Appendix 15.2: Potential Impacts Discussed in Other ESIA Chapters and Scoped Out of the Community Health, Safety and Security assessment

Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Construction and Pre-Commissioning Phase - onshore		
Pre-construction pipeline route surveys causing temporary land loss and/or disturbance. Although over 90% of the land being taken up is not under productive cultivation, the exception within site T1/T2 could result in loss of incomes from agricultural land with consequent lower standards of living and wellbeing.	Chapter 14 Socio-Economics	It is anticipated that labour will be able to re-deployed within the remaining 400 to 600 ha of land cultivated by the same land owner and manager so there should be no impact on standards of living.
Construction land take causing permanent change of land use or restriction on land use activities. Resulting in loss of long-term income from agricultural land with consequent lower standards of living and wellbeing.	Chapter 14 Socio-Economics	The socio-economic chapter concludes that there is a negligible residual impact on vineyard activities which would therefore not affect standards of living.
Release of dust from excavation and construction traffic movements. Non-respirable dust can cause annoyance, discomfort and effects on wellbeing and mental health.	Chapter 9 Air Quality	Use of water as a dust suppressant where appropriate means there is a low impact on human receptors from dust generation as a result of construction and traffic and resultant health issues will be unlikely with the proposed mitigation measures in place.
Deposition of mud on the local roads from construction vehicles with the potential to cause road accidents leading to personal injury.	Chapter 8 Soils, Groundwater and Surface Water	Adoption of the proposed wheel washing and dust suppression mitigation measures which will make it unlikely that there will be community/population level health impacts.
Fuel and oil leaks and spills from construction vehicles / plant from activities related to the main onshore facility. Leaks and spills have the potential to cause road accidents leading to personal injury.	Chapter 8 Soils, Groundwater and Surface Water	Spillage prevention, and bunding mitigations around fuelling areas will prevent road traffic accidents.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Light pollution from construction works from activities related to the main onshore facility. Potential impacts include sleep disturbance and a decrease in road safety due to glare.	Chapter 13 Landscape and Visual	Directional light shielding mitigation measures; phasing of works to minimise disturbance time; avoidance of night-time construction activities as far as practicable. With these mitigations, it is unlikely that light pollution will contribute to road traffic accidents or sleep disturbance.
Restriction of access / fragmentation of access due to construction works. Access restriction can cause long-term disturbance to local communities, including increased travel time (and associated fuel costs) and restrictions on leisure activities which provide physical activity.	Appendix 9.1 Traffic and Transport Study	The highway network is capable of accommodating the additional traffic without there being any perceptible impact on other road users with the exception of the section of the route through Rassvet (discussed in Chapter 15). So for communities other than Rassvet, there are no impacts to community health and safety.
Waste generation, storage and disposal, including drilling lubricants and waste fluids from construction. There are potential food chain impacts from contamination of soils, surface water and groundwater (particularly where abstraction occurs).	Chapter 8 Soil, Groundwater and Surface Water	Waste Water Monitoring will alleviate any waste related issues with human health.
Disruption of community third party utilities as a result of accidental damage during construction. Loss of mains water, heating, power or sanitation drainage could reduce important component of healthy living, including hygiene and heating.	Chapter 5 Project Description	Adequate precautions are in place in place to avoid disruption of known utilities
Ground excavations, including foundations, trenching and tunnelling have the potential for injuries or fatalities arising from falls and excavation collapse.	Chapter 22 Environmental and Social Management (CMPs / HSSE-IMS)	Temporary security fencing around the perimeter during construction will prevent accidental or intentional trespass which could lead to accidents/safety problems.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Use of radioactive sources for weld inspection. Integrity testing of the pipes and their welds may include x-ray tests. Such ionising radiation has the potential to cause cellular harm if exposure is for long periods or at a high dose.	Chapter 5 Project Description	Inspections will be performed by visual inspection and Automated Ultrasonic Testing (AUT) which is not likely to give rise to any community / population level health impacts.
