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# Adelaide Ruiters Mining and Exploration Pty Ltd

**“The Worlds only (Black)Woman Owned Phosphate Mining Company”**

Saldanha Bay, Western Cape, South Africa

Established 2013

# High Level: Who are we?



- ▶ South African Sedimentary Phosphate and Limestone Mining and Exploration Co to produce Phosphate Concentrate for Direct Application Organic fertilizer (“Langfos Premium Fertilizer), Possibly industrial /food grade phosphoric acid and animal feed industry in Western Cape; South Africa ,SADC Region and potentially exports
- ▶ 73% Black Woman Owned company
- ▶ Founder and CEO: Adelaide Ruiters (owns several phosphate and limestone exploration rights in Saldanha Bay Area Western Cape 13 licences in total, South Africa) Estimated Combined 2nd largest Phosphate resources in SA
- ▶ Mining Right Accepted by Department of Minerals for proposed Zandheuvel Phosphate mine and beneficiation plant
- ▶ Currently Developing two mines of which first mine Zandheuvel Sedimentary Phosphate Ore Body in Saldanha Bay, West Coast, Western Cape Province of SA

# Who are we: continued



- ▶ February 2017 Company Financials prepared in accordance with International Financial Reporting Standards - Audited by Moore Stephens worth **R500 million (at 10% of value of mineral resources since currently in Exploration Phase)**
- ▶ **ARME Phosphate Assets previously or historically drilled by Foskor, owned by Samancor, BHP Billiton, AMCOR and General Mining. These rights became old order rights and Adelaide Ruiters subsequently obtained these rights**
- ▶ Advantages: **BEE Woman Owned Black Industrialist Co**, owns mineral resources, in control mining costs, resource close proximity to Saldanha Deep Sea Port, proposed phosphoric acid plant to be located in Saldanha IDZ Deep Sea Port, no need for new infrastructure development,
- ▶ Zandheuvel Phosphate Mine **ore is 19% citric acid soluble**
- ▶ **Low Cadmium and Heavy Metals Levels; low mining costs (truck and Shovel) no drilling/Blasting etc; Revive Old Langfos Premium Fertilizer Brand**

# ARME Journey to date

- ▶ Adelaide initially applied for rights on her ID (in her Personal Capacity, no formal company)
- ▶ Circumvented high costs associated with Exploration. How ? Historical Measured data on existing phosphate ore deposits 's ; Did most of the consultation process herself, used University Graduates to assist with technical and environmental matters and Mine Engineer
- ▶ The South African Dept. of Mineral Resources created conducive environment for application, even though Application was initially in her Personal Capacity. The South African Minerals Act provides for such applications
- ▶ After first right was awarded, Adelaide progressed with own resources to complete PFS (with historical data) and applied for other rights

# ARME Journey to date: continued



- ▶ Post PFS, Adelaide acquired the Phosphate Assets of Orexx PO, to consolidate the phosphate deposits, West Coast Saldanha
- ▶ Orexx Acquired 8% of ARME
- ▶ Anglo American provided funding for Exploration and acquired equity of 13%
- ▶ Adelaide's determination not to give up, with support from Anglo American, her shareholders and The Department of Mineral Resources enabled her to come this far
- ▶ MESSAGE: to inspire other previously disadvantaged woman to follow same "recipe" to enter mining, so that the minerals of our continent can be owned and mined by its people to serve our continent i.e. food security. Other woman should not fear entering Mining Industry and participate in Mineral Beneficiation Industry

# Shareholders



## Shareholders:

- ▶ Adelaide Ruiters (73%) - CEO and Founder 2013
- ▶ Anglo American (13%) - Acquired equity in 2016
- ▶ Orexx PO (8%) - Acquired equity in 2015, and
- ▶ Jan van der Merwe (2,5%) - Acquired equity in 2014
- ▶ Steven Frankel (2,5%) - Acquired equity in 2015 and 1 other shareholder (1%)  
Acquired equity in 2014

