

Date: 29 November 2023

ASX Code: MAN

Capital Structure

Ordinary Shares: 615,759,920
Current Share Price: 4.2c
Market Capitalisation: \$25.9M
Cash: \$15.5M (Sept 2023)
EV: \$10.4M
Debt: Nil

Directors

Lloyd Flint
Non-Executive Chairman
Company Secretary

James Allchurch
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Lithium Brine Sampling Commences at large-scale Utah Lithium Project

Highlights

- Preliminary Lithium brine sampling of legacy oil and gas wells underway at Mandrake's 100%-owned Utah Lithium Project
- Targeting six wells with a total of eight discrete sampling intervals
- Sampling campaign will allow assessment of existing legacy well bore conditions ahead of comprehensive workover programme
- Brine samples to be sent for laboratory analysis and DLE testing
- Mandrake fully funded - \$15.5M

Mandrake Resources Limited (ASX: MAN) (Mandrake or the Company) is pleased to advise that a preliminary Lithium brine sampling programme has commenced at its flagship 93,755 acres (~379km²) Utah Lithium Project.



Figure 1: Wireline unit conducting sampling operations at Big Indian #1

Managing Director James Allchurch commented:

“The preliminary wireline sampling programme currently underway allows Mandrake to access up to three known lithium brine-bearing formations across six depleted oil and gas wells.

Recovered brine samples will be subjected to laboratory testing for a comprehensive analytical suite (including Lithium), as well as providing important information for the next phase of targeted sampling which will optimise future sampling programmes.

Importantly, results from this sampling campaign are expected to underpin an Exploration Target for the Utah Lithium Project and two large volume samples will be sent for preliminary direct lithium extraction (DLE) testing in laboratories in both the US and Australia.

Getting the wireline unit on site is a key step in the Company's goal of delivering a maiden Mineral Resource Estimate planned for Q1 2024.”

Preliminary Wireline Sampling Programme

Mandrake has commenced a wireline brine sampling programme targeting six shut-in legacy oil and gas wells owned by local oil field owner Paradox Resources Inc (Paradox). Mandrake signed a Well Access Agreement with Paradox in May 2023¹.

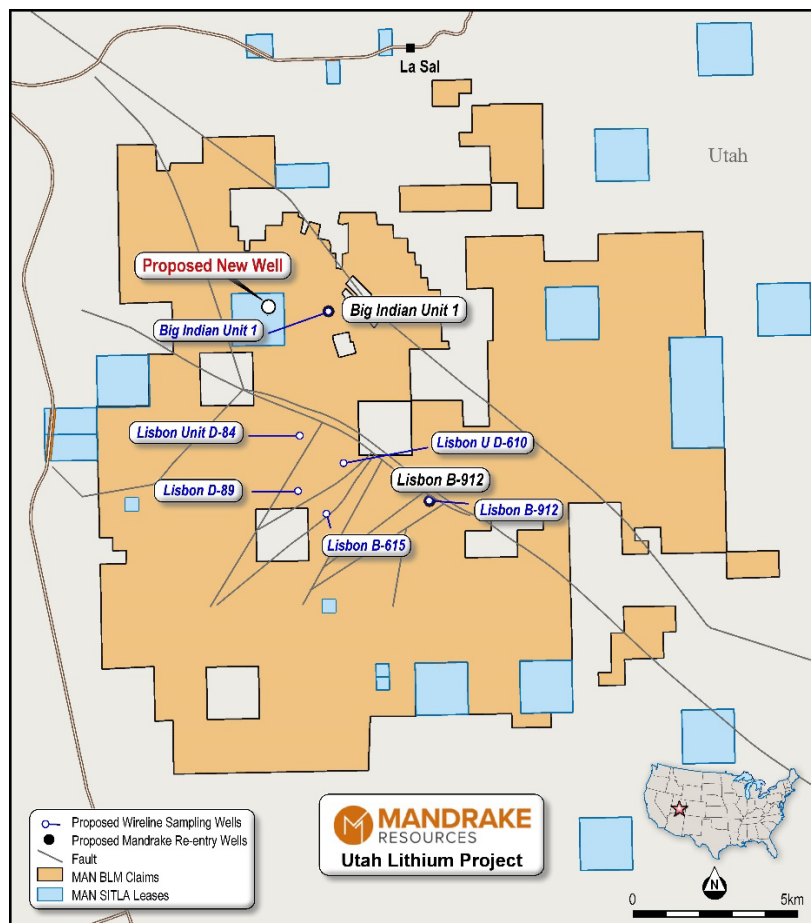


Figure 2: Utah Lithium Project – Wireline Sampling

¹ See ASX Announcement 22 May 2023

The wells were selected on the basis of the following:

