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NOTES FROM BASE REALIGNMENT AND CLOSURE TEAM MEETING DATED 11  
FEBRUARY 2002 CNC CHARLESTON SC  
3/6/2002  
CH2MHILL

## Notes from February 2002 BCT Meeting SCDHEC Offices, Columbia, SC.

PREPARED FOR: Charleston Naval Complex BCT  
PREPARED BY: Sam Naik  
DATE: March 6, 2001

The February 2002 BCT Meeting was held at the SCDHEC offices in Columbia, South Carolina. The meeting began at 0800 hrs on Monday, February 11, 2002, and concluded at 1500 hrs on Tuesday, February 12, 2001.

The meeting began with introductions of team members, agenda review and action item review.

### Monday, February 11, 2002

#### Update on Field Activities

CH2M-Jones provided an update on field activities at the following sites:

**AOC 607:** Dean presented some graphs to show the heating trends taking place at different locations at AOC 607 and compared existing heating trends with the heat required to volatilize the chlorinated solvents. He explained that the boiling points for TCE and PCE were lower than that of groundwater and that at present, there was enough heating to boil the groundwater, which indicates that TCE and PCE are also being volatilized by the heating. Dean added that no releases of chlorinated VOCs into ambient air, or vapor migration away from the footprint of the site, were being detected. Mansour asked how thick the clay layer was. Dean indicated that it was approximately 1-2 feet thick. Paul B. asked if there was a concern with electric charge reaching the site fence. Dean indicated that that is not a concern and that this is being monitored. Tony Hunt asked how much contaminant mass had been removed and Dean answered saying that approximately 80-100 lbs had been removed at the time of preparation of the first quarterly report. Dean concluded the presentation observing that there was good treatment taking place in several areas, and that the goal is to get the heating to reach all areas uniformly and to the temperatures required for treatment.

On the issue of the water leak at the site, Dean indicated that the Charleston Public Works department had been contacted and explained the possibility that a rubber flange connection had been the cause of the leak and that this is being monitored to determine whether it needed to be fixed.

Tony inquired if there were any increases in TCE concentrations in any of the wells. Dean said that there was an increase of TCE concentrations in one of the wells. Tony inquired if this would require expanding the network of heating electrodes. Dean said that since the elevated concentrations were noticed in the interior of the network, there was no need seen to expand the network outside the present footprint. Gary Foster added that TRS intends to

continue the heating into April 2002. Tony added that some Navy and ITRC people would like to conduct a site visit.

**SWMU 25/70:** Paul Favara indicated that the FerOx injection phase was completed, and the intended quantity of zero-valent iron (ZVI) was injected into the formation at the site. He added that the top 6 ft. of the aquifer will be monitored also. He explained that the next stage of the IM was post-treatment monitoring scheduled for the middle of March 2002. Additionally, 5 vertical profiler samples will be collected to assess the hexavalent chromium and total chromium concentrations at the site. Paul explained the fate of the ZVI in the subsurface formation and indicated that it ultimately becomes inert. He added that the next stage would be preparation of a CMS Work Plan and a report of findings of the study. The pilot study report would be inserted as an appendix to the CMS Work Plan. Paul Bergstrand asked if there was any VOC sampling done during the IM. Paul Favara answered saying that the VOC detections were found outside the target treatment area.

Tony added that the coordination by CH2M-Jones and their subcontractor ARS Technologies, Inc., with the building tenant at SWMU 25/70 was excellent, and that the tenant was very happy. Paul Favara added that the building was structurally unimpacted by the pneumatic fracturing and injection work.

**SWMU 39:** Dean indicated that the report on the HRC Pilot study was being initiated. He indicated that the results of the HRC injection treatments have not been as good as expected. He added that different technologies are being considered and that HRC will be evaluated as one of the alternatives in the CMS report.

**AOC 633:** Excavations show the presence of oil-saturated soil. CH2M-Jones is trying to determine if oil contamination is from the fuel distribution system (FDS).

**SWMU 196:** Paul Favara briefly explained the progress and the different possible outcome scenarios from the ChemOx treatment at this site. Mansour asked if surface water is being evaluated as part of the IM. Paul F. indicated that CH2M-Jones' understanding is that it is being addressed under Zone J by EnSafe, Inc. Tony indicated that the tenant at Building 1848 at SWMU 196 (the North Charleston Public Works Dept.) is anxious to resume operations inside the building after treatment activities are done, and requested CH2M-Jones' assistance in providing a schedule of future activities to the N. Charleston Public Works Dept.

