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MCB CAMP LEJUENE  
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DRAFT MEETING SUMMARY IR PARTNERING TEAM MEETING 9 FEBRUARY TO 10  
FEBRUARY 2005 MARRIOTT RALEIGH MCB CAMP LEJEUNE NC (DRAFT ACTING AS  
FINAL)  
02/23/2005  
CH2M HILL

# Marine Corps Base Camp Lejeune IR Partnering Team Meeting Minutes:

Partnering Meeting: February 9, 2005 –February 10, 2005

ATTENDEES:        Bob Lowder/MCB Camp Lejeune        Matt Louth/CH2M HILL  
                      Ken Cobb/MCB Camp Lejeune        Chris Bozzini/CH2M HILL  
                      Daniel Hood/NAVFAC Atlantic        Donna Laudermilch/CH2MHILL  
                      Gena Townsend/USEPA Region IV        Ron Kenyon/Shaw E&I  
                      Randy McElveen/NC DENR        Rich Bonelli/Baker Environmental  
                      Peter Sprague/Management Edge

FROM:                Donna Laudermilch/CH2M HILL

DATE:                February 23, 2005

## LOCATION

Marriott Raleigh Crabtree Valley in Raleigh, North Carolina

## MINUTES

February 9, 2005

8:00 AM

Check-In

### I.        Review Meeting Minutes/Action Items from October 2004 Partnering Meeting

The Partnering Team reviewed the Draft Meeting Minutes from the October 2004 Partnering Meeting and had no comments, so the Meeting Minutes will be issued as final. The status of Action Items identified during the October 2004 Partnering Meeting was not discussed.

### II.       Review Meeting Minutes/Action Items from Partnering Training

The Partnering Team reviewed the Draft Meeting Minutes from the Partnering Training held November 30, 2004 through December 2, 2004 and had no comments, so the Partnering Training Meeting Minutes will be issued as final. The status of Action Items identified during Partnering Training, are summarized in Table 1.

TABLE 1  
Partnering Training Action Items

Action Item	Status
Peter will email Randy his Roles and Responsibilities document from the Training.	Completed
Randy, Ron, and CH2M HILL will complete Roles and Responsibilities documents and e-mail to Donna.	Completed
CH2M HILL will email Roles & Responsibilities documents created in training to Partnering team.	Completed
CH2M HILL will email team roster to all team members.	On-going
The Partnering Team will send Gena all information to create a draft agenda for February Partnering meeting.	Completed
The Partnering Team will read "Synergistic Decision Making" (pages 7.6-7.11 in the 'Basics of Partnering' manual).	Completed
Peter will add "CERCLA productivity" to Team Assessment.	Completed
Chris will arrange for Scribe to have laptop for Partnering meetings.	Completed
CH2M HILL will transfer old meeting minutes and other partnering documents to new Scribe laptop.	Completed

**Action:** CH2M HILL (Matt) will collect contact information from the Team to create a contact list and distribute to the Team.

### III. Partnering Team Roles & Responsibilities

**Objective:** The purpose of this discussion was to review and reach a consensus on each individual's drafted roles and responsibilities to the Partnering Team. Peter led this discussion.

**Overview:** The roles and responsibilities drafted during Partnering Training for the Navy RPM, the MCB Camp Lejeune RPM, and the EPA RPM were not discussed, because consensus was reached during Partnering Training. The Team revised the roles and responsibilities of the NCDENR RPM, which will be included in the Partnering Plan.

The roles and responsibilities for Navy Contractors and RAC Contractors were moved to the Parking Lot to be discussed at the next Partnering Meeting.

**Action:**

1. Peter will send CH2M HILL the electronic copy of the working Draft Partnering Plan with updates from the February Partnering Meeting.
2. CH2M HILL will be responsible for issuing the Final Partnering Plan document and submitting it to the Team.

**Consensus:** The Team agreed to adopt the Roles & Responsibilities developed for the NCDENR RPM, to be included in the Final Partnering Plan.

#### IV. Partnering Team Mission & Vision

**Objective:** The purpose of this discussion was to create new Vision and Mission Statements for the Partnering Team. This discussion was led by Peter.

**Overview:** The Team reviewed sample mission and vision statements from the Partnering Training notebook, and agreed that the mission statement from Redstone Arsenal should be adopted as the MCB Camp Lejeune mission statement. The Team agreed to expand the mission statement to include the statement “to ensure protection of human health and environment”. The Team discussed including the “exploration of alternative cleanup levels” as part of the mission statement, but decided that it is already captured elsewhere in the vision/mission statements.

The Team brainstormed to identify important items to include in the vision statement. The key items identified and agreed to by the Team will be expanded by Ron and Peter to develop the draft MCB Camp Lejeune vision statement, which will be presented at the next Partnering Meeting.

**Action:** Ron and Peter will develop the Team’s ideas from the brainstorming session into a vision statement and present to the Team at the next Partnering Meeting.

**Consensus:** The Team agreed to adopt the mission statement from Redstone Arsenal as the mission statement for MCB Camp Lejeune with the modification of “ensuring protection of human health and the environment”.

#### V. Ground Rules for Partnering Meetings

**Objective:** The purpose of this discussion was to finish developing and reach a consensus on the Partnering Meeting ground rules for Team members and guests. This discussion was led by Peter.

**Overview:** The Team reviewed the ground rules developed during Partnering Training, and then discussed the applicability of Peter’s proposed rules to the MCB Camp Lejeune Partnering Team. The Team came to a consensus decision on finalizing the ground rules developed during the February 2005 Partnering Meeting, which Peter will send to CH2M HILL for inclusion in the Final Partnering Plan.

