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MINUTES FROM ENVIRONMENTAL CLEANUP PROJECT TEAM MEETING DATED 28  
SEPTEMBER 1999 CNC CHARLESTON SC  
9/28/1999

**Naval Base Charleston  
Environmental Cleanup Project Team  
Meeting Minutes**

**Date:** 28 to 29 Sep 99      **Place:** DHEC HQ Farrow Road, Columbia      **Time:** 0800 - 1700

**Attendees:** Tony Hunt (SDIV); Paul Bergstrand, Mihir Mehta, Charles Watson, Eric Cathcart, Susan Byrd, Susan Peterson, Mike Danielsen, Anne Clark (DHEC); Dann Spariosu (USEPA); Todd Haverkost, Charlie Vernoy, Larry Bowers (EnSafe)

**Invited Guests:** David Scaturro, Melissa King (DHEC); Dr. June Mirecki (College of Charleston); Craig Smith, Steve Parker, Fred Erdmann (EnSafe)

**Leader:** Tony Hunt

**Scribe:** Larry Bowers

**DISCUSSIONS**

9909-M460	Tony	<p>Check-in</p> <ul style="list-style-type: none"> <li>- Review of ground rules.</li> <li>- Check in and introduction of PT members.</li> <li>- Revise and check meeting agenda.</li> </ul>
9909-M461	Mihir	<p>DHEC Request</p> <ul style="list-style-type: none"> <li>- Mihir requested that EnSafe provide a risk assessment person for certain PT meetings, as appropriate.</li> <li>- Todd obliged and stated that EnSafe's lead risk assessor, Pei, will be present when requested and as necessary to support the PT.</li> </ul>
9909-M462	Todd	<p>SS SSL Discussion</p> <ul style="list-style-type: none"> <li>- Handout provided.</li> <li>- A Zone F SS (site-specific) SSL table was provided to the PT for review and comment. Todd reminded the team that the SSL tables in the revised RFI's will be using some parameters that are slightly different than what was presented in the earlier RFI due to recent USEPA changes of some parameters. Note that SS (really zone-specific) physical and hydrogeologic parameters were used for the example.</li> <li>- EnSafe used max and min values to develop zone high and zone low DAF values.</li> <li>- The handout showed that most SS SSL's were several factors (and sometimes an order of magnitude or several greater) than the generic SSL (DAF=1).</li> <li>- Mihir espoused 3 possible options for dealing with SSL:</li> <li>- 1) calculate each SS SSL, or 2) take the low value (of DAF?) and apply it to the entire site (zone?), or 3) separate zone into several areas and calculate area-specific DAFs.</li> <li>- Todd questioned whether the use of the data from 10% of the existing wells would suffice to cover the various soil types within the investigated</li> </ul>

