



Grants Reclamation Project

Homestake Mining Company of California

David W. Pierce  
Closure Manager

20 December 2019

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Regional Administrator  
Materials Licensing and Decommissioning Branch  
Division of Nuclear Materials Safety  
Region IV  
1600 East Lamar Boulevard  
Arlington, TX 76011-4511

**RE: HMC Response to Notice of Violation – NRC Inspection Report 040-08903/2019-002 and Notice of Violation; Homestake Mining Company of California – Grants Reclamation Project – Docket No. 040-08903, License No. SUA-1471**

Dear Regional Administrator:

Pursuant to the letter from the U.S. Nuclear Regulatory Commission (NRC) dated December 22, 2019 titled *NRC Inspection Report 040-08903/2019-002 and Notice of Violation*, Homestake Mining Company of California (HMC) has prepared responses to Notice of Violations (NOVs) cited by the NRC as shown below in italics, followed by HMC responses.

- A. *Title 10 of the Code of Federal Regulations (10 CFR) 20.1501(c) requires the licensee to ensure that instruments and equipment used for quantitative radiation measurements (e.g., dose rate and effluent monitoring) are calibrated periodically for the radiation measured.*

*Contrary to the above, from July 22 through October 24, 2019, the licensee failed to ensure that instruments and equipment used for quantitative radiation measurements were properly calibrated for the radiation measured. Specifically, a Ludlum Model 3030 scaler was returned from the vendor with a calibration label and calibration certificate for a different instrument. The licensee did not verify that the instrument returned to them had been calibrated by the vendor, nor request corrected paperwork from the vendor. Further, the licensee returned the potentially uncalibrated instrument to service and used the instrument.*

*This is a Severity Level IV violation (Section 6.7.d.4).*

**HMC Response:**

HMC acknowledges the inadvertent mislabeling of two digits in the serial number listed on the calibration certificate and calibration sticker for the subject instrument (a Ludlum Model 3030 alpha/beta counter); however, HMC believes that failure to immediately identify and correct the typographical error on the calibration documentation represents a minor procedural deficiency rather than a violation of regulations or license conditions. Although HMC failed to immediately identify and correct the typographical error on the calibration documentation, the instrument in question was known to have been properly calibrated prior to resumption of use at the Site, and this calibration has been

1E07  
RGNO4  
NMSS  
RGNO4

verified based on the original electronic calibration data provided on the second page of the attached, corrected calibration certificate (Attachment 1). The serial numbers on the calibration certificate and calibration sticker for the instrument in question have been corrected to match the serial number permanently labeled on the instrument, and HMC requests that this NOV be closed out by NRC.

- B. *License Condition 23 of Materials License SUA-1471, Amendment 53, dated April 9, 2019, states, in part, that standard procedures shall be established for all activities involving radioactive materials that are handled, processed, or stored.*

*Contrary to the above, since March 18, 2019, the licensee failed to establish a standard procedure for an activity involving the handling, processing, and storage of radioactive materials. Specifically, the licensee failed to establish a standard procedure for startup of the reverse osmosis water treatment system, which filters radioactive contaminants from groundwater.*

*This is a Severity Level IV violation (Section 6.3.d.3).*

**HMC Response:**

HMC acknowledges that a startup procedure for the reverse osmosis water treatment plant had not been completed since the March 2019 inspection. The procedure is currently being written and will be integrated into current SOP 32 (Reverse Osmosis Water Treatment Plant Shutdown). HMC anticipates that it will be available for review by the next NRC inspection in 2020.

HMC appreciates your consideration of our responses in this matter. If you have any questions, please contact me via e-mail at [dpierce@homestakeminingcoca.com](mailto:dpierce@homestakeminingcoca.com) or via telephone at 505-238-9701.

Respectfully,

*David W. Pierce*

**David W. Pierce**  
Closure Manager  
Homestake Mining Company of California  
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Attachment

Copy To:

R. Linton, NRC, Bethesda, MD (electronic copy)  
M. McCarthy, Barrick, Salt Lake City, Utah (electronic copy)  
G. George, Davis, Wright and Tremaine, San Francisco, California (electronic copy)  
C. Burton, Barrick, Henderson, Nevada (electronic copy)  
R. Whicker, Environmental Restoration Group, Albuquerque, New Mexico (electronic copy)

Letter to NRC  
*RE: Reply to Notice of Violation Letter*

**ATTACHMENT 1: Corrected Calibration Certificate for Ludlum Model 3030 alpha/beta scaler.**



# Certificate of Calibration

## Calibration and Voltage Plateau

Environmental Restoration Group, Inc.  
8809 Washington St NE, Suite 150  
Albuquerque, NM 87113  
(505) 298-4224  
www.ERGoffice.com