During the ground rules discussion, the Team decided that, going forward, each Partnering Meeting will include one hour at the end of the meeting for Parking Lot items.

**Action:** Peter will send CH2M HILL the finalized Partnering Meeting ground rules for inclusion in the Final Partnering Plan.

**Consensus:** The Team agreed to adopt the Partnering Meeting ground rules developed during the February 2005 Partnering Meeting.

#### VI. Ground Rules for Conference Calls

**Objective:** The purpose of this discussion was to develop and reach a consensus decision on ground rules for Partnering Team conference calls. This discussion was led by Peter.

**Overview:** The Team brainstormed key issues to be covered by the ground rules including: scheduling calls, mandatory punctual attendance for appropriate parties, time limits for conference calls, parking lot items for additional topics, preparation of an agenda prior to the call, maintaining minutes of calls, and following the same ground rules as Partnering Meetings.

A set of ground rules was developed during the February 2005 Partnering Meeting based on the brainstorming session, which were finalized by the Team. Peter will send the ground rules to CH2M HILL for inclusion in the Final Partnering Plan.

**Action:** Peter will send CH2M HILL the finalized conference call ground rules for inclusion in the Final Partnering Plan.

**Consensus:** The Team agreed to adopt the conference call ground rules developed during the February 2005 Partnering Meeting.

## VII. Partnering Plan Status

**Objective:** The goals of this agenda item were to identify the remaining tasks and to develop a timeline for completing the Partnering Plan. This discussion was led by Peter.

**Overview:** Peter presented a Partnering Plan Tracking Tool to identify those items that have been completed, those items that need to be completed, and the necessary steps to complete those items. Items discussed include the status of:

*Partnering Charter* - the Mission Statement was finalized during the February Partnering Meeting, and the Vision Statement will be finalized at the April Partnering Meeting.

*Meeting Cycle and Preparation Process* - the draft version developed during Partnering Training. Final changes and approval will be discussed at the April Partnering Meeting.

*Goals for the next two Fiscal Years* - FY2005 and FY2006 goals have been developed. The FY2005 goals are already part of the Partnering Plan and are attached to these Meeting Minutes; CH2M HILL will add the FY2006 to the Partnering Plan.

*Team Membership* - The draft version has been completed. The Team agreed to add the Facilitator and the Scribe to the list of Partnering Team members.

*Roles and Responsibilities* - The Navy RPM, MCB Camp Lejeune RPM, EPA RPM, and NCDENR RPM roles and responsibilities have been completed. The draft roles and responsibilities for Navy and RAC contractors need to be reviewed and finalized during the April Partnering Meeting. Peter will develop roles and responsibilities for the Facilitator.

*Ground Rules* - Completed.

*Ground Rules for Conference Calls* - Completed.

*Conflict Resolution Process* - Not yet started.

*Team Member Communication Process* -Not yet started.

*New Member Orientation Process* - The Team will review and edit the process from the original Partnering Charter document to develop and finalize a new process.

*Member Exit Process* - The Team will review and edit the process from the original Partnering Charter document to develop and finalize a new process.

**Action:**

1. CH2M HILL will add the FY2006 goals to the Partnering Plan.
2. Peter will develop the roles and responsibilities of the Facilitator.

**VIII. Procedures for Communicating with Non-Team Member Contractors**

**Objective:** The purpose of this discussion was to develop procedures for communicating with non-Partnering Team member contractors. This discussion was led by Peter.

**Overview:** The Team discussed the appropriate notification procedures for regulators to contact non-Team member contractors (e.g., Micropact, E&E, etc.). Daniel recommended that he be notified prior to any contact with non-Team member contractors. The primary concern of the Team is that actions will be taken and conclusions drawn based on incomplete and inaccurate information gathered from non-Team member contractors and field workers.

Peter developed a draft version of the Team Member Communication Process, which the Team finalized.

**Action:** Peter will send CH2M HILL the finalized Team member communication process for inclusion in the Final Partnering Plan.

**Consensus:** The Team agreed to finalize the communication process developed during the February 2005 Partnering Meeting.

**IX. Potential Transfer of Site 69 to MMRP Program**

**Objective:** The purpose of this discussion was to discuss the regulatory impact of transferring Site 69 to the MMRP program, and to reach a consensus decision on the path forward. This discussion was led by Gena, Bob, and Daniel.

**Overview:** The concurrence letter for the IROD states that Site 69 is subject to a 5-year review, which comes up in September 2005. The MMRP program is not yet recognized by the EPA, so moving the CWM portion of the site to the MMRP program is not an acceptable remedy. The Team agreed to the following path forward for Site 69:

1. Collect CWM data.
  - Re-verify CWM breakdown products to be sampled for.
  - Examine 5-year review data
  - Analyze RI data.
2. Present CWM data to the Partnering Team. If CWMs are not detected in groundwater, determine if MNA is still working.
3. If MNA is still working, amend the ROD to go final.
4. Within RD (post-ROD), install additional wells for LTM, if required.

5. Deal with sediment on Site 69 as a separate issue.

**Action:**

1. Rich will send Matt a copy of the Site 69 2004 Annual Report.
2. CH2M HILL will verify the appropriate CWM breakdown products to sample for.
3. Bob will try to find documentation that CWM test-kits were used on Base and provide this information to Daniel.

