

# FUSRAP Document Management System

Year ID  
00 4625

Further Info?

Operating Unit Site Area MARKS Number  
Iowa IAAAP FN:1110-1-8100g

Primary Document Type Secondary Document Type  
Site Management Correspondence

Subject or Title  
Responses to Comments on Draft Summary of the Radiological Survey Findings for the Iowa Army Ammunition Plant Explosive Disposal Area, Inert Disposal Area, Demolition Area/Deactivation Furnace, and Line 1 Former Waste Water Impoundment Area.

Author/Originator Company Date  
Cotner, Sharon CEMVS 5/25/2005

Recipient (s) Company (-ies) Version  
Marquess, Scott, Don Fla US EPA, IDPH, IAAP Final

Original's Location Document Format Confidential File?  
Central Files paper

Comments

SAIC number

Bechtel ID

### Include in which AR(s)?

- North County
- Madison
- Downtown
- Iowa

ETL

Filed in Volume





DEPARTMENT OF THE ARMY  
ST. LOUIS DISTRICT, CORPS OF ENGINEERS  
8945 LATTY AVENUE  
BERKELEY, MISSOURI 63134

REPLY TO  
ATTENTION OF:

May 25, 2005

Formerly Utilized Sites Remedial Action Program

Subject: Summary of the Radiological Survey Findings for the Iowa Army Ammunition Plant Explosive Disposal Area, Inert Disposal Area, Demolition Area / Deactivation Furnace, and Line 1 Former Waste Water Impoundment Area, Draft Final, dated May 24, 2005.

Mr. Scott Marquess  
U.S. Environmental Protection Agency  
Region VII  
901 North 5<sup>th</sup> Street  
Kansas City, Kansas 66101

Dear Mr. Marquess:

Enclosed you will find three copies of the Summary of the Radiological Survey Findings for the Iowa Army Ammunition Plant Explosive Disposal Area, Inert Disposal Area, Demolition Area / Deactivation Furnace, and Line 1 Former Waste Water Impoundment Area, Draft Final. In addition, you will find a copy of the response to comments that supports this version of the document. The document will be considered Final if no comments are received by July 6, 2005.

If you have any questions regarding this matter, please contact Mr. Brian Harcek at (314) 260-3933.

Sincerely,

  
for Sharon Cotner  
FUSRAP Program Manager

Enclosure



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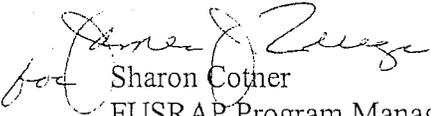
Mr. Don Flater  
Iowa Department of Public Health  
401 SW 7<sup>th</sup> Street, Suite D  
Des Moines, Iowa 50309-0075

Dear Mr. Flater:

Enclosed you will find two copies of the Summary of the Radiological Survey Findings for the Iowa Army Ammunition Plant Explosive Disposal Area, Inert Disposal Area, Demolition Area / Deactivation Furnace, and Line 1 Former Waste Water Impoundment Area, Draft Final. In addition, you will find a copy of the response to comments that supports this version of the document. The document will be considered Final if no comments are received by July 6, 2005.

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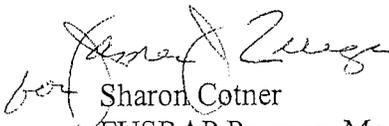
Mr. Steve Bellrichard  
Iowa Army Ammunition Plant  
17571 State Highway 79  
Middletown, Iowa 52638-5000

Dear Mr. Bellrichard:

Enclosed you will find copy of the Summary of the Radiological Survey Findings for the Iowa Army Ammunition Plant Explosive Disposal Area, Inert Disposal Area, Demolition Area / Deactivation Furnace, and Line 1 Former Waste Water Impoundment Area, Draft Final for your review. In addition, you will find a copy of the response to comments that supports this version of the document. The document will be considered Final if no comments are received by July 6, 2005.

If you have any questions regarding this matter, please contact Mr. Brian Harcek at (314) 260-3933.