**AOC 617:** Dean indicated that a CMS is being prepared. Different options for remediation are being considered, including a pump-and-treat option.

**SWMU 3:** Dean indicated that the analytical results from the soil sampling are being evaluated. He added that installation of some monitor wells in the future is being evaluated. Mansour asked how the PAHs from the asphaltic concrete are being treated. Dean answered saying that there were no exceedances in the asphaltic concrete area, and that the IM for soil removal is being done outside the berm and away from the asphaltic concrete area.

## **CNC Property Transfer**

Gary made a presentation on the different areas of CNC slated for property transfer.

## UST/RCRA Program Coordination

The team then discussed sites where UST sites and RCRA sites overlap and discussed keeping an updated list of sites with overlaps. Tony volunteered to have the list updated each month to reflect updates in the closure status of these sites. Paul B. mentioned that SWMU 161 in Zone K has a UST remediation status listed as "active" in SCDHEC records. Richard Garcia (CH2M-Jones) indicated that there was an AST at the site which was removed and the site was closed under the UST program. He added that the site was transferred back to the RCRA program where it was given an NFA status.

## Document Review and Submittal Status

Tony asked if the Statements of Basis for recently closed sites could be prepared. Dean indicated that CH2M-Jones can prepare them.

Paul B. asked about the status of AOCs 711-718. Gary indicated that some of these sites are included in the Zone I CMS Work Plan being prepared for submittal.

Gary showed a list of documents under review at SCDHEC. Jerry Stamps provided updates on the status of SCDHEC review of various documents.

Joe Bowers indicated that he and other hydrogeologists at SCDHEC were working together to review the technical memorandum on the arsenic geochemistry prepared by CH2M-Jones. Dean asked if their evaluation will affect decision-making at CNC sites. Joe indicated that it should not and that the BCT could make decisions for individual sites that it thought were appropriate.

## Tuesday, February 12, 2002

### EPA Soil Screening Guidance Fact Sheet

Vijaya Mylavarapu provided an introduction to the EPA Soil Screening Guidance Fact Sheet. The team discussed the DAF issue at SWMU 17. Vijaya mentioned that any change in the DAF and SSL values at SWMU 17 may not change the remediation approach. Dean explained that the future land use is expected to remain industrial and the remediation in the CMS phase will be evaluated for industrial land use. He clarified that there are COCs at this site exceeding even the industrial land use criteria, and that these COCs are the targets of remediation. Jerry said that if the CMS uses pavement or building covers as land use controls, CH2M-Jones should present this information in the CMS.

Dean asked what SCDHEC had done at other sites with situations similar to SWMU 17. Jack Gelting said that the residential land use criteria had always been used at other sites, with the RBCs and MCLs as ~~cleanup criteria~~ **baselines for risk comparison** for groundwater (especially at industrial sites), and that the EPA SSL guidance document was used as a supporting document. After some discussion, the DHEC team indicated that SSLs could be used, based on either literature-based partitioning factors or SPLP-based partitioning factors, as appropriate. In either case a dilution attenuation factor would be used, which could be site specific or generic depending on the particular site attributes.

Jerry proposed that since the SPLP data does not alter the SSL values at SWMU 17, the SPLP approach is not necessarily applicable at SWMU 17. Dean indicated that SPLP partitioning tests were being used for two lead-contaminated sites (AOC 620 and SWMU 5/18) because the literature values for lead partitioning are so widely variable.

### **Arsenic MCL**

Joe Bowers made a brief presentation on ~~the possibility of~~ the arsenic MCL coming down to 10 ug/L from ~~the existing~~ 50 ug/L. Dean pointed out that most background grid wells at CNC will show background arsenic concentrations in excess of the 10 ug/L level. Vijaya added that where site-specific data does not show a site-specific source of arsenic, and if arsenic values are not significantly higher than background, then there is no action required to address arsenic in groundwater at these sites. The team agreed to track this issue as it develops and take appropriate actions once the MCL change is effective.

### **Zone J RFI Status**

Charlie Vernoy presented information on the recent Zone J fieldwork effort.

