

# PLAN OF OPERATIONS

for

## Alkali Flats Phase 1 - 2 Lithium Brine Exploration



**Lancaster  
Resources Inc.**

**Prepared for:**

U.S.A Department of Interior  
Bureau of Land Management  
Las Cruces Field Office

& as an Appendix to:

New Mexico Energy Minerals and Natural Resources Department  
Mining and Mineral Division  
Santa Fe, New Mexico

**Submitted by:**

Lancaster Resources Inc.  
2569 Marine Drive  
West Vancouver, BC Canada

**Submitted: September 26, 2023**

## Executive Summary

This Plan of Operations (PoO) is submitted to the Bureau of Land Management, Las Cruces Office (BLM) in support of the Alkali Flats Lithium Brine Exploration Project (Project) located near Lordsburg, New Mexico by Lancaster Resources Inc. (LCR). This PoO is also attached as an appendix to the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Mining and Minerals Division (MMD) Phase 2, Subpart 3 Minimal Impact drilling application.

The Project is operated by LCR. LCR is a registered company in British Columbia, Canada and has optioned the BLM mineral claims from a US entity, Majuba Mining Ltd.

This PoO is submitted in accordance with BLM Surface Management Regulations 43 Code of Federal Regulations (CFR) 3809. This PoO is intended both to satisfy the BLM's requirements for a plan of operations for drilling and geophysical programs and to supplement and support LCR's corresponding application to EMNRD for a Subpart 3 Minimal Impact New Exploration Operations permit for exploratory drilling.

The Project is located on public lands administered by the BLM in part or all of Sections 15,17, 19-22, 27-30, 33 Township 23 South, Range 30 West NM Principal Meridian, in Hidalgo County, New Mexico (Project Area). The Project Area is approximately 5200 acres. Project disturbance (~1.97ac) will occur in two phases. Phase 1 is a minimal impact drilling program of 1-3 exploration wells based on previously completed magneto-telluric (MT) geophysics program, and Phase 2 is an expansion of the MT program to cover all mineral placer claims. There are approximately 3.5 miles of existing roads that will be utilized for Project access and ~1.7 miles of on-playa access to Sec15-23S-20W. Figure 1 shows the Project Area with the proposed Project access.

LCR PoO would have a total of ~1.97 acres of surface disturbance under the two phases. At any given time during the project, however, there will be no more than 0.18 acres of un-reclaimed, non-access, disturbance (a maximum of 3 well pads). The mineral disturbance exploration activities covered under this Plan consist of the following: on-playa access for drilling 1 to 3 diamond drilling bore holes, geologic and geophysical mapping, drill site(s) and sump construction, maintenance of the access roads and reclamation of Project-related surface disturbance. Phase 2 MT program is dependent on results of Phase 1 and the existing MT data, but the impact is negligible based on 1ft x 3ft holes, ~6 inches deep, for ~89 receiver sites that would be backfilled immediately after the survey.

Table 1 outlines the total acreage of authorized and proposed surface disturbance, by type of disturbance. The proposed disturbance will create a total of approximately 1.97 acres of new surface disturbance. These proposed drilling locations may be subject to change pending continued geophysical review, however, the locations will be submitted to the BLM once confirmed and prior to any activity. The work plans will include maps that show the location of the proposed surface disturbance to ensure that all listed and eligible and unevaluated cultural resources or any other sensitive resources are avoided, pending a BLM cultural review.

**Table 1: Proposed Disturbance**

<b>Activity</b>	<b>Length (ft)</b>	<b>Width (ft)</b>	<b>Quantity</b>	<b>Disturbance (ac)</b>
New Roads	N/A			0
Existing Overland Access	8900	8	1	1.63
Existing Roads (needing Rehab)	N/A			0
MT Geophysical holes	1	3	100	0.007
Drill Pads	50	75	3	0.26
Drill Pits	15	10	3	0.01
<b>Total</b>				<b>1.97</b>

## 1.0 Operator and Claim Information

### 1.1 Claim Operator

Name: Lancaster Resources Inc. (LCR)

Mailing Address: 2569 Marine Drive  
West Vancouver, BC, Canada

Phone Number: (604) 923-6100  
info@lancasterlithium.com

Corporate Contact: Andrew Watson, P. Eng.  
VP Engineering & Operations  
(403) 710-1284  
[andrew@lancasterlithium.com](mailto:andrew@lancasterlithium.com)

LCR is a corporation registered in Vancouver, BC Canada. LCR was formed to support the transition to clean energy and transportation by owning and developing lithium mineral opportunities in North America.