**Consensus:** The Team agreed to adopt the path forward drafted during the February 2005 Partnering Meeting.

**X. Sites 41 and 74 (OU 4) Sampling Data**

**Objective:** The purpose of this discussion was to review the sampling data and determine the absence/presence of CWM constituents to reach a consensus as to whether the sites have achieved NFA status. This discussion was led by Gena.

**Overview:** The Site 41 monitoring report documents that CWM constituents were not detected in the groundwater. The Team agreed that no groundwater issues exist at Site 41, so the Site has achieved Remedial Action Complete status, and a closeout report can be issued.

According to Baker, a final LTM report was issued in August 2001 for Site 74. Rich will verify whether samples were analyzed for CWM constituents and notify the Team. The Team will review this data and be prepared to make a consensus decision at the next Partnering Meeting.

**Action:**

1. Rich will confirm what constituents were sampled for at Site 74, and email to the Team.
2. Bob, Daniel, Randy, and Gena will review the Site 74 decision made by the Team in 2001 and will be prepared to reach a consensus decision to close the Site at the next Partnering Meeting.

**Consensus:** The Team came to a consensus decision that Site 41 has achieved Remedial Action Complete Status, and a closeout report can be issued.

**XI. Naming/Numbering the Dipping-Vats**

**Objective:** The purpose of this agenda item was to reach a consensus on the naming and numbering pattern for the cow- and goat-dipping vat sites. This discussion was led by Bob.

**Overview:** No work can move forward on these sites until they are entered into the Navy system. Daniel will be responsible for completing this task. The Team agreed that the site names should be based on location, not their historical use.

**Action:** Daniel will name the sites and input them into the Navy system.

**Consensus:** The Team agreed that the site names should be based on location.

February 10, 2005

8:00 AM

Check-In

## I. Addition of GSRA to the FFA

**Objective:** The purpose of this discussion was to develop the pros and cons of adding newly acquired lands to the FFA and to create a strategy to present to each representative legal authority. This discussion was led by Gena and Bob.

**Overview:** The Team agreed that although the FFA has not been updated since 1989, the basic premise of the FFA still applies; however there are a lot of items that could be updated (e.g., list of SWMU sites and the number of IR sites). The biggest issue is that the land purchased by the Base (GSRA) is not currently included in the FFA. The Base wants to add GSRA to the FFA to ensure that any contaminated sites, which may fall under CERCLA, are addressed under CERCLA. The Team discussed what it would take to update the FFA, and identified the potential paths forward, which are summarized in Table 2.

TABLE 2  
Potential Paths Forward for Amending the FFA to include GSRA

Potential Path Forward	Pros	Cons
Update the complete FFA	Can use the process just completed by Cherry Point.	Many people involved at many agencies. Will require public hearings.
Update the map in the FFA	Increases the size of the NPL site. Allows for treating new contamination under CERCLA - more completely funded. Avoids having to treat future contamination under another program, (e.g., FUD)	DoD issue, even DOE issue - NPL listing can't move arbitrarily If the NPL boundary is extended, this has precedent setting implications for other sites (that do NOT want their NPL site boundaries extended) May not cover contamination found, if it is considered to have occurred post-purchase.
Don't make any changes to the FFA		If contamination is found at GSRA, the response would be under RCRA, which will be funded at lower levels than CERCLA, allowing for less quality response.

Gena and Randy voiced concern that the attorneys will not be comfortable revising the map alone without revising anything else in the FFA. According to the EPA, extending the boundary of an NPL site has precedent-setting implications. There are currently arguments for and against extending NPL site boundaries to include acquired property. Typically, the SMP is appended to the FFA, and is the mechanism for adding sites; while the FFA is mainly used for dispute resolution. However, Gena indicated that the IG office Ombudsman has requested a copy of the FFA, so it may be required to be updated at some point in the future anyhow. According to Rich, figures currently in the SMP and Five Year Review documents include GSRA; these may need to be revised to be accurate.

The Team brainstormed to create a unified approach for moving forward, and agreed to bring the following questions to their legal representatives:

- Should we update the FFA?
- Can we include the new boundaries (expanding the NPL site)?
- How do you amend the FFA?
- When amending the FFA, is every element of the FFA eligible for re-assessment?
- If the decision is made to go forward, what is the time frame for getting this done?
- Can Cherry Point's recently revised FFA be used as a template? How much re-negotiation is likely to be needed?

**Action:**

1. Ken will research current and past ownership of Camp Davis to determine whether there would be an issue for MCB Camp Lejeune if it were to become a FUD site.
2. Daniel will obtain a letter from NAVFAC legal advisors about the implications of extending the NPL boundary to include GSRA.
3. Bob will research Base EBS documentation.
4. Randy, Gena, Bob, and Daniel will ask their organizations' lawyers the questions drafted during the February Partnering Meeting.
5. Rich will resend maps from the Five Year Review and Matt will resend maps from the CIP that identify the NPL boundary as identified in the FFA.

## II. OU2, Site 6 Utility Track delineation & Site 82 Technical Evaluation

**Objective:** The purpose of this agenda item was to discuss delineation of the utility tracks at Site 6 and the data gaps associated with Site 82, including the wetland and surface water areas. This discussion was led by Matt.

**Overview:**

Site 6

CH2M HILL conducted soil sampling at Site 6, with the goal of clearing a ROW for a future sewer line. Currently, utilities are located on both the inbound and outbound sides of Holcomb Boulevard. CH2M HILL will coordinate with the Base Utility Department to develop a ROW strategy. Samples will need to be collected to verify the identified ROW is clean.

