



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. ARMY GARRISON  
FORT McCLELLAN, ALABAMA 36205-5000

November 25, 2002

Environmental Office

Mr. Philip Stroud  
Alabama Department of Environmental Management  
Hazardous Waste Branch, Land Division  
1400 Coliseum Boulevard  
Montgomery, AL 36110-2059

Dear Mr. Stroud:

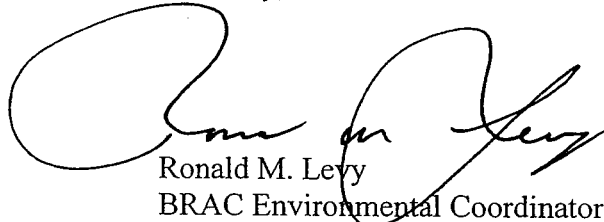
Enclosed are responses to U.S. Environmental Protection Agency (EPA) and Alabama Department of Environmental Management (ADEM) comments on the Final Site Investigation Report and Decision Document for the Artillery and Mortar Impact Areas, Parcels 138Q-X, 139Q-X, 140Q-X, 141Q-X, and 142Q-X. Request your office provide a letter of concurrence on these final documents by December 26, 2002.

These responses were reviewed during the October 2002 BCT meeting. Following discussions to clarify additional ADEM concerns, EPA and ADEM accepted the responses as written. These responses do not involve any changes to the subject documents.

Copies of this memorandum with enclosures have been provided to Mr. Doyle Brittain, Environmental Protection Agency Region 4.

If further information is required or you have questions regarding this submittal, please contact Mrs. Lisa Holstein at (256) 848-7455.

Sincerely,



Ronald M. Levy  
BRAC Environmental Coordinator

Enclosure

**RESPONSE TO COMMENTS ON THE FINAL SITE INVESTIGATION  
REPORT AND DECISION DOCUMENT FOR THE  
ARTILLERY AND MORTAR IMPACT AREAS SOUTH OF BAINS GAP  
ROAD, PARCELS 138Q-X, 139Q-X, 140Q-X, 141Q-X, AND 142Q-X**

- 1. EPA**
- 2. ADEM**

## **EPA COMMENTS**

**RESPONSE TO COMMENTS FROM THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
ON THE FINAL SITE INVESTIGATION REPORT AND DECISION DOCUMENT  
ARTILLERY AND MORTAR IMPACT AREAS SOUTH OF BAINS GAP ROAD  
PARCELS 138Q-X, 139Q-X, 140Q-X, 141Q-X, AND 142Q-X, DATED MAY 2002  
FORT McCLELLAN, CALHOUN COUNTY, ALABAMA**

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*Comments from Doyle T. Brittain, Senior Remedial Project Manager, dated May 16, 2002.*

***General Comments***

**Comment 1:**      The Environmental Protection Agency (EPA) has reviewed the subject document and as agreed upon in the April 2002 On Board Review consider the document acceptable as written. As ADEM considers appropriate, please transmit these comments to Fort McClellan (FTMC).

**Response 1:**      Comment noted.

## **ADEM COMMENTS**

**RESPONSE TO COMMENTS FROM THE  
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
ON THE FINAL SITE INVESTIGATION REPORT AND DECISION DOCUMENT  
ARTILLERY AND MORTAR IMPACT AREAS SOUTH OF BAINS GAP ROAD,  
PARCELS 138Q-X, 139Q-X, 140Q-X, 141Q-X, AND 142Q-X, DATED MAY 2002  
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*Comments from Stephen A. Cobb, Chief, Hazardous Waste Branch, Land Division, dated July 25, 2002.*

**General Comments**

**Comment 1:** The Alabama Department of Environmental Management (ADEM or the Department) has reviewed the above referenced document. Draft findings related to the subject document were discussed at the Base Realignment and Closure Team (BCT) review meeting on April 16, 2002. During the meeting, the Department provided its comments on the Bains Gap Road Parcels in an interactive manner so that the Army and its consultants could begin resolving the Department's comments. As documented in the meeting minutes issued on May 16, 2002 by IT Corporation, the Army recommended a No Further Action (NFA) designation for these parcels. EPA and ADEM stated that it was premature to make such a designation without further sampling or an appropriate risk analysis to support the Army's request for an NFA designation. Fort McClellan conducted no further additional field sampling but elected to submit a preliminary risk analysis (PRA) as part of the Site Investigation (SI) Report for Parcels 138Q-X, 139Q-X, 140Q-X, 141Q-X and 142Q-X.

