

22 February 2022

# Geophysical Exploration Update for Fish Lake Valley Lithium Project

**Phase 1 Passive Seismic Survey completed at Fish Lake Valley**

**Initial results support excellent opportunities for sub-surface reservoir depth and the potential for volume scale at the Fish Lake Valley Lithium Project**

**Phase 2 Passive Seismic Surveying set to commence in March 2022 with additional geophysical work being planned**

**Geophysical understanding of sub-surface layering and structure will form the basis for the development of a future drilling program to target potential lithium-bearing brine reservoirs**

## Overview

Morella Corporation Limited (**ASX: 1MC** "Morella" or "the Company") is pleased to announce that it has completed Phase 1 of a Passive Seismic Survey (PSS) on the Fish Lake Valley Lithium Project in Nevada, USA ("the Project"). Additional geophysical survey work has been planned and will commence in the coming week. Morella has engaged US based geology and mining services group Rangefront Mining Services ("Rangefront") to undertake field activities and data collection, the collected data then processed and interpreted by Perth based geophysical consulting group Resource Potentials Pty Ltd ("Resource Potentials").

Fish Lake Valley is 60km to the west, southwest of the town of Tonopah and equidistant (approximately 280km) to the major Nevada cities of Las Vegas and Reno, with Tesla's Nevada Gigafactory located 37km from Reno. Morella's project area covers the entire Fish Lake Valley salt playa and is located in a well-known, highly prospective lithium region of the USA. The Project area can be seen in Figure 1.

Morella CEO Alex Cheeseman said:

*"The information we have obtained from the first phase of geophysical survey at Fish Lake Valley will provide us with a far greater understanding of the depth potential of this project. The fact that we were able to get work underway on-site last year, so soon after formulation of our agreement with partner Lithium Corporation is an excellent outcome for the Company and sets us up well to continue to develop the project in 2022."*

*"This first phase of work sets the platform to build and improve our knowledge of the potential of Fish Lake Valley. We have a clear plan for future work and expect this to be underway in the coming weeks."*



Figure 1 – Fish Lake Valley Lithium Project, Nevada, USA

### Further Work Fronts

The Phase 1 PSS has provided indications of rift basin sediment thickness, layering and possible fault-bounded sub-basin structures. The completion of a Phase 2 PSS and integration of the two data sets will allow for a greater understanding of the entire Project area basin, sub-basins, fault structures, depth and volume potential. This geophysical understanding of the sub-surface structure of the Project will form the development of a future drilling program that will target potential lithium-bearing brine reservoirs.

Over the coming weeks, Morella intends to:

1. Deploy field personnel to Fish Lake Valley to complete the Phase 2 PSS data collection.
2. Whilst in the field, conduct calibration and possible extension-line data collection.
3. After data collection/exchange to Resource Potentials, analyse, interpret and 3D model the entire project area.

Further, the Phase 1 PSS has supported the planning of additional geophysical exploration in the form of a magnetotelluric (“MT”) survey. A MT survey will help determine layering of electrically conductive and resistive features at depth, and whether any interpreted conductive zones in sub-basins may contain lithium bearing brine. US-based MT survey contractors are being engaged at present, with a target survey timeline of March-April 2022. Resource Potentials will be engaged to analyse the MT data and integrate results into the Project’s sub-surface model.



## Passive Seismic Survey Overview

Following an extensive review of all available historical geological and geophysical information and exploration results across the Project (which from a lithium exploration perspective, were relatively shallow or surface focussed), the Company formed the opinion that a significant project opportunity exists within the Fish Lake Valley rift basin due to its depth and volume scale potential.

The intention of the PSS was to efficiently map the thickness of geologically young, relatively soft/porous basin fill sediments overlying harder and more compacted basement rocks/sediments, thus forming a potential basal aquiclude for brines. The sediment cover thickness information for the shallow part of the rift basin is used to infer basin structure and will be used to assist in estimating the location and potential quantity of lithium brine reservoirs in future studies. The initial intention was to complete the PSS in a single phase but adverse weather conditions in late December 2021 saw the Company split the PSS data collection and processing into two phases.

