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MCB CAMP LEJEUNE  
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U S NAVY RESPONSE TO NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES COMMENTS ON THE DRAFT SAMPLING AND ANALYSIS PLAN  
SUPPLEMENTAL INVESTIGATION OPERABLE UNIT 2 (OU2) SITES 6 AND 82 MCB CAMP  
LEJEUNE NC  
8/23/2012  
CH2M HILL

**Response to Comments  
Draft Sampling and Analysis Plan  
Supplemental Investigation  
Operable Unit No. 2, Sites 6 and 82  
Marine Corps Installations East - Marine Corps Base Camp Lejeune, North Carolina**

PREPARED FOR: Dave Cleland, NAVFAC Mid-Atlantic  
Charity Rychak, MCIEAST-MCB CAMLEJ  
Gena Townsend, USEPA Region 4  
Randy McElveen, NCDENR

PREPARED BY: CH2M HILL

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## **Introduction**

The purpose of this document is to address comments on the Draft Sampling and Analysis Plan for the Supplemental Investigation at Sites 6 and 82, Operable Unit No. 2, Marine Corps Installations East- Marine Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ). The United States Environmental Protection Agency (USEPA) had no comments on the document. The North Carolina Department of Environment and Natural Resources (NCDENR) provided the comments listed below. Responses to comments are provided in bold.

## **NCDENR Comments (dated July 2, 2012)**

1. The last sentence of the second bullet on page 38 states, "The cause of the fluctuating chlorobenzene concentrations in IR06-GW16 is unknown, and could be caused by a seasonal variation or a potential unknown source." This statement needs to be updated to be consistent with bullet number four on the same page. There could still be unknown sources but we also have a known source that was likely the cause of the fluctuations along with potential of seasonal groundwater fluctuations. Please include the new source information in this bullet. There seems to be a disconnect based on the way it is written.

**The text will be updated to include the drums of unknown liquid as a potential cause of fluctuating chlorobenzene concentrations at IR06-GW16.**

2. Monitoring well purge rate is discussed in the third bullet on page 64. As we discussed in the June partnering meeting, for most wells at Camp Lejeune, the 0.2 to 0.5 liter per minute purge rate is generally too slow for the hydraulic conductivities in the area. Please make appropriate corrections or reference.

**As discussed at the June 2012 partnering meeting, the majority of monitoring wells in which groundwater is sampled at MCIEAST-MCB CAMLEJ have a high hydraulic conductivity, allowing conditions to be conducive to meet the requirements of low-flow sampling techniques. The small percentage of wells with low hydraulic conductivities exhibiting excessive drawdown cannot meet the requirements for low-flow; therefore, are**

**not purged using low-flow sampling techniques. The well response to pumping will dictate one of two monitoring well purging approaches: low-flow or well volume. For the low-flow purging approach, the well is purged at a flow rate less than 1 liter per minute with a target drawdown of less than 0.33 feet and a maximum of 5% of the static water column until water quality parameters stabilize. If the water level draws down more than 0.33 feet or the maximum of 5% of the static water column, the well volume approach will be followed. In the well volume approach, the well is purged a minimum of 3 wells volumes at a reduced flow rate to avoid exposing a submerged well screen until after water quality parameters stabilize.**

**The SAP will be updated to reflect this discussion.**

3. In many cases, the Project action Limits (PALs) for metals in the table on Worksheet #15-7 are lower than the State and EPA groundwater standards. Do we generally use background concentrations in this manner, when they are lower than the Standards?

**Yes. Background concentrations are considered along with State and EPA standards when developing PALs for metals. Metals concentrations that exceed background concentrations may indicate a source area or release, even if concentrations are below State and EPA groundwater standards.**

4. We need more soil gas samples as shown on Figure 10, around the area where we know there is VOC contaminated soil, in order to delineate the source contaminants in the cleared area to the north of the treatment plant where test pit excavations were completed in August 2012.

**The passive soil gas survey was conducted as a screening tool to identify additional potential source areas, not to delineate source areas.**