

## MEMORANDUM FOR RECORD

SUBJECT: Radiation Control Area (RCA) Addition at Joint Base Lewis-McChord (JBLM)

1. On 12 May 2022, the JBLM garrison Radiation Safety Officer (RSO) reported to the License RSO that an explosive ordnance disposal contractor doing range maintenance found remnants of a M101 depleted uranium (DU) spotting round outside an RCA. The License RSO reported this to the Nuclear Regulatory Commission (NRC) Project Officer the same day and extended the boundaries of the RCA as described below pending an amendment to our NRC source material license (#SUC-1593). We applied the same access controls to this extended portion of the RCA that the Radiation Safety Plan (RSP) requires for all RCAs (RSP, sections 3.2 and 15.1). During the next few months, further maintenance activity found three more rounds, one of which consisted of the tailfin only. See Figure 1 through Figure 4.
2. Section 3.2 of the RSP says, "The License RSO will establish a new or extended RCA to address this discovery" of DU outside an existing RCA. The RSP and License conditions do not prescribe how to do this. So, doing it is at the discretion of the License Radiation Safety Officer (RSO), in coordination with JBLM garrison staff and subject to NRC approval.
3. The License RSO applied the following considerations in extending the existing RCA to encompass the locations of the newly discovered M101 DU spotting rounds.
  - a. The rounds were close enough to an existing RCA to allow an addition to the existing RCA rather than establishing a new RCA.
  - b. The extension (Figure 5) is a rectangle whose sides are perpendicular to the side of the existing RCA where they touch. The three non-touching sides of the extension are set so that no round is closer to a side than about fifty meters. The License RSO chose this distance as a compromise between the competing considerations that the rounds should not be close to the RCA edges and that the added area should minimize future decommissioning costs.
  - c. JBLM garrison staff have posted the extended RCA with CAUTION: RADIOACTIVE MATERIAL signs in accordance with section 14.1 of the RSP.
  - d. If we find more rounds outside an RCA, then we can add to the extension or create a new extension. The Archive Search Report for Fort Lewis (now part of JBLM) said that the number of rounds fired at Fort Lewis and Yakima Training Center was 1,756. We believe that the four rounds outside the original RCA are anomalies and are not indicative of a whole new range.

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4. JBLM garrison staff prepared a new map (Figure 6) that shows all the RCAs at JBLM, including the new extended RCA. The new map shows the coordinates of the corners of the RCAs and replaces the old map in the revised document, "M101 Impact Area." We are including this revised document in our license amendment #8 application along with, among other things, this memorandum for record.

5. JBLM garrison staff and the License RSO retrieved all four rounds during the license annual audit on 22 July 2023 (see Figure 7 and Figure 8). The JBLM garrison RSO is maintaining an inventory of the four rounds in accordance with section 13 of the RSP. We have notified the Chief, Army Low-Level Radioactive Waste Disposal Division, US Army Joint Munitions Command (JMC) and are holding the rounds for JMC's eventual pickup and disposition IAW section 18 of the RSP and with NRC regulations. We will document that pickup and disposition when it occurs.

ROBERT N. CHERRY  
Health Physicist  
License Radiation Safety Officer

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Figure 1. Discovery of the first M101 DU spotting round (tailfin only).

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Figure 2. Discovery of the second M101 DU spotting round.