# The First Zandheuvel Project

- ▶ Zandheuvel Sedimentary Phosphate Project 450 ha; 3 farms located 7km from Deep Sea Port of Saldanha Western Cape, in Industrial Development Zone Area; good infrastructure in place; Railway Siding traverses through mining area
- ▶ Historically Measured Phosphate Ore Deposit AMCOR 1969; Foskor drilled 2003 and did metallurgical test work showed economically viable
- ▶ ARME Exploration completed end November 2016
- ▶ Competent Person's Report produced August 2017 (for 1 of the rights/deposits): 22,5 million ton's Sedimentary Phosphate @ 5,58%P205 upgradable through flotation to 26,7%; results matches historically drilled data and previous metallurgical test work showed economically viable to further pursue Bankable Feasibility Study ; Further Variability Metallurgical Studies on higher grade Ore currently in progress( Ore varies from 3,5 to 12% P205 across reserve);
- ▶ Agreement with Saldanha Bay Municipality to provide Treated Effluent water for mining operations and flotation plant
- ▶ Mining Right Acceptance DMR

# Market Fundamentals

- ▶ Food Security; Market driven by population growth, available arable land decreasing therefore crop yields must increase
- ▶ Phosphorous, which is essential for plant growth, has no known substitutes, is not economically recyclable and has to be mined and processed
- ▶ Africa has worlds fastest growing population, currently has lowest rates fertilizer consumption; SA currently net importer ( ARME BEE status advantage)
- ▶ ARME's plan to sell product fertilizer (Langfos Premium Brand) at competitive prices to small scale and established farmers can have positive impact in SA and SADC region; Low Mining Costs ( Open Cast Truck and Shovel Mining Operation
- ▶ Possibly supply Phos Acid; develop other rights



# Market Fundamentals: continued

- ▶ In European Union, advocating for reduced levels of Cadmium and Heavy Metals content of fertilizers and Phosphoric Acid, esp. Food Grade. Our ARME Ore has a very low presence of such minerals, and we therefore welcome and see benefit from such strict legislation.
- ▶ ARME close proximity to the Saldanha Bay Deep Sea Port makes it ideal to export fertilizer, food grade phosphoric acid and animal feed
- ▶ SA BEE legislation and ARME's BEE status would encourage SA companies to procure locally, earning BEE points as an incentive to industry
- ▶ ARME's licence and holdings enable the company to add to its tonnages to produce Fertilizers, Phosphoric Acid, Animal Feed and possibly supply waste water treatment industry

# The Product: ARME Langfos Premium



- ▶ South African Popular Direct Application Fertilizer type that were sold and mined by CHEMFOS on the Farm Langeberg between 1943 and 1992 ;produced through flotation on the Old Langebaan Weg Mine about 8km from Zandheuvl Mining Site ( approximately 24 Million tons were sold)
- ▶ 2 types were sold in the market: Langfos 21% P205 Concentrate and Langfos Premium , a more concentrated product 26-29% P205
- ▶ The mine was mined out closed rehabilitated and all staff transferred to Foskor, and old literature shows the Zandheuvl Phosphate deposit was identified to be the successor of this mine( Zandheuvl was previously explored by Foskor and became Old Order Mining Right), ARME also holds the rights of the continuation of the Langeberg Ore Body .

# The Product: ARME Langfos Premium

## Cont



- ▶ ARME Zandheuvél phosphate concentrate shows same characteristics of Langfos Premium
- ▶ ARME's second mine being currently developed, shows same characteristics of Langfos, however no need to do flotation, only mine crush bag and sell. It is not a francolite sedimentary
- ▶ Previous work done by FOSKOR on the flotation of the Zandheuvél Ore Body confirms that it was easily upgradable/beneficiated by means of Normal Froth Flotation producing concentrates equal to the Original Langebaan Weg Ore Concentrate that were sold as Langfos Premium
- ▶ ARME exploration and metallurgical test work confirmed FOSKOR results

