WINTER >> 2021 >>2022>>>

ECO-GOGREEN-MAGAZINE

.COM>>>

IN THIS ISSUE:

A FOCUS ON REDUCING GREENHOUSE GAS PRODUCTION OF OLD FASHIONED PORTLAND CEMENT BY GOING BACK TO THE EVEN OLDER, STILL STANDING, FORMULA OF ROMAN CONCRETE.

Understanding How Geological Time Has Come Down to Making An Up to Date Choice

A long and winding tale by author /magazine/prospector writer Barry Murray.
Also an Appeal to the USFS to stop stonewalling a rock-breaking project!

This was to be Part B of the complete documentation backing the formal filing of a USDA Forest Service Form FS 2800-5a, which is an update to further surface disturbance to an already permitted block of claims that had operated as a quarry for a specialized, Ph neutral, non-toxic jetty where the fresh water of a salmon spawning river merges with an increasingly chemically contaminated sea.

My problem as a long-time recreationalist adventurer historian chronicler (as being a horseback pioneer of a 2,500 Pacific Crest Trail, and a filmmaker documenting the Klondike Gold Rush by climbing the Chillkoot Pass and paddling a folding kayak to Dawson City, and onward 2,000 miles down the Yukon to rea dto the volunteer Tillimook Burn tree-planter journalist, is that my other career as TheProspector [dotcom] acting as the Editor of MiningMagazines [dotcom] which has for years has been fighting to stay alive for 65 years walking the balanced middle line of a crumbling infrastructure, and independent profession, into, if possible, a sustainable future — while being hit from both sides by left and right wing know-it-all extremist "fundamentalists" who want to absolutely control self-serving political decisions, absolutely.

Which, with an well advertised apathy about Global Warming Climate Change by our elected leaders really translates down to the reality that individuals really need to act together for the greater good as demonstrated in the WesternMiner [dotcom] U.S. Mining Law of 1872 that came out of the "prudent man" let's be fair management of California Gold Rush camps. Historically the adoption, of adapted local rules as in the ***Paint Your Wagon*** Idaho City stampede where newcomers were only allowed three placer claims, stream, first bank, and second bench, which needed to be worked in a cooperative order for the good of all. And that is the reason we few left that consider the incentive of individuals claiming homestead, timber, mining, covered by the law of the lands of '72 , that sit right next to the Constitution on a shelf in publicly accessed courthouse libraries.

As the son of one of the West's most sought after independent mining lawyers —a

very Scottish frugal freedom fighter in a family tree going back to bringing his clan to legalize Wallace at Sterling Bridge— I, as a wee lad working his way through grade school learned to pull, and quote, case law citations. Guess I should also disclose that a Great Uncle, who also was a well read lawyer, helped promulgate the ***Code of the West*** while working the Yuba Bar, before he was hired to represent John Stutter's land claims, that eventually lead to Peter Hardiman Burnett being elected Governor of the new State of California.

By the way, Uncle Peter lost Stutter's case of foreign land grants still ruled valid by the Supreme Court that today is struggling with the rights and wrongs of real property "blue sky" concerns. Since litigation takes years to live through when it comes to defending the basic needs of life in the "backyards" of the whole Earth, I have decided to launch yet-another-specialty magazine —which you are reading right now— defending ECO-Mining-Milling Limited Cooperative Association LCA's role in the 'Court of Public Opinion' concerning a sustainable future, just as my new URL will state when launched by uploading to the World Wide Web as ECO-GoGreen-Magazine [dotcom]. Others with something worthwhile to say, instead of chanting an instructed protest, may submit a reasonable length "article" in a plug-n-play password protected Adobe PDF.

So, bringing attention back to Waldport, Oregon, where "Protect our Salmon" being the latest super patriotic panic manufactured distraction news in a coastal Oregon county containing a rare and unusual **Nepheline Syenite** deposit that is needed said to be a proven, uniform in value, 700 million underground tons, where FoamKrete™has applied for permission to go underground with an almost zero environmental disturbance — no trees need to be cut down, nor would be a waste tailing pile of other mining operations Plan of Action. Which, of course, would not destroy the local fishing industry through the dumping of 'Cyanide' mistakenly confusing Syenite with the gas poison used in extermination camps of WWII!

Interesting, as the debunked truth about any possible contamination is that the city of Newport municipal swimming pool is kept pure by the use of **Nepheline Syenite** in the filtration system, just down the mountain in aquariums. What is scheduled next for real news is the possibility of a Hatch Act investigation following the money into a very competitive multinational real estate investment trust, based in Vancouver, British Columbia, that controls more vital to green recovery forest lands than the USFS —or

a medium size state, or small country ruled by an oligarch— operating their Table Mountain quarry right now neighbor, playing a monopoly game that seems to have enough political clout, for now, of get out of jail cards free?

Nice try, using the fruit of a poisoned tree, having untraceable voices to further discredit 32 twenty acre legal State of Oregon lode mining claims that the Oregon Department of Geology and Mineral Industries oversees the annual filing of an Assessment Work Affidavit, along with the paying an "annual rental" per claim on file with the validating (last say on the validity of the minerals claimed) Department of the Interior, Bureau of Land [BLM] Management office in Portland.

In these days of a final countdown(?) on mankind's' short recorded time on Planet Earth, we are experiencing an extraordinary number of suggested possible scientific breakthroughs on unexpected things that possibly may be a "nick in time" Climate Change Answer. As a naturally soluble individual combination strangely coming together as a **Al2O3** and **SiO2** marriage. Too much hearts and flowers over the mating of their naturally soluble relationship that some of patented Portland cement are jealous about? Make that a sexy reactive hot, hot, hot coupling where a volcanic based intrusion creates a natural Italian pozzalina named Nepheline, after what the Greeks had called cloudstone.

Speaking about weird methods of reproduction, as that of androgynous single fish, as salmon and steel-head trout, hatched in freshwater streams and rivers, that travel as juveniles to the oceans, where four years later as adults return to their birthplace — if they haven't lost their way in the confusion of today's critical storm —to spawn in the only reproductive act of their life, climaxed by dying. I also should scientifically note that foreign multinationals' with a record of simply paying an ECO violation fine "screwing the 'little people' US taxpayer" is not a form of biblically sanctioned beneficial reproduction.

Current scientific research involving hatchery and sea farming for a continuing food supply, is trying to decide if the current directional cycle is —magnetics navigation, versus loosing a particular sense of smell and taste, or if it is yet another unknown cause and effect of believing that "inconsequential" Global Warming has disrupted by ancient migratory patterns by raising the temperature of meting ice fed tributaries that are often warmed in holding ponds and very needed hydroelectric dams with well thought out fish-ladders and hatcheries, where this vital source of protein, omega-3 fatty acid, and the best natural vitamin D, are at risk of extinction after a mere 10 or 20 million years on account of baby's bathwater being too warm.

One other curious consequence of conservation blocking the use of a Ph neutral salmon safe Nepheline Syenite jettystone was that when the current "independent prospector" owner gained title of the mining claims rights to bid-upon a small business

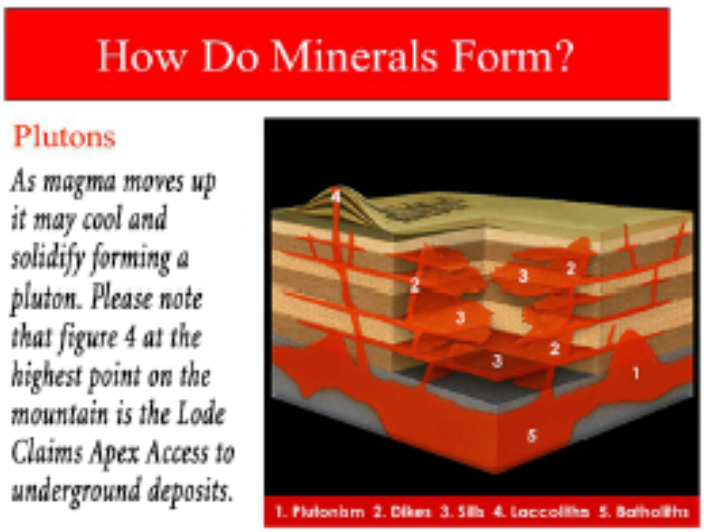
set-aside extension of ever increasingly vital jetty system, the Corp of Engineers moved a very small .02% qualification figure upward (as explained in the Oregon Department of Economic Minerals Industries report, made a part of this report) to disqualify the expected $3 per ton bid, on a estimated $3 million dollar project. Also, the ancient rumor of 'Syenite' being a poison seemed to be a consideration. So, of course the winner over a small business too small to even qualify as a small business, went to one of the West's largest builders that made it happen with imported rock, for a final price tag of $12 million.

All that shucking and jiving happened during the 1980's. The rest of the bringing an up-to-date story of an Ancient Mineral that some geologists believe was the source of a **Alumina-Silicate Geo-polymer low moisture concrete-paste** used to build the great pyramids through mixing in-place in removable forms, instead of dragging hand cut blocks for miles, and up impossibly long and steep ramps.

And, then we come to the almost as unbelievable **Alumina-Silicate Geo-polymer use as a natural pozzolan** that allowed the Romans to use their "hydraulic cement" to build seawalls, wharfs, bridges, acquiducts, and the Parthenon, the World's widest un-reinforced concrete dome. Another impossible task.

