

EXECUTIVE SUMMARY

TGS Geophysical Company (UK) (hereafter TGS) has applied for Environmental Authorization (EA) for a 3D seismic survey off the West Coast of South Africa. Environmental Impact Management Services (Pty) Ltd (EIMS) has been appointed by TGS to prepare and submit an application for EA as per the requirements of the Environmental Impact Assessment (EIA) Regulations, 2014, as amended, promulgated under the National Environmental Management Act (Act No. 107 of 1998- NEMA) and the requirements of the Minerals and Petroleum Resources Development Act (Act No. 28 of 2002 – MPRDA).

The proposed project area is located between approximately 120 km offshore of St Helena Bay, extending north along the western coastline to approximately 230 km offshore of Hondeklip Bay over a number of petroleum licence blocks. The Application Area for the proposed 3D seismic survey is approximately 57 400 km² in extent. It is proposed that a single survey vessel equipped with seismic sources and streamers be used. The proposed 3D survey would be supported by up to two escort vessels. The 3D survey will take in the order of 70 days including downtime.

A Basic Assessment (BA) process is being undertaken to accompany the EA for the EIA Listing Notices listed activities applicable to the project namely:

- **GN983, Listing Notice 1: Activity 21(b):** Any activity including the operation of that activity which requires a reconnaissance permit in terms of section 74 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice or in Listing Notice 3 of 2014, required to exercise the reconnaissance permit, excluding -
 - (a) any desktop study; and
 - (b) any aerial survey.

PUBLIC PARTICIPATION PROCESS

The PPP for the proposed project has been undertaken in accordance with the requirements of the NEMA EIA Regulations (2014), and in line with the principles of Integrated Environmental Management (IEM). IEM implies an open and transparent participatory process, whereby stakeholders and other I&APs are afforded an opportunity to comment on the project and have their views considered and included as part of project planning.

The comments received from I&APs during the initial call to register and commenting period so far have been captured in the Public Participation Report (PPR) in Appendix 2. This BA report is being made available for public review from 21 October 2022 to 21 November 2022. A high-level summary of the key comments and concerns raised to date are presented below:

- Effects on migratory patterns of fauna along the West Coast;
- Long term marine life impact if the survey finds exploitable resources;
- Impacts on marine life between the survey site and the coast and how this will impact the future of tourism and agriculture;
- Climate change impacts associated with oil and gas;
- Effects on fisheries and catch rates;
- Food security;
- Free Prior and Informed Consent in public participation processes;

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- Previous Public Consultation Processes have been viewed as a “tick box exercise”;
- Impact on indigenous cultural heritage, historical connection to the sea;
- EIMS’ independence if the applicant pays for the services rendered;
- Alternative technologies to seismic surveys;
- Cumulative impacts; and
- A lot of the communities are very poor. Concern that there will be no economic benefits for the communities as a direct result of the survey.

IMPACT ASSESSMENT

The BA report aims to achieve the following:

- Provide an overall assessment of the social and biophysical environments affected by the proposed project.
- Assess potentially significant impacts (direct, indirect and cumulative, where required) associated with the proposed project.
- Identify and recommend appropriate mitigation measures for potentially significant environmental impacts; and
- Undertake a fully inclusive public involvement process to ensure that Interested and Affected Parties (I&APs) are afforded the opportunity to participate, and that their issues and concerns are recorded.

The most significant risks and impacts identified were those that remain high/medium in terms of significance even if post mitigation measures being considered. The following impacts were determined to have a potentially moderate negative final significance:

- Perceived impacts on livelihoods;
- Impacts on sense and spirit of place;
- Impacts on social licence to operate;
- Community expectations;
- Social unrest;
- Uncertainty from a social perspective;
- Concerns about cumulative social impacts; and
- Further marginalization of vulnerable groups.

Mitigation measures have been identified based on input from the Environmental Assessment Practitioner (EAP), public consultation, and specialist assessments. The associated EMPr (Appendix 5) includes suggested mitigation mechanisms for avoidance, minimisation and / or management of the negative impacts.

The conclusions and recommendations of this BA are the result of the assessment of identified impacts by specialists, and the parallel process of public participation. The public consultation process has been extensive, and every effort has been made to include representatives of all stakeholders in the study area. The main conclusions from each of the specialist studies are presented below.