In November 2022 LCR obtained access to the Alkali Flats project through an options agreement with the claim owner, Majuba Mining Ltd. As of the date of submission all claims have been renewed with BLM for an additional year (2024), as per renewal requirements.

### 1.2 Claim Owner Information

Owner: Majuba Mining Ltd.  
Rodney Blakestad, Consulting Geologist  
1602 W Placita Sin Nieve  
Sahuarita, AZ 85629

Phone Number: (520) 465-8650

Email: [Rodney.Blakestad@gmail.com](mailto:Rodney.Blakestad@gmail.com)

Tax Payer ID Number: 56-2517399

Commodity: Lithium from Brine

Claim Name: Alkali Flats

Claim Type: Federal Placer Mining Claims (260)

Claim Numbers: NM105297541 - NM105297571 (31)  
NM105788152 - NM105788187 (36)  
NM105810533 - NM105810694 (162)  
NM105818469 - NM105818480 (12)  
NM105830503 - NM105830521 (19)

## 2.0 Project Description

### 2.1 Project Area

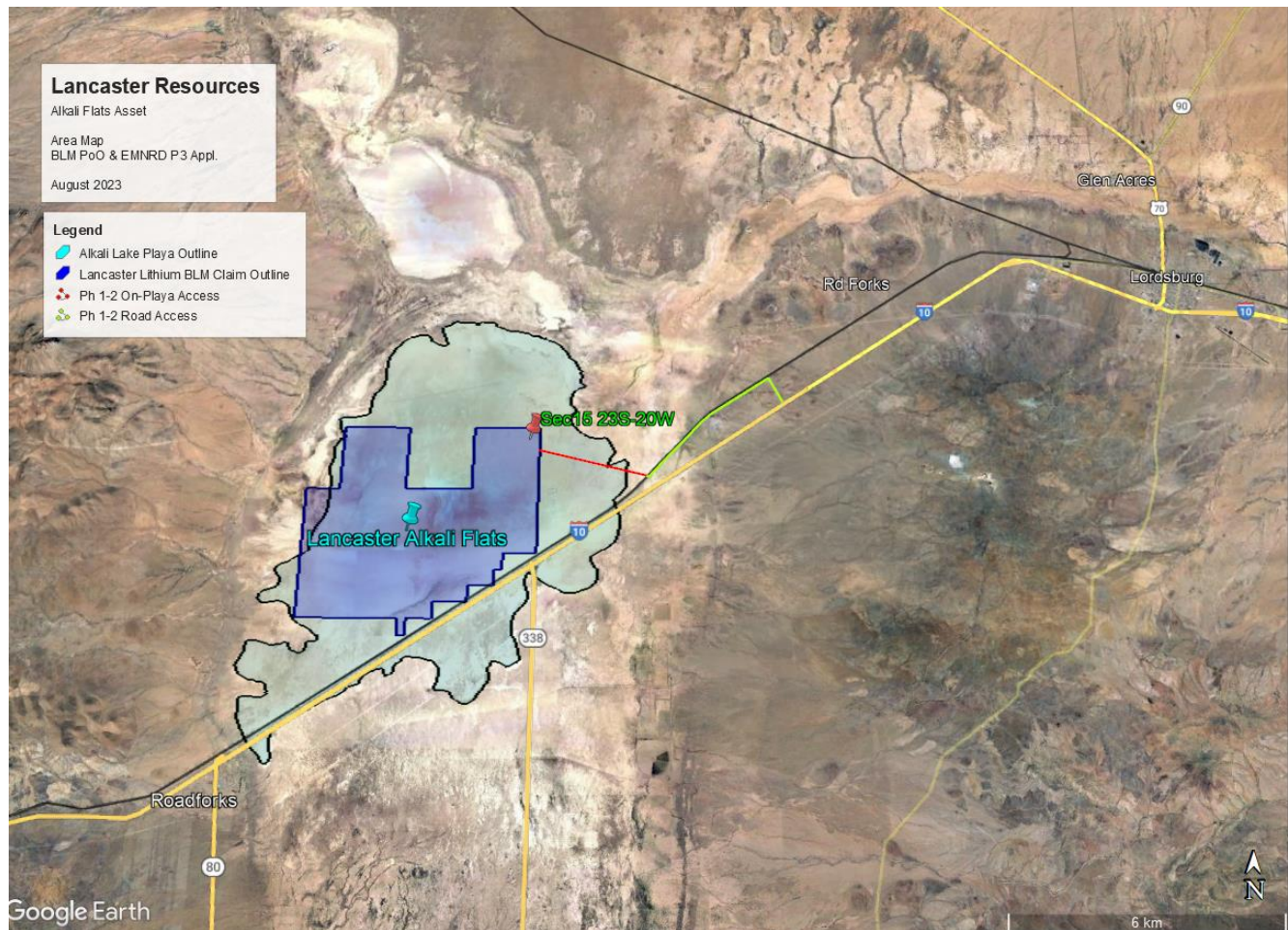
The project is proposed on the Alkali Flats playa ~12mi to the west of Lordsburg, NM. The mineral claims include 260 BLM placer claims covering ~5200ac over sections 15, 17, 19-22, 27-30, 33 Township 23 South, Range 20 West. Figure 1 shows the outline of the claims area with internal reference numbers and Figure 2 shows the claims relative to Lordsburg with the proposed access route. Please see Attachment #1 outlining detailed claim information.