So let's follow a new way of understanding how nano particles from the remembered past are today responsible for creating a culture of "faster-better-cheaper" attempts along the path of "Continuous Improvement" that really needs to be explained in documents, not under a proprietary lock and key library, that really requiring reading.

Of course you have already heard about, and understand, Nepheline Syenite?



No? As belonging to a Fundamental Feldspathic Family of rocks, more easily definable as a conglomeration of chemical elements? Check it out on Wikipedia.com and you will find the offspring's ***Nepheline***, and ***Syenite,*** both recognized for being on the chart for containing a Basic Element.

>> "**Nepheline** [by itself] also called nephelite (from Ancient Greek nephé cloudstone), is a rock-forming mineral in the feldspathoid group – a silica-under-saturated alumino-silicate, $Na_3KAl_4Si_4$

O 16, that occurs in intrusive and volcanic rocks with low silica, and in their associated pegmatites. It is used in glass and ceramic manufacturing and other industries, and has been ..."

>> "**Syenites** [by thereself] are products of alkaline igneous activity, generally formed in thick continental crustal areas, or in Cordilleran subduction zones. To produce a syenite, it is necessary to melt a granitic or igneous protolith to a fairly low degree of partial melting. This is required because potassium is an incompatible element and tends to enter a melt first, whereas higher degrees of partial melting will liberate more calcium and sodium, which produce plagioclase, and hence a granite, adamellite or tonalite."

Then, search for "the natural, unpatentable, ***Nepheline Syenite***" fused together :

>> "**Nepheline Syenite** is an anhydrous sodium potassium alumino silicate. Although feldspar-like in its chemistry, mineralogically it is an igneous rock combination of nepheline, microcline, albite and minor minerals like mica, hornblende and magnetite. At very low degrees of partial melting a silica undersaturated melt is produced, forming a nepheline syenite, where orthoclase is replaced by a feldspathoid such as leucite, nepheline or analcime It is found in Canada, India, Norway and USSR."

Now things really get confusing when trying to explain the magic bonding, metamorphic zeolite tranformmation of an **Aluminosilicate** into a natural pozzolanic fly ash cement. Some coal companies have been trying to substitute as a manufactured replacement noted correctly as **Coal Fly Ash**, an inferior source of **Al2O3/SiO2** collected from the insides of carbon buring electricity generating plants still operating, while still complaining that solar, wind, tidal generation is a "hoax". As reported by "fake news source" Leslie Stahl on ***60 Minutes Newsmagazine***, what is being slipped into the formula for real deal AAC, CLC, and other "greenwashed" cement aditives is a dangerious health hazzard.

Also as 'breacking news' UN reports has found that the world is 'way off track' for reaching our necessary climate goals with carbon dioxide levels in the atmosphere hitting a 3 million-year high. So, here is where we go way back past the 3-million mark, to how **FoamKrete**™ was formed raising up from a melted mantle, and folding, again and again, changing shapeM trademarl of the srystaline structure, by reheating, where orthoclase is replaced by a feldspathoid —such as nepheline. Which in the building world is considered a superior natural polymer pozzlon.

If a deep-seated source magma intrusive rock cooled underground but near the surface, it is called subvolcanic or hypabyssal, and often has visible, but tiny mineral grains. If what comes out the pipe exploding when adding oxgen, into a fine ash, that is called an extrusive volcanic eruption. Which explaines how it happened that a small

village between the sea (and an underwater continential drift sub-deduction shear zone) near Mt. Vesuvius became famous as the source of Pozzalina, used to mix with lime, into a Roman no-rebar hydraulic concrete used to build warves, bridges, viasucts, a the world's largest not rienforced dome celing, also still standing strong 2,000 years later.

Double check that by following another search query for "*Aluminium silicate*" to:

>> "**Aluminium silicate** (or silicate aluminum, or in 36 CFR 228.419(d)4 **Alumino-silicates**) is a name commonly applied to chemical compounds which are derived from aluminium oxide, **Al2O3** and silicon dioxide, **SiO2**, which may be anhydrous or hydrated, naturally occurring as minerals, or in a manufactured synthetic substitue, as fly ash."

It should be noted here that the local USFS ranger seems to be having trouble understanding the marketable need to approve of a common viriety use of road gravel which happens to be **Nepheline Syenite** past the approved 36 CFR 228.419(d)4 "common variety" minerals as :

FYI § 228.42 An explanation as to Uncommon Varieties.

By its unique chemistry, having a provable added marketable value over non-locatable Common Varieties of sand, gravel, stone, pumice, pumicite, cinders, clay, and other similar materials. The acceptable "best uses" include:

(3) **Silica suitable and used for glass manufacture**, production of **metallic silicon**, **flux**, and **rock wool**; *[a proven Yes, Yes, Yes, &Yes]*

(4) **Aluino-silicates** or **clays** having exceptional qualities suitable and used for the production of aluminum, **ceramics**, drilling mud, **taconite binder, foundry castings**, and other purposes for which common clays cannot be used; *[of critically and strageticially important in todays nano chemistry, as explained in recent scientific white papers as mentioned below]*

(5?) Which is why an uncommonly unique, and all natural, Nepheline after-mixture belongs, here. This is why I'm preceding the "How" part of this Plan of Action, following, with this value added, best use "Why" white paper suggesting that the breakthrough technology of an uncommon **Alumino-Silicate-Ultra-High-Performace Concrete** be clear-listed as **FoamKrete**™, or a **Rock-Krete.com** for use by an affordable **EcoHousingofAmerica.com** soulution, alone, for its unusual ECO mineral characteristics!

(6!) It should be noted that until the Russians/Chinese/European/Canadians hiding a non-patentable building product —because it is a natural mixture of ingrediants including an unexplainable at this time touche of Rare Earths— behind formula numbers branding a barrel or bag, it was extremely difficult, and expensive, to reverse engineer what was happening to update old fashioned Portland Cement to support nanotech updated uses of the natural aluminium oxide, **Al2O3** and silicon dioxide, **SiO2** **Roman Concrete that has a 2,000 year old record of super-cement stregnth structures.**

Continue the online available search for:

>> "**Silicates of the Alkali Metals**" that leads to a number of research articles that have expesive fees to access, and guess what, a free and open pathwayto the public Patents as:

Patent 2683102C1 RU, Method of Processing Nepheline Concentrate, Published March 26, 2019

Patent 1680625 SU, C 04 B 33/32, Method for Production of Alkali Silicate Hydrate Powders, published September 30, 1991.

Patent 2134247 RU, C 04 B 12/04, C 01 B 33/32, Method for Production of Sodium or Potassium Silicate Hydrate Powders, published August 10, 1999.

NZ527772 (A) - Alkali activated fly ash based geopolymer cements and methods for their production

To really expand your due dilligence research by going past outdated initials as AAC, CLC, and a merage of acronyms and abbreviations that today, thanks to building material scientists has come togeather to label *Alumino-scilicates* as a ***geopolymer***:

"**Geopolymer cement** is a binding system that hardens at room temperature... List of the minerals, chemicals used for making geopolymer cements. It is a more environmentally friendly alternative to conventional Portland cement. It relies on minimally processed natural materials or industrial byproducts to significantly reduce the carbon footprint of cement production following in the correct sequence of mixing cement with water and aggregriate."

"**Geopolymer concrete (GPC)** is an eco friendly product which uses a natural Pozzalan, or industrial waste by-products such as fly ash (waste from thermal power plants) and ground granulated Blast Furnace Slag (waste from Iron production) as a partial replacement for Portland cement in concrete. As result of this geopolymer concrete reduces CO 2 emissions by 80%."

Triple check this Internet response by typing "*Geopolymer Paste Mortar*" in a browser window, especially the ECO aware ECOSIA finder where you will find:

"A Geopolymer is a formulated mortar comprised of **aluminosilicate powder** with an alkaline activator to form a monolithic mineral polymer with ceramic properties. A geopolymer is simply not an epoxy or a plastic blended with aggregate."

"Geopolymer powder prepared through pre-curing and pulverization showed

great potential to produce one-part-mixing geopolymers ceramics that exhibited a comprssive strength and a high flexural strength (90 MPa) after sintering as result of **nepheline** formation."

"The underlying fact in every research is savings in cost. Only when the products are cost effective they will reach the common man. Geopolymer concrete is a very versatile material and also cost effective when compared to OPC concrete. The use of GPC precast elements will help speed up the construction process and also prove to be economical in the long run."

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About here I have to get a draft of this documant out for fact checking before publication. So what follows has not been hyperlinked to many of the White papers supporting that the Table Mountain Alumino-silicate is way past the clasfication of common veriety ?????

Any input suggestions before final publication will be appreciated.

I really had wanted to reach the description of a Table Mountain **Aluino-silicate as a natural [NP]** Pozzolina, thanks to the work of an exceptional Gelogical reasercher I have contacted for permission to republish this article.

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And, at https://www.sciencedirect.com/topics/engineering/geopolymer-paste

"During heating the geopolymer paste frees Na, Si and Al species to crystallise to various zeolitic phases and alkali feldspars. The temperature for the onset of crystal growth in the paste is variable... Mineral phases nepheline ($NaAlSiO_4$)."

