagement Plan				Y
SOC-6	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Fisheries	Operators shall inform fishermen through the fisheries associations about well plan approvals to ensure well location avoidance. Discussions will be initiated approximately 1 month before planned commencement of drilling in case extensive fishing area is impacted.	TEP Liban	Stakeholder Engagement Plan				Y
SOC-8	OAS01	Logistics base operation	Infrastructure (Port of Beirut)	Logistics base contractor will be required to comply with the Port's operational limits and Operator's HSE requirements.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contractor Contract with Port of Beirut				Y
SOC-9	OAE06; OAS03	Helicopter transfers to Beirut International Airport; Support activities (Helicopter transfer)	Sensitive coastal habitats; Terrestrial ecology; Seabirds; Infrastructure (air traffic)	A flight plan will be developed and agreed with the Lebanese aviation authorities.	TEP Liban; Logistics Base Contractor; RHIA	Social Management Plan; Helicopter Contract				Y
SOC-10	OAS03	Support activities (Helicopter transfer)	Public Health; Tourism; Infrastructure (air traffic)	Helicopter transfers will be planned for daylight hours to minimise noise disturbance to local communities at night.	TEP Liban; Logistics Base Contractor;	Helicopter Contract; Company Rules				Y
SOC-11	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural	Sensitive coastal areas will be protected as a priority in line with coastal sensitivity mapping in TEP Liban's OSCP and mapping in the NOSCP.	TEP Liban; Drilling Contractor;	Social Management Plan				Y
SOC-12	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	A Notice to mariners (NAVAID / NAVAREA system) will be issued.	TEP Liban; Supply Vessel Contractor;	PSV Contract; As per Port Authorities				Y
SOC-13	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Infrastructure (Road network)	Contractors are responsible for protecting infrastructure and reinstating damages if caused by their activities.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contractor Contract with Port of Beirut				Y
SOC-14	MAS04	Public health and safety (people working in immediate vicinity of the MODU)	Shipping; Fisheries; Tourism	One support vessel will be permanently at the drill site providing security and safety duties, alerting other non-project sea users about 500 m safety zone.	PSV Contractor	Supply Vessel Contract				Y

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SOC-15	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Shipping	Vessels and crafts used for or involved in Petroleum Activities shall comply with applicable international and Lebanese laws and regulations regarding Petroleum Activities and navigation; vessels and crafts shall abide by instructions given by competent Lebanese authorities and by competent Lebanese naval vessels, patrol boats or crafts.	TEP Liban;	Company Rules; Scope of Work				Y
SOC-16	OAS01	Logistics base operation	Employment	TEP Liban will make it a contractual requirement that its contractors and subcontractors comply with all applicable labour laws.	TEP Liban;	Company Rules; Scope of Work	Y			Y
SOC-17	OAS02	Logistics base operation	Public Health	Logistics Base Operator will respect traffic movement restrictions at the port.	Logistics Base Contractor;	Company Rules; Scope of Work				Y
SOC-18	OAS01	Logistics base operation	Tourism	No expansion of the port footprint will be required due to presence of project logistics base.	TEP Liban; Logistics Base Contractor;	HSE Plan				
TR-1	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste management awareness will be raised among personnel through site inductions, toolbox talks, site HSE committee meetings (if applicable), performance reports and general waste management awareness campaigns (e.g. posters, brochures).	Drilling Contractor; Supply Vessel Contractor;	Logistics Base Bridging Document				Y
TR-2	AE5	Shallow gas blowout, release of gas into water column during riserless operations	Air quality; Water quality; Sediment quality / composition; Benthos; Plankton; Fish; Fisheries; Shipping	Shallow gas procedures will be known and practised, and shallow gas drills will be conducted.	TEP Liban; Drilling Contractor	Riser Analysis; Company Rules				Y
TR-3	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Critical personnel will be trained and certified in well control.	TEP Liban; Drilling Contractor	Contractor Training Procedure; Rig Contract				Y
TR-4	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Frequent kick drills will be conducted.	TEP Liban; Drilling Contractor	Drilling Program; Company Rules				Y
TR-5	AE10	Loss of rig stability (rig capsize) with release of fuel inventory	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Emergency disconnect sequence will be in place that is tested and exercised.	TEP Liban; Drilling Contractor	Drilling Program; Company Rules				Y
TR-6	AE11	Earthquake resulting in loss of well integrity and release of hydrocarbons to sea	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Rig crew will be ready to disconnect in case of emergency.	TEP Liban; Drilling Contractor	Company Rules				Y

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TR-7	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Tourism - logistics base located close to yachting club	Relevant key personnel will be trained in spill response.	Logistics Base Contractor;	Logistics Base Bridging Document				Y
TR-8	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Loss of MODU position trials will be carried out along with endurance tests	TEP Liban; Drilling Contractor	Riser Analysis; DP Trials				Y
WM-1	MAE03; MAS02	Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; MODU operations	Seabed quality / composition; Benthos; Water quality; Plankton; Nekton (fish); Cetaceans, turtles and seals; Sensitive seabed habitats	Drilling fluids and cuttings from the lower hole sections will be returned to the rig and separated using the onboard solids control equipment (shale shakers and centrifuges). Separated drilling fluids will be reused and the cuttings discharged to sea. If discharge of HPWBDF cuttings (Option 2) is selected for a future well in Block 4, cuttings dispersion modelling that is specific to the new well location will be conducted and the MoE informed of results.	TEP Liban; Drilling Fluids Contractor;	Company Rules; Scope of Work				Y
WM-2	MAE03; MAS02	Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; MODU operations	Seabed quality / composition; Benthos; Water quality; Plankton; Nekton (fish); Cetaceans, turtles and seals; Sensitive seabed habitats	Cuttings discharge chute will be approximately 10 m below the sea surface to aid good dispersion of the solids.	TEP Liban; Drilling Fluids Contractor;	Company Rules; Scope of Work				Y
WM-3	MAE04	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings	Air quality; Climate change	Separated drilling fluids will be reused. Residual drilling fluids that no longer fulfil the product specification will be managed by the drilling well services contractor.	TEP Liban; Drilling Fluids Contractor;	Company Rules; Scope of Work				Y
WM-4	MAE04	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings	Air quality; Climate change	Cuttings skips will be certified.	TEP Liban; Drilling Fluids Contractor;	Waste Management Plan, Scope of Work				Y
WM-5	MAE04	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings	Air quality; Climate change	Onward export of cuttings to neighbour country for treatment and disposal will be compliant with the requirements of the Basel convention (R).	TEP Liban; Drilling Fluids Contractor;	Waste Management Plan, Scope of Work				Y
WM-6	MAE08; MAS02	Discharge of sanitary waste from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Sanitary waste will be managed in accordance with MARPOL 73/78 Annex IV. Grey water will be discharged to sea (without treatment) as long as no floating matter or sheen is observable. Black water will be treated in accordance with MARPOL 73/78 Annex IV prior to discharge.	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention & Environmental Monitoring Plan				Y
WM-7	MAE09	Discharge of food waste from MODU and support / supply vessels (in the case of B4-1 well no discharge)	Water quality; Plankton; Nekton (fish)	Discharge of any food waste from the MODU and support/supply vessels will only be carried out more than 12 nm from the nearest land and all food waste will be ground up in order to pass through a 25 mm mesh before discharge, in line with MARPOL 73/78 Annex V (Mediterranean Sea 'special area' requirement).	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan				Y
WM-8	MAE09	Discharge of food waste from MODU and support / supply vessels (in the case of B4-1 well no discharge)	Water quality; Plankton; Nekton (fish)	Any discharges of food waste into the sea will be recorded in the Garbage Record Book of the MODU (MARPOL Annex V).	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan				Y
WM-9	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	All non-hazardous and hazardous solid waste generated by the Block 4 exploration drilling programme will be transported to shore for recycling/treatment/disposal in accordance with MARPOL 73/78 Annex V or incinerated onboard the MODU (with the exception of water-based drill cuttings and drill fluids).	Drilling Contractor; Supply Vessel Contractor	Waste Management Plan				Y
WM-10	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste will be segregated at source on site and coded according to the appropriate waste coding.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Waste Management Plan				Y
WM-11	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste receptacles will be designed to prevent release of wind born waste.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Waste Management Plan; Scope of Work				Y
WM-12	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	For hazardous waste, containers will be chemically resistant to the contained product and may be sealed to reduce risks.	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan				Y
WM-13	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Hazardous waste will be transported, stored and treated/disposed of in line with applicable national regulations in force (including reporting requirements, etc)	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan; HSE Plan				Y
WM-14	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste transfer notes will provide an auditable trail of the waste management process.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Waste Management Plan				Y
WM-15	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	A Waste Management Plan will be developed by TEP Liban and implemented by its contractors.	TEP Liban; Drilling Contractor; Supply Vessel Contractor	Waste Management Plan				Y

UID	ESIA Section References (Aspect Codes)	Project Phases / Activity / Aspect	Receptors	Mitigation	Responsible Party (for implementation)	Project Documentation (environmental and social management plan, standards, ESMP matrix, etc)	Operation of a grievance procedure/mechanism	Incident reporting and investigation	Audits by the contractor	Performance monitoring
WM-16	OAE04	Logistics base operation – waste management	None providing waste managed properly	The compatibility of waste streams will be considered when segregating and storing wastes.	Logistics Base Contractor	Logistics Base Bridging Document				Y
WM-17	OAE04	Logistics base operation – waste management	None providing waste managed properly	The logistics base contractor and waste management contractors will ensure the final destination of the waste is guaranteed and complies with both regulatory requirements and Total contractual commitments and that licence to operate is in place (R).	Logistics Base Contractor and Waste Management Contractors	Logistics Base Bridging Document				Y
WM-18	MAE11	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels	Water quality; Plankton; Nekton (fish)	Oily waste and sludge from separation processes will be transported to shore for treatment and disposal.	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan				Y
WM-19	OAE04; MAE14	Logistics base operation – waste management; Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Sorting of solid waste will be compliant with applicable national regulations in force.	Drilling Contractor; Logistics Base Contractor;	Waste Management Plan				Y
PP-63	MAE10	Desalination unit discharges from MODU	Water quality; Plankton; Nekton (fish)	Anti-scaling chemical will be an environmentally sound all-organic product based on biodegradable compounds.	Drilling Contractor;	Scope of Work; Contracts; Chemicals Management Plan; Company Rules				Y
PP-64	MAE12	Uplift and discharge of cooling water from MODU	Nekton (fish)	No discharge of antifouling chemicals in cooling water, a marine growth prevention system (MGPS) will be used.	Drilling Contractor;	Scope of Work; Contracts; Chemicals Management Plan; Company Rules				Y
PL-6	OAS01	Logistics base operation – water management	Infrastructure	A surge tank will be installed at the Logistics Base; surge tank will be filled with fresh water during off-peak community demand in order to supply project requirements specifically with regard to mudplant activity.	Logistics Base Contractor;	Logistics Base Contract				Y

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Block 4 (Lebanon) offshore exploration drilling EIA