- Proximity to major fault structures that may influence brine migration and thus play a role in the distribution of elevated lithium concentrations
- Total depth of the wells and depth of perforated interval – targeting reservoirs known to host brines with elevated lithium concentrations
- Down-hole well conditions and integrity of wellbore
- Wells awaiting workover approval from Bureau Land Management (BLM)

Existing wells have historically targeted the deeper Mississippian (Leadville) and Devonian (McCracken) formations, being the principal oil and gas productive horizons in the basin, however the Paradox formation has also been completed (perforated) in some wells as various sub-units have been proven to host hydrocarbons, such as the Cane Creek unit near the base of the formation.

Well	Field	Status	Target Formation	Number of brine samples
Big Indian #1	Big Indian	Shut-in	Paradox	3
Lisbon B-912	Lisbon	Shut-in	Leadville	1
Lisbon D-89	Lisbon	Shut-in	Paradox	1
Lisbon U D-610	Lisbon	Shut-in	McCracken	1
Lisbon U D-84	Lisbon	Shut-in	Leadville	1
Lisbon B-615	Lisbon	Shut-in	Leadville	1

Table 1: Wells selected for preliminary wireline sampling

A wireline unit from The Wireline Group (TWG) is now on-site and will collect samples using a simple bailer configuration designed to retrieve brine samples from desired depth intervals.

Each sample will be sent to an accredited laboratory for comprehensive analytical testing. Further to the laboratory testing, Mandrake has agreements with two Direct Lithium Extraction (DLE) providers who have each requested large volume brine samples for preliminary DLE testing.

Mandrake has engaged an independent lithium brines resource geologist to provide input into the forthcoming sampling programme with a view to the estimation of an Exploration Target in the near term.

Mandrake regards wireline bailer sampling as indicative and sub-optimal insofar for the potential to return relatively diluted lithium concentrations when compared to brines collected through swabbing.

Once wireline results are received, and together with Mandrakes' extensive well hole and geophysical data set, an Exploration Target can be estimated.

A swabbing unit will then be mobilised which will enable larger volumes of water to be removed from the well allowing for the ingress of brines representative of surrounding formations.

Lithium Brine Sampling Strategy

Mandrake is able to access brine samples from potential lithium brine-bearing formations through the methods detailed below.

Sampling Method	Features/Discussion	Permitting	Relative Cost
Preliminary Wireline Sampling	<ul style="list-style-type: none"> • Currently underway • Brines from wellbore only • Access to existing O&G perforations only • Brine/DLE results and well assessment will inform subsequent sampling, saving time and money 	Not required	Very Low
Swabbing	<ul style="list-style-type: none"> • Rapid mobilisation (2 weeks' notice) • More representative brine sample drawn-in from reservoir • Access to existing O&G perforations only • Bulk samples for analysis and DLE testing • Potential brine producer 	Not required	Low
Re-entry and Workover	<ul style="list-style-type: none"> • Rapid mobilisation (4 weeks' notice) • Able to access formations highly prospective for Lithium brines (not restricted to existing perforations) • Bulk samples for analysis and DLE testing • Hydrogeological testing • Optimal design - brine producer 	BLM – Expected approval Q1 2024	Moderate
Drilling	<ul style="list-style-type: none"> • Rapid mobilisation (4 weeks' notice) • Able to access formations highly prospective for Lithium brines • Able to better convert to Lithium brine producer • Able to drill deeper to access highly prospective formations at depth • Bulk samples for analysis and DLE testing • Hydrogeological testing • Optimal design - brine producer 	Utah State – Expected approval Q1 2024	High

Table 2: Lithium brines sampling methods qualitative assessment

The preliminary wireline sampling programme provides Mandrake with the potential to access brines from existing wells for approximately US\$25,000 per well. The information from this project will inform both DLE testing and an Exploration Target estimation as well as providing crucial information for subsequent swabbing, re-entry and workover operations.

The provision of wellbore information in particular will reduce costs and optimise future operations and rapidly progress the Company towards the Exploration Target and ultimately a maiden lithium Resource estimate.

This announcement has been authorised for release by the Board of Mandrake Resources.

Competent Persons Statement

The information related in this announcement has been compiled and assessed under the supervision of Mr James Allchurch, Managing Director of Mandrake Resources. Mr Allchurch is a Member of the Australian Institute of Geoscientists. He has sufficient experience that is relevant to the information under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code. Mr Allchurch consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.