



DEPARTMENT OF THE ARMY  
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND  
ARMAMENT RESEARCH, DEVELOPMENT AND ENGINEERING CENTER  
PICATINNY ARSENAL, NEW JERSEY 07806-5000

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5 Jun 2018

RDAR-CRM

MEMORANDUM FOR NUCLEAR REGULATORY COMMISSION (NRC) REGION I

SUBJECT: Response to Request for Additional Information for the Dog Pound Final Status Survey Plan

1. ARDEC previously submitted a survey and sampling plan for the "Dog Pound" former outdoor storage area at Picatinny Arsenal. A request to address the addition of the Manganese-54 Minimum Detectable Concentration to Table 14 on page 69 was received the last week of May. A revision of the page is attached that addresses the request.
2. The Point of Contact for this memorandum is Margaret Kouretas at 973.724.6518 or [malgorzata.e.kouretas.civ@mail.mil](mailto:malgorzata.e.kouretas.civ@mail.mil).

MALGORZATA E. KOURETAS  
Radiation Safety Officer, ARDEC

Encl: Revised page 69 of the Dog Pound Final Status Survey Plan



Table 14 Sample Analysis Summary Table

Radionuclide	Radioactive Half Life	Analysis Method	MDC in pCi/g
Cobalt (Co) 60 <sup>1</sup>	5.27 y	Gamma Spectroscopy	~ 0.2
Manganese (Mn)54 <sup>1</sup>	312 days	Gamma Spectroscopy	~ 0.2
Promethium (Pm)147 <sup>1</sup>	2.6 y	Liquid Scintillation	~ 1.0
Barium (Ba) 133 <sup>1</sup>	10.5 y	Gamma Spectroscopy	~ 0.2
Uranium (U) 238 <sup>1</sup>	4.5 E9 y	Isotopic Uranium (Alpha Spec)	~ 0.3
Uranium (U) 235 <sup>1</sup>	7.04 E8 y	Isotopic Uranium (Alpha Spec)	~ 0.3
Radium (Ra) 226	1600 y	Gamma Spectroscopy	~ 0.5
Cesium (Cs) 137 <sup>1</sup>	30.1 y	Gamma Spectroscopy	~ 0.2
Thorium (Th) 232	1.4 E10 y	Isotopic Thorium (Alpha Spec)	~ 0.3
Carbon (C) 14 <sup>1</sup>	5730 y	Liquid Scintillation	~ 1.0
Strontium (Sr) 90 <sup>1</sup>	29.1 y	Gas Flow Proportional	~ 3.0
Antimony (Sb) 125 <sup>1</sup>	2.76 y	Gamma Spectroscopy	~ 0.2
Krypton (Kr) 85 <sup>1</sup>	10.7 y	Gamma Spectroscopy	~ 0.2

<sup>1</sup> Even though these are not considered radionuclides of concern based upon past sampling events, they will be analyzed for and the results reviewed for potential impact to the dose in the area.

Test America Inc's information is as follows:

Test America Laboratories, Inc.

13715 Rider Trail North

Earth City, MO 63045

DOD ELAP Cert # ADE-1430

State of New Jersey Laboratory Certification ID# MO002

## 7.9.8 Statistical Considerations

### 7.9.8.1 Demonstration of Compliance

When determining compliance with remediation goals, the entire site consisting of the survey units is examined. One measurement does not determine compliance. Rather, the site data are examined statistically. The three compliance tests are summarized in Table 13. They include the following:

- Compare the largest site measurement to the smallest background measurement.
- Compare the average site measurement to the average background measurement.