Utilization of natural ashes in mortar and concrete development of sustainable construction materials

Noushini and Castel (2016) achieved 62.3 MPa compressive strength in geopolymer concrete mixture cured at 75 °C for 24 h. Proper curing of GPC leads to less permeable voids, resulting in increased compressive strength.

Production of nepheline/quartz ceramics from geopolymer mortars
C. Kuenzel1,2, L.M Grover4, L. Vandeperre2, A. R. Boccaccini2,3, C. R.

Cheeseman1*

ABSTRACT

This research has investigated the mechanical properties and microstructure of metakaolin derived geopolymer mortars containing 50% by weight of silica sand, after exposure to temperatures up to 1200 °C. The compressive strength, porosity and microstructure of the geopolymer mortar samples were not significantly affected by temperatures up to 800 °C.

Nepheline (NaAlSiO4) and carnegieite (NaAlSiO4) form at 900 ™C in the geopolymer phase and after exposure to 1000 °C the mortar samples were transformed into polycrystalline nepheline/quartz ceramics with relatively high compressive strength (™275 MPa) and high Vickers hardness (™350 HV).

Geopolymers have improved acid and fire resistance compared to most cementitious matrixes, and unlike concrete containing Portland cement, the maximum strength is achieved significantly before 28 days [4, 7-10]. Several potential applications have been proposed for geopolymer concrete including use in fire resistant panels, insulation materials and geopolymer concrete precast construction products [11-14]. A novel potential application for geopolymers is as a precursor for the production of ceramics.

Much of the documentation on the historic use of this natural pozzolan [NP] is found in books, and anthropoligical reports as:

Synthesis and attributes of nano-SiO local metakaolin based-geopolymer

Which again brings us right back to the almost impossible task of presenting Russian research, supporting their 3D geopolymer printing of a xxxxxxxx home for $20,000 (most likely much more than that for the demostration —on national TV— xxxx home errected in Texas) after this paper

All of the quoted material in this publication as may be found in the following biblography as copyright permitted abstracts, citations, or public domain papers in full. As this: (Once it is understood that Natural Polomar Pozzolan is superior in the Al2O3/ SiO2 ratios of a manafactured substitute of Coal Stack Fly Ash)

RELATIVE ANALYSIS OF FLY ASH BASED GEO POLYMER CONCRETE IN ATMOSPHERIC CONDITION

@2019 International Journal of Engineering Sciences & Research Technology Thomson Reuters, ISSN: 2277-9655

LITERATURE REVIEW

V. BHIKSHMA, M.KOTI REDDY

Concluded that Efforts to produce more environmentally friendly concrete is to reduced the use of OPC by replacing the cement in concrete with geopolymer. In geopolymer concrete no cement is used, instead fly ash and alkaline solution such as sodium hydroxide (NaOH) Sodium silicate (Na2O, SiO2) and potassium hydroxide (KOH) are used to make the binder necessary to manufacture the concrete. One tone of fly ash can be utized for manufacturing about 2.5 cubic meter of high quality geopolymer concrete. Test experiments proved as fly ash based geopolymer concrete has excellent compressive strength , suffers very low drying shrinkage, low creep, excellent resistant to sulphate attack and good acid resistance

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™
International Journal of Engineering Sciences & Research Technology

M.KALAIVANI

Represented the reasons to produce eco-friendly concrete to reduce the use of cement by replacing fly ash with alkaline liquids. The flexural strength of geopolymer concrete is compared with cement concrete. They casted beam of size 1000* 150* 150 mm for finding flexural strength. The beams was tested at 7, 14 and 28 days. The flexural strength of geopolymer concrete is increase with increased the molarities. The compressive strength of the geopolymer concrete was increased with increasing the curing time. The compressive strength of geopolymer concrete is not affected by the ratio of alkaline liquid to fly ash. The compressive strength of geopolymer concrete is tested on universe testing machine of 1000 KN capacity and the flexural strength is tested on two point testing machine. The length of beam is 750 mm .The load was applied on two points each 250 mm away from centre of the beams. The flexural strength of geopolymer concrete was measured at 8 molarities and 10 molarities are

57.73KN and 59.35KN.

ABHIJITSINH PARMAR , DHAVAL M PATEL

The 100% cement replaced by the fly ash is to decrease the carbon emission from concrete. The geopolymer concrete is place of cement by using waste materials as binders and implementing various curing techniques to provide strength. Geopolymer beams having grade M30 was maded by fly ash by replaced 100% cement and also alkaline solution used for making geoploymer concrete.

FRANTISEK SKVARA:

Investigated the synthesis of geopolymer their microstructure and properties of concrete. The results showed that the mixtures containing higher percentage of fly ash exhibit a different rheological behavior. Both the static and dynamics viscosity of the geopolymer concrete are substantially higher. The strength values of pastes, mortar and concrete of the geopolymer on the basis of fly ashes increased from is to 70 Mpa after 28 days .The compressive strength measured after 28 days ranged from 100 to 160 Mpa.

JAMES ALDRED

Concluded that the term geopolymer was used to described the inorganic aluminosilicate polymer gel resulting from reaction of amorphous aluminosilicates with alkali hydroxide and silicate solution. The some others names was also identified in the literature , such as alkali- activated cement , inorganic polymer concrete and geocement was has been used to describe materials synthesized. Geopolymer binders was covered a wide range of possible source materials and activators. The low shrinkage, heat of hydration and high tensile strength means that the materials have been technical advantages over traditional concrete. The most common concrete grades was used and the compressive strength 32 and 40 Mpa and the cylinder strength is measured up to 70 Mp

C.ANTONY JEYASEHAR

They are proposed that a alkaline liquid could be used to react with the silicon and aluminum in a source material of geological origin or in by-product materials such as fly ash was produced cementitious binders.The mechanical properties of geopolymer concrete such as compressive strength, split tensile strength and flexural strength have been found out and compared with ordinary Portland cement. The total five beams is casted of size 125*250*3200 mm and tested. The one beam out of five beams is cement concrete and remaining four beams is geopolymer concrete with alkali-activator solution. The load deflection and moment curvature behaviours was obtained from the experimental results and was compared with the analytical solution.The low calcium fly ash is used for casted geopolymer concrete. The strength of geopolymer concrete is increased with increasing alkali activator solution/ fly ash ratio. The highest compressivestrength of GPC is achieved in 28 days is 52.08N/mm2. The tensile strength is achieved in 28 days of GPC is 10.8

What is Geopolymer Concrete?

The name geopolymer was given by “Joseph Davidovits” in 1978. Geopolymer concrete (GPC) is an eco friendly product which uses industrial waste by-products such as fly ash (waste from thermal power plants) and ground granulated Blast Furnace Slag (waste from Iron production) as complete replacement for cement in concrete. As a result of this geopolymer concrete reduces CO2 emissions by 80%. Geopolymer is gaining importance and acceptance as it ensures sustainability. Fly ash and GGBS are rich sources of silcon and aluminium which are polymerized by alkali activating solution to form molecular chains and networks to create hardened binder.

Why Geopolymer concrete?

Ordinary Portland Cement, results from the calcination of limestone (calcium carbonate) at very high temperatures of about 1450-1500°C, and silico-aluminous material as given in the equation below.

$5CaCO3 + 2SiO2 —> (3CaO,SiO2) + (2CaO,SiO2) + 5CO2$

which means that, production of every 1 metric tonne of cement generates 1 metric tonne of CO2.With increasing consumption of cement, the world’s atmosphere gets destroyed. Cement industry is one of the worst source of atmospheric pollution than any other industry. Thus the necessity for an alternative material arose and soon Geopolymer emerged as an alternative material which is eco friendly with reduced carbon dioxide emissions.

What are the Advantages of Geopolymer Concrete?

The main benefit of geopolymeric cement is the reductions in carbon dioxide emission since the chemical process emits zero carbon dioxide, and the fuel much less, resulting in reduction of carbon dioxide emissions by 80% to 90%. The other benefits are shown in fig 1.

Greta Thunberg branded the COP26 climate summit a “global north greenwash festival”

Go for alumina silicate

The regulations at 36 CFR part 228, subpart A, require that all such locatable mineral prospecting, exploration, development, mining and processing operations, and associated means of access, whether occurring within or outside the boundaries of a mining claim located under the Mining Law, shall be conducted in a manner that minimizes adverse environmental effects on National Forest System surface resources.

Aluminum silicate is a polymorph with two other minerals; kyanite and sillimanite. A polymorph

is a mineral that shares the same chemistry but a different crystal structure with another, or other, minerals.science-denying lunatic

HollowRebar, invented by engineering professors at Oregon State University (Corvallis, Ore.)
long glass thermoplastic forms

Second International Conference on Concrete Sustainability Book of Abstracts “

9.3. Alkali activated Natural Pozzolan

Geopolymeric concrete mixes based on activated natural pozzolans mostly have shown lower strength and modulus of elasticity than OPC mixes at early ages, but they reach the same and even higher strength and modulus of elasticity than OPC mixes after long-term curing. It is concluded that concrete made with an alkali activated natural pozzolan develops moderate to high mechanical strength and modulus of elasticity and shrinks much less than ordinary OPC. All of the geopolymer concrete mixes show lower ultrasonic pulse velocity than OPC concrete mixes even though they have higher compressive strengths despite lower densities (Bondar, 2009, 2011).

