

May 23, 2017

Mr. Ken Kalman
Project Manager
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Paul Davis
Project Manager
Oklahoma Department of Environmental Quality
707 N. Robinson
Oklahoma City, OK 73101

Re: Docket No. 70-925; License No. SNM-928
Pilot Test Budget Supplement

Dear Sirs:

The final approved 2017 budget for the Cimarron Environmental Response Trust submitted by Environmental Properties Management (EPM) included design, installation, and analysis for pilot testing of several infiltration and extraction trenches at the Cimarron site. The construction and testing of the pilot test trenches is intended to provide information that may be needed to finalize the design and reduce uncertainty related to the performance of the trenches.

2016 Planning for the Pilot Test Trench Construction and Testing

To obtain a cost estimate for the pilot tests for the 2017 budget, two subcontractors were requested to provide a “budgetary estimate” for the construction of five pilot test trenches: four injection trenches and one extraction trench. Each trench was to be approximately 200 feet in length. The subcontractors were given a site tour and were provided copies of 60% design drawings and scope of work, showing portions of the following trenches:

- 220 feet of Trench GWI-UP1-01
- 175 feet of Trench GWI-UP2-01
- 200 feet of Trench GWI-UP2-04
- All of Trench GWI-BA1-01
- All of Trench GETR-BA1-01

Based on the subcontractor cost estimates, funding for the pilot tests included:

- \$796,328 for subcontractor (surveying, construction, provision of equipment).
- \$277,674 for Burns & McDonnell for detailed design engineering, procurement, construction oversight, and testing.
- Limited funding for Enercon to provide radiation protection (RP) support (it was assumed that excavated spoils would be scanned, only requiring a few man-days worth of work).

2017 Additions to the Scope of Work

In January, preparation of detailed (90%) design drawings and specifications began for the pilot test injection and extraction trenches and associated infrastructure. Detailed design drawings and specifications were necessary to prepare a request for bid (RFB). During this detailed design phase, the following items/issues were identified that had not been included in the 60% subcontractors' scope of work (or cost estimates):

1. Preliminary preparations
 - a. Staging all materials outside of the 100-year floodplain
 - b. Implementation of stormwater management controls
 - c. Road improvement at the pond's emergency spillway
2. Monitor well installation and abandonment
 - a. Monitor wells need to be installed in UP1 to fill lithologic data gaps
 - b. Monitor wells need to be abandoned in BA1 where they interfere with construction
 - c. Monitor wells need to be installed in UP2 and BA1 to monitor drawdown near completed trenches
3. Trench construction
 - a. A thicker HDPE or geocomposite liner is needed for UP2 trenches to prevent damage during backfill of rock
 - b. Silica or other non-reactive granular fill for injection trenches is needed to minimize the potential for future fouling
 - c. Monitor wells are needed within the trenches to monitor water levels across the trench
4. Provision of test skids containing flow and pressure meters, valves, and controls by the subcontractor
5. Miscellaneous Costs
 - a. Management & indirect costs
 - b. Facilities – construction trailer, rental equipment, dumpsters, etc.
 - c. Bonding, tax, insurance

Soil Containing Elevated Activity

Early in February, an activity plan was initiated in accordance with the site-specific Quality Assurance program. In assessing potential radiological hazards and/or conditions for the Radiation Protection section of the activity plan, a review of the radiological data presented in the March 1998 *Final Status Survey Report for Phase III Subarea O, Uranium Waste Ponds #1 and #2 (Subsurface)* was conducted.

This review was conducted because Condition 27(c) of NRC License SNM-928 states, "For Waste Ponds 1 and 2 in Phase III Subarea O, the licensee may use the 'Method for Surveying and Averaging Concentrations of Thorium in Contaminated Subsurface Soils' ... for volumetric

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concentration averaging of enriched uranium in soils below the surface.” The volumetric averaging methodology provides for increasing concentrations of radioactive material with increasing depth.

Portions of Trench GWI-UP1-01 and GWI-UP2-01 are within the footprint of the former waste ponds; the data was reviewed to determine if soil averaging over 30 pCi/g total uranium would be brought to the surface. In the UP1 area, along the pilot trench line, the soil from 6 to 9 feet below ground surface (bgs) averages 35 pCi/g total uranium, and bedrock was encountered from 6 – 10 feet bgs. In the UP2 area, along the pilot trench line, the soil from 5 to 8 feet bgs averages 30 pCi/g total uranium, and bedrock was encountered from 8 – 9 feet bgs.

Excavating and stockpiling soil from grade to bedrock will most likely blend the higher and lower concentration soil to produce a more homogeneous, low activity soil. But because the average concentration of the soil in these depth zones is near or slightly above 30 pCi/g total uranium, an ALARA-based decision was made to return this soil to the same depth from which it was excavated. This should allow for the volumetric averaging criteria to still be met and the area would continue to be releasable for unrestricted use.