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UID	ESIA Section References (Aspect Codes)	Project Phases / Activity / Aspect	Receptors	Mitigation	Responsible Party (for implementation)	Project Documentation (environmental and social management plan, standards, ESMP matrix, etc)	Performance Indicator/s	Monitoring Frequency	Impact/s to be Managed
DC-1	MAE01; MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Water quality, air quality, UW noise; Archaeological and cultural resources	A plugging and abandonment programme will be submitted to respective authorities as part of the Advanced Drilling Plan (ADP) before drilling begins.	TEP Liban;	Advanced Drilling Plan	Developed and approved program issued to relevant authorities.	Once, at time of Drilling Permit submission	Physical disturbance of sediments, benthic communities and sensitive seabed habitats from anchoring and removal of the blowout preventer (BOP) and cement plugging operations
MR-1	MAE01; MAS01; MAS02; AE1	MODU mobilisation, installation, plug and abandonment and demobilisation; Drilling of riserless top hole sections - discharge of cuttings and WBDFs; MODU operations; Dropped Object from MODU (lifting).	Seabed quality / composition; Benthos; Sensitive seabed habitats; Water quality; air quality, UW noise; Archaeological and cultural resources	ROV survey will be conducted after drilling operations are complete to provide status of the seafloor condition around the wellsite.	TEP Liban	Advanced Drilling Plan	Specified and provided for in relevant management plan; site verification zero noncompliance	ROV survey performed after BOP disconnection and prior to rig departure.	Physical disturbance of seabed sediments and benthos from dropped object; Physical disturbance of sediments, benthic communities and sensitive seabed habitats from anchoring and removal of the blowout preventer (BOP) and cement plugging operations
PE-1	MAE17	Well test of possible future appraisal well	Air quality; Climate change	A permit will be obtained from the Ministry of Energy and Water for flaring for technical purposes during well test (R) and TEP Liban will inform the MoE for environmental clearance. Flaring for safety / emergency reasons reported to MoE (no permit required)	TEP Liban	Advanced Drilling Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance. Permit for technical flaring and communication with MoE.	Once prior to well test.	Reduction in air quality; GHG emissions contribute to climate change
PP-1	MAE02; MAS02	Drilling of riserless top hole sections - discharge of cuttings and WBDFs; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Nekton (fish)	Seawater used for drilling the 36" well section.	TEP Liban; Drilling Fluids Supervisor	Advanced Drilling Plan; Drilling Program	Quantity of seawater used for drilling operations.	Use of seawater monitored on daily basis. Recorded in Daily Drilling Report.	Burial or smothering of benthic communities; Oxygen depletion in sediments; Changes to sediment structure and quality; Changes to water quality; Potential for toxicity or bioaccumulation effects; Potential for indirect effects on fish; Potential for direct and indirect effects on sensitive seabed habitat
SA-1	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	All vessels fitted with navigational aids, communication systems and follow specified shipping routes and speed restrictions.	Supply Vessel Contractor;	As per Port Authorities	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Route and speed compliant with each trip to Port	Potential to interfere with other sea users passing through Beirut Port and within the transit route to MODU; Increased vessel transfer through Beirut Port area increases risk of vessel collision
SA-2	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	Follow communication from Port Authorities, who are responsible for Port operations up to the quay line.	Supply Vessel Contractor;	As per Port Authorities	Zero complaints / nonconformance with Port Authority instructions.	Route and speed compliant with each trip to Port	Potential to interfere with other sea users passing through Beirut Port and within the transit route to MODU; Increased vessel transfer through Beirut Port area increases risk of vessel collision
HSS-4	AE1	Dropped Object from MODU (lifting)	Sediment quality/ composition; Benthos	Lifting equipment and cranes will be certified and be subject to a preventative maintenance programme.	TEP Liban; Drilling Contractor	Bridging Document; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Audit at start start of the operations and at each change of lifting equipment or crane.	Physical disturbance of seabed sediments and benthos from dropped object
HSS-5	AE1	Dropped Object from MODU (lifting)	Sediment quality/ composition; Benthos	Crane operators will be certified.	TEP Liban; Drilling Contractor	Bridging Document; Scope of Work	All operators with certified training	Audit at start of the operations and at each change of personnel.	Physical disturbance of seabed sediments and benthos from dropped object
HSS-6	AE1	Dropped Object from MODU (lifting)	Sediment quality/ composition; Benthos	Lifting will be carried out in accordance with HSE bridging document agreed between Total E&P Liban and the drilling contractor.	TEP Liban; Drilling Contractor	Bridging Document; Scope of Work	Approved bridging document; site verification zero noncompliance	Site verification during all lifting operations.	Physical disturbance of seabed sediments and benthos from dropped object
PP-44	AE2	Loss of chemical containment onboard MODU	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Suitable and certified CCUs (Cargo Carrying Unit) will be used for chemicals transfer; they will be checked visually for integrity at logistics base before transfer offshore.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Chemical Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check prior to mobilisation. Prior to each chemical delivery.	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries
PP-54	AE2	Loss of chemical containment onboard MODU	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Spill kits will be available onboard MODU and supply vessels; personnel will be trained in use of spill kits.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Chemical Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance; 100% training coverage.	Prior to spud for spill kit. Inspection records of the sitebased spill kits to ensure presence and useability.	Reduction in water quality; Potential for impacts on plankton and fish

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MR-9	OAE05	Logistics base operation – chemicals management	None providing chemicals managed properly	Logistics base contractor will keep and maintain a register of dangerous and hazardous goods stored on location along with relevant copies of MSDS (Material Safety Data Sheets) and dangerous goods (DG) declarations.	Logistics Base Contractor;	Chemical Management Plan; Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Initial check at logistics base final set up, during HSE audit and during weekly HSE tour during drilling programme.	None under normal operations
PP-38	OAE05	Logistics base operation – chemicals management	None providing chemicals managed properly	The chemical storage areas at the logsitics base will be designed to avoid leak or spillage to the environment. They will have adequate ventilation and shall be protected from rainfall and direct sunlight.	Logistics Base Contractor;	Chemical Management Plan; Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up. Weekly site verification. And after any maintenance/service of facilities.	None under normal operations
CM-4	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	Labelling will comply with regulatory requirements in terms of format and composition.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	At each load out on the base. Otherwise site verification every 3 weeks.	None under normal operations
CM-5	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	Chemical products that are required at the MODU (and haven't been pre-mixed onshore) will be packed into mini containers, or open cargo carrying units (CCUs), that are certified and appropriately colour coded for safe transfer from jetty to supply vessel and supply vessel to MODU	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	At each load out on the base.	None under normal operations
CM-6	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	MSDS will be present onboard the supply boat during transfer and on the MODU.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	At each load out on the base.	None under normal operations
CM-7	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	All personnel involved in the transfer and handling or all personnel who might be exposed to hazardous chemicals will be trained on the potential hazards involved.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Chemicals Management Plan	Specified and provided for in relevant management plan/s; review of training records; site verification of personnel zero noncompliance	Training matrix to be provided by Contractors for all personnel involved and will be updated at each personnal change.	None under normal operations
CM-8	MAE21; OAE05; AE2	Chemicals transfer and storage; Logistics base operation – chemicals management; Loss of chemical containment onboard MODU.	None providing chemicals managed properly	Chemicals will be stored separately according to their potential hazard and compatibility.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor;	Chemicals Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	At time of receiving goods - then every week during safety tour.	None under normal operations
CM-9	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	A full register of all chemicals inventory and consumption records shall be maintained on each site.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Chemicals Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	During each weekly safety tour	None under normal operations
CM-3	MAE21	Chemicals transfer and storage	None providing chemicals managed properly	All chemicals will be packaged according to manufacturer's instructions	Drilling Contractor; Supply Vessel Contractor;	Chemicals Management Plan; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance	At each load out on the base.	None under normal operations
TR-6	AE11	Earthquake resulting in loss of well integrity and release of hydrocarbons to sea	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Rig crew will be ready to disconnect in case of emergency.	TEP Liban; Drilling Contractor	Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Crew training records checked prior to operations start up. and subsequently at 14 day intervals Loss of position drills reported in daily drilling report.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria

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PP-18	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Fuel efficiency measures shall be taken into account in the selection of MODU, support / supply vessels and helicopters.	Drilling Contractor; Supply Vessel Contractor;	Company Rules; Call for Tenders	High fuel efficiency vessels prioritized during MODU and PSV selection; Zero noncompliance with selection procedure; Fuel consumption.	During tender technical evaluation process; Fuel consumption for PSV and MODU recorded daily and reported to TEP Liban monthly.	Reduction in air quality; GHG emissions contribute to climate change
HSS-10	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Selection procedure in place for certified helicopter contractor, and flying crew will be certified.	TEP Liban; Helicopter Contractor;	Company Rules; Scope of Work	All flying crew with certified training	Training / competancy records at start of the operations, or upon change of pilots	Reduction in water quality; Potential indirect impacts on plankton
HSS-11	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Helicopters will only operate within their weather limits and during daylight hours (except in case of MEDEVAC which is not restricted to daylight flights).	TEP Liban; Helicopter Contractor;	Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Airport Civil Aviation Authority provides authorisation for each flight.	Reduction in water quality; Potential indirect impacts on plankton
HSS-16	OAS01	Logistics base operation	Tourism	Logistics base operator will be selected based on strict HSE criteria compliant with international regulations for oil and gas activities and applicable TOTAL E&P rules.	TEP Liban;	Company Rules; Scope of Work	Zero noncompliance with selection process.	Once during selection of operator. Then HSE audit planned prior operations start.	Increase in level of industrial activities within the territory of the Port and at logistics base used for the project may interfere with other businesses focused on tourism activities if located close to logistics base
SA-4	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	The supply vessel movements and the likely duration of their activities will be communicated to the port maritime authorities.	Supply Vessel Contractor;	Company Rules; Scope of Work	Complaints; evidence of communications.	Information provided on a per trip basis	Potential to interfere with other sea users passing through Beirut Port and within the transit route to MODU; Increased vessel transfer through Beirut Port area increases risk of vessel collision
SOC-15	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Shipping	Vessels and crafts used for or involved in Petroleum Activities shall comply with applicable international and Lebanese laws and regulations regarding Petroleum Activities and navigation; vessels and crafts shall abide by instructions given by competent Lebanese authorities and by competent Lebanese naval vessels, patrol boats or crafts.	TEP Liban;	Company Rules; Scope of Work	Zero complaints / nonconformance with competent Lebanese authorities and or competent Lebanese naval vessels, patrol boats or crafts instructions.	Complaints and nonconformance records on a monthly basis.	Disruption to sea users – mainly tankers, cargo ships and container ships - due to diversion to avoid 500 m safety zone
SOC-16	OAS01	Logistics base operation	Employment	TEP Liban will make it a contractual requirement that its contractors and subcontractors comply with all applicable labour laws.	TEP Liban;	Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Stipulated in the contract signed. Once.	Potential for positive impacts on the employment of a local workforce (opportunities are limited at this exploration phase); Opportunities in terms of provision of service
SOC-17	OAS02	Logistics base operation	Public Health	Logistics Base Operator will respect traffic movement restrictions at the Port.	Logistics Base Contractor;	Company Rules; Scope of Work	Specified and provided for (operational limits) in relevant management plan/s; site verification zero noncompliance.	Review noncompliance records and corrective actions at each occurrence.	Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities causing disturbance and nuisance to human health
WM-1	MAE03; MAS02	Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; MODU operations	Seabed quality / composition; Benthos; Water quality; Plankton; Nekton (fish); Cetaceans, turtles and seals; Sensitive seabed habitats	Drilling fluids and cuttings from the lower hole sections will be returned to the rig and separated using the onboard solids control equipment (shale shakers and centrifuges). Separated drilling fluids will be reused and the cuttings discharged to sea. If discharge of HPWBDF cuttings (Option 2) is selected for a future well in Block 4, cuttings dispersion modelling that is specific to the new well location will be conducted and the MoE informed of results.	TEP Liban; Drilling Fluids Contractor;	Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance. Additional modelling if required.	Equipment checked at acceptance. Function of equipment checked constantly during discharges to ensure no non-compliance.	Burial or smothering of benthic communities; Oxygen depletion in sediments; Changes to sediment structure and quality; Changes to water quality; Potential for toxicity or bioaccumulation effects; Potential for indirect effects on plankton, fish and sensitive seabed habitats
WM-2	MAE03; MAS02	Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; MODU operations	Seabed quality / composition; Benthos; Water quality; Plankton; Nekton (fish); Cetaceans, turtles and seals; Sensitive seabed habitats	Cuttings discharge chute will be approximately 10 m below the sea surface to aid good dispersion of the solids.	TEP Liban; Drilling Fluids Contractor;	Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Equipment checked at acceptance.	Burial or smothering of benthic communities; Oxygen depletion in sediments; Changes to sediment structure and quality; Changes to water quality; Potential for toxicity or bioaccumulation effects; Potential for indirect effects on plankton, fish and sensitive seabed habitats
WM-3	MAE04	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings	Air quality; Climate change	Separated drilling fluids will be reused. Residual drilling fluids that no longer fulfil the product specification will be managed by the drilling well services contractor.	TEP Liban; Drilling Fluids Contractor;	Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored daily	Reduction in air quality due to significant transportation requirements; GHG emissions contribute to climate change