Mineral claims for the project area are exclusively public lands under administration of BLM, claim numbers outlined in section 1.0.

**Figure 1 – Placer Claim Map**



**Figure 2 – Area Map**



## 2.1 Project Access

As LCR has outlined in the Part 3 application to EMNRD, access to the playa is proposed by exiting Interstate Highway 10 at Wildcat Mountain Road / "Fraggle Rock" exit and heading north ~1/2 mile to a tee-intersection. Turn west (left) for ~2.5 miles to at-grade rail crossing. Turn north (right) and cross tracks to access playa. Head ~1.7 mi to northwest to section 15. This routing will provide access for the MT geophysical programs and proposed drilling locations.

For the Phase 1 drilling program it is proposed to have a single truck mounted diamond drilling rig (or appropriate reverse-circulation drill) access the site. Additionally, there will be a water truck, pipe truck for drill pipe, and a consulting geologist pickup.

Access to the site for the Phase 2 geophysical program would consist of one pickup truck with a crew of 2 and associated equipment. If required an ATV, or other lightweight OHV vehicle would be considered.

All vehicle access would be limited to low speed to minimize surface impacts such as rutting, loss of vegetation, or dust creation.

## 2.2 Proposed Project

LCR is proposing a two-phase approach under this PoO, including the EMNRD application. Phase 1 is the execution of an exploration drill program of 1 to 3 exploratory test wells targeting highly conductive aquifers in November 2023. It is estimated to take 10-15 days to drill the well(s).

Pending successful drilling a follow up Phase 2 MT program over the balance of the BLM mineral claims would be conducted in Q1 2024. Phase 2 is estimated to take approximately 10-15 days to complete.

### *2.2.1 Phase 1 – Exploration Drilling Program*

Phase 1 is proposed to be 1 - 3 exploration wells targeting the conductive zones identified in previous MT programs. LCR is anticipating using a single diamond drilling rig to drill and test. The drilling is expected to take 5-8 days for the deep well(s), at an estimated subsurface depth of 760m. The shallower well(s) will be 2-4 days, at ~200m depth. The Part 3 Minimal Impact Exploration application to EMNRD will be submitted in parallel with this PoO, including WD-07 and WR-08 forms.

It must be noted that the drilling locations are currently in a proposed location based on existing technical information. LCR is committed to ensuring that the boreholes are targeted in the most prospective high conductivity lithology. As such the final drilling coordinates can not be confirmed until the geophysics review has been completed and interpreted. LCR is estimated to have final coordinates by October 15, 2023. Once this has been completed, LCR commits to updating BLM and EMNRD on the final locations, with GPS coordinates. It is not expected that the borehole locations will move significantly, nor will the wellsite locations impact different vegetation or surface topography. All locations will remain within Section 15.