10. EVALUATIONOF CARBON FOOTPRINT AND COST FOR GEOPOLYMER CONCRETE

Two potential advantages of concrete made with alkali activated alumina silicate compared with other binders are its carbon footprint and cost. Increased pressure to improve sustainability within the concrete industry makes these factors very important. The relation between CO

2

footprint and cost of geopolymer concrete and its compositions in comparison with Portland-based cements is roughly quantified (Bondar

The following Part B, above, is the “How” explanation of engineering the underground tunnel linking of existing quarries by a costs plus 10% contractor, www.ECO-Mining-Milling.com for being “operator’s of the claims”. There performance incentive is to deliver a dedicated a unique “Nepheline Cement” product to FoamKrete™, for the wholesale distribution and retail marketing of a soluble AAC, or CLC, after-mixture of Alumna Oxide of (Al2O3), and a soluble Silicon Dioxide (SiO2) as a natural pozzolanic fly ash cement un-contaminated by the dilution of a grade F fly ash collected from dirty coal burning smokestacks.

FYI ™228.56 : Operating plans.

Any surface-disturbing operation under a contract, permit, or prospecting permit is subject to prior approval by the authorized officer of an operating plan and to reasonable conditions as may be required to ensure proper protection of the environment and improvements, including timely reclamation of disturbed lands.

Significant changes to operations require prior approval of an amended operating plan. The operating plan must include, as a minimum, a map and explanation of the nature of the access, anticipated activity, surface disturbance, and intended reclamation including removal or retention of structures and facilities. Operating plans must be submitted by the purchaser, permittee, or prospecting permittee, except as noted in ™ 228.64(b).

FYI ™228.6 : Availability of information to the public.

Except as provided herein, all information and data submitted by an operator pursuant to the regulations in this part shall be available for examination by the public at the Office of the District Ranger in accordance with the provisions of 71.1-1.6 and 36 CFR 200.5-200.10. Specifically identified information and data submitted by the operator as confidential concerning trade secrets or privileged commercial or financial information will not be available for public examination.

Information and data to be withheld from public examination may include, but is not limited to, known or estimated outline of the mineral deposits and their location, attitude, extent, outcrops, and content, and the known or planned location of exploration pits, drill holes, excavations pertaining to location and entry pursuant to the United States mining laws, and other commercial information which relates to competitive rights of the operator.

Following the need today for a total full disclosure to make a net neutral, middle of the political road statement — We already are a nation of laws, that have taken years to promulgate, that already made America Great. As I personally object, as a US Citizen, to trade secrets or privileged commercial or financial information not being available for public examination, which is why this paper is supported by download-able Adobe PDF as published on the Internet.

Although this is a legal document being prepared for filing, I am — Copyright ™2018, Mac & Murray protecting my thinking; and my "fair use doctrine" of other protected papers already published as thesis or news articles.

As I am an independent middle of the road claim holder, in partnership with a neutral US Forest Service, where we both have found ourselves in-between extremest interests. As far left "tree-huggers" terrorists so concerned about the environment (which I, and the USDA logically are) they illogically think the correct way to save a tree is to drive a spike into a trunk so that mill workers will die when their IUD explodes and shatters a tensioned saw blade into flying bits of shrapnel.

And, on the far right fringe, very vocal "super patriotic" Posse Comitatus / cattle rustlers / claim jumpers invading Oregon defending their interpretation of the Second Amendment rule of law as found in their upheld (to TV cameras) New Testament Book of Constitutional Laws in conflict with our established "Code of The West." There is absolutely no Branch Davidian Defense for purposefully setting range wildfires in political protest over The Homestead Act of 1862, The Mining Law of 1872, and the Taylor Grazing Act of 1934. "Greening up grass for bovine grazing" by burning off brouse needed for other species of a unique ecosystem, is a crime.

So, as the son of a mining lawyer, and the great-something nephew of lawyer Peter Hardiman Burnette (the first Wagon-master of the Oregon Trail) who quit his job as Justice of the Supreme Court of Oregon to lead the first wagon train down the Applegate Trace to make a claim on a Yuba River Bar during the California Gold Rush. Finding gold panning hard work (it is) he was a big part of writing "Mining District" common sense self regulations before being elected California's first Governor. These "laws" were later picked up by Congress to establish the ("peoples") Mining Law of 1872.

I have made a number of form FS-2800-5 revisions using the guidelines of the Cornell School of Law notations for the sake of clarity in understanding the importance of mining in the nineteen US states open to the "mineral entry staking" allowed by the Mining Law of 1872 that was totally structured around the individual U.S. Citizen "Prudent Man" principle.

FYI ™ThePROSPECTOR.com of MiningMagazines.com @#&! ™$fu.statement

I should also like to suggest at this time that any foreign cartel Nepheline Syenite competitors (and their multinational Wall Street cohorts) wanting to shut down by spam hacking of what really is a "Prudent Man", Main Street America start-up project to enable US mining to "do-it-right", know that my long-time media relationship with the US Forest Service demands I support their multiple mission statement, by sticking up for "our side" in the battle of disinformation or misdirection from "outside interests."

I have been much maligned as "ThePROSPECTOR.com", and my personal www.BarryMurray.com for not being recognized as a mining professional "in Canadian interests 43-101 certification" process standards, even when the TSX is "free trade" abusing American owned properties. As happened to me in Alaska by the unfair playground bullies of [CAF] and Merill Lynch of Canada, backed by a one-sided BC Securities "Queen's Bench" arbitration system.

I will be reporting the outcome of this CFR proposal, done correctly, to multi-national financial freaks from my USA media-side in a soon to be updated www.OregonMining.net. This only as a personal defense of 60 years of in-the-field minerals experience on how to bring a complicated ECO compliance "frontier" project, to completion, correctly, without a room full of hungry lawyers, lead pencil assayers, and Arthur Anderson accountants, and market maker stock brokers!

Even before I took my young family, horseback with pack horse support, 2500 miles up what was left of the California Riding and Hiking Trail on the PCT system to pioneer the new Pacific Crest National Scenic Trail. I had previously worked very well, on the media side of me, as a freelance writer/photographer liaising with Merle Pugh, the editor of USDA Region Six on a number of articles experiencing forest fire lookouts, and the smoke-jumper school at Winthrop Washington. And following my LIFE, and Holiday Magazines articles, I was asked to produce a 16-page brochure explaining the reason why the PCNST has become a lesson in living.this, that investment due diligence actually requires reading a lot of hard to understand and boring papers. Sorry, but it takes more than 280 characters to reach valid breakthrough decisions. So:

Either way, or what the designation, China has been selling a Nepheline Syenite very similar to the Table Mountain chemistry for $250 per ton, as valued in USDs. Reverse engineering that chemistry market price in an attempt to win a trade war depending on location, location, location others cannot win, breaks down as follows:

1>TheUSDpriceofprecipitatedSiliconDioxide(SiO2)isonlinesearchableat$600-800/perton.

Asa"solublenephelinesilicon"usedat59percentofthenecessaryAACsecretformulavol-

ume,makestheTableMountaindepositbeingworthisnolessthan$354per-325metricton.

Pleaseusethisrockhardfacttocounter“concreteindustryfinancialexperts”discountingthescienceofAACconcretebuildingmaterialsrelyingon(SiO2)—naturalormanufactured—withabsolutelynodocumentablepublishedpapersintheirrebuttal.

2>MarketpriceofthetotallyscientificallyrecognizedAACsecretofsolubleAlumnaOxideof(Al2O3),orAluminaoutofAustralianbauxitethathasbeenrangingfrom$322+permetricton,for400,000tonsamonthdeliveredtoChina.

AstheacceptableAACpercentageformulaof5%–8%Aluminabyvolume,outofanorethatassaysahigher19.35%thantheChinesebulkFOBprice,calculatesouttobeworth$64.40permetricton.A$64pertonfigure,alone,iswellundertheprojectedOregonTableMountainprojectproductioncostsofdrilling,blasting,andcrushing,deliveredtoanearbyrailheadandbargedockasa$100pertonproduct.

Thishappenstanceitselfmayhaveseriousconsequencesonwhatglobalbuildingindustrycartelsmighthavetosayaboutstiflingcompetition.In

afreemarketsociety,letthemultinationalsfindanotherU.S.sourceofareadilysolublenaturalrawmaterialsourceofaluminaandsilica!

Also,theestablishedworldwidemarketpriceof$250pertonforallnatural-325nephelineAACpowder,doesnotreflectwhatvalue,andpurpose,theotherTableMountainnephelinechemicalsmayhaveintheverynewdevelopingscienceofCLC3Dconcreteprinting,orthinfilmsolar“smart”rooftopusethatalsoharvestscleanrainwater.

3>CalciumOxide(CaO)US$210-250/Ton@1%assayvalue=$2.10perton.
CaO(s)+H2O(l)Ca(OH)2(aq)(Hr=63.7kJ/molofCaO)asithydrates,anexothermicreactionresultsandthesolidpuffsup.Oneliterofwatercombineswithapproximately3.1kilograms(6.8lb.)ofquicklimetogivecalciumhydroxideplus3.54MJofheatenergy. Thisprocesscanbeusedtoprovideaconvenientportablesourceofautoclavingcuringapumpablefoamedcement.AccordingtoWikipedia,“thefreeencyclopedia,”calciumoxidehasforalongtimebeenisakeyingredientfortheprocessofmakingcementasanaturalpozzolanaforsettingunderwaterconcreteindams.

