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FINAL MEETING MINUTES 11 AND 12 MARCH 2015 MCB CAMP LEJEUNE NC
6/2/2015
CH2M HILL

Marine Corps Installations East – Marine Corps Base Camp Lejeune IR Partnering Team Meeting Minutes

MEETING DATES: March 11-12, 2015

LOCATION: MCIEAST-MCB CAMLEJ, NC

ATTENDEES:

Bryan Beck/NAVFAC ¹	Monica Fulkerson/CH2M HILL
Dave Cleland/NAVFAC	Kim Henderson/CH2M HILL
Patti Vanture/MCIEAST-MCB CAMLEJ	Matt Louth/CH2M HILL
Gena Townsend/EPA Region 4	Shaun Whitworth/Osage
Beth Hartzell/NCDENR	Mark Pisarcik/Tetra Tech
Randy McElveen/NCDENR	James Macdonnell/Sepi
Marti Morgan/NCDENR	CH2M HILL PMs (by topic)

FROM: Kim Henderson/CH2M HILL

DATE: June 2, 2015

March 11, 2015

I. Introductions, Logistics, Check-In

II. Review Agenda/Ground Rules/Action Items/Meeting Minutes

The status of Action Items identified during the previous meeting and on-going Action Items are tracked in the attached spreadsheet.

Consensus – November 2014 meeting minutes are approved.

III. Base/Navy Time

Updates on the following were:

- **Site 73 Equipment** – Randy has concerns with the AS equipment (ozone compressor, hydrogen equipment, tank and hose) remaining on-site and recommends that the system be protected or recycled if not needed or protected.

Action Dave – Plan for Site 73 AS equipment removal with Osage.

- **Lot 202** – Patti sent Gena a letter for additional intrusive activity in the vicinity of Lot 202 outside of the initially planned area (south of the chlorobenzene plume). A fence was already installed and additional gravel is planned. Gena is concerned with them encroaching on a site with buried debris and where ongoing groundwater investigation.

Action Patti – Prepare a memo to the tenant of Lot 202, and copy the Team, that states that if investigation is needed within the vicinity, the rolling stock will need to be moved.

Action Monica – Check the flush mount wells in the vicinity of Lot 202 and consider whether bollards should be installed.

- **RAB/Public Meeting Schedule** – April 8, 2015

¹ Joined by phone for Base/Navy and Vapor Intrusion topics.

Action Patti – Send the RAB an updated RAB/public meeting schedule for the meeting planned on April 8, 2015.

Action CH2M HILL – Submit an updated public notice and extend the public comment period for the UXO-19 Proposed Plan public meeting planned on April 8, 2015. Include that the previous meeting was postponed due to weather.

- **Navy legal** – Dave noted that they have a new lawyer.

IV. Vapor Intrusion Update

Objective: Discuss the recent activities and results from Building HP-57, review recent IRP VIMS O&M data, discuss the VIMS O&M report format, and review the schedule.

Overview: A presentation was reviewed by Keri Hallberg/CH2M HILL. Building HP-57 is a barracks located upgradient of Site 88 where sewer utilities run through areas of high soil gas concentrations near Buildings 3B, 43, & 37 that connect to Building HP57. The building was recommended for additional investigation based on TCE detected in indoor air in April 2013 (IRP monitoring report). Activities conducted from October 2014 through January 2015 include concurrent indoor air, subslab soil gas, and outdoor air sampling; a HAPSITE investigation; Base plumbing sealed pipe and drains in HVAC rooms with expandable plugs; pressure cycling in Company Office (location of previous TCE detections) and HVAC Rooms; and a HAPSITE investigation at Buildings 37, 58, 59, and HP55 and adjacent sewers and manholes.

Conclusions of the Building HP57 investigation indicate that the sewer line is a source of vapor entry and the sealing of the pipe and drain in the HVAC room were effective in reducing PCE and TCE concentrations. However, if p-traps are not maintained, any building/room with connection to sewer is potentially vulnerable to vapor intrusion. Recommendations are to conduct a pilot study for sewer mitigation/ventilation at connection with Building HP57 to pull a vacuum. If this is successful, the plan for full implementation near the former Building 25 source area can be included in the Site 88 FS for protection of other buildings connected to the sewer line.

In the meantime, additional sampling is planned for further investigation of individual barracks rooms in Building HP57 prior to and following implementation of pilot study using a combination of HAPSITE and SUMMA Canisters. Indoor air sampling is also planned in Building 67.

