51-102F3
MATERIAL CHANGE REPORT

Item 1 Name and Address of Company

Lithos Energy Ltd. (the "**Company**" or "**Lithos**")
Suite 2380 – 1055 West Hastings Street
Vancouver, British Columbia, V6E 2E9

Item 2 Date of Material Change

September 6, 2023

Item 3 News Release

The news release dated September 6, 2023 was issued through Cision.

Item 4 Summary of Material Change

On September 6, 2023, the Company announced that LiTHOS Technology LLC (**"LiTHOS**"), a wholly-owned subsidiary of the Company, has signed a non-binding indicative term sheet (this "**Term Sheet**") with Sand Spirit LLC ("**Sand Spirit**") to develop, construct, own and operate a testing and production facility to handle raw brine and upgrade it into a final yield product of lithium hydroxide monohydrate ("**LiOH H_2O**").

Item 5 Full Description of Material Change

5.1 Full Description of Material Change

On September 6, 2023, the Company announced that LiTHOS Technology LLC (**"LiTHOS**"), a wholly-owned subsidiary of the Company, has signed a non-binding indicative term sheet (this "**Term Sheet**") with Sand Spirit LLC ("**Sand Spirit**") to develop, construct, own and operate a testing and production facility to handle raw brine and upgrade it into a final yield product of lithium hydroxide monohydrate ("**LiOH H_2O**"), inclusive of, but not limited to, the following key operations (collectively, the "**System**") and ancillary equipment and services to be located at Sand Spirit's Buildings 1, 2 and 3 located in Bessemer, Alabama (the "**Site**"):

(i) Storage of raw, intermediate, and processed brines;

(ii) Pre-treatment processing systems and operations;

(iii) Lithium chloride ("**LiCl**") concentration processing systems and operations;

(iv) Direct lithium extraction ("**DLE**") processing systems and operations; and

(v) Lithium chloride treatment and refining activities ("**Refining**") into LiOH H_2O.

Ancillary equipment and services will include all operations necessary for the completion of a successful lithium pre-treatment processing, LiCl concentration, DLE, and Refining operations including power, reagent, and water supply.

Scott Taylor CEO of LiTHOS stated: "*The Crimson Tide facility will be the first Lithium Hydroxide Monohydrate ("LiOH-H20") production facility in the Southeastern United States. Fortunately, we found a phenomenal partner in Sand Spirit who bring engineering expertise, a large complex, and the necessary environmental permits to produce LiOH-H20. We can be nimble and quickly get this facility producing LiOH-H20. The facility is strategically located next to the Smackover which is the most prospective lithium enriched brine reservoir in the US. ExxonMobil (NYSE:XOM), Standard Lithium (NYSE:SLI), Galvanic Energy, TerraVolta, and Vital Energy, Inc. (NYSE: VTLE) are all actively developing Smackover lithium projects*

which present production offtake opportunities for the Crimson Tide facility. The Crimson Tide facility will leverage a license to LiTHOS's patent-pending pre-treatment to LiOH-H20 process."

ABOUT SAND SPIRIT

Scott Taylor CEO of the LiTHOS commented: "*Sand Spirit is led by two brilliant, seasoned chemical engineering entrepreneurs Rusty Sutterlin, Ph.D and Mark Tegen, Ph.D. Both are skilled in organic materials, inorganic materials, biofuels, synthesis, extraction, separations, biomass, rare earths, and patent law. What initially caught my eye a couple months ago was Rusty's and Mark's experience and performance under direct extraction. The objective of this U.S Department of Energy small business innovation research project was to locate coal overburden material that had rare earth elements ("**REEs**") at concentrations of 300 ppm or higher. After securing the feedstock the next goal was to efficiently extract and purify the feedstocks to a purity of greater than 95%. A techno economic analysis was conducted to determine the economic viability of mining and processing REEs associated with Appalachian coal deposits. All aspects of mining, mineral processing, by-product potential, waste management, permitting and economics were examined including. They designed and implemented a REE separation system based upon a continuous ion exchange process [**see Figure 1 below**]. Attention was paid to the separation, degree of purification and marketing of REEs. Along with REEs Rusty and Mark also evaluated the economics of the recovery of other metals of interest along with the REEs*."