Sincerely,

  
Sharon Cotner  
FUSRAP Program Manager

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**Comments on the Rev B Summary of the Radiological Survey Findings for the Iowa Army Ammunition Plant  
Explosive Disposal Area, Inert Disposal Area, Demolition Area / Deactivation Furnace,  
and Line 1 Former Waste Water Impoundment Area dated February 2005**

No.	Sec./ para./ line	Comment	Response	Initials
1	General Comment	The Survey Report should be revised to eliminate any confusion regarding the location of the radiological anomalies. For example (but not limited to), Section 5.2.1 discusses initial anomalies detected near the main creek at the EDA. However, the locations of these anomalies cannot be easily identified on Figure 5-1. It is recommended that anomalies be labeled on the figures and this label be used to reference/discuss anomalies in the text. Revise the Survey Report accordingly.	All anomalies discussed in the text have been identified on a gamma walkover survey figures and clearly labeled for clarification.  Note: Figure 5-1 has been further updated to include additional follow-up data obtained at the locations of initial anomalies #2 and #3.	
2	General Comment	It would be helpful if the figures of the Survey Report included site features and characteristics. For example, the figures should be revised to depict excavation areas, buildings/bunkers (labeled with building numbers), and drainage ways/creeks (ground elevation contours) in different colors so they can be easily identified. Since the surveys were to focus on drainage ways as well as lowland areas (or other site-specific information), it is important to depict these features graphically. Revise the Survey Report figures to provide site features and characteristics as described above.	The purpose of the survey was to provide supplemental radiological data to facilitate a determination of impacted/un-impacted for the subject areas. The scope of this report is to report the results of the field investigation, recommend whether or not further action is needed, but not determine what further action is needed. As such this report was not meant to be a stand alone document. The requested information is available in previously released documents about the site.	
3	General Comment	It appears that additional biased samples should have been collected at the EDA, IDA, D/ADF, and LIFWWI. For example, Figures 5-1 through 5-4 depict areas of elevated radiation levels based on the gamma walkover survey. These areas are depicted as either red or black dots which correspond to radiation ranges of 16,001-18,000 counts per minute (cpm) or 18,001-1,000,000 cpm, respectively. In the case of the D/ADF, red or black dots correspond to radiation ranges of 17,501-19,500 cpm or 19,501-1,000,000 cpm, respectively.  From a review of the text and figures, it appears that not all of the observed elevated levels have been discussed. While it is understood that initial radiation anomalies could not be reproduced in some areas (i.e., please see Specific Comment 13), the Survey Report does not appear to rule	The plan stated that elevated areas would be investigated. All elevated areas identified during the walkover have been further investigated following the process described in Section 3.1. Figures have been updated to clarify the location of anomalies that are further described in the text.  The plan stated that elevated areas would be investigated. All confirmed anomalies identified during the walkover have been further investigated following the process described in Section 3.1.	

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	<p>out biased sampling at each area where elevated radiation levels were observed. Without more detailed information/rationale, it appears that biased sampling in areas of anomalies should have been collected.</p> <p>Additionally, the Survey Report should be revised to include a table that lists all location points where elevated radiation levels were noted during the gamma walkover survey and provide the rationale for the sampling (or the lack of sampling). Please revise the Survey Report accordingly.</p>	<p>Anomalies are discussed in Sections 5.2.1, 5.3.1, 5.4.1, and 5.5.1 and are also shown on Figures 5-1, 5-2, 5-3, and 5-4. The process and rationale for evaluating anomalies is described in Section 3.1.</p>
<p>1</p> <p>Section 2.0, Site Description and History, Page 3.</p>	<p>Section 2.0 does not adequately discuss site activities associated with structures (i.e., buildings and concrete areas). Revise Section 2.0 to provide additional information for structures at the EDA, IDA, DA/DF, and LIPWWI, particularly in terms of historical use and materials handled.</p>	<p>The specific uses of specific buildings were considered when the plan was developed such that each building was treated equally. There is no historical evidence found that indicated to treat one building in greater detail than any other. The lack of identified radiological contamination in either the soil or the surveyed buildings supports this assumption. Section 2.0 was meant to give a general overview of the history of the site. Site specific historical information is presented in the <i>Iowa Army Ammunition Plant Radiological Survey Plan</i>, August, 2004, as well as in Sections 2.1 through 2.4 of this report. Additional historical information can also be found in previously released documents from the site.</p>
<p>2</p> <p>Section 2.1.1, Explosive Disposal Area Description, Page 4.</p>	<p>Section 2.1.1 indicates that the immediate area of the contaminated waste processor (CWP) was not screened for radiological contamination. According to Section 2.1.1, this area has "undergone several remediation and construction events which would limit or negate the effectiveness of a surface-based survey." Please describe the nature of the remediation and construction events near the CWP. Also, the CWP was considered inaccessible due to safety considerations associated with heavy construction/demolition activities that were being conducted at the time of the survey. However, this information does not sufficiently justify exclusion of the area from the radiation survey, and also does not indicate the impact that this data gap would have on site results.</p>	<p>Section 5.1.1 of the <i>Iowa Army Ammunition Plant Radiological Survey Plan</i>, August, 2004 states "The area within this boundary will be subjected to the planned radiological screening with the exception of the active waste collection/minimization station located in the northwest portion of the EDA." This is because the CWP was constructed after remediation of the area was conducted. However, gamma walkover survey and soil sampling was conducted in the vicinity of the facility. This area received walkover and sampling coverage commensurate with that of other areas of the EDA, which is adequate and in line with the survey plan.</p> <p>Regarding the nature of the remediation and construction</p>

