

December 2, 2024

Mr. Anthony Bell
Circle K Stores, Inc.
1100 Situs Court, Suite 100
Raleigh, NC 27606

Delivered via email: ABell@circlek.com

**SUBJECT: Revised Groundwater Monitoring Work Plan
Circle K Store 2746266 (Former Holiday 266)
745 Grand Avenue, Billings, Montana
Facility ID 56-08058; (TID 30210) Release 2612, Work Plan 34945
Tetra Tech Project Number 117-8153017**

Dear Mr. Bell:

Tetra Tech is pleased to submit this work plan to conduct groundwater monitoring at the above-referenced facility (Figure 1). This work plan has been prepared in response to a request from Eric Krueger of the Montana Department of Environmental Quality (MDEQ) in correspondence dated October 4, 2024 (MDEQ, 2024). In this correspondence, Mr. Krueger made the following requests:

- *Use the standardized Work Plan format found under the Guidance dropdown at the Petroleum Tank Cleanup Section (PTCS). 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 at the PTRCB).*
- *Propose a plan to monitor, gauge, and sample groundwater at Facility monitoring wells. Collect groundwater samples by low-flow sampling methodology according to DEQ's Groundwater Sampling Guidance found under the Guidance dropdown at the PTCS.*
- *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.*
- *Validate all laboratory analytical data using DEQ's Data Validation Summary Form (DVSF) found online under the Guidance dropdown at the PTCS.*
- *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.*
- *Prepare and submit one Groundwater Monitoring Report detailing the method and results of all groundwater monitoring events completed under this WP. The Groundwater Monitoring Report is expected to include all content, tables, figures, and appendices described in the Groundwater Monitoring Work Plan and Report Guidance for Petroleum Releases found under the Guidance dropdown at the PTCS webpage¹ and the following:*
 - *Prepare an updated Release Closure Plan (RCP).*
 - *Append all 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.*

The following sections summarize Tetra Tech's proposed scope of work and schedule for completing the requested tasks. The attached Cost Estimate Breakdown and Groundwater Monitoring and Sampling Unit Cost Worksheets in Attachment A present an estimated budget.

BACKGROUND INFORMATION

Circle K Store 2746266 (Formerly Holiday 266) is located at 745 Grand Avenue, in the southwest quarter of the southeast quarter of Section 31, Township 1 North, Range 26 East, Billings, Yellowstone County, Montana (Figure 1). The site consists of a store building, an underground storage tank (UST) basin, and two fuel dispenser islands with several dispensers under a canopy (Figure 2). Commercial properties border the site on the west, east, and south, and residential areas border the site on the north.

The Circle K Store 2746266 site has been a retail fuel outlet since the 1960s. In June 1995, four USTs and associated distribution piping and fuel dispensers were removed from the site. Approximately 1,000 cubic yards of petroleum hydrocarbon-impacted soil containing hydrocarbon concentrations over the MDEQ Risk-Based Screening Levels (RBSLs; MDEQ, 2024) were removed from the UST basin and piping trenches. This soil was disposed of at the Billings Regional Landfill.

An investigation was conducted between January and June 1996 to define the extent of petroleum hydrocarbon-impacted soil and groundwater. Monitoring wells installed downgradient of the site did not contain impacted groundwater. The approximate extent of impacted soil and groundwater was limited to the site property. Approximately 0.5 feet of free petroleum product was detected in monitoring well HSG-2 (Figure 2) during the initial

stage of this investigation. Approximately 14 gallons of product were recovered from this well between January 1996 and September 1996 (Maxim Technologies, 1996).

A soil vapor extraction system was installed at the site during October and November 1997. This system was installed to remove free product from the unsaturated zone around monitoring well HSG-2. The system operated continuously between December 2, 1997, and June 21, 2000. Volatile organic compound (VOC) concentrations decreased below instrument detection limits during this period (Maxim Technologies, 2003).