Phase 1 was concentrated on the southern area of the Project, whilst Phase 2 will focus on the northern area of the Project. Phase 1 captured 184 horizontal to vertical spectral ratio (HVSr) station recordings along 15 survey lines. Phase 2 intends to capture a further 112 (minimum) HVSr station recordings along 11 survey lines. The Phase 1 (completed) and Phase 2 (planned) survey points are plotted relative to the Project claim area in Figure 2.

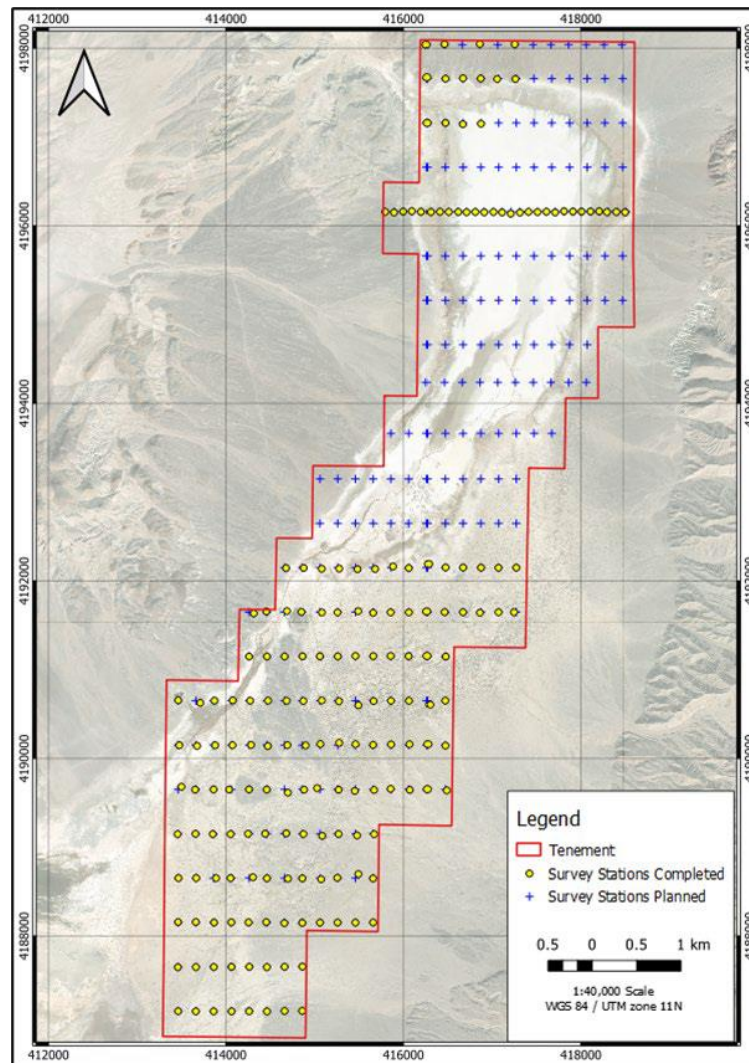


Figure 2 – Fish Lake Valley Lithium Project passive seismic survey line and station locations

## Data Collection and Processing

Passive seismic HVSR data was downloaded and provided to the Company’s Perth-based consultants Resource Potentials who are assessing the data, providing data QA/QC, editing, proposed recording repeat stations, conducted preliminary data processing, cross section and 3D model generation, providing Morella with updates and preliminary results throughout the survey period.

