

M67001.AR.005416
MCB CAMP LEJEUNE
5090.3a

LETTER AND U S EPA COMMENTS TO DRAFT ENGINEERING EVALUATION/COST
ANALYSIS UXO-14 FORMER INDOOR PISTOL RANGE RR-53 MCB CAMP LEJEUNE NC
8/2/2012
U S EPA REGION IV

From: "Gena Townsend" <Townsend.Gena@epamail.epa.gov>
To: <beth.hartzell@ncdenr.gov>; <bryan.k.beck@navy.mil>; "Bozzini, Chris/CLT" <Chris.Bozzini@CH2M.com>; <david.t.cleland@navy.mil>; "Henderson, Kimberly/VBO" <Kimberly.Henderson@CH2M.com>; <marcy@rhea.us>; <martha.morgan@ncdenr.gov>; "Louth, Matt/VBO" <Matt.Louth@CH2M.com>; <Mark.Pisarcik@shawgrp.com>; <randy.mcelveen@ncdenr.gov>; <robert.a.lowder@usmc.mil>; <townsend.gena@epa.gov>; "Ben Grosser" <ben@rhea.us>; "Rychak CIV Charity M" <charity.rychak@usmc.mil>; <SWhitworth@osageva.com>; <cweber@osageva.com>
Sent: Thursday, August 02, 2012 3:11 PM
Attach: UXO-14 Draft EECA - EPA's comment summary - 8-2012.pdf
Subject: Draft EECA UXO-14 - EPA's comments

Hi All,

See attached EPA's comments on the Draft EECA for UXO-14, Former Indoor Pistol Range

(See attached file: UXO-14 Draft EECA - EPA's comment summary - 8-2012.pdf)

Gena D. Townsend
US EPA
61 Forsyth Street, SW
Atlanta, Georgia 30303
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

**REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET, S.W.
ATLANTA, GEORGIA 30303**

August 2, 2012

NAVFAC Atlantic
Attn: David Cleland: OPQE3
USMC North Carolina IPT, EV Business Line
6506 Hampton Blvd
Norfolk, VA 23508-1273

SUBJ: Marine Corps Installations East
MCB Camp Lejeune
Draft Engineering Evaluation/Cost Analysis
UXO-14, Former Indoor Pistol Range RR-53

Dear Mr. Cleland:

The Environmental Protection Agency (EPA) has completed its review of the above subject document, dated July 2012. The comments are in the form of extracted pages from the Adobe (pdf) document and are enclosed.

If there are any questions, I can be reached at (404) 562-8538.

