ENVIRONMENTAL TECHNOLOGY, LLC
AN EIS COMPANY
2541 East University Drive ● Phoenix AZ 85034 ● 602-267-1900 ● ROC #192950

June 25, 2026

Mr. Jonathan Love
Montana Department of Environmental Quality – Petroleum Tank Cleanup Section
1371 Rimtop Drive
Billings, Montana 59105-9702

Re: Groundwater Monitoring Work Plan IDs 35209 and 35210
Former Good2Go #8
1600 N Crawford Ave
Hardin, Big Horn County, Montana 59034 (Site)

Facility ID 02-00538;
Release ID 5050 and 5157

EN TECH Project No. 60101

Dear Mr. Love:

Environmental Technology, LLC. (EN TECH®), on behalf of the 8 Hardin Montana Property LLC, is pleased to submit this groundwater monitoring (GWM) Work Plan for a baseline sampling event and Site reconnaissance of current conditions at the Good2Go #8 facility located in Hardin, Montana.

If you have any questions regarding the contents of this GWM Work Plan or require additional information, please feel free to contact me at (602) 531-3603.

Respectfully submitted,
Environmental Technology, LLC

Rielly Fitch, RG
Project Manager

2541 East University Drive ● Phoenix AZ 85034 ● 602-267-1900 ● ROC #192950

GROUNDWATER MONITORING WORK PLAN

Good2Go #8
1600 N Crawford Ave
Hardin, Montana 59034

Facility ID 02-00538
Facility Code 17731
Release IDs# 5050 and 5157
Work Plan IDs# 35209 and 35210

Prepared for:

8 Hardin Montana Property LLC
P.O. Box 50620
Idaho Falls, Idaho 83405

EN TECH Project No. 60101

June 25, 2026

I, the undersigned, am personally familiar with the information submitted in this work plan and the attached documents and attest that it is true and complete to the best of my knowledge.

Prepared by:

Rielly Fitch, RG
Project Manager

Reviewed by:

Frank J. Skocypec, PE, RG, CPG
Senior Project Manager

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1.0 INTRODUCTION

Environmental Technology, LLC (EN TECH®) has prepared this groundwater monitoring (GWM) Work Plan (ID# 35209 and 35210) for the Montana Department of Environmental Quality (MDEQ) Petroleum Tank Cleanup Section (PTCS) to perform a current conditions Site reconnaissance and baseline groundwater sampling event at the Good2Go #8 active fueling service station (Facility ID 02-00538, Release ID 5050 and 5157), located in Hardin, Montana (Site). The GWM Work Plan has been prepared based on comments and discussions with the MDEQ-PTCS and EN TECH via Teams meeting on November 7, 2025.

This Site-specific Work Plan includes the scope of work, schedule, and budget for the planned activities. It also contains a brief description of the Site and summarizes previous corrective action activities. This GWM and sampling event will be performed in accordance with the accepted practices in the *MDEQ Groundwater Sampling Guidance (Updated 2021).*

1.1 Site Description

The Site is located within Section 14, Township 1 South, Range 33 East, in Big Horn County, Montana (**Figure 1**). The elevation of the Site is approximately 2,904 feet above mean sea level (amsl). The Site is currently an active fueling service station with two (2) existing 6,000-gallon regular unleaded gasoline underground storage tanks (USTs) (T3 and T6), one (1) existing 6,000-gallon premium unleaded gasoline UST (T4), one (1) existing 6,000-gallon diesel UST (T5), active fuel dispensers with overhead canopy, product piping, convenience store, one (1) former and removed waste oil 500-gallon UST (T1), and one (1) former and removed regular unleaded gasoline or diesel 2,000-gallon UST. All four (4) active USTs (T3, T4, T5 and T6) are in one single tank basin area. T1 was previously located behind the convenience store to the west and was removed in August 1996. T2 was previously located to the east of the active tank basin and was subsequently removed in February 2002. The location of convenience store, active UST basin area, fuel dispensers, piping system, and former USTs are shown in **Figure 2.**

1.2 Site Geology and Hydrology

The Site is located in the Yellowstone River Basin (MDNRC, 2015) which is drained to the north by the Bighorn River. There are parts of three geologic provinces that make up the Yellowstone River