CH2M HILL will provide a Technical Memorandum to the Team identifying the depth to groundwater to ensure that no utilities would come in contact with the groundwater, identifying sample locations, and presenting the analytical data. If this is provided to the Team two weeks prior to the next Partnering Meeting, the EPA and NCDENR will be prepared to approve the ROW at the Partnering Meeting. Once the ROW has been approved, CH2M HILL will notify the GIS office and update the Plat maps.

Site 82

According to CH2M HILL's review, pump and treat is currently working, but contaminant reduction is approaching an asymptotic level.

The proposed path forward involves:

- Installing additional intermediate and deep wells to fully cover the capture zone ;
- Collecting additional samples; and
- Performing a bench scale study for enhancing remediation. Ron would like an MSDS on the product.

CH2M HILL will develop a Scope of Work for a path forward for the next Partnering Meeting.

**Action:**

1. Gena will send the Team a link on the Groundwater Technical Guidance on MNA.
2. Rich will send CH2M HILL the 1995 Site 82 Supplemental Investigation.
3. CH2M HILL will develop a Technical Memorandum on the Utility Delineation for Site 6 and provide to the Team two weeks prior to the next Partnering Meeting.
4. CH2M HILL will develop a Scope of Work for a path forward at Site 82 and present to the Team at the next Partnering Meeting.

**III. Update on Tier I/Tier II Meeting**

**Objective:** The purpose of this agenda item was to inform the Team about the discussion topics on the agenda for the Tier I/Tier II Meeting. Bob led this discussion.

**Overview:** Topics for the next Tier I/Tier II Meeting are:

- Performance-Based Contracts - concerns and issues for the partnering process.
- Optimization for LTM and O&M contracting
- Regulatory perspective on LUC
- Tier III presentation
- MMRP and closed-range issues
- Streamlining RODs
- CWM
- Closeout and exit strategies for sites

Tier II would like a Tier I contractor to conduct a 30-minute "lessons learned" presentation. The contractor needs to provide 20-25 hard copies and 1 electronic copy. The Team agreed that Ron will present on Site 89 ERH including success, lessons learned, and true costs.

**Action:** Ron will develop a presentation on the Site 89 ERH for the Tier I/Tier II Partnering Meeting, including success, lessons learned, and true costs (including a breakdown of capital costs versus O&M costs).

#### IV. Site 89 RI Update & ERH Update

**Objective:** The purpose of this agenda item was to present recent data and to discuss a path forward. Chris led the RI portion of the discussion and Ron led the ERH portion of the discussion.

##### Overview:

##### RI Update

CH2M HILL is finishing the Draft RI Report, which should be sent to the Team the week of February 14, 2005. The findings of the RI will show:

- Surficial groundwater is contaminated, and it poses a human health risk;
- No contaminants have been detected in groundwater in the deep wells;
- The groundwater in the intermediate wells is the “transition” area;
- The creek does not pose a human health risk; however, the Ecological Risk Assessment identifies the creek as a concern, requiring additional assessment;
- The RI recommends identifying the ecological receptors in the creek in order to show it is not a risk; and
- The RI recommends moving forward with the RI/FS process, and then any loose ends with the Ecological Risk Assessment will be issued as an addendum.

The Team will review the Draft RI and be prepared to discuss any major comments that would prevent the RI Report from being finalized at the next Partnering Meeting.

##### ERH Update

The Implementation Report has been sent out to the Team. The results indicate that:

- 48,000 pounds have been removed.
- No contaminants were mobilized during the remediation process.
- Soil data demonstrates that the concentrations are continuing to decrease.
- Lessons learned include involving the appropriate Air Quality people early on in the process, and the use of a Thermal Oxidizer instead of a Catalytic Oxidizer.

The one year follow-up sampling event will be in May 2005, but may be unnecessary if it is going to duplicate an LTM effort.

**Action:** CH2M HILL will submit the Draft Site 89 RI Report to the Team the week of February 14, 2005.

#### V. RAB Presentation Ideas

**Objective:** The purpose of this agenda item was to identify key topics to discuss at the next RAB Meeting. Bob led this discussion.

**Overview:** The Team identified the following agenda items for the March 10, 2005 RAB Meeting:

- Lot 203
- Site 88 Pilot Study
- Site 35 Pilot Study
- Dipping-Vat Sites
- Update on Site 86 (if time allows)

**Action:**

1. Rich and Ron will send Bob the Lot 203 data for use in creating approximately 10 PowerPoint slides for the next RAB meeting.
2. Matt and Chris will put together presentations for Site 88, 35, and 86.

**VI. Status of Site 10 and Site 85 NFA Letters**

**Objective:** The purpose of this agenda item was to determine the status of Sites 10 and 85.

**Overview:** Rich has a copy of the draft NFA letter from 2001, but the Team cannot recall whether closeout letters were issued from the EPA and the State. The Team will check their files for these letters. If the letters were not previously issued, then the letters will need to be drafted.

**Action:** The Team will check files for closeout letters from EPA and the State for Sites 10 and 85.

**VII. Site 94 & Site 78 Data Review**

**Objective:** The purpose of this agenda item was to present recent data collected at Sites 94 and 78 and discuss the path forward. Matt led this discussion and provided the Team with several figures.

**Overview:** The shallow well data shows no chlorinated VOCs were detected at Site 94. The only detects in the shallow wells occurred in the areas of the former HRC and ORC pilot studies on Site 78.

