



# AJM, Incorporated

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**Re: Remedial Investigation Work Plan Monitoring Well Evaluation, Groundwater Sampling at Yellowstone Travel Plaza, 1226 US HWY 10 West, Livingston, Park County, Montana; Facility ID 34-11200 (TID 26137), Petroleum Release 3918, Work Plan 35167**

## **Executive Summary**

Per Montana Department of Environmental Quality work plan request letter dated March 20, 2026 by Environmental Project Manager, Eric Krueger, AJM Incorporated (AJM) has completed the following work plan to address monitoring well assessment, groundwater monitoring and evaluating release closure.

The facility had a significant release in the early 2000's due to fuel pipe issues (Release 3918). Due to the impacts found, a large remedial excavation of soils (sandstone was completed in the early 2000's. Approximately 16,000 yards of impacted soil was removed from the site. A groundwater investigation was then conducted with 17 wells installed between 2002 and 2005 to determine groundwater plum boundaries. These wells were monitored routinely from 2002 through 2017. Although this is an active release, previous sampling events have shown that the plum is shrinking, and has remained stable, not moving off the site boundaries. Due to the lapse in data collection since 2017, it is unknown if impacts are within the Montana Department of Transportation (MDOT) right of way along Old Hwy 10 West or are constrained to the subject property.

By conducting the necessary work mentioned in this work plan, AJM will further identify the historical plume boundary, provide recommendations on further well proposals for delineation, and determine the most efficient method to move release 3918 toward closure or no further corrective action.

## **Facility History and Release Background**

Release 3918 happened in 2000 and was found during fuel system upgrades. The facility has been a gas station from 1989 to present. The underground storage tanks were installed in 1989. Fiberglass lines were up-graded in 2020 according to the DEQ facility summary sheets.

On January I; 2005, while conducting groundwater-sampling activities associated with the YTP petroleum release site in Livingston, Mr. Joe Laudon of RTI discovered free product in monitoring well

MW-9. Previous sampling had shown this to be generally clean well. RTI determined the free product to be waste oil. Contaminants at the nearby YTS are diesel and gasoline, the source of which has been remediated, with dissolved phase diesel and gasoline constituents remaining in groundwater. The likely source of the free product oil in MW- 9 is waste oil that was disposed down a floor drain in the building occupied by KER. A U.S. Environmental Protection Agency (EPA) inspection of KER on March 14, 2004 determined that KER was operating at least one Class V industrial disposal system. EPA offered KER the options of either closing the drain/disposal system or applying for a permit to operate the system, and KER closed the system. According to documents in the file, KER had 2 above-ground storage tanks that store waste oil, and the waste oil is burned via a shop heater. EPA ordered the removal of all visibly impacted soil associated with the disposal system.

RTI conducted the remedial investigation and excavation of the disposal system from April 11 through August 2, 2006. RTI collected confirmation soil samples from the excavation to document that soil has been cleaned up to DEQ's applicable Risk-Based Screening Levels (RBSLs) to satisfy DEQ's requirements for the site. The first round of confirmation samples indicated that petroleum remained in the soil at concentrations above RBSLs. RTI conducted additional excavation, and follow-up confirmation soil samples did not detect total extractable hydrocarbons (TEH) in the extractable petroleum hydrocarbon (EPH) screen. Contaminated soil was placed in a DEQ-permitted one-time land-farm.

During excavation of the impacted soils from the floor drain MW-9 was destroyed, but was replaced with MW-9A. Samples from 2008 through 2009 show no further waste oil impacts, and no further work was required for this release.

In 2007/2008 100 gallon diesel spill occurred and was assigned release 4617. A cleanup response was initiated which removed 35 cubic yards of impacted soil. Confirmation soil samples confirmed that the release had be remediated. In February 2008, the DEQ provided a No Further Corrective Action letter to the facility.

During an inspection by the DEQ in 023, it was noted that a slight leak was occurring beneath dispenser 5/6and 8/9. This was fixed and soil samples were collected to evaluate the impacts. Samples were collected beneath both dispensers at 2.5 feet below ground surface. No impacts were found below 8/9 and minor impacts were observed below 5/6. One groundwater sample was collected from a nearby downgradient well (MW-10). No impacts were found and this release was closed to further investigation.