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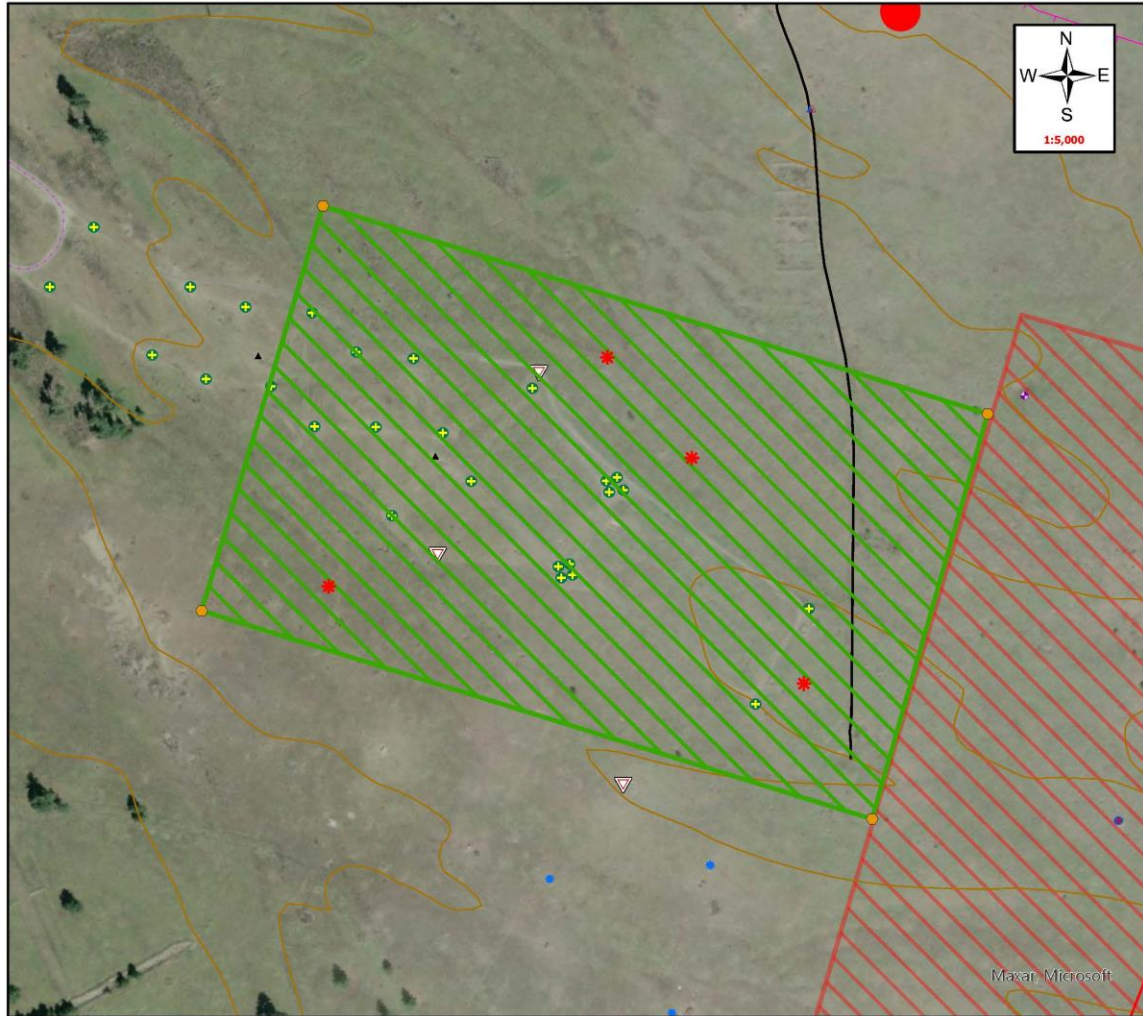
Figure 3. Discovery of the third M101 DU spotting round.

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Figure 4. Discovery of the fourth M101 DU spotting round.

# Range 53 RCA Extended Box



Label	
	DU location
	Corner RCA extended
	Personnel target pit
	Firing limit marker
	RCA, extended

Type	MGRS_grid
Corner RCA extended NW	10TET2614908460
Corner RCA extended SW	10TET2604408110
Corner RCA extended SE	10TET2662407930
Corner RCA extended NE	10TET2672408280
1st DU location	10TET2656508047
2nd DU location	10TET2615408131
3rd DU location	10TET2639508329
4th DU location	10TET2646808242



Figure 5. Locations of the four discovered M101 DU spotting rounds and the boundaries of the RCA addition.