		<p>zone. Mihir felt that a certain % did not matter, just ensure that you select wells that adequately cover all variables within the zone. Thus a professional judgment call is required.</p> <ul style="list-style-type: none"> <li>- Todd reminded the PT that for the "Big Picture" ... whatever DAF is calculated for the zone or TOC for the zone, if the site fails the SSL we then need to go to SPLP for truly representative empirical data.</li> <li>- SS SSL process consensus. Refer to Consensus Item No.6 at the end of these minutes.</li> </ul>
9909-M463	Paul	<p><b>AOC 689 Monitoring Parameters</b></p> <ul style="list-style-type: none"> <li>- Boiler at Naval Annex. Site has one well and some DPT work.</li> <li>- Paul would like to see pest/svoc/metals added to existing sampling site.</li> <li>- PT then discussed LT monitoring requirements and "one hit wonders," in a general sense.</li> <li>- Paul referenced the "well list" he presented during last week's PT meeting. The PT confirmed that these listed wells, in addition to others yet identified, will likely require LT monitoring (t and f yet TBD).</li> <li>- Todd stated that EnSafe is waiting on TetraTech to provide their well data (approx. 200 wells) before EnSafe and the Navy sit down to discuss which wells are likely candidates for LT monitoring. Wells from the Navy UST program will be considered also.</li> <li>- Mihir then stated that DHEC would also like to see a yearly summary of off-site GW migration factors (e.g., site, COC). Todd responded by stating that the LT GW monitoring network/plan that is soon to be proposed by EnSafe and the Navy will suffice for this State request.</li> </ul>
9909-M464	Todd	<p><b>Site Boundary Discussion</b></p> <ul style="list-style-type: none"> <li>- Handout provided. Zone E site presented as example.</li> <li>- Street names, boring ID's, etc. will be dropped into final RFI product (was not in example figure). The figure was not as complete as EnSafe intended due to office disruption and evacuation caused by Hurricane Floyd. However, the figure did provide many extra details requested by DHEC during the last PT meeting.</li> <li>- Mihir requested that the fig show all AOC or SWMU boundaries, drains, ditches, topography that may affect fate and xport, sample locations ... yet we do need to avoid a figure that shows "to much" detail as it would likely become too confusing (so a catch 22 here). So it was agreed to move some site-specific figs from Section 10 to Section 5 of the RFI.</li> <li>- Figure consensus. Refer to Consensus Item No. 7 at the end of these minutes.</li> </ul>
9909-M465	Todd	<p><b>N&amp;E Figure</b></p> <ul style="list-style-type: none"> <li>- The PT agreed that the N&amp;E figure will include the boundary of the AOC/SMWU, boring locations, topography details associated with potential contaminant migration, and soil gradient based on BG or RBC (whichever is applicable for the constituent and IF a gradient is present and IF it is contour-able).</li> </ul>
9909-M466	Tony	<p><b>COC Delineation</b></p> <ul style="list-style-type: none"> <li>- A lengthy discussion ensued regarding the "how to" of COC delineation.</li> <li>- General thoughts included drawing a line around area described by red triangles (certain risk or hazard accedences for individual constituents), and then contour if applicable.</li> <li>- COC delineation consensus. Refer to Consensus Item No. 8 at the end of</li> </ul>

		these minutes.
9909-M467	Todd	<p><b>SWMU 39 Update</b></p> <ul style="list-style-type: none"> <li>- Several new off-site wells were installed about 4 to 6 weeks past. They consist of two pairs (shallow/deep) near RR track adjacent NW property line (by SWMU 42/AOC 505) in Zone A.</li> <li>- One hit of DCE, otherwise the two well pairs are clean.</li> <li>- It was noted however, that impacted GW is likely going off site on the southern portion of SWMU 42/AOC 505. Perimeter wells just north of 42/505 were clean though.</li> <li>- Tony stated that the DET completed the diffusion sampling effort at SWMU 39 and some petrol hits occurred on the north end near Hess (the Hess migrating plume). No VOC's were noted on the North end, yet they were noted on the South end near SWMU 42/AOC 505. This more less confirms what the GW wells have already indicated.</li> </ul>
9909-M468	Mihir	<p><b>Meeting Minute Correction</b></p> <ul style="list-style-type: none"> <li>- Mihir requested that today's PT meeting minutes reflect a correction for last month's PT meeting minutes.</li> <li>- Correction is "GEL 15 is now referred to as SWMU 196." Correction noted.</li> </ul>
9909-M469	Tony	<p><b>Outsourcing Update</b></p> <ul style="list-style-type: none"> <li>- Completed Phase I of the contract - 3 proposals submitted, thus 3 contractors were short listed. CH2MHill, Arcadis G&amp;M, and IT Corp.</li> <li>- The bidders have questions for the PT and there are several ways we can approach this (to keep the playing field fair for all parties).</li> <li>- The Navy wants the bidders to submit their Q's in writing. We will then respond in writing and all bidders will receive the same set of Q's and answers.</li> <li>- Phase II of the contract will occur on 3 Nov 99 which is when the bidders must submit their technical approach and cost estimate for close out of all known, unknown remaining environmental issues remaining at the base.</li> <li>- Oral presentations for each bidder will occur (one day each) on 8, 9, and 10 Nov. Thus we need to move the Nov PT meeting from the second to the third week of Nov (15 and 16 Nov in CAE).</li> </ul>
9909-M470	Paul	<p><b>Dioxin Study</b></p> <ul style="list-style-type: none"> <li>- Discussion ensued regarding dioxins, basewide statistical study (as mentioned in the Zone K RFI).</li> <li>- Todd informed the PT that the reference in the Draft RFI to a basewide statistical study for diox was a mistake and it should be disregarded.</li> <li>- Diox is detected throughout the base at very low levels, yet thresholds are low also. It is likely that any diox detected will be a risk contributor that will be discussed in COC refinement section post the BRA. It is also likely the diox will be dropped out of the COC list during this refinement section (provided valid reasons for its exclusion are presented).</li> </ul>
9909-M471	Mihir	<p><b>Shrimp Roast at Mihir's House Post PT Meeting</b></p> <ul style="list-style-type: none"> <li>- Host did not show up with the goods.</li> <li>- Guests departed rapidly and very hungry.</li> </ul>
9909-M472	Fred	<p><b>Zone G Scoping (further RFI characterization)</b></p> <ul style="list-style-type: none"> <li>- Handout provided. Summary of additional investigations proposed for</li> </ul>