The intermediate well data shows one well within Site 94 with a detection of TCE at 32µg/L. Higher concentrations of TCE were present across the rest of Site 78, with the highest concentrations detected upgradient of Site 94. Based on review of the data, the Team agreed that the detection at Site 94 is due to an upgradient source.

The deep well data shows that no chlorinated VOCs were detected at Site 94 and across most of Site 78, with the exception of one detection of TCE at 310µg/L at the Commissary. Future investigations at Site 78 will require additional sampling to increase understanding of contamination in the area of the Commissary.

Based on the data, the Team came to a consensus decision that contamination at Site 94 is due to an upgradient source area at Site 78. The Team agreed to proceed with an NFA

approach, supported by an RI report with a minimal screening risk assessment to demonstrate no risk, followed by a proposed plan and ROD.

**Action:**

1. CH2M HILL will proceed with the RI report.
2. Bob will coordinate between the UST and CERCLA teams to set up a joint meeting in order to reduce the amount of sampling being conducted at Site 78 between the two programs and to ensure that the chosen remedial approaches will be complementary of each other.

**Consensus:** The Team came to a consensus decision that an NFA approach will be taken at Site 94, due to contamination associated with Site 78, supported by a RI report followed by a proposed plan and ROD.

### **VIII. Site 93 Feasibility Study Technology Decision**

**Objective:** The purpose of this discussion was to present the proposed remedial alternatives at Site 93 and reach a consensus decision on the path forward utilizing the Synergistic Decision-Making Approach. Chris led this discussion and provided the Team with five figures and a summary table of technology alternatives.

**Overview:** The shallow geoprobe data identified a narrow band of contamination through IS01, IS06, IS10 and IS14; with the highest concentration at IS10. Intermediate geoprobe data identified a small amount contamination around IS07, with a concentration one order of magnitude higher than concentrations found at any other geoprobe location. The deep geoprobe data shows general low levels of contamination across the site.

The most recent groundwater data collected from the monitoring wells indicates a narrow band of contamination that runs from southwest to northeast across the site. Water quality data indicates reducing conditions at the Site. Groundwater flow across the site is slow, which will affect the remedial decision.

The seven proposed technologies were presented to the Team: MNA; enhanced bioremediation via hydrogen sparging; enhanced bioremediation via substrate injection; enhanced bioremediation via organic mulch biowall; in situ chemical reduction via zero valent iron injection; in situ chemical oxidation; and bioaugmentation. The Team decided that air sparging should be included for consideration.

The Team discussed the pros and cons identified by CH2M HILL for each technology and agreed to those that are listed below in Table 3.

**TABLE 3**  
Pros and Cons of the Proposed Remedial Alternatives for the Site 93 Feasibility Study

<b>Technology</b>	<b>Pros</b>	<b>Cons</b>
Monitored Natural Attenuation	<ul style="list-style-type: none"> <li>• Not intrusive.</li> <li>• Easily implementable.</li> <li>• Low-cost (only on-going monitoring).</li> </ul>	<ul style="list-style-type: none"> <li>• Very slow contaminant reduction.</li> <li>• Institutional controls needed for the duration.</li> <li>• Long-term capital investment.</li> </ul>
Enhanced Bioremediation via Hydrogen Sparging	<ul style="list-style-type: none"> <li>• Most direct approach to stimulating reductive dechlorination.</li> <li>• System automated, so low-maintenance.</li> </ul>	<ul style="list-style-type: none"> <li>• Complex network of piping/wells, not practical for high-activity areas.</li> <li>• Potential for accumulation of fugitive gas in nearby buildings or production of hazardous by-products.</li> <li>• Difficult to implement elsewhere at the Base.</li> <li>• High capital cost.</li> <li>• Difficult to deliver and control.</li> </ul>
Enhanced Bioremediation via Substrate Injection	<ul style="list-style-type: none"> <li>• Can be relatively inexpensive.</li> <li>• No O&amp;M required, except monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• Slower reaction than ISCO.</li> <li>• Multiple injections may be necessary.</li> <li>• Delivery key to effectiveness. Subsurface delivery has been difficult at Base.</li> <li>• Longer term monitoring required.</li> </ul>
Enhanced Bioremediation via Organic Mulch Biowall	<ul style="list-style-type: none"> <li>• Generally low capital cost, mulch can be generated on-site or obtained locally.</li> <li>• No O&amp;M required, except monitoring.</li> <li>• Innovative.</li> <li>• Can expand technology to include entire plume for little additional cost.</li> </ul>	<ul style="list-style-type: none"> <li>• Long-term remediation system (5-10 years).</li> <li>• Must rely on groundwater flow through wall, which is slow at the site.</li> <li>• Heat generation as compost starts to decay.</li> </ul>
In-situ Chemical Reduction via ZVI injection	<ul style="list-style-type: none"> <li>• One-time injection likely, due to the longevity of iron.</li> <li>• No equipment or system to maintain.</li> <li>• Relatively fast treatment time.</li> </ul>	<ul style="list-style-type: none"> <li>• Pneumatic fracturing necessary in order to achieve adequate contact between iron and contaminant.</li> <li>• Patent issues, limited vendors.</li> </ul>
In-situ Chemical Oxidation	<ul style="list-style-type: none"> <li>• Oxidation can have high contaminant reduction.</li> <li>• Relatively fast treatment time.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for rebound. Re-injection may be necessary.</li> <li>• Large amount of chemical may be necessary to treat target area; NOD testing required.</li> <li>• Delivery key to effectiveness. Subsurface delivery has been difficult at Base.</li> </ul>
Bioaugmentation	<ul style="list-style-type: none"> <li>• Could result in complete dechlorination to ethane.</li> <li>• Relatively fast treatment time, depending on delivery mechanism.</li> </ul>	<ul style="list-style-type: none"> <li>• Technology is still evolving.</li> <li>• Requires bench-scale testing, and still may not work.</li> <li>• Delivery would likely be a continuous operation.</li> <li>• Active treatment system.</li> </ul>
Air Sparging	<ul style="list-style-type: none"> <li>• Aggressive technology</li> <li>• Subsurface geology conducive to technology (sandy soils)</li> <li>• Relatively low cost limited to implementation.</li> </ul>	<ul style="list-style-type: none"> <li>• Operating system on site.</li> </ul>

