

# **ASX Announcement**

## 26 July 2016

# Dark Horse Expands its Argentine Focus with Lithium Acquisition Package Includes Historical Lithium Rich Spodumene Mine and Exploration Licences

Dark Horse Resources Limited (ASX:DHR; "DHR" or "Company") is pleased to announce that it has entered into a Memorandum of Understanding (MOU) to acquire 100% of Oronegro SA ("Oronegro"), with exclusive rights to explore for lithium and other strategic minerals throughout the San Luis and Córdoba provinces of Argentina (**Figure 1**).

## **Highlights:**

- ➤ Dark Horse has entered into a Memorandum of Understanding for an option to acquire 100% ownership of Argentine company Oronegro SA, which holds licenses to explore and develop lithium and other minerals covering prospective districts within the San Luis and Córdoba provinces in Argentina.
- Oronegro entered an Exclusivity Agreement to acquire 100% of the Las Cuevas Mine in San Luis province, which is considered one of the most important spodumene mines in Argentina.
- ➤ Oronegro holds 36,700Ha of exploration license applications over the most prospective lithium bearing pegmatite fields in San Luis and Córdoba.
- Oronegro management have been retained by Dark Horse to source and secure other opportunities.
- ➤ The pegmatite fields of San Luis and Córdoba have an important past record of producing mica, beryl, spodumene, tantalite (tantalum oxide), columbite (niobium oxide), and recently K-feldspar, albite and quartz.
- > The relevant properties have good access and infrastructure support for exploration activities on a year round basis.



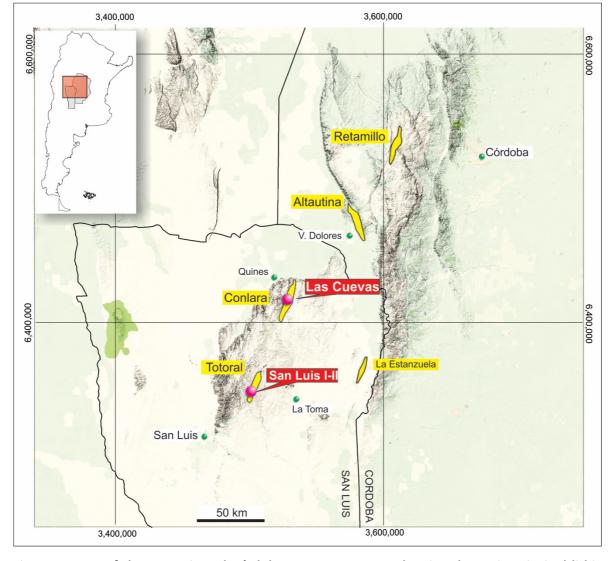


Figure 1: Map of the San Luis and Córdoba Pampean ranges showing the main principal lithium bearing pegmatite districts and its principal historic mines in San Luis province (modified from Gallisky and Márquez-Zavalía, 2011).

Executive Director David Mason commented: "Dark Horse is expanding its Argentinean business interests from coal to other energy sources, in particular battery development materials, including lithium and graphite. This is designed to offer shareholders exposure to alternatives in the field of energy while still focusing on the strategic 1000MW Pico Power Project in Rio Negro Province.

Argentina, with its new President and Government implementing significant structural and financial change, is a completely different place from a year ago and has become an extremely attractive country for resources and energy investment. This new venture into lithium pegmatites with Oronegro adds significant value to DHR's portfolio of projects and has the potential to lead to substantial wealth generation for our shareholders.

Dark Horse views lithium as an important component in the battery storage industry, and believes its importance in this area will continue to support demand of the mineral along with current international renewable energy trends."



Oronegro holds a portfolio of lithium bearing pegmatite projects comprising:

#### a) San Luis Province

- Oronegro has entered into an "Exclusivity Agreement with Option to Purchase" (EAOP) with the Las Cuevas Mine vendor to acquire 100% of the mining properties of Las Cuevas Group, (Las Cuevas, Daniela Luciana II, Pequeña Lulu and San Roque, totaling 49Ha).
- Oronegro has submitted applications for Exploration Permits ("Cateos") surrounding various lithium bearing pegmatite mines as follows:
  - San Martín (6,400Ha) covering an area immediately surrounding the Las Cuevas group of properties in the northern part of the Conlara pegmatite field.
  - o **El Totoral** (10,000Ha) covering an area immediately surrounding inactive spodumene mines of the prolific El Totoral pegmatite field.