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	<p>Further, the Survey Report does not adequately identify the affected area at/around locations excluded from examination based on these arguments. For example, since the Plan indicates that survey coverage would include areas around soil excavations, Figure 5-1 should be revised to depict the excavated areas. It is difficult to tell from the text, and Figure 5-1, whether the gamma walkover survey should have encompassed areas closer to the CWP despite the accessibility issues.</p> <p>Revise Figure 5-1 to depict excavated areas and refer to General Comment 2. Additionally, revise the Survey Report to discuss whether the lack of screening in the immediate area of the CWP may present a data gap, and how this data gap will be addressed. Finally, the Survey Report should be revised to discuss activities associated with the CWP as this information is not provided and would help determine the need for further radiological investigation.</p>	<p>activities please see the response to general comment #2.</p> <p>See above paragraphs and response to General Comment #2.</p>	
<p>3</p>	<p>Section 2.1.2, Explosive Disposal Area History, Pages 5 -6.</p> <p>In paragraph 1, please describe the radiological wastes that have been managed at the EDA.</p>	<p>Text has been changed to clarify radiological waste questions. Text now reads "Historical records confirm the presence of DU in at least a portion of the waste burned or disposed in the EDA by AEC. Historical records indicate that a measurable amount of radiation was noted when performing a radiological screening of the residual ash from the various burn areas during the disposal operations. The active areas within the EDA have been remediated for chemical contaminants with confirmation chemical sampling performed in the excavation. No radiological screening or survey result summaries reviewed from the remediation phase of this area reported elevated levels of radioactive material. The monitoring wells located adjacent and down gradient of the EDA have shown no increased levels of uranium in the groundwater.</p> <p>The EDA was referred to as the Burning Grounds in early histories and in 1941 was located on a portion of the East Burn Pads. The Burning Ground was expanded sometime in the late 1940s to include the area currently known as the West Burn Pad Area. The Burning Ground was designed for the disposal of waste that was contaminated by explosive material generated at the plant. The material was</p>	