Sincerely,

Gena D. Townsend
Senior Project Manager

cc: Martha Morgan, NCDENR
Charity Rychak, MCB Camp Lejeune

TABLE E-1
Summary of Alternative Evaluation

Evaluation Criteria	Alternative 1 No Action	Alternative 2 Excavation and Offsite Disposal	Alternative 3 <i>In Situ</i> Soil Stabilization with Excavation and Offsite Disposal
Effectiveness			
Overall protection of human health and the environment	Does not meet RAOs	Meets RAOs through removal of soil from the site.	Meets RAOs through removal of the soil from the site.
Compliance with ARARs	Does not meet ARARs ¹	Implementation would require compliance with location- and action-specific ARARs. Includes requirements relating to stormwater runoff, dust emissions, management of hazardous and non-hazardous waste, and onsite staging piles. ³	Implementation would require compliance with location- and action-specific ARARs. Includes requirements relating to stormwater runoff, dust emissions, management of non-hazardous waste, and onsite staging piles. ²
Long-term effectiveness and permanence	Not effective in the long-term.	⁴ soil with COCs exceeding site cleanup levels would be removed from site. Residual site risk is acceptable for unlimited use/unrestricted exposure (UU/UE). ⁷	⁵ soil with COCs exceeding site cleanup levels would be removed from the site. Residual site risk is acceptable. ⁶
Reduction of toxicity, mobility, or volume through treatment	Does not reduce toxicity, mobility, and volume.	⁹ treatment is not included; however, reduces toxicity, mobility, and volume through soil removal. ⁷	⁸ reduces toxicity, mobility, and volume through treatment. Stabilization and subsequent removal would reduce COC mobility in soil thus meeting criteria. ⁶
Short-term effectiveness	Not effective in the short-term.	Potential risks to site workers and the nearby community due to construction activity and increased truck traffic. Potential dust emission issues associated with excavation may require engineering controls. Action would require 2 weeks in the field to complete. Potential environmental impact due to transportation of investigation-derived waste (IDW) to disposal facility.	Potential risks to site workers and the nearby community due to construction activity and increased truck traffic. Potential dust emission issues associated with excavation and reagent mixing may require engineering controls. Action would require up to 3 weeks in the field to complete. Potential environmental impact due to transportation of investigation-derived waste (IDW) to disposal facility.
Implementability			
Technical Feasibility	Feasible	Excavation is a standard and reliable technology. Monitoring the technical aspects is easily done.	Excavation and in situ stabilization are reliable technologies. Monitoring the technical aspects is easily done.
Administrative Feasibility	Feasible	Waste being disposed is considered hazardous and would require additional permitting.	Treated waste is non-hazardous, and additional permitting is not necessary for transport or disposal.
Availability of Services and Materials	Not applicable	Services and materials are readily available. Limited number of disposal facilities.	Services and materials are readily available.
State and Community Acceptance	Unlikely	To be determined	To be determined
Cost			
Capital Cost	\$0	\$387,000	\$296,000

Summary of Comments on section 6—Comparative Analysis of Removal Action Alternatives

Page: 3

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 7/31/2012 5:00:16 PM
Change: "meet" to "trigger"

 Number: 2 Author: GTOWNSEN Subject: Sticky Note Date: 7/31/2012 5:04:10 PM
Replace text with : "All soil with COCs above
RAOs removed from the site. Residual site risk is acceptable."

 Number: 3 Author: GTOWNSEN Subject: Sticky Note Date: 7/31/2012 5:04:04 PM
Replace text with : "All soil with COCs above
RAOs removed from the site. Residual site risk is acceptable."

 Number: 4 Author: GTOWNSEN Subject: Highlight Date: 7/31/2012 5:03:17 PM

 Number: 5 Author: GTOWNSEN Subject: Highlight Date: 7/31/2012 5:03:46 PM

 Number: 6 Author: GTOWNSEN Subject: Sticky Note Date: 7/31/2012 5:08:04 PM
Change text to read: "Reduces toxicity, mobility,
and volume through soil removal. Stabilization
reduces lead mobility in
soil. Contaminants are not
destroyed, but rather
moved to an appropriate
permitted disposal facility."

 Number: 7 Author: GTOWNSEN Subject: Sticky Note Date: 7/31/2012 5:06:46 PM
Change text to read: "Reduces toxicity, mobility, and volume through soil removal. Contaminants are not destroyed, but rather moved to an appropriate permitted disposal facility."

 Number: 8 Author: GTOWNSEN Subject: Highlight Date: 7/31/2012 5:08:37 PM

 Number: 9 Author: GTOWNSEN Subject: Highlight Date: 7/31/2012 5:08:13 PM

1.2 Purpose and Objectives

The objective of this EE/CA is to evaluate the removal alternatives to address the potential risks posed by lead and antimony in surface soil at the UXO-14 Former Indoor Pistol Range Site, in preparation for site closeout under CERCLA.

Submittal of this document fulfills the requirements for NTCRAs defined by CERCLA, SARA, and the NCP. This EE/CA has been prepared in accordance with USEPA's guidance document *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*, PB93-963402, August 1993. Additionally, this EE/CA shall:

1. Satisfy environmental review and public information requirements for removal actions.
2. Satisfy Administrative Record requirements for improved documentation of the removal action selection.
3. Provide a framework for evaluating and selecting alternative technologies. 