**Response 1:** The following is a summary of the chronology of events relating to the Site Investigation of the Artillery and Mortar Impact Areas South of Bains Gap road, Parcels 138Q-X, 139Q-X, 140Q-X, 141Q-X, and 142Q-X (as documented in the BCT minutes):

**October 2001** – Data from the site investigation are presented to the BCT. ADEM and EPA request a preliminary risk assessment (PRA) to support the recommendation for "No Further Action".

**December 2001** – The results of the PRA are presented to the BCT. The BCT requests that the three seeps be re-sampled for lead only.

**April 2002** – The results of the seep resampling are presented to the BCT with a recommendation for No Further Action (NFA) and unrestricted land reuse. In light of the PRA and resampling results, the BCT makes a risk management

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decision that the site does not pose an unacceptable risk to human health and concurs with the NFA recommendation.

**May 2002** – IT Corporation issues the Final Site Investigation Report and Decision Document (including the agreed upon NFA recommendation).

**July 2002** – ADEM issues comments recommending the collection of additional samples and land use controls on groundwater.

*Human Health Issues*

**Comment 1:** Fort McClellan identified four metals (aluminum, antimony, iron and manganese) in soils and two metals (barium and lead) in seep water as chemicals of potential concern at the site. Seep water samples were collected from wetlands located along or near surface drainage pathways. Seep samples were analyzed for full-suite analysis in May 2001 and resampled in January 2002 for lead analysis only. Lead was initially identified as a chemical of concern in seep water samples. In the resampling event, lead concentrations were reportedly detected at levels below the established SSSL in all but one surface water sample and two seep water samples, one of which was detected at levels exceeding the established UBR. In all but one surface and one subsurface soil sample, elevated levels of iron and aluminum exceeded SSSLs but were below UBR values.

**Response 1:** Disagree. It is incorrect to state that the results of the seep resampling indicated the presence of lead at a concentration exceeding its SSSL and UBR. Lead was only detected in seep water at concentrations exceeding the SSSL and UBR in the initial round of sampling. In the subsequent round of seep resampling, lead concentrations in all three seep samples were below the SSSL and the background concentration. Based on the results of the resampling, it was concluded that lead is not a chemical of concern in seep water.

It should also be noted that although lead was detected in one surface water sample at a concentration exceeding its SSSL (but below its UBR), surface water was not included in the resampling event. At the request of the BCT, only the seeps were resampled.

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*Ecological Health Issues*

**Comment 1:** Fort McClellan identified three metals (antimony, barium and beryllium) present as chemicals of potential ecological concern at the site. Lead was detected in three surface water samples and one sediment sample at levels exceeding ESVs but below UBR values. In all surface soil samples, elevated levels of iron and aluminum exceeded ESVs but were below UBR values. Aluminum also exceeded the established ESV in five surface water samples but was below the UBR. Antimony was detected at levels exceeding the ESV and UBR in one surface soil sample. Barium exceeded the ESV in three surface soil samples, one of which also exceeded the UBR. For all surface water samples, barium also exceeded the ESV but was below the UBR. Beryllium levels exceeded the ESV and UBR in four surface soil samples.

**Response 1:** Comment noted.

*Preliminary Risk Analysis*

**Comment 1:** In its PRA, Fort McClellan assumed that, at an artillery impact area, concentrations of aluminum and antimony in surface and subsurface soil represent site-related releases. The hazard index (HI) for aluminum and the HI for antimony in surface and subsurface soil both fall below the threshold level of one. Fort McClellan's PRA concluded that exposure to surface soil, subsurface soil, surface water and sediment poses no threat to an on-site resident. The chemicals of potential concern COPCs for seep water appear limited to barium and lead, namely, based on ecological impacts. The total HI for exposure to seep water of .127, due to barium alone, is well below the threshold value of 1. However, the concentration of lead in seep water (groundwater) would require further remedial action at the site if groundwater were to be developed as a potable water source.