NOISE / ACOUSTICS

The zones of potential injuries for fish species with a swim bladder (e.g. snoek), turtles and fish eggs and fish larvae are predicted to be within 180 m from the array source (noise source). However, fish species without

swim bladders have higher injury impact thresholds, and therefore have smaller zones of potential injuries within 90 m from the airgun array source.

The zones of potential mortal injuries for fish species with a swim bladder, fish eggs, and fish larvae are predicted to be within 30 m from the adjacent survey lines for all the 24-hour survey operation scenarios considered. For recoverable injury, the zones of impact are predicted to be within 80 m from the adjacent survey lines for fish with a swim bladder for all the operation scenarios considered. Fish without swim bladder are not expected to suffer or any potential injury. The zones of temporary auditory threshold shift (TTS) effect for fish species with and without swim bladders are predicted to be within 2.9 km from the adjacent survey lines for the relevant 24-hour survey operation scenarios considered. Existing experimental data regarding recoverable injury and TTS impacts for fish eggs and larvae is sparse and no guideline recommendations have been provided. However, based on a subjective approach, noise impacts are expected to be moderate for fish eggs and larvae. Impact is expected to be low for all of them at intermediate and far field from the source location.

Three (3) long range modelling source locations are proposed for the 3D seismic survey. The modelling is representative of the noise propagation within the proposed 3D seismic area. Source location L1 is adjacent to the marine sensitive area (Tripp Seamount – located to the north and outside of the Application Area), L2 represents the average depth of the south survey area and L3 is located towards the deeper water environment of the survey area. As can be seen from the horizontal and vertical contour figures, the received noise levels at far-field locations vary at different angles and distances from the source locations. This directivity of received levels is due to a combination of the directivity of the source array, and propagation effects caused by bathymetry and sound speed profile variations. Thus, it can be said that the sound levels don't change equally over vertical and horizontal distance from the source due to the shape of the sea floor and the direction of the noise source.

In general, the bathymetry profiles with significant upslope section across the continental slope region have the sound propagations experiencing significant attenuation due to the strong interaction between the sound signal and the seabed. The bathymetry profiles with downslope section have much less sound attenuation. These effects are evident in all locations for propagation paths towards shoreline directions.

For all source locations and except for downslope sections, the seabed depth variations are not significant along the propagation paths within the deep-water region. Therefore, the directivity of received noise is dominated by the directionality of the source array.

In terms of the impact from immediate exposure to individual airgun array pulses, the maximum zones of PTS effect for sea turtles are predicted to be within 19 m from the source location. On the other hand, the maximum zones of TTS effect for sea turtles are predicted to be within 24 m of the source array. The behavioural disturbance for sea turtles caused by the immediate exposure to individual pulses are predicted to be within 1.3 km of the source array.

In terms of the impact from cumulative exposure to multiple airgun array pulses, the noise impacts related to recoverable injury and TTS on sea turtles are expected to be high at the near field from the source location. The maximum zones of PTS impact are predicted to range within 10 m of the source array. The maximum zones of TTS effect for sea turtles are predicted to be within 500 m of the source array.

Relevant mitigation measures are recommended to minimise the seismic impact on assessed marine fauna species:

- Recommended safety zones are based on the maximum threshold distances modelled for PTS (marine mammals and sea turtles) and potential mortal injury (fish) due to immediate exposure from single pulses and cumulative exposure from multiple pulses.
- Implement a soft-start procedure if testing multiple seismic sources. Delay soft-starts if shoaling large pelagic fish, turtles, seals, or cetaceans are observed within the zone of impact.

- Baseline noise measurements can provide useful information (prior to operations) when interpreting underwater noise predictions for the introduction of a new noise source. As such, it is recommended that underwater noise measurements be implemented that would include the deployment of underwater sound monitoring equipment to establish an actual baseline prior to the commencement of the survey and then operational levels of noise during the survey.

MARINE ECOLOGY

The Reconnaissance Permit Area, which is approximately 57 400 km² in size, is located in water depths ranging from ~1 500 m to nearly 4 000 m off the South African West Coast between Alexander Bay and Cape Columbine. The seabed sediments comprise sandy muds. Although influenced by the Benguela Current the Reconnaissance Permit area is located on the western extent of the coastal upwelling cells. Winds come primarily from the southeast, whereas virtually all swells throughout the year come from the S and SSW direction. The bulk of the seawater in the study area is South Atlantic Central Water characterised by low oxygen concentrations, especially at depth. Surface waters in the Reconnaissance Permit Application area will primarily be nutrient poor and clear, being beyond the influence of coastal upwelling, with seasonal (September to March) nutrient peaks expected on the eastern edge of the Reconnaissance Permit Area during periods of upwelling.