4>MagnesiumOxide(MgO)US$160-260/@.02%=$3.20Again,accordingtoWikipedia,MgOisoneoftherawmaterialsformakingPortlandcementindryprocessplants.IftoomuchMgOisadded,thecementmaybecomeexpansive.

6>PotassiumOxideK2OUS$850-950/MetricTon@4%=$34HereWikipediarefersto“somematerialsofcommerce,suchasfertilizersandcements,areassayedassumingthepercentcompositionthatwouldbeequivalenttoK2O.”

7>SodiumAluminiumOxide(Na2O)US$1417-1584@12%=$170

Again,goingtotheInternettheDigitalFireceramicsmaterialsdatabaseexplainsthatthegenericnameofalloftheabovebundleofchemicalsassociatedwithNa2OhappenstobeNephelineSyenite.

AddupalltheAACchemicalmixandyoucomeupwithafigureof$595.30perton,whichsortofexplainstheoutrageouspriceonlineoutofChinasellinga“gasextrudingaluminumpasteandpowderforaeratedautoclaveconcrete/AACthatsellsforUS$2.6-3.5/Kilogram,withaminimumorderof1ton.”Useanyonlinekilogramtopoundconverterand$2.6USDperkilogramworksouttobeanamazing$2,600permetricton.(?).

OnYouTubesearchforAACsuccessstoriesofbuildinghousesof“AutoclavedAeratedConcrete”broadentoincludeCLCConcretewithanaturalpozzolanavolcaniclasticflyashchemistryinsteadoftheby-productofburningcoalintallstacksthatdonotscrubthehydrocarbonsbeingemittedintocleanair.

IfitbothersyoujustabitjusthowfarbehindAmericaisin“greenliving”thenusetheseInternetsearchphrasestofindaSpanish“fully-customized,modularsolarhouseis3Dprintedprefab,”or“Dutcharchitectstobuildworld’sfirst3Dprintedhouse,”tofindwheretoorderCLCmixersandpumpsinVietnam,India,andofcourse,aChinathatcopiedwhatwasmanufacturedinEurope,thatreallyletalotof“tradesecrets”

WhatmakestheShanghaiWinSunDecorationDesignEngineering“tenhousesinoneday,at$5000each”projectreallyinterestingtothoseconcernedabouttheenvironmentisthattheChineserecycledoldconcrete,intonew,bychippingupwhatwouldhavebeenlandfill,orburned.
Atthelastmomentofmixingastandardcementtheyaddedaminus325superfine(soluble)Aluminapowderatarateof08%byvolume,anda(soluble)60%silicacontentasanaggregate.

Chinahasbeenimportingaluminapowderextractedfrombauxiteinaustraliaatthecostof$300perton.TheRussiansusedtheirnephelinesyenitealuminapowdertobuildairplanesduringWWII;theyalsoarethemostadvancedinnephelineresearchforthingsacatalyticconvertors,andcleanairsteelfluxing.

Theproblemincomingupwiththosefiguresforanamericandepositis

thatthe“magicstuff”usedasanexpansionagenthasalmostbeenconsidereda“topsecret”byforeigncorporationsandcountries.

TheyapparentlywerenotveryhappywhenNephelineSyenite.com,andwww.Nepheline.com,ranapictureoftheTableMountain,Oregon,materialthathadbeenpolymerfoamed—testingRussiantechnology—intopolysnaptogetherbuildingblocks.

TherealsohasbeenapatentfilinginEurope—andonlycoveringEurope—thatdemandsprotectionofthecompositionofautoclavedaeratedconcrete,whichcuriouslyincludesbasaltmineralwoolforabinderaspartoftheformula?

Andspeakingofrockwool,thereisaDanishpatentfora“nephelinebriquet”usedintheprocessofmeltingrockatatemperatureof1600ÅãC,throughwhichastreamofairorsteamisblown.Moreadvancedproductiontechniquesarebasedonspinningthemoltenmaterialonhighspeedspinningwheelssomewhatliketheprocessusedtopreparecottoncandy.TheonlyAmericanmadeproductispinkspunfiberglassthatisonlyhalfaseefficientasnephelinewoolthermalinsulation.

1> The USD price of precipitated Silicon Dioxide (SiO2) is on-line researchable at $600-800 / per ton.

As a “soluble Nepheline silicon” used at 59 percent of the necessary AAC secret formula volume, makes the Table Mountain deposit being worth is no less than $354 per -325 metric ton if that were not already included, at no extra cost in the natural bundle.

Please use this rock hard fact to counter “concrete industry financial experts” discounting the science of AAC /CLC concrete building materials relying on added (SiO2) as “re-manufactured fly ash”, with absolutely no document-able published papers in their rebuttal.

2> Market price of the totally scientifically recognized AAC/CLC secret of soluble Alumna Oxide of (Al2O3), or Alumina out of Australian bauxite that has been ranging from $322 + per metric ton, for 400,000 tons a month delivered to China.

As the acceptable AAC percentage formula of 5% – 8% Alumina by volume, out of an ore that assays a higher 19.35% than the Chinese bulk FOB price, calculates out to be worth $64.40 per metric ton.

A $64 per ton figure, alone, is well under the handling costs of a "free for the recycling" dangerous coal fly ash, which as a carbon product may catch on fire and explode.

As the projected Oregon Table Mountain production costs of "gravel pit" drilling, blasting, crushing, grinding, and delivery to a nearby railhead and barge dock is a minus $100 per ton(?) FOB product. The costs increase of going underground are factored into a safe to meet estimated $150 per ton FOB by the bag wholesale market price

This happenstance itself may have serious consequences on what global building industry cartels might have to say about stifling competition. On the West Coast local readily soluble natural raw material source of alumina and silica can almost pay for itself through a savings on shipping cost alone.

The established advertised world-wide market price of $250 per ton, FOB China, for the exactly same chemistry as shown elsewhere in FoamKrete.com documentation. The eastern Canadian / Norwegian price per ton is harder to document as the imported product is hidden behind brand numbers on a bag in support of "scarcity" being used to control an increased free market price. I have seen it for sale for $300 per ton on a markdown sale.

Researching Russian documentation on the worlds largest Nepheline Syenite was even more difficult. One window on the Baltic was a library in Estonia that suddenly found itself free after the breakup of the USSR.

One recent find helpful to me was that I came across a white paper in English — Evolutional Development of Alkaline Aluminosilicates Processing Technology, by Andrey Panov, Sergey Vinogradov, and Svyatoslav Engalychev that openly explained how Russia and China have become the leader in 3D printing of houses, through other Nepheline sources in Russia, and in other counties, of a "lower quality (Al2O3 19–22%, which is my range) and their processing results in more cement produced per tonne of alumina".

The added value of an all natural —un-patentable—minus 325 Nepheline AAC / CLC powder, does not reflect what value, and purpose, the other Table Mountain Nepheline chemicals may have in the very new developing science of CLC 3D concrete printing, or thin film solar "smart" silica rooftop use which also harvests clean rainwater.

3> Calcium Oxide (CaO) US $210-250 / Ton @ 1% assay value = $2.10 per ton. CaO (s) + H2O (l) Ca(OH)2 (aq) (Hr = 63.7 kJ/mol of CaO) as it hydrates, an exothermic reaction results and the solid puffs up. One liter of water combines with approximately 3.1 kilograms (6.8 lb.) of quicklime to give calcium hydroxide plus 3.54 MJ of heat energy. This process can be used to provide a convenient portable source of autoclaving curing a pump-able foamed cement. According to Wikipedia, "the free encyclopedia," calcium

oxide has for a long time been is a key ingredient for the process of making cement as a natural pozzolana for setting underwater concrete in dams.

4 > Magnesium Oxide (MgO) US $160-260 / @ .02% = $3.20. Again, according to Wikipedia, MgO is one of the raw materials for making Portland cement in dry process plants. And, it is a known "super cement" strengthener.

6 > Potassium Oxide K2O US $850-950 / Metric Ton @ 4% = $34. Here Wikipedia refers to "some materials of commerce, such as fertilizers and cement, are assayed assuming the percent composition that would be equivalent to K2O." I have not figured out yet the advantage of K2O in what I am now calling Nepheline Cement, as my next project is to work on a totally greenhouse project complete with hydro-phonic gardens.

7 > Sodium Aluminum Oxide (Na2O) US $1417-1584 @ 12% = $170. Again, going to the Internet the Digital Fire ceramics materials database ex-plains that the generic name of all of the above bundle of chemicals associated with Na2O happens to be Nepheline Syenite.

8 > Titanium Oxide Nanoparticles (TiO2) US $1450 per ton. I am not even bothering to calculate the overall value of the Table Mountain natural, includes all, value of a TiO2 assay of 0.15 to 0.19, beyond the potential end use in sunscreen?

However, a white paper just released to the public explaining how TiO2 contributes to concrete performance in High Strength Non-Autoclaved Aerated Concrete. See link, below. I have no idea where team members Victor Cary, Kelsey Doolittle, Sally Lin, Daniel Lizardo, Stephanie Marzen were reporting from, or why, but I think their addition of 0.05 wt% of TiO2 resulting in a conservative 200% strength increase, well worth proving. Especially when dealing with local outdated building codes requiring rebar, which lately is being discouraged by other scientists that feel the chemical reaction dates the life span of ordinary dense concrete.

