TETRA TECH

May 10, 2024

Mr. Anthony Bell
Circle K Stores
1100 Situs Court, Suite 100
Raleigh, North Carolina 27606

Delivered via email: abell@circlek.com

RE: Additional Corrective Action Work Plan (CAP - AC-07) 2024
Circle K Store 2746272 (Formerly Holiday Station Store #272)
200 1st Street West, Havre, Montana
Facility ID No. 21-08068; Releases 3537 and 5212, Work Plans 34826 and 34827

Dear Mr. Bell:

This letter presents Tetra Tech, Inc. (Tetra Tech) proposed corrective action plan for the gasoline release at the above-referenced site. Tetra Tech prepared this work plan in response to the Montana Department of Environmental Quality's (MDEQ) letter (WPR) request dated February 14, 2024 (MDEQ, 2024). Additionally, this plan was developed in conjunction with the phone discussion on 3/14/24. The WPR from the MDEQ required the following tasks:

- *Install enough free product recovery wells around the Underground Storage Tank (UST) basin to adequately recover the free product present around the USTs. These recovery wells should be tied into the existing free product recovery system and the operation and reporting conducted under work plans 34720 and 34721.*

- *Use the standardized work plan and report formats found under the Guidance dropdown at the Petroleum Tank Cleanup Section (PTCS) webpage1. Please submit a Petroleum Tank Release Compensation Board (PTRCB) Groundwater Monitoring and Sampling Unit Cost Worksheet (enclosed and available under the Forms and Worksheets tab on the PTRCB page).*

- *Monitor groundwater at facility monitoring wells semi-annually. Gauge fluid levels at all Facility monitoring wells. Collect groundwater samples at all Facility monitoring wells by low-flow sampling methodology according to DEQ's Groundwater Sampling Guidance found under the Guidance dropdown at the PTCS webpage2.*

•Analyze groundwater samples for petroleum constituents as required by the Montana Risk-Based Corrective Action Guidance for Petroleum Releases.

•Dispose of purge water according to the Disposal of Untreated Purge Water from Monitoring Wells flowchart found under the Guidance dropdown at the PTCS webpage2.

•Validate all laboratory analytical data using DEQ's Data Validation Summary Form (DVSF) found online under the Guidance dropdown at the PTCS webpage2.

•Discuss ongoing WP tasks and results with DEQ's project manager; submit written agreed-upon WP modifications as required to complete the WP objectives.

•Prepare and submit an Interim Data Submittal (IDS) for each interim groundwater monitoring event. The IDS is expected to include the discussion, data, tables, and figures described in the Groundwater Monitoring Work Plan and Report Guidance for Petroleum Releases found under the Guidance dropdown at the PTCS webpage2.

•Prepare and submit one Groundwater Monitoring Report detailing the method and results of all groundwater monitoring events completed under this WP. All reporting for the free product recovery system will occur under work plans 34720 and 34721. The Groundwater Monitoring Report is expected to include at a minimum the following:

- *◦Use the report format found under the Guidance dropdown at the PTCS webpage2.*
- *◦Discussion of the monitoring method results, deviations from the approved work plan, assessment of attenuation rates (onsite and offsite), recommendations, and conclusions.*
- *◦Cumulative groundwater data tables.*
- *◦Updated site features and potentiometric surface maps.*
- *◦An updated Release Closure Plan (RCP) based on the monitoring results.*
- *◦Append groundwater monitoring field forms, laboratory analytical data, completed DVSFs, and the updated RCP.*

•Submit WP and reports electronically following the PTCS submittal requirements found under the Guidance dropdown at the PTCS webpage1.

The following work plan presents a brief discussion of the site's history and the proposed scope of work to meet the MDEQ request and phone discussion with DEQ. This work plan will address the additional product recovery efforts and groundwater monitoring. Other remediation activities will be addressed in work plan 34752 (Tetra Tech, 2023).

BACKGROUND INFORMATION

The Holiday Station Store #272 is located at 200 1st Street West, in the south half of the southeast quarter of the southwest quarter of Section 5, Township 32 North, Range 16 East, Havre, Hill County, Montana (Figure 1). The site consists of a store building, an underground storage tank (UST) basin with three gasoline USTs, one diesel UST, and six fuel dispenser islands (Figure 2). The site is bordered to the north, west, and east by commercial properties and to the south by residential properties.