The City of Billings reconstructed Grand Avenue during the spring and summer of 1999. As a result of this work, monitoring wells HSG-7 and HSG-8 were destroyed. On August 22, 2003, one additional monitoring well, HSG-11 (Figure 2), was installed south of the site, on the southeast corner of the Grand Avenue and 8th Street West intersection (Maxim Technologies, 2003).

A Remedial Investigation (RI) was conducted in October 2023 to determine the extent and magnitude of the petroleum impacts on soil and groundwater, fill data gaps from previous investigations, and determine the remediation approach to resolve the release. The RI included the five soil borings and the installation of one monitoring well. Petroleum constituents in soil samples collected from the borings were either not detected above laboratory detection limits or were detected at concentrations below MDEQ RBSLs (Tetra Tech 2024).

Groundwater monitoring events were performed in February and May 2024. In February 2024, the concentration of C5-C8 aliphatics in a groundwater sample collected from well HGS-2 was above the MDEQ RBSL. No other detections of petroleum hydrocarbons in the groundwater samples were above MDEQ RBSLs during these sampling events.

SCOPE OF WORK

This project's general scope includes conducting one groundwater monitoring event. The monitoring event will be conducted during the winter months to monitor water quality during low water conditions. The event will include groundwater sampling of monitoring wells located on site and groundwater measurements for all monitoring wells on-site (Figure 2). A groundwater monitoring report will be prepared, including updating the Release Closure Plan (RCP). The following details describe the methods to be used for this investigation: The following details describe the methods to be used for this investigation. Additionally, Tetra Tech's standard operating procedures are provided in Attachment B.

GROUNDWATER MONITORING

Static water level measurements will be collected from all monitoring wells, and groundwater samples will be collected from two on-site monitoring wells HSG-2 and HSG-12 using the following methods:

- Depth to groundwater will be measured as described above using a decontaminated electronic oil/water interface meter. The meter will be decontaminated between each

- measurement.
- Each monitoring well will be purged using the low-flow, slow-purge pumping method, a submersible bladder pump, and dedicated polyethylene tubing. During purging, field instruments will analyze the water for pH, temperature, dissolved oxygen, specific conductivity, oxidation-reduction potential, and turbidity. Purge water will be containerized by the Disposal of Untreated Water from the Monitoring Wells Flow Chart and disposed of appropriately following receipt of laboratory results (MDEQ, 2015). The pump will be decontaminated between wells using a Liquinox® solution followed by a triple rinse technique. Additionally, a new bladder will be installed between sampling each well.
 - A groundwater sample from each monitoring well will be collected using a submersible bladder pump and dedicated polyethylene tubing. Groundwater samples will be analyzed for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) via EPA using the Massachusetts Department of Environmental Protection Methods (MADEP, 2004). By MDEQ guidance, if the EPH concentration in water exceeds 1,000 micrograms per liter ($\mu\text{g/L}$), then an EPH fractionation analysis is required (MDEQ, 2024).
 - Groundwater samples will also be analyzed for intrinsic biodegradation indicators (IBIs). The IBIs include dissolved ferrous iron (Method E200.7), dissolved manganese (Method E200.7/E200.8), sulfate (Method E300.0), nitrates/nitrites (nitrate plus nitrite as nitrogen; Method E353.2), and methane (GS-FID/Kampbell (SW8015 Modified)). For cost-estimating purposes, it is assumed that two monitoring wells will be sampled during the event, and one water sample will be analyzed for EPH fractions.

DATA VALIDATION

The 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, laboratory 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 groundwater monitoring report and will follow MDEQ's data validation guidelines. It is anticipated that one data validation will be completed for this project.

REPORTING

Following completion of fieldwork and data validation, analytical results of the sampling event will be discussed with the MDEQ to determine if additional groundwater monitoring is warranted for this site.

