

Document Title:

(1) Draft Technical Memorandum, Replacement Well Installation and Groundwater Evaluation, Marine Corps Air Station, El Toro, California

Reviewer: Triss M. Chesney, P.E., Department of Toxic Substances Control; comments received 13 July 2001

Comment No.	Section/ Page No.	Comment	Response
SPECIFIC COMMENTS			M60050.002585 MCAS EL TORO SSIC # 5090.3
1.	Section 2.2 Page 2-2	<p>The second sentence in the second paragraph states, "Prior to sample collection, each well was purged using either a dedicated low-flow bladder pump or potable Grundfos submersible pump."</p> <p>Please identify the purge method used for each well in the document.</p>	The purge methods have been identified.
2.	Section 2.2 Page 2-2	<p>The third sentence in the second paragraph states, "During purging, groundwater was extracted at a flow rate ranging from 1 to 2.5 gallons per minute (gpm),..."</p> <p>Table C-1, Groundwater Purging and Stabilization Parameter Summary, indicates that purge rates ranged from 0.35 to 2.5 gpm. Please clarify this in the text. Additionally, please include the purging and stabilization parameter logs as an appendix to the technical memorandum.</p>	<p>The text has been corrected to reflect a purge rate ranging from 0.35 to 2.5 gpm.</p> <p>Groundwater sampling logs have been included.</p>
3.	Section 2.2 Page 2-7	<p>The second paragraph states, "Monitoring well 18_BGMW18A went dry after purging approximately 30 gallons." The associated well boring log indicates that the lithology across the upper screen length consists of a poorly graded sand layer from approximately 114 to 129 feet below ground surface (bgs). The lithology adjacent to the lower portion of the screen is composed mostly of silty sand silty clay, and clay.</p> <p>DTSC recommends placing a low-flow bladder pump at approximately 130 feet bgs and conducting low-flow purge rate tests. The test can be used to determine if the purge rate can be reduced to equal the rate of recharge so that the well will not go dry during purging.</p>	<p>Subsequent sampling conducted at this well will use low-flow sampling techniques and the pump will be placed at the bottom of the sand unit.</p> <p>Note that there are no significant differences between the analytical results for 18_BGMW18 and 18_BGMW18A.</p>

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4.	Section 4.2 Page 4-1	<p>The recommendations include additional sampling to confirm the results and conclusions presented in the technical memorandum. This will include comparison studies between the original monitoring wells and the associated replacement wells.</p> <p>When conducting comparison studies between wells, the same groundwater purging method should be used. Please identify the purge method used for each well and include copies of the groundwater purging and stabilization parameter logs, and analytical reports with the associated report that will present the results.</p>	<p>Comment noted. For subsequent comparison analysis, purge methods have been identified and documented in the final technical memorandum.</p> <p>In addition, the logs have been included in the final technical memorandum.</p> <p>Analytical reports have also been included.</p>
5.	Table C-1 Appendix C	<p>The table indicates that the turbidity was high during purging and stabilization measurements for wells 12-DBMW48A (17.21 nephelometric turbidity units (NTUs)) and 18_BGMW18A (870 NTUs). Additionally, the turbidity for wells 03_DGMW26A (6.29 NTUs) and 04_DGMW66A (7.21 NTUs) slightly exceeded the preferred turbidity level of less than 5 NTUs.</p> <p>To reduce the turbidity, DTSC recommends the use of low-flow purging for these wells. The pump inlet should be placed adjacent to the most permeable sand layer. Then drawdown should be measured during purging and the purge rate should be adjusted to minimize drawdown.</p>	<p>Recommendation noted.</p> <p>To reduce the turbidity, a low-flow pump should be installed at these wells prior to future sampling events.</p>
6.	Table C-1 Appendix C	<p>Please include measurements of groundwater drawdown in each well during purging, particularly for the wells purged using the low-flow technique, in Table C-1</p>	<p>Drawdown was not recorded during purging. For wells purged using the low-flow technique, initial and final groundwater levels were documented on the purge logs (copies of the purge logs have been provided in the final technical memorandum).</p>

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Reviewer: Patricia A. Hannon, California Regional Water Quality Control Board, Santa Ana Region; comments received 17 October 2001

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1.		Based on the information in the report, we concur with the recommendation for resampling of the five well pairs. In the data report for this additional sampling round, please include updated maps, clearly indicating the new well locations in relation to old wells.	<p>Evaluation of the results of the supplemental sampling have been included in the final tech memo.</p> <p>The replacement wells were installed very close to the original wells (generally within 10 to 20 feet). When the replacement wells are plotted along with the original wells, they cannot be distinguished from each other due to their close proximity and the scale of the map. The text has been amended to state the general distance between the original wells and the replacement wells.</p>