The site is located on alluvial clays, silts, sands, and small gravels of Quaternary age that were deposited in the floodplain of the Milk River (Vuke et al., 2007). Groundwater is present at depths of eight to 11 feet below ground surface (bgs) in these alluvial deposits. Based on previous investigations, the near-surface geology consists of silty sand interbedded with silty clay and sand to a depth of approximately 20 feet bgs (Tetra Tech, 1999, 2002, and 2007). Groundwater flow is generally to the north toward the Milk River, which is located approximately 2,000 feet north of the site.

The Holiday Station Store #272 site has been used as a fueling facility since the mid-1980s. A release of petroleum hydrocarbons was discovered during an upgrade of the USTs in August 1998 (Rocky Mountain Oil, 1998). Groundwater monitoring conducted during the previous investigations referenced above has indicated that petroleum hydrocarbon impacts over the

MDEQ risk-based screening levels (RBSLs; MDEQ, 2018) are present in several on-site monitor wells.

A new petroleum hydrocarbon release was discovered on February 17, 2017. This release was due to gasoline leaking from a functional element in the premium gasoline UST. The volume of the release is unknown. Tetra Tech investigated the release on March 29, 2017, and measured free product in monitor wells HHO-1 and HHO-2 (Figure 2).

An investigation was conducted in May and June 2017 to determine the extent of the free product and dissolved petroleum hydrocarbons in groundwater. Nine monitor wells and three product recovery wells were installed. Additionally, soil vapor extraction piping (SVE) was connected to the product recovery wells and monitoring wells to recover vapor-phase petroleum hydrocarbons from the subsurface soils. In August 2017, SVE piping was connected to five additional monitor wells (Tetra Tech, 2018).

Free petroleum product is being recovered from three wells using Xitech® product recovery skimmers. In May and June 2017, free product was also periodically pumped from five additional wells.

All monitor wells without measurable free product were sampled quarterly during 2017, 2018, and 2019 and semi-annually during 2020, 2021 and 2022 for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH). Most wells had VPH and EPH constituent concentrations exceeding the MDEQ RBSLs.

Sub-slab vapor monitoring was conducted monthly from May 2017 through May 2022 at the Marden and Holiday buildings (Figure 2). Indoor air was sampled during this period at the Marden and Holiday buildings. Also, the crawl space air was monitored in the Morse building during 2017 and 2018. Air samples were analyzed for volatile organics and air petroleum hydrocarbons.

Volatile organics were detected in all samples at low concentrations. For indoor air samples collected in the Marden and Holiday buildings, benzene and ethylbenzene concentrations slightly exceed the EPA regional screening levels (EPA, 2017). No regulatory screening levels were exceeded in the Morse building crawl space samples.

SCOPE OF WORK

The scope of work for this project includes the following four primary tasks: project management, installation of recovery wells, product recovery and SVE system installation, groundwater monitoring, and reporting. The operation and maintenance of the product recovery and SVE system will be conducted under work plans 34720 and 34721. Details of these tasks are described below.

Project Management

This task includes the time necessary for coordinating and scheduling the project with Holiday Companies, MDEQ, adjacent landowners, and subcontractors, arranging and tracking waste material disposals, and communications. In addition, the current health and safety plan (HASP) will also be updated and revised to address activities in this work plan before conducting any on-site activities.

Recovery Well Installation

Initially, an underground utility locate using the Montana 24-hour Utility Notification Center will be conducted. Due to the planned locations of the soil borings and the proximity to the UST basin, a private utility locate using ground penetrating radar (GPR) will also be employed to locate utilities within the proposed soil boring areas. Five soil borings and recovery wells will be installed, as shown in Figure 2. These recovery wells will be placed in or near the UST basin to recover free product gasoline from the subsurface sediments. The recovery wells will be installed by advancing an eight-inch diameter PVC pipe with an air knife procedure within the UST basin. The PVC pipe will be advanced in 5-foot sections and each section will be connected with a PVC glued slip coupler or threaded connection. Once the borehole is completed, a four-inch schedule 40 PVC will be installed. The bottom 10 feet of PVC pipe will be a 0.020 well screen. The top of the recovery wells will be fitted with 4-inch diameter water-tight locking plugs. The recovery wells will be completed with a 12-inch diameter flush-mount steel protector casing concreted in place. The subcontractor bids for recovery well installation can be found in attachment A.