## b) Córdoba Province

- Oronegro has submitted applications for Exploration Permits ("Cateos") as follows:
  - Retamillo and Los Mogotes claims (20,000Ha) which cover historically reported elevated lithium values obtained from stream sediment samples along the western boundary of the Achala batholith.
  - o Piedra Pintada claim (300Ha) in the southernmost part of the Altautina pegmatite field.

## Background on the Lithium- Bearing Pegmatite Fields of San Luis and Córdoba

The San Luis and Cordoba lithium bearing pegmatite fields belong to the Pampean pegmatite province that was defined to include the economic fields of granitic pegmatites of central and northwestern Argentina (Herrera, 1963, Galliski, 1994a, 1994b). It contains more than 95% of the granitic pegmatites of the country, with mineral resources that have been mined during the past 80 years, producing the majority of the feldspar, quartz and mica plus Be-, Li-, Ta-, Bi- and Rb-bearing minerals. Of particular importance for hard rock lithium exploration are those pegmatite districts located in San Luis (Conlara, El Totoral and Estanzuela) and western Córdoba (Altautina and a recently identified new district named Retamillo) (Figure 1).

## Las Cuevas Mine and San Martín Lease, San Luis Province

Las Cuevas is one of the largest historical beryllium, lithium and tantalum mines of Argentina (Angelelli and Rinaldi, 1966). The mine is located in the northern part of San Luis province, 30km south east of Quines and 4km northwest of the village of San Martin (**Figure 1**). The Las Cuevas pegmatite is part of the Conlara pegmatite field and belongs to the Rare-Element class, REL-Li subclass, complex type, spodumene-subtype of granitic pegmatites (Martinez and Galliski, 2011).

The pegmatite has been previously mined in seven (7) open pits (**Photographs 1 and 2**), and underground workings concentrated in the northern part of the property (**Photograph 3**). Mining operations were not continuous, and were firstly directed to recovering beryl and micas, later to spodumene and tantalum-bearing ores, and more recently to albite, K-feldspar and quartz (Galliski and Márquez-Zavalía 2011) (**Figure 2B**).



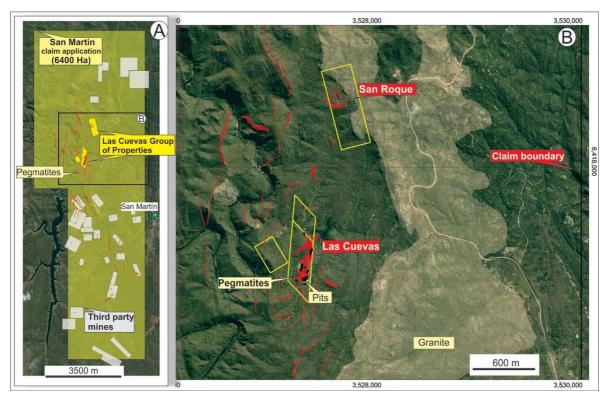


Figure 2: Satellite image from the northernmost part of the Conlara pegmatite district in San Luis. (A) Image showing the location of the "San Martin" claim application, Las Cuevas Group of properties and other third party "minas". (B) Detailed image showing Las Cuevas Group of properties and the pegmatite field along the western contact of granite.

The pegmatite is exposed over more than 400m in strike length and is 70m – 100m in width (**Figure 2**). From surface exposure, Las Cuevas pegmatite appears as a N- to NNW striking dyke-like intrusion that dips shallowly to the west in the north (approx 30° W) and more steeply to the west in the south (30 to 70° W). The pegmatite pinches out to the south and plunges to the north where its northern termination is concealed under alluvium.

The thickness of the pegmatite sheet is highly variable in the northern most part where both footwall and hanging wall contacts are exposed, with thickness ranging between 0.5m and 2m. In the southern most part the thickness is significantly greater, between 10m to 20m, but the footwall contact does not crop out.

The lithium zones in the pegmatite consist of coarse-grained euhedral spodumene with crystals up to 2m in length (**Photographs 4 and 5**) intergrown with quartz, which form white and pink lustrous units at the top of the hanging-wall (**Photograph 6**). Intercalations of quartz-albite occur further north with large spodumene, lepidolite and lithium rich tourmaline zones (**Photograph 7**).