Of the proposed technologies, the Team came to a consensus decision that the technologies to be evaluated for the FS will be:

1. No Action
2. MNA
3. Enhanced bioremediation via organic mulch biowall
4. In situ chemical reduction via zero valent iron injection
5. Air sparging
6. In situ chemical oxidation

**Action:** CH2M HILL will proceed with the draft FS Report for Site 93 evaluating the alternatives listed above.

**Consensus:** The Team came to a consensus decision that the technologies that will be evaluated for the Site 93 Feasibility Study will be: no action, monitored natural attenuation, enhanced bioremediation via organic mulch biowall, in situ chemical reduction via zero valent iron injection, air sparging, and in situ chemical oxidation.

#### **IX. Updates on Sites 88, 86, 35, 73; OU6 ROD; and Five Year Review**

**Objective:** The purpose of this discussion was to provide an update to the Team on the status of the OU6 ROD, the Five-Year Review, Sites 88, 86, 35, and 73; and to identify the future schedule of each listed site. This discussion was led by Gena and Chris.

#### **Overview:**

OU6 ROD: The Team discussed Randy's comments on the ROD, which had not been addressed, and agreed that:

- Comment #4 - "in" will be added to the sentence in question.
- Comment #5 - the repeated text in the last paragraph of Section 5.6 will be removed.

Randy would like to add the State Hazardous Waste regulation to the ARAR table, and the team agreed to this. Rich will send out the three correction pages and the revised ARAR table to the Team. Once Randy receives these pages, Randy will issue the concurrence letter and send to Daniel. Daniel will send a copy of the letter to Rich to include in the ROD as an Appendix. When finished, the ROD will go to Bob to be signed by the Commanding General, then sent to Randy to be signed by the State, and then sent to Gena to be signed, and a concurrence letter issued by the EPA. Three signature pages will be circulated to allow the State, the EPA, and LANTDIV each to have an original signature page.

Five-Year Review: The document is finished, with the exception of the map with the NPL boundary, which Rich will update and send to the Team.

Site 35: Chris gave an overview of the pilot study using a PowerPoint presentation. The pilot study generally proceeded as described in the work plan, with three minor modifications during field activities: the number of fracture/injection locations was reduced from six to five; after two injections, the concentration of permanganate was increased from 3% to 5% at the remaining three locations; and the fracture/injection depth was increased at two locations. Photographs of the pilot study were presented to the team. A total of 19,400

gallons of permanganate solution was injected. Samples collected from the injection wells and the monitoring wells indicated good distribution of the permanganate.

The remaining schedule is as follows:

- Check monitoring wells in March 2005
- Collect groundwater samples when wells are no longer purple
- Issue a Pilot Study Report following two additional quarters of groundwater monitoring.

Site 88: The soil mixing was delayed due to several issues, so no soil mixing had begun at the time of the February Partnering Meeting. The soil mixing is scheduled to begin on February 11, 2005, and is projected to take 7 to 10 days. Chris presented photographs of the site preparation activities.

Site 86: The treatment system was started up on February 2, 2005. The ozone will be started in one month. Chris presented photographs of the equipment and results of the air sparging system start-up. When the system was started up, groundwater was bubbling or shooting up through the vertical monitoring wells. The system was turned off, and screw tops were put on the monitoring wells in the vicinity of the horizontal well. The system was restarted at 100 cfm, and will be slowly ramped up to a maximum of 150 cfm. The initial results are showing the system has good radius of influence and the screw caps are working.

**Action:**

OU6 ROD: Rich will send the Team the three replacement pages and the ARAR table with the addition of the State Hazardous Waste regulation. Once received, the rest of the Team will do their part to get the concurrence letter issued.

Five-year Review: Rich will update the map with the NPL boundary and send to the Team.

Site 73: Daniel will send an update electronically to the Team.

**Path Forward:**

Site 35: CH2M HILL will proceed with the schedule identified above.

**Consensus:**

OU6 ROD: The Team agreed to add the State Hazardous Waste regulation to the ARAR Table.

**X. SMP Conference Call**

**Objective:** The purpose of this agenda item was to set up a conference call to discuss the schedules in the SMP.

**Overview:** The Team agreed to a conference call on February 22, 2005 at 9:00am, with Matt leading the call.

**Action:** Matt will initiate the conference call to update the schedules in the SMP.

**XI. Next Partnering Meetings****Start:** April 5, 2005**End:** April 7, 2005**Host:** Randy McElveen**Chair:** Bob Lowder**Timekeeper:** Ron Kenyon**Location:** Raleigh, North Carolina**Start:** June 14, 2005**End:** June 16, 2005**Host:** Bob Lowder**Chair:** Daniel Hood**Timekeeper:** Randy McElveen**Location:** Jacksonville, North Carolina**Action:** Chris will secure a location for the April Partnering Meeting.**XII. Agenda Topics for Next Partnering Meeting**