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	<p>In paragraph 5, please clarify the nature of the 1980 "cleanup operation" at the North Burn Pads Landfill. The entire contents of the landfill were obviously not transported to the IDA.</p> <p>The last paragraph of Section 2.1.2 states that "the active areas within the EDA have been remediated for chemical contaminants with confirmation chemical sampling performed on the floor of the excavation." It is unclear whether confirmation sampling was also conducted along the perimeter of the excavations (or from excavation walls). Revise the Survey Report to provide this information.</p>	<p>initially placed in small shallow pits and ignited from a remote shelter by a blasting machine. The standard practice at the time was to segregate any ash residue containing excessive alpha contamination after burning, then bag the residue, and ship it to the Pantex, Texas site for disposal. Ash not containing excessive alpha contamination was ultimately disposed of in three landfill cells at the IDA (USACE, 2001a)."</p> <p>Paragraph 5 has been clarified as follows: "Cleanup operations were performed in 1980 and 1998 that resulted in 12,000 cubic yards of North Burn Pad Landfill materials being removed, transported, and placed at the IDA (USACE, 2001a)"</p> <p>This paragraph has been moved to the front of Section 2.1.2 as indicated in the above response. The confirmatory chemical sampling was done in the excavation as stated. The scope of this report is to gather as much radiological information as possible to assist in determining future actions at each site. Section 2 was meant to give a general historical overview. See response to general comment #2.</p>	
4	<p>Section 2.2.1, Inert Disposal Area, Page 5.</p> <p>The description here and in Section 2.2.2 is somewhat confusing, as it does not clearly distinguish between the past and current uses at the IDA. For example, in paragraph 1, many of the IDA features described (burning ground, sludge drying bed, etc...) no longer exist at the IDA, and were consolidated under the IDA cap as part of a CERCLA response action. The text should be revised appropriately.</p> <p>Please show the landfill area that has been capped by the Army on Figure 5-2.</p>	<p>Text has been changed to more accurately reflect past uses of the IDA. Text changed to "The IDA covers approximately 20 acres and included a trench-and-fill sanitary landfill, a burning ground, a metal salvage operation, a sludge lagoon, a waste-water sludge drying bed, and an earthen-bermed holding area formerly used to store sludge."</p> <p>The figure has not been updated, but text has been added to the paragraph one of Section 2.2.1 to reflect that Trenches 1-5 have been capped. Text now reads "Trenches 1 through 5 were</p>	

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	<p>In paragraph 2, Trench 6 is described as "... appear(s) to be surrounded by geosynthetic lined berms...". Suggest that you consult with the Army for a more accurate understanding of the construction of Trench 6. We believe that you may be referring to the anchor trenches for the geosynthetic liner in Trench 6. Please insure that the site descriptions are accurate.</p> <p>In paragraph 4, please clarify that the Cap Extension Area consists of generally uncovered soil/waste, however, there are some areas where a temporary plastic cover is in place (rather than a geosynthetic liner).</p> <p>Section 2.2.1 does not discuss the potential for depleted uranium (DU) contamination. It should be noted that Section 2.4.2 indicates that depleted uranium (DU) fines, if present in the initial effluent from L1FWWI, would have settled as heavy particulates and been transported to the IDA for disposal. Revise the Survey Report to clarify the disposition of these fines and to discuss the possibility of this type of contamination at the IDA.</p>	<p>capped by the Army IRP." A description of Trench 6 is in Paragraph 2 of Section 2.2.1, Trench 7 is described in Paragraph 3 and the cap extension is described in paragraph 4.</p> <p>This paragraph is describing what was visually observed in the field while surveying. Text now reads "It was observed that the trench was surrounded by geosynthetic-lined berms to contain the deposited material."</p> <p>Text now reads, "The top of the cap extension area is fairly flat and exhibits a variety of visible cover materials including bare soil, thick vegetation, and a plastic cover."</p> <p>This discussion occurs in Section 2.2.2 which deals with the IDA history. Text revised to read "DU contamination was potentially deposited at the IDA when soils from the West Burn Pads Area, East Burn Pads, North Burn Pads, North Burn Pads Landfill, L1FWWI and the Fire Training Pit were placed in Trench 6, Trench 7 and the cap extension area."</p>
<p>5</p>	<p>Section 2.4.1, Line 1 Former Wastewater Impoundment, page 7.</p> <p>Please clarify that the L1FWWI no longer exists as a "wastewater impoundment", and was remediated in a CERCLA response action.</p>	<p>Text revised to - "The L1FWWI is an area of approximately 7.5 acres that lies adjacent to the extreme southwest corner of the Line 1 area and includes the impoundment from the north dam to the south dam. This area is no longer used as a wastewater impoundment and was remediated in a Comprehensive Environmental Response Compensation and Liability Act (CERCLA) response action in 1997."</p>
<p>6</p>	<p>Section 2.4.2, L1FWWI History, page 8.</p> <p>Please describe the possible sources of DU and tritium releases at Line 1. Was there machining of DU components at Line 1? How would DU have been released to the environment - via building washdowns?</p>	<p>See response to General comment #2.</p>