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TR-3	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Critical personnel will be trained and certified in well control.	TEP Liban; Drilling Contractor	Contractor Training Procedure; Rig Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Checked prior to operations start up and at each personnel change	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
PP-27	MAE21; AE2	Chemicals transfer and storage; Loss of chemical containment onboard MODU.	None providing chemicals managed properly	All chemicals will be held in secure and leak-proof containers suitably labeled to indicate the nature of the substance and risk involved.	Drilling Contractor; Supply Vessel Contractor	Contractor's Chemical Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check prior to mobilisation. Prior to each chemical delivery.	None under normal operations
PP-5	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Drainage water from process areas will go to closed drains and only water from non-process areas to open drains.	Drilling Contractor; Supply Vessel Contractor	Contractor's Hazard Register	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check prior to mobilisation, during the Rig Acceptance Audit.	Reduction in water quality; Potential for impacts on plankton and fish
CM-11	AE3	Radioactive source lost in hole	Sediment quality / composition	Only sealed radioactive sources used.	Drilling Contractor	Contractor's Radiation Standard; Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance	During kick off meeting; site verification at time of loading onboard PSV.	Potential radiation impact on sediments and geology
MR-4	MAE22	Logging using radioactive sealed sources (also applicable to onshore storage and transport of radioactive sealed sources)	None under normal operations	Radioactive sources will be managed in line with international regulations.	Drilling and Acquisition Contractor	Contractor's Radiation Standard; Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Review of supply chain documentation prior to transport and use of source.	None under normal operations
BIO-5	MAE01; MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Water quality, air quality, UW noise; Archaeological and cultural resources	If a semi-submersible is selected impacts will be minimised by ROV survey of the seabed to select optimum anchor positions that avoid sensitive seabed features.	TEP Liban;	Drill Site Assessment	Specified and provided for in relevant management plan; site verification zero noncompliance	Site survey will be performed in sufficient time ahead of anchoring such that anchor plan can be established. For B4-1, MODU is a drillship.	Physical disturbance of sediments, benthic communities and sensitive seabed habitats from anchoring and removal of the blowout preventer (BOP) and cement plugging operations
HSS-7	AE5	Shallow gas blowout, release of gas into water column during riserless operations	Air quality; Water quality; Sediment quality / composition; Benthos; Plankton; Fish; Fisheries; Shipping	First two sections of well will be drilled riserless. If shallow gas encountered, it will be released at seabed with no impact on MODU.	TEP Liban; Drilling Contractor	Drill Site Assessment	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Shallow gas risk verified well in advance of spud and reported within Drill Site Assessment document. Shallow gas occurrence verified during riserless section with ROV.	Reduction in air quality, water quality and sediment quality; Potential indirect impacts on benthos, fish and fisheries; Potential for gas in water column to affect shipping
CH-2	MAS02	MODU operations	Fisheries; Archaeological and cultural resources; Benthos; Archaeological and cultural resources	Predrill wellsite assessments will be completed to provide high-resolution bathymetric and 3D/2D seismic data to identify seabed geohazards, habitat and, detect archaeological sites previously not detected; to inform avoidance measures and a wellsite free of geohazards.	TEP Liban; Drilling Contractor;	Drill Site Assessment; Company Rules	Specified and provided for in relevant management plan; site verification zero noncompliance	Site survey will be performed in sufficient time ahead of spudding to sensitive sites will not be affected. Already completed for well B4-1.	Potential for physical disturbance of unknown marine archaeological resources during well spud (at all 3 possible well locations).
MR-13	AE5	Shallow gas blowout, release of gas into water column during riserless operations	Air quality; Water quality; Sediment quality / composition; Benthos; Plankton; Fish; Fisheries; Shipping	ROV monitoring will be carried out during riserless operations.	TEP Liban; ROV Contractor;	Drilling Program	Specified and provided for in relevant management plan; site verification zero noncompliance	ROV monitoring throughout riserless operations.	Reduction in air quality, water quality and sediment quality; Potential indirect impacts on benthos, fish and fisheries; Potential for gas in water column to affect shipping
PP-2	MAE05	Cementing discharges during drilling	Seabed quality / composition; Benthos	Discharge of cement to seabed only from 20" casing.	TEP Liban; Drilling Fluids Supervisor	Drilling Program	The quantity of released excess cement slurry	Daily during cementing phase.	Cement may smother seabed and change its pH; Potential for toxicity or bioaccumulation effects
PP-3	MAE05	Cementing discharges during drilling	Seabed quality / composition; Benthos	Careful monitoring of cement discharges using an ROV to ensure discharges are kept to a minimum.	TEP Liban; Drilling Fluids Supervisor	Drilling Program	N/A	ROV monitoring throughout cement job.	Cement may smother seabed and change its pH; Potential for toxicity or bioaccumulation effects

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PP-22	MAE17	Well test of possible future appraisal well	Air quality; Climate change	If flaring is the sole option available for the disposal of well test fluids, only the minimum volume of hydrocarbons required for the test will be flowed and the well test duration will be reduced to the extent practical.	TEP Liban; Drilling Contractor;	Drilling Program of Appraisal Well; Company Rules; Scope of Work	Volume of gas flared	During the well test operations	Reduction in air quality; GHG emissions contribute to climate change
PP-23	MAE17	Well test of possible future appraisal well	Air quality; Climate change	An efficient well test flare burner head equipped with an appropriate combustion enhancement system (e.g. “evergreen burners” type) will be selected to minimise incomplete combustion, black smoke, and hydrocarbon fallout to the sea.	TEP Liban; Drilling Contractor;	Drilling Program of Appraisal Well; Company Rules; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Once, review of supply chain documentation with regard to efficiency having greater importance than cost in selection process	Reduction in air quality; GHG emissions contribute to climate change
PP-24	MAE17	Well test of possible future appraisal well	Air quality; Climate change	Whenever possible, the liquid phase of the separator shall be re-injected into the process lines or stored in appropriate tanks, and only the gaseous phase shall be burned.	TEP Liban; Drilling Contractor;	Drilling Program of Appraisal Well; Company Rules; Scope of Work	Least polluting option chosen.	Prior to well test operations startup.	Reduction in air quality; GHG emissions contribute to climate change
MR-14	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Pore pressure will be closely monitored (flow checks).	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules	Specified and provided for in relevant management plan; site verification zero noncompliance	Constant monitoring performed during critical sections.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
MR-15	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Integrity of cementing operations will be checked.	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules	Specified and provided for in relevant management plan; site verification zero noncompliance	Constant monitoring of parameters during cementing operations.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
MR-16	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	BOP and well control equipment testing will be conducted.	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules	Specified and provided for in relevant management plan; site verification zero noncompliance	Frequency stated in drilling program and bridging doc. Monitoring carried out at least daily, and status included in Daily Drilling Report.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
PL-3	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Drilling fluid weight and properties will be controlled.	TEP Liban; Drilling Fluids Contractor	Drilling Program; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Fluids parameters monitored several times a day	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
TR-4	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Frequent kick drills will be conducted.	TEP Liban; Drilling Contractor	Drilling Program; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Drills reported on daily drilling report. Drills carried out before entering reservoir phases.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria

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TR-5	AE10	Loss of rig stability (rig capsize) with release of fuel inventory	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Emergency disconnect sequence will be in place that is tested and exercised.	TEP Liban; Drilling Contractor	Drilling Program; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Tested at acceptance. Drills reported in daily drilling report.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
PL-4	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Well shut in and well control procedure will be in place.	TEP Liban; Drilling Contractor;	Drilling Program; Company Rules; DrillSafe Audit Report	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Procedure to be in place prior to spud. Displayed onboard in driller's cabin.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
BIO-2	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Use of soft start procedures for VSP airguns.	Drilling and Acquisition Contractor	Environmental Standard	Records of marine mammal observations and responses	If VSP, check during all VSP operation.	Potential for injury / hearing loss, alteration of behaviour, auditory masking, effects on zone of audibility
BIO-3	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Use of trained MMOs during VSP operations for monitoring of mitigation exclusion zone (radius 500 m) and delay in start-up of airguns if cetaceans (or turtles) observed within zone.	Drilling and Acquisition Contractor	Environmental Standard	Records of mitifgation measures initiated by MMOs	If VSP, check during all VSP operation.	Potential for injury / hearing loss, alteration of behaviour, auditory masking, effects on zone of audibility
BIO-4	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Use of PAM devices for cetacean detection prior to VSP operations during hours of darkness / reduced visibility.	Drilling and Acquisition Contractor	Environmental Standard	Records of marine mammal vocalisations and responses	If VSP, check during all VSP operation.	Potential for injury / hearing loss, alteration of behaviour, auditory masking, effects on zone of audibility
CM-10	AE2	Loss of chemical containment onboard MODU	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Chemical storage onboard the MODU will be restricted.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Handling and Storage of Hazardous Materials; Rig Environmental Aspects and Impacts Register	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Daily	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries
PP-48	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Helicopter transportation will be restricted to daylight hours except for possible Medevac	TEP Liban; Helicopter Contractor	Helicopter Contract	Zero noncompliance	Airport Civil Aviation Authority provides authorisation for each flight. Any accident is reported as per Emergency Response Plan.	Reduction in water quality; Potential indirect effects on plankton
PL-5	AE8	Helicopter crash on MODU deck – release of aviation fuel to sea	Water quality; Plankton	Helideck will meet CAP 437 specs for lights, illumination, marking, net, dimension, integrity, certification.	TEP Liban; Helicopter Contractor;	Helicopter Contract; Company Rules	Zero noncompliance	Certification of the helideck checked and approved prior to contract set up. Daily check of lights and net conditions.	Reduction in water quality; Potential indirect impacts on plankton
SOC-10	OAS03	Support activities (Helicopter transfer)	Public Health; Tourism; Infrastructure (air traffic)	Helicopter transfers will be planned for daylight hours to minimise noise disturbance to local communities at night.	TEP Liban; Logistics Base Contractor;	Helicopter Contract; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Recorded on a per - flight basis. Flight plan approved by Lebanese Air Force.	Increase in airborne noise disturbing residential areas if flying route is passing near the house and local holidaymakers if passing near hotels or other noise sensitive businesses; Potential burden on existing flight control facilitie
SOC-18	OAS01	Logistics base operation	Tourism	No expansion of the Port footprint will be required due to presence of Project logistics Base.	TEP Liban; Logistics Base Contractor;	HSE Plan	No expansion of port footprint as a result of Project logistics Base presence / activity.	NA	Increase in level of industrial activities within the territory of the Port and at logistics base used for the project may interfere with other businesses focused on tourism activities if located close to logistics base

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HSS-12	AE10	Loss of rig stability (rig capsize) with release of fuel inventory	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Marine crew will be certified.	Drilling Contractor	HSE Training Plan	All marine crew with certified training	Training / competancy records at start of the operations, or upon change of pilots	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
MR-23	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Tourism - logistics base located close to yachting club	Periodic inspections of oil spill kits and restocking of kits will be carried out by the logistics base contractor.	Logistics Base Contractor;	Industry best practice	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Initial check at logistics base final set up, during HSE audit and during weekly HSE tour.	Reduction in water quality within the port; Disruption of access to water for sailing club vessels during any clean-up
PP-32	OAE01; OAS01; OAS02	Logistics base operation; Transport of materials to / from the logistics base (vessel and vehicle activity)	Air quality; Climate change; Public Health (Air Quality)	Low sulphur fuel to be used at the logistics base where practicable.	TEP Liban; Logistics Base Contractor	Industry best practice	less than 0.5%	MGO certificate of quality required prior to each fuel bunkering.	Reduction in air quality; GHG emissions contribute to climate change; Reduction in air quality due to activities at Logistics Base inside the Port (air emissions/dust, vibration from machinery and noise), affecting nearby communities; Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities causing disturbance and nuisance to human health
PP-33	OAE02	Logistics base operation - discharge of drainage water	Water quality	Site drainage from the logistics base will only be permitted from non-contaminated areas.	Logistics Base Contractor	Industry best practice	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up. Daily site verification.	Local effect on water quality
PP-40	OAS01; OAE01	Logistics base operation - emissions to air	Public Health; Air Quality	Any transfer of dry bulk from the drilling fluids mixing plant dry bulk silos will be carried out with the use of a dust collector unit to minimise dust migration to the surrounding environment	TEP Liban; Logistics Base Contractor	LMP and Cementing Contractors	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up. Monitoring to document that dust collectors are used during each bulk transfer.	Reduction in air quality; GHG emissions contribute to climate change; Reduction in air quality due to activities at Logistics Base inside the Port (air emissions/dust, vibration from machinery and noise), affecting nearby communities
TR-1	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste management awareness will be raised among personnel through site inductions, toolbox talks, site HSE committee meetings (if applicable), performance reports and general waste management awareness campaigns (e.g. posters, brochures).	Drilling Contractor; Supply Vessel Contractor;	Logistics Base Bridging Document	100% coverage of all personnel; training records.	Training records for all personnel at start of operations and at each change of personnel.	None under normal operations
TR-7	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Tourism - logistics base located close to yachting club	Relevant key personnel will be trained in spill response.	Logistics Base Contractor;	Logistics Base Bridging Document	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Crew training records checked prior to operations start up. and subsequently at 14 day intervals Loss of position drills reported in daily drilling report.	Reduction in water quality within the port; Disruption of access to water for sailing club vessels during any clean-up
WM-16	OAE04	Logistics base operation – waste management	None providing waste managed properly	The compatibility of waste streams will be considered when segregating and storing wastes.	Logistics Base Contractor	Logistics Base Bridging Document	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Site verification of effective waste segregation. Daily during logistics base operation.	None under normal operations
WM-17	OAE04	Logistics base operation – waste management	None providing waste managed properly	The logistics base contractor and waste management contractors will ensure the final destination of the waste is guaranteed and complies with both regulatory requirements and Total contractual commitments and that licence to operate is in place (R).	Logistics Base Contractor and Waste Management Contractors	Logistics Base Bridging Document	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored waste tracking notes.	None under normal operations
HSS-13	OAS01	Logistics base operations	Social Conditions (Security)	The logistics base operator will cooperate with General Security of the Port and regularly assess security risks through Security Plan as required under their contractual conditions with TEP Liban.	TEP Liban; Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Weekly safety/security tour	Logistics base within the Port of Beirut will require an outdoor storage area used as a pipe yard, and an indoor storage area used as a warehouse, offices and other facilities which may require security measures
MR-5	OAE01	Logistics base operation - emissions to air	Air quality; Climate change	Logistics base operator will monitor consumption of fuel in order to calculate air emission quantities.	TEP Liban; Logistics Base Contractor	Logistics Base Contract	Fuel consumption reports	Every month regarding calculating emissions.	Reduction in air quality; GHG emissions contribute to climate change

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PL-6	OAS01	Logistics base operation – water management	Infrastructure	A surge tank will be installed at the Logistics Base; surge tank will be filled with fresh water during off-peak community demand in order to supply project requirements specifically with regard to mudplant activity.	Logistics Base Contractor;	Logistics Base Contract	Number of related complaints.	Availability of tank checked prior to spud.	Presence of the project could create additional pressure on existing Port's infrastructure including competition for existing facilities and space inside the Port
PP-31	OAE01	Logistics base operation - emissions to air; Logistics base operation	Air quality; Climate change	Generators at the logistics base will be operated according to manufacturer's instructions to operate in most energy efficient manner.	Logistics Base Contractor	Logistics Base Contract	Fuel consumption of generator	QHSE monthly report to include number of hours and fuel quantities. Operation against manufacturer's instructions to be included in weekly HSE tour, or following maintenance or service operation.	Reduction in air quality; GHG emissions contribute to climate change
PP-34	OAE02	Logistics base operation - discharge of drainage water	Water quality	For areas at the logistics base where there is the potential for spillages, and contaminated runoff, containment will be in place.	Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up. Daily site verification.	Local effect on water quality
PP-35	OAE03	Logistics base operation - noise generation	Terrestrial ecology	Equipment at the logistics base will be well maintained and individual mitigation measures applied if noise levels are higher than maximum allowable noise levels (where feasible).	Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; zero noncompliance with manufacturer's recommended maintenance schedule; zero nonconformance with fenceline noise limit.	Fenceline noise monitoring on a bi-weekly basis during logistics base operational period.	Disturbance of fauna in vicinity of logistics base
PP-36	OAE04	Logistics base operation – waste management	None providing waste managed properly	Waste collection and temporary storage at logistics base will be designed to minimise the risk of escape to the environment (for example by particulates, infiltration, runoff or odors).	Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up. Daily site verification.	None under normal operations
PP-37	OAE04	Logistics base operation – waste management	None providing waste managed properly	Wastes will be stored in areas of the logistics base that minimise the risk of accidental loss of confinement or leaching (bunded areas). All effluents from waste storage areas will be collected and disposed of appropriately.	Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up. Daily site verification. Maintenance of disposal records.	None under normal operations
PP-41	OAS01	Logistics base operation	Public Health (Air borne noise)	At present the layout of the logistics base is not finalised. During the final design of the layout equipment which has the highest source noise levels will be located as far from the closest residential properties as possible.	TEP Liban; Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; zero noncompliance with manufacturer's recommended maintenance schedule; zero nonconformance with fenceline noise limit.	Initial check at logistics base final set up.	Increase in ambient noise disturbing residential properties, businesses and leisure and recreation facilities in the vicinity of the logistics base
PP-42	OAS01	Logistics base operation	Public Health (Air borne noise)	Noise monitoring will be carried out at the logistics base to determine if noise mitigation measures shall be applied (where feasible).	TEP Liban; Logistics Base Contractor;	Logistics Base Contract	Noise assessment records; implementation of findings.	Fenceline noise monitoring on bi-weekly basis during logistics base operational period. If attentuation is required then monitoring of performance of attenuation on a weekly basis.	Increase in ambient noise disturbing residential properties, businesses and leisure and recreation facilities in the vicinity of the logistics base
PP-43	OAS01; OAS02	Logistics base operation; Transport of materials to / from the logistics base.	Public Health (Air borne noise)	Airborne noise levels from the logistics base will comply with Lebanese maximum allowable noise levels (Decision 52/1/96) at the Logistics base fenceline.	TEP Liban; Logistics Base Contractor;	Logistics Base Contract	Specified and provided for in relevant management plan/s; zero noncompliance with manufacturer's recommended maintenance schedule; zero nonconformance with fenceline noise limit.	Fenceline noise monitoring on a bi-weekly basis during logistics base operational period.	Increase in ambient noise disturbing residential properties, businesses and leisure and recreation facilities in the vicinity of the logistics base
PP-53	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Tourism - logistics base located close to yachting club	Oil spill kits and chemical spill kits will be available on the logistics base and clearly marked.	Logistics Base Contractor	Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Initial check at logistics base final set up, during HSE audit and during daily tour and weekly HSE tour.	Reduction in water quality within the port; Disruption of access to water for sailing club vessels during any clean-up
PP-62	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Public Health	Compliance with the regulatory requirements, including, but not limited to requirements of PAR, OPRL, EPA and MoE decision No. 52/1/1996, National maximum allowable noise levels and the permissible noise exposure standards.	Logistics Base Contractor;	Logistics Base Contract	Zero nonconformance with fenceline noise limit.	Fenceline noise monitoring biweekly (every 2 weeks).	Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities causing disturbance and nuisance to human health; Reduction in water quality; Potential indirect effects on plankton
SA-3	MAS03	Support activities (Movement of support vessels)	Infrastructure (Beirut Port); Shipping; Fisheries; Tourism, (recreational activities)	Supply vessels will have designated mooring jetty at the onshore logistics base reducing interference with other non-project vessels using the Port.	Supply Vessel Contractor;	Logistics Base Contract	Designated mooring jetty.	Once during logistic base set up	Potential to interfere with other sea users passing through Beirut Port and within the transit route to MODU; Increased vessel transfer through Beirut Port area increases risk of vessel collision