Testing and capture of both physical core/cuttings/rock chips and brine samples will occur throughout the drilling phase. The drilling location sites are anticipated to be ~50'x75' in size with a single 10'x30' waste/sump pit at each location. Once drilling and sample collection is complete each borehole will be abandoned as per requirements in a separate WR-08 application to New Mexico OSE. The sump pit will be backfilled at the earliest opportunity after drilling.

LCR will follow all New Mexico requirements for selecting a drilling vendor, operating wells, and plugging/abandoning once testing is complete. A representative of LCR will be on site during drilling activity. The onsite geologist will coordinate drilling activity and advise drillers as required. A standard rig crew is expected (2-3 people).

Groundwater may be encountered during drilling. LCR commits to ensuring proper drilling operations to protect all ground water and ensure no cross contamination between targeted brines and near surface fresh water. It should be noted that historic water wells drilled in the vicinity of the playa have all reported containing high salt content that is not fit for human and animal consumption (State Engineer's Office Well Report Number A-675 or 3-14096).

No structures or occupancy are expected. If required, LCR can put up temporary fencing to prevent animals from entering pits or drilling pads.

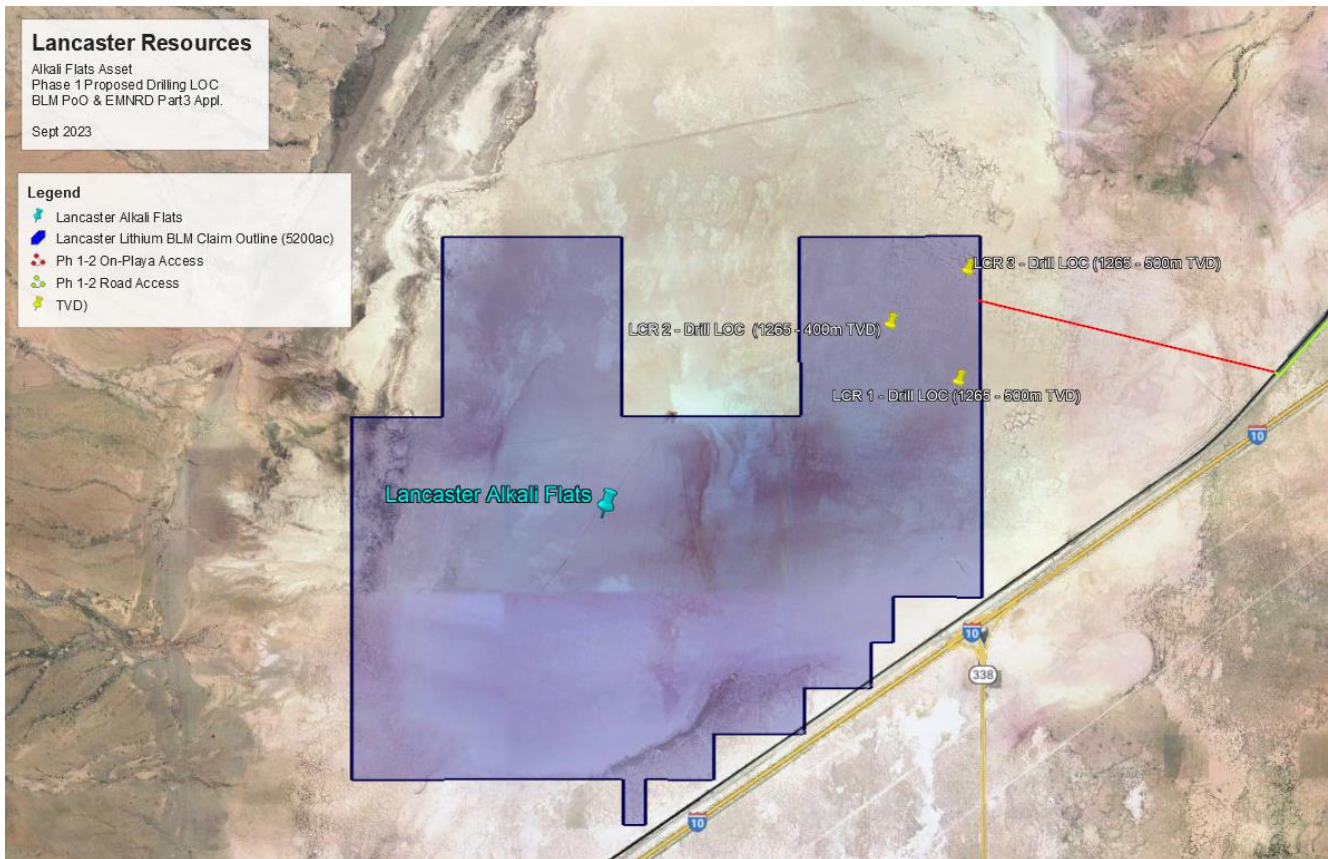
No toxic additives are expected to be added during the drilling process.