The quarterly VIMS O&M conducted at 5 buildings at IRP Sites 78 and 88 through Round 10 indicate that the VIMS are operating as designed, exhaust sample results indicate VIMS are effectively removing COCs from subsurface. Quarterly inspections and semi-annual indoor air/outdoor air/exhaust sampling is conducted. Minor repairs have been conducted to blowers/electrical systems at select buildings by Osage as the systems begin to age. The Round 10 Tech Memo is with EPA for review. Round 11 included indoor air/outdoor air/exhaust sampling and the Tech Memo is planned for submittal in June 2015. The Round 12 inspection is planned in March 2015. A new checklist reporting format was suggested for quarters where only inspections are conducted (exhaust and indoor air samples are not collected) and the Team agreed.

The VIMS O&M Manual is being updated to include fan replacements and the Building 1005 modifications. The update is planned for submittal to the Navy/Base in April 2015 and to the Team in June 2015.

V. Sites 69 and 86 RIP Update

Objective: Review status and schedule for RODs, RDs, and/or IRACRs.

Overview: A presentation was reviewed by Monica with the following updates:

- **Site 69** - Landfill cap construction was completed in September 2014 and MNA downgradient well installation was conducted in February 2015, following DDESB approval of the AAR in December 2014. Mark is working on coordination of the LUC survey plat and the IRACR is planned for submittal in April 2015. Dave asked about the ramp for mowing equipment, etc and routine maintenance in the IRACR. Mark is planning to install the pathways across the riprap, install turn-arounds around the fence perimeter, fertilize and overseed the cap, and repair the fence in April 2015. Mark plans to include the

routine maintenance requirements for O&M and the checklist in the IRACR. Patti plans to conduct quarterly inspections and Mark plans to address recommendations.

- **Site 86** - The ROD was signed as of October 2014 and RD was finalized in November 2014. The MNA well installation and LUC survey plat is planned pending the hangar MILCON completion in March 2015. The Draft IRACR was submitted in June 2014 and EPA comments were received in January 2015 and were reviewed. EPA's comments were to revise references to ROD signature to October 29, 2014; change the tenses to dates when referencing the survey plat, well installation, LTM, and quarterly LUC inspections; switch Section 8 (Certification Statement) and Section 9 (Schedule and Costs); and to revise Figures 2 and 3 to show proposed wells as existing wells once installed. The IRACR will be updated to reflect EPA's comments and will be finalized when the wells are installed and LUC survey plat are complete, planned for July 2015.

Action Patti – Check on the MILCON schedule and airfield access for Site 86 to allow for monitoring well installation and LUC surveying.

VI. Site 89 Air Sparge Update

Objective: Review update on air sparge (AS) operations, December 2014 LTM results, and schedule.

Overview: A presentation was reviewed by Shaun. The AS system flow rates were operating below the design parameters, causing daylighting and sink holes. The system was shut down in December 2014 to allow the formation to settle out to reduce potential for daylighting. The system was re-started in January 2015 following the incremental re-start plan presented during the November 2014 meeting. Monitoring data indicates that current operation is at ~160 scfm. Groundwater elevations are increasing and stabilizing at higher elevations. Daylighting has occurred at one well (MW55) where a snap sampler is installed. The wells with snap samplers have different caps to accommodate the samplers and may cause future daylighting.

Action Monica/Shawn – Look into modifications for stronger snap sampler caps at Site 89.

A presentation was reviewed by Monica. The December 2014 AS performance monitoring results were reviewed and concentrations were generally consistent with the previous quarter where concentrations decreased over time and/or daughter products have increased. However, there was a significant increase of TCE in MW80DWR indicating the potential for DNAPL. The vertical extent was last evaluated in 2011 and there were no exceedances in MW80DW2. Soil gas results at Building TC864 in December 2014 indicated that TCE concentrations decreased below the NCDENR Industrial SGSL; however, the AS system was turned off at the time. The path forward for AS is to continue increasing flow rates gradually with groundwater levels monitored daily, realign groundwater performance monitoring to match O&M schedule of every 4 months, continue with quarterly soil gas sampling (while system is operating), and collect a sample from MW80DW2 to confirm vertical extent.