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MR-8	OAE05	Logistics base operation – chemicals management	None providing chemicals managed properly	A certified fire fighting and fire alarm system will be installed at the Logistics base chemical storage areas, with remote alarm control installed in the offices.	Logistics Base Contractor;	Logistics Base Contract; HSE Plan	Zero noncompliance	Initial check at logistics base final set up, during HSE audit and during daily tour and weekly HSE tour.	None under normal operations
MR-21	AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea	Water quality; Plankton; Nekton (fish); Tourism - logistics base located close to yachting club; Cetaceans turtles and seals; Sediment quality / composition; Benthos; Fisheries	Transfer hoses will have valve fittings that allow spill free connection and disconnection.	Logistics Base Contractor;	MGO Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Check prior to each fluid transfer.	Reduction in water quality within the port; Disruption of access to water for sailing club vessels during any clean-up
MR-22	AE9; AE12	Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea; Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Water quality; Tourism - logistics base located close to yachting club; Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Certified and pressure tested transfer hoses will be used that are visually inspected before use.	Logistics Base Contractor;	MGO Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Check prior to each fluid transfer.	Reduction in sediment and water quality; Potential indirect impacts on benthos, plankton, fish and fisheries; Disruption of access to water for sailing club vessels during any clean-up
PP-49	AE9	Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Marine diesel transfer will start in daylight hours only.	Drilling Contractor; Supply Vessel Contractor	MGO Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Prior to each request for refuelling. Site verification during all transfer activity.	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries
PP-50	AE9	Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Transfer hoses will be self floating or equipped with floating device to limit the risk of sinking and potential rupture with vessel's propeller.	Drilling Contractor; Supply Vessel Contractor	MGO Contract	Zero noncompliance	Prior to each request for refuelling. Site verification during all transfer activity.	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries
MR-17	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	All spills in Lebanese waters will be reported to the Joint Maritime Operations Chamber (JMOC).	TEP Liban	Oil Spill Contingency Plan	Specified and provided for in relevant management plan; site verification zero noncompliance	Report issued in case of incident.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
MR-18	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Transboundary impacts will be communicated to Lebanese authorities so that they can notify and consult with potentially affected neighbouring countries.	TEP Liban	Oil Spill Contingency Plan	Specified and provided for in relevant management plan; site verification zero noncompliance	Report issued in case of incident.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
PP-47	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Any dispersant usage will be approved in advance by the MoE.	TEP Liban; Drilling Contractor	Oil Spill Contingency Plan	Approval from MoE	Approval of dispersant application in case of accident by MoE.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria

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PP-55	AE4; AE5; AE6; AE7; AE8' AE10; AE11	Riser rupture, release of drilling fluid to sea; Shallow gas blowout, release of gas into water column during riserless operations; Shallow gas blowout, release of gas into water column during riserless operations; Blowout – release of condensate and gas; Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser; Helicopter crash on MODU deck – release of aviation fuel to sea; Loss of rig stability (rig capsize) with release of fuel inventory; Earthquake resulting in loss of well integrity and release of hydrocarbons to sea.	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries; Air quality; Shipping; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources; Sensitive marine habitats (offshore); Coastal habitats	An Oil Spill Contingency Plan (OSCP), Blowout Contingency Plan (BOCP), and Emergency Response Plan (ERP) will be developed and implemented for project. The OSCP will align with the 'National Oil Spill Contingency Plan (NOSCP) in Lebanese Waters' (2017) and will be communicated to the LPA. In the event that a subsequent exploration / appraisal well is drilled in the Block 4 priority area, in a location closer to shore than well B4-1, TEP Liban will carry out further spill modelling and submit the results in a Notification of Change Report to the authorities.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Helicopter Contractor	OSCP, BOCP, ERP as a part of Company Management System	Approved OSCP; BOCP and ERP. Additional modelling if required.	Various plans developed and implemented prior to spud.	Reduction in air quality, water quality and sediment quality; Potential indirect effects on benthos, plankton, fish, seabirds, cetacean, turtle and seals, marine habitats and fisheries; Potential for gas in water column to affect shipping; Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria; Damage to vessel
WM-6	MAE08; MAS02	Discharge of sanitary waste from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Sanitary waste will be managed in accordance with MARPOL 73/78 Annex IV. Grey water will be discharged to sea (without treatment) as long as no floating matter or sheen is observable. Black water will be treated in accordance with MARPOL 73/78 Annex IV prior to discharge.	Drilling Contractor; Supply Vessel Contractor	Pollution Prevention & Environmental Monitoring Plan	Compliance/Non-Compliance	Sheen monitoring undertaken twice daily during discharges.	Reduction in water quality; Potential for indirect effects on plankton and fish
MR-2	MAE04; MAE16; MAE17	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions; Well test of possible future appraisal well.	Air quality; Climate change	Air emissions data (including GHG information) will be submitted to the authorities.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Pollution Prevention and Environmental Monitoring Plan	Atmospheric emissions calculated empirically from fuel consumption	Air emissions calculation will be done at end of the project (regarding MODU and vessels) Reporting to TEP Liban on the fuel consumption will be done on a monthly basis. Air emissions calculation will be done empiricallly on a monthly basis (regarding logistics base operation)	Reduction in air quality; GHG emissions contribute to climate change
MR-3	MAE18	Underwater noise from vertical seismic profile (VSP) activities	Nekton (fish); Cetaceans, turtles and seals	Reporting of marine mammal monitoring results and findings of real-time mitigation to ACCOBAMS.	TEP Liban; Drilling Contractor	Pollution Prevention and Environmental Monitoring Plan	MMO report	If VSP Logging takes place, reports from MMO will be issued following VSP operations.	Potential for injury / hearing loss, alteration of behaviour, auditory masking, effects on zone of audibility
PP-16	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Sulphur content of marine fuel oil used onboard vessels will not exceed 0.5% by mass (unless vessels have scrubbers fitted) in line with MARPOL 2020 requirements (R).	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan	Sulphur content in fuel less than 0.5% by mass	MGO certificate of quality required prior to each refuelling.	Reduction in air quality; GHG emissions contribute to climate change
PP-25	MAE20; MAS02	Light spill from MODU; MODU operations	Seabirds; Fish; Cetaceans turtles and seals	Light spill will be reduced by shielding lights and pointing lights directly at the work area (directional alignment).	Drilling Contractor; Supply Vessel Contractor	Pollution Prevention and Environmental Monitoring Plan	N/A	During rig visit by HSE department.	Possible disorientation of seabirds; Attraction of planktonic organisms and subsequently fish and other large marine fauna; Disorientation of turtle hatchlings
PP-26	MAE20; MAS02	Light spill from MODU; MODU operations	Seabirds; Fish; Cetaceans turtles and seals	Area and work lighting will be limited to the amount and intensity necessary to maintain worker safety.	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan	N/A	During rig visit by HSE department.	Possible disorientation of seabirds; Attraction of planktonic organisms and subsequently fish and other large marine fauna; Disorientation of turtle hatchlings
PP-39	OAS01; OAS02	Logistics base operation; Transport of materials to / from the logistics base (vessel and vehicle activity)	Public Health (Air Quality)	Compliance with Lebanese maximum emission limits (Decision 8/1/2001) at the logistics base.	TEP Liban; Logistics Base Contractor;	Pollution Prevention and Environmental Monitoring Plan	Specified and provided for in relevant management plan/s; zero noncompliance with manufacturer's recommended maintenance schedule.	Initial check at logistics base final set up. Every week for maintenance records.	Reduction in air quality due to activities at Logistics Base inside the Port (air emissions/dust, vibration from machinery and noise), affecting nearby communities; Increase in ambient noise disturbing residential properties, businesses and leisure and recreation facilities in the vicinity of the logistics base; Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities causing disturbance and nuisance to human health
PP-58	MAE11	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels.	Water quality; Plankton; Nekton (fish)	The MODU and support/supply vessels (more than 400 gross tonnage) will have an International Oil Pollution Prevention Certificate, will maintain an Oil Record Book, and will have an approved Shipboard Oil Pollution Emergency Plan (SOPEP) in accordance with MARPOL 73/78 Annex I (R).	Drilling Contractor; Supply Vessel Contractor	Pollution Prevention and Environmental Monitoring Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Certificates in place before mobilisation. Oil record book updates on a monthly basis.	Reduction in water quality; Potential for impacts on plankton and fish

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PP-59	MAE13	Discharge of ballast from MODU and support / supply vessels	Water quality; Plankton; Nekton (fish)	The MODU and support / supply vessels will have an onboard Ballast Water Management Plan, keep a record of all ballast water exchange operations in a Ballast Water Record Book, and have an International Ballast Water Management Certificate.	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan	Ballast Water Management Plan/s; site verification zero noncompliance.	Monitored by bridge at each ballasting operation.	Potential for introduction of non-native invasive species in ballast water, with knock-on effects to rest of marine ecosystem (secondary impacts)
PP-61	MAE16	MODU and support / supply vessel / helicopter transfer / plant operation resulting in air emissions	Air quality; Climate change	The MODU and support/supply vessels (more than 400 gross tonnage) will obtain an International Air Pollution Prevention Certificate in accordance with MARPOL 73/78 Annex VI	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan	Certificate demonstrating compliance – International Air Pollution Certificate. Atmospheric emissions calculated empirically from fuel consumption.	Atmospheric emissions calculated emperically from fuel consumption records every month	Reduction in air quality; GHG emissions contribute to climate change
PP-20	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Ozone depleting substances and all products listed in the Montreal Protocol - CFCs, HCFCs and Halons, will be prohibited except for essential use, under derogation (R).	TEP Liban; Drilling Contractor; Supply Vessel Contractor	Pollution Prevention and Environmental Monitoring Plan; Contractors Scopes of Work	List of identified products.	Review of list of chemicals before operations.	Reduction in air quality; GHG emissions contribute to climate change
PP-15	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Atmospheric emissions on the MODU and support / supply vessels will be controlled in accordance with MARPOL 73/78 Annex VI (R).	Drilling Contractor; Supply Vessel Contractor;	Pollution Prevention and Environmental Monitoring Plan; Environmental Management	Certificate demonstrating compliance – International Air Pollution Certificate. Atmospheric emissions calculated empirically from fuel consumption.	Atmospheric emissions calculated empirically from fuel consumption records every month.	Reduction in air quality; GHG emissions contribute to climate change
PP-57	MAE08	Discharge of sanitary waste from MODU and support / supply vessels	Nekton (fish)	Both the MODU and support / supply vessels will have an International Sewage Pollution Prevention Certificate in line with MARPOL 73/78 Annex IV.	Drilling Contractor; Supply Vessel Contractor	Pollution Prevention and Monitoring Plan	Available certificates for MODU & vessels	Certificates in place before operations.	Reduction in water quality; Potential for impacts on plankton and fish
PP-19	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	Supply vessels transfers to the MODU will be optimised and the support vessel will drift around the MODU to minimise engine use.	Drilling Contractor; Supply Vessel Contractor;	PSV Contract	Site verification zero noncompliance; Fuel consumption	Daily activity report; Fuel consumption for PSV recorded daily and reported to TEP Liban monthly	Reduction in air quality; GHG emissions contribute to climate change
SOC-12	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	A Notice to mariners (NAVAID / NAVAREA system) will be issued.	TEP Liban; Supply Vessel Contractor;	PSV Contract; As per Port Authorities	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	NTM on NAVAREA publication will checked prior to spud and updated if duration of the well increases. Issue of NTM responsibility of MoPWT	Damage to vessel; Reduction in water quality; Potential indirect impacts on plankton, fish, seabirds, cetacean, turtle and seals, marine habitats and fisheries
MR-12	AE4; AE6	Riser rupture, release of drilling fluid to sea; Blowout – release of condensate and gas	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries; Air quality; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Rig acceptance audit will be carried out.	TEP Liban; Drilling Contractor;	Rig contract	Zero noncompliance	Once - rig acceptance performed prior to mobilisation.	Reduction in water quality and sediment quality; Potential indirect impacts on benthos, fish and fisheries; Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
PP-10	MAE13; MAS02	Discharge of ballast from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	MODU will carry out internal ballasting for a large proportion of its operations with no discharge of ballast to sea.	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored by bridge at each ballasting operation.	Potential for introduction of non-native invasive species in ballast water, with knock-on effects to rest of marine ecosystem (secondary impacts)
PP-11	MAE13; MAS02	Discharge of ballast from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish); Fisheries	Any ballast water exchange will be carried out in compliance with the 'International Convention for the Control and Management of Ships' Ballast Water and Sediments 2014' (R).	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored by bridge at each ballasting operation.	Potential for introduction of non-native invasive species in ballast water, with knock-on effects to rest of marine ecosystem (secondary impacts); Potential for reduction in water quality from drilling and operational discharges to impact fisheries
PP-12	MAE13; MAS02	Discharge of ballast from MODU and support / supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Ballast water on drillship and support/supply vessels will be segregated and will not come into contact with oil and chemicals.	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored at each fluid transfer.	Potential for introduction of non-native invasive species in ballast water, with knock-on effects to rest of marine ecosystem (secondary impacts)