TABLE 4  
Agenda Items for the April 2005 Partnering Meeting

<b>Agenda Topic</b>	<b>Required Time</b>
Complete review of Roles & Responsibilities for Contractors and Facilitator	30 minutes
Finalize Mission and Vision Statements	30 minutes
Proceed with closeout report for Site 74	30 minutes
Update on amending the FFA and GSRA – answers to questions and next steps	30 minutes
Review/finalize the scope of work for OU2 Site 6/82 (follow up to Technical Evaluation)	1 hour
Discuss/resolve comments on the Draft RI for Site 89	1 hour
Preview of Tier I/Tier II presentation	30 minutes
Base Issues	1 hour
Site Updates for Sites 86, 88, 35, 69	1 hour
Site 82/6 Utility Corridor	1 hour
Finalize the Meeting Cycle and sample formats for Agenda and Meeting Minutes	30 minutes
Develop Team communication process	1 hour
Conflict resolution process	1 hour
LTM recommendations	2 hours
Five-year goal update (standing action item to be included in Meeting Minutes)	30 minutes
Review, edit new member orientation process and exit process	1 hour
Check-in, agenda, action items, read ground rules aloud	1 hour
Closeout	1 hour

### XIII. Plus/Delta Review of Partnering Meeting

TABLE 5  
Plus Delta Review of February 2005 Partnering Meeting

Plus	Delta
Structure and efficiency improvement	Better Preparation
Team cohesiveness	Plan to have an LCD
Lots of progress	Overpacked agenda
Good meeting leadership	Mix up partnering and technical
Accommodations	Service staff disruptive
Meals	
Central location	
Made decisions	
Thorough Action Items list	
Randy, less defensive	
Ken on the Team	

### XIV. Summary Tables of Action Items and Consensus Decisions From February 2005

Table 6 summarizes all of the action items identified during the February 2005 Partnering Meeting.

TABLE 6  
Summary of Action Items from February 2005 Partnering Meeting

Agenda Item	Action Item	Responsible Party
Partnering Training Action Items	Collect contact information from the Team to create a contact list and distribute to the Team.	CH2M HILL (Matt)
Partnering Team Roles & Responsibilities	Send CH2M HILL the electronic copy of the draft Partnering Plan with updates from the February Partnering Meeting.	Peter
	Issue the Final Partnering Plan and submit it to the Team.	CH2M HILL
Partnering Team Mission & Vision	Develop the Team's ideas from the brainstorming session into a vision statement and present to the Team at the next Partnering Meeting.	Ron and Peter
Ground Rules for Partnering Meetings	Send CH2M HILL the finalized Partnering Meeting ground rules for inclusion in the Final Partnering Plan.	Peter
Ground Rules for Conference Calls	Send CH2M HILL the finalized conference call ground rules for inclusion in the Final Partnering Plan.	Peter
Partnering Plan Status	Add the FY2006 goals to the Final Partnering Plan.	CH2M HILL
	Develop the roles and responsibilities of the Facilitator.	Peter

**TABLE 6**  
Summary of Action Items from February 2005 Partnering Meeting

<b>Agenda Item</b>	<b>Action Item</b>	<b>Responsible Party</b>
Procedures for Communicating With Non-Team Member Contractors	Send CH2M HILL the finalized Team member communication process for inclusion in the Final Partnering Plan.	Peter
Potential Transfer of Site 69 to the MMRP Program	Send Matt a copy of the Site 69 2004 Annual Report.	Rich
	Verify the appropriate CWM breakdown products to sample for.	CH2M HILL
	Find documentation that CWM test-kits were used on Base, and provide this information to Daniel.	Bob
Sites 41 and 74 (OU4) Sampling Data	Confirm what constituents were sampled for at Site 74, and email to the Team.	Rich
	Review the Site 74 decision made by the Team in 2001 and be prepared to reach a consensus decision to close Site 74 at the next Partnering Meeting.	Bob, Daniel, Randy, and Gena
Naming/Numbering the Dipping-Vats	Name sites and input into the Navy system.	Daniel
Addition of GSRA to the FFA	Research current and past ownership of Camp Davis to determine whether there would be an issue for MCB Camp Lejeune if it were to become a FUD site.	Ken
	Obtain a letter from NAVFAC legal advisors about the implications of extending the NPL boundary to include GSRA.	Daniel
	Research Base EBS documentation.	Bob
	Ask respective legal representatives the questions drafted during the February 2005 Partnering Meeting: (1) should we update the FFA? (2) can we include the new boundaries (expanding the NPL site)? (3) how do you amend the FFA? (4) when amending the FFA, is ever element of the FFA eligible for re-assessment? (5) can Cherry Point's recently revised FFA be used as a template? How much re-negotiation is likely to be needed?	Bob, Daniel, Randy, and Gena
	Resend maps from the SMP and CIP that identify the NPL boundary as identified in the FFA.	Rich and Matt
OU2, Site 6 Utility Track Delineation & Site 82 Technical Evaluation	Send the Team a link on the Groundwater Technical Guidance on MNA.	Gena
	Send CH2M HILL the 1995 Site 82 Supplemental Investigation.	Rich
	Develop a Technical Memorandum on the utility delineation for Site 6 and provide to the Team 2 weeks prior to the next Partnering Meeting.	CH2M HILL
	Develop a Scope of Work for a path forward at Site 82 and present to the Team at the next Partnering Meeting.	CH2M HILL