The Application Area falls into the Southeast Atlantic Deep Ocean Ecoregions. Although there is a lack of knowledge of the community structure and diversity of benthic macrofauna off the shelf edge, the South Atlantic bathyal and abyssal unconsolidated habitat types have been rated as 'Least Threatened', reflecting the great extent of these habitats in the South African Exclusive Economic Zone (EEZ). Only sections along the shelf edge and in the Cape Canyon are rated as 'Vulnerable' and 'Endangered' (outside of the Application Area). Geological features of note in, and adjacent to, the Application Area are Child's Bank situated at about 31°S and Tripp Seamount situated at about 29°40'S. Two canyons, the Cape Canyon and Cape Valley also occur to the south, but outside of, of the Reconnaissance Permit Area. Features such as banks and seamounts often host deepwater corals and boast an enrichment of bottom-associated communities relative to the otherwise low-profile, homogenous seabed habitats.

Due to its offshore location, plankton abundance is expected to be low, with the major fish spawning and migration routes occurring inshore on the shelf. The dominant fish in the area would include the migratory large pelagic species such as tunas, billfish and pelagic sharks. Seabirds will be dominated by the pelagic species such as albatross, petrels and shearwaters. Migrating turtles in the area would include the leatherback and loggerhead turtles. Marine mammals likely to occur offshore include a variety of baleen whales including humpbacks, Antarctic minke, fin and sei whales. Toothed whales will include sperm and killer whales, as well as a variety of beaked whales and dolphins. There are six offshore Marine Protected Areas (MPAs) in the general project area but none fall within the Reconnaissance Permit Area. The Application Area lies well offshore of these MPAs. There is some overlap of the Reconnaissance Permit Area with the Orange Seamount and Canyon Complex Ecologically and Biologically Significant Areas (EBSAs). Critical biodiversity areas (CBAs) within the Reconnaissance Permit area include both CBA1 (natural) and CBA2 (natural areas), with a small section of CBA2 (restore) being located in the north.

Potential impacts to the marine fauna as a result of the proposed 3D seismic acquisition include:

- Physiological injury and/or mortality;
- Behavioural avoidance;
- Reduced reproductive success/spawning;
- Masking of environmental sounds and communication;
- Collision of turtles/marine mammals with the survey and support vessels or entanglement in towed acoustic apparatus; and
- Indirect impacts on piscivorous predators due to seismic effects on prey species.

The highest sensitivities in response to the proposed 3D surveys are:

- Humpback whales, which migrate through the area between June and November (inclusive);
- Sperm whales, beaked whales and other odontocetes that frequent offshore waters;
- Large migratory pelagic fish and shark species that show seasonal association with Child's Bank and Tripp Seamount;
- Leatherback turtles which frequent offshore waters in low numbers and aggregate around seamounts to feed on jellyfish; and
- Various pelagic Albatross, Petrel, Storm Petrel and Shearwater species.

If all environmental guidelines, and appropriate mitigation measures recommended in this report are implemented, there is no reason why the proposed seismic survey programme should not proceed. It should also be kept in mind that some of the migratory species are now present year round off the West Coast, and that certain baleen and toothed whales are resident and/or show seasonality opposite to the majority of the baleen whales. Data collected by independent onboard observers should form part of a survey close-out report to be forwarded to the necessary authorities, and any incidence data and seismic source output data arising from surveys should be made available for analyses of survey impacts in Southern African waters.

FISHERIES ASSESSMENT

The potential impacts of the seismic survey programme on fisheries relate to :

- Exclusion of fishing vessels from accessing fishing ground;
- the impact on catch rates as a result of increased noise levels associated with the seismic survey operation;
- accidental loss of equipment from the survey array; and
- accidental release of marine diesel at sea.