The December 2014 PRB performance monitoring results were reviewed and concentrations have generally decreased over time within the wall and downgradient from the wall, but water is moving slowly and may not have travelled to the extent of each of the downgradient wells and/or the creek. The ORP is being monitored and has been negative over time and is favorable for reducing conditions. From the RD *"During the first year, PRB performance monitoring wells will be gauged quarterly, and monitoring wells located within the PRB will be sampled quarterly for geochemical parameters in the field. All PRB performance monitoring wells will be sampled for VOCs and TOC semi-annually for the first 2 years, then annually for the duration of the life of the PRB."*; therefore, the plan is to continue sampling for VOCs and TOC semi-annually and reduce sampling for geochemical parameters from quarterly to semi-annually beginning in June 2015.

The December 2014 surface water monitoring indicate that downgradient surface water results (SW109) remain below NCSWQS.

The next round of aerator performance monitoring is planned in March 2015, AS performance monitoring is planned in May 2015, and the PRB performance monitoring is planned in June 2015.

Gena asked whether with the addition of the new aerators whether there have been NPDES permit exceedances and Patti has not heard on any issues.

VII. Sites 6 and 82

Objective: Provide preliminary unvalidated Wallace Creek sampling results, discuss path forward, and review schedule.

Overview: A presentation was reviewed by Monica. Results of the Wallace Creek sampling conducted in December 2014 were reviewed as follows:

- **Site 6 Surface Water** – VOCs were analyzed and detected, there were no exceedances of NCGWQS or NCSWQS, chloroform exceeded the NRWQC in one sample.
- **Ephemeral Drainage Surface Water** – Full suite analysis was conducted. VOCs were detected but there were no exceedances of NCSWQS, RSLs, or Ecological Screening Values (ESVs), metals were detected and aluminum exceeds the ESV and chromium exceeds the RSL but concentrations are unlikely to pose risks.
- **Ephemeral Drainage Sediment** - Full suite analysis was conducted. VOCs were detected but there were no exceedances of RSLs or ESVs, SVOCs and PCBs were detected and exceeded ESVs, metals were detected and chromium exceeds the RSL and lead and mercury exceed the ESVs. The concentrations are unlikely to contribute to pose risks.

The path forward is to complete the test pitting for exposed batteries, conduct a site walk to identify potential source areas, and further evaluate the ephemeral drainage for potential transport pathway to Wallace Creek and human health and ecological risks.

Base comments were just received on the Draft SI Report and the report will be submitted to the Team this month. The Draft ESI UFP-SAP is with the Team for review. The battery test pitting and site walk is planned in March/April 2015. MIP/DPT, well installation; and groundwater/pore water sampling is planned for May 2015.

Randy recommended that we revise the title of the ESI to an SRI since ESI refers to preliminary type investigations. The Team agreed.

VIII. Site 1 RACR

Objective: Sign the Certification Statement for the Final RACR that will close the site and remove the LUCs, discuss the path forward for removing LUCs, and action items.

Overview: A presentation was reviewed by Kim. We looked into the North Carolina General Statutes to determine the process for removing LUCs. N.C.G.S. 130A-310.8(f) indicates that a notice of contaminated site may be cancelled by the Secretary by sending a statement to the register of deeds for recordation in the deed books.

We talked with Gena about the process since she has removed LUCs at Cherry Point and she provided an example. Basically, we need to send a letter from NCDENR to Onslow County with attachments that include:

- N.C.G.S. 130A-310.8(f)
- Letter from Marine Corps to NCDENR
 - Copy of recorded LUC survey plat
 - EPA's letter concurring with the final RACR

The Team signed the RACR and assigned the following action items:

- **Action Gena** – Send a concurrence letter for the Final Site 1 RACR to the Team.
- **Action Kim** – Send example LUC removal letters to the Team.
- **Action Patti** – Write a letter to NCDENR requesting removal of the Site 1 LUCs and attach the survey plat and EPA concurrence letter.

- **Action Randy** – Write a letter to Onslow County requesting removal of the Site 1 LUCs and attach a copy of the N.C.G.S. 130A-310.8(f) and the Base’s letter with attachments.

March 12, 2015

I. Check-In

II. Partnering Exercise

Beth led a team-building exercise.

III. UXO-23 NTCRA

James indicated that the Draft RAWP was submitted to the Navy and Base. Pending review, it is planned for submittal to the Team this month. Gena recommended that the document be titled Phase 2 to tie it to the initial NTCRA. A meeting with the ROICC will be scheduled for planning the NTCRA. The field activities will likely take 3 to 4 months. The ESS will need to be followed and 3R training will be needed for all site workers. James will provide a presentation at the next RAB meeting.