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PP-6	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Deck drainage (clean drains) will only be discharged to sea as long as no visible sheen is observable (sea surface monitored during discharge).	Drilling Contractor; Supply Vessel Contractor	Rig Environmental Aspects and Impacts Register	Zero noncompliance	Sheen monitoring twice daily throughout discharging operations.	Reduction in water quality; Potential for impacts on plankton and fish
PP-7	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Bilge water will be treated and discharged in accordance with MARPOL 73/78 Annex I, with discharge automatically stopped if effluent exceeds 15 ppm of oil (special area requirements for Mediterranean Sea, ships of >400 gross tonnage).	Drilling Contractor; Supply Vessel Contractor	Rig Environmental Aspects and Impacts Register	15ppm oil in water	Continuous monitoring of wastewater from bilge and engine rooms to ensure compliance with MARPOL 73/78	Reduction in water quality; Potential for impacts on plankton and fish
PP-8	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Water quality; Plankton; Nekton (fish)	Slop water will be treated onboard the MODU in a slop treatment unit. The separated drilling fluids and slops will be sent to shore for treatment / disposal and the separated water discharged to sea providing the oil in water content does not exceed 15 ppm.	Drilling Contractor; Supply Vessel Contractor	Rig Environmental Aspects and Impacts Register	15ppm oil in water	Monitoring of oil in water content before each discharge.	Reduction in water quality; Potential for impacts on plankton and fish
PP-9	MAE12; MAS02	Uplift and discharge of cooling water from MODU; MODU operations	Water quality; Plankton; Nekton (fish)	Discharge of cooling water will comply with allowable limits in Decision No. 8/1/2001 (maximum temperature of wastewater discharge to sea 35 °C) and TOTAL / World Bank requirement that temperature increase shall not exceed a maximum of 3 °C, 100 m away from the discharge point.	Drilling Contractor	Rig Environmental Aspects and Impacts Register	35°C maximum water temperature	Daily mechanical rounds	Reduction in water quality / temperature effects; Potential for indirect impacts on plankton and fish; Direct impacts to plankton and fish from entrainment during uplift
PP-13	MAE11; MAS02	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels; MODU operations	Fisheries	All operational discharges from MODU will be in accordance with the requirements of MARPOL 73/78 (R).	Drilling Contractor; Supply Vessel Contractor;	Rig Environmental Aspects and Impacts Register; Pollution Prevention and Environmental Monitoring Plan	Available certificates for MODU & vessels Compliance/Non-Compliance	Certificates in place before operations. Sheen monitoring undertaken twice daily during discharges.	Potential for reduction in water quality from drilling and operational discharges to impact fisheries
PP-52	OAE01; OAS02; AE8; AE10	Logistics base operation - emissions to air; Transport of materials to / from the logistics base (vessel and vehicle activity); Helicopter crash on MODU deck – release of aviation fuel to sea; Loss of rig stability (rig capsize) with release of fuel inventory	Air quality; Climate change; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Planned, preventive maintenance as per manufacturer's recommendation will be mandatory for all equipment.	TEP Liban; Drilling Contractor; Logistics Base Contractor; Helicopter Contractor	Rig Maintenance Manual; Scope of Work	N/A (for logistics base operation) % of non-compliance with manufacturer's recommended maintenance schedule. (for MODU and vessels)	Documentation check prior to spud, other checks as per manufacturer's recommendations throughout the duration of the operation	Reduction in air quality due to activities at Logistics Base inside the Port (air emissions/dust, vibration from machinery and noise), affecting nearby communities; Increase in ambient noise disturbing residential properties, businesses and leisure and recreation facilities in the vicinity of the logistics base; Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities causing disturbance and nuisance to human health; Reduction in water quality; Potential indirect effects on plankton
MR-10	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Riser fatigue analysis will be carried out and riser joints fully inspected and changed if necessary.	Drilling Contractor	Riser Analysis	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Riser analysis performed prior operations start. Risers inspected as per contrator maintenance program. Constant MODU stability monitoring.	Reduction in water quality and sediment quality; Potential indirect impacts on benthos, fish and fisheries
MR-11	AE4; AE10	Riser rupture, release of drilling fluid to sea; Loss of rig stability (rig capsize) with release of fuel inventory	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	Daily metocean and weather forecast will be assessed during operations.	Drilling Contractor	Riser Analysis	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Site verification every day.	Reduction in water quality and sediment quality; Potential indirect impacts on benthos, fish and fisheries; Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
PL-2	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Upfront analysis of metocean data will be carried out in order to adapt riser equipment.	Drilling Contractor	Riser Analysis	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Riser analysis performed prior operations start. Risers inspected as per contrator maintenance program. Constant MODU stability monitoring.	Reduction in sediment and water quality; Potential indirect impacts on benthos, plankton, fish and fisheries

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TR-2	AE5	Shallow gas blowout, release of gas into water column during riserless operations	Air quality; Water quality; Sediment quality / composition; Benthos; Plankton; Fish; Fisheries; Shipping	Shallow gas procedures will be known and practised, and shallow gas drills will be conducted.	TEP Liban; Drilling Contractor	Riser Analysis; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Practised once before Top hole operations. Additional practise if crew changes during shallow drilling.	Reduction in air quality, water quality and sediment quality; Potential indirect impacts on benthos, fish and fisheries; Potential for gas in water column to affect shipping
TR-8	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Loss of MODU position trials will be carried out along with endurance tests	TEP Liban; Drilling Contractor	Riser Analysis; DP Trials	Specified and provided for in relevant management plan/s; site verification zero noncompliance. 100% coverage of all relevant personnel; training records.	Crew training records checked prior to operations start up. Loss of position drills reported in daily drilling report.	Reduction in water quality and sediment quality; Potential indirect impacts on benthos, plankton, fish and fisheries
PP-45	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	BOP auto shear function will be in place in order to reduce volume of drilling fluids released from the well during an accidental event.	TEP Liban; Drilling Contractor	Riser Analysis; Drilling Program; Company Rules	N/A	Verified during BOP certification. Surface test during acceptance. Constant function availability monitoring.	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries
PP-46	AE4	Riser rupture, release of drilling fluid to sea	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries	Riser emergency disconnect sequence will be tested.	TEP Liban; Drilling Contractor	Riser Analysis; Drilling Program; Company Rules	N/A	Once during acceptance test. Constant function availability monitoring during riser activities.	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries
HSS-14	AE10	Loss of rig stability (rig capsize) with release of fuel inventory	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Coastal habitats; Fisheries; Shipping; Tourism; Public health; Social conditions; General economy / industry; Infrastructure; Archaeological and cultural resources	MODU will only operate within weather limit.	TEP Liban; Drilling Contractor;	Riser Analysis; Rig Specifications; Bridging Document	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Site verification every day.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
HSS-8	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	Support vessel will be at well site providing security and safety (fire fighting, etc) and will alert any vessels on a collision course.	TEP Liban; Supply Vessel Contractor	Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	On daily basis when PSV are in vicinity of the MODU	Damage to vessel; Reduction in water quality; Potential indirect impacts on plankton, fish, seabirds, cetacean, turtle and seals, marine habitats and fisheries
HSS-9	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	There will be 24/7 radio communications and watches.	TEP Liban; Supply Vessel Contractor	Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	On daily basis when PSV are in vicinity of the MODU	Damage to vessel; Reduction in water quality; Potential indirect impacts on plankton, fish, seabirds, cetacean, turtle and seals, marine habitats and fisheries
PE-2	MAE22	Logging using radioactive sealed sources (also applicable to onshore storage and transport of radioactive sealed sources)	None under normal operations	A permit will be obtained by the Contractor for the import, storage, use and export of radioactive materials from the Lebanese Atomic Energy Commission, a department of the Ministry of Public Health.	Drilling and Acquisition Contractor	Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Licenses/permit obtained by said CONTRACTOR to be submitted to COMPANY upon receipt.	None under normal operations
CM-1	MAE02; MAE03; MAS02	Drilling of riserless top hole sections - discharge of cuttings and WBDFs; Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; MODU operations	Seabed quality / composition; Benthos; Sensitive seabed habitats; Nekton (fish); Water quality; Plankton; Cetaceans, turtles and seals; Fisheries	Barite will meet heavy metals concentration standards i.e. mercury <1 mg/kg and cadmium <3 mg/kg dry weight (total).	TEP Liban; Drilling Fluids Contractor	Scope of Work; Chemical Management Procedure	% of non-compliance	Review of supply chain documentation with each new batch of barite.	Burial or smothering of benthic communities; Oxygen depletion in sediments; Changes to sediment structure and quality; Changes to water quality; Potential for toxicity or bioaccumulation effects; Potential for indirect effects on plankton, fish and sensitive seabed habitats; Potential for reduction in water quality from drilling and operational discharges to impact fisheries;
RA-1	AE3	Radioactive source lost in hole	Sediment quality / composition	Logging operations carried out by a certified team.	Drilling and Acquisition Contractor	Scope of Work; Company Rules; Contractor Standards	All operators with certified training	Training / competency records provided for logging team ahead of logging operations.	Potential radiation impact on sediments and geology
RA-2	AE3	Radioactive source lost in hole	Sediment quality / composition	Best efforts will be made to retrieve the source – fishing equipment will be available on site. Failing this, section where radioactive source lost will be cemented up.	Drilling and Acquisition Contractor	Scope of Work; Company Rules; Contractor Standards	Evaluation decision documents.	Once prior decision execution	Potential radiation impact on sediments and geology