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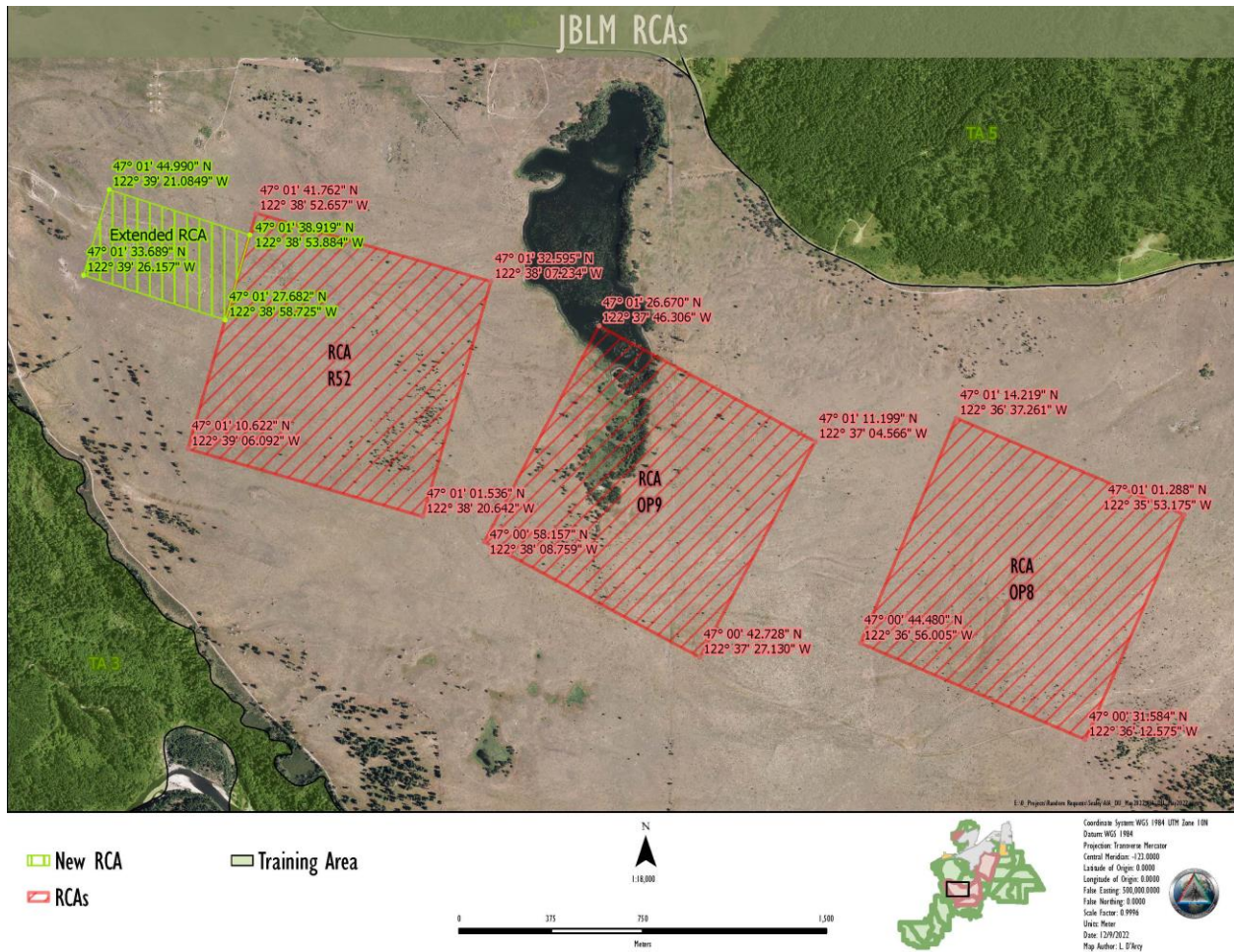


Figure 6. All RCAs at JBLM with extended RCA at the right.



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Figure 7. License RSO scanning M101 DU spotting round in situ.

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Figure 8. License RSO scanning M101 DU spotting round in situ.