Under the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS, 1972, Part A, Rule 10), a seismic survey vessel that is engaged in surveying is defined as a "vessel restricted in its ability to manoeuvre" which requires that power-driven and sailing vessels give way to a vessel restricted in her ability to manoeuvre. Furthermore, under the Marine Traffic Act, 1981 (No. 2 of 1981), a vessel used for the purpose of exploiting the seabed falls under the definition of an "offshore installation" and as such it is protected by a 500m safety zone. It is an offence for an unauthorised vessel to enter the safety zone. In addition to a statutory 500 m safety zone, a seismic contractor would request a safe operational limit (that is greater than the 500 m safety zone) that it would like other vessels to stay beyond. Safety clearances for seismic surveys are usually 6 Nm ahead and astern and 2 Nm to either side of the survey vessel, resulting in an exclusion area of approximately 165 km² around the survey vessel. The temporary exclusion of fisheries from the safety zone may reduce access to fishing grounds, which in turn could potentially result in a loss of catch and/or displacement of fishing effort (direct negative impact). The safety zone would be implemented around the seismic vessel for the duration of the project, resulting in an immediate impact that would endure for the duration of the proposed survey (~70 days). The impact of exclusion from fishing ground was assessed on each fishing sector based on the type of gear used and the proximity of fishing areas relative to the Reconnaissance Permit area. With the implementation of the project controls and mitigation measures, the residual impact of the proposed survey is of LOW NEGATIVE significance to large pelagic longline and tuna pole-line sectors. There is no impact expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, linefish, west coast rock lobster, netfish and small-scale fishing sectors.

The impact on catch rates due to sound elevation levels was assessed and sensitivity/vulnerability differences amongst the targeted fish species identified for each sector. Sound generated during the proposed seismic survey is expected to be in the order of 255 dB re 1 µPa at 1 m at an operating frequency range of 5 – 300 Hz.

This falls within the hearing range of most fish species. A sound transmission loss modelling study (SLR 2021) identified predicted zones of impact for fish species (amongst other marine fauna species of concern) based on relevant noise impact assessment criteria. The noise effects assessed included physiological effects (PTS) and TTS) and behavioural disturbance due to either immediate impact from single airgun pulses or cumulative effects of exposure to multiple airgun pulses over a period of 24 hours. Based on the current project description, sound levels for the seismic survey could notionally be expected to attenuate to below levels for behavioural disturbance at a distance of 4 km from the source. The spatial extent of the impact of sound (produced by the airgun array) on catch rates is expected to be regional, although localised at any one time. The impact is considered to be of immediate duration and reversible without additional time or cost. Based on the distance of fishing grounds from the Reconnaissance Permit area, only the large pelagic longline and tuna pole-line sectors are considered to be susceptible to the effects of elevated sound. With the implementation of the project controls and mitigation measures, the residual impact due to seismic noise is considered to be of **LOW NEGATIVE** significance. There is no impact expected on the demersal trawl, midwater trawl, demersal longline, small pelagic purse-seine, linefish, west coast rock lobster, netfish and small-scale fishing sectors.

The Reconnaissance Permit area is situated in the Orange Basin, offshore of the shelf break and offshore of grounds of importance for many of South Africa's commercial fishing sectors, as well as small-scale and recreational fisheries. The large pelagic longline sector operates across the extent of the Reconnaissance Permit area, with activity focussed along the continental shelf break. The Application Area does not overlap key spawning or nursery areas therefore the risk of noise disturbance to spawning behaviour and fishery recruitment is considered unlikely.

In order to mitigate the impacts on the large pelagic longline sector, it is recommended that the survey avoid taking place during June and July. Prior to the commencement of survey activities, affected parties should be informed of the navigational co-ordinates of the proposed survey acquisition area, timing and duration of proposed activities and any implications relating to the safety zone that would be requested, as well as the movements of support vessels related to the project. The relevant fishing associations include FishSA, SA Tuna Association, SA Tuna Longline Association and Fresh Tuna Exporters Association.

Other key stakeholders should be notified prior to commencement and on completion of the survey. These include; Department of Forestry, Fisheries and the Environment (DFFE), the South African Navy Hydrographic Office (SANHO), South African Maritime Safety Association (SAMSA) and Ports Authorities. For the duration of the survey, a navigational warning should be broadcast to all vessels via Navigational Telex (Navtext) and Cape Town radio. In addition, it is recommended that updates of the scheduled weekly survey plan should be circulated to the operators of affected fishing vessels on a daily basis. A Fisheries Liaison Officer (FLO) should be present on board the seismic vessel or escort vessel for the duration of the survey in order to facilitate communications between the seismic and fishing vessels in the project area.

