DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER

JUN 07 2016

AFCEC/CIBW
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McClellan, CA 95652

Ms. Angeles Herrera
United States Environmental Protection Agency (EPA), Region IX
75 Hawthorne Street
San Francisco, CA 94105

Ms. Tina LePage
Arizona Department of Environmental Quality (ADEQ)
1110 West Washington Street, 4415B-1
Phoenix, Arizona 85007

SUBJECT: Site ST012, Liquid Fuels Storage Area, Former Williams Air Force Base (AFB)

In recent months, our respective Remedial Project Managers (RPMs) and Air Force (AF) Base Environmental Coordinator (BEC) on the Williams AFB BRAC Cleanup Team (BCT) have been focusing on the transition of the ST012 remedy from Steam Enhanced Extraction (SEE) to Enhanced Bioremediation (EBR). During this period, the AF and its remediation contractor, Amec Foster Wheeler, have been dedicated to evaluating site information and assuring the most effective implementation of the ST012 groundwater remedy in accordance with the Remedial Action Work Plan (RAWP). I wanted to take this opportunity to summarize accomplishments, status and plans at ST012 (Attachment 1), reiterate the AF commitment to achieving the ST012 cleanup objectives and remedial timeframe, and discuss recent BCT interactions.

EPA and ADEQ RPMs have provided letter correspondence, technical comments, and BCT meeting input in regard to ST012 operations and the SEE/EBR transition. The regulatory comments and discussions over the past two years have been beneficial and improved the implementation and operation of the remedy. In all cases, including the AF's recent response letter dated 19 May 2016 addressing the 3 May 2016 EPA/ADEQ joint letter regarding continued SEE extraction, the AF and Amec Foster Wheeler endeavored to be constructive and responsive by taking appropriate steps to address EPA/ADEQ concerns. While there may be technical differences between EPA/ADEQ and the AF over remedy implementation, such differences should not be interpreted as diminishing the AF commitment to achieve overall remedy objectives. Pursuant to our established relationship under the Federal Facility Agreement (FFA), the AF values the regulatory evaluation of the remedy and will continue to consider new site information and regulatory input.

The AF is looking forward to a continued productive relationship with EPA and ADEQ that achieves further remedial progress at the former Williams AFB. Towards that end, it has come to my attention that recent regulatory comments regarding ST012 during the May BCT conference call were presented in a negative manner that indicated deterioration in the working BCT team relationship. The AF expects that our 19 May 2016 response letter will help alleviate the EPA/ADEQ concerns by confirming our commitment and plans for ST012 remedy implementation. The AF and Amec Foster Wheeler exercised significant and reasonable efforts to optimize SEE implementation using available site information. As a result, diminishing Light Non-Aqueous Phase Liquid (LNAPL) removal rates were documented at the end of SEE operations. While the AF understands the EPA/ADEQ concerns over the potential for residual LNAPL or plume migration at the site, the April 2016 groundwater monitoring results do not indicate a sustained or elevated presence of benzene above the maximum contaminant level (MCL) at the downgradient perimeter monitoring wells. Our current emphasis is to collect post-SEE site characterization information in order to continue optimizing the remedy, specifically EBR, in accordance with the RAWP. As stated in our 19 May 2016 letter, the AF believes that evaluating data collected during post-SEE monitoring, installation of 23 additional wells, and initial EBR implementation is the best way to determine current site conditions and optimize the approach to achieving remedial objectives. I am requesting your support in this approach and believe that this will help assure that future BCT interactions are conducted in a productive manner.

In addition to requesting your support, the AF would like to respond to a statement made by Carolyn d'Almeida, EPA RPM, during the 19 May 2016 BCT conference call. Ms. d'Almeida stated Amec Foster Wheeler would potentially have joint and several liability under CERCLA if contamination is spread from ST012. This assertion was unhelpful and not supported by CERCLA, in particular 42 USC § 9619(a) which provides qualified immunity to CERCLA response action contractors. Amec Foster Wheeler has clearly not acted with negligence or intentional misconduct to cause a release at ST012. The AF is the responsible party and signatory authority for the FFA and Operable Unit 2 (OU-2) decision documents. Disagreements on the most viable and technically and legally appropriate course of remedial actions at this site should be addressed through mutual dialogue with the AF and its contractors and, only if necessary, through the FFA dispute resolution process. The parties to the FFA entered the agreement to enhance response action progress and establish a procedural framework for communication and consultation among the parties. Both the AF and Amec Foster Wheeler are fully committed to this process and look forward to continued cleanup successes with our regulatory partners at the former Williams AFB.