Some hazardous substances are expected to be used and LCR will follow all spill and container requirements. These include diesel, gasoline, lubricants, etc. Spill mats and containment will be used during any refueling or maintenance operations. All waste will be contained on site in appropriate containers and then disposed of at an approved facility.

Water may be needed for dust suppression both for drilling and for access to site in minimizing dust as required. Water will be obtained from the town of Lordsburg and be hauled to site. Opportunities for local rancher supplied fresh water are being explored.

LCR is proposing to complete this program in November 2023 with an approved New Mexico drilling contractor such as Godbe Drilling (not confirmed).

**Figure 3 – Phase 1 Proposed Drilling Locations (November 2023)**



### 2.2.3 Phase 2 – Geophysical Program: Full coverage of claims

Phase 2 would be the completion of an MT and possible gravity survey over the balance of the mineral claims. This is proposed for Q1 2024 and pending successful results from Phase 1.

The MT electro-magnetic minimal impact exploration program will be used to further identify highly conductive subsurface brine layers that LCR believes may host high concentrations of lithium over the placer claims.

Each receiver site would have a hand dug shovel hole, ~1ft wide x ~3ft long x ~0.5ft deep. The receiver would capture background, naturally sourced electromagnetic waves for 12-18 hours. Once complete the receiver would be retrieved and put in a new location. All holes would be backfilled immediately and smoothed over to ensure no surface impacts or disturbance. It is expected that the program would be laid out with N-S lines being ~500m spaced apart and E-W receiver stations being ~500m apart. The estimated receiver count is ~89 stations. A typical MT site may look the following picture:



The data captured from the MT program is expected to show the continuation of significant subsurface anomalies that would be highly conductive as seen in past geophysics programs. This implies high salinity brine and would be the target of future exploration drilling programs.

All access to the playa during this phase would be with a single vehicle/pick-up truck traveling at low/minimal speed. This will aim to reduce access impacts such as rutting, dust creation, and vegetation damage. There will be no toxic or hazardous chemicals used, no external sources of power (other than batteries for sensors) to create signals such as explosives or heavy weight drops.

