



Tamarack Water Alliance Community Zoom Meeting Wed. March 1, 2023, 10am CT

*Everyone is invited to attend our open community virtual Zoom meeting on Wednesday, March 1, 2023 at 10am CT. This is an opportunity for you to learn about risks to the community of the proposed Talon Metals mine in Aitkin County. March's topic will be *Sandy Lake 1855 Treaty Rights and Boundaries*, presented by Jean Skinaway-Lawrence, Chairwoman, Big Sandy Lake Band of the Mississippi Chippewa.*

To register for the meeting and receive the Zoom link go to
<https://tamarackwateralliance.org/php/eventreg.php?eid=16>

If you believe nickel-sulfide mining is too risky in Aitkin County, Tamarack Water Alliance has yard signs with this messaging available. Your \$6 donation helps defray costs. Email waters@tamarackwateralliance.org to arrange pickup of your sign.

We hope you will share this information with others and keep in touch as we build a community that can protect water and health from the dangers of sulfide mining.

Encourage your friends, family and neighbors to sign up for the monthly Tamarack Water Alliance [email newsletter](http://eepurl.com/hOboEb) (<http://eepurl.com/hOboEb>).

Nickel Not Needed for Future EV's

In his Feb. 8, 2023 column in the Duluth News Tribune, Ryan Sistad presented misleading information with his assertion that Talon Metal's high sulfide nickel mine is needed for the ongoing energy transition.

It is important to note that Talon Metals has not yet applied for permits and given permitting will take 5-10 years and facility construction will take another 2+ years, we will not see Talon nickel until sometime in the 2030's. **Indeed, this is “out of the window” for Talon's so called “Tesla agreement” making that agreement null and void. But the relevant question is, will Talon nickel be needed in the 2030's for US based EV battery supply chain? The answer is clearly no.**

Note that nickel used in the cathode of an EV battery sells at \$25,000 to \$30,000 a ton and increasing with demand. Alternatively, new battery chemistries use iron phosphate, sulfur and sodium at \$100-\$200 a ton. Clearly economics will win as the industry moves toward better batteries at much lower costs. This is all part of the energy transition.

New EV battery (non-nickel) materials such as sulfur, iron and sodium (for new Sodium batteries) have a fully US supply chain. On the other hand, the USGS survey data indicates that only 0.6% of the global supply of nickel comes from the US while US reserves are only 0.375% of the worldwide reserves. USGS demand data indicates that less than 10% of nickel for the EV battery industry could possibly come from the US (in 2022) and if nickel demand increases (as the mining advocates imply) this percentage will drop much further. Clearly, nickel can never be an answer to the need for a US supply chain. Even at 2022 demand, more than 90% of nickel for EV batteries must be imported. Ryan seems to advocate for more Chinese imports.

However, the (non-nickel) materials used in new battery chemistries such as sulfur, iron and sodium (for new Sodium batteries) have a fully US supply chain and cost 300 times less than nickel.

US based non nickel LFP factories are being built now. LFP patent rights had been owned by the Chinese but these patents expired in 2022. Thus we see many major announcements for new US based LFP gigafactories in the news. For example, American Battery Factory (ABF) announced in December that it would build its first LFP Gigafactory in Tuscon, Arizona. In October 2022, ICL received a \$200 million US Department of Energy grant to build an LFP cathode material factory at its Saint Louis site. And Gotion's new Michigan factory is expected to produce LFP batteries as well.

Per Tesla's recommendation, LFP EV batteries should be charged to 100%. However, Tesla recommends that nickel based batteries be charged to only 80% under normal driving conditions. Thus an LFP battery is very close to the range of a nickel based battery under normal driving conditions. LFP batteries are also much safer, last 4-5 times that of nickel based lithium batteries and have been shown to do better in cold weather.

The new EV battery technologies are much cheaper with better performance than the old style lithium nickel batteries. Lithium sulfur batteries have 2-3 times the energy density as the old nickel based batteries. And all of these new battery chemistries will be significantly less costly, more stable and safer.

You only need to look at the news – CNN has reported that “The next holy grail for

EVs: Batteries free of nickel and cobalt”, mining.com reported that “Cobalt, nickel free electric car batteries are a runaway success”, and Bloomberg.com reported “The Next Best Electric Car Battery Is Here, Cheaper Than Ever and it’s Sodium ion based.”

Mr. Sistad is quite misinformed. Nickel will not be needed for EVs in the 2030’s when Talon might be mining and indeed, we also know that no high sulfide nickel mine exists in a wet area that has not been shown to pollute the environment.