Basin: the Rocky Mountain foreland uplifts and basins, the Yellowstone Plateau, and the Absaroka Volcanic Field. The local geology at the Site consists of Bighorn River terrace deposits of gravels, sands, and silts, overlying the Gammon Formation, an Upper Cretaceous deposit of marine mudstones and shales. The contact with the Upper Cretaceous Niobrara Shale is buried in the vicinity of the Site. The distinction in the two units is color, with the Gammon Formation typically having a yellow-brown appearance and the Niobrara Formation appearing brownish-gray. The units are relatively flat lying with a gentle dip to the east (Vuke, et al, 2000). Based on previous consultant measurements of on-site monitoring wells (RTI, 2018), groundwater has been measured from 6.47 feet below ground surface (ft-bgs) to 11.57 ft-bgs. Groundwater flow has averaged predominantly in a northerly direction. (RTI, 2018).

1.3 Summary of Previous Releases

In total, there have been eight (8) petroleum releases, both active and closed, at the Good2Go #8 facility. Release #525 was reported on December 17, 1990, due to a failed line tightness test, the release was excavated and closed based on post-excavation samples and subsequent line tightness test of the repaired line(s). Release #2962 was reported on July 15, 1996, due to holes in the former used oil UST (T2); the UST and contaminated soil were removed. Release #3667 was reported on February 9, 1999, due to a release from the former 2,000-gallon diesel UST (T2); the UST was removed in February 1999, and a brief over-excavation was completed, the remainder of the contaminated soil was excavated with Release #4619. Release #3873 was reported in December 1999, due to a vehicle collision with a dispenser, this release was not excavated until Release #4619 was excavated. Release #3959 was reported on April 27, 2000, due to a piping release at one of the dispensers, groundwater samples confirmed the release did not leach into the unconfined groundwater aquifer. Release #4619 was reported on December 17, 2007, due to a failed line tightness test and approximately 3,400 cubic yards of petroleum contaminated soil were removed along with the dispensers, product piping, and canopy, however, there was contamination left in-place towards the convenience store building. Release #5050 was reported on September 26, 2014, due to an overfill on one of the USTs; fuel spilled out of the vent pipes during delivery, due to a failed flapper valve. Release #5157 was reported on October 28, 2016, due to an overfill on one of the USTs, the spill discharged from the Site to the acreage south of the Site. An excavation was completed to the south of the Site with residual contamination remaining in the area around the UST basin. Release #s 4619, 5050, and 5157 remain active. For a summary of the releases, see **Table 1 in Attachment A**.

1.4 Previous Investigation Work

An investigation and corrective measures associated with Release#s 3667, 3873, and 3959, consisted of excavations and soil sampling, advancement of five (5) soil borings and sampling, installation of four (4) monitoring wells (MW-1, MW-2, MW-3, and MW-4), and subsequent groundwater sampling. The excavated areas were limited based on the location of subsurface utilities. Petroleum concentrations showed a decreasing trend between November 2004 and August 2005. (RTI, 2010)

On May 3, 2010, during the installation of new piping and dispensers, evidence of contamination was found below each dispenser; following the discovery, on May 5, 2010, an excavation was started and subsequently expanded due to widespread contamination found in a fill layer. Free product was observed in MW-4 and MW-5 at approximately four feet and eight feet thick, respectively. The canopy was removed and a landfarm was permitted to accommodate the volume of the expanded excavation. The completed excavation measured 125 feet long and ranged from 50 to 80 feet wide, averaging a depth of 14-15 feet below ground surface (ft-bgs). A total of 28 confirmation samples were collected during and post-excavation, sample WWC-6 was the only sample that exceeded Tier 1 Risk Based Screening Levels, exceeding for both toluene and ethylbenzene. Contamination was left in-place at sample location WWC-6 due to the proximity of the convenience store building footprint. The excavation was backfilled and compacted to allow for the reconstruction of the fueling system (RTI, 2010).

Following the completion of the excavation and fueling system, four (4) monitoring wells (MW-4A, MW-6, MW-7, and MW-8) were installed to assess the effectiveness of the excavation. Free product was observed in the subsequent groundwater sampling event in MW-5 and MW-7. MW-6 showed evidence that the excavation remediated the release from T2.

In September 2011, two (2) additional monitoring wells (MW-9 and MW-10) were installed to assess the lateral extent of the groundwater contamination to the north and east. Free product recovery commenced in MW-7 and MW-5. An increase in the groundwater elevation led to groundwater becoming impacted by contaminated soil left in place from the excavation.