Additional fuel spill and releases were recorded over the years with remedial action taken and eventual release closure by the Montana Department of Environmental Quality (MDEQ).

### **Summary of Facility Conditions**

The facility operates as a fuels station, convenience store and diner. Future site plans include additional tank systems, expansion of the truck island, and gasoline islands for cars. Current tanks system includes four underground storage tanks, one 8,000gal diesel tank, one 6,000gal diesel tank, and two 6,000gal gasoline tanks. Although the old tanks will be used, all new piping and fuel canopy/islands will be constructed.

Further site information concerning impacts to site monitoring wells can be found in the AR-01 Report Form submitted to the DEQ on August 17, 2017. At that time , dissolved benzene concentrations in the

groundwater samples taken from MW-3, MW-4, MW-8, MW-11, MW-13 and MW-15 were above drinking water standards.

### **Work Plan Maps**

Figure 1- Site Location. This map includes the aerial imagery of the site and surrounding area. The site is in Livingston, Park County, Montana. South of I-90 on Old Hwy 10 west of Livingston.

Figure 2 – Site Map. This map includes the current fuel system layout and locations of known monitoring wells installed over the years.

Currently it is believed that 15 wells exist at this site with labels: MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9A, MW-10, MW-11, MW-12, MW-13, MW-15, MW-16, MW-17.

Typical wells depths are 21 feet belowground surface (bgs) with a screen interval from total depth (TD) to 8-feet bgs.

### **Objective of Investigation**

The purpose of this work plan is to determine what groundwater monitoring wells at the facility are still viable wells for sampling, determine if wells have been lost over the course of time, collect groundwater samples from all viable wells and evaluate the data collected and determine what additional data will need to be collected and evaluated to move the site toward either closure or into a viable Petroleum Mixing Zone. (PMZ) agreement with the DEQ. At some point in the near future, a “No Further Corrective Action” determination by the DEQ is sought.

The objective of this work plan is to determine if petroleum hydrocarbon impacts observed over the course of the last 20 years are stable and shrinking in plume size. The last groundwater sampling report in 2017 indicated that impacts found in the localized groundwater have remained on site and appear to have natural attenuation due to the reduction of impacts in various wells.

The site had significant soil excavation conducted in the early 2000’s and a bed rock does exist at about 17 feet bgs. Based on well logs the bed rock exists across the site with a prominent strike that runs west to east on the south half of the site. This causes the local groundwater to pool on the north side of the strike with little to no groundwater flow off the site.

The current well system on the site indicates that flow and attenuation of impacts remain mostly on the site and may also occur within the Montana Department of Transportation (DOT) right of way to the south of old Highway 10 which bound the site to the north.

This work plan is designed to evaluate all current monitoring well at the site to include:

- Determine what wells still exist
- Collect groundwater samples from each existing well
- Identify well coordinates and produce an accurate site survey
- Evaluate the data collected
- Determine any additional data requirements to move the site toward closure

## **Investigation Methods, Equipment, Technology, and Personnel**

### **Professional Land Survey**

A Professional Land Survey (PLS) has already been used by the owner to create an ALTA Survey as they move forward with plans to expand the station into a major truck stop to serve the Livingston/Hwy 90 travel way. During this recent survey, well coordinates and elevations were not identified. AJM plans to have the site monitoring wells located and surveyed to produce a figure that can be used to determine accurate groundwater flow and direction. The previous consultant used an arbitrary coordinate system that can no longer be used to determine accurate groundwater characteristics due to site changes. The costs associated with an updated site survey is included in the attached Groundwater Monitoring Unit Cost Tool in Appendix B.

### **Groundwater Sampling**

At this time, it anticipated to collect only one (1) groundwater sampling event that will help determine site information and direct any future well installation to help fill data gaps. This sampling can be conduct as soon as Spring 2026 which will be Because the most recent sampling was done in 2017, there may be decreases in groundwater concentrations due to natural attenuation or groundwater direction changes. By collecting one sampling event, AJM will have data to recommend either additional well installation or determine actions to move the site toward closure.