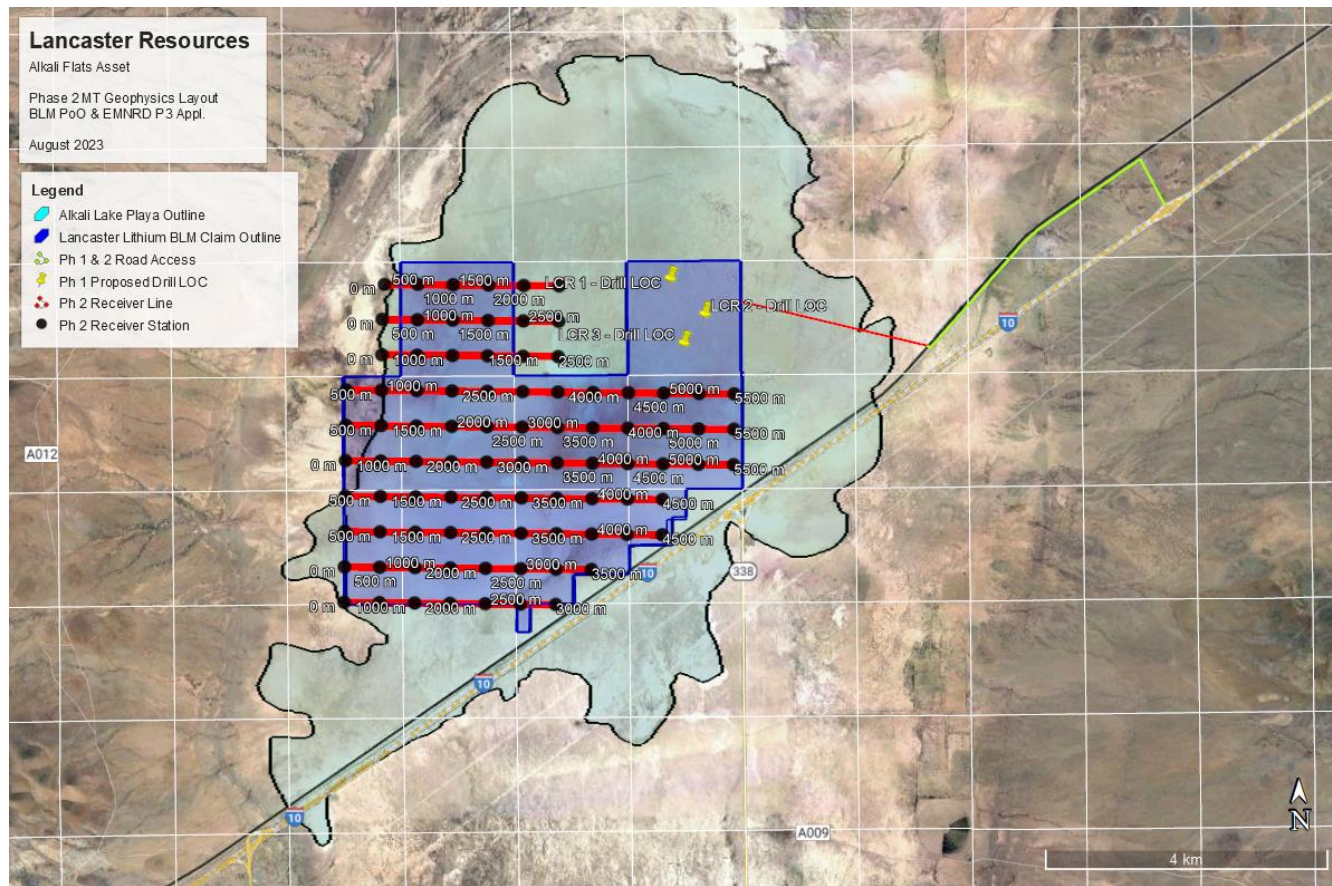
It is expected that KLM Geoscience would conduct the program, pending availability of crew. The program will take an expected 10-15 days to complete and follow the same access routing as Phase 1.

It is expected to complete this program in Q1 2024 pending successful completion of Phase 1.

Please see Figure 4 for a layout of the proposed MT program.



**Figure 4 – Phase 2 MT Geophysics Layout (Q1 2024)**



For both phases LCR does not anticipate needing to build or repair any existing road. Minimal overlapping traffic routes will occur which will help minimize potential rutting and vegetation damage.

LCR will also be monitoring wind conditions during drilling Phase 1 operations. Should the wind begin to cause dust storms and impede visibility, operations may be reduced or suspended until the wind subsides.

LCR commits to compliance with all state and federal environmental protection requirements for all proposed activities. This includes protection of air, water, species, and vegetation.

LCR will not be conducting either of the proposed phases should the playa be too wet to support vehicular weight.