Following a request from the Montana Department of Transportation, MW-8, MW-9, and MW-10 were abandoned to facilitate the expansion of North Crawford Avenue. Laboratory analytical results from the last sampling event in July 2015 in these wells indicated natural attenuation of the contamination. Benzene concentrations in MW-8 decreased from 6,000 micrograms per liter (µg/L) in September 2011 to 1,500 µg/L in July 2015. Benzene concentrations in MW-9 decreased from 1,600 µg/L in September 2011 to below laboratory detection limits in July 2015. Benzene was not detected above laboratory detection limits in three sampling events: September 2011, August 2014, and July 2015 (Table 4A, RTI, 2018).

On November 28, 2017, MW-8A was installed as a replacement well for abandoned MW-8 and monitor the northern part of the contamination plume. MW-3A was installed east of the UST basin to assess the area impacted by Release #5157.

The most recent groundwater sampling event occurred on January 8, 2018, with all monitoring wells being sampled except the following three wells: (1) MW-1 (not located); (2) MW-3A (well buried under a snowbank), and (3) MW-5 (presence of free product). On April 26, 2018, MW-3A was subsequently sampled. Volatile petroleum hydrocarbon (VPH) analysis detected benzene above the MDEQ Tier 1 Risk Based Screening Level (RBSL) for groundwater of 5 µg/L in MW-3A, MW-4A, and MW-8A. MW-3A and MW-4A detected RBSL exceedances for ethylbenzene, naphthalene, C_5-C_8 Aliphatics, C_9-C_{12} Aliphatics, C_9-C_{10} Aromatics, and total purgeable hydrocarbons. Extractable petroleum hydrocarbons exceeded the 1,000 µg/L screen limit in MW-3A, MW-4A, MW-6, and MW-7. The analyzed fractions detected C_9-C_{18} Aliphatics above the RBSL of 1,400 µg/L in MW-4A and MW-7 and C_{19}-C_{36} Aliphatics detected above the RBSL of 1,000 µg/L in MW-6 and MW-7 (RTI, 2018).

Six (6) direct push technology (DPT) borings (DPT-1 through DPT-6) were advanced around the UST basin to investigate Release #5157 and its impact on soil. Two (2) of the borings (DPT-4 and DPT-6) were advanced to the soil-groundwater interface and grab samples were collected.

Resource Technology, Inc. reports summarizing the excavation activities from 2010, DPT soil borings and groundwater monitoring from 2018 are provided in **Attachment A**.

2.0 SCOPE OF WORK

The proposed scope of work is divided in three (3) tasks comprised of the preparation of this Work Plan, Site reconnaissance, baseline groundwater sampling activities and reporting. A detailed breakdown and description of GWM Work Plan contents are provided below.

2.1 Work Plan Preparation (Task 1)

This task includes preparation of this GWM Work Plan and preparation of the scope, schedule and budget costs for the events described below.

Project preparation, planning and coordination includes:

- Development of a project schedule and scheduling of personnel and subcontractors;
- Coordination and scheduling with Site Maintenance Manager;
- Prepare site-specific Health and Safety Plan (HASP);
- Develop contractual work orders with subcontractors;
- Securing field equipment and checking it for proper operation; and
- Notification to Mr. Gary Brown (Environmental Compliance Manager for #8 Hardin Montana Property LLC) and Mr. Jonathan Love (MDEQ-PTCS Project Manager) prior to implementing field activities.

2.2 Site Reconnaissance and Groundwater Sampling Event (Task 2)

The scope of work for the Site reconnaissance and groundwater sampling event are as follows:

- EN TECH will mobilize to the Site to assess the current conditions of the property and monitoring well network.

- Measurement of fluid-levels and LNAPL, if present, in up to eight (8) existing monitoring wells MW-1, MW-2, MW-3A, MW-4A, MW-5, MW-6, MW-7, and MW-8A.
- Monitoring wells will be photographed and condition recorded in a bound field logbook.
- Groundwater samples will be collected from all eight (8) monitor wells, listed above, unless LNAPL is encountered. The groundwater samples will be analyzed for volatile petroleum hydrocarbons (VPH) by Massachusetts Environmental Protection Agency (MAEPA) Method MA-VPH and extractable petroleum hydrocarbons (EPH) by MAEPA EPA Method MA-EPH, if EPH results exceed 1,000 mg/L, the sample will be further analyzed for EPH fractions.