Beneficial impact at the national (Russian Federation) level for businesses engaged in the manufacture and supply of pipelines associated with the increased demand for goods and services during construction phase. Such employment would be associated with positive physical and mental health outcomes.	Chapter 14 Socio-Economics	There are likely to be some, but limited, contracts for local businesses but not enough to have a beneficial impact at a national level.
Risk of house price and food price inflation due to in-migration of non-local workers during construction phase. Housing quality is linked to health outcomes, particularly associated with warmth and respiratory health.	Chapter 14 Socio-Economics	Construction workforce will be on average fewer than 300 people during the peak year of construction and approximately one third of these could be drawn from the local workforce. The number of non-local workers likely to lodge within Local Communities will not be high enough to have any significant impact on housing and food markets
Risk of house price devaluation due to proximity of the development. Reductions in house price may increase deprivation as local community fixed assets are reduced in value.	Chapter 13 Landscape and Visual	Mitigation includes Landscape and Visual Vegetative screening. Given the limited scope for amenity levels to be affected, there are unlikely to be community / population level health impacts.
Adverse impact on local tourism due to disruption and reduced visual appeal and local amenity of the area due to industrial nature of project. Tourism is an important source of income for many local communities. A reduction in tourism could cause financial hardship with consequent reductions in standards of living and wellbeing.	Chapter 14 Socio-Economics	Ongoing information provision; grievance procedure; and Compensation Framework. Considering mitigations, impacts on local tourism are considered not significant.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Construction and Pre-Commissioning Phase – nearshore & offshore		
Air quality emissions from marine vessels engaged in nearshore and offshore survey, dredging, pipe-laying and support activities. A number of different air-borne particulates are antagonistic to the sensitive lining of the airways and act as irritants.	Chapter 9 Air Quality	Impacts associated with the construction phase emissions from diesel plant and vessel have been combined into a single modelling scenario and impacts are concluded to be not significant.
Noise and vibration emissions (airborne and underwater) from nearshore and offshore survey, dredging, pipe laying and support activity engines and on-board plant. Excessive or persistent noise exposure can have a detrimental effect on health.	Chapter 10 Noise and Vibration	The ESIA assessment of noise and vibration impacts arising during the Construction and Pre-Commissioning Phase in the nearshore, offshore and landfall sections have been combined into a single modelling scenario and impacts are concluded to be not significant.
Increase in vessel traffic restricting recreational / commercial uses of nearshore and offshore zone, including ports and any exclusion zones. There is potential for a reduction or loss of income to affect standards of living and wellbeing due to disruption of other marine users.	Chapter 14 Socio-Economics	Recreational sailors can easily navigate around the vessel spread. For commercial vessels the socio-economic assessment concludes that impacts on fisheries businesses and other commercial shipping revenues due to construction activities considering mitigation will be not significant.
Dredging and pipe laying activities causing the release of sediments to water column (altering water chemistry and increasing turbidity). There is potential for loss of income though reduced fishing yield and potential spread of contaminants causing illness/toxic exposure.	Appendix 14.1 Fishing Study	Although there is evidence of contaminants in water and sediment samples collected in the offshore section, the potential for these to affect community/population health and wellbeing is limited given the distance any sediment disturbance would be from shore.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Physical presence of construction vessels in nearshore area (within sight from shore) could result in loss of income from tourist industry / resorts dependant on coastal views, with consequent reduction in quality of life and wellbeing.	Chapter 13 Landscape and Visual	Mitigations include phasing of works to minimise disturbance time; avoidance of night-time construction activities as far as practicable; and directional shielding for lighting, other than navigational lights on vessels. So any residual impacts will be negligible.
Local job creation for nearshore and offshore activities has the potential for positive physical and mental health outcomes.	Chapter 14 Socio-Economics	The effects of direct employment aboard vessels is expected to be very limited, if there is any benefit at all, as the majority of the construction work force required will be highly skilled and is anticipated to come from outside the local area.