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7	<p>Table 3.1, Data Quality Objectives, Page 9.</p>	<p>According to Table 3.1, six U-235 sample analyses exceeded the target minimum detectable activities (MDA) of 0.5 pico-curies per gram (pCi/g). However, the Survey Report does not adequately discuss how these exceedances affect the usability of the results. Revise the Survey Report to discuss the impact of these exceedances on the survey conclusions.</p>	<p>The appropriate "DOO Attainment" cell of Table 3.1 has been revised and now reads as follows:</p> <p>"The target MDA for gamma spectroscopy was met for K-40 with 0.6702 and U-238 with 1.227. Six U-235 sample analyses exceeded the target MDA of 0.5 pCi/g, the highest having a value of 1.408 pCi/g. These exceedances have no significant impact on the overall data usability for the following reasons:</p> <ul style="list-style-type: none"> <li>• Samples were also analyzed by alpha spectroscopy (a generally more sensitive analytical method). Target MDAs for samples analyzed by alpha spectroscopy were met for each sample as discussed below.</li> <li>• Data generated using alpha spectroscopy is used in the data tables in Section 5.</li> <li>• Analysis of samples by gamma spectroscopy was primarily used to provide data for the non-DU radionuclides.</li> <li>• The associated DU radionuclides (i.e., U-234 and U-238) confirm that all samples yield results well below the 56 pCi/g screening level."</li> </ul>
8	<p>Section 3.2, Soil Sampling, Page 10.</p>	<p>Section 3.2 does not provide adequate discussion describing soil sample collection procedures. Revise Section 3.2 to address the following issues.</p> <ul style="list-style-type: none"> <li>• A minimum of 600 g of soil should have been collected for each sample. However, the amount of soil collected is not provided.</li> <li>• While surface soil sampling procedures are briefly discussed, procedures for collecting subsurface soil samples are not presented. If the information is provided elsewhere, the Survey Report should provide a reference to this document.</li> <li>• Equipment decontamination procedures are not provided.</li> <li>• Rationale for sampling to a maximum depth of two feet should be included, or</li> </ul>	<p>A citation was added to the first paragraph of Section 3.2 referencing the Iowa Army Ammunition Plant Radiological Survey Plan, which addresses the first three bulleted items. The text now reads "Soil sampling associated with this survey was conducted at IAAAP in August 2004 in accordance with the radiological screening plan (USACE, 2004a)."</p> <p>The last bulleted item is described in the plan in section 5.3.4. Text changed to cite the plan. Text now reads "In accordance</p>

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		<p style="text-align: center;">the location for this reasoning should be referenced.</p>	<p>with the radiological survey plan (USACE, 2004a), this random depth approach was designed to increase the probability of detecting radiological contamination that may have been deposited in the trenches."</p>	
9	<p>Section 3.3, Analysis of Soil Samples, Page 11.</p>	<p>Section 3.2 should reference the site figures which depict random sample locations.</p> <p>Section 3.3 does not list Pa-231 as a standard Formerly Utilized Sites Remedial Action Program (FUSRAP) contaminant for which sample results were reported. From a review of Attachment B of the Survey Report, sample results were reported for Pa-231. For clarification, revise Section 3.3 to indicate that results were also reported for Pa-231, and reference the discussion of these results in Section 5.6, as appropriate</p>	<p>Additional information pertaining to sampling locations is discussed in Section 5.2 thru 5.5 of this report.</p> <p>Pa-231 was been added to the text. Text now reads " Sample results were reported for the following contaminants (actinium(Ac)-227, americium (Am)-241, cesium(Cs)-137, potassium(K)-40, protactinium(Pa)-231, radium(Ra)-226, Ra-228, thorium(Th)-228, Th-230, Th-232, U-235, U-238) and other peaks if identified during analysis."</p> <p>Pa-231 was already included in Section 5.6 of this report.</p>	
10	<p>Section 3.4, Building Surveys, Page 11.</p>	<p>According to Section 3.4, building and structure surveys were limited to those structures that could be accessed safely. However, it should be noted that although structures could not be accessed due to safety concerns, there may still be a need to survey them in the future. The Survey Report should discuss all structures not surveyed and clarify whether these structures should be surveyed for radiological contamination in the future if/when safety issues have been eliminated. Revise the Survey Report accordingly.</p>	<p>The <i>Iowa Army Ammunition Plant Radiological Survey Plan</i>, August, 2004 identified all buildings/structures on this site as having a very low probability of containing residual radioactivity associated with MED/AEC activities with no single building having any greater potential. The lack of identified radiological contamination in either the soil or the surveyed buildings confirms the original assumption of very low to no probability for the presence of residual radioactivity and no further action is required. Where applicable (i.e., the DA/DF area) the specific structures not surveyed are discussed and it is stated that no further survey is required on the structures within the area. In addition see response to specific comment #1.</p>	
11	<p>Section 4.0, Sample and Waste Disposition, Page 13.</p>	<p>In paragraph 2, please clarify where /how the IDW is currently being managed, and when / where it will be disposed.</p>	<p>USACE direction needed.</p>	
12	<p>Section 5.1.</p>	<p>The Survey Report should clarify the use of the term</p>	<p>The purpose of the cited section (Section 5.1) is to present</p>	