Action Dave – Provide the Draft UXO-23 RAWP to the ROICC for review.

Action CH2M HILL – Provide the UXO-23 ESS to James.

For the final report, the Phase 1 and 2 NTCRA reports can be added to the RI.

IV. UXO-22, 23, and 24

Objective: Provide updates and schedule for UXO-22 DRMO soil screening, battery disposal area, and ESI Report, UXO-23 mounds and container area sampling; and UXO-24 ESI approach.

Overview: A presentation was reviewed by Dan Hockett/CH2M HILL. Updates for each site were as follows:

- **UXO-22** – The remaining DRMO pile to be inspected was pending ESS approval which was recently approved. The inspection and MDAS disposal is planned in March/April 2015 followed by the test pits in the battery disposal area. The test pit debris will be inspected for MEC/MPPEH, soil samples will be collected for metals analysis, and surface clearance will be conducted around test pits and in the ravine. The results will be presented in an ESI Report this summer.
- **UXO-23** – Soil sampling is planned to investigate the 15 mounds and 10 container areas. The UFP-SAP is with the Navy Chemist and Base and is pending review. Pending review, it is planned for submittal to the Team in April. Field activities are planned in July 2015. Additionally, after the NTCRA, groundwater sampling in the theoretical shot fall zone is planned.
- **UXO-24** – The ESI is planned for geophysical investigation to evaluate the lateral extent of buried debris followed by test pits and soil sampling. The UFP-SAP is with the Navy Chemist and Base and is pending review. Pending review, it is planned for submittal to the Team in April/May. Field activities are planned in July/August 2015, pending approval of ESS Amendment 1. Dave indicated that a project is planned to carry the site through the RI/FS phase if needed.

V. UXO-06 RI and FS

Objective: Review RI revisions, discuss recent MILCON investigations, prepare for the FS, and provide schedule update.

Overview: A presentation was reviewed by Jessica Skeeane/CH2M HILL. A redlined version of the RI was submitted last week to address EPA and NCDENR comments and to include the cantonment area subdivisions and explosive hazard evaluations.

EPA comments were related to the potential risks from temporary well data generated a false positive. The temporary well list was removed from text and a note was added to the tables indicating that no COPCs were identified based on permanent wells installed to evaluate metal concentrations in temporary wells.

NCDENR comments were related to the explosive hazards. The conclusions were updated to reflect the changes:

- The overall hazard due to MEC/MPPEH potentially remaining in the Borrow Pit Area; Cantonment Area B; and Wooded Area at UXO-06 is judged to be moderate. The overall hazard in Cantonment Area C is judged to be minor.
 - In the Borrow Pit Area and Cantonment Area C, 100 percent intrusive investigation has been performed and the potential for encountering MEC/MPPEH was significantly reduced.
- The overall hazard due to MEC/MPPEH in Cantonment Area A is judged to be negligible since only small arms ammunition and one ammunition can were found, which presents a minimal threat if contact were to occur.
 - The overall hazard due to MEC/MPPEH in the Limited Use Area is judged to be minor based on limited access, which reduces the potential for encountering MEC/MPPEH.

Patti indicated that recent MILCON within the Cantonment Area A was discussed with MARCORSSYSCOM and based on the RI findings, on-call construction support was deemed acceptable.

The recommendations were updated based on the conclusions:

- No further action for the Borrow Pit Area and Cantonment Area C because investigation and removal of MEC/MPPEH resulted in substantial reduction in potential hazards from contact with MEC. Continued implementation of 3R training is recommended for site workers.
- No further action for Cantonment Area A since only small arms and 1 ammo can found which presents a minimal threat if contact were to occur.
- FS for the Cantonment Area B, Wooded, and Limited Use Areas to address potential threats from any MEC that remains at the site.

Recent MILCON clearance was provided for a proposed water force main within Cantonment Area and included 100% intrusive investigation of 319 anomalies and 10 saturated response areas. MPPEH including 1 3.5-inch practice rocket, rocket components, and small arms were found. On-site UXO construction support is planned during excavation activities.

The RAO for the FS was revisited based on the recent UXO-19 Proposed Plan and is to “Reduce or prevent the potential for direct physical contact with MEC/MPPEH to allow current and reasonably anticipated land use at the site to continue”. This RAO will apply to the Cantonment Area B, Wooded, and Limited Use Areas.