		<p>Zone G.</p> <ul style="list-style-type: none"> <li>- General discussion ensued regarding the additional sampling proposed for SS SSL determination.</li> <li>- The PT agreed that a revision to the SSL process was in order. At step No. 4 for the COC refinement, we need to define N&amp;E based on SSL.</li> </ul>
9909-M473	Craig	<p>Zone F Scoping (further RFI characterization)</p> <ul style="list-style-type: none"> <li>- Handout provided. Summary of additional investigations proposed for Zone F.</li> <li>- General discussion ensued regarding the additional sampling proposed for SS SSL determination.</li> <li>- Charlie asked if EnSafe could complete the 2<sup>nd</sup> round of sampling prior to getting a formal DHEC approval. DHEC said it would be OK just as long as both parties are aware of the general reason for the re-sampling.</li> <li>- DHEC provided conditional approval of proposed field work.</li> </ul>
9909-M474	Steve	<p>Zone K Scoping (further RFI characterization)</p> <ul style="list-style-type: none"> <li>- Handout provided. Summary of additional investigations proposed for Zone K.</li> <li>- General discussion was attempted regarding the additional sampling proposed for SS SSL determination.</li> <li>- Mihir stated that Zone K comments were inbound (&lt; 1 week). Therefore, EnSafe should review comments before the proposed sampling plan is submitted. Most of the comments pertain to N&amp;E issues. The handout with the proposed sampling will be revised, accordingly, upon review of DHEC's comments.</li> </ul>
9909-M475	Eric	<p>Method Blanks</p> <ul style="list-style-type: none"> <li>- Charlie feels that metals found in sample blanks are due to the lab because it definitely is not coming from the NCSD. Subsequent analytics proved this out.</li> <li>- Charlie is also waiting on a letter from SW Labs stating the [metals] allowed in their lab blanks (e.g., the method blanks).</li> <li>- Eric requested that EnSafe use lab-grade DI water for equipment and field blanks, and not water from the NCSD. However, it is acceptable to use NCSD water for decon purposes. EnSafe concurred and agreed to this request.</li> </ul>
9909-M476	Todd	<p>SWMU 196 (GEL 15)</p> <ul style="list-style-type: none"> <li>- Handout provided for DHEC review.</li> <li>- Todd requested that DHEC review this "info summary" package and our proposal for additional work at this newly designated SWMU. The work plan was developed to address recently discovered site concerns as well as DHEC's comments from the first summary package made available during early summer 99.</li> <li>- EnSafe requested that DHEC provide comment in particular on 1) the Work Plan goal and objectives, and 2) Work Plan format. EnSafe would like to use this simplified Work Plan format for all subsequent field work in order to expedite the review/approval process.</li> </ul>
9909-M477	Todd	<p>SWMU 17</p> <ul style="list-style-type: none"> <li>- Handout provided (unofficial work plan submittal).</li> <li>- Todd provided a brief history of SWMU 17 with respect to the RFI and CMS efforts.</li> </ul>