Anticipated wells to be sampled are: MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9A, MW-10, MW-11, MW-12, MW-13, MW-15, MW-16, MW-17. Well that cannot be found or sampled will be identified and report in the Groundwater Monitoring Report.

All sampling will be completed in accordance with AJM Standard Operating Procedures and under DEQ Groundwater Sampling Guidance Section 2.5 Stabilization Parameters. To specify, static water levels will be collected prior to groundwater sampling each well and regularly collected during the well purging processes to identify and minimize hydraulic drawdown. During the well purging, stabilization parameters will be collected every three to five minutes including temperature, pH, dissolved oxygen (DO), conductivity, turbidity and oxygen reduction potential (ORP). Once stabilization parameters read three consecutive measurements within the following ranges, pH  $\pm 0.1$  units, specific conductance  $\pm 3\%$ , DO  $\pm 10\%$ , turbidity  $\pm 10\%$ , and ORP  $\pm 10$  mV, a viable groundwater sample can be collected for laboratory analysis. If stabilization parameters cannot be reached, a sample will be collected after the well has at least three well volumes purged and a lack of stabilization parameters will be documented.

Sampling will be conducted in the 2-inch wells with a peristaltic pump with low flow controller. When using the peristaltic pump, new 1/4-inch HDPE tubing will be used. Appropriate labeling, cooling, and chain of custody protocols will be followed. Samples will be delivered under chain of custody to an accredited laboratory for analysis.

All water produced from this sampling process will be disposed of in accordance with DEQ guidance. Based on results from previous sampling events in 2017, it is anticipated that proper disposal would include allowing purge water to evaporate on the asphalt without on-site storage. Should sheen or free phase product be observed, the DEQ and PTRCB will be contacted to determine course of action. All non-dedicated equipment used for purging, sampling, or depth measurements will be decontaminated with an Alconox wash solution, followed by a distilled water triple rinse prior to each use.

Groundwater samples will be analyzed for volatile petroleum hydrocarbon (VPH), extractable petroleum hydrocarbon (EPH), EPH fractionation if screening level exceed 1000µg/L. Per the RTI AR-01 Abbreviated Report submitted in 2017 (Appendix B), lead scavengers were none detectable and therefore do not warrant further analysis. Appropriate labeling, cooling, and chain of custody protocols will be followed. Samples will be delivered under chain of custody to an accredited laboratory for analysis.

### **Schedule and Reporting**

Following the groundwater monitoring well sampling, groundwater monitoring report will be submitted including the following:

- Discussion of groundwater investigative methods and results.
- Evaluation of the monitoring well performance and viability.
- Produce an updated survey with monitoring well coordinates and vertical accuracy.
- Evaluation of current site data and determination of additional data that should be collected; this may include the installation of additional wells.
- Conclusions and recommendations of remedial action(s) required to resolve the release.
- Cumulative groundwater data tables.
- Append groundwater field forms, laboratory analytical data, completed Data Validation Summary Forms, and the Release Closure Plan.
- The Report will follow all guidelines found on the Montana DEQ under the Guidance dropdown at the PTCS webpage.
- A Release Closure Plan will be created.

Work discussed in this work plan is estimated to be completed August 2026. A cost estimate for the monitoring well sampling and report writing have been completed for the above-described work and can be found in Appendix B. Work at this facility can begin upon written approval by the DEQ. Please do not hesitate to call if there are any questions or if we can provide any additional information.