The Team discussed the LUCs and differences with UXO-19 and the need for physical notices, fences, and signs to highlight the areas.

The Draft Final RI was submitted to the Team in March 2015. The Draft FS is planned for submittal to the Navy/Base in May 2014, pending Navy technical review of the RAA, and to the Team by July 2015.

VI. Site 88

Objective: Provide update on Site 88 site-wide and SWMU 615 groundwater results, the tracer study approach and schedule.

Overview: A presentation was reviewed by Jessica High/CH2M HILL. Site-wide groundwater sampling was completed in October 2014. 128 groundwater samples were collected for VOCs and groundwater elevation data was collected. Eight groundwater samples were also collected for petroleum-related compounds upgradient, in the immediate vicinity, and downgradient of the former USTs. Additionally, 14 groundwater samples were collected for NAIPs.

Additionally, investigations have been conducted at SWMU 615, Building 133 that is planned for transfer from RCRA to the IRP based on its location and COCs. The RFI was completed in December 2014 and localized exceedances of PCE, TCE, and VC were identified in the surficial aquifer. The RFI report is planned to recommend

deferment to the IRP. The sanitary sewers, as discussed during the Vapor Intrusion topic, were revisited and it was confirmed that the sanitary sewer runs from former Building 25 to Building 133. Sewer ventilation will be considered as part of the Site 88 FS pending results of pilot study at Building HP57.

The site-wide groundwater plume maps from 2011 and 2014 were reviewed by aquifer and COC. Overall observations indicate that concentrations of COCs have generally decreased since 2011. In the surficial aquifer, a similar lateral extent of COCs were observed and near the soil mixing area where the ESTCP pilot study was conducted, significant reduction in cis-1,2-DCE concentrations were identified. In the UCH aquifer, the downgradient/leading edge wells were paved over and need to be re-installed and EPH/VPH aliphatics C5-C8 were detected in downgradient samples. In the MCH/LCH aquifers, downgradient migration to the west/northwest was observed.

Action CH2M HILL – Look into cutting out of the Site 88 downgradient/leading edge wells that were paved over.

Gena noted that red rice yeast injections may be considered for Site 88 based on the results of the Site 36 pilot test to inhibit methane production.

The tracer study is being planned including installation of a horizontal well, permanganate injections, post-injection geophysical mapping, and monitoring. If needed to enhance distribution, installation/operation of an extraction/recirculation system could be conducted followed by another round of geophysical mapping.

The preliminary geophysical survey results indicate that previous EVO/microbial activity from the 2010 pilot study and utility overshadowing overprints some potential contaminant signals but it will not affect the ability to image future injections due to evaluating change in resistivity values. To enhance the ability to detect the permanganate in the subsurface, increasing the conductivity of the permanganate with sodium chloride was recommended to increase the electrical difference. To address the action item, we looked into whether chloride injections would have any impacts to groundwater. The plan for installation of the horizontal well was reviewed.

The draft tracer study work plan is planned for submittal to the Navy/Base in April 2015, to the Team in May/June 2015, finalized in July/August 2015, and the tracer study is planned to begin in September/October 2015. The soil sampling is included in the LTM Pilot Study UFP-SAP that is planned for signature today, and the soil sampling is planned in May 2015.

VII. Site 78

Objective: Provide an update on the treatability study results, discuss site-wide CSM refinement and data gaps, discuss potential remedial options, and the path forward.

Overview: A presentation was reviewed by Monica. Nate Brown/CH2M HILL and Heather Perry/CH2M HILL attended by phone. The treatability study results indicate that degradation is occurring with up to 93% reduction of TCE 5 ft from the injection well. A breakdown of TCE to daughter products cis-1,2-DCE, VC, and ethane was achieved and there were favorable NAIP and DHC results. Rebound of TCE is also occurring and untreated groundwater is likely moving into the study area. The report is planned for submittal to the Navy/Base in April 2015. Pending review, the report will be submitted to the Team in June 2015.