		<ul style="list-style-type: none"> <li>- The unofficial work plan is strictly a site characterization effort (for now) for GW and soil. EnSafe will NOT propose any active free product recovery until the additional characterization effort is completed.</li> <li>- DHEC informed the PT that Susan B. and Mike D. will provide review of the work plans for SWMUs 196 and 17.</li> </ul>
9909-M478	Tony	<p><b>Inorganics in GW</b></p> <ul style="list-style-type: none"> <li>- Tony briefed the PT on the history surrounding inorganics in GW at the base.</li> <li>- Arsenic has been located (&gt;MCL) in GW in various locations at the base on a sporadic basis. It could be due to the sampling process or naturally occurring.</li> <li>- Low flow sampling and various filtering methods have been completed at 26 selected wells in an attempt to determine the cause for arsenic, and a few other problematic inorganics such as Thallium. Though the [inorganic] decreased as a result of these additional precautions, the efforts have been largely unsuccessful in dismissing the problematic inorganics.</li> <li>- Dann stated that we ought to check for a correlation between Arsenic and other inorganics. This will be done for existing data from the previous rounds of sampling for select wells. Obviously, the elevated presence of suspended solids would lead to an increase in all inorganics analyzed for.</li> <li>- <u>Dr. June Mirecki (guest - College of Charleston)</u> informed the PT of her extensive review of GW data at the base which is one of her research projects she is directing for the College. A few points of interest from Dr. Mirecki: 1) she has not seen any "arsenic plumes" based on the current arsenic distribution in GW, 2) the species of arsenic and other metals could be influenced by redox potential, 3) the existing GW data {number of data events and number of wells} is more than adequate in evaluating the inorganics issue, and 4) she also stated that the really "Big Question" should be "Are the arsenic values actually high enough above BG to warrant any remedial attention?"</li> </ul>

### ACTION ITEMS

9909-A257	Todd/Tony	Update PT on LT GW monitoring plan. By next PT meeting, 13 Oct.
9909-A258	Tony	Check into availability of diffusion sampling results (DET). By next PT meeting, 13 Oct.
9909-A259	Todd	Provide boring logs for wells at AOCs 607, 609, 613 and SWMU 109 (by Todd via Craig). By next PT meeting, 13 Oct.
9909-A260	Todd	Provide field pH data for AOC 617, plate and galvanizing shop (by Todd via Craig). By next PT meeting, 13 Oct.
9909-A261	Susan P. and Mike	Provide comments on draft WP for SWMUs 17 and 196 (formerly GEL 15). By 6 Oct 99.
9909-A262	Dr. Mirecki	Generate additional arsenic impacted GW site figures that show temporal variations. By next PT meeting, 13 Oct.

9909-A263	Todd	Provide a list of sites (basewide) which may have been involved with arsenic producing processes (e.g., potential anthropogenic sources of Arsenic such as Arsenic containing pesticides used at the golf course). By late Oct.
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## CONSENSUS ITEMS

<b>9909-C6</b>	<p><b>SS SSL Process - 1) Calculate DAF's and determine zone TOC, discuss in RFI, 2) generate compound tables for each zone then calculate SS SSL {the Todd table handed out at the beginning of the PT meeting}, 3) Based on table in step No. 2, compare site constituents to zone calculated values for defining COPC's {max values}, define N&amp;E based on SSL, 4) perform SPLP on constituents that fail SSL screening {for eventual COC development}.</b></p> <p><b>Steps No. 1 and 2 will be completed in Section 6 of the RFI. Steps 3 and 4 will be completed in Sections 5 and 10 of the RFI, respectively.</b></p> <p><b>EnSafe selects DAF and TOC and justifies reasons for their selection. DHEC approves this approach.</b></p> <p><b>Note that for Zones E, F, and G; soils are heterogenous and several values are likely. Note that Zone K; soils are homogenous (sandy more or less) and a single value is likely.</b></p>
<b>9909-C7</b>	<p><b>Figure Specifics - Some site specific figures will be moved from section 10 to 5 in the RFI.</b></p>
<b>9909-C8</b>	<p><b>COC Delineation - EnSafe will complete figures based on the general discussion at this PT meeting. DHEC will approve figures if they feel the COC is adequately delineated based on COC characteristics and unique site conditions.</b></p>