Sincerely,

*Lars Heinstedt*

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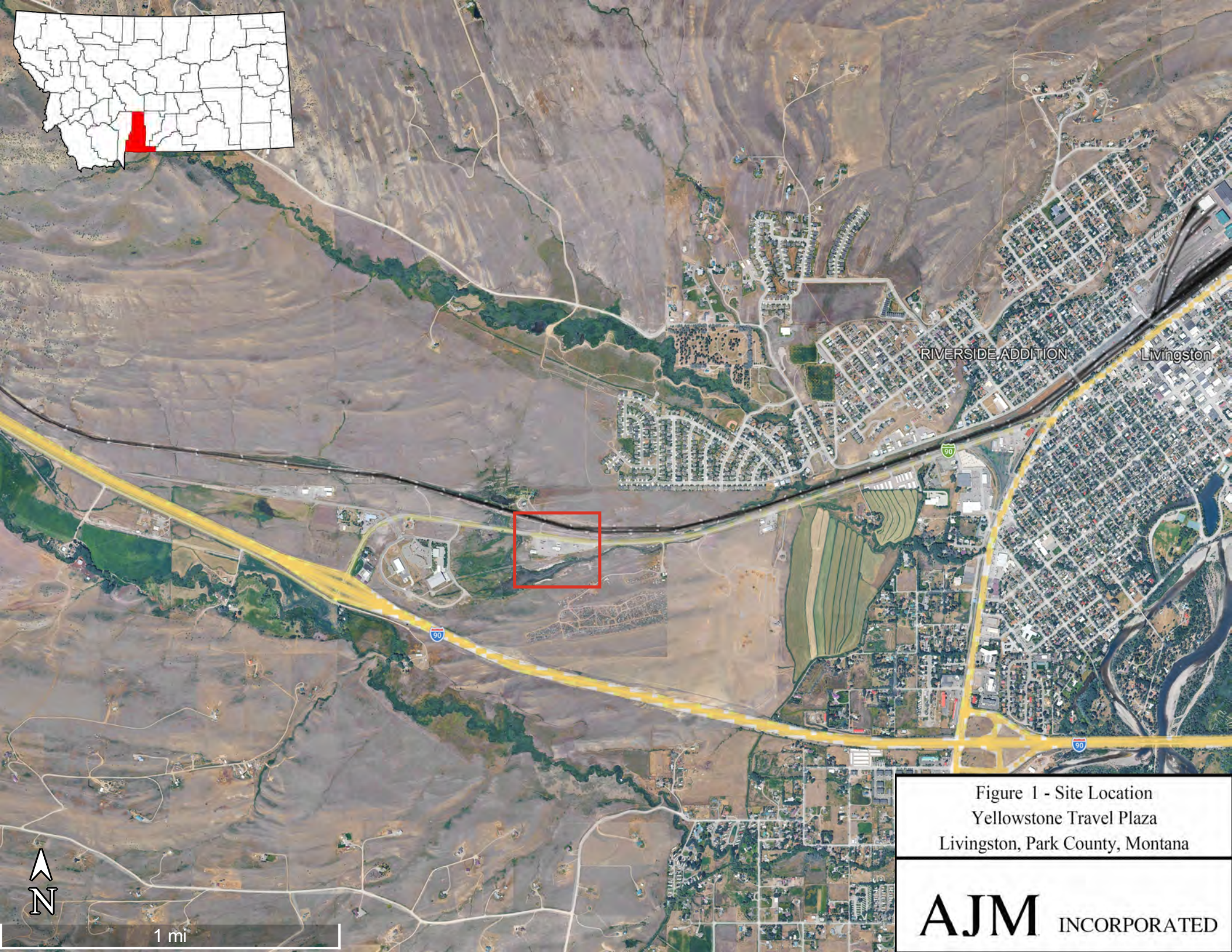
*Dennis Franks*

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**AJM**  
Incorporated

Appendix A  
Figure 1 - Site Map  
Figure 2 – Current Monitoring Well Locations



RIVERSIDE ADDITION

Livingston



Figure 1 - Site Location  
Yellowstone Travel Plaza  
Livingston, Park County, Montana

**AJM** INCORPORATED



1 mi



GRAPHIC SCALE



( IN FEET )  
1 inch = 60 ft.

CONTOUR INTERVAL = 1 FOOT

**LEGAL DESCRIPTION**

Tracts 1 and 2 of Certificate of Survey No, 2896, located in the NE1/4 of Section 22, Township 2 South, Range 9 East, P.M.M., Park County, Montana, according to the official plat thereof on file and of record in the office of the County Clerk and Recorder of Park County, Montana.