Las Cuevas is known to carry significant columbite group minerals. Columbite minerals include tantalite (tantalum oxide) and columbite (niobium oxide) the main ores for tantalum and niobium used in the electronics and metals fabrication industries. The columbite group minerals occur concentrated especially in the northern end of the pegmatite where it tends to form a low angle dipping body. Columbite group minerals were mined by underground developments, most commonly occurring as massive pockets of crystals of several centremetres (Galliski and Márquez-Zavalía, 2011).



Smaller pegmatite veins or apophyses of the main pegmatite body emanate north and south into the country rock and these occurrences are covered by the 6,400Ha San Martín Oronegro claim (**Figure 2A**).

The San Roque mine concession (part of Las Cuevas group) is reported as a spodumene bearing pegmatite as well, with small pits and excavations on the northern side.

Despite historical production, no systematic modern exploration has been undertaken and the occurrences have never been the subject of formal resource estimation.

## El Totoral Lease, San Luis Province

The Oronegro claim named "El Totoral" (10,000Ha) covers the Totoral Pegmatite Field (TPF) located in the southernmost part of the Pampean pegmatite province. The TPF (Oyarzábal, 2004) comprises a swarm of rare-element pegmatites of LCT (Li-Cs-Ta) petrogenetic family that forms a NE trending belt about 17km in length by 2km wide, cropping out on the eastern flanks of the Cerro La Torre, Loma Alta - Paso del Rey granitic intrusions (**Figure 3**).

The complex type, spodumene subtype pegmatites are located in the southernmost part of the TPF, emplaced in mica-schists and close to the Paso del Rey granite. The pegmatites have a tabular morphology, with evidence of deformation during and after their emplacement. They occupy a north-trending belt up to 6km in strike length by 1.5km wide. The most important spodumene deposits are (from north to south): San Luis (I and II), La Teresaida, Nilda and Diana (Oyarzabal and Galliski 1993).

The San Luis (I and II) mines are hosted by an albite-spodumene type pegmatite with variable thickness between 2m and 12m and more than 1km in strike length (Figure 3). The internal structure is complex, with spodumene forming giant prismatic crystals (approximately 2m long) hosted in massive quartz within the core of the pegmatite body. The pegmatite was the focus of small-scale exploitation from 1954 to 1958. Reported production was of 110 tonnes of spodumene (Oyarzábal, 2004). The San Luis (I and II) pegmatite is the most economically important pegmatite in the district. A preliminary economic evaluation by Oyarzabal over a length of 730m (along the strike of the pegmatite) has indicated that 68% is lithium-bearing with spodumene contents ranging between 5% and 35% in volume (Oyarzábal, 2004).

Oronegro is awaiting formal notification from the Provincial Mining authority regarding the Cateo application. However, current cadastral information indicates that both the San Luis mines and prospective pegmatite belt north and south of the mines have been covered by El Totoral Claim.



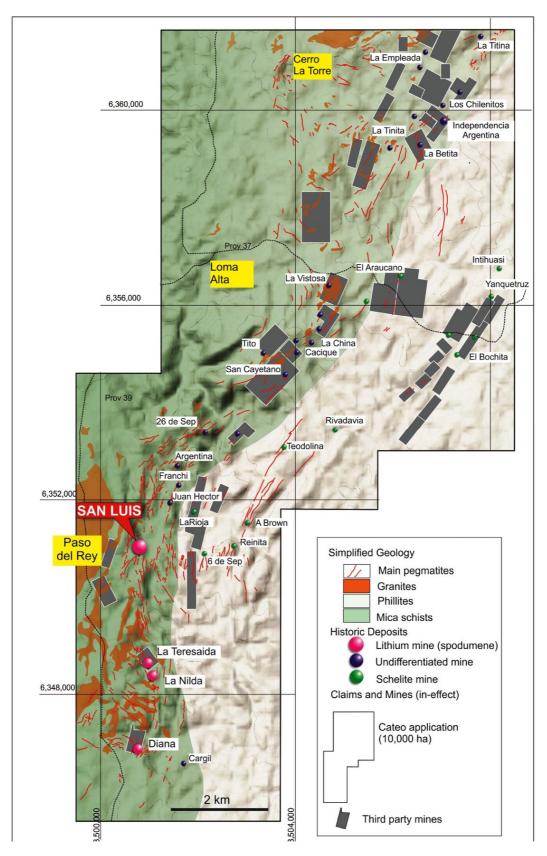


Figure 3: Map of Totoral district (adapted from Galliski and Márquez-Zavalía, 2011) showing the location of the "El Totoral" claim application, and other third party "minas". The lithium bearing pegmatite deposits are concentrated in the central and southernmost part of the district.