The process of excavating, stockpiling, and backfilling the trenches was revised to ensure that the soil in the above-described depth intervals is returned to the trenches at a minimum depth of 6 bgs in UP1 and 5 feet bgs in UP2. Additional stormwater management controls will be implemented for this material to prevent the potential migration of licensed material away from the trenching activities.

Need for Additional Funding

Due to the potential cost impact of the changes listed above, plus the additional requirements associated with management of the deeper soil, one pilot trench was removed from the scope of work. A request for proposal (RFP) for pilot test trench construction was sent to three companies on March 21, 2017. A pre-bid meeting and site tour was conducted at the Cimarron site on March 28, 2017.

NRC and DEQ approved the final budget on April 10 and April 27, 2017, respectively. The last bid addendum responding to requests for information was issued to pilot test bidders on April 14, 2017. Bids were received on April 18, 2017. The average of the three bids received for the construction of the pilot test trenches was \$1,516,495 (exceeding the approved budget by \$720,167).

Based on the bid tab from the bidders, the additions to the scope of work listed in items 1 through 5 above represent approximately \$300,000. The original cost estimate was based on simultaneous construction of two trenches, but after reviewing the final design and installation requirements, all three subcontractors indicated that would be infeasible; the trenches need to be

constructed sequentially. The schedule for construction therefore increased significantly. The segregation of “elevated activity” soil in UP1 and UP2 also contributed to the schedule increase and required additional expense for soil management (including additional stormwater controls). Finally, details provided in the 90% design and specifications that had not yet been defined in 2016 resulted in additional costs to complete.

Evaluating Alternative Paths to Proceed

EPM requested Burns & McDonnell to do an evaluation to evaluate modifying the requirements and/or reducing the scope of work from the original plan for the pilot test sufficiently to both yield the information needed and complete the pilot test within the budgeted funding. Shortening the trenches and staying outside of the footprints of the former waste ponds was considered, but it was considered doubtful that the information obtained from a scope of work that was reduced enough to come in under the approved budget would provide all that is needed to address the needs of the revised DP.

Significant unanticipated effort was required to revise drawings and specifications due to changes in the scope of work. The cost of this additional work is approximately \$65,000. The lengthened schedule will also require increased time for construction oversight, requiring additional unanticipated funding.

In addition, it became evident that, primarily due to the identification of elevated activity soil in UP1 and UP2 and in keeping w/ALARA principals and a commitment to NRC to survey/monitor subsurface soil brought to the surface, it will be necessary to provide radiation protection support full time through the construction and testing of the trenches. The additional time estimated for this additional support is approximately \$53,000.

Proposed Path Forward

One alternative is to request approval of a supplement to the budget including:

- \$53,000 for Task 2 to provide radiation protection support for the extended construction and testing schedule for the pilot trench construction
- \$65,000 is requested for Task 4 to cover additional design costs.
- \$1,070,000 for the construction subcontractor. This consists of a bid of \$1,485,643 (the middle subcontractor bid) + \$371,410 (25% contingency) – \$796,328 (approved funding) = \$1,060,725.

This alternative would resolve the budgetary shortfall by approving approximately \$1,200,000 in additional funding. However, due to the schedule delay created by this situation, only a portion of the 90% design work can begin in 2017, and none of the RFBs for construction or fabrication will be started in 2017. In addition, submission of *Facility Decommissioning Plan – Rev 1* by

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the end of the year may not be possible. The contractors can no longer complete enough of the existing 2017 scope of work to require the total funding that such a supplement would provide.

An alternative solution would be to request no additional funding, but perform the pilot test in accordance with current designs and plans, and prepare only as much of the 90% design as can be completed within the current approved budget. The Trustee believes this is the best solution; not enough work can be completed to require additional funding, and there is no reason to request funding that cannot be use.

The schedule for starting (or completing) the pilot test is dependent on when regulatory approval to proceed (scope change or budget supplement) is received. It would be aggressive to execute contracts and mobilize within 4 weeks of regulatory approval to proceed. Based on the bid received, construction and testing of pilot test trenches will require a minimum of 11 weeks. Even if approval is received by mid-June, it will be late September before the pilot test field work is complete.

EPM respectfully requests that NRC and DEQ approve the pilot test in accordance with the current design, and defer preparation of 90% design and RFBs to the extent needed to remain within the current approved 2017 budget.

If you have questions or comments related to this request, please contact me at 405-642-5152 or jlux@envpm.com.

Sincerely,



Jeff Lux, P.E.
Project Manager

Enclosure

cc: Robert Evans, US Nuclear Regulatory Commission, Region IV
NRC Document Control Desk (electronic copy only)