A Groundwater Monitoring Report will be prepared and submitted to MDEQ. The report will present the field and analytical results of this investigation and compare laboratory analytical results to MDEQ RBSLs. Conclusions and recommendations detailing site conditions, and the extent and magnitude of the plume will be discussed, along with a to-scale map presenting necessary site information. Additionally, the report will include updates to the RCP to evaluate the potential path for closure of the release.

SCHEDULE AND COSTS

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

PROPOSAL AUTHORIZATION

Should you find this work plan acceptable, please sign the Work Authorization included in Attachment C 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 MDEQ for their review. We appreciate the opportunity to provide you with environmental consulting services.

Sincerely,

Tetra Tech



Steven Marie, P.E.
Senior Engineer



Jeff Rice
Environmental Group Manager

Cc: Eric Krueger, MDEQ; eric.krueger@mt.gov

Figures

Attachment A: Unit Cost Worksheets Unit Cost Worksheets

Attachment B: Tetra Tech Standard Operating Procedures

Attachment C: Work Authorization

REFERENCES

Maxim Technologies, Inc., 1996. Soil and Groundwater Investigation Results, Holiday StationStore #266, Billings, Montana. Report submitted to Rocky Mountain Oil Company. July.

Maxim Technologies, Inc., 2003. September 2003 Groundwater Monitoring Results, Holiday StationStore #266, Billings, Montana. Report submitted to Rocky Mountain Oil Company. October.

Montana Bureau of Geology, 2024. Online at (<http://mbmggwic.mtech.edu/>). Accessed July 4, 2024.

MDEQ, 2015. Disposal of Untreated Purge Water from Monitoring Wells. July 27.

MDEQ, 2023. Approval of Work Plan, dated July 19, 2023, for the Petroleum Release at Circle K Store 2746266, 745 Grand Avenue, Billings, Yellowstone County, Montana; Facility ID 56-08058 (TID 30210), Release 2612, Work Plan 34724. August 4.

MDEQ, 2024. Groundwater Monitoring Work Plan Required for the Petroleum Release at Circle K Store 2746266, 745 Grand Avenue, Billings, Yellowstone County, Montana, Facility ID 56-08058, (TID 30210), Release 2612, Work Plan ID 34945, October 24.

MDEQ, 2024. Montana Risk-Based Corrective Action Guidance for Petroleum Releases. Montana Department of Environmental Quality. February.

Tetra Tech, 2009. May 2009 Groundwater Monitoring Results Holiday StationStore #266 745 Grand Avenue, Billings, Montana. July 13