**TABLE 6**  
Summary of Action Items from February 2005 Partnering Meeting

<b>Agenda Item</b>	<b>Action Item</b>	<b>Responsible Party</b>
Update on Tier I/Tier II Meeting	Develop a presentation on the Site 89 ERH for the Tier I/Tier II Partnering Meeting, including success, lessons learned, and true costs (including a breakdown of capital costs versus O&M costs).	Ron
Site 89 RI & ERH Updates	Submit the draft Site 89 RI Report to the Team the week of February 14, 2005.	CH2M HILL
RAB Presentation Ideas	Send Bob the Lot 203 data for use in creating approximately 10 PowerPoint slides for the next RAB meeting.	Rich/Ron
	Put together presentations for Sites 88, 35, and 86.	Chris/Matt
Status of Sites 10 and 85 NFA Letters	Check files for closeout letters from the EPA and the State for Sites 10 and 85.	Team
Sites 94 & 78 Data Review	Proceed with the Site 94 RI Report.	CH2M HILL
	Coordinate between the UST and CERCLA teams to set up a joint meeting in order to reduce the amount of sampling being conducted at Site 78 between the two programs and to ensure that the chosen remedial approaches will be complementary of each other.	Bob
Site 93 FS Technology Discussion	Proceed with the draft FS Report for Site 93 evaluating: no action, MNA, enhanced bioremediation via organic mulch biowall, in situ chemical reduction via ZVI injection, air sparging, and in situ chemical oxidation.	CH2M HILL
Updates on Sites 88, 86, 35, 73; OU6 ROD; and Five-Year Review	Send the Team the three replacement pages and the ARAR table with the addition of the State Hazardous Waste regulation for the OU6 ROD.	Rich
	Update the Five-Year Review map with the NPL boundary and send to the Team.	Rich
	Send an update electronically to the Team.	Daniel
SMP Conference Call	Initiate the conference call to update the schedules in the SMP.	Matt
Next Partnering Meetings	Secure a location for the April Partnering Meeting.	Chris

Table 7 summarizes all of the consensus decision made during the February 2005 Partnering Meeting.

**TABLE 7**  
Summary of Consensus Decisions from February 2005 Partnering Meeting

<b>Agenda Item</b>	<b>Consensus Decision</b>
Partnering Team Roles & Responsibilities	The Team agreed to adopt the roles and responsibilities developed for the NCDENR RPM during the February 2005 Partnering Meeting.
Partnering Team Mission & Vision	The Team agreed to adopt the mission statement from Redstone Arsenal as the mission statement for MCB Camp Lejeune with the modification of "ensuring protection of human health and the environment".
Ground Rules for Partnering Meetings	The Team agreed to adopt the Partnering Meeting ground rules developed during the February 2005 Partnering Meeting.
Ground Rules for Conference Calls	The Team agreed to adopt the conference call ground rules developed during the February 2005 Partnering Meeting.
Procedures for Communicating With Non-Team Member Contractors	The Team agreed to finalize the communication process developed during the February 2005 Partnering Meeting.
Potential Transfer of Site 69 to the MMRP Program	The Team agreed to adopt the path forward drafted during the February 2005 Partnering Meeting: (1) collect CWM data; (2) present the data to the Team, if CWMs were not detected, determine if MNA is still working; (3) if MNA is still working, amend the ROD to go final; (4) within RD (post-ROD), install additional wells for LTM, if required; and (5) deal with sediment on Site 69 as a separate issue.
Sites 41 and 74 (OU4) Sampling Data	The Team came to a consensus decision that Site 41 has achieved Remedial Action Complete Status, and a closeout report can be issued.
Naming/Numbering the Dipping-Vats	The Team agreed that the site names should be based on location.
Sites 94 & 78 Data Review	The Team came to a consensus decision that a no further action approach will be taken at Site 94, due to contamination associated with Site 78, supported by an RI report followed by a proposed plan and ROD.
Site 93 FS Technology Discussion	The Team came to a consensus decision that the technologies that will be evaluated for the Site 93 Feasibility Study will be: no action, monitored natural attenuation, enhanced bioremediation via organic much biowall, in situ chemical reduction via zero valent iron injection, air sparging, and in situ chemical oxidation.
Updates on Sites 88, 86, 35, 73; OU6 ROD; and Five-Year Review	The Team agreed to add the State Hazardous Waste regulation to the ARAR table for the OU6 ROD.

# Fiscal Year 2005 Goals

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<b>Goal Number</b>	<b>Site</b>	<b>Goal</b>	<b>Complete by</b>
1.	35	Pilot Study Implementation	31 March 2005
2.	88	Pilot Study Implementation	31 March 2005
3.	89	Draft Pilot Study Implementation Report	31 March 2005
4.	93	Amended Draft FS	31 March 2005
5.	OU6	Final ROD	31 March 2005
6.	All	Final 5-Year Review	31 March 2005
7.	78	Final Pilot Study Report	30 June 2005
8.	94	Draft RI	30 June 2005
9.	All	SMP - Draft	30 June 2005
10.	All	SMP - Final	30 August 2005
11.	35	Finalized RI	30 September 2005
12.	35	Draft FS	30 September 2005
13.	69	Reevaluate and Determine Clear Path Forward	30 September 2005
14.	73	Draft Pilot Study Report	30 September 2005
15.	88	Pilot Study Report	30 September 2005
16.	89	Draft FS	30 September 2005
17.	93	Draft PRAP	30 September 2005
18.	84	Tech Eval (Site Summary/Site Closeout)	30 September 2005
19.	89	Draft RI	31 December 2004