The approach for the CSM was to review readily available historical documents; assimilate readily available groundwater level and contaminant soil, soil vapor, and groundwater data into a working geodatabase; evaluate physical characteristics of subsurface; evaluate local groundwater use; infer three-dimensional groundwater flow pathways; identify whether subareas exist where shallow groundwater flow pathways could be influenced by subsurface utility corridors; and establish list of contaminants and concentration histories to be included in evaluation to answer the following key questions:

- Where did groundwater contaminants come from?
- What is the nature of known and suspected sources?
- Where are groundwater contaminants now?
- Where are groundwater contaminants going?

Assumptions and the CSM for each area were reviewed.

A summary of the Site 78 North CSM is as follows:

- Former unknown source in NW woods and industrial sources resulted in comingled CVOC and fuel groundwater plumes
- Potential ongoing source in NW woods and Buildings 901/902/903 based on CVOCs in soil vapor and groundwater indicating residual sources
- Leaky multi-level aquifer system, as opposed to a “layer cake” aquifer system with aquifers separated by contiguous aquitards
- Groundwater flow to W/SW, transitions to W/NW with depth
- Temporal groundwater trends consistent w/precipitation
- Utility corridors (within 6 ft bgs) could play role in groundwater flow and contaminant transport if groundwater levels continue to rise
- CVOC plume extent likely limited by presence of fuels
- No evidence of rapidly expanding plumes
- Cumulative CVOC removal rate from recovery wells has plateaued based on the CVOC mass removal that is now diffusion-limited (mobile CVOCs have been removed) and because the recovery wells may no longer be ideally located to maximize CVOC mass removal

A summary of the Site 78 South CSM is as follows:

- Former industrial sources resulted in comingled CVOC and fuel groundwater plumes
 - In the RI, contaminated bags of soil were noted in the vicinity of Buildings 1709 and 1710
- Ongoing source at Buildings 1502/1602 not likely
- Potential ongoing source in Buildings 1602/1603 based on CVOCs in groundwater indicating residual sources and LNAPL observed in GW58R (being addressed by UST program)
- Leaky multi-level aquifer system overlain by a discontinuous surficial aquitard
- Groundwater flow direction to S/SW, slightly more westerly with depth
- Temporal groundwater level trends similar to Site 78 North
- Utility corridors (within 10-15 ft bgs in industrial area) could play role in groundwater flow and contaminant transport near Buildings 1502/1601/1603
- CVOC plume extent likely limited by presence of fuels
- Some modest expansion of plume in the distal portions of CVOC plumes in the Parade Grounds, but no evidence of rapidly expanding plumes
- Cumulative CVOC removal rate from recovery wells has plateaued based on the CVOC mass removal that is now diffusion-limited (mobile CVOCs have been removed) and because the recovery wells may no longer be ideally located to maximize CVOC mass removal

A summary of the HPFF and Site 94 CSM is as follows:

- Former industrial, fuel storage, and unknown CVOC sources resulted in comingled CVOC and fuel groundwater plumes
- Ongoing fuel source at HPFF (LNAPL) with treatment systems in place: product recovery (pumping, manual bailing/skimming/aggressive fluid vapor recovery), biopulse AS, shallow AS/SVE, deeper biosparging, groundwater recovery
- CVOC source area(s) not all identified
- Groundwater CVOC concentrations in existing network do not indicate presence of extensive DNAPL
- Leaky multi-level aquifer system
- groundwater flow patterns complex, S/SW beneath industrial area; W/NW near Commissary
- Vertical gradients influenced by annual precipitation
- Temporal groundwater levels similar to other portions of site.
- Utility corridors could influence groundwater flow and contaminant transport, particularly if groundwater levels continue to rise

- CVOC plume extent likely limited by presence of fuels
- Benzene plume expanding to west

Gena expressed concern that the UST plume is migrating downgradient towards the commissary. We have an action item to gather the latest UST data and Dave checked with Jose and they sample annually for VOCs by 8260. Dave and Gena discussed meeting with Catlin.

Action Dave – Look into a data sharing meeting with Catlin at the Base on April 8th to discuss their current status and future plan for HPPF in preparation for planning the path forward for Site 78.

Action Patti – Look into reserving a large conference room for the morning of April 8th.

Action Dave – Look into free product recovery at GW58R within Site 78S.

Potential data gaps (in order of priority) include installing and sampling wells along inferred plume centerlines to support future plume stability evaluations; performing opportunistic soil sampling (bulk density and *foc*), tracer testing, and aquifer testing; and refining plume boundaries based on depth-discrete groundwater sampling and optimized LTM.

