TETRA TECH

November 20, 2019

Ms. Angela Gallagher
Massachusetts Department of Environmental Protection (via eDEP)
Bureau of Waste Site Cleanup
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

Re: Phase II Scope of Work
71 Airport Road
West Tisbury, Massachusetts
RTN 4-0027571

Dear Ms. Gallagher:

Tetra Tech, Inc. has prepared this Phase II Scope of Work (SOW) for the above-referenced Disposal Site on behalf of the Martha's Vineyard Airport Commission (MVAC). This Phase II SOW is being submitted concurrently with a Phase I Initial Site Investigation (ISI) Report and Tier Classification submittal. This Phase II SOW has been prepared by the Licensed Site Professional (LSP) of record for the Site, Ronald E. Myrick, Jr. The Phase II SOW includes a general plan for assessing per- and polyfluoroalkyl substances (PFAS) in groundwater attributed to suspected releases from various sources including aqueous film-forming foam (AFFF), assessment of potential receptors, and further evaluation of potential exposure pathways. We have identified the likely technical approaches to be used and a projected schedule with interim milestones.

Comprehensive Assessment Activities

The investigations completed during the Phase I ISI provided a robust data set including sampling and analysis of shallow and deep soils at suspected AFFF release locations, sampling and analysis of 21 groundwater monitoring wells, and sampling and analysis of 193 private wells. Based on the ISI, PFAS impacts to source area soils are not significant, and further assessment of soils will be limited under the Phase II SOW. However, additional evaluation of the horizontal and vertical delineation of the extent of PFAS impacts to groundwater is necessary to complete the Comprehensive Site Assessment for the Site. The following additional assessment activities are proposed:

- At the source areas where AFFF releases occurred, additional vertical delineation of PFAS impacts to groundwater is warranted. It appears that PFAS concentrations generally decrease with increased depth. However, stratified soil conditions and preferred flow pathway may alter the depth of highest PFAS impacts in the near downgradient area relative to the source areas. Groundwater monitoring wells will be installed in the vicinity of monitoring wells TT-01, M-6D, MW-JM, and Property AY to assess the vertical extent of PFAS in groundwater. These monitoring wells will be screened at elevations that are deeper than existing wells. At some locations it may be necessary to install 2 or more deeper monitoring wells.

- Additional horizontal delineation of PFAS impacts is necessary to the west of TT-10 and to the east of M-6D, and additional groundwater monitoring well installations are planned in these areas.

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- At least one upgradient monitoring well is planned to the north of TT-3 and TT-5 to refine our understanding of groundwater flow direction and assess for potential upgradient PFAS impacts to the north. Due to the presence of an active airport, it is currently anticipated that an upgradient monitoring well could be installed along Fire Road #57 to the north of the airport, or an existing upgradient monitoring well (M-1) which was installed during a prior hydrologic study and located north of Runway 15 may be used if located.

- Additional monitoring wells are also planned to assess the horizontal and vertical extent of PFAS in groundwater in the downgradient area near Properties DA and AY where elevated concentrations of PFAS were detected in an area where PFAS was not detected in surrounding private wells. These additional wells will be installed at various depths to assess for preferential flow paths in the downgradient area near these properties.

- In the downgradient area assessment of shallow PFAS impacts to soil is planned to assess whether PFAS compounds have accumulated in the near surface soils as a result of application of water from the private wells where elevated concentrations of PFAS have been identified (e.g. from irrigation of lawns and landscaping).

- Using the PFAS fingerprint assessment techniques initiated in the Phase I Report, additional evaluation of potential groundwater migration pathways via similar techniques is planned during Phase II. This may include generation of normalized data sets and comparison of bar graphs, radar plots and/or regression analysis to assess potential patterns.

- Assessment of PFAS concentration trends over time will be performed to obtain temporal data to evaluate patterns and trends. At this time quarterly sampling is being performed at private wells where PFAS has been detected at concentrations that may pose an Imminent Hazard to human health. Also, semi-annual samples are collected at private wells where PFAS concentrations exceed the MassDEP ORSG. In addition, replicate sampling will be performed to provide temporal data at private wells where PFAS concentrations exceed or approach 20 parts per trillion (ppt). Based on the lack of other confirmed exposure points, we do not anticipate extensive temporal sampling of groundwater monitoring wells; however, samples will periodically be collected to assess concentrations over time. Also, to assess data representativeness, blind duplicate samples, matrix spikes, field blanks, equipment blanks, and trip blanks will be collected and analyzed from select private wells and monitoring wells to support response action decision making.