Please contact me at (916) 643-1250, ext. 100 or philip.mook@us.af.mil if you have any questions regarding this letter.

Sincerely,

Philip H. Mook Jr.

PHILIP H. MOOK, JR.
Western Execution Branch Chief

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Attachment:
Summary of ST012 Remedy Status

cc:
AFCEC/CIBW – Catherine Jerrard
CNTS – Geoff Watkin
Amec Foster Wheeler – Don Smallbeck
Administrative Record – Terie Glaspey

June 3, 2016
Summary of ST012 Remedy Status

Past Activities

- **Signed Record of Decision Amendment (RODA)** — **Sep 2013**
- **Final Remedial Design/Remedial Action(RD/RA) Work Plan** — **May 2014**
  - **Approved By Air Force, Regulators and Amec Foster Wheeler**
- **Steam Enhanced Extraction (SEE) Construction** — **Feb-Aug 2014**
  - **The well field included 88 steam injection or extraction wells, more than 5.5 miles of wiring, and 2.5 miles of piping for steam injection and groundwater extraction.**
- **SEE Commissioning and Startup** — **Sep 2014**
- **SEE Operation** — **Oct 2014 – Apr 2016**
  - **Target Treatment Zone - Expanded from 371,000 cubic yards (Focused Feasibility Study, FFS) to 410,000 cubic yards**
  - **Treatment zone consisted of three distinct steam injection intervals, at 145–160 feet below ground surface (bgs), 160–195 feet bgs, and 210–245 feet bgs.**
  - **SEE operated for 578 days versus design estimate of 472 days**
  - **Removed approximately 2.75 million pounds of contamination (SEE/SVE)**
  - **Achievement of RD/RA transition criteria was demonstrated from Jan to Apr 2016**
  - **Completed eight week post-SEE groundwater extraction in Mar-Apr 2016**
  - **Minimal (<100 gal) liquid NAPL removed last four weeks (Apr 2016) of post-SEE groundwater extraction**
  - **Downgradient perimeter monitoring well sampling results in Apr 2016 indicate no plume migration (<MCL)**
- **Total Mass Removed at ST012 - 7.5 million pounds or approximately 1.1 million gallons (includes mass removal summarized in FFS plus additional mass removed by SVE before SEE was started)**
- **Draft RD/RA EBR addendum submitted to regulatory agencies** — **Nov 2015**
- **Presented evaluation of SEE to EBR transition in monthly BCT meetings from Nov 2015 thru Apr 2016**
- **Draft Final RD/RA EBR addendum submitted** — **Mar 2016**

Summary of ST012 Remedy Status (Continued)

Current Activities

- **SEE Decommissioning/Demobilization** — **May 2016-Aug 2016**
- **Deep SVE wells reconnected and operational** — **May 2016**
  - Continues vapor recovery from deep vadose zone above SEE treatment area
- **LNAPL gauging and removal (perimeter and SEE wells)** — **Ongoing**
- **Phase 1 EBR well installation, and characterization** — **May 2016-Jun 2016**
  - 23 new wells in areas of interest
  - Continuous core drilling
  - LNAPL screening and dye tests
  - Modifying well screen intervals and well depths based on site conditions

Future Activities

- **Phase 1 EBR Baseline Groundwater sampling** — **Jun 2016**
- **Phase 1 EBR Construction** — **Jul 2016-Aug 2016**
- **Phase 1 EBR Treatment** — **Sep 2016-Aug 2017**
- **Phase 1 EBR****
  - Injections — Sep-Nov 2016
  - Perimeter Well Monitoring — Sep 2016-Aug 2017
  - NAPL Removal From Wells As Necessary — Sep 2016-Aug 2017
  - Updates on Site Data Collection, Model Update — Sep 2016-Aug 2017
- **Evaluation of Phase 1 EBR treatment** — **Feb 2017-Apr 2017**
  - Model Update and evaluate additional EBR Phase of treatment as necessary
- **Phase 2 EBR** (conceptual)**
  - Planning — Apr 2017-May 2017
  - Implementation — Jun 2017-Aug 2017
  - Monitoring — Sep 2017-Aug 2018
- **Evaluation of Phase 2 EBR treatment** — **Feb 2018-Apr 2018**
  - Implement additional EBR phases of treatment as necessary
- **Phase 3 EBR** (as above, conceptual, if necessary)** — **Apr 2018-Aug 2019**

The schedule may be expedited in certain locations based on results from drilling and monitoring results in each phase