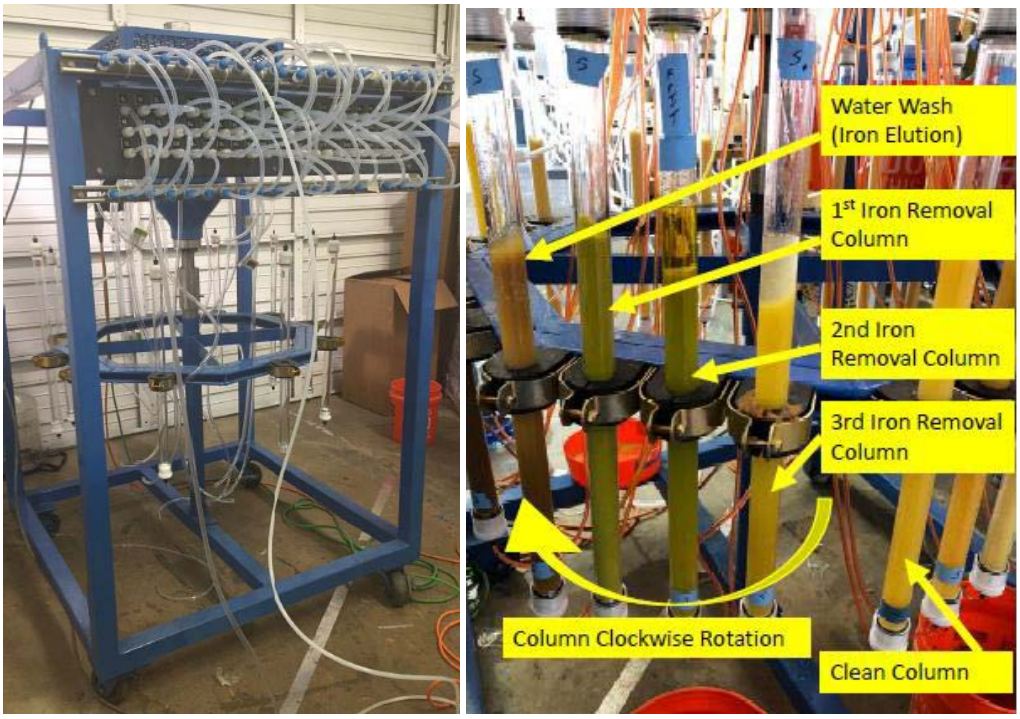

Figure 1 - REE separation system based upon a continuous ion exchange process

Rusty and Mark have a demonstrated track record of repeatedly delivering and maturing patented technologies from bench to pilot to commercial scale rapidly. Some highlights of success include:

1. **Supercritical Alcoholysis**. U$60M project to make/recover natural vitamin E. Scaled from Idea to bench to pilot to commercial tech in 4 years; Mark Tegen and Rusty Sutterlin inventors. Now the single largest natural vitamin E plant in the world [see Figure 2 below]. An additional US$200M installed capital cost projects in final completion 2023 using same technology for non-vitamin E applications. https://inventurechem.com/solutions/mscf-solutions/

Figure 2 - largest natural vitamin E plant in the world

2. **Soap Carbonate**. $25M project, final commissioning 2023. $200M+ of projects in pipeline utilizing technology. Mark Tegen and Rusty Sutterlin inventors. Utilizes carbon dioxide (as carbonic acid) to turn a waste product from refining of edible cooking oils back into a renewable fuel or chemical raw material. Process consumes CO_2. Worldwide partnership with Air Liquide (**AI.PA**: **$87B)**. WEB NEWS NEWS-2

3. **GreenBox**. Revolutionized the shipping of temperature sensitive drugs, tissues and blood. Rusty Sutterlin inventor. Winner of the DuPont diamond award for packaging innovation. NEWS NEWS-2

The term sheet sets out certain preliminary terms for a potential joint development agreement ("**JDA**") between LiTHOS and Sand Spirit LLC (the "**Transaction**"), which the parties will seek to negotiate and enter within 180 days of date of entry of the Term Sheet.

The JDA will contemplate the establishment of a governance structure for the Transaction as well as the allocation of the following duties and responsibilities of the parties for the development of each aspect of the Site in the following three phases (collectively, the "**Project Phases**"):

Phase 1: Site Development Strategy

Phase 2: Site Contracting and Implementation

- Complete front-end loading designs and engineering for the Site upon selection of a target source brine, volume of brine to processed and location for processing plant;

- Negotiate definitive agreements, including a fixed-price and date-certain engineering, procurement and construction contract and a comprehensive lithium marketing and distribution strategy for the Site;

Phase 3: Final Investment Decision

- Mutually agree to a final investment decision ("**FID**"), provided that all conditions precedent to FID as set forth in the JDA are met to the satisfaction of each of the parties; and

- Complete the construction, commissioning, and placement into service of the Site consistent with the purpose and Project Phases. The pilot production System capacity shall be right-sized for Building 3 or other suitable site as determined by the parties.