### 3.0 Site Geology

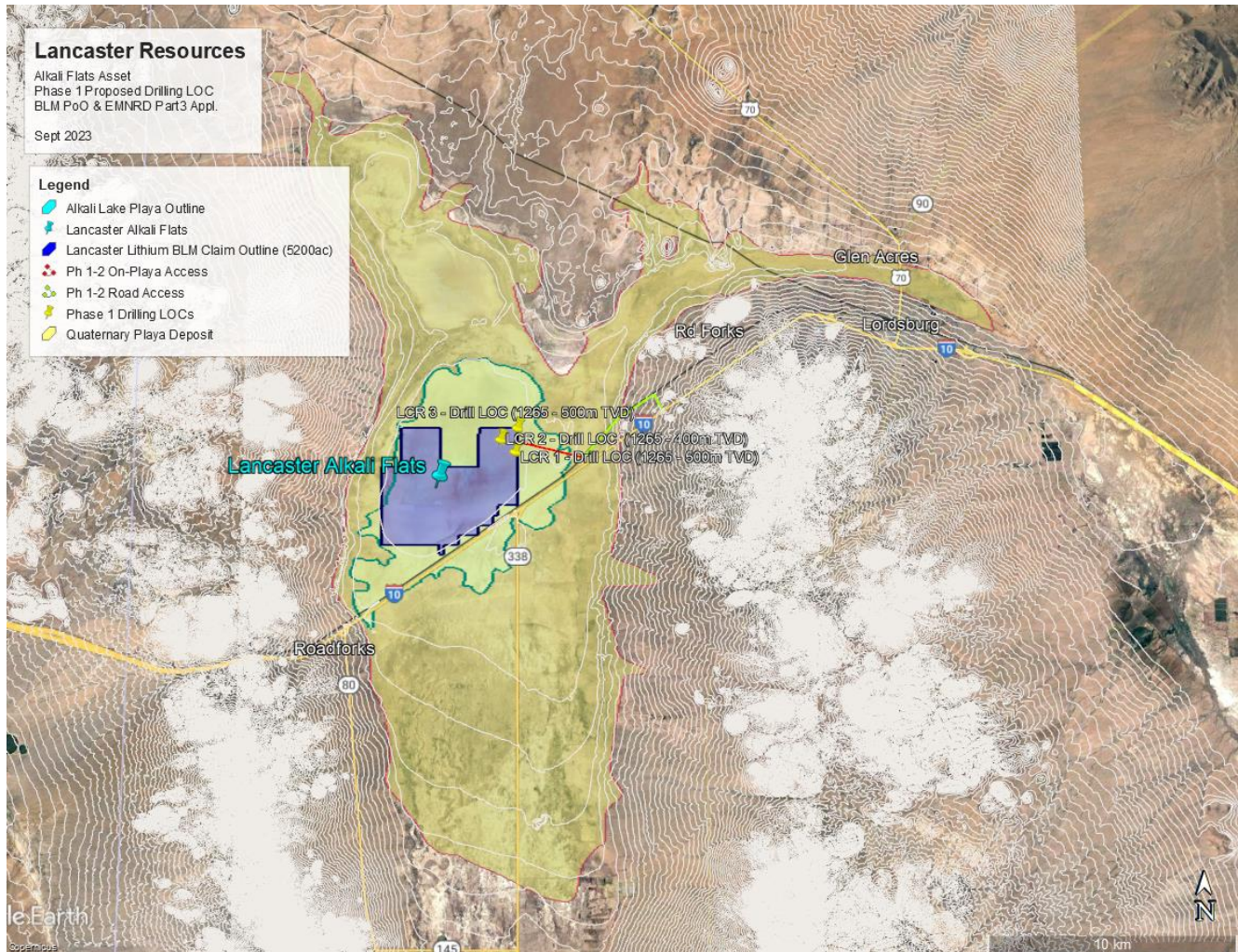
#### 3.1 Area Geology

The Alkali Flat Property forms part of the Lordsburg Playa Network 20 km southwest of Lordsburg, New Mexico, on a dry lakebed and approximately 8 km east of the Peloncillo Mountain range, 13 km west of the Pyramid Mountains, and north of Interstate 10, at an elevation of 1267 m above sea level.

The Property occurs within the Basin and Range Physiographic Province that has been subdivided into three topographic units known as the Lower Animas Valley on the west, the Lordsburg Valley on the east and the Pyramid Mountains that occur between the two valleys.

Please see Figure 6 for a topographic map of the general area.

**Figure 6 – General Area Topography (a comment on the map - the Legend does not address at features correctly)**



The Lower Animas Valley, host to the Alkali Flat Property, is bounded on the west by the Peloncillo Mountains and is a typical near-desert basin with detritus and fill contributed by the bounding mountain ranges. The Basin is flat but slopes gently towards the mountain ranges. The northern portion of the Valley is host to the ~15 square mile Alkali Flat. The ancient pluvial Lake Animus is marked by beach ridges and strand lines developed as the Lake subsided. Lordsburg Valley occurs to the east of the Pyramid Mountains and has similarities to the Lower Animas Valley.

The Pyramid Mountains are a 22 mile long by 3-7-mile-wide linear north to south- trending mountain range covering approximately 90 square miles. The Range has been divided by two low passes into northern, middle, and southern portions. The northern portion consists of bare pyramidal shaped hills with maximum elevations of 5000' to 5100' and includes the Lordsburg and Pyramid Mining Districts. Drainage patterns are very irregular. The topography of the middle portions of the Pyramid Mountains is controlled by the original depositional surfaces of Middle to Late Tertiary welded tuff and pyroclastic deposits and by dissected older basalt flows.