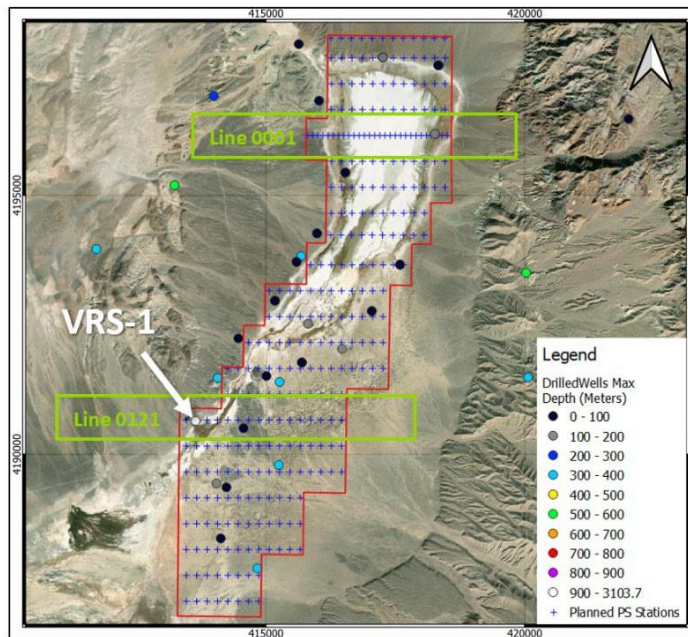
The Phase 1 survey data has undergone final data processing, velocity analysis and depth conversion of all passive seismic data with HVSR amplitude depth cross sections generated for each passive seismic survey transect. An undulating acoustic impedance contrast interface response or “acoustic bedrock” has been resolved on all survey lines. Regionally the acoustic bedrock is deeper in the southern area where the Phase 1 survey has been completed.

## Geological Interpretation

A regional geophysical study of the Project area and surrounds conducted by the University of Texas. (2016) (*refer to ASX announcement - Fish Lake Valley Lithium Project Update released on 15 December 2021*) subdivided basin cover into three major sequences:

1. Fish Lake Valley Formation, mainly consisting of Pliocene and Pleistocene sediments and locally underlain by and interleaved with basalt flow and breccia.