Unemployment for nearshore and offshore workforce at the end of the construction phase. Rising unemployment levels and diminished circulation of wealth in the community may be associated loss of livelihoods and increasing poverty, which are detrimental to general health and well-being.	Chapter 14 Socio-Economics	Given that the direct employment for the Project from the local job market is expected to be very limited (if there are any job opportunities for local workforce at all), based on professional judgement there are unlikely to be community / population level health impacts.
Risk to community and public safety from unauthorised access to construction worksite.	Chapter 22 Environmental and Social Management (CMPs/HSSE-IMS)	The installation of a temporary security fence around the perimeter of the temporary facilities and the landfall facilities site during construction to prevent entry by unauthorised persons will help to ensure public safety in this regard by preventing accidental or intension trespass by local residents.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Operational Phase - onshore		
Air quality emissions from operational plant, vehicles and materials, including commissioning heaters. A number of different air-borne particulates are antagonistic to the sensitive lining of the airways and act as irritants.	Chapter 9 Air Quality	The ESIA air quality assessment has concluded that for onshore maintenance plant and activities there will be a 'not significant' to 'low' impact on nearby communities.
Noise and vibration emissions from operational plant. Excessive or persistent noise exposure can have a detrimental effect on health.	Chapter 10 Noise and Vibration	The ESIA noise and vibration assessment has concluded that for operational activities there will be 'low' noise and vibration impacts at all existing communities neighbouring the Project (including residential dwellings, cemeteries and places of worship).
Controlled venting of natural gas from dispersion stack as part of emergency shutdown procedures. In sufficient concentrations natural gas can cause asphyxiation, as well as the risk of fire and explosion, including direct and indirect injury from pressure waves.	Chapter 9 Air Quality	The stack height has been pre-determined based on safety requirements in the workplace in order to protect workers at the facility from asphyxiation and from the unlikely event that the vented gas might ignite. Based on professional judgement, given that mitigation is included to allow dispersion to safe levels for onsite maintenance personnel, there is not expected to be a risk to community receptors.
Visual impact of industrial complex replacing rural setting. Natural features and green spaces have considerable influence on physical, mental and perceived health.	Chapter 13 Landscape and Visual	The landscape and visual impact assessment concludes that impacts from operation of permanent landfall facilities, including the 30 m high vent stack, will be 'Low/Not Significant'.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Fuel and oil leaks and spills from vehicles / plant engaged in maintenance and repair activities. Contamination of water and sediments may cause illness.	Chapter 8 Soils, Groundwater and Surface Water	The ESIA soils, groundwater and surface water assessment has concluded that subject to appropriate mitigation measures there is a 'Low' impact on soil and water receptors from leaks and minor spills during operational activities.
Local job creation. Employment is associated with positive physical and mental health outcomes	Chapter 14 Socio-Economics	The very limited workforce to be employed during the Operational Phase means that the Project would provide 'Not Significant' impacts on employment during this Phase.
Operational land use change including proposed safety exclusion zones. Such land change could cause loss of long-term income from agricultural land with consequent lower standards of living and wellbeing. It could also reduce the availability of recreational amenity land with consequent reductions in leisure activities that promote physical activity.	Chapter 13 Landscape and Visual	The ESIA socio-economic chapter identifies that there is limited scope for adverse impact on levels of community amenity or physical activity as the land in question is predominantly part of a vineyard. Furthermore mitigation is in place for any economic impact on the vineyard itself.
Site security enforcement. There is a risk of possible localized incidents between local people and security guards, particularly if the guards are poorly trained and not members of the local community which could lead to misunderstandings about intentions.	Chapter 22 Environmental and Social Management (CMPs/HSSE-IMS)	As the landfall facilities are unmanned during the operational phase, security of the landfall facilities is primarily provided by perimeter security fencing and the surveillance of the real time CCTV by staff based in the Central Control Room. Following the adoption of the proposed mitigation measures for security personnel training, there are unlikely to be community / population level health impacts.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Operational Phase – nearshore and offshore		
Air quality emissions from marine vessels engaged in nearshore and offshore pipeline surveys and repairs. A number of different air-borne particulates are antagonistic to the sensitive lining of the airways and act as irritants.	Chapter 9 Air Quality	The ESIA air quality assessment has concluded that for nearshore and offshore maintenance and survey vessels there will be a 'Not Significant' to 'Low' impact on nearby communities.