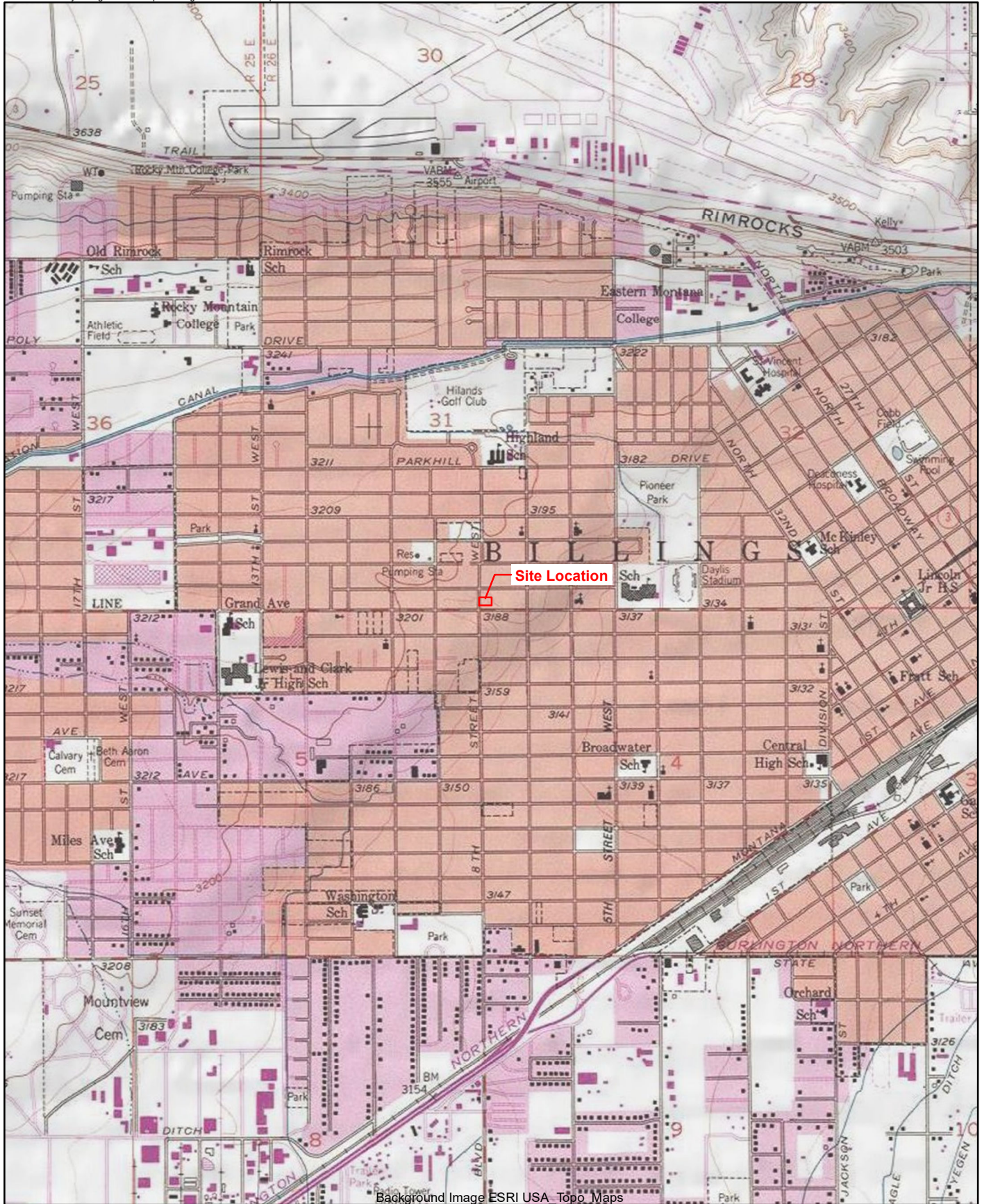
Tetra Tech, 2011. AR-01 Abbreviated Report Form with required attachments for Holiday Store #275. December 7.

Tetra Tech, 2023. Remedial investigation Work Plan. Holiday Station Store 275 (Circle K Store 2746275). 105 Broadwater Avenue, Billings, Yellowstone County, Montana. DEQ Facility ID 56-08063; Release

Tetra Tech, 2024. Remedial Investigation Report, Circle K Store 2746266 (Former Holiday 266), 745 Grand Avenue, Billings, Montana. August 7.