If possible, each soil boring will be advanced to 15 feet bgs. Groundwater is estimated to be encountered between 9.5 and 9.9 feet bgs. Before drilling, all downhole drilling and sampling equipment will be decontaminated using a high-pressure hot water washer.

One soil sample will be collected from each soil boring at the groundwater interface. The samples will be collected using a stainless-steel hand auger, estimated at eight to nine feet bgs. The hand auger will be decontaminated between each borehole using a Liquinox solution followed by a triple rinse technique. Each soil sample will be placed in clean laboratory-supplied containers, transported in an ice-filled cooler, and submitted to Energy Laboratories in Billings, Montana. The soil samples will be analyzed for VPH and EPH.

Soil from the recovery well installation will be containerized on-site within 55-gallon drums or directly transported to Hill County Unified Disposal Landfill. Per landfill disposal requirements, one soil sample will be collected from the containerized soil and submitted for laboratory analysis of VPH, EPH, and Resource and Conservation and Recovery Act (RCRA) metals.

After the recovery well installation is completed, each recovery well will be surveyed. The vertical elevation of each new recovery well PVC casing will be surveyed and overseen by a licensed engineer or conducted by a licensed surveyor to an accuracy of 0.01 feet and mean sea level datum.

Product Recovery and Soil Vapor Extraction System Installation

Following the recovery well installation, each well will be connected to the existing product recovery system via trenches within the concrete and PVC lines (Figure 2). The subcontractor bids for the concrete cutting and trench excavation can be found in Attachment B. Gas and product tubing will be installed inside a 2-inch diameter PVC pipe within the trenches. The trenches will be saw-cut into the concrete to run compressed nitrogen gas and product lines (1/4-inch OD tubing) from the recovery wells to a product storage shed in the holiday property's southwest corner. Approximately 100 linear feet will be trenched. The trenches will be re-paved with concrete ready-mix once product lines and PVC are in place. The shed houses the SVE system, nitrogen gas cylinders, and 55-gallon drums for recovered product storage. The drums are equipped with a high-level shut-off float switch. The drums will also be placed on an engineered secondary containment pad.

The product will be recovered by using Xitech Instruments® product recovery pumps. These compressed gas-driven pumps are designed to fit into 4 and 2-inch diameter well casings, have a

recovery rate of up to 12 gallons per hour, and can be programmed for various run-time settings. The Xitech pumps operate on compressed nitrogen gas. These pumps will be installed in the five product recovery wells, assuming the product is observed in each well.

Soil Vapor Extraction System Installation

The 2-inch diameter Schedule 40 PVC used to house the product recovery lines will simultaneously be used as SVE piping. These SVE pipes will be plumbed into the utility shed and connected to a 0.75-horsepower regenerative blower with an explosion-proof electric motor (Figure 2). This blower model was chosen and is the same as the other blowers deployed at the site. The blower exhaust was plumbed to 20 feet of vertical 2-inch diameter PVC piping on the shed's exterior. Product recovery and SVE system monitoring will be conducted in a separate work plan. However, the additional recovery points installed must be amended to work plans 34720 and 34721.

Groundwater Monitoring

Groundwater monitoring will be conducted semi-annually during 2024 (weather permitting). The sampling events will be scheduled to collect high and low groundwater conditions. Water levels will be measured at all monitoring wells and recovery well locations, including the newly installed recovery wells. Groundwater sampling will be collected from HHO-1, HHO-2, HHO-3, HHO-4, HHO-5, HHO-10, HHO-12, HHO-14, and HHO-18. This task will be conducted using the methods described below.

- Depth to groundwater/product will be measured at all site monitoring and recovery wells: HHO-1 through HHO-18, GSMW-2 through GMSW-5, RW-1 through RW-3, the Tire-Rama well TWM-1, and the newly installed recovery wells. The measurements will be collected using an electronic product interface probe. Between measurements, the interface probe will be decontaminated by washing with Liquinox® soap and rinsing with deionized water.

- The wells will be purged using disposable plastic tubing and a peristaltic pump. Field parameters consisting of pH, temperature, specific conductance, dissolved oxygen (DO), turbidity, and oxidation-reduction potential (ORP) will be monitored during purging. Purging will continue until these parameters have stabilized using the standard low-flow sampling method. Purged water will be discharged on the paved surfaces for evaporation. If free product is encountered, it will be placed in the on-site product recovery container for proper disposal.