## Retamillo Lease, Cordoba Province

In Cordoba province, Oronegro has applied for two exploration licenses (20,000Ha) covering the newly recognized Retamillo pegmatite vein field developed along the contact between granites (Achala batholith) and metamorphic rocks (**Figure 1**). The concession areas are coincident with anomalous Li, Be, Ce, La from a regional stream sediment survey completed in 1999 as part of collaborative work between the French Bureau des Recherches Geologiques et Minieres (BRGM) and the Mining Secretary of Cordoba. Individual stream sediment samples returned lithium values up to 228ppm Li (**Figure 4**).

The Retamillo concession areas have excellent location and access. Although there are currently some restrictions on the exploitation of some minerals in Cordoba, including the types outlined above, the Company expects that this will change in the future.

#### Piedra Pintada Lease, Cordoba Province

Additionally, in Cordoba province, Oronegro has applied for an exploration license (300Ha) in the southernmost part of the Altautina pegmatite field (**Figure 1**). A number of pegmatite occurrences and some historical mines are known in the region.

## **About Oronegro SA**

Oronegro is a private Argentine company founded and managed by a team of experienced mining professionals. Its principals include Dr Gustavo Rodriguez, Mr Carlos Saravia Frias and Mr Alastair Morrison. Dr Rodriguez is a Cordoba-based geologist with extensive experience in South America working for international mining groups, including Gold Fields, lamgold, Crystallex and Mariana Resources. Mr Saravia Frias is a renowned Argentine mining lawyer, a founding partner of the law firm of Saravia Frias Abogados, and a former Vice Minister of the Argentinean Mining and Energy Department. Mr Morrison is an Australian-based mining professional and a director of the ASX-listed OreCorp Limited.

The Company's strategy is to acquire and explore for lithium and other strategic minerals in the geological environment of the Sierras Pampeanas.

## **Work Program Further Plans**

On the completion of due diligence, Dark Horse will move quickly to evaluate the Las Cuevas / San Martin Group of properties and also El Totoral District in San Luis Province. Initial exploration is expected to focus on geological mapping and rock sampling of exposed pegmatites and historical extraction sites, the latter in particular to determine what work may be required to resurrect mining activities and allow the Company to move quickly into operations, production and ore sales.



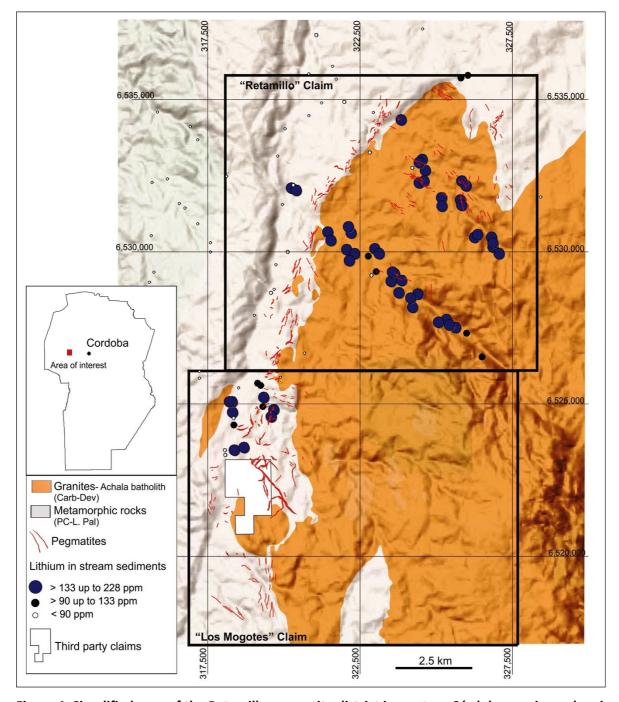


Figure 4: Simplified map of the Retamillo pegmatite district in western Córdoba province, showing the principal pegmatites, and Li anomalies in stream sediment sampling. The survey was completed in 1999 as part of collaborative work between the French Bureau des Recherches Geologiques et Minieres (BRGM) and the Mining Secretary of Córdoba.