Noise and vibration emissions from nearshore and offshore marine vessels. Excessive or persistent noise exposure can have a detrimental effect on health.	Chapter 10 Noise and Vibration	The ESIA noise and vibration assessment has concluded that for operational activities there will be not significant noise and vibration impacts at all community receptors.
Increase in vessel traffic restricting recreational / commercial uses of nearshore and offshore zone, including ports and any exclusion zones during surveys and repairs. There is potential for a reduction or loss of income to affect standards of living and wellbeing due to disruption of other marine users.	Chapter 14 Socio-Economics	The ESIA socio-economic chapter scopes out of potential impacts to marine users, including: divers, recreational sailors and fishing communities. The fishing study demonstrates that there will be no significant adverse impacts on fish stocks or the fishing communities that rely on them as a result on the exclusion zones.
ROV and RTV nearshore survey activity and pipeline maintenance activities causing the release of sediments to water column (altering water chemistry and increasing turbidity). There is potential for loss of income though reduced fishing yield and potential spread of contaminants causing illness/toxic exposure.	Chapter 12 Marine Ecology	The scope for release of historic contaminants into the water is considered to be limited and the limited scale of sediment disturbance from routine inspection and maintenance is unlikely to impact on water quality levels.
Physical presence of survey and maintenance vessels in nearshore area (within sight from shore) could result in loss of income from tourist industry / resorts dependant on coastal views, with consequent reduction in quality of life and wellbeing.	Chapter 13 Landscape and Visual	Landscape and visual impact assessment concludes that impacts from occasional operation of marine maintenance vessels will be low.

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Potential impact	Relevant ESIA Chapter	Proposed mitigation from relevant ESIA Chapter / relationship to Community Health, Safety and Security
Local job creation for nearshore and offshore activities has the potential for positive physical and mental health outcomes.	Chapter 14 Socio-Economics	There will no significant permanent employment within the Project Area during the operational phase.
Unemployment for nearshore and offshore workforce at the end of the construction phase. Rising unemployment levels and diminished circulation of wealth in the community may be associated loss of livelihoods and increasing poverty, which are detrimental to general health and well-being.	Chapter 14 Socio-Economics	Given that the direct employment for the project from the local job market is expected to be Not Significant, based on professional judgement there are unlikely to be community / population level health impacts.
Construction and Operational Phases – nearshore and offshore		
Collision with other vessels during nearshore and offshore activities resulting in personal injury or fatalities. There is also potential for financial hardship if vessel damage or personal injury results in loss of livelihood.	Chapter 19 Unplanned Events	The ESIA Unplanned Events chapter identifies that following the adoption of the proposed mitigation measures (including an exclusion zone and a Marine Operations Plan) there are unlikely to be collisions and in the event of a collision the lifesaving equipment available is likely to minimise any injury or loss of life.
Fuel and oil leaks and spills from vessels / plant engaged in nearshore and offshore activities could cause potential contamination of water and sediments, with potential for illness and economic loss for coastal water users.	Chapter 19 Unplanned Events	Following the adoption of the proposed mitigation measures (compliance with MARPOL and national regulations, as well as stringent management of bunkering activities) there are unlikely to be community / population level health impacts.
Waste generation, storage and disposal on-board vessels. Wastes could cause contamination of coastal water and sediments leading to the potential for illness/toxic exposure.	Chapter 18 Waste Management	Since recycling will be maximised and waste generated on vessels will be managed in accordance with MARPOL requirements there are unlikely to be community / population level health impacts.

Complete.