# The Product: ARME Langfos Premium



- ▶ Therefore, ARME is re introducing the product LANGFOS Premium after 26 years
- ▶ Many farmers remember this product for the following reasons( research confirmed literature available)
- ▶ Benefits: Not water soluble, it's a slow release product which releases the phosphate to the plants over many years assisting the farmer to build up healthy soils and land
- ▶ Langfos Premium performs better than Water Soluble Chemical fertilizers in high acidic ( Low PH soils) esp Eastern and Southern Africa to crease crop yields. It is used in Low PH soils to rectify P in the soils over a period of 5 years without leaching,
- ▶ Low Cadmium Heavy Metals

# The Product: Langfos Premium ARME



- ▶ sugar cane, tropical deciduous fruits Eastern Southern Africa
- ▶ Can also be used Western Part of South Africa Grains, Wheat Mielies, Pastures etc
- ▶ Orally confirmed by Farmers who used product , product can be blended very well with organic waste, such as Chicken Manure, Guano, Sea Weed, Bone Meal, Abattoir Waste ( dried Blood Meal) etc
- ▶ Organic Nematode Deterrent/Organic Pest Deterrent , especially Potato Crops ( “Aalwurm”)
- ▶ Successfully used in Soil Rehabilitation Programmes

# The Product: Langfos Premium Cont



- ▶ *Ideal export Southern and Eastern Africa*
- ▶ Why?
- ▶ Suitable for high acidic soils of Eastern Southern African Land (Tropical Deciduous Fruits)
- ▶ The ideal close proximity to the Saldanha Bay Deep Sea Port makes this product ideal for export into Southern and Eastern African Market
- ▶ Low Mining Cost infrastructure logistics in place: ARME's aim to provide Competitively Priced Product to help restore Southern and Eastern African farmers as Bread Basket of Region/secure Food Security/low food prices

# Potential Products Phosphoric Acid and further downstream?

- ▶ FOSKOR conducted Phosphoric Acid Tests on the Zandheuvel Ore in 2003, showed positive potential to produce phosphoric acid.
- ▶ ***Quote FOSKOR report 2003 :..” Although the rock concentrate contained only 26.9% P2O5(Table 2), the filtrate was as high as 25.8% P2O5. This is the best ration (0.96) of P2O5 in rock to that in acid compared to all the concentrates that have ever been treated in this pilot plant....this concentrate displayed superior performance compared to all other concentrates treated in the wet process phosphoric acid pilot plant.....”***
- ▶ Further tests to be done on ore mined Zandheuvel to confirm FOSKOR results
- ▶ Advantage Low Cadmium and Heavy Metals,
- ▶ Where? IDZ area Saldanha Bay , further incentives investment; EXPORT; Sedimentary Phosphates JV Technical Partner needed to develop

# Conclusion:



- ▶ The World Bank states in a Q 4, 2017 Report that although fertilizer application has been increasing, it remains constrained by relatively weak crop prices, which in turn reflect well supplied agriculture markets. However, it anticipates that fertilizer prices will ultimately strengthen moderately over the medium term due to anticipated growth in demand and higher energy costs, which may incentivize new capacity.
- ▶ ARME Zandheuveld Fertilizer Mine and Concentrate Plant with Desalination Plant ( Throughput 100 000 tons/month R250 million ZAR/ 20 mill Euros) well placed to provide such new capacity and revive “ Langfos Premium”; aims to come fully on stream 2021/2022. A Resource that can add much value to secure the SADC Region food security needs





# Looking to the Future

- ▶ BFS Study ( with further Metallurgical and Market Studies) to determine economic viability of project and the final products to produce. A Competent Persons Report has been produced showing economic viability
- ▶ *Looking for Phosphate JV Technical Partner to invest in Project and complete exploration for other phosphate assets*
- ▶ *Interested clients Langfos Premium(Samples for Market Available with Chemical Analysis)*
- ▶ BFS targeted to be completed within 2nd quarter of 2019
- ▶ *Possible Listing on JSE planned in future*
- ▶ Develop other Phosphate and Limestone Sedimentary Phosphate Rights
- ▶ AIM: Zandheuvel full Production Q4, 2021- Q1 2022;
- ▶ Any interested parties to contact Adelaide Ruiters:

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