It is the reasoned opinion of the specialist that the reconnaissance activities may be authorised, subject to the implementation of the mitigation measures proposed.

HERITAGE ASSESSMENT

The scientific studies conducted for this project identified impacts on fishing stock as low for all species. By inference, a potential impact (albeit low) on fishing yield could be expected and thus potential economic impact on communities due to reduced caught fish volumes. The recommended mitigation measures, as listed in the specialist reports for the project, focus on the reduction of impacts on fish species and the projected reduction of the impact on the commercial and small-scale fishery catch yield. These mitigation measures should then indirectly positively impact the potential negative impacts on the cultural heritage of the communities to be impacted.

The cultural heritage and living heritage related to the communities linked to fisheries and ocean subsistence and further identifying as indigenous communities can potentially be impacted by the proposed project. A pre-mitigation negative impact on a regional scale over the long term with a moderate intensity due to the potential

indirect impact on the communities and, ultimately, their heritage, with a high probability of this impact occurring. The pre-mitigation impact on heritage resources is rated as MEDIUM. The potential residual impact on heritage resources, with mitigation measures from the scientific studies, is projected as LOW with a medium confidence factor.

Considering the assessment based on the findings of the fieldwork as well as the scientific studies relating to the impact on fisheries, the specialist is of the opinion that the impact of the proposed project on the cultural heritage resources can be mitigated through the implementation of the recommendations in this report.

SOCIAL ASSESSMENT

TGS's activities for this application would be of short duration if approved, and if viewed in isolation considering only technical risks as discussed in various specialist reports conducted as part of the EIA process, the impacts will be negligible. However, communities feel that there are significant gaps in the available data and from a social perspective the non-technical or social risks can potentially cause significant impacts. Although the marine fauna and fisheries specialists have indicated that the impacts on the marine fauna would be negligible, the communities, with generations of experience in the ocean, fear that the behaviour of the fish will change and that this would affect their catch rates and consequently their livelihoods. What is seen as a minor impact in a large ecosystem may be experienced as a major impact by an individual. The marine fauna might not be affected greatly, but the fishing community fear that marine fauna might change its behaviour in response and that is a main concern from a social perspective.

Another concern is the cumulative impact of activities in the ocean where these communities earn their livelihoods. Their fears about the tipping point where their source of livelihood does not recover from all the activities in the ocean, and they are no longer able to make their livelihood as fishing communities must be considered. Currently these communities are able to sustain themselves, although it is difficult. The communities are not against development, but they want to see it happen in a sustainable way that does not jeopardise their source of livelihood. They have already seen how their livelihoods are being affected by mining that is taking place in the sea, pollution, climate change, overfishing and businesses such as factories that come and go and often do not leave in a socially responsible way.

TGS, as well as other companies that want to do surveys or exploration in the area, currently do not have social license to operate. A large part of this is due to a lack of meaningful consultation by previous applicants from a community perspective. If TGS or any other seismic survey company wants to proceed with the project, they will need to engage in meaningful conversation with the communities and try to restore relationships. From a community and social risk perspective this is not negotiable.

Seismic reconnaissance projects are controversial in South Africa and have been in the news frequently in the last year. For many stakeholders it is an emotional matter, for others the potential of impacting their livelihoods is the biggest fear. There are also stakeholders that feel that the exploration for fossil fuels is not in line with sustainable development and the fight against climate change. Other stakeholders feel that it is imperative for the growth and development of the South African economy to engage in these investigations.

From a social perspective it is clear that the communities and majority of local people are opposed to the project. If the project is considered in isolation, the impacts are negligible. However, the project does not happen in a vacuum, and the social environment is much wider than the footprint of the project. If the social risks and potential damage to cultural and indigenous rights are considered the impact on the social fabric of already vulnerable communities may be significant. At this stage communities feel that they cannot make informed decisions. Although all legal processes have been followed, the seismic survey industry is not moving at the pace of the community, and in the long run this will be detrimental to the industry. Potential future benefits and the economic development of the country should the surveys find any significant resources are not disputed. From a social perspective it is recommended that the project proceed subject to the mitigation measures (i.e. meaningful consultation, local research, education, and awareness raising in the project-affected communities)

forming part of the conditions for authorisation and being implemented prior to the commencement of the actual survey.