The depth to groundwater will be measured from the permanent surveyed mark or brass screw typically located on the northern side of the top of well casing. The depth to groundwater or LNAPL measurement will be made with a precision of one hundredth of a foot. The interface probe will be decontaminated between wells. Decontamination shall consist of washing the indicator probe and measuring tape that was submerged with non-phosphate detergent (e.g., Alconox™) and rinsed with potable water.

The following monitoring well sampling procedure will be followed:

1. Gauge Water Level. Measure the depth to water (with a 1 hundredth of a foot precision) and LNAPL, if present, in the well from the northern side of the PVC well casing (same point from where the well casing was surveyed). Decontaminate the electronic tape after each well gauging in Alconox™ solution and then rinse with potable water.
2. Purge the Well. The sampler will utilize a peristaltic pump to low-flow purge the monitoring wells. Depth to water (DTW), dissolved oxygen (DO), oxygen reducing potential (ORP), pH, specific conductivity, temperature, and turbidity will be recorded on an approximate 5-minute interval until the parameters reach stabilization.
3. Sample Well. After the groundwater parameters have stabilized, the well is ready to sample. Groundwater samples will be collected using the peristaltic pump. Ferrous iron will be field-measured utilizing a HACH test kit with a 0-7 mg/L range.

4. Fill sample containers making sure that they do not overflow. Pre-preservation and avoiding overflow of containers will ensure that bottles for analyses that require preservatives have the necessary pH. The analysis, time of collection, date, and monitoring well number shall be recorded on sample bottle label. The sample containers will be placed in a cooler on ice as soon as they are filled and labeled. A duplicate sample will be collected from one (1) monitoring well.

A trip blank will be provided by the laboratory and analyzed. No other quality control samples will be collected.

2.2.1 Investigation-Derived Waste

In the process of collecting environmental samples during this investigation, the following different types of potentially contaminated investigation-derived waste (IDW) may be generated:

- Used personal protective equipment (PPE);
- Disposable sampling equipment; and
- Purged groundwater and decontamination fluids.

Used PPE and disposable equipment will be double-bagged and placed in a municipal refuse dumpster. This waste is **not** considered hazardous and can be sent to a municipal landfill. Any PPE and equipment that is to be disposed that can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Decontamination fluids that will be generated in the sampling event will consist of deionized water, residual contaminants, and water with non-phosphate detergent. The volume and concentration of the decontamination fluid will be sufficiently low to allow disposal at the property. The water (and water with detergent) will be poured onto an impermeable surface and allowed to evaporate on the Site premises.

Purged groundwater during sampling **not** containing LNAPL generated from well development and purging will be placed on an impervious surface and allowed to evaporate.

2.3 Reporting (Task 3)

EN TECH will prepare and submit a paper and electronic copy of the Groundwater Monitoring (GWM) Report to the MDEQ-PTCS project manager. The report will include:

- A description of the activities performed on the Site by EN TECH;
- A Site map indicating the general Site features, monitoring well locations, and locations of all samples collected by EN TECH;
- A description of groundwater sampling procedures;
- Laboratory analysis procedures and results;
- A summary table of groundwater sampling analytical data;
- Analytical laboratory testing results and chain-of-custody forms;
- Evaluation and interpretation(s) of the data obtained;
- Copies of field notes and groundwater sampling forms; and
- Any recommendations for additional characterization and/or remediation, if necessary.

EN TECH will prepare and submit the GWM Report as a final deliverable to MDEQ-PTCS.

3.0 SCHEDULE and RESOURCES

EN TECH anticipates that it will take up to four to five days, including mobilization for one person to complete the Site reconnaissance and baseline groundwater sampling event. The schedule for the proposed work will be developed once Work Plan approval and notice to proceed are obtained. Analytical chemistry results will be available in approximately 10 working days from the time samples are submitted. The report will be delivered to the MDEQ-PTCS in approximately 15-20 working days after the analytical chemistry report is received.

5.0 LIMITATIONS

Environmental Technology, LLC. has or will perform the tasks outlined in this Work Plan in accordance with generally accepted practices and consistent with the level of work performed by other consultants providing similar services in Montana at the time of the investigation. No other warranty, expressed or implied, is made. This report is not a complete chemical characterization of the Site and surrounding areas and is not to be construed in whole or in part as due diligence specified in the Superfund Amendment and Reauthorization Act of 1986, (SARA), as amended.

