Representative Task Order #2
Restoration Management Actions

Title: Restoration Management Actions – Groundwater Sampling, Analysis, Modeling, Monitoring Well Maintenance and Landfill Inspection

Task Objective:
Accomplish regulatory requirements and due diligence actions related to operating, managing or being responsible for groundwater wells, landfills and groundwater contamination.

Period of performance: May 1, 2015 – April 30, 2016

Task Background: Goddard Space Flight Center (GSFC) has groundwater wells throughout the Center supporting ongoing investigation of trichloroethene (TCE) contamination of the groundwater and groundwater withdrawl. Regulations require that GSFC maintain the wells in a condition that protects the groundwater of the State.

GSFC maintains a Storm Water Pollution Prevention Plan (SWPPP) as a requirement of permits issued by the State of Maryland. The SWPPP requires that Landfills A1, A2, B and C be inspected twice per year.

GSFC is responsible for managing groundwater TCE contamination including periodic inspection of the identified source area and periodic assessment of the plume.

Task Description:

A. The Contractor shall: Inspect the wells, provide a status report to the COR describing the condition of each well and perform necessary maintenance and other actions as described in and in accordance with the latest version of *200-PG-8500.5.1, Groundwater Monitoring and Production Well Maintenance*. Review and update the latest version of *200-PG-8500.5.1, Groundwater Monitoring and Production Well Maintenance*. Inspect the landfills as required by the SWPPP. Inspect the 'source area' following the same schedule and general procedures as the landfill inspections. Provide all documentation of the inspections to the COR.

The Contractor shall provide final draft report to the COR April 1, 2016.

B. The Contractor shall: Conduct potentiometric measurements of wells and perform potentiometric mapping. Collect one round of potentiometric data for the TCE Plume and GSFC Greenbelt Campus to evaluate groundwater elevations across the TCE Plume and GSCF Greenbelt Campus.

The contractor shall submit a field health and safety plan and field sampling and analysis plan for review and approval prior to initiating field activities, with table and map, along

with planned analyte list, to cover both potentiometric measurement and groundwater sampling. NASA shall be provided 15 calendar days to review and comment on field health and safety plan and field sampling and analysis plan. The Contractor shall use the same wells in this study as used to produce the October 2013 report, *"Final 2013 TCE GW Plume Annual GW Monitoring Report."*

The Contractor shall conduct one sampling event for potentiometric data from the existing monitoring well network and prepare a Groundwater Potentiometric Map for the TCE Plume and GSFC Campus per the Sampling and Analysis Plan. The Contractor shall use the same wells in this study as used to produce the October 2013 report, *"Final 2013 TCE GW Plume Annual GW Monitoring Report."* All Potentiometric data shall be collected within one 12-hour period.

The contractor shall: Perform groundwater sampling and analysis for a report required by the Maryland Department of the Environment. Conduct TCE plume groundwater VOC sampling in order to observe and analyze changes in fate and transport of the TCE plume. Collect one round of groundwater samples from the existing TCE plume monitoring wells. Perform sample analysis using EPA Method 8260B. Analyze Monitored Natural Attenuation (MNA) parameters (field parameters for pH, SC, DO, ORP, etc.) from the same set of monitoring wells.

The contractor shall perform all field sampling and laboratory analysis in accordance with current EPA and Maryland Department of the Environment guidance.

The contractor shall maintain field notes for all field activities. The field notes shall be legibly written using a consistent, standardized format.

C. The Contractor shall prepare a TCE Plume Monitoring Report for NASA GSFC for evaluation and discussion with the Maryland Department of the Environment. The TCE Plume Monitoring Report shall describe field work, deviations to plan, along with summary of data with data tables. The brief data summary shall only discuss, in general terms, similarities and differences to 2013 TCE groundwater plume annual groundwater monitoring report's conclusions and recommendations including data/plume maps. The Table and map shall highlight any positive detection. The report shall be in the same general format as the October 2013 report, *"Final 2013 TCE GW Plume Annual GW Monitoring Report,"* Topics shall cover:

a. Sampling activities;
b. Sampling data;
c. Potentiometric monitoring; and
d. Well abandonment activities.

The contractor shall: Provide a draft final TCE Plume Monitoring Report for NASA GSFC to the COR by September 15, 2015, and a final report to the COR 15 calendar days after receiving comments from the government. Provide all data collected, measured and analyzed in tabular format as backup information to the COR by September 15, 2015.

Provide copies of all sample chain of custody forms and laboratory reports to the COR by September 15, 2015. Provide copies of all field notes to the COR by September 15, 2015.

Task Constraints:
The contractor shall perform this task during normal Environmental Management (EM) business hours: 8:00 am to 4:30 pm, Monday through Friday, except for government holidays. Any documents removed from the EM office shall be signed out utilizing a hand receipt. If other work schedule is required, this shall be identified in the proposal and the contractor is responsible for assuring any required escorting or access coordination.