REFERENCES:

US LFP Manufacturing

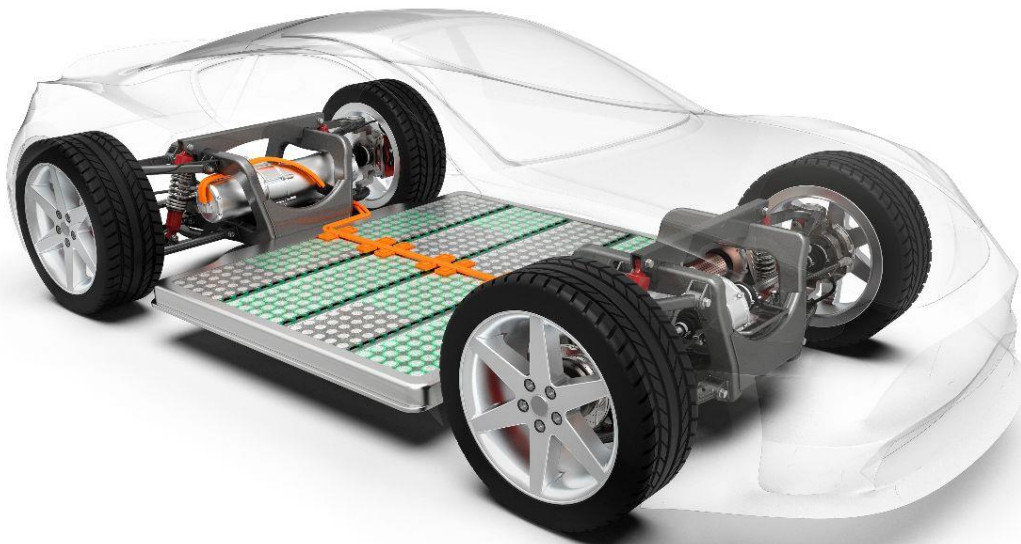
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FROM CNN: Next holy grail for EV's: free of nickel and cobalt

<https://www.cnn.com/2022/06/01/cars/tesla-lfp-battery/index.html>

FROM MINING.COM

<https://www.mining.com/cobalt-nickel-free-electric-car-batteries-are-a-runaway-success/>



Ford Taps Michigan for New LFP Battery Plant; New Battery Chemistry Offers Customers Value, Durability, Fast Charging, Creates 2,500 New American Jobs- February 13, 2023

- Ford is investing \$3.5 billion to build an LFP battery plant in Marshall, Michigan; this wholly owned subsidiary is part of Ford's \$50 billion+ global push to lead the EV revolution. Initial production slated for 2026 with 2,500 employees to start
- Adding LFP batteries to Ford's EV lineup this year – starting with Mustang Mach-E – and backing a U.S. LFP battery plant are key parts of the company's Ford+ plan; this helps Ford scale more quickly, making EVs more accessible and affordable for customers
- LFP batteries are exceptionally durable using fewer high-demand, high-cost materials and will help power a variety of Ford's next-generation of EV passenger vehicles and pickups; new LFP plant will add approximately 35 gigawatt hours (GWh) of LFP battery capacity
- Ford and its battery tech collaborators have announced \$17.6 billion in investment in EV and battery production in the United States since 2019, leading to more than 18,000 direct jobs in the U.S. and more than 100,000 indirect jobs

LFP battery technology helps reduce reliance on critical minerals such as nickel and cobalt and is in line with Ford's work to create an EV supply chain that upholds its commitments to sustainability and human rights."

Ford Taps Michigan for New LFP Battery PLant; New Battery Chemistry Offers Customers Value, Durability, Fast Charging, Creates 2,500 New American Jobs,

February 13, 2023, Media.Ford.com

<https://media.ford.com/content/fordmedia/fna/us/en/news/2023/02/13/ford-taps-michigan-for-new-lfp-battery-plant--new-battery-chemis.html>

Who We Are

Tamarack Water Alliance is a group of local residents and landowners working together with others from across Minnesota to protect water and community health from the dangers of sulfide mining near our beloved lakes and wild rice beds, at the headwaters of the Kettle River and in the Mississippi River watershed.

A proposal by a foreign owned mining company to mine nickel and other metals near Tamarack in Aitkin County threatens the health of our communities. This kind of sulfide mining, especially in water-rich environments, has never been done without severe impacts to water and the health of those downstream. Mining here is also a threat to environmental justice and the long-term economic security of nearby native and rural communities.

Review our community slide presentation,
(tamarackwateralliance.org/docs/TamarackMineConcerns-Consolidated.pdf)

Download seven informative flyers:
(<https://tamarackwateralliance.org/resources.html>)

- Talon Mine Risks,
- High Sulfide Mines Create Acid Mine Drainage,
- Nickel Not Needed for Future EV Batteries,
- Minnesota's Prime Wild Rice Lakes Under Threat,
- Minnesota Regulators Poor Record In Protecting The Environment,
- Responsible Mining
- Eagle Mine Environmental Report & Saving Our Meager Nickel Reserves

We will be sending this monthly newsletter to keep you informed about this project, to share information and opportunities to act, and to invite you to gatherings where you can connect with others who share a passion for clean water and community health.



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