6.0 REFERENCES

ASTM D5088-15a, *Standard Practice for Decontamination of Field Equipment Used at Waste Sites.*

Montana Department or Natural Resource Conservation 2014., *Yellowstone River Basin Waster Plan - 2014*. p44-45. Montana Water Supply Initiative.

Resource Technologies Inc., July 13, 2010, *Remedial Investigation and Soil Excavation Report.*

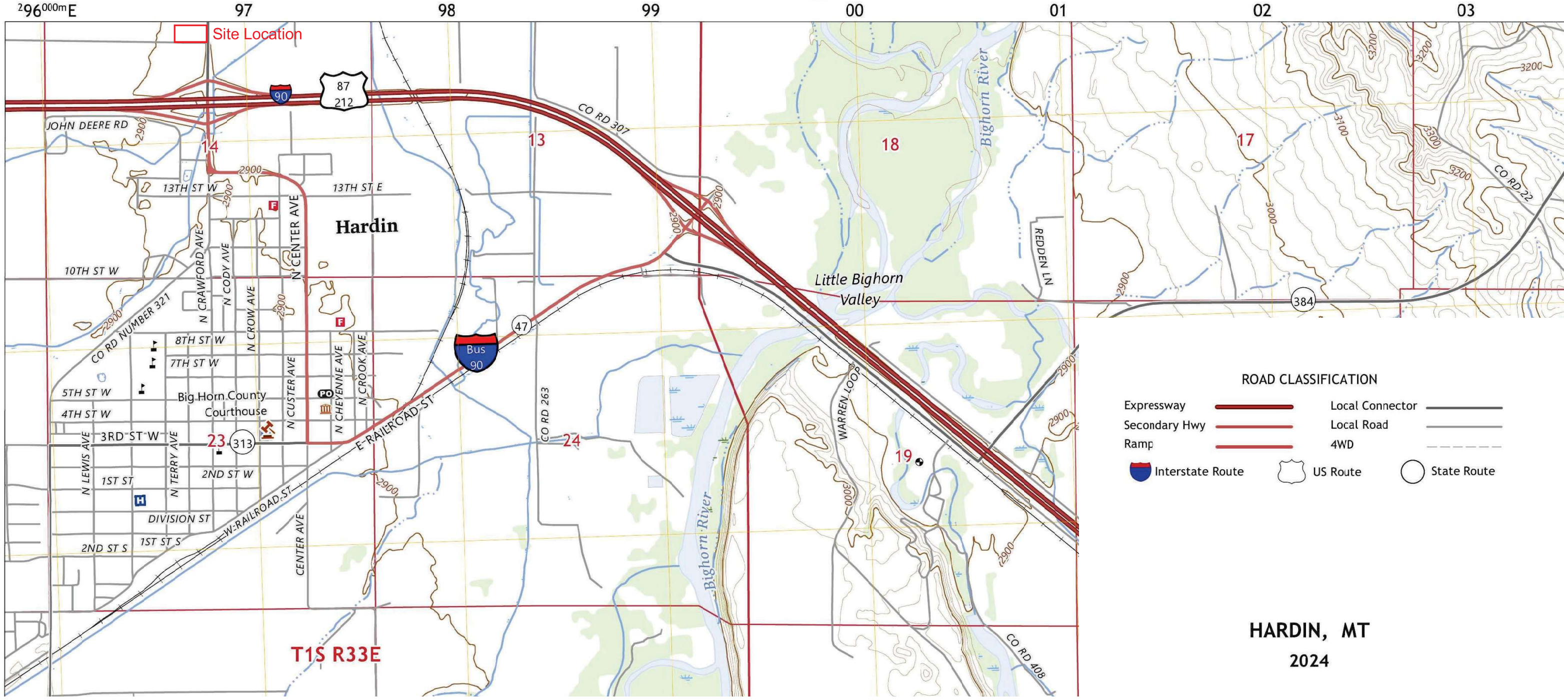
Resource Technologies Inc., June 20, 2018, *Standardized Initial RI Report.*

Vuke, S.M., Wilde, E.M., and Bergantino, R.N., 2007, *Geologic Map of