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Reference Area, Page 14.	"background" as it is unclear whether it refers to locations where radiation is not suspected (i.e., reference areas) or whether this is a general term used to frame the range of radiation levels detected in each area (i.e., East Burn Pads versus West Burn Pads, etc.). Revise Section 5.1 to clarify the locations considered as background and to discuss whether there are also site-specific reference gamma scan values at these locations.	uranium data from <u>soil samples</u> obtained at the reference area located northeast of Gate 4. The results of these soil samples were used in this survey, as well as in a previous survey (at Firing Sites 6 and 12) as comparison values (i.e., background values) for soil samples taken from survey areas. Figure 5-0. was added to show the location of the reference area.  As stated in The Iowa Army Ammunition Plant Radiological Survey Plan August, 2004, the investigation level for gamma walkover surveys will be dependant upon the relevant background <u>in each specific area.</u>
13 Section 5.2.1, Gamma Walkover Survey, Page 15.	While the first paragraph on page 15 indicates that two initial anomalies detected near the main creek could not be reproduced following further investigation, the potential causes for the initial anomaly detections have not been evaluated. Revise the Survey Report to further discuss these anomalies and to provide potential causes for their initial detection.	Section 3.1, paragraph 3, details various reasons that can cause anomalies. Also see response to general comments 1 and 3.
14 Section 5.2.2, Soil Sampling, Page 17.	Please clarify or reference the significance of 56 pCi/g DU.	The last five paragraphs of Section 3.2 have been revised. The end of Section 3.2 now reads " <i>NUREG 1507, Minimum Detectable Concentrations with Typical Radiation Survey Instruments for Various Contaminants and Field Conditions (NRC, 1998) lists the MDC for scanning with a 2" x 2" NaI detector for soil contaminated with DU at 56 pCi/g. It has been determined that this level of contamination will be detected at least 95% of the time by the average survey technician walking at a rate of 0.5 meters per second (m/sec). This scan MDC value is based on the assumption that instrument background is at or near 10,000 cpm. Site-specific background for instruments used during the walkover survey should be within ± 20% of this value to validate the use of the stated scan MDC. If instrument backgrounds fall outside this value, a site-specific scan MDC should be calculated.</i>  <i>Conservative risk and dose assessment calculations were performed using the residual radiation code (RESRAD) 6.0 to model a residential scenario with DU soil contamination at</i>