Gena questioned when evaluating the centerline of the plume, how we know if we are seeing the groundwater flow or degradation. Nate indicated that by evaluating both the hydraulic and contaminant data it can indicate whether the trend is based on advection or if the plume is evolving but stable and degradation is occurring.

When considering filling data gaps and alternative remedial actions, the Team will need to agree on the metrics for success, e.g., is the goal to reduce remediation timeframes, reduce life-cycle costs, reduce contaminant migration to or in offsite areas, reduce the potential for future vapor intrusion risk, reduce the monitoring burden in specific subareas.

At the next meeting, a data gap scoping session is planned based on a life cycle cost analysis that will analyze the value of the data with respect each remedial option, costs, probabilities of success, and uncertainties to lead to a revised Proposed Plan and ROD Amendment.

VIII. Site 96

Objective: Review RI sampling approach and schedule.

Overview: A presentation was reviewed by Matt. The soil sampling approach to assess presence/absence of constituents includes collection of six collocated surface, shallow subsurface (<10 feet bgs), deep subsurface (2 feet above water table) soil samples within and adjacent to former UST and near sewer line for VOCs, SVOCs, PCBs, and metals. The groundwater sampling approach is to install 15 downgradient surficial and UCH aquifer monitoring wells, conduct water level data and aquifer testing, and conduct comprehensive groundwater sampling for VOCs, select wells for 1,4-dioxane, and additional analytes based on soil results. The surface and pore water sampling approach is to collect four collocated samples for VOCs.

The Draft UFP-SAP was submitted to the Navy/Base in January 2015. Pending Base review, the UFP-SAP will be submitted to the Team in April 2015. The field Investigation is planned this summer.

IX. LTM and Pilot Studies

Objective: Present FY15 Q1 results and plumes over time, sign the pilot study UFP-SAP, and schedule.

Overview: A presentation was reviewed by Monica.

At Site 3, four monitoring wells are sampled for SVOCs biennially. No COCs were detected in exceedance of cleanup levels in surficial aquifer (benzo(a)anthracene's detection limit was above the cleanup level and naphthalene was detected at the cleanup level) and only benzo(a)anthracene was detected in exceedance of cleanup levels in the UCH aquifer. NCDENR indicated that if the detection limit exceeds the cleanup level, the detection limit becomes the cleanup level. The pilot study approach for the UCH aquifer has been updated since the last meeting to install ORC socks in newly installed upgradient well (MW14UCH) and monitor MW02IW and

MW14UCH rather than placing ORC socks in MW02IW and installing a downgradient well to monitor based on well diameter. The pilot study UFP-SAP was submitted and comments received from NCDENR regarding bioaugmentation being conducted at both locations at Site 36. Bioaugmentation will be conducted at both locations and Worksheet 11 has been updated to reflect this. The UFP-SAP was signed.

At Site 35, MNA is conducted annually for VOCs at 33 monitoring wells. Updated plume maps were reviewed. Upgradient of Brinson Creek in December 2013, VC in MW62 (35.7 µg/L) exceeded 10x NCSWQS (24 µg/L); however, in December 2014, there were no exceedances of 10x NCSWQS (VC in MW62 [21 µg/L]). In the southern area of the site, the isolated exceedances in the UCH aquifer have been stable over time and degradation is not occurring.

At Site 93, MNA is conducted annually for VOCs at 12 monitoring wells. An additional sidegradient surficial aquifer monitoring well was installed in January and no COCs were detected. Concentrations within the plume are stable and a pilot study is planned to accelerate degradation.

The Draft FY13 Annual Report was submitted to the Navy/Base in October 2014. Pending review, the report will be submitted to the Team in April 2015. The FY14 report is planned for submittal to the Navy/Base in July 2015 and to the Team in September 2015. The FY15 Q2 LTM event is being conducted this week. Pilot study field activities are planned in May 2015 with monitoring through February 2016.

X. Five-Year Review

Objective: Review 2015 recommendations and schedule.