Add up all the AAC/CLC chemical mix — except TiO2 which I have not yet had time to play with, if purchased separately elsewhere— and mixed together in some sort of violation of somebody's European only patent (?), and you come up with a figure of $595.30 per ton, which sort of explains the outrageous price on-line out of China selling a "gas extruding aluminum paste and powder for aerated autoclave concrete / AAC that sells for a USD 2.6 - 3.5 /Kilogram, with a minimum order of 1 ton." Use any on-line kilogram to pound converter and USD 2.6 per kilogram works out to be an amazing $2,600 per metric ton?

As the natural chemical mixture, already bundled, as found in a uniform 500 million tons of Nepheline Syenite —see the professional geological, mineralogical, and economic value reports, referenced in Part B of this filing. In the 1973 State of Oregon Environmental Geology of Lincoln County Report featuring Economic Mineral Resources (as linked in Part B of this "Plan of Action" has a statement was made referencing the value of the Table Mountain jetty stone, roofing gravel, and rock wool at, "$15 per ton in today's market."

From my 60 years field experience in minerals exploration verifying length x width x depth of ore deposits, measured in $'s per ton, I, as a prudent man tend to favor the conservative. As by cutting that 700,000 million to five hundred million, due to possible

conflicts with a small holding of a “fee simple” private timber company next door, that actually holds no underground mineral rights on their School Land Grant section.

And, cut that in half again to 250,000 million mine-able tons by room and pillar methods underground. I have also considered that dropping to a very low industry standard of $10 per ton in-place real estate price for a potential gravel quarry, and the same $10 per ton for a large disseminated micro gold mine that is only economical as a open pit/chemical leach pad disaster.

So, $10 in-place it is, for now (as long as the discounted price flows through ECO-Mining-Milling and FoamKrete distribution to affordable housing) which by itself is, if I have the commas correct, 2.5 million tons times $10 per ton = $ 2.5 billion ??? Room enough between $10 ton and the China $250-ton price, to pay a privileged State of Alaska mining claim style 3% royalty, after the first $3 million in production. So, to help the USFS, and BLM, State of Oregon, Lincoln County and villages fight climate change wildfires and flooding, FoamKrete™will be paying back a totaly righteous 10% “tithing” above and beyond taxes and use fees to help neighbors recover from “unexpected catastrophes” as global warming.

Besides this, I personally will have a part in setting a wholesale price for FoamKrete™ Distributors outside the County to help prick the baloon bubble of affordable housing that has created a homeless crisis.

Some More Tap Dancing to the Yada-Yada- Yada Shuffle

On YouTube search for AAC/CLC success stories of building houses of “Autoclaved Aerated Concrete”. Then broaden that search to include more recent pump-able, on-site CLC Concrete construction with a natural pozzolana volcaniclastic fly ash chemistry, instead of the Class F by-product of burning coal in tall stacks that do not scrub the hydrocarbons being emitted into clean air.

If it also bothers you just a bit how far behind America is in “green living” then use these Internet further search phrases to find a Spanish “fully-customized, modular solar house is 3D printed prefab,” or “Dutch architects to build world’s first 3D printed apartment house,” to find where to order CLC mixers and pumps in Vietnam, India, and of course, a China that copied what was manufactured in Europe, that really let a lot of “trade secrets” disappear into public domain.

What makes the Shanghai WinSun Decoration Design Engineering “ten houses in one day, at $5000 each” project really interesting to those concerned about the environment is that the Chinese recycled old concrete, into new, by chipping up what would have been landfill, or burned. At the last moment of mixing a standard cement they added a minus 325 super fine (soluble) Alumina powder at a rate of 08% by volume, and a (soluble) 60% silica content as an aggregate.

China has been importing alumina powder extracted from bauxite in Australia at the cost of $300 per ton. The Russians used their Nepheline Syenite alumina powder to build airplanes during WW II; they also are the most advanced in Nepheline research for things as catalytic converters, and clean air steel fluxing.

The problem in coming up with those figures for an American deposit is that the

“magic stuff” used as an expansion agent has almost been considered a “top secret” by foreign corporations and countries.

They were not very happy when NephelineSyenite.com, and www.Nepheline.com, ran a picture of the Table Mountain, Oregon, material that had been polymer foamed— testing Russian technology supposedly protected by a patent for a shape? which expires in twenty years— into poly snap-together building blocks.

There also has been a patent filing in Europe— and only covering Europe— that demands protection of the composition of autoclaved aerated concrete, which curiously includes basalt(?) mineral wool for a binder as part of the formula?

Moreover, speaking of rock wool, there is a Danish patent for a “Nepheline briquette” used in the process of melting rock at a temperature of 1600™, through which a stream of air or steam is blown to spin a cotton candy like insulation. The only American made product is pink spun fiberglass that is only half as efficient as Nepheline wool in thermal insulation.

So — at last, a conclusion— that for the 500 million ton, plus, and a US Table Mountain Mining Claims deposit being a “lessor Nepheline Syenite” should also pass along a birthright benefit to US tax payers instead of flowing through the Toronto Stock Exchange for tax benefits.

For years Russian, Belgium, and Canadian distributors have discounted my figures as second-class chemistry for the manufacturing of clear glass and white China-ware used in bathrooms. What does making toilets has to do with an a “value added” advantage of being the perfect natural mix for a “Nepheline Cement”? Everything.

Now I have a Russian paper — Evolutional Development of Alkaline Alumunosilicated Process Technology ... “whereas there are other Nepheline sources in Russia and in other counties of lower quality (Al2O) their processing results in more cement produced per tonne of alumina”.

Thank you. I will be selling one bag of FoamKrete™at about the same price as a bag of Portland cement to replace by expansion the traditional five bags of dense cement. To one, plus one.

A a curious reason offered for wanting to undercut established prices was not too long ago, anti-free trade, dumping of Canadian Nepheline Syenite closed down a struggling, higher quality, feldspar quarry at Kings Mountain, in the Carolinas.

Ironically, my Murray mining family history dates back to the 1750’s Carolinas (gold) and Georgia (a bauxite project?) starting out as an indentured servant (for only seven years), who was sold off of the same trading block as other slaves the English nobility (who like to sing we will never, ever, be slaves) flogged off to a lifetime of suffering as a way to set up the future timebomb as the ongoing(?) U.S. Civil War.

I know this really doesn’t fit into this application. But, as a Celtic (with an ancient Queen Boudicca talent for all things mining) and the Revolutionary War patriotic circumstance of my having three Scottish-American great-something grandfathers who helped defeat the hated English redcoats in a lopsided American victory that set up the Patriots winning at Yorktown.

The revenge battle cry at our Kings Mountain was to “Remember Culloden” for

not giving quarter as 2,000 Highlanders were slaughtered, versus 300 Redcoats dead. The cost of English arrogance on Kings Mountain was paid when Americans only lost around 28 killed and 68 wounded, whereas British losses numbered around 225 killed, 163 wounded, and 600 captured — who were not murdered, or sold off in indentured servitude.

I am sure some of the Redcoats who released returned to try to destroy another three members of my highland "over the mountain" family again during England's forgotten War of 1812 of secret plans to cripple America.

But, again, "the crowns" folly was to attack Celtic "dirty shirts," as the British called the Americans Tennessee volunteer soldiers during the Battle of New Orleans. This was another time for revenge for Andrew Jackson who also had no love for the English, as he'd spent time as their prisoner during the Revolutionary War. Just as my Braveheart FREEDOM fighter Sir Andrew de Moray had been imprisoned at the Tower of London. The revenge score, again, was a lopsided 2000 Redcoats, to less than 100 Americans.

The reason this history is in a explanation of added value, is since beginning work developing the Table Mountain Nepheline Syenite, out of necessity as none of the major players wanted to make an offer to a "hillbilly" individual claim-holder, I have been under a very sneaky hack attack through my www.MiningMagazines.com, for First Amendment opinions I dared to express on www.TheProspector.com, www.MiningInvestment.com, www.The MiningInvestor.com, www. DiversifiedInvestments.net., etc.

Apparently, from pinging back on the spam overload denial of service web stats, who were not Chinese, Russian, Ukrainian, but north of the border "flaming English LIBOR twits, and TSX 43-101 masters of the pump-and-dump" — the centuries-old battle continues.

My challenged Internet defense from some very competitive international adversaries hiding behind the skirts of a no-tariff free trade to practice their trade-craft of dirty tricks, is to simply prove the beauty and truth of a simple scientific "this is how it works" as expressed

I, as an "Mining Law of 1872 Prudent Man" individual will not lose this "trade war" with a multinational organization that feels the price of scarcity is justified as best way to maximize profits, vs, the genius attitude of an incomplete educated AsS (or Asperger's syndrome) WW2 concrete genius Henry J. Kaiser, whose fellow AsS Jobs like motto to add value to any project, with a "Find a need and fill it." There is an absolute demand for an affordable housing building material for the delivered product from Table Mountain, marketed as FoamKrete™.I intend to stick around long enough to build some affordable housing!

This is why I am responding to USDA Forest Service Area Mining Geologist, Ruth Seeger, wanting professional documentation; and USDA Forest Service Siuslaw Mining and Minerals Administrator, Robert Ginn's pointed questions and suggestions made at a "meet and greet" a few years ago, with what may seem an information overload.

