UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555 - 0001

February 14, 2012

Ideal Source Quality Assurance, LLC
ATTN: Dr. William Yelon
1309 Overhill Ct.
Columbia, Missouri 65203

Mail Control No. 576815

Subject: REQUEST FOR ADDITIONAL INFORMATION

Dear Dr. Yelon:

This is in reference to your email dated December 14, 2011, requesting amendment to your U.S. Nuclear Regulatory Commission (NRC) Exempt Distribution License No. 24-32675-02E. We currently do not have sufficient information to complete the review of your amendment request. In order to continue our review we ask that you provide additional information as specified below.

1. In the second paragraph of your request for amendment, you stated: "One result of that testing has been confirmation that neutron irradiated and electron irradiated topaz can be readily distinguished by the total absence of activation in the latter group, if the electron energy is less than about 15 MeV, compared with readily observable activity in neutron irradiated topaz, even when those stones have been subject to long decay times. Based on that, we believe (and have confirmed in limited testing) that electron treated diamonds can be easily tested to confirm that **no activation** is present, and hence these stones meet NRC standards and can be safely released for retail sale in the U.S."

   This statement may be confusing to some readers. The point seems to be that activation products are detectable in topaz that has been treated by neutron irradiation, while no activation products are detectable in topaz that has been treated by electron irradiation as long as the electron energy is no greater than about 15 MeV. We assume that you are not referring to a method for distinguishing between treatment by neutron irradiation and treatment by electron irradiation. We further assume that you are not referring to a method for distinguishing between topaz that has been treated by electron irradiation below about 15 MeV and topaz that has been treated by electron irradiation above about 15 MeV. Please inform us if either of these assumptions is incorrect.

2. In the third paragraph you stated: "It has been found, using 5-10 gm batches (25-50 cts) of topaz, that activities exceeding 1 Bq/gm are easily measured using 30 sec. counts." Also, in the fourth paragraph of your request for amendment, you stated: "It has been found that this well shielded detector system, coupled with the Canberra Genie2K software, modified for fitting low activities, is easily capable of establishing 1 bq/g activities from the isotopes typically present in topaz using 30 sec. counts on 10 g samples."

Was this detection capability discussed in any previous submittals to NRC, or does another reference exist? Please explain why you stated a sample size of 5-10 gm in the first instance and 10 gm in the second.

3. Later in the third paragraph you stated: "Determination of topaz activity is performed by subtracting this background (proportional to measuring time) from the observed spectrum, after which any excess activity, (above background) is quantified, using matrix calculations to distinguish the isotopes present."

   Please explain "matrix calculations" and how they are applied. If you have described this in any previous submittals to NRC, please briefly describe the document and indicate the approximate date of its submittal.

4. In the fourth paragraph you stated: "The three sided cave surrounding the measuring platform is made from 2" thick lead bricks, the top of which is also covered, by 2" thick lead bricks."

   Please clarify whether Figure 1 illustrates the configuration of the shielding during sample analyses. Your statement appears to indicate that the top of the enclosure would be covered by 2" thick lead bricks during analyses, while the front face of the enclosure would be open. If this is correct, does such an open-face configuration provide sufficient shielding to achieve the detection capability of 1 bq/g activity from the isotopes typically present in topaz using 30 second counts on 5 g or 10 g samples?

Any correspondence regarding this amendment application should reference the control number specified above.

If we do not receive your reply within 30 calendar days from the date of this letter, we will consider your application as having been abandoned by you. This action would be without prejudice to the resubmission of another application with the required information.

In accordance with 10 CFR 2.390 of NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in NRC's Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at http://www.nrc.gov/reading-rm/adams.html.

If you have any questions, you may contact me at (301) 415-5477, or by electronic mail at richard.struckmeyer@nrc.gov.

Sincerely,
/RA/
Richard K. Struckmeyer
Licensing Branch
Division of Materials Safety and State Agreements
Office of Federal and State Materials and
Environmental Management Programs
Washington, DC 20555

Docket No. 030-37567

cc: Ostro Minerals (UK) LTD
ATTN: Mr. Maurice Ostro, Chairman
62 Grosvenor Street
London, W1K 3JF, United Kingdom

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If you have any questions, you may contact me at (301) 415-5477, or by electronic mail at richard.struckmeyer@nrc.gov.

Sincerely,
/RA/
Richard K. Struckmeyer
Licensing Branch
Division of Materials Safety and State Agreements
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Environmental Management Programs
Washington, DC 20555

Docket No. 030-37567
Enclosures: License No. 24-32675-02E

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