1.3 Organization of the EE/CA

The following information is presented within this EE/CA:

- Section 2—Site Characterization
- Section 3—Identification of Removal Action Objectives
- Section 4—Identification of Removal Action Alternatives
- Section 5—Detailed Analysis of Removal Action Alternatives
- Section 6—Comparative Analysis of Removal Action Alternatives
- Section 7—References

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/1/2012 11:48:54 AM

Add text to Section 1.2: *"An EE/CA must be completed for all NTCRAs under CERCLA, as required by section 300.415(b)(4)(i) of the NCP. An EE/CA serves an analogous function to the Remedial Investigation/Feasibility Study (RI/FS) conducted for removal actions, but is more focused and streamlined."*

SECTION 3

Identification of Removal Action Objectives

This section identifies the objectives for the NTCRA at the Former Indoor Pistol Range. The objectives for the proposed removal action area are based on the identified risks identified which were posed by exposure to lead and antimony in the surface soil.

The following are the removal action objectives (RAOs) for the NTCRA:

1. Prevent exposure to surface soils with lead and antimony concentrations exceeding the site-specific remediation goals.
2. Reduce the potential for COCs lead and antimony to migrate from surface soil to subsurface soil and groundwater.

3.1 Statutory Limits on Removal Actions

NCTRAs funded by the USEPA have a \$2 million and a 12-month statutory limit pursuant to Section 104(c)(1) of CERCLA fund-financed removal actions, with statutory exemptions for emergencies and actions consistent with the removal action to be taken. This removal action will not be USEPA fund-financed; it will be financed by the Navy. The Defense Environmental Restoration Program (DERP) Manual does not limit the cost or duration of the removal action; however, cost-effectiveness is a recommended criterion for the evaluation of removal action alternatives.

3.2 Determination of Removal Action Scope

Potential risks have been identified in two areas around the footprint of the Former Indoor Pistol Range. The selected removal action is intended to be a corrective action implemented within the vicinity of the Former Indoor Pistol Range to reduce the amount of contaminant mass present, to the extent practicable, in order to minimize potential unacceptable risk to human health and the environment and reduce the potential for contaminant migration from soil to groundwater.

3.3 Determination of Removal Action Schedule

Implementation of the removal action is anticipated to require approximately 2 to 3 weeks based on which removal action is chosen. Factors that may affect the removal action schedule primarily relate to site conditions, requirements of the removal technologies, availability of vendors and supplies, MCIEAST-MCB CAMLEJ mission requirements, and inclement weather.

3.4 Applicable or Relevant and Appropriate Requirements

As required by Section 121 of CERCLA, removal actions carried out onsite under Section 104 or secured under Section 106 must attain the levels of standards of control for hazardous substances, pollutants, or contaminants specified by the applicable or relevant and appropriate requirements (ARARs) of federal and state environmental laws and state facility-siting laws unless waivers are obtained. The elements of the removal action, carried out offsite, are subject to all applicable regulations rather than ARARs. The requirements of CERCLA generally apply as a matter of law only to removal actions. However, as required by 40 CFR Section 300.415(j), ARARs will be identified and attained for removal actions to the extent practicable. The following three factors will be applied to determine whether the identification and attainment of ARARs is practicable in a particular removal situation:

1. Demands of the situation
2. Scope of the removal action
3. Effect of ARAR attainment on the statutory limits for removal action duration and cost

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/1/2012 2:50:21 PM
Change "Demand" to "Exigencies"

 Number: 2 Author: GTOWNSEN Subject: Highlight Date: 8/1/2012 2:50:27 PM

ARARs are identified by the USEPA as either being applicable to a situation or relevant and appropriate to it. These distinctions are critical to understanding the constraints imposed on response alternatives by environmental regulations other than CERCLA while operating onsite. The following definitions of ARARs are from the USEPA guidance (USEPA, 1988).

1. “Applicable requirements” are standards and other environmental protection requirements of federal or state law dealing with a hazardous substance, pollutant, contaminant, action being taken, location, or other circumstance at a CERCLA site.

“Relevant and appropriate requirements” are standards and environmental protection criteria of federal or state law that, although not “applicable” to a hazardous substance, pollutant, contaminant, action being taken, location, or other circumstance, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. The procedure to determine whether a requirement is relevant and appropriate is a two-step process. A requirement is “relevant” if it addresses problems or situations sufficiently similar to the circumstances of the proposed response action. A requirement is “appropriate” if it would also be well suited to the conditions of the site.