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		<p>56 pCi/g. The resulting risk and dose to the maximum exposed individual from this evaluation is 5 E-5 and 8 millirem per year (mrem/yr), respectively, as described in Appendix A, IAAAP Survey Screening Level DCGI Risk/Dose Assessment.</p> <p>The use of 56 pCi/g as a screening level for DU is applicable to IAAAP since it is expected that the soil at these sites is potentially contaminated with micron-size DU particles. In this situation, it is expected that the activity per gram of soil is much less than the known specific activity of solid DU (i.e., 3.637 E-7 Ci/g). For solid DU (i.e., visible DU fragments), the specific activity is known and the appropriate parameter to define the minimum detectable quantity is the size of the fragment, not its activity.</p> <p>The presence of DU in excess of 56 pCi/g in any sample from a specific area will require additional investigation for that area or the affected parts of that area. If no samples from a specific area contain DU in excess of 56 pCi/g, no further action will be required in that area (USACE, 2004a). Soil sample results were compared to the established DU screening level of 56 pCi/g. Further discussion of the soil sampling findings and results is presented in Section 5."</p>
<p>15</p> <p>Section 5.3.1, Gamma Walkover Survey, Page 18.</p>	<p>The text indicates that "liner material was exposed at the surface across much of the trench area...". The nature of the exposed liner material should be clarified. This matter should be coordinated with the IAAAP.</p>	<p>See response to General Comment #2.</p> <p>The intent of this paragraph was to provide the reader with a general description of the visible materials encountered by the surveyors.</p>
<p>16</p> <p>Figure 5-2, IDA Gamma Walkover Survey Data and Soil Sample Locations, Page 22.</p>	<p>It appears that biased soil sample, IAAP84249, was collected from the edge of the radiation hotspot at Trench 7. Consequently, this sample may not be representative of the hotspot. Please clarify why this hot spot area was not specifically sampled.</p>	<p>The elevated area depicted on the map, identified during the gamma walkover, was re-evaluated the following day. Text has been changed to read "Additional gamma levels were obtained using a NaI 2X2 to identify the area of highest sustained counts or gamma radiation. The area of highest gamma levels at the time of sampling was the area sampled and is considered representative of the larger area of elevated counts."</p>
<p>17</p> <p>Section 5.4.3, Building</p>	<p>Figures indicating the sample locations associated with the various buildings and structures should be included. Plans</p>	<p>Please refer to Appendix C, which contains figures and sample information pertaining to the building and structure surveys.</p>

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and Line 1 Former Waste Water Impoundment Area dated February 2005**

	Surveys, Page 24.	to address the high alpha detections should be discussed.	
18	Figure 5-4.	It appears that the walkover scans between the impoundment and Line 1 were conducted in a direction parallel to possible drainage from Line 1 to the former impoundment, rather than perpendicular to the drainage route. Thus, it is unclear whether the possible drainages were evaluated in the walkover. Please clarify.	Regarding plans to address the high alpha detections please see response to general comment #2.  It is correct that the scans were conducted in a direction parallel to possible drainage from Line 1. However, as presented in Sections 4.3.2.1 and 5.2.2 of the Iowa Army Ammunition Plant Radiological Survey Plan, August 2004 the survey crew biased their walkover in this area to any observed ditches or apparent drainage paths from Line 1. In addition, Section 5.5.1 of this report states: "The focus of the surveys was along the circumference of the impoundment basin, an island/peninsula surrounded by water, the drainage ways exiting from the west side of Line 1 leading to the impoundment, and the areas north of the north dam and south of the south dam."
19	Section 6.0, Conclusions, Page 31.	The specific origin and nature of the Cs-137 metal found at the IDA has not been determined. The specific origin and nature of the material should be assessed and compared to site use information to determine whether this material may be present elsewhere. Revise the Survey Report to assess the origin and nature of this material and to evaluate whether this material may be present elsewhere.  Additionally, Section 6.0 concludes that the cause of the elevated alpha counts on the small concrete pad at the DADF is due to naturally occurring radioactive materials. Revise the Survey Report to adequately substantiate this conclusion taking into account site history, as well as surrogate and analogous data showing that this type of concrete does in fact show elevated levels of natural radioactive material (i.e., U-238).	See response to General Comment #2.  See response to General Comment #2.
20	Table 5.2.3, EDA Building Survey Results, Page 18.	Although all sample results are below screening values as noted in Table 3.2, it should be noted that sample BG-5 nearly exceeds the screening criteria. It is recommended that the Survey Report be revised to note this detection and to discuss why additional sampling is not required.	Text revised to -".....Attachment C. It should be noted that one fixed point location in BG-5 identified counts near this screening level. Additional scanning was conducted near this point and throughout the bunker. A total of three fixed point measurements were taken. All additional surveys conducted were at or near background values, well below the screening values."