



Buttazoni, Brian <bbuttazoni@blm.gov>

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## Fwd: FW: 1996 USGS Report Identifying Erionite Locations in Arizona

1 message

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**Cave, Shelby** <scave@blm.gov>

Thu, Jun 1, 2017 at 11:23 AM

To: Areta Zouvas <aretazouvas@kirklandmining.com>, Al Burch <burchservices1@aol.com>, "Amanda L. Best" <abest@westlandresources.com>, "Hawes, David (Rem)" <rhawes@blm.gov>, "Buttazoni, Brian" <bbuttazoni@blm.gov>, "savarirayan.naveen" <savarirayan.naveen@azdeq.gov>, vaidyanathan.balaji@azdeq.gov

FYI: This message was sent previously to ADEQ and I mistakenly left off the carbon copy recipients.

----- Forwarded message -----

From: **Cave, Shelby** <scave@blm.gov>

Date: Wed, May 31, 2017 at 12:38 PM

Subject: Re: FW: 1996 USGS Report Identifying Erionite Locations in Arizona

To: "Steven A. Rose" <Rose.Steven@azdeq.gov>

Thank you for that report! Thinly bedded water-lain ash fall is exactly how I would have interpreted the location south of Kirkland. It looks like erionite in Arizona has been identified in a marker bed, which means it could be compositionally influenced, or influenced by a certain depositional setting, but since erionite is a secondary alteration product, I do think all similar Mid-Tertiary rhyolites still need to be tested to some extent before being disturbed to rule out its presence, as well as any other sites or units with identified zeolite alteration.

I have talked to my field manager about establishing a best practice for erionite testing at BLM Arizona and I would love your input on this matter in order to make something that is consistent across state and federal guidelines. I'm a little concerned about the turn-around time for our internal lab, so we may use an outside lab. It will probably be one of the ones from the North Dakota report, but I will check with our state mineral examiners to verify which labs they think are the highest quality.

I did follow up with Areta, and she agreed to do annual testing for erionite specifically, and that initial testing should include a grid across the footprint of the pit which would be informed by Al Burch's mapping. I agreed to keep the exact geochemical reports confidential among the regulatory agencies if that was what she wanted, since geological composition is proprietary information. The NEPA analysis would still report annual testing for airborne carcinogens just without listing erionite specifically in the public forum.

As per Areta's request I have attached our preliminary spot testing for erionite and asbestos minerals at the Kirkland Quarry site and stockpiles as it was reported

Talk to you soon,  
-Shelby

On Thu, May 25, 2017 at 10:38 AM, Steven A. Rose <Rose.Steven@azdeq.gov> wrote:

Hello Shelby,

As requested,

Below is the link to the USGS paper referenced by NIOSH that identified erionite deposit locations in Arizona with references.

<https://pubs.usgs.gov/of/1996/0018/report.pdf>

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### 3 attachments



**BLM 2016 Kirkland AZ Area Erionite and Asbestos Sample Locations.pdf**  
265K



**BLM 2016 Kirkland AZ Area Erionite and Asbestos SEM report.pdf**  
797K



**BLM 2016 Kirkland AZ Area Erionite and Asbestos XRD report.pdf**  
1040K