Overview: A presentation was reviewed by Kim. Seventeen OUs with 27 sites were reviewed. Issues and recommendations were identified at seven OUs at eight sites as follows:

- **OU 1 (Site 78)** – Collect groundwater samples for 1,4-dioxane, continue groundwater remedy evaluation to determine what changes are needed, refine the CSM to evaluate extent of groundwater contamination and exposure pathways, add an industrial/non-industrial use control boundary (VI), and develop a revised Proposed Plan and ROD Amendment pending the groundwater remedy evaluation.
- **OU 2 (Sites 6 and 82)** - Collect groundwater samples for 1,4-dioxane; complete assessment of the extent of COCs in site media; re-evaluate human health and ecological risks in Wallace Creek; add/update LUCs for groundwater, VI, and MEC; re-evaluate effluent standards based on current State and Federal criteria; evaluate expanding or modifying the existing treatment system at Site 82 and evaluate alternative treatment technologies at Sites 6 and/or Site 82 to remediate source areas and minimize degradation of Wallace Creek; and develop a revised Proposed Plan and ROD Amendment pending the groundwater remedy evaluation. Gena recommended to revise the language within the issues and recommendations that refer to source areas to be more similar to OU 1 and to revise the language for UXO-22 to include UXO-22 as part of OU 2 and add LUCs. Wording changes were made within the presentation real-time. Randy indicated that there was a hole where some munitions items are uncovered close to Site 82. He will show the UXO team during the upcoming field activities and CH2M HILL is planning the site-wide walk to map disposal areas.
- **OU 5 (Site 2)** - Prepare RACR and remove remaining non-industrial use LUCs. Gena questioned the need for a RACR since groundwater has been closed and will look into the requirements. The wording was changed to remove remaining non-industrial LUCs.
- **OU 6 (Site 36)** - Add an industrial/non-industrial use control boundary (VI).
- **OU 10 (Site 35)** - Add an industrial/non-industrial use control boundary (VI). The Team discussed monitoring and evaluating potential impacts to Brinson Creek as part of the LTM program since the most recent results were below the standard.
- **OU 20 (Site 86)** - Collect groundwater samples for 1,4-dioxane.
- **OU 21 (Site 73)** - Add an industrial/non-industrial use control boundary (VI).

The draft report is planned for submittal to the Team in March/April 2015. The report must be finalized and signed by August 2015.

XI. FY15 Goal Update

The Team reviewed the goals and discussed the current status of each goal presented in a separate table.

XII. Parking Lot

There were no items remaining in the parking lot after the meeting.

XIII. Next Partnering Meeting

Start: June 2, 2015

End: June 3, 2015

Facilitator: Monica

Host: Charity

Chair: Gena

Timekeeper: Dave

Location: MCIEAST-MCB CAMLEJ, NC

Start: October 7, 2015

End: October 8, 2015

Facilitator: TBD

Host: TBD

Chair: TBD

Timekeeper: TBD

Location: TBD

The next RAB date is scheduled for April 8, 2015. Topics include a UXO-23 NTCRA update, CIP update, and UXO-19 public meeting.

Agenda Items for the next (June 2015) Partnering Meeting

Agenda Topic	Required Time
Standing Agenda Items:	
Check-in	30 minutes
Review agenda	15 minutes
Review action items, approve minutes from prior partnering meeting; read ground rules	30 minutes
Partnering exercise	30 minutes
Base/Navy time	1 hour
Review FY15 goals	30 minutes
Parking lot	15 minutes
Agenda items for next partnering meeting, team assessment, +/- review, checkout	30 minutes
Lunch	3 hours
Breaks	1 hour
Time for Standing Agenda Items:	8 hours
Technical Agenda Items:	
Sign UFP-SAPs (Sites 6 and 82, Site 96, UXO-23, UXO-24)	30 minutes
Site 69 (IRACR and O&M Update)	30 minutes
Site 78 (Scoping Session)	1 hour
Site 86 (RIP Update)	30 minutes
Site 88 (RTCs and TS update)	30 minutes
Site 89 (AS system update)	30 minutes
LTM (FY14 report, FY15 update, FY16 UFP-SAP scoping, streamline report)	1 hour
VI Update	30 minutes
FYR RTCs	30 minutes
CIP Report	30 minutes
UXO-06 (FS)	30 minutes
UXO-19 (ROD)	30 minutes
UXO-22 (ESI)	30 minutes
UXO-23 (NTCRA)	30 minutes
UXO-28 and 29	30 minutes
SDZ EE/CA	30 minutes
Updated Partnering Guide	30 minutes

Agenda Items for the next (June 2015) Partnering Meeting

Agenda Topic	Required Time
Time for Technical Agenda Items:	9.5 hours
TOTAL TIME	17.5 hours²

² The agenda will be drafted prior to the meeting and the required times and topics may be adjusted based on current site status.