IMPACT STATEMENT

The findings of the specialist studies conclude that there are no environmental fatal flaws that should prevent the proposed project from proceeding, provided that the recommended mitigation and management measures are implemented. Based on the nature and extent of the proposed project, the level of disturbance predicted as a result of the survey activities, the findings of the specialist studies, and the understanding of the significance level of potential environmental impacts, it is the opinion of the EIA project team and the EAP that the significance levels of the majority of identified negative impacts can generally be reduced to an acceptable level by implementing the recommended mitigation measures and the project should be authorized.

Some of the key critical mitigation measures are listed below (more detail is provided in Section 9 of this report):

- Plan seismic surveys to avoid sensitive areas and periods for some marine fauna: Movement of migratory cetaceans (particularly baleen whales) from their southern feeding grounds into low latitude waters (June/July and late October/November), and their aggregation on the summer feeding grounds between St Helena Bay and Dassen Island from late October to late December and ensure that migration paths are not blocked by seismic operations. If possible, the survey should be undertaken from North to South to avoid these feeding aggregations;
- Although a seismic vessel and its gear may pass through a declared Marine Protected Area, acoustic sources must not be operational during this transit;
- Ensure the seismic vessel is fitted with Passive Acoustic Monitoring (PAM) technology, which detects some animals through their vocalisations;
- Define and enforce the use of the lowest practicable seismic source volume for production, and design arrays to maximise downward propagation, minimise horizontal propagation and minimise high frequencies in seismic source pulses;
- Ensure that 'turtle-friendly' tail buoys are used by the survey contractor or that existing tail buoys are fitted with either exclusion or deflector 'turtle guards';
- Ensure that solid streamers rather than fluid-filled streamers are used to avoid leaks;
- Make provision for the placing of qualified Marine Mammal Observers (MMOs) on board the seismic vessel;
- Maintain a pre-acquisition watch of 60-minutes before any instances of seismic source testing. If only a single lowest power seismic source is tested, the pre- acquisition watch period can be reduced to 30 minutes;
- Implement a "soft-start" procedure in certain identified scenarios or if testing multiple seismic sources;
- Implement a dedicated MMO and PAM pre- acquisition watch of at least 60 minutes (to accommodate deep-diving species in water depths greater than 200 m);
- Terminate seismic source on observation and/or detection of penguins or feeding aggregations of diving seabirds, turtles, slow swimming large pelagic fish (including whale sharks, basking sharks, manta rays) or cetaceans within the 500 m mitigation zone;
- Terminate seismic source on observation of any obvious mortality or injuries to cetaceans, turtles, seals or mass mortalities of squid and fish (specifically large shoals of tuna or surface shoaling small pelagic species such as sardine, anchovy and mackerel) when estimated by the MMO to be as a direct result of the survey;

- Avoid operating during June and July, in order to avoid periods of peak fishing effort by the large pelagic longline sector;
- Prior to the commencement of seismic survey activities the key stakeholders should be consulted and informed of the proposed seismic survey programme;
- An experienced FLO should be placed on board the seismic or guard vessel to facilitate communications with fishing vessels in the vicinity of the seismic survey areas;
- Notify any fishing vessels at a radar range of 12 nm from the seismic vessel via radio regarding the safety requirements around the seismic vessel;
- Implement a grievance mechanism in case of disruption to fishing or navigation;
- Re-assess post project, the effects on the identified communities and their intangible cultural heritage as well as of related economic damage and losses, and human development impacts. Based on the outcomes, provide resources and support for communities to develop and undertake safeguarding measures or plans to enhance the mitigation capacity of their intangible cultural heritage by fostering dialogue, mutual understanding and reconciliation between and within communities. It is anticipated that this can be achieved through the implementation of the mitigation measures in the Social Impact Assessment.
- TGS should develop a community engagement protocol that is based on the San Code of Research Ethics. This should be done in consultation with the affected communities. This should include a communication strategy and grievance mechanism.
- TGS should contribute to assisting with collaboration on independent research on how fish species on the West Coast such as snoek respond to seismic surveying. TGS will further contact relevant scientific research institutions to offer the potential of collaborating in independent on-water research during the survey.
- Baseline noise measurements can provide useful information (prior to operations) when interpreting underwater noise predictions for the introduction of a new noise source. As such, it is recommended that underwater noise measurements be implemented that would include the deployment of underwater sound monitoring equipment to establish an actual baseline prior to the commencement of the survey and then operational levels of noise during the survey.
- Consult with communities on potential ways in which to make a positive contribution to the communities.