Dann asked if the Zone J samples account for solid loading/sediment loading in effluents. Charlie indicated that solid/sediment loading was not considered. He added that no significant sediment was noticed in the water samples. Richard Garcia asked if every small sewer line was tracked as part of the Zone J effluent study. Charlie said that those sewer lines that could have potential impacts from AOCs/SWMUs were picked, and that maps prepared by Davis & Floyd (RDA contractor) were used as a base maps for the sewer line locations.

Tony asked what the schedule was for the technical memo on Zone J background study. Charlie indicated that it was April 2002. He indicated that the COPC refinement will be done later. He indicated that they were waiting for another low-tide rain to collect more samples.

Vijaya inquired if samples were being collected near Shipyard Creek as part of the Zone J sampling effort. Charlie indicated that if there are AOC/SWMU impacts to the surface water, it was EnSafe's understanding that surface water sampling was going to be conducted by CH2M-Jones, and that if the impacts to the surface water were attributed to the sewer lines, then the surface water sampling would become EnSafe's responsibility. Dean asked what defines COPCs at Zone J. Charlie answered saying that the screening against background surface water criteria would determine COPCs.

### **SWMUs 38/39 plume**

Dean made a presentation of detected compounds in Zone A monitor wells to highlight the possibility of an offsite source (plume) of contamination migrating onsite into SWMU 38. Dean asked that if it is determined that the HESS tank farm adjacent to SWMU 38 is contributing to groundwater contamination, can the property be transferred under the BRAC regulations. Tony indicated that he will be getting updates next week during the meeting with HESS, and will evaluate the information. He added that petroleum contamination will not preclude transfer of the property. The team discussed scenarios for the path forward for SWMU 38. Dean added that additional data collection may be needed to determine the path forward.

Tony asked the team if there were concerns about the extent of plume boundaries at other sites, and asked if everyone on the team was satisfied with the determination of boundaries of other plumes at CNC sites. The team agreed to take another look at all the plumes at CNC.

Vijaya asked that if SWMUs 38/39 had been slated for unrestricted future land use, would the groundwater contamination make it a candidate for land use controls? Dean added that the site can be transferred even with the groundwater contamination as long as a remedy was in place for groundwater. The team generally agreed that the buildings can continue to be used for non-residential purposes as long as the groundwater remedy was in place.

Jerry mentioned that SCDHEC was concerned about the efficacy of using the ChemOx process for treating pesticide contamination at SWMU 38. He asked that the confirmatory soil sampling locations from the DET IM be resampled and some additional monitor wells be installed. Jerry mentioned that a ChemOx application to treat TCA at another site in South Carolina did not work very well. Paul Favara indicated that the specialty subcontractor is not treating TCA anymore because the ChemOx process was not found to be suitable to break the chemical bonds of TCA. He added that at SWMU 38, we were targeting a pesticide contamination level of 0.9 ug/L and that we are not treating a big source area of pesticides. Jerry asked for more information on the ChemOX process to determine if it was an effective technology to treat pesticides. Paul Bergstrand asked that more monitor wells be installed to verify the absence of a bigger plume of pesticides. Vijaya pointed out the possibility of groundwater sample contamination from sediments which could have carried the pesticides into the samples. CH2M Jones agreed to provide additional data on the ChemOx process for pesticides and to consider sampling for VOCs and adding more wells.

### **Environmental Indicators (EI)**

SCDHEC and Navy team members discussed the updates to the list of environmental indicators for sites with the EI codes of 725/750. David Scaturro explained the criteria for defining "source control". Tony explained to the team that the EIs are performance evaluators used by the Dept. Of Defense to see if the funds being spent towards site cleanups are addressing human health concerns. Rob Harrell added that these EIs are an evaluation of whether the contamination has been evaluated and whether reasonable intervention is in place to prevent exposure to these contaminants. Rob added that the principal question being asked in the EI issue is not whether you have remediated the site but rather, have you intervened and broken the path for human exposure.

### **Zone I Grid Well 11 SAP**

Paul Bergstrand asked that the EGIS and other records be verified for the existence of 2 USTs and an OWS mentioned in this SAP. He asked why there were no lower interval (subsurface) soil samples taken during the RFI. Sam Naik replied that this was perhaps because the groundwater was very shallow at this site which is about 100 ft from the Cooper River.

## **RCRA/UST Program Coordination**

Paul Bergstrand expressed concern that there was a lack of coordination on sites where USTs and RCRA cleanup efforts overlap. Gary suggested looking at the list of UST/RCRA overlap sites that Tony sent out in an email. Tony suggested that the team revisit the issue of RCRA closure being hindered by UST issues.