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CM-2	MAE02; MAE03; MAE05; MAS02; AE2; AE4; AE9; AE12.	Drilling of riserless top hole sections - discharge of cuttings and WBDFs; Drilling of lower well sections using HPWBDF - discharge of cuttings and fluids; Cementing discharges during drilling; MODU operations; Loss of chemical containment onboard MODU; Riser rupture, release of drilling fluid to sea; Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea; Loss of containment during materials transfer to supply vessels at logistics base quay side – release of drilling fluids / diesel to sea.	Sediment quality / composition; Water quality; Benthos; Plankton; Fish; Fisheries; Seabed quality / composition; Benthos; Fisheries	Majority of chemicals proposed are HQ Band Gold; OCNS Group E; or PLONOR and; have characteristics of: lowest toxicity, lowest bioaccumulation potential and highest biodegradation. The only exception is BORE-HIB (OCNS Group D) which is used in small quantities.	TEP Liban; Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor; Fluids Contractor; Drilling and Acquisition Contractor	Scope of Work; Contracts; Chemicals Management Plan; Company Rules	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Review of supply chain documentation for each chemical.	Burial or smothering of benthic communities; Oxygen depletion in sediments; Changes to sediment structure and quality; Changes to water quality; Potential for toxicity or bioaccumulation effects; Potential for indirect effects on benthos, plankton, fish and sensitive seabed habitats, and fisheries; Cement may smother seabed and change its Ph; Potential for toxicity or bioaccumulation effects; Potential for reduction in water quality from drilling and operational discharges to impact fisheries; Reduction in water quality within the port; Disruption of access to water for sailing club vessels during any clean-up
PP-63	MAE10	Desalination unit discharges from MODU	Water quality; Plankton; Nekton (fish)	Anti-scaling chemical will be an environmentally sound all-organic product based on biodegradable compounds.	Drilling Contractor	Scope of Work; Contracts; Chemicals Management Plan; Company Rules	Zero noncompliance	Once before operations.	Reduction in water quality; Potential for impacts on plankton and fish
PP-64	MAE12	Uplift and discharge of cooling water from MODU	Nekton (fish)	No discharge of antifouling chemicals in cooling water, a marine growth prevention system (MGPS) will be used.	Drilling Contractor	Scope of Work; Contracts; Chemicals Management Plan; Company Rules	Zero noncompliance	Prior to operations.	Reduction in water quality / temperature effects; Potential for indirect impacts on plankton and fish
PP-17	MAE04; MAE16	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings; MODU and support / supply vessel / helicopter transfer plant operation resulting in air emissions	Air quality; Climate change	All machinery, equipment and installations will comply with generally accepted standards in the international petroleum industry, will be of proper construction, and kept in good working order.	Drilling Contractor; Supply Vessel Contractor;	Scope of Work; Environmental Management	Zero noncompliance	Review of equipment against relevant standards prior to spud / use; review of maintenance schedule against manufacturer's recommended maintenance; verification of maintenance activity as per schedule.	Reduction in air quality; GHG emissions contribute to climate change
CH-1	MAS02	MODU operations	Archaeological and cultural resources	Avoid existing known cultural heritage and archaeological sites and comply with their protection regimes according to regulatory requirements (Antiquities System Decision 166/1933 and Cultural properties Law 37/2008	TEP Liban;	Social Management Plan	Specified and provided for in relevant management plan; site verification zero noncompliance	Site survey will be performed in sufficient time ahead of anchoring such that anchor plan can be established, and spud location confirmed that avoid cultural heritage sites. Already completed for well B4-1.	Potential for physical disturbance of unknown marine archaeological resources during well spud (at all 3 possible well locations).
HSS-15	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Shipping	Ensure sea users are aware of drilling programme activities and presence of safety zone during mobilisation and demobilisation through a Notice to Mariners (The schedule of activities will be communicated to the Ministry of Public Works and Transport and the Lebanese Navy via the Lebanese Armed Forces (LAF) that issues information and instructions to mariners pertaining to shipping hazards and safety zones).	TEP Liban;	Social Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Notice to Mariners issued before spud	Disruption to sea users – mainly tankers, cargo ships and container ships - due to diversion to avoid 500 m safety zone
SCM-1	OAS01	Logistics base operation	General economy (employment and service provision)	Contractors will be encouraged to consider the use of local labour and to advertise any Project related vacancies locally.	TEP Liban; Logistics Base Contractor	Social Management Plan	Effective messaging with regard to employment and training opportunities.	Local content report post activity delivered to relevant authorities.	Potential for positive impacts on the employment of a local workforce (opportunities are limited at this exploration phase); Opportunities in terms of provision of service
SCM-2	OAS01	Logistics base operation	General economy (employment and service provision)	Preferential treatment will be given to the procurement of Lebanese originating goods and services; PAR Article 157 right holder shall ensure that operator gives preferential treatment to the procurement of Lebanese originating goods and services when such goods and services are internationally competitive with respect to quality, availability, price and performance.	TEP Liban; Logistics Base Contractor	Social Management Plan	Effective messaging with regard to procurement opportunities.	Mention in the contract: monitoring during audits.	Potential for positive impacts on the employment of a local workforce (opportunities are limited at this exploration phase); Opportunities in terms of provision of service
SCM-3	OAS01	Logistics base operation	Education and Training	PAR Article 155 the right holder and contractor shall give priority to training of Lebanese in order to facilitate the employment of Lebanese at all level or right holders/contractor's organisation.	TEP Liban; Logistics Base Contractor	Social Management Plan	Effective messaging with regard to employment and training opportunities.	Mention in the contract: monitoring during audits.	Potential for positive impacts on skills development for the local workforce

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SOC-1	OAE03; MAS01; OAS01; OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Fisheries; Public Health; Social Conditions (Road safety and congestion); Infrastructure (Road network)	Project will implement a grievance mechanism; the grievance mechanism will be clearly communicated to relevant stakeholders.	TEP Liban; Logistics Base Contractor	Social Management Plan	Grievance mechanism; effective messaging.	Grievance mechanism in place prior to spud, and communicated to stakeholders.	Potential disruption to fisheries as fishing will not be allowed within 500 m of the safety zone around drillship for security reasons; Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities causing disturbance and nuisance to human health; Increase in traffic on the road network due to transportation of supplies, materials and personnel to and from logistics base inside the Port of Lebanon; Potential deterioration and damage to existing road infrastructure from increased traffic
SOC-11	AE6	Blowout – release of condensate and gas	Air quality; Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Coastal habitats; Fisheries; Shipping; Tourism; Public Health; Social conditions; General economy / industry; Infrastructure; Archaeology and cultural resources	Sensitive coastal areas will be protected as a priority in line with coastal sensitivity mapping in TEP Liban's OSCP and mapping in the NOSCP.	TEP Liban; Drilling Contractor;	Social Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance	Route provided by Lebanese Air Forces.	Potential condensate spill impacts on plankton, fish, seabirds, cetaceans, turtles and seals and coastal habitats, fishing, shipping, tourism, infrastructure (water intakes), archaeological and cultural resources and therefore general economy / industry; Potential health impacts on coastal communities from spills reaching shore and possible consumption of contaminated fish; Transboundary impacts also predicted in offshore waters and shoreline of Syria
SOC-3	MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Shipping	Adherence to existing shipping corridors with known buffer zones and standard operating procedures as stipulated in UNCLOS.	TEP Liban; Port Authorities	Social Management Plan; As per Port Authorities	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Information reviewed on a per trip basis.	Disruption to sea users – mainly tankers, cargo ships and container ships - due to diversion to avoid 500 m safety zone
SOC-2	OAE06; OAS03	Helicopter transfers to Beirut International Airport; Support activities (Helicopter transfer)	Sensitive coastal habitats; Terrestrial ecology; Seabirds; Tourism	Avoidance of low flight directly over internationally recognised and proposed conservation areas and over local communities and popular beaches, in the vicinity of the airport, if safe and practical to do so (subject to Lebanese Air Force approval).	Helicopter Contractor; RHIA	Social Management Plan; Helicopter Contract	Zero noncompliance with flight plan.	Not Applicable as Route provided by Lebanese Air Forces.	Airborne noise may disturb fauna (IBA, KBA and MPA in close proximity to airport); Increase in airborne noise disturbing local holidaymakers if passing near hotels or other noise sensitive businesses
SOC-9	OAE06; OAS03	Helicopter transfers to Beirut International Airport; Support activities (Helicopter transfer)	Sensitive coastal habitats; Terrestrial ecology; Seabirds; Infrastructure (air traffic)	A flight plan will be developed and agreed with the Lebanese aviation authorities.	TEP Liban; Logistics Base Contractor; RHIA	Social Management Plan; Helicopter Contract	Zero noncompliance with flight plan.	Not Applicable as Route provided by Lebanese Air Forces.	Potential burden on existing flight control facilities; Airborne noise may disturb fauna (IBA, KBA and MPA in close proximity to airport)
HSS-1	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Social Conditions (Road safety and congestion)	Speed restrictions will always be adhered to, these will be defined in a driving and transportation policy. Speed limits around Logistics Base will be 20 km/hour.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contract	Enforcement activity; training records; zero traffic infringements.	Inside the base: road sign at base entrance. Outside the base: under Port authorities responsibility. At sea random checks of vessel speed by use of AIS	Increase in traffic on the road network due to transportation of supplies, materials and personnel to and from logistics base inside the Port of Lebanon
HSS-2	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Infrastructure (Road network)	A vehicle movement plan will be developed and implemented at the logistics base	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contract	Enforcement activity; zero traffic infringements.	Outside the base: falls under Port authorities	Increase in traffic on the road network due to transportation of supplies, materials and personnel to and from logistics base inside the Port of Lebanon; Potential deterioration and damage to existing road infrastructure from increased traffic
HSS-3	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Infrastructure (Road network)	Contractor shall comply with driving and transportation policy requirements under the contract including speed limits and slow speeds when crossing villages etc.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contract	Enforcement activity; zero traffic infringements.	Inside the base: road sign at base entrance. Outside the base: under Port authorities responsability. At sea random checks of vessel speed by use of AIS	Potential deterioration and damage to existing road infrastructure from increased traffic
SOC-13	OAS02	Transport of materials to / from the logistics base (vessel and vehicle activity)	Infrastructure (Road network)	Contractors are responsible for protecting infrastructure and reinstating damages if caused by their activities.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contractor Contract with Port of Beirut	Specified and provided for in relevant management plan/s; number of related complaints.	Monitoring to be specified if reinstatement required, then on a monthly basis during drilling of claims / grievances	Presence of the project could create additional pressure on existing Port's infrastructure including competition for existing facilities and space inside the Port; Potential deterioration and damage to existing road infrastructure from increased traffic
SOC-8	OAS01	Logistics base operation	Infrastructure (Port of Beirut)	Logistics base contractor will be required to comply with the Port's operational limits and Operator's HSE requirements.	TEP Liban; Logistics Base Contractor;	Social Management Plan; Logistics Base Contractor Contract with Port of Beirut	Specified and provided for (operational limits) in relevant management plan/s; site verification zero noncompliance.	Monthly report stating HSE data	Presence of the project could create additional pressure on existing Port's infrastructure including competition for existing facilities and space inside the Port
SOC-5	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Fisheries	Operators will submit Safety Zone Authorisation to the authorities for approval prior to drilling activities.	TEP Liban;	Social Management Plan; Stakeholder Engagement Plan	Approval of Safety Zone Authorisation	Prior to spud	Disruption to sea users – mainly tankers, cargo ships and container ships - due to diversion to avoid 500 m safety zone