**Response 1:** Agree that the PRA identified lead as the only chemical of concern for human health in any medium at the Impact Areas based on the initial round of sampling. Based on the results of the initial round of sampling, the PRA indicated that further action is required if the groundwater were to be developed as a source of potable water.



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However, the PRA goes on to state that based on the seep resampling results, performed at the request of the BCT, it was determined that lead is not a chemical of concern in seep water. Therefore, the PRA states that exposure to site media poses no unacceptable risk for the resident. The Impact Areas should be released for unrestricted use with no further action.

It should be noted that the PRA is conservative in its approach. The risk characterization performed in the PRA combined the exposure assumptions and toxicity assessment (incorporated in the SSSLs) with the exposure-point concentration (EPC) to quantify the incremental lifetime cancer risk (ILCR) and noncancer hazard index (HI). ILCR and HI estimates were computed for each chemical in each medium, and were summed to yield a total ILCR and total HI for each receptor scenario. The PRA differs from a streamlined human health risk assessment in that no attempt was made to estimate an EPC that reflected a conservative estimate of average concentration for use in risk assessment. The 95 percent upper confidence limit on the mean (UCL) is usually used for this purpose. Instead, the maximum detected concentration was adopted as the EPC, which imparted a conservative bias to the PRA.

*Additional Comments*

**Comment 1:** Fort McClellan lists antimony, barium and beryllium as constituents of potential ecological concern. Lead should also be considered. Fort McClellan should collect additional samples for analysis to confirm its assertion that presence of these metals is due to either a laboratory artifact or variations in naturally occurring levels.

**Response 1:** Disagree. Lead was excluded as a COPEC because lead concentrations in surface soil were below the ESV and lead concentrations in surface water and sediment, although above ESVs in some samples, were below background or within the range of background.

Further sampling is not warranted to confirm that the presence of these metals is due to either a laboratory artifact or variations in naturally occurring levels. The antimony result was flagged with a "B" data qualifier indicating that the metal was also detected in a laboratory method blank. Because the barium and beryllium results were slight exceedances and/or of limited spatial distribution, the BCT made a risk management decision that these metals do

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not pose an unacceptable risk to human health. Ample explanation is provided in the report. Therefore, the site should be released for "No Further Action" as agreed upon.

***Conclusion***

**Comment 1:** Although surface and subsurface soil samples were reportedly not impacted by lead, seep water samples indicate that lead contamination has impacted groundwater at these parcels. Except for lead impacts to groundwater, based on Fort McClellan's analytical data and its PRA the Department believes that exceedences of various contaminant levels in site media are of insufficient magnitude to pose a potential threat to human and ecological receptors at the above referenced parcels. Although it appears that additional sampling is warranted, ADEM concurs with Fort McClellan's recommendation that the above referenced site may be designated as No Further Action for recreational reuse. However, land use controls are warranted to prevent the use of lead-contaminated groundwater at this site. Furthermore, the status of ordnance and explosives/unexploded ordnance (OE/UXO) at this site is unclear to ADEM at this time.

**Response 1:** Disagree. Results of the seep resampling indicate that lead is not a chemical of concern in seep water; therefore, it is not a chemical of concern in groundwater. Based on these data (provided in the SI Report and PRA), additional samples are not needed to characterize the site and land use controls are not warranted (since lead is not a chemical of concern in groundwater).

**Comment 2:** ADEM has recently obtained the services of an ordnance and explosives/unexploded ordnance contractor to provide OE/UXO services to the Department. ADEM will provide comments concerning OE/UXO related issues, under separate cover, after the contractor has had an opportunity to review OE/UXO related activities at this site.

**Response 2:** Comment noted.