A requirement may be “relevant” to a particular situation but not “appropriate,” given site-specific circumstances; such a requirement would not be an ARAR for the site. A requirement that is relevant and appropriate must be met as if it were applicable. Relevant and appropriate requirements that are more stringent than applicable requirements take precedence. However, more discretion is allowed in determining relevant and appropriate requirements than in determining applicable requirements.

“To-be-considereds” (TBCs) are non-promulgated advisories or guidance issued by federal or state government that are not legally binding and do not have the status of potential ARARs. TBCs are evaluated along with ARARs and may be implemented by USEPA when ARARs are not fully protective of human health and the environment.

Another factor in determining which response requirement must be met is whether the requirement is substantive or administrative. Onsite CERCLA response actions must meet substantive requirements of ARARs but not administrative requirements. This distinction applies to onsite actions only, as offsite response actions are subject to all applicable standards and regulations, including administrative requirements such as permits, rather than ARARs. Substantive requirements are those dealing directly with actions or with conditions in the environment. Administrative requirements implement the substantive requirements by prescribing procedures such as fees, permitting, and inspection that make substantive requirements effective.

Three classifications of requirements are defined by USEPA in the ARAR determination process: chemical-specific, location-specific, and action-specific. **Appendix C** contains the ARAR summary.

Chemical-specific ARARs are health- or risk-management-based numbers or methodologies that result in the establishment of numerical values for a given medium that would meet the NCP “threshold criterion” of overall protection of human health and the environment. These requirements generally set protective SRG concentrations for the COCs in the designated media, or set safe concentrations of discharge for response activity. Chemical-specific requirements are generally set for a single chemical or closely related group of chemicals and do not typically consider mixtures of chemicals. When chemical-specific requirements do not adequately protect human health or the environment, SRGs may be set below the TBC value.

Location-specific ARARs restrict response activities and media concentrations based on the characteristics of the surrounding environments. Location-specific ARARs may include restrictions on response actions within wetlands or floodplains, near locations of known endangered species, or on protected waterways.

Action-specific ARARs are usually technology- or activity-based requirements or limitations on actions taken with respect to hazardous substances.

Not all potential ARARs identified in **Appendix C** apply to every remedial alternative. A discussion concerning which ARARs may apply to each specific response action is included in Section 5. The work plan for the selected alternative will provide additional detail on how the ARARs for that action will be met.

 Number: 1 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 10:09:01 AM

 Number: 2 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:08:54 AM

Change highlighted text to read: "*Applicable requirements, as defined in 40 C.F.R. § 300.5, means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, or contaminant, remedial action, location, or other circumstance at a CERCLA site.*"

SECTION 4

Identification of Removal Action Alternatives

General removal actions that could be used to satisfy RAOs include institutional controls, removal, containment, treatment, and disposal. In accordance with USEPA guidance (1993), treatment technologies are more favorable than containment. Technologies with demonstrated effectiveness in significantly reducing lead and antimony mass or mobility in soil include:

- Excavation and backfill
- Soil stabilization (*in situ* and *ex situ*)

4.1 Technology Descriptions

The following is a short description of the technologies considered for further evaluation.

Excavation and Backfill

Excavation and backfill involves the excavation of the removal area using conventional earth-moving equipment. The area of excavation is typically backfilled to original grade with imported clean fill or excavated soil that meets the SRGs. Excavation and backfill allows site closure or reuse within a short time frame, without long-term environmental monitoring.

All excavated soil would require disposal sampling in accordance with Resource Conservation and Recovery Act (RCRA) disposal requirements. The results of waste sampling would determine the final designation of the excavated soil as hazardous or non-hazardous. Non-hazardous soil would be transported to a regional Subtitle D landfill facility for disposal. Hazardous soil would be transported to a permitted, RCRA Subtitle C treatment, storage, or disposal facility.