Meter/Detector: Manufacturer: Ludlum Model Number: 3030 Serial Number: 210278 *210768 PS 10/30/19*

☒ Mechanical Check ☒ THR/WIN Operation HV Check (+/- 2.5%): ☒ 500 V ☒ 1000 V ☒ 1500 V  
☐ F/S Response Check ☐ Reset Check Cable Length: ☐ 39-inch ☐ 72-inch ☒ Other: Internal  
☐ Geotropism ☒ Audio Check  
☐ Meter Zeroed ☐ Battery Check (Min 4.4 VDC) Alpha Threshold: 120 mV Barometric Pressure: 24.69 inches Hg  
Source Distance: ☐ Contact ☐ 6 inches ☒ Other: In Planchett Beta Threshold: 4 mV Temperature: 72 °F  
Source Geometry: ☐ Side ☐ Below ☒ Other: In Planchett Beta Window: 46 mV Relative Humidity: 20 %

Instrument found within tolerance: ☒ Yes ☐ No

Range/Multiplier	Reference Setting	Integrated 1-Min. Count "As Found"		Integrated 1-Min. Count "Reading"	
		$\alpha$	$\beta$	$\alpha$	$\beta$
x 1000	400 Kcpm	399288	399317	399288	399317
x 100	40 Kcpm	39934	39935	39934	39935
x 10	4 Kcpm	3994	3993	3994	3993
x 1	400 cpm	400	399	400	399

  

High Voltage	Pot. Setting	Alpha Source		Beta Source		Background	
		$\alpha$	$\beta$	$\alpha$	$\beta$	$\alpha$	$\beta$

DATA. - SPECT.

SEE ATTACHED

Comments: Comments: HV Plateau Scaler Count Time = 1-min. Recommended HV = 550

### Reference Instruments and/or Sources:

Ludlum pulser serial number: ☐ 97743 ☒ 201932

Fluke multimeter serial number ☐ 87490128

☒ Alpha Source: Th-230 sn. 4098-03 @ 12,800dpm/6.520cpm(1/4/12)

☐ Gamma Source Cs-137 @ 5.2 uCi (1/4/12) sn: 4097-03

☒ Beta Source: Tl-204 sn. 4099-03 @ 17,700dpm/11,100cpm(1/4/12)

☐ Other Source:

Calibrated By: *[Signature]*

Calibration Date: 7/22/19

Calibration Due: 7/22/20

Reviewed By: *[Signature]*

Date: 7/22/19

Ludlum Measurements, Inc.  
Model 3030 Plateau Data

7/22/2019  
8:05:13 AM

Header 1: HMC  
Header 2: Grants, NM  
Header 3: Ludlum 3030  
Header 4: Serial#210768  
Header 5:  
Header 6:

Calibration Due Date: 7/22/2020

Model 3030 Date: 7/22/2019  
Model 3030 Time: 5:57:31 AM

User PC Time: 30.0

Alpha Isotope: Th-230  
Alpha Source Size (dpm): 12800  
Alpha Source Size (Bq): 213.33  
Alpha Source Size (µCi): 0.005765766

Beta Isotope: Tc-99  
Beta Source Size (dpm): 17700  
Beta Source Size (Bq): 295.0  
Beta Source Size (µCi): 0.007972973

Starting High Voltage: 400  
Starting High Voltage: 700  
High Voltage Increment: 50

Plateau Count Mode: SCALER  
Source Count Time (min): 1.0  
Background Count Time (min): 1.0

HV	Source (Beta)	ALPHA			CrossTalk	Source (Alpha)	BETA			Crosstalk
		Background	Eff				Background	Eff		
400	2171 (725)	1	17.0%	33.4%		6 (1)	1	0.0%		0.0%
450	4078 (247)	0	31.9%	6.0%		991 (5)	3	5.6%		0.5%
500	4599 (272)	0	35.9%	5.3%		2570 (3)	29	14.4%		0.1%
550	4701 (511)	0	36.7%	9.9%		3863 (6)	47	21.6%		0.2%
600	4524 (607)	0	35.3%	12.4%		4873 (6)	48	27.3%		0.1%
650	4658 (740)	2	36.4%	14.7%		4903 (26)	55	27.4%		0.5%
700	4792 (1532)	9	37.4%	30.5%		5071 (669)	74	28.2%		13.2%

DSA  
7/22/19

Cf  
7/22/19