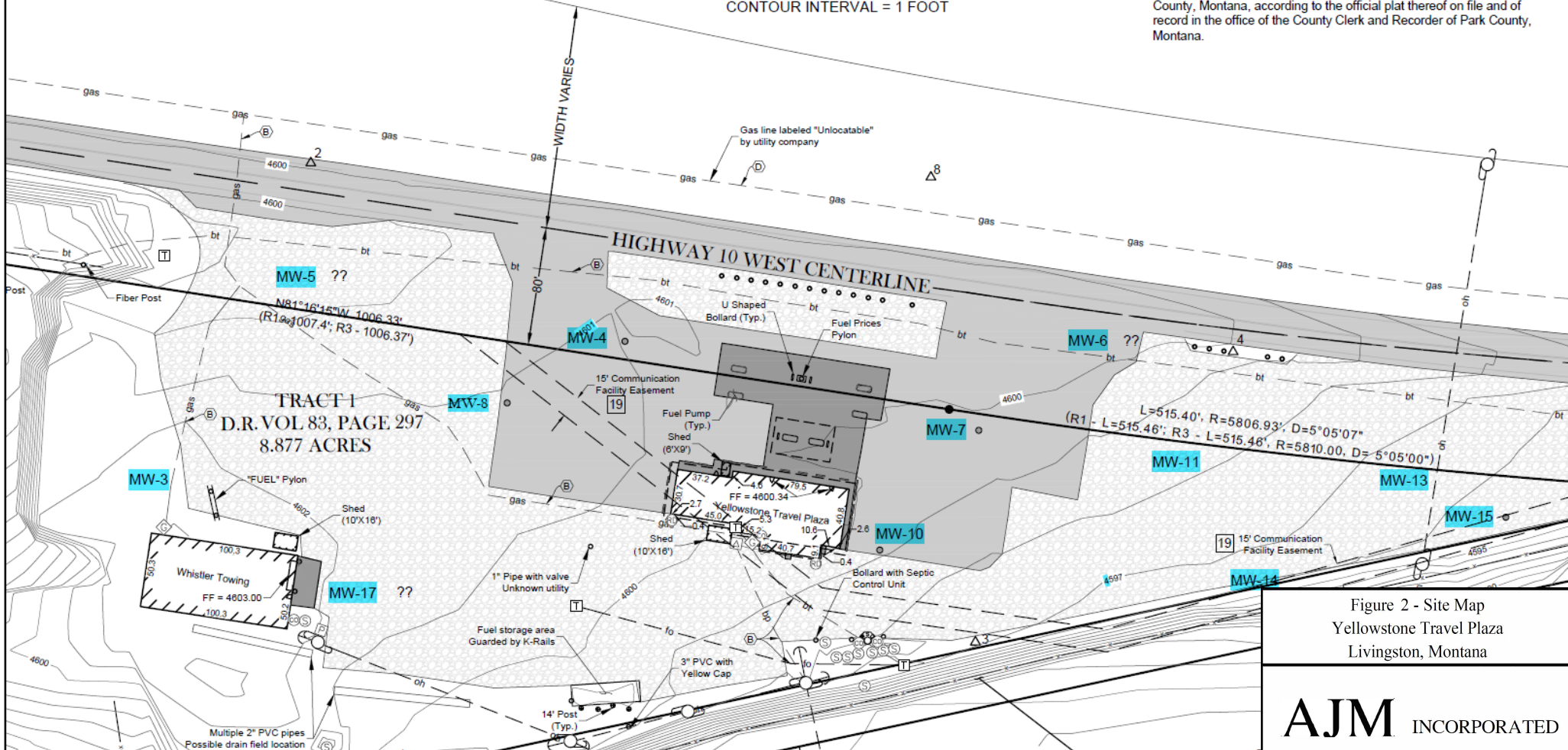


Figure 2 - Site Map  
Yellowstone Travel Plaza  
Livingston, Montana