Additional activities associated with excavation and backfill include: site surveying and clearing, construction of appropriate erosion and sediment controls to prevent contaminants from leaving the site, dust control, confirmation sampling on the sidewalls and base of the excavation, and restoration of excavated areas.

Soil Stabilization

Soil stabilization is a process by which material within the identified removal area are mixed with a reagent that chemically binds and immobilizes lead and other metals, such as antimony, in soil (USEPA, 2005). Lead binds readily with inorganic salts such as phosphate or sulfate and forms less soluble compounds, such as lead phosphate and lead sulfate. Lead is least soluble (and thereby immobile) when the pH of soil is maintained between 6 and 9 (ITRC, 2003). A buffering compound, such as lime or manganese oxide, reduces the leachability of lead. Reagents are typically buffered phosphate, sulfate, hydroxide, or carbonate compounds. Known soil stabilization reagents include Apatite, EcoBond, EnviroBlend, and Portland cement. EnviroBlend was the reagent identified for cost estimating purposes and its product information is included in **Appendix D**. The reagent would be applied to the ground surface and mixed into the shallow subsurface (*in situ*). Conventional construction equipment can be used to apply and mix the reagent.

4.2 Development of Removal Action Alternatives

Three alternatives have been developed, drawing on the technologies described in Section 4.1. A discussion of each alternative is provided as follows.

4.2.1 Alternative 1—No Action

Alternative 1 implies that no treatment or removal work would be done. The no action alternative is the baseline against which the effectiveness of other removal action alternatives is compared. The area would be left as it currently exists, leaving the impacted surface soil in place. Under this alternative, no controls or removal

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/1/2012 3:04:46 PM

Add text: "Material treated and excavated would be managed in accordance with RCRA disposal requirements. Additional activities associated with soil stabilization include: site surveying and clearing, dust control construction of erosion and sediment controls to prevent contaminants from leaving the site, confirmation sampling, and restoration of excavated and/or disturbed areas."

technologies would be implemented. CERCLA (Section 121(c)), as amended by SARA (1986), requires that the site be reviewed every 5 years since the impacted surface soil remains onsite.

4.2.2 Alternative 2—Excavation and Offsite Disposal

Alternative 2 involves the excavation of roughly 260 yd³ of soil from the target removal area. Excavated soil would be transported offsite for treatment and disposal. The excavation would be backfilled, graded, and seeded to promote drainage.

Although it is assumed the soil will be classified as a characteristic hazardous waste for lead, waste disposal soil samples will be taken and analyzed to determine RCRA classification. Soil classified as hazardous would be transported by roll-off to a permitted, RCRA Subtitle C treatment, storage, or disposal facility. Any non-hazardous material would be disposed of at an approved Subtitle D landfill. Offsite disposal of excavated material would require 27 roll-offs (assuming 15 tons per truck).

Confirmation samples would be collected from the side walls and base of the excavation and analyzed for lead and antimony and compared to the SRGs to verify that the horizontal and vertical extent of the contamination was removed. For this evaluation, the excavation area is assumed to be divided into 30-foot by 30-foot grids. A base sample will be composited from four aliquots collected within each grid. If the grid is along a sidewall, a sidewall sample will be composited from four aliquots collected within each grid. This is expected to result in the analysis of seven confirmation samples in the westernmost removal area (three base, four sidewall) and five samples in the eastern removal area to the east (one base, four sidewall).

All excavated soils would be managed in accordance with RCRA disposal requirements.² The rule of thumb entails collecting 1 sample per 500 tons of soil excavated for waste characterization. An estimated 390 tons of soil would be excavated; therefore, only one sample will be analyzed for the Toxicity Characteristic Leaching Procedure (TCLP). Samples for offsite disposal characterization will be collected in accordance with the MCIEAST-MCB CAMLEJ Investigation and Remediation Waste Management Plan (CH2M HILL, 2011d) and the requirements of the disposal facility.