Sorry, it has taken me so long, as a former freelance photojournalist whose success with placing articles in national magazines was to transport myself into a "temporary expert" mode to comply with accuracy standards as LIFE Magazine editor's three dot

system before publishing.

When starting to filling out a simple form FS-2800-5, I found it necessary to attach reports, university-level thesis, legal citations, real website news, and this white paper supporting an added value in the almost unique chemistry, definitely not common variety, of Table Mountains' Nepheline Syenite.

The following PDFs available to the reading public intact, are a small part of what has been studied for propriety use, only. And yes I admit to being a little intimidated, a few years ago by a threatening call from a room full of lawyers on speaker-phone wanting to challenge this photojournalists source of information. Thankfully I was able to cite the volume and page number of a well respected Canadian mining magazine.

And thankfully, after winning that exchange by asking in jest, "How many lawyers does it take to dial a so-called smartphone?" I began to wonder what their interest was in my holding onto what was a grandfathered $2 per ton in-place jetty-stone quarry.

It took five years following what research I could afford —one international market study that cost $5000 only focused on Nepheline with less FE than mine in clear glass production. Follow what the Chinese were doing in concrete gave me the reverse engineering breakthrough lead of following the chemistry.

This was a fun learning path ("if you are not having fun, quit") following independent professionals answering three questions.

1) What Exactly is the Financial Advantage of Aerating a Foamed Concrete?

001) AUTOCLAVED AERATED CONCRETE AS A GREEN BUILDING MATERIAL
By Stefan Schnitzler, October 2006, University of California, Davis Extension.

This was the first reference I stumbled across concerning the magic of Alumina Powder and Silica Sand expanding:

"Autoclaved aerated concrete is a precast product manufactured by combining silica (either in the form of sand, or recycled fly ash), cement, lime, water, and an expansion agent — aluminum powder, and pouring it into a mold. Once added to the concrete, the aluminum powder reacts with the silica, resulting in the formation of millions of microscopic hydrogen bubbles. The hydrogen bubbles cause the concrete to expand to roughly five times its original volume. The hydrogen subsequently evaporates, leaving a highly closed-cell aerated concrete.

Autoclaved aerated concrete is further considered a sustainable building product because of its excellent insulating qualities resulting in increased energy efficiency. AAC's thermal efficiency stems from three factors. First, AAC structures result in solid wall construction with integrated insulation. Entire wall coverage prevents the thermal bridging associated with conventional stud framed walls, which leaves cold gaps around every stud and header.

Second, the solid wall construction of AAC structures creates an airtight building envelope, minimizing uncontrolled air changes while helping maintain desired indoor temperatures and maximizing the efficiency of HVAC equipment.

Third, AAC structures benefit from the added value of thermal mass and low thermal conductivity of a .... “effective” or “mass-enhanced” R-value of about 21.8.

AAC is inorganic, noncombustible, and virtually fireproof. It receives a 4 hour UL fire rating and has a melting point of over 2900 degrees Fahrenheit.

AAC buildings can be engineered for earthquake and hurricane-prone areas, and such buildings have performed well to date. For example, the vast majority of AAC homes in the 1995 Kobe, Japan earthquake survived substantially undamaged. They also were immune from fires started during the earthquake and even acted as firebreaks. The ability of AAC structures to withstand fires and natural disasters minimizes waste, contamination to the surrounding environment, and the need for repair materials, while also lowering insurance costs.” Full Text....

002) AN INTRODUCTION TO AUTOCLAVED AERATED CONCRETE INCLUDING

DESIGN REQUIREMENTS USING STRENGTH DESIGN

By Eric Ray Domingo. B.S. Kansas State University, 2008

The only other US white paper I could find. And it is marked with a copyright protected symbol. This is where I have to apologize to the author my “fair use” synopsis. And the full source of a university paper presented here as evidence in what really is a legal document. Eric. Good job, and if you are looking to continue Nepheline Syenite R&D, let me know.

“Autoclaved aerated concrete (AAC) is a lightweight concrete material that was developed in Sweden approximately 85 years ago but only recently, as early as 1990 in the Southeast, has it been used or produced in the United States (www.gostructural.com). It is a lightweight building material that is easy to build with, has great thermal properties, and can be easily produced from locally available materials. AAC is commonly found as masonry block units or as larger planks that can be used as wall components or as roof or floor components . (

AAC has a high percentage of air making up its volume and the materials that are used to make it can be recycled from waste AAC material. Recycled AAC can be ground up finely and can be used as the aggregate in the new mixture. Also, the energy that is required to produce AAC is much lower than other masonry products (www.eaaca.org). This report details the history, physical properties, manufacturing process, and structural design of AAC. This report includes an explanation of the 2005 Masonry Standards Joint Committee (MSJC) Code for the design of AAC members subjected to axial compressive loads, bending, combined axial and bending, and shear. An example building design using AAC structural components is provided. This report concludes that AAC has import-

ant advantages as a structural building material that deserves further consideration for use in the United States.

Currently, in the United States, there are two producers of autoclaved aerated concrete. Xella Aircrete North America Inc. (Hebel) has plants located in Texas, Georgia, and Mexico as well, and AERCON is located in Florida (www.aacpa.org). The annual production of AAC in the United States is not currently available, however, the annual production capacity of the largest North American producer of AAC (Hebel's Georgia Facility) can produce approximately 2.7 billion cubic feet (250,000 cubic meters) per year (www.xella-usa.com). Full Source....

003) UTILIZATION OF ECOSAND AND FLYASH IN AERATED CONCRETE

By Keertana. B, Department of Civil Engineering, Karpagam University, India

From here-on, the research white papers I could pass along came from everywhere but the United States. This, from the Department of Civil Engineering, Karpagam University, Coimbatore-641021, Tamilnadu, India. I appreciated the idea, and simplicity of my Si02 being recognized as an Ecosand. And that Geopolymers also gain strength very quickly as well, obtaining 70% strength within the first three to four hours of production.

"Besides insulating capability, one of AAC's advantages is its quick and easy installation since the material can be routed, sanded and cut to size on site using standard carbon steel band saws and drills. AAC is well known as environmentally friendly construction material. The production process emits no pollutants and creates no toxic waste products.

Lightweight concrete has its obvious advantage of high strength/weight ratio, good tensile strength, low coefficient of thermal expansion, waste utilizing, heat preservation, noise insulation characteristic, and energy saving, as well as good absorbability of impacting energy due to air void in lightweight aggregate.

Autoclaved concrete can develop to be high strength concrete and good absorbability of impact energy. It has a lower modulus of elasticity and higher tensile strain capacity further provides better impact resistance than normal weight concrete. Full Text..

004) EVOLUTIONAL DEVELOPMENT OF ALKALINE ALUMINOSILICATES PROCESSING

By Andrey Panov, Sergey Vinogradov, and Svyatoslav Engalychev

Abstract: Alkaline aluminosilicates are of significant interest for metallurgical and chemical

industries. They are widespread in countries like Russia, USA, China, Canada, Venezuela,

Mexico, Iran, etc. and can present a viable alternative to bauxites. Complex and waste-free

alkaline aluminoslilcates processing technology into alumina, soda ash and cement was developed in VAMI institute in 20th century from idea till successful realization at several industrial facilities in Russia, operating till now with competitive production cost of alumina. Russian Alumina refineries are using feedstock with unique high alumina content (Al2O3 26–28%) whereas there are other Nepheline sources in Russia and in other counties of lower quality (Al2O319–22%) and their processing results in more cement produced per tonne of alumina. An economical beneficiation technology has been developed that opens the possibility for more efficient industrial processing of comparatively poor aluminosilicate raw materials in Russia and the rest of the world. English Text....

What a shame the processing of poor aluminosilicate raw materials (FoamKrete™) results in more cement produced per ton of Al2O3 alumina. And thanks for putting a competitor on the map.

2) Which 'Fly Ash' Pozzolan is Best for AAC/CLC Pump-able Concrete?

005) THE RIDDLE OF ANCIENT ROMAN CONCRETE

By Dacid Moore, P.E. Retired Professional Engineer Bureau of Reclamation, 1995

Abstract: The riddle of ancient concrete consisted of two studies: one was understanding the chemistry, and the other was determining the placement of ancient concrete. To understand its chemical composition, we must go back in time much before Moses. People of the Middle East made walls for their fortifications and homes by pounding moist clay between forms, often called pise work. To protect the surfaces of the clay from erosion, the ancients discovered that a moist coating of thin, white, burnt limestone would chemically combine with the gases in the air to give a hard protecting shied. We can only guess that the event of discovering pseudo concrete occurred some 200 years before Christ when a lime coating was applied to a wall made of volcanic, pozzolanic ash near the town of Pozzuoli in Italy.