ABOUT THE SAND SPIRIT FACILITY

Facilities and Equipment are in downtown Bessemer, Alabama. Bessemer is an adjacent city to Birmingham, Alabama and only 30 miles to the University of Alabama. The complex consists of 3 buildings that are 6,000, 7,000, and 42,000 sq. ft. each. Each building has an office, laboratory, and warehouse space. Two buildings have fume hoods for solvent related work. Fire Extinguishers and eye-wash / safety showers are located throughout the buildings.

Equipment

- ICP-OES Agilent
- LC-MS Sciex Triple Quad 5500 Mass Spec.
- Silverson L4RT High Shear Mixer with 4 different heads.
- Shimadzu TA-60 Differential Scanning Calorimeter (DSC)
- TA Instruments Q2000 Differential Scanning Calorimeter (DSC)
- TA Instruments Q600 Thermogravimetric Analyzer (TGA).
- Three Hewlett Packard 6890 gas chromatograph (GC-MS)-5973 MS detector and autosampler.
- Shimadzu HS-20 gas chromatograph (GC-MS) with head space analyzer
- Hewlett Packard 5890 gas chromatograph (GC-FID) detector and autosampler
- Hewlett Packard 1100 high performance liquid chromatograph (HPLC) including detector analysis by evaporative light scattering and an autosampler.
- Dionex LC-20 with PAD and AS40 Autosampler
- KNAUR Simulated Moving Bed Lab Bench
- Buchi Reveleris X2 Flash chromatography
- Buchi Reveleris PREP flash chromatography
- Calgon ISEP – Simulated Moving Bed Pilot Plant with 30 columns (3 inch by 4 foot) (4 systems)
- Nanalysis NMReady 60 Pro
- 10L photochemical reactor
- 20L photochemical reactor (4 systems)
- Multiple ovens, chillers, balances, and chemical storage cabinets.
- Denver Instruments Karl Fisher Titrator Model 375
- Denver Instruments Model 250 pH/Ion/Conductivity Meter.
- Metrohm 743 Rancimat Analyzer

• Heidolph 4001 Efficient Rotary Evaporator (3 units)

• Pensky Martin Closed Cup Flash Point

• SI Analytics Acid and Base Auto Titrators

• Brookfield DV-E Viscometer

• Wurster Bed Coater

• Spray dryer – 4L/hr pilot

• Multiple Environmental Chambers

• BR Instruments Spinning Band Distillation Column with eight fraction collectors, BR Instruments 36/100 with CPU and vacuum

• BR Instruments Spinning Band Distillation Column with eight fraction collectors, BR Instruments 9600 with CPU and vacuum

• Spinning Disk Molecular Distillation Lab 3 Still from Meyers Vacuum.

• Glass Wiped Film Evaporator with continuous feed pump and two stage condenser, InCon ICL-04WR WFE

• Two inch glass distillation column

• Oldershaw Glass distillation Column

• Parr series 4550 high pressure reactor (2,500psi) (4 units)

• Parr series 4540 high pressure reactor (3,500psi) (2 units)

• 200 gallon glass lined pressure reactor with agitator

• 150 gallon Inconel pressure reactor (600psi) with agitator

• 5L, 20L and 50L rotary evaporators

• 10L, 20L, 50L and 100L jacketed stirring glass reactors

• Falling film evaporators

• Thin film evaporator

• Wiped film evaporators

• Multiple heating and cooling utilities (Mokon, Julabo, Chromalox, PCS)

Multiple batch pressure vessel reactors

• Three 10 gallon, and one 20-gallon pilot scale reactor for use up to 2100 kPa,

• 75, 150 and 200 gallon market-development reactor,

• typical glassware reactor configurations,

• 4 liter Zipperclave by Autoclave Engineers with pneumatic drive rated at 2000psi

• 50 ml, 600 ml and three 2000 ml PARR reactor with PID control, programmable temperature control

• 100 L jacketed Glass Reactor

• three packed-bed reactor systems capable of programmed and remote operation through the CAMILE control system with NT software.

• 200 ml Autoclave Engineer Model 401A-9723 reactor capable of 5500psi at 650°F

• Continuous 200 ft long reactor 1.0 inch diameter Plugged Flow Reactor, with dual agitated piston pumps

• CIX/CIC system

Computer/Software

• Aspen for chemical engineering modeling

• Solid Works for CAD drawings

• Scifinder for Chemical Research

• Access to the University of Alabama Electronic Library

5.2 Disclosure for Restructuring Transactions

N/A

Item 6 Reliance on subsection 7.1(2) or (3) of National Instrument 51-102

N/A

Item 7 Omitted Information

None

Item 8 Executive Officer

Contact: Scott Taylor, CEO
Telephone: 604.908.1679

Item 9 Date of Report

September 6, 2023