- Groundwater samples will be collected from monitor wells HHO-1, HHO-2, HHO-3, HHO-4, HHO-5, HHO-10, HHO-12, HHO-14, and HHO-18 plus one trip blank. These wells were chosen based on historic concentrations and orientation to the release. The wells will act as good indicators for petroleum concentration trends at the site. Based on historical trends, all other wells are expected to be highly impacted, except HHO-12. Wells with light non-aqueous phase liquid (LNAPL) will not be sampled. For cost estimate purposes, it is assumed that all monitoring wells will be sampled and that no wells contain LNAPL.

- The water samples will be collected from the wells through the peristaltic pump at the lowest flow rate attainable. The groundwater samples will be placed in laboratory-provided containers, preserved appropriately, transported in an ice-filled cooler, and submitted to Energy Laboratories in Billings, Montana, for analysis of VPH and EPH using the Massachusetts Department of Environmental Protection (MDEP) methods.

- For each groundwater monitoring event, one trip blank and one duplicate sample will be collected. The trip blank samples will be analyzed for VPH, and the duplicate samples will also be analyzed for VPH and EPH.

Data Validation

Each analytical data package will include a summary report that cross-references the sample identification with the laboratory identification and identifies variations from standard operating procedures; laboratory analytical results; quality control data, which may include but is not limited to surrogate recoveries, initial and continuing calibration blanks and spikes, method blanks, laboratory control blanks, and spikes, and matrix spike and matrix spike duplicates; FID chromatograms; chain of custody form(s); and a sample receipt checklist. Additionally, data validation will be included with the investigation report and will follow DEQ's data validation guideline as per *https//deq.mt.gov/Portals/112/Land/StateSuperfund/Documents/DataValidationReport.pdf*. Three separate data validations are anticipated to be completed for this project.

REPORTING

Tetra Tech will prepare a report presenting findings and conclusions on soil and groundwater investigations and recovery system installation. The report will include results from field screening activities, figures depicting site features and well locations, well completion details and logs, a summary of soil sampling results, groundwater elevations, groundwater potentiometric surface map, groundwater flow direction and gradient, a summary of groundwater analytical results, petroleum vapor intrusion screen results, and discussion on the vertical and aerial extent of impacts based on the investigation data. Tetra Tech will also prepare RCP, which will be appended to the report, to evaluate the potential path for release closure.

SCHEDULE AND COSTS

Tetra Tech will initiate this work upon receiving authorization from Circle K Store Inc. and approval from the MDEQ. The work described above will be conducted on a unit-cost basis per the attached *Groundwater Monitoring and Sampling Unit Cost Worksheets* and *Cost Estimate Breakdown* included in Attachment C.

PROPOSAL AUTHORIZATION

The work described in this plan will be conducted per the terms and conditions in the Master Services Agreement between Holiday Companies and Tetra Tech, dated March 28, 2017. Should you find this work plan acceptable, please sign Work Authorization #18, included in Attachment D, and return a signed copy to our Billings, Montana office. If you have questions or comments regarding this work plan, please call us at (406) 248-9161. For your convenience, we have forwarded a copy of this work plan to DEQ for their review. We will not begin this work until we have authorization from Circle K and MDEQ. We appreciate the opportunity to provide you with environmental consulting services.

Sincerely,

Tetra Tech, Inc.

Austin Maphis
Project Hydrogeologist

Paul E. Lemire
Senior Hydrogeologist

Enclosures:
Figures
Attachment A: Subcontractor Bids – Recovery Well Installation
Attachment B: Subcontractor Bids – Concrete Cutting & Trenching
Attachment C: Estimated Cost Worksheet
Attachment D: Work Authorization #18

cc: William Bergum, MDEQ; wbergum@mt.gov

REFERENCES

EPA, 2017. US Environmental Protection Agency (EPA) Regional Screening Level (RSL) for Composite Worker Ambient Air Table (TR = 1E-06, THQ = 0.1). Regional Screening Levels for Chemical Contaminants at Superfund Sites. June 2017.

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MDEQ, 2023. Additional Corrective Action Work Plan Required for the Petroleum Release at Circle K Store 2746272 (former Holiday Stationstore 272), 200 1st Street West, Havre, Hill County, Montana; Facility ID 21-08068 (TID 22350), Releases 3537 and 5212, Work Plans 34720 and 34721. May

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Tetra Tech, 2023. Additional Corrective Action Work Plan (CAP - AC-07) 2023 Circle K Store 2746272 (Formerly Holiday Station Store #272.200 1st Street West, Havre, Montana Facility ID No. 21-08068; Releases 3537 and 5212, Work Plans 34720 and 3472. May

Vuke, S.M., Porter, K.W., Lonn, J.D. Lopez, D.A., 2007, *Geologic Map of Montana*, Montana Bureau of Mines and Geology: Geologic Map 62C. Scale 1:5000,000.