The southern Pyramid Mountains have the most highly dissected topography with both constructive and destructive landforms present. The highest peaks in the Pyramid Range are volcanic necks of rhyolitic

composition and attain maximum elevations of 6000'. Average relief in the range is about 500'. The Range is bordered on all sides by gently sloping pediments with bedrock present as low spurs separated by gravel-filled arroyos or as isolated remnants surrounded by alluvium.

### 3.2 Playa Sediment

An organic-rich A-Horizon is not present at the playa and the playa surface is a duricrust of dry, moderately to weakly indurated sediment to a depth of approximately six inches. The duricrust is a cream-colored, fine-grained sediment, with amorphous gypsum as the binder for the sediment. Below the duricrust the playa sediments consist of compact, tan-colored, fine-grained silt and sandy silt, which is moderately moist. Widely dispersed clumps of reedy grass exist locally on the playa surface; in places where those grasses have died, they are partially replaced with gypsum, which renders the grass stems brittle.

### 3.3 Hydrology

While groundwater is expected to be seen in Phase 1 drilling, LCR does not believe any subsurface water encountered would be considered fresh or potable. As noted in sec 2.2.2 existing historical wells have all noted that water is unfit for human or wildlife consumption.

No surface water is expected to be seen (dry playa environment), used, or impacted from any operations. No streams, creeks, etc. have been noted. However, there may be ephemeral draws from surface water due to rains/flooding.

LCR will ensure that all drilling fluids (fresh water) and operations will be taken to protect groundwater and cross flow between wells any subsurface aquifers/water sources.

## 4.0 Vegetation

Vegetation at the Lordsburg Playa site is extremely sparse. A few individual alkali sacaton (*Sporobolus airoides* (Torr.) Torr.) plants are present. In general, the Lordsburg district is sparsely vegetated but species typical of the southwest United States are present. Mesquite, greasewood, and numerous varieties of cactus are common, however, none of these occur on the playa surface area.

LCR has not completed an independent report on playa vegetation or wildlife, however, previous applications for PoO and drilling on the playa have been completed. Please see EMNRD Application/Approval HI018EM - (Lordsburg Resources / Arizona Lithium / Frank Bain) or NMDGF 18073.

LCR will require all vehicles entering the playa to be clean and free from foreign materials, dirt, and plant material.

LCR commits to revegetation as per approval conditions.

## 5.0 Cultural

LCR has not completed an independent report on cultural resources, however, previous applications for PoO and drilling on the playa have been completed. Please see Application/Approval HI018EM - Lordsburg Resources / Frank Bain or NMDGF 18073.

LCR commits to protection of cultural monuments, fossils, sites, etc. as per approval conditions. Should any cultural or paleontological sites or artifacts be discovered, LCR will notify the BLM and other authorities immediately.

At the completion of the proposed phases there will be significant information generated to determine the prospective nature of the Alkali Flats Lithium depositional environment, subsurface lithology, brine lithium concentrations, and future brine production potential. By gathering the technical information in a minimally invasive, very low impact manner with low risks and strong mitigation practices, LCR believes this is a significant opportunity to support the future development and economic opportunities without impacting the natural environment.

## 6.0 Financial Assurance

LCR is committed to ensuring there is no financial impact to the BLM, State of New Mexico, or nearby stakeholders. Based on the size of the project (~1.97ac) and proposed disturbance, LCR is requesting no financial security be needed for this project. As mentioned, once sampling and drilling is complete on each borehole, it will be immediately plugged and abandoned as per EMNRD approvals with the surface disturbance being immediately reclaimed shortly thereafter. This will mitigate any potential risks to the BLM, NM State, or other stakeholders.

LCR commits to informing the BLM, EMNRD, and other stakeholders at the start and end of each surface area disturbance and completed reclamation for individual boreholes (MT geophysical and drilling).

Thank you for your time and consideration. Please do not hesitate to contact the undersigned at any time.



Andrew Watson, P. Eng.  
VP Engineering & Operations  
Lancaster Resources  
[Andrew@LancasterLithium.com](mailto:Andrew@LancasterLithium.com)  
403-710-1284