## **DHR-Oronegro MOU Terms**

The main commercial terms of the MOU with Oronegro SA are:

- ➤ Stage #1 completion of 45 days DD U\$50k payment to cover expenses, 10m DHR shares issued, earn 10% equity of Oronegro SA.
- ➤ Stage #2 1 year from completion of DD, spend U\$150k on properties, 15m DHR shares, earn a further 15% equity (25% cumulative).
- ➤ Stage #3— 2 years from completion of DD, spend U\$200k on properties, 20m DHR shares, earn a further 20% equity (45% cumulative).
- > Stage #4– 3 years from completion of DD, spend U\$500k on properties, 55m DHR shares, earn a further 55% equity (100% total).
- ➤ U\$4k per month ongoing from agreement execution to allow personnel to generate new properties for Oronegro.
- Cover all third party acquisition costs of mines/ML's.
- > DHR will have Directors positions along the way based on equity.
- ➤ 3 months' escrow on the issued shares and the first rights of refusal sought for both on market and off market sales.
- > Geographic exclusivity area for all minerals covering the provinces of Cordoba and San Luis.
- > DHR has the right at any time to move to 100% ownership.
- > DHR's rights are assignable.
- > There is no NSR.

## **Las Cuevas Mine Acquisition Terms**

The main commercial terms of the Oronegro EAOP are:

- Exclusivity for 30 days to undertake legal DD by payment of U\$20k on signing the EAOP agreement. This can be extended if there are any legal uncertainties not able to be adequately ascertained or access to the properties is delayed with no additional payment.
- If inconsistencies are determined, Oronegro can terminate the EAOP agreement. The initial payment would be retained by the vendor.
- Otherwise, the parties will enter into a "Contract of Sale" (CS) within the 30 day exclusivity period, by paying a total of U\$4m over 4 years with terms as follows:
- > Payment of U\$30k on signing the CS.
- Payment of U\$50k 6 months following signing of the CS.
- Payment of U\$150k on first anniversary.
- > Payment of U\$750k on second anniversary.
- > Payment of U\$1,000k on third anniversary.
- > Payment of U\$2,000k on fourth anniversary.
- > There are no earn-in equity rights along the way.
- > Full payment may be made earlier to secure the properties at the discretion of Oronegro.
- Oronegro to maintain the tenements in good standing and has the right to manage the properties.
- The vendor can carry out their usual mining operations provided they don't interfere with Oronegro's activities.



### References

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## **Photographs**



Photograph 1: Old open cut workings at the Las Cuevas pegmatite mine.





Photograph 2: Old open cut workings at the Las Cuevas pegmatite mine.



Photograph 3: Old underground workings at the Las Cuevas lithium pegmatite mine.





Photograph 4: Coarse-grained euhedral spodumene crystals up to 2m in length within the lithium pegmatite zones at the Las Cuevas Mine.



Photograph 5: Coarse-grained euhedral spodumene crystals up to 2m in length within the lithium pegmatite zones at the Las Cuevas Mine.





Photograph 6: Coarse-grained euhedral spodumene crystals intergrown with quartz, forming white and pink lustrous units at the top of the hanging-wall at the Las Cuevas Mine.



Photograph 7: Intercalations of quartz-albite with large spodumene, lepidolite and lithium rich tourmaline zones at the Las Cuevas Mine.



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On behalf of the Board Mr Karl Schlobohm Company Secretary

## **Competent Persons Statement**

The information herein that relates to Exploration Targets and Exploration Results is based on information compiled by Mr Neil Stuart, who is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Neil Stuart is a Director of Dark Horse Resources Ltd.

Mr Stuart has more than five years experience which is relevant to the style of mineralisation and type of deposit being reported and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves' (the JORC Code). This public report is issued with the prior written consent of the Competent Person(s) as to the form and context in which it appears.

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#### **About Dark Horse Resources:**

Since listing on the Australian Stock Exchange in 2011, Dark Horse Resources (formerly Navaho Gold) has slowly evolved into a diversified exploration company, with interests in gold projects in the USA, numerous mineral licences in Australia, oil and gas projects in Australia (held via NavGas Pty Ltd), and coal and lithium projects in Argentina.

The Company's coal projects in Argentina consist of the Marayes project (San Juan province) and the Nirihuau project (Rio Negro province). Both projects are located within close proximity to access to existing rail networks with links to industrial areas and ports.