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PP-51	AE9; AE12	Loss of containment during offshore materials transfer to MODU – release of drilling fluids or marine diesel to sea	Water quality; Plankton; Nekton (fish); Tourism - logistics base located close to yachting club; Cetaceans turtles and seals; Sediment quality / composition; Benthos; Fisheries	Vessels will have a Shipboard Oil Pollution Emergency Plan (SOPEP) in line with MARPOL requirements.	Drilling Contractor; Supply Vessel Contractor	SOPEP (Shipboard Oil Pollution Emergency Plan); Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance	SOPEPs collected from PSVs.	Reduction in water quality and sediment quality; Potential indirect effects on benthos, plankton, fish and fisheries; Disruption of access to water for sailing club vessels during any clean-up
MR-19	AE7	Collision of third party ship with MODU – release of third party fuel inventory, possible damage to MODU and riser	Water quality; Plankton; Fish; Seabirds; Cetaceans, turtles & seals; Sensitive marine habitats (offshore); Fisheries; Shipping	MODU position and 500 m exclusion zone will be notified to the authorities.	TEP Liban; Supply Vessel Contractor;	Stakeholder Engagement Plan	Specified and provided for in relevant management plan; site verification zero noncompliance	Check before spudding well that NTM actually released.	Damage to vessel; Reduction in water quality; Potential indirect impacts on plankton, fish, seabirds, cetacean, turtle and seals, marine habitats and fisheries
SOC-6	MAS01	MODU mobilisation, installation, plug and abandonment and demobilisation	Fisheries	Operators shall inform fishermen through the fisheries associations about well plan approvals to ensure well location avoidance. Discussions will be initiated approximately 1 month before planned commencement of drilling in case extensive fishing area is impacted.	TEP Liban	Stakeholder Engagement Plan	Meeting reports	1 month before spud. Ongoing liaison with fishermen during drilling regarding understanding of grievance mechanism	Potential disruption to fisheries as fishing will not be allowed within 500 m of the safety zone around drillship for security reasons; Decreased in air quality from transport emissions affecting human health; Disturbance from noise from transport activities.
SOC-4	MAS01; MAS02	MODU mobilisation, installation, plug and abandonment and demobilisation; MODU operations	Shipping	Ensure sea users are aware of drilling programme activities and presence of safety zone during mobilisation and demobilisation through a Notice to Mariners (The schedule of activities will be communicated to the Ministry of Public Works and Transport and the Lebanese Navy via the Lebanese Armed Forces (LAF) that issues information and instructions to mariners pertaining to shipping hazards and safety zones).	TEP Liban;	Stakeholder Engagement Plan; As per Port Authorities	Stakeholders informed of drilling operations including vessel movements.	NTM on NAVAREA publication will checked prior to spud and updated if duration of the well increases. Issue of NTM responsibility of MoPWT	Disruption to sea users – mainly tankers, cargo ships and container ships - due to diversion to avoid 500 m safety zone
SOC-14	MAS04	Public health and safety (people working in immediate vicinity of the MODU).	Shipping; Fisheries; Tourism	One support vessel will be permanently at the drill site providing security and safety duties, alerting other non-project sea users about 500 m safety zone.	PSV Contractor	Supply Vessel Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	NTM on NAVAREA publication will checked prior to spud and updated if duration of the well increases. Issue of NTM responsibility of MoPWT	Disruption to sea users – mainly tankers, cargo ships and container ships - due to diversion to avoid 500 m safety zone
PP-4	MAE06; MAS02	Pipe dope discharges during drilling; MODU operations	Water quality; Plankton; Nekton (fish)	A pipe dope product that is heavy metal free will be selected for the drilling operations.	TEP Liban; TRS Contractor	TRS Contract & Scope of Work	Zero noncompliance	Review of supply chain documentation for pipe dope.	Localised reduction in water quality; Potential for indirect effects on plankton and fish
MR-7	OAE04	Logistics base operation – waste management	None providing waste managed properly	Waste Transfer Notes signed by all parties will be sent to TEP Liban by logistics base contractor and copies retained on site.	Logistics Base Contractor;	Waste Management ; Logistics Base Contract	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Checks for each waste transit operation.	None under normal operations
PP-14	MAE15	Operation of incinerator onboard MODU	Air quality; Climate change	Any onboard incineration will be carried out in compliance with the requirements of MARPOL 73/78 Annex XI Chapter 3, regulation 16 – Shipboard Incineration (R). There will be no incinerator onboard the MODU for well B4-1. If future exploration / appraisal wells are drilled using a MODU with onboard incinerator TEP Liban will inform the MoE for environmental clearance.	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance. Records of communication with MoE.	Monitoring operational discharge activity records. Site verification weekly during incineration activity.	Reduction in air quality; GHG emissions contribute to climate change
WM-10	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste will be segregated at source on site and coded according to the appropriate waste coding.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored daily	None under normal operations
WM-12	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	For hazardous waste, containers will be chemically resistant to the contained product and may be sealed to reduce risks.	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Containers to be checked prior to spud and when empty/new skips come into service	None under normal operations
WM-14	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste transfer notes will provide an auditable trail of the waste management process.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitoring at each step of the activity: transport, storage and disposal.	None under normal operations
WM-15	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	A Waste Management Plan will be developed by TEP Liban and implemented by its contractors.	TEP Liban; Drilling Contractor; Supply Vessel Contractor	Waste Management Plan	Waste management plan.	Prior to spud	None under normal operations

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WM-18	MAE11	Discharge of drainage water (deck drainage, fire water, bilge water and slop water) from MODU and support/supply vessels.	Water quality; Plankton; Nekton (fish)	Oily waste and sludge from separation processes will be transported to shore for treatment and disposal.	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Monitored daily, reported in monthly report	Reduction in water quality; Potential for impacts on plankton and fish
WM-19	OAE04; MAE14	Logistics base operation – waste management; Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Sorting of solid waste will be compliant with applicable national regulations in force.	Drilling Contractor; Logistics Base Contractor;	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Site verification of effective waste segregation. Daily during logistics base operation.	None under normal operations
WM-7	MAE09	Discharge of food waste from MODU and support / supply vessels (in the case of B4-1 well no discharge)	Water quality; Plankton; Nekton (fish)	Discharge of any food waste from the MODU and support/supply vessels will only be carried out more than 12 nm from the nearest land and all food waste will be ground up in order to pass through a 25 mm mesh before discharge, in line with MARPOL 73/78 Annex V (Mediterranean Sea 'special area' requirement).	Drilling Contractor; Supply Vessel Contractor	Waste Management Plan	Garbage record book data	Recorded for each discharge, inspected biweekly	Reduction in water quality; Potential for indirect effects on plankton and fish
WM-8	MAE09	Discharge of food waste from MODU and support / supply vessels (in the case of B4-1 well no discharge)	Water quality; Plankton; Nekton (fish)	Any discharges of food waste into the sea will be recorded in the Garbage Record Book of the MODU (MARPOL Annex V).	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan	Garbage record book data	Recorded for each discharge, inspected biweekly	Reduction in water quality; Potential for indirect effects on plankton and fish
WM-9	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	All non-hazardous and hazardous solid waste generated by the Block 4 exploration drilling programme will be transported to shore for recycling/treatment/disposal in accordance with MARPOL 73/78 Annex V or incinerated onboard the MODU (with the exception of water-based drill cuttings and drill fluids).	Drilling Contractor; Supply Vessel Contractor	Waste Management Plan	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Waste records available for review.	None under normal operations
WM-4	MAE04	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings	Air quality; Climate change	Cuttings skips will be certified.	TEP Liban; Drilling Fluids Contractor;	Waste Management Plan, Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Certification of skips checked at reception	Reduction in air quality due to significant transportation requirements; GHG emissions contribute to climate change
WM-5	MAE04	Drilling of lower well sections using synthetic NADFs - ship to shore of cuttings	Air quality; Climate change	Onward export of cuttings to neighbour country for treatment and disposal will be compliant with the requirements of the Basel convention (R).	TEP Liban; Drilling Fluids Contractor;	Waste Management Plan, Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Documentation checked at each shipment	Reduction in air quality due to significant transportation requirements; GHG emissions contribute to climate change
WM-13	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Hazardous waste will be transported, stored and treated/disposed of in line with applicable national regulations in force (including reporting requirements, etc)	Drilling Contractor; Supply Vessel Contractor;	Waste Management Plan; HSE Plan	Environmental license/s; quarterly MOE reports.	Monitoring at each step of the activity: transport, storage and disposal.	None under normal operations
MR-6	OAE04	Logistics base operation – waste management	None providing waste managed properly	The logistics base contractor will ensure vehicles transporting hazardous wastes from site have appropriate certification / licence to transport wastes of the particular carried waste codes (R).	Logistics Base Contractor;	Waste Management Plan; IMDG	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Certificates/licenses received at start of transport operations and each time vehicles are changed.	None under normal operations
PL-1	OAE04	Logistics base operation – waste management	None providing waste managed properly	Hazardous waste storage area will be designed as follows: Storage on an impervious surface connected to a drainage and collection system and/or in a bunded area; Storage area equipped with suitable fire-fighting equipment and spillage recovery equipment such as shovels and absorbent materials; Restricted/controlled area and access to the storage site.	Logistics Base Contractor;	Waste Management Plan; Logistics Base Contract	Zero noncompliance	Initial check at logistics base final set up, and after any maintenance servicing of storage areas	None under normal operations
WM-11	MAE14	Generation of solid waste on MODU and support / supply vessels	None providing waste managed properly	Waste receptacles will be designed to prevent release of wind born waste.	Drilling Contractor; Supply Vessel Contractor; Logistics Base Contractor	Waste Management Plan; Scope of Work	Specified and provided for in relevant management plan/s; site verification zero noncompliance.	Daily tour check of waste receptacles during operations	None under normal operations