Dean asked how the Navy would coordinate between the two SCDHEC program offices responsible for USTs and the RCRA program. Mike Bishop (from the SCDHEC UST program) answered that Paul Bergstrand gets copied on all UST closure correspondence. Tony indicated that the Navy can help SCDHEC in identifying those sites where the UST issues impact the RCRA closure. Tony added that he will be the point of contact for keeping a list of UST/RCRA overlap sites updated. Paul Bergstrand added that a column be added to this list to identify which CNC study zone the site falls within. Tony added that he will copy Mike Bishop on the letters transferring sites to the UST program. Mike asked that the tank numbers for the tanks at the sites being transferred be identified in the letter.

Tony asked Stacey French what SCDHEC's thinking was on why RCRA sites where the only issues are UST issues, are being held up for transfer due to petroleum contamination. Stacey explained that SCDHEC's view is that until all regulatory concerns are addressed (RCRA or UST side), the site cannot be granted an NFA status. Tony cited the example of AOC 609 where a conditional NFA has been granted by SCDHEC with UST issues still open. Joe Bowers added that it has been SCDHEC's policy that the site be closed by all bureaus of SCDHEC, to be consistent.

Stacey suggested looking at the RCRA Facility Assessment (RFA) to find out why the site came into the RCRA permit. Tony said that sometimes there is not enough information during the RFA stage to determine if a site is a strictly UST site, and the RFI sampling may find that the site actually had only UST-related issues and no RCRA issues.

Dean asked if under the SCDHEC management policy, if a waste oil tank did not exhibit hazardous constituents, could such a tank should be transferred to the UST program. Tony added that historically, if the analytical data indicates that the waste oil tanks contain petroleum-related constituents only, such tanks have been transferred to the UST program.

## **EPA Guidance on Dioxin Issues**

Vijaya made a presentation on the EPA guidance on dioxins. She began by pointing out that a very low percentage of dioxin exposure comes from soil or groundwater. She explained that generally accepted screening criteria for investigative activities is 1,000 parts per trillion (ppt). She added that most dioxin detections at CNC are below 50 ppt for TCDD-equivalents (TEQs), and that 2,3,7,8- TCDD (the principal dioxin compound) is rarely detected. She explained that dioxins are highly insoluble in water and that unless groundwater was shown to be impacted by a dioxin source, dioxins were not a groundwater concern. Tony indicated that on approximately 10 percent of all soil and groundwater analyses conducted during the RFIs, dioxins were also analyzed and that a few detections were found. He indicated that the team had agreed to consider dioxins as a chemical of potential concern (COPC) in the initial RFI screening but later evaluated these COPCs during the risk assessment and found them not to be a concern at CNC.

Susan Byrd added that the 1,000 ppt (1 part per billion) level applies to site cleanup and not site investigation.

Dean added that CH2M-Jones was trying to streamline the dioxin screening process for the RFIs at CNC. Joe Bowers suggested a discussion between Vijaya, Dean, Ted Simon (EPA Region IV risk assessor) and SCDHEC risk assessors. He suggested that this discussion could result in a letter or technical memorandum proposing how the dioxin screening should be handled. Dean suggested selecting sites and background grid sampling locations without obvious dioxin sources and coming up with a dataset to generate background ranges for dioxins. Jerry agreed that this was a good approach.

### **Interim Measure Groundwater Monitoring Report**

Tony asked if the team can make a decision on the stability and "significance" of plumes at CNC as they pertain to the GPRA and include it in the Revision 1 of the IM Groundwater Monitoring Report. He added that this would help in the discussion on EIs.

## **List of Attendees:**

U.S. Navy: Rob Harrell, Tony Hunt

USEPA: Dann Spariosu

BLWM-SCDHEC: David Scaturo, Jerry Stamps, Jack Gelting, Paul Bergstrand, Susan Peterson, Jo Cherie Overcash, Gill Rennhack, Stacey French, Joe Bowers; Susan Byrd and Mike Bishop (Tuesday only).

CH2M-Jones: Gary Foster, Dean Williamson, Vijaya Mylavarapu, Paul Favara, Sam Naik, Richard Garcia.

EnSafe: Steve Parker; Charlie Vernoy (Tuesday only).

Gannett Fleming: Cheryl Nybro.