The following components are also included in this alternative:

- Site survey of excavation boundary and utility location
- Construction of erosion and sediment controls
- Concrete and debris removal as non-hazardous waste prior to soil excavation
- Site restoration with grading, clean soil backfilling, and seeding

4.2.3 Alternative 3—*In Situ* Soil Stabilization with Excavation and Offsite Disposal

Alternative 3 involves *in situ* mixing of stabilization reagents to render the contaminated soil non-hazardous, followed by excavation of the treated material from the removal area. The stabilization reagents would be distributed across the removal area using a spreader truck, then tilled into the underlying soil to a depth of 1 foot bgs using conventional equipment. Approximately 270 yd³ of stabilized material would then be excavated and managed as non-hazardous waste and transported offsite for disposal. The excavation will be backfilled, graded, and seeded to promote drainage.

For Alternative 3, the primary purpose for a stabilization reagent would be to minimize lead leaching as evaluated by the TCLP method. Since antimony is not included in characteristic waste, the EnviroMag reagent will be used to stabilize the lead within the removal area, at a dose of 4 percent by weight. Since the reagent does not have an activation time, once it is mixed into the soil the TCLP sample can be immediately collected in preparation for subsequent excavation.

All excavated and treated soils would be analyzed to determine if soil has been rendered non-hazardous waste, in accordance with RCRA disposal requirements.³ Approximately one sample would be collected per 500 tons of stabilized material for waste characterization.⁴ The estimated mass soil plus mixed in reagents is 410 tons; therefore, only one sample would need to be taken for TCLP analysis. Samples for offsite disposal characterization will be collected in accordance with the MCIEAST-MCB CAMLEJ Investigation and Remediation Waste

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 2:31:25 PM

The quantity (1) of samples documented for TCLP analysis for the excavation area is not adequate. A representative sampling (percentage) should be collected based on the size of the loads for disposal and not on the overall tonnage.

 Number: 2 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 11:12:58 AM

 Number: 3 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 2:40:09 PM

The quantity (1) of samples documented for TCLP analysis for the excavation area is not adequate. A representative sampling (percentage) should be collected based on the size of the loads for disposal and not on the overall tonnage.

 Number: 4 Author: GTOWNSEN Subject: Highlight Date: 8/1/2012 3:20:29 PM

Management Plan (CH2M HILL, 2011d) and the requirements of the disposal facility. It is assumed that incorporation of the stabilization reagent will result in the characterization of all treated waste as non-hazardous. Non-hazardous material would be transported offsite, requiring 28 roll-offs (assuming a maximum of 15 tons per roll-off) for disposal at an approved Subtitle D Landfill. If waste characterization indicates that excavated material remains hazardous, the material will be handled as such and disposed of according to RCRA hazardous waste requirements.

Confirmation samples would be collected from the side walls and base of the excavation and analyzed for COCs and compared to the SRGs to verify that the horizontal and vertical extent of the contamination was removed. For this evaluation, it is assumed the excavation area will be divided into 30-foot by 30-foot grids. A base sample will be composited from four aliquots collected within each grid. If the grid is along a sidewall, a sidewall sample will be composited from four aliquots collected within each grid. This is expected to result in analysis of seven confirmation samples within the larger removal area (three base, four sidewall) and five samples from the smaller removal area (one base, four sidewall).

The following components are also included in this alternative:

- Site survey of excavation boundary and utility location
- Construction of erosion and sediment controls
- Concrete and debris removal as non-hazardous waste prior to soil stabilization mixing and excavation
- Site restoration by grading, soil backfill, and seeding