- A comprehensive groundwater elevation survey will be necessary to refine groundwater flow patterns at the Site. The elevations of groundwater monitoring wells will be surveyed to established bench mark elevations, and groundwater gauging will be performed to generate a groundwater potentiometric surface map of the Site. Groundwater gauging data will also be collected over several periods to assess season changes in groundwater flow patterns.

- Based on the delineated horizontal and vertical extent of PFAS impacts to groundwater, an assessment of hydrogeologic characteristics of the Site will be necessary to facilitate estimates of groundwater and contaminant migration rates. Rising head and/or falling head slug tests and short-term pump tests are planned on select groundwater monitoring wells at the Site to assess the hydraulic conductivity and groundwater flow velocity at various locations and depths. The selection of the wells for hydrogeologic testing will be based on assessed groundwater flow patterns; however, it

is anticipated that, at a minimum, testing will be necessary proximate to M-4, TT-10, and M-6D. Based on the findings of the Phase II, it may also be necessary to perform additional hydrogeological assessments to support the Phase III Remedial Action Plan. Such assessments may include additional hydraulic conductivity testing, installation of pilot wells or systems, and performing short-term pump tests.

- Although not believed to be a significant contributing source of PFAS to groundwater which has been impacted by past releases of AFFF, additional assessment of PFAS associated with wastewater treatment plant discharges to groundwater is planned and may include effluent sampling from the plant as well as sampling of commercial discharges to the MVY sewer system from business park tenants.

Schedule and Interim Milestones

In accordance with the Massachusetts Contingency Plan (MCP), the Phase II Report is due within three years of the effective date of the Tier Classification for the Site (by November 20, 2022). Also, a Phase III Remedial Action Plan is due within four years of Tier Classification (by November 20, 2023). However, depending upon the availability of funding and other factors, the timing of these submissions and associated response actions may occur sooner. Also, evaluation of upgradient PFAS source elimination and migration mitigation activities may be performed in the near term under the Immediate Response Action Plan on a pilot scale as part of an assessment of the effectiveness of various remedial actions that may be implemented at the Site to ultimately achieve a Permanent Solution.

The following interim milestones are proposed to facilitate gathering sufficient data to support preparation of the reports by the above deadlines:

- **November 2019 through September 2022**. Perform quarterly sampling of private wells where potential IH to human health has been identified, semi-annual sampling of private wells with PFAS concentrations above the MassDEP ORSG and annual sampling of private wells with PFAS concentrations above 20 ppt. Replicate sampling of other private wells, focusing upon those located near privates with elevated PFAS concentrations, will also be performed to assess for changes in concentrations in private wells over time activities. These sampling activities are anticipated to be completed as part of the ongoing IRA at the Site and will be documented in semi-annual IRA Status Report submittals.

- **July 2020 to October 2021**. Implement investigations for additional horizontal delineation of the extent of PFAS impacts to groundwater including installation of deeper groundwater monitoring wells to assess vertical PFAS distribution in groundwater. This investigation process may be completed earlier or may require additional investigation events to establish horizontal and vertical boundaries of the Site.

- **Summer/Fall 2020**. Conduct comprehensive groundwater elevation survey and assess groundwater flow patterns at the Site.

- **July 2020 to September 2022**. Perform hydrogeological assessment of the Site and evaluate groundwater and contaminant transport characteristics.

- **September 2020 to October 2022**. Perform the data synthesis including a detailed PFAS fingerprint analysis and calculation of exposure point concentrations for use in the Phase II Report.
- **November 2022**. Prepare and submit Phase II Report.
- **July 2020 to October 2023**. Perform additional hydrogeological assessments, as needed, to support evaluation of various potential approaches for Site remediation.
- **November 2023**. Prepare and submit Phase III Remedial Action Plan.

Please contact the undersigned at (508) 786-2200 if you have any questions or require additional information.

Very truly yours,

Ronald E. Myrick, Jr., P.E., L.S.P.
Director

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