A chemical reaction took place between the chemicals in the wall of volcanic ash (silica and
small amounts of alumina and iron oxide) and the layer of lime (calcium hydroxide) applied
to the wall. Later they found that mixing a little volcanic ash in a fine powder with the moist
lime made a thicker coat, but it also produced a durable product that could be submerged in
watersomething that the plaster product of wet lime and plain sand could not match.
To explain this chemical difference we must examine the atomic structure. Common plaster
is made with wet lime and plain sand. This sand has a crystalline atomic structure whereby
the silica is so condensed there are no atom holes in the molecular network to allow the
calcium hydroxide molecule from the lime to enter and react. The opposite is true with the
wet lime pozzolan contact. The pozzolan has an amorphous silica atomic structure with
many holes in the molecular network. Upon mixing the wet lime with the pozzolan, the
calcium hydroxide enters the atomic holes to make a concrete gel that expands, bonding
pieces of rock together. The fine powder condition of the pozzolan provides a large surface
area to enhance chemical reaction. We find parts of the complex chemistry of the ancient
concrete bonding gel matching the same chemical formula of modern concrete bonding gel.
So the pozzolan wet lime gel gave permanence to the ancient concrete. Full Newsletter Article.

I did find in my a compilation of university level papers proving many original findings that led to even more curious questions that follow, as to what (AS) really was compared to ordinary, lower grade fly ash.

SCIENTIFIC INSTITUTE OF THERMAL INSULATION, DEPARTMENT OF BUILDING MATERIALS, VILNIUS GEDIMINAS TECHNICAL UNIVERSITY, VILNIUS, LITHUANIA —

Abstract: Investigations of Forming Mixture Parameters of Autoclaved Aerated Concrete with Nano additives“Amorphous” SiO2 (AS) is a very effective pozzolanic mate-

rial. As an aggregate, AS powder is in particular suitable for modern building industry. It was used at construction since 1994 in New Zealand and with each year its usage grew. AS is a by-product of ferrosilicon and silicon metal production and can be used in shape of very fine powder [1]....In production of concrete with AS, the pozzolanic reaction is ... decreases conductivity of water and water vapor and increases strength and life of concrete [3]....

And how it was revealed that AS was the real "fly ash pozzolina" in sea water Roman Cement, used a long time before the invention of re-bar. Or, explaining how it is that a lightweight "smart" concrete is actually stronger, better, cheaper, than the "dull and dense" concrete many associate with a concrete "jungle scene" of parking structures, sewage treatment facilities, those islands in the sky of unfinished freeway interchanges. But, more import to the bottom line of using a flammable dirty coal based substitute.

006) TO IMPROVE TODAY'S CONCRETE, DO AS THE ROMANS DID
UC Berkeley News, June 4, 2013

AN EARTH-FRIENDLY ALTERNATIVE PARAGRAPH: While Roman concrete is durable, Monteiro said it is unlikely to replace modern concrete because it is not ideal for construction where faster hardening is needed. But the researchers are now ™finding ways to apply their discoveries about Roman concrete to the development of more earth-friendly and durable modern concrete.

They are investigating whether volcanic ash would be a good, large-volume substitutein countries without easy access to ™fly ash, an industrial waste product from the burning of coal that is commonly used to produce modern, green concrete.

"There is not enough ™fly ash in this world to replace half of the Portland cement being used," said Monteiro. "Many countries don't have ™fly ash, so the idea is to ™find alternative, local materials that will work, including the kind of volcanic ash that Romans used. Using these alternatives could replace 40 percent of the world's demand for Portland cement." Full News Release Text....

COAL ASH IS MORE RADIO ACTIVE THAN NUCLEAR WASTE
By Mara Hvistendahl journalist in sync with reporter Leslie Stahl of CBS's Sixty Minutes]

Over the past few decades, however, a series of studies has called the stereotypes into question. Among the surprising conclusions: the waste produced by coal plants is actual more radioactive than that generated by their nuclear counterparts. In fact, the fly ash emitted by a power plant—a by-product from burning coal for electricity— carries into the surrounding environment 100 times more radiation than a nuclear power plant producing the same amount of energy.

3) Why is Nepheline Cement, With Less Material, Superior in

Strength?

And how it was revealed that AS was the real "fly ash pozzolina" in sea water Roman Cement, used a long time before the invention of re-bar is actually stronger, better, cheaper, than the "dull and dense" concrete thought of as "cold." Now, getting into "proparity stregnth trade secrets" we are getting into delecitate territory when it comes to such things as:

007) MECHANICAL ACTIVATION OF NEPHELINE CONCENTRATE BINDING CEMENTS

B. I. Gurevich, Institute of Chemistry of Rare Elements Academy of Sciences, Russian, 2013

Abstract—Binding properties of a Portland cement–Nepheline–water formulation were studied in relation to its Nepheline content by using a preliminary mechanical activation. A thermal analysis was used to estimate the hydration rate of cement phases in the system under study. The accelerating role of Nepheline in hardening of mechanically activated Portland cement–Nepheline formulations was revealed and found to be more pronounced in early stages. The gain in the strength of the cement stone was analyzed in relation to the formulation composition and hardening duration. Research Paper Preview : Available in full for susbscription on link.springer.com for $39.95

008) HIGH-STRENGTH STRUCTURAL LIGHTWEIGHT CONCRETE

No authors cited for what is an excellent paper / informative sales tool for HPCC panels that I would love to work with.

Synopsis — High-Performance Cellular Concrete [HPCC] has all the properties of cellular concrete and can achieve 55.37 MPa [8,000 psi]. Higher strengths can be produced with the addition of supplementary cementitious materials.

In conventional concrete, the percentage of sand in the aggregate is 30% to 40%. However, the foamed cement of this process/invention is preferably mixed with an aggregate having a higher ratio of sand.

Preferably in the range of 40% to 50%. This reduces or eliminates voids in the concrete mixture, since gaps between larger rock particles may be filled with a combination of smaller rock, sand, and air bubbles. The smaller the spacing factor, the more durable the concrete will be.

The LightConcrete LLC Paper

009) HIGH STRENGTH NON-AUTOCLAVED AERATED CONCRETE

By Victor Cary | Kelsey Doolittle | Sally Lin | Daniel Lizardo | Stephanie Marzen

Now, getting into "proparity strength trade secrets" on an MIT paper(?) were perhaps we are getting into delecitate territory when it comes to such things as optimization of TiO2 the :

Abstract: Traditionally, aerated concrete is autoclaved in order to achieve the high compressive strength necessary for structural use. While the high temperatures and pressures from the autoclaving process give rise to crystallization and thus high compressive strength, the process is extremely energy intensive. Eliminating autoclaving would save significant energy, but other methods would need to be employed to maintain good compressive strength. Thus, the project goal is to develop a form of concrete with a high strengthtodensity ratio: low density for high materials efficiency and high compressive strength with the elimination of autoclaving.

In this paper, we will discuss our final prototype: a nonautoclaved aerated concrete that boasts higher compressive strength than previously developed nonautoclaved concretes through the optimized additions of 0.05 wt% titanium dioxide (TiO2) and 0.05 wt% sodium alginate. Our prototype also exhibits low density, consistent foamlike structures and is cost efficient.

Further research on raising prototype strength may be warranted. Aerated ConcreteA new direction towards advanced construction techniques using High-Strength Lightweight Cellular Concrete in the development of concrete in building and civil engineering construction. A Good Read

010) TECHNICAL-CERAMICS-FOR-MILITARY-PURPOSES
By Benedette Cuffari

So, since this exercise in published knowledge was to establish that FoamKrete™was stronger for conventional homebuilding (even without re-bar) what else can I say than, “Hey. Are we building a tank, or just an ordinary bullet proof house?”

This is seriouly beyond the scope of FoamKrete™. But, this paper has me thinking about the next best things, as:

1) Forming a foam ECO container home, complete with a smart solar rainwater harvesting roof, that would fit (when needed to be transported) on one of the new mid-sized electric delivery trucks I will be expermenting with in of my Biz Plan of action?

2) And what if the 80% bubbles material, that floats, was foamed into a boat hull that would bounce off a hidden reef without a scrath? Take a look at AZoM.com Limited ideas.

I will be reformatting Citations of such a large number of 2020 papers that have come out recently, as:

Frontiers | Silico-Aluminophosphate and Alkali-Aluminosilicate Geopolymers- A Comparative Review | Materials.pdf

3) Where is Nepheline Cement, labled something other than Foam-Krete, proving the chemistry in the field ?

Which unfortunately is Russia, during an eara of how political attentions stiffling free trade business, I was delighted to find recently:

011) **APISCOR_TECHNOLOGYDESCRIPTION_EN.PDF**

012) **APRISGEOCEMENT GEOPOLYMER CEMENT.PDF**

As these are advertising PDFs from a far away foreign competor, I haven't presumed to alter their conclusions and tradenames of what is basicly Nepheline Syenite, with an actavator which is a Trade Secret.

As 3D house printing is something that can really compete with tilt up form counstruction, and think ECO Housing of America could really benefit from the ease of printing a curve or castle-wall from sea protection at Waldport, or South Beach of Newport.

4) More to come once I have secured Locating my own add on Foam-Krete Trade Secrets, most likely for a just formed ECO-Mining-Milling Limited Cooperative Association to also offer a ceramic

ALUMINA SILICATE

Alumina silicate machinable ceramic

Alumina Silicate Machinable Ceramics

Alumina silicate is a natural ceramic which is sourced from a pyrophyllite rock. Final Advanced Materials employs a mineral which is endowed with exceptional mechanical and thermal performance capabilities. After high-temperature treatment, this material acquires properties which are similar to those of known synthetic ceramics.

and

ULTIMATE_AND_FATIGUE_STRENGTH_OF_GFRP_RE.pdf