2. Middle sequence consisting of late Miocene tuff and lower Silver Peak Formation sediments.
3. Oligocene to Miocene volcanic rocks overlain in angular unconformity by interbedded andesite flows and lahar.

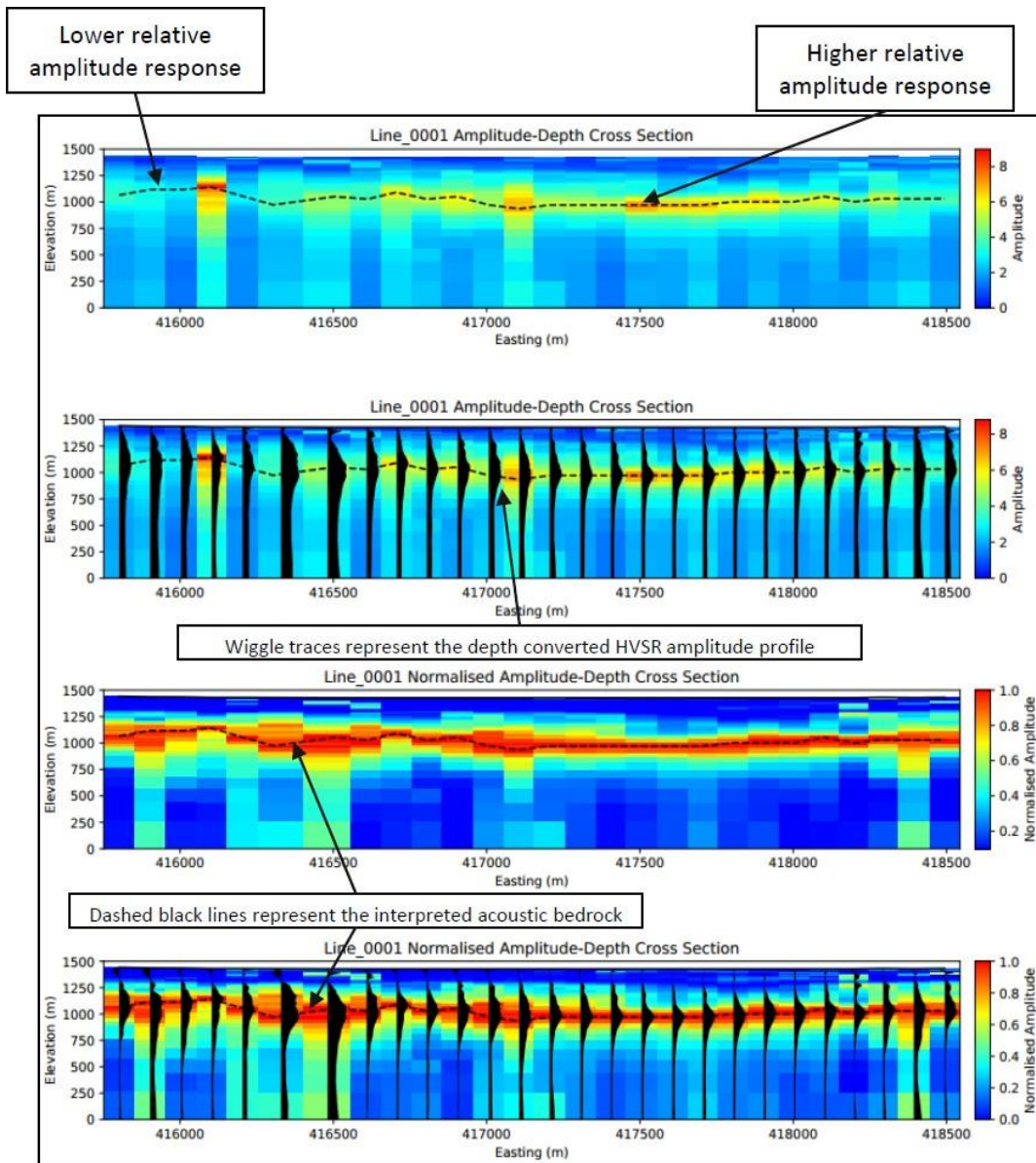
Resource Potentials undertook a review of available drillhole datasets, with a historic drill-hole (“VRS-1”) which was drilled through the cover sequence for a total depth of 2,628 metres. Drillhole VRS-1 is located close to PSS stations 0121 and 0129 on HVSR survey line 0121, which were therefore selected by Resource Potentials to conduct velocity analysis and modelling to estimate the shear wave velocity of the cover sequence, thus leading to HVSR depth conversion and the ability to assess acoustic basement depth. VRS-1 and line 0121 can be seen in Figure 3 which also shows the location of existing drillholes (and depth ranges) overlain on the PSS survey sections, also the location of drillhole VRS-1.



