



May 2, 2023

Stantec Project Number 203723075

Ms. Paula Sime
Manager, Environmental Services
7-Eleven, Inc.
P.O. Box 1026
Temecula, California 92593

**Re: Supplemental 2023 Work Plan for Task 4 – Installation of 4” diameter Chemox Injection Wells in Manholes at former Air Sparge Wells
Speedway Store 5315 (Former Tesoro 2Go Mart 111)
3679 College Road, Fairbanks, Alaska
ADEC Facility ID #1112; ADEC Hazard ID #24247; ADEC File #100.26.026**

Dear Ms. Sime:

This letter presents the proposed work plan prepared by Stantec Consulting Services, Inc. (Stantec) for the implementation of Task 4 that was proposed in the 2023 Corrective Active Plan (CAP) for the above referenced site. Subject to your review and acceptance, this work plan will be submitted to Pete Campbell with the Alaska Department of Environmental Conservation (ADEC) on behalf of 7-Eleven, Inc. for the subject Speedway store.

Task 4 – Installation of 4” diameter Chemox Injection Wells in Manholes at Former Air Sparge (AS) Wells

The purpose of this task is to make site modifications to improve the operation and distribution of the chemox injection pump and treat system in the vicinity of the existing fueling islands. The changes described below will be made to the underground plumbing system that receives and distributes the discharge of the groundwater from recirculation/remediation well RM-2.

In 2022, Stantec field staff determined the existing aeration sparge lines to 5 former air sparge (AS) wells – identified as AS-1, AS-4, AS-11, AS-12, and AS-14 - were found to be functional, i.e., able to deliver water from RM-2 remediation well. The locations of the 5 abandoned AS wells are shown on the attached site plan (**Figure 1**) and identified with a check mark and a circle around the well. Under this task, the existing 2-inch diameter abandoned AS wells will be decommissioned by methods acceptable to the ADEC and replaced with shallow (15 to 20-foot deep) 4-inch diameter screened wells to be used for future chemox injection.

The new 4-inch diameter chemox wells will be flush grade with a protective well access manhole. If found feasible, the existing AS manhole will be left in place and used for the piping connection; otherwise, the manhole may be replaced if the installation of the 4-inch well casing is too tight for connecting to the existing aeration line. Stantec will connect the proposed 4-inch diameter chemox injection wells to the existing plumbing system that receives the discharge of flow from the recirculation/remediation well RM-2.



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The following section describes the method that will be used to complete the installation of the chemox injection wells:

- Prior to drilling the chemox injection wells, pre-clearing bore hole will be performed by the driller to a minimum depth of 6-feet below the ground surface (bgs). An air knife and soil extraction/vacuum equipment will be used to pre-clear the bore hole. The extracted soil will be field screened with a PID to determine if petroleum contamination is present. Soil found to have elevated PID measurements above background levels that typically exceed 25 ppmv, will be segregated and securely stored in placard drums. The remaining soil found to have non-elevated PID measurements (typically 25 ppmv or below) will be used to backfill the soil boring hole.
- A photoionization detector (PID), calibrated before the start of each day with 100 parts per million by volume (ppmv) isobutylene gas standard, will be used to field screen the soil to determine zones of highest potential petroleum contamination. The screening samples will be placed into plastic Ziploc® bags to enhance volatilization prior to headspace screening. Headspace screening will be conducted in 2.5 feet increments or twice per PVC liner.
- A Geoprobe® 7822DT drill rig or equivalent that utilizes a direct push drill method and a 10-inch auger bit will be used to install the 4-inch diameter injection wells.
- Dual Tube “DT45” tooling will be utilized in the injection well locations to continually collect and classify the soil and identify the depth to groundwater.
- Soil will be continuously collected in 1.5-inch diameter PVC liners in 5-foot intervals. Soil recovery will begin at 6-feet below the surface and continue to the depth of completion, or approximately 5-feet below the groundwater level at the time of drilling. Recovered soil will be visually examined for lithology, color, density, moisture content, and physical/olfactory indications of petroleum contamination.
- A minimum of two discrete analytical soil samples will be collected from the soil boring. One will be collected from the location with the highest PID reading and one will be collected from soil below the ground water table to assess the migration of contaminants, if any. If PID readings are negligible then a sample will be collected from the “smear” zone or the non-saturated soil just above the groundwater level. The soil samples will be submitted to PACE Laboratories for the following analysis:
 - Gasoline Range Organics (GRO) by Alaska Test Method (AK) 101
 - Diesel Range Organics (DRO) by AK 102
 - Residual Range Organics (RRO) by AK 103
 - Volatile Organic Compounds (VOCs) by U.S. Environmental Protection Agency (EPA) 8260D



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- Polynuclear Aromatic Hydrocarbons (PAHs) including Ethylene Dibromide (EDB) by EPA Method 8270D Selective Ion Monitoring (SIM)
- Total Lead by EPA Solid Waste 6020D
- Laboratory samples will be placed in clean, laboratory-supplied, sample containers with the prescribed preservative for each analytical method. They will be delivered in accordance with standard chain-of-custody procedures to PACE Laboratories. Required quality control samples consisting of a duplicate sample and trip blank sample will also be collected and analyzed.
- Following the placement of the 4-inch diameter well casing into the bore hole, the annulus space between the casing and native soil will be backfilled as follows: filter sand will be placed from 4 feet bgs to the bottom of the well, bentonite clay from 4 to 2 feet bgs, and pea gravel from 2 to 1 feet bgs. The top of the well casing will be capped with a water-tight expandable well cover. The completed well casing will be placed within a flush-mounted steel well casing. The bottom 10-foot section of the 4-inch diameter injection well will consist of a Schedule 40 PVC screened (20-slot) casing. It is anticipated the total well depth will range from 15 to 20 feet – dependent of the depth of the ground water table. The goal is to place the bottom of the injection well to a depth that penetrate 5-feet into the water table.
- Excess soils derived during the drilling of the soil borings that have PID field screening measurements below background levels (typically 25 ppmv) will be used to backfill the soil boring hole. The remaining soil cuttings found to have elevated PID measurements above background levels (typically 25 ppmv) will be stored in drums and labeled with their contents. The drums containing suspected contamination will be placed in temporary location on the Speedway store property.
- After analytical results are received from the laboratory, drums of soil found to be contaminated above the ADEC SCLs will be disposed/treated at an appropriate disposal facility approved by ADEC. Soil found to be non-contaminated (below SCLs) will be land spread on-site at a suitable location on the Speedway store property.
- The chemox injection wells will be horizontally surveyed by swing-tie measurements in relation with existing wells and site improvements.
- As a final task, Stantec will connect the former AS aeration lines to the new chemox injection well and initiate the monthly injection of chemox. Stantec intends to insulate the well head inside each well manhole and attempt to operate the chemox injection system during the entire year, if possible.

Upon completion of the above described tasks, Stantec will prepare a report that will provide documentation on the field work performed to complete Task 4. The report will include well logs,



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field screening measurements and observations, and laboratory analytical test results with recommendations for operation of the chemox injection system. Subject to the acceptance of the report by 7/Eleven, the final report will be submitted to ADEC.

If you have any questions or need additional information concerning this 2023 Supplemental Work Plan for Task 4, please contact us at (907) 227-9883.

Regards,

STANTEC CONSULTING SERVICES, INC.

Robert (Bob) Gilfilian, P.E.
Project Technical Lead
Principal Senior Civil Engineer

Attachments: Figure 1 - Site Plan with locations of former air sparge wells.