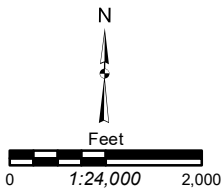


FIGURES



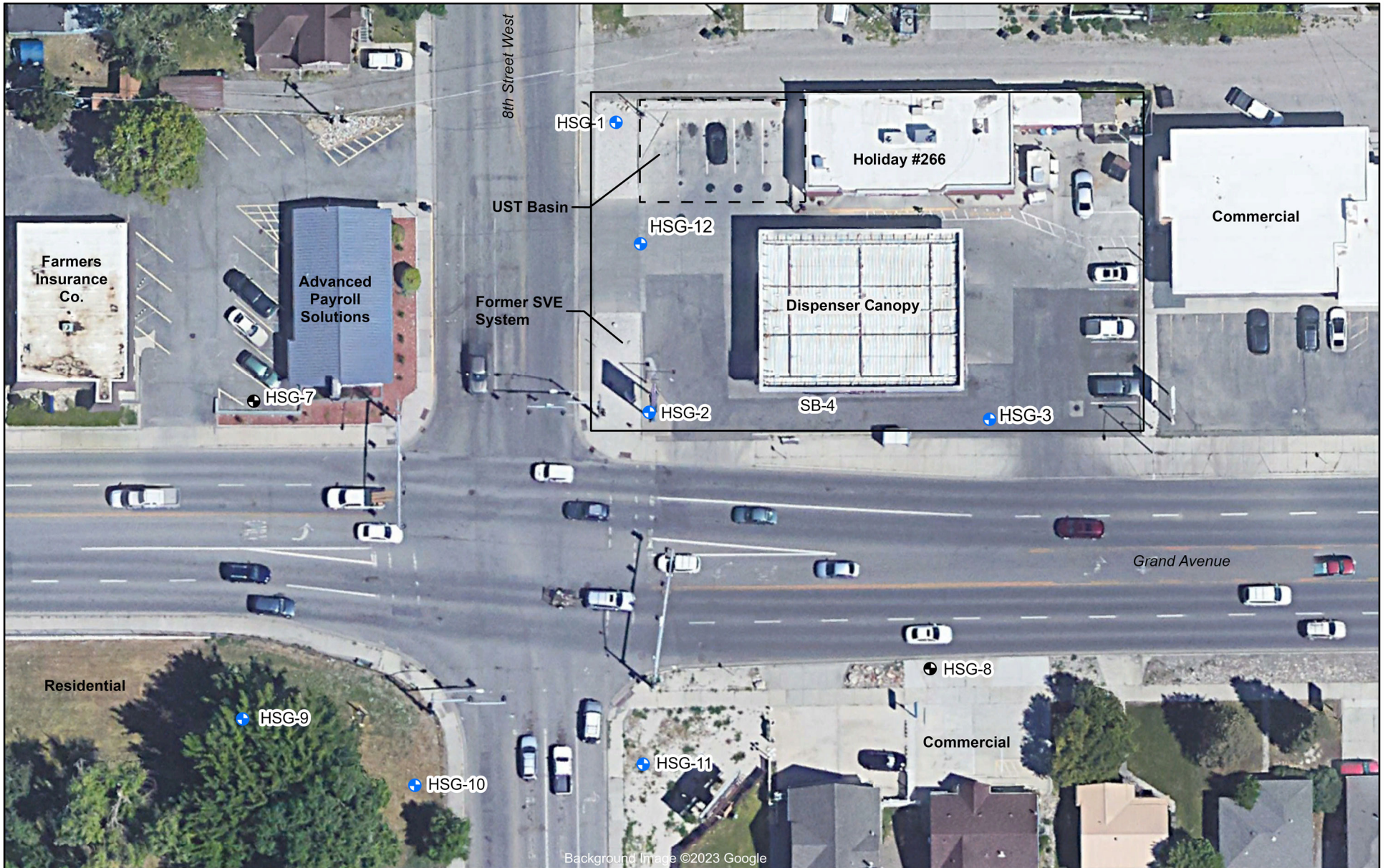
Background Image ESRI USA - Topo Maps

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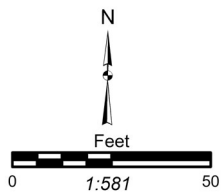


Approximate Project Boundary

Location Map
Circle K Store 2746266
745 Grand Avenue
Billings, Montana
Figure 1



117-8153017
10/24/2024



- + Existing Monitoring Well
- + Destroyed Monitoring Well
- Approximate Project Boundary
- UST Basin

Site Map
February 2024
Circle K Store 2746266
745 Grand Avenue
Billings, Montana
Figure 2



ATTACHMENT A

UNIT COST WORKSHEETS



ATTACHMENT B

TETRA TECH STANDARD OPERATING PROCEDURES