**Figure 3 – Fish Lake Valley Lithium Project - Existing drillholes coloured by maximum downhole depth and PSS survey lines 0001 and 0121**

### Cross Section Model (2D)

An example of a HVSR amplitude depth cross section model is shown below in Figure 4 for survey Line 0001 raw (top two sections) and normalised (bottom two sections). HVSR amplitude cross sections display hot colours representing zones of higher amplitude HVSR acoustic layer responses and cool colours represent zones of lower amplitude HVSR response.



**Figure 4 – Fish Lake Valley Lithium Project, example raw and normalised amplitude HVSR cross sections for survey Line 0001**

HVSR peak frequency responses were manually picked along these cross sections and are displayed as black dashed profiles passive seismic HVSR data, were amplitude normalised by applying a filter process that equalises variations in the HVSR peak amplitudes observed at the individual recording station. This amplitude normalisation allows for subtle peak frequency responses to be amplified and stronger amplitudes to become subdued, enhancing lateral continuity along a single survey line and across the broader Project survey area.



2D HVSR cross section images are provided with the developing sub-surface 3D model can be seen in Figure 5.

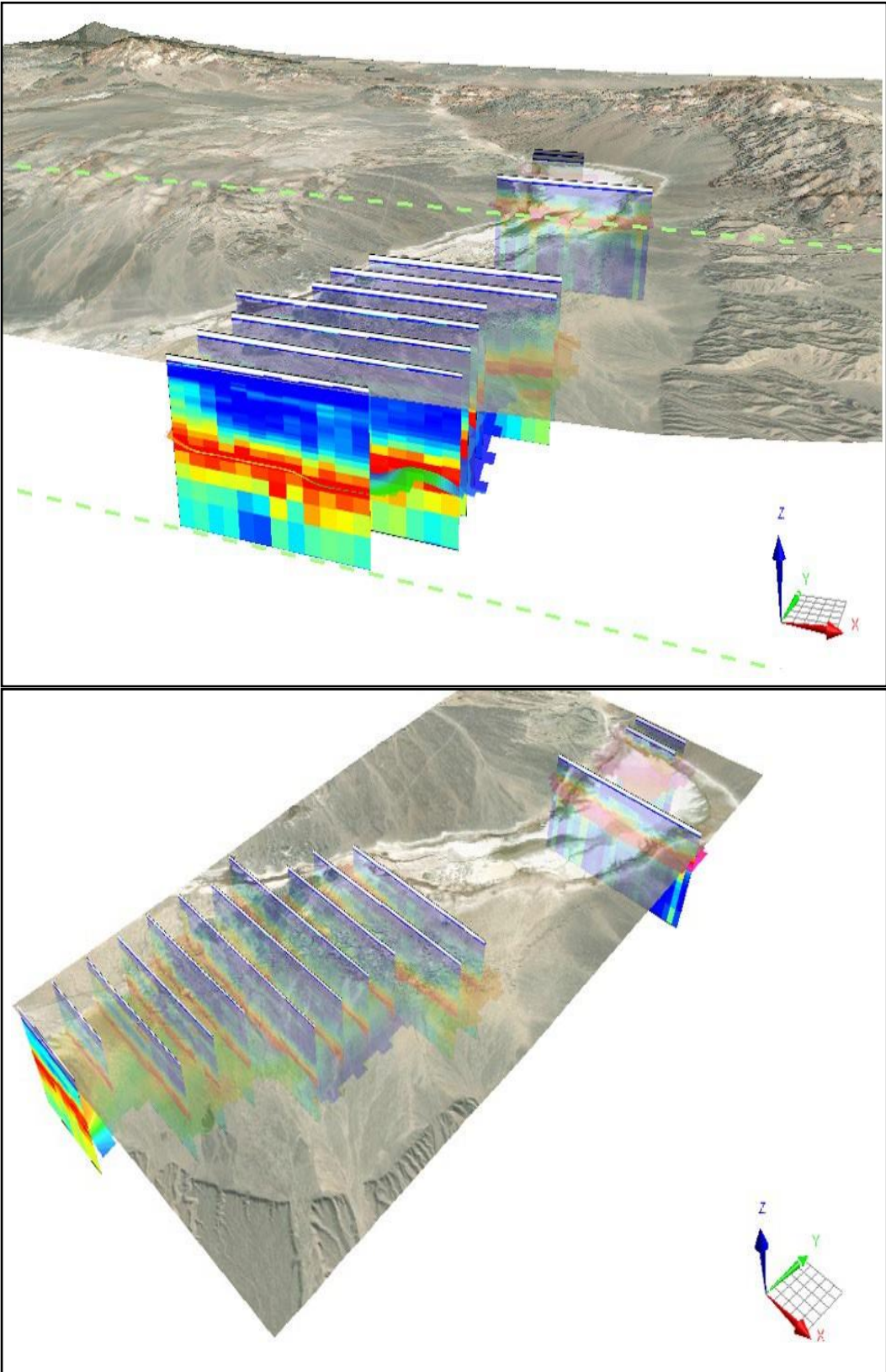


Figure 5 – Fish Lake Valley Lithium Project sub-surface 3D model emerging from the Phase 1 PSS

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## Contact for further information

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**This announcement has been authorised for release by the Board of Morella Corporation Limited.**

**About Morella Corporation Limited** Morella (ASX:1MC) is an exploration and resource development company focused on lithium and battery minerals. Morella is currently engaged in exploration activities on two project opportunities, strategically located, in Tier 1 mining jurisdictions in both Australia and the United States of America. Morella will secure and develop raw materials to support the surging demand for battery minerals, critical in enabling the global transition to green energy.

**Competent Person's Statement** The information in this report that relates to Exploration Results is based on information compiled by Mr Duncan Storey, who is a Chartered Geologist with the Geological Society of London (an RPO defined by JORC 2012). Mr Storey is an independent consultant engaged by Morella Corporation and has sufficient experience with the exploration and development of mineralised brine deposits qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Storey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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