TABLE C-1

Action-Specific Applicable or Relevant and Appropriate Requirements

Engineering Evaluation/Cost Assessment

UXO-014 Former Indoor Pistol Range

MCIEAST-MCB CAMLEJ, North Carolina

Action	Requirements	Prerequisite	Citation
General Construction Standards — All Land-disturbing Activities (i.e., excavation, clearing, grading, etc.)			
Managing stormwater runoff from land-disturbing activities	2 shall take all reasonable measures to protect all public and private property from damage caused by such activities. 1	Land-disturbing activity (as defined in N.C.G.S. Ch. 113A-52) of more than 1 acre of land – relevant and appropriate to alternatives 2 and 3	
	Erosion and sedimentation control plan must address the following basic control objectives: (1) Identify areas subject to severe erosion, and offsite areas especially vulnerable to damage from erosion and sedimentation. (2) Limit the size of the area exposed at any one time. (3) Limit exposure to the shortest feasible time. (4) Control surface water runoff originating upgrade of exposed areas (5) Plan and conduct land-disturbing activity so as to prevent offsite sedimentation damage. (6) Include measures to control velocity of storm water runoff to the point of discharge.		15A NCAC 4B.0106
	Erosion and sedimentation control measures, structures, and devices shall be planned, designed, and constructed to provide protection from the runoff of 10-year storm.	Land-disturbing activity (as defined in N.C.G.S. Ch. 113A-52) of more than 1 acre of land -- relevant and appropriate to alternatives 2 and 3	15A NCAC 4B.0108
	Shall conduct activity so that the post-construction velocity of the 10-year storm runoff in the receiving watercourse to the discharge point does not exceed the parameters provided in this Rule.		15A NCAC 4B.0109

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:15:19 AM

Change highlighted text to read: *"Shall install erosion and sedimentation control devices and practices sufficient to retain the sediment generated by the land-disturbing activity within the boundaries of the tract during construction."*

 Number: 2 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 10:15:28 AM

TABLE C-1

Action-Specific Applicable or Relevant and Appropriate Requirements

Engineering Evaluation/Cost Assessment

UXO-014 Former Indoor Pistol Range

MCIEAST-MCB CAMLEJ, North Carolina

Action	Requirements	Prerequisite	Citation
	Shall install and maintain all temporary and permanent erosion and sedimentation control measures.		15A NCAC 4B.0113
	Erosion and sedimentation control measures, structures, and devices with High Quality Water (HQW) zones shall be planned, designed and constructed to provide protection from the runoff of the 25 year storm.		15A NCAC 4B.0124(b)
	Provisions for ground cover sufficient to restrain erosion must be provided for any portion of the land-disturbing activity with 15 working days or 60 calendar days following completion of the construction or development, which period is shorter.		15A NCAC 4B.0124(e)
	Implement good construction management techniques, best management practices for sediment and erosion controls, and storm water management measures in accordance with 15A NCAC 02H .1008 to ensure storm water discharges are in compliance.	Development activity (otherwise requiring a stormwater permit) within one mile of and draining to waters classified as High Quality Waters (HQW) — relevant and appropriate to alternatives 2 and 3	15A NCAC 02H .1008 and the substantive provisions of NC General Permit CNG 0100000
Air Quality Emission Control Standards			
Managing fugitive dust emissions  5	3 Requires plan outlining actions to control fugitive dust emissions from the site that could travel beyond the site boundary  1	4 Fugitive dust emissions that cause or contribute to substantive complaints -- relevant and appropriate to alternatives 2 and 3	2 15A NCAC 02D .0540(a), (c), and (f)
Waste Characterization and Storage — Primary Wastes (i.e., excavated contaminated soils)			
Characterization of solid waste (e.g. contaminated soil and drums)	Must determine if solid waste is hazardous waste or if waste is excluded under 40 CFR 261.4(b); and	Generation of solid waste as defined in 40 CFR 261.2 and which is not excluded under 40 CFR 261.4(A) - applicable	40 CFR 262.11(a)

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:18:38 AM

Change highlighted text to read: "*Shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints, or visible emissions in excess of that allowed under paragraph (e) of this Rule.*"

 Number: 2 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:20:42 AM

Change highlighted text to read: "Activities within facility boundary that will generate fugitive dust emissions"

 Number: 3 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 10:18:35 AM

 Number: 4 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 10:19:49 AM

 Number: 5 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:26:46 AM

Add to table under "Managing fugitive dust emissions":

In Requirements Column:

"Implement methods (e.g. wetting dry soils) to control dust emissions that could travel beyond the facility boundary."

In Citation Column:

"15A NCAC 02D .0540(g)"

TABLE C-1

Action-Specific Applicable or Relevant and Appropriate Requirements

Engineering Evaluation/ Cost Assessment

UXO-014 Former Indoor Pistol Range

MCIEAST-MCB CAMLEJ, North Carolina

Action	Requirements	Prerequisite	Citation
	Must determine if waste is listed under 40 CFR Part 261; or		40 CFR 262.11(b)
	(1) 2 ust characterize waste by using prescribed test 1 methods or applying generator knowledge based on information regarding material or processes used.	Generation of solid waste which is not excluded under 40 CFR 261.4(a) - applicable	40 CFR 262.11(c)
	Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste.	Generation of solid waste which is determined to be hazardous - applicable	40 CFR 262.11(d)
Storage of solid waste (e.g., contaminated soil)	All solid waste shall be stored in such a manner as to prevent the creation of a nuisance, insanitary conditions, or a potential public health hazard.	Generation of solid waste which is determined not to be hazardous-- relevant and appropriate to alternatives 2 and 3	15A NCAC 13B .0104(f)
	Containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or insanitary conditions. Containers that are broken or that otherwise fail to meet this rule shall be replaced with acceptable containers.		15A NCAC 13B .0104(e)
Characterization of hazardous waste	Must obtain a detailed chemical and physical analysis on a representative sample of the waste(s), which at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with pertinent sections of 40 CFR 264 and 268.	Generation of RCRA-hazardous waste for storage treatment or disposal – applicable to alternative 2	40 CFR 264.13(a)1)
Determinations for management of hazardous waste	Must determine each EPA Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under 40 CFR 268 <i>et seq.</i> .	Generation of hazardous waste for storage treatment or disposal –	40 CFR 268.9(a)

 Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:31:06 AM

Change highlighted text to read: "Must determine whether the waste is (characteristic waste) identified in subpart C of 40 CFR part 261 by either:

- (1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261. Or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or
- (2) Applying knowledge of the hazard characteristic of the waste in light of the materials or processes used."

 Number: 2 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 10:31:03 AM

TABLE C-3

Chemical-Specific Applicable or Relevant and Appropriate Requirements

Engineering Evaluation/Cost Assessment

UXO-014 Former Indoor Pistol Range

MCB CamLej, North Carolina

Media	Requirements	Prerequisite 	Citation
Soil	U.S. Environmental Protection Agency (EPA) Risk Assessment Guidance for Superfund (RAGS)	 Chemical concentrations corresponding to fixed levels of human health risk (i.e., a hazard quotient of 1, or a lifetime cancer risk of 10^{-6} , whichever occurs at a lower concentration). Assessment of potential human health risks -to be considered for alternatives 1, 2, and 3	 Risk Assessment Guidance for Superfund (RAGS) - USEPA Tables only as they apply to lead (443 mg/kg) and antimony (31 mg/kg)



Number: 1 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:38:21 AM

The highlighted "prerequisite" info should be move to the "requirements" column and the "prerequisite" text should read "*Assessment of potential human health risks -to be considered*".

Number: 2 Author: GTOWNSEN Subject: Highlight Date: 8/2/2012 10:35:51 AM

Number: 3 Author: GTOWNSEN Subject: Sticky Note Date: 8/2/2012 10:47:53 AM

Add to table as another row:

Requirements:

Disposal of a RCRA hazardous-waste in a land-based unit if it meets the requirements in the table "Treatment Standards for Hazardous Waste" at 40 CFR 268.40 before land disposal.

Prerequisite:

Land disposal, as defined in 40 CFR 268.2, of restricted hazardous soils - **applicable**

Citation:

40 CFR 268.40(a) as it applies to lead. The Universal Treatment Standard for lead is 0.75 mg/L by TCLP.

Next Row:

Requirements:

All underlying hazardous constituents [as defined in 40 CFR 268.2(i)] must meet the Universal Treatment Standards, found in 40 CFR 268.48 Table UTS prior to land disposal.

Prerequisite:

Land disposal of restricted RCRA characteristic wastes (D001-D043) that are not managed in a wastewater treatment system that is regulated under the CWA, that is CWA equivalent, or that is injected into a Class I nonhazardous injection well - **applicable**

Citation:

15A NCAC 13A.0112(c) only as it incorporates 40 CFR 268.40(e)