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FIGURES

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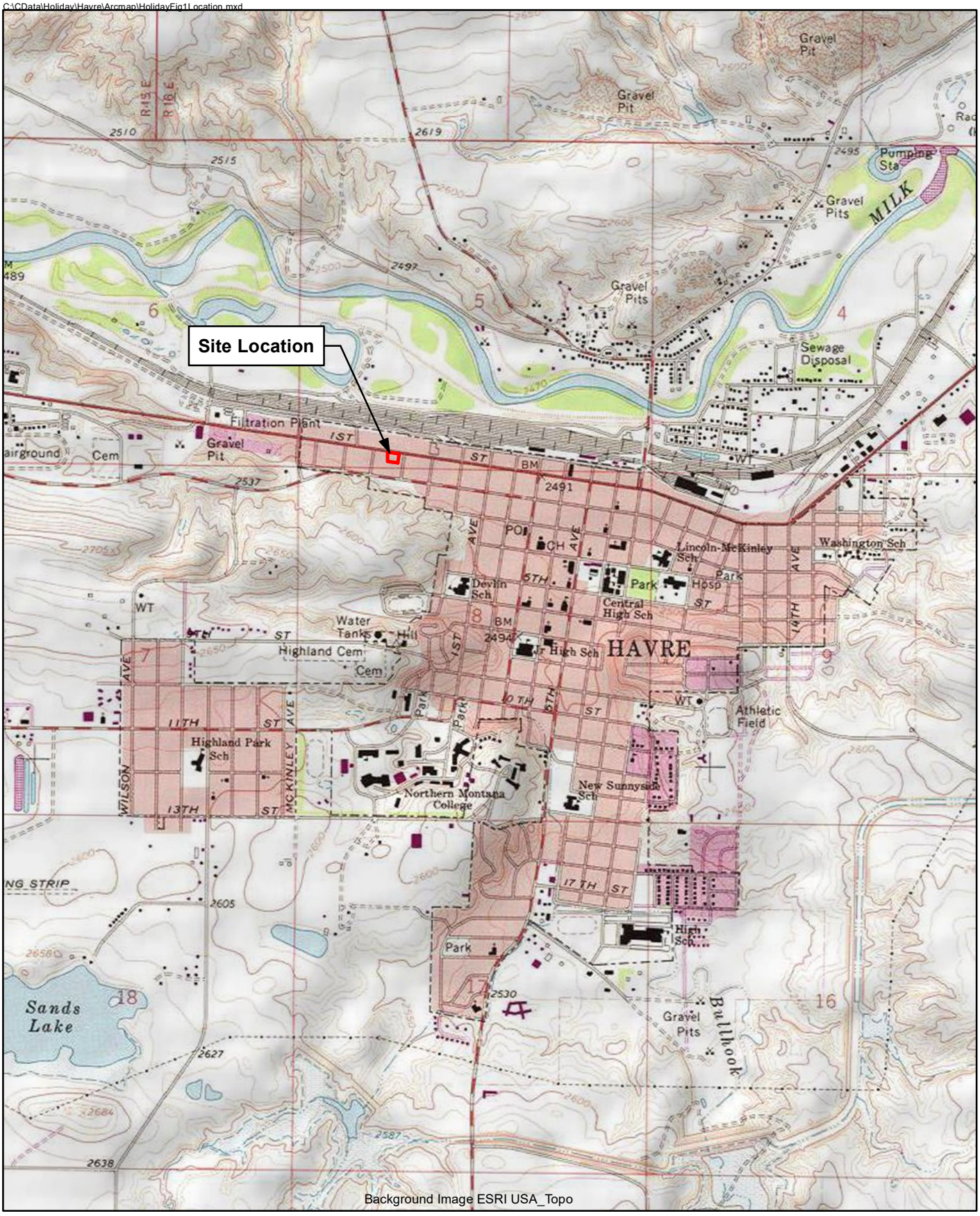

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Figure 1
Site Location Map
Holiday Stationstore #272
200 1st Street West
Havre, Montana

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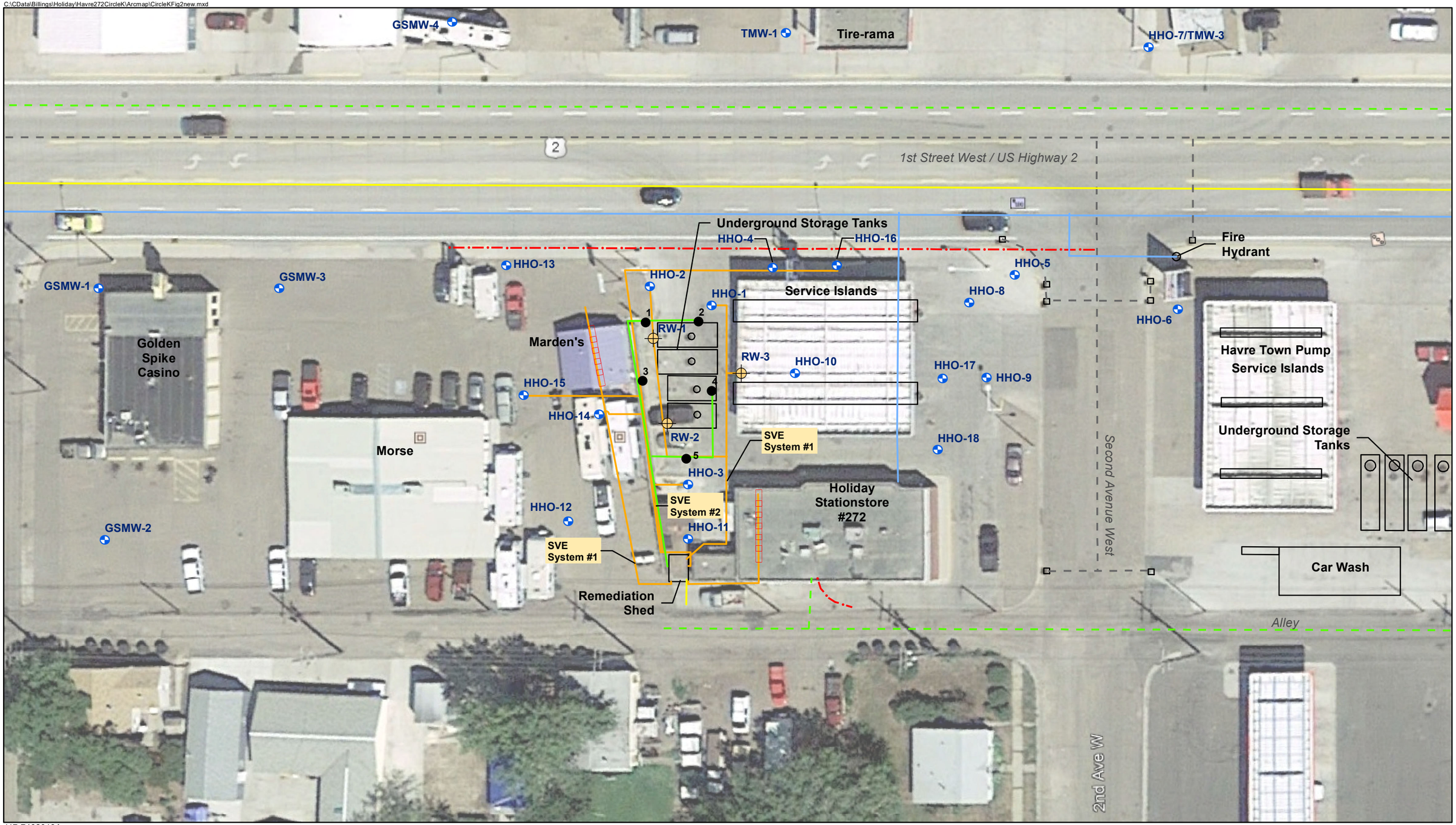

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- Recovery Well
- Monitor Well
- Storm Sewer Drains
- Soil Boring (Recovery Wells)
- Facilities
- Underground Electric
- Natural Gas
- Water Lines
- Sanitary Sewer
- Storm Sewer
- Proposed SVE Lines
- SVE Lines
- SVE Perforated Piping

Figure 2

Monitor and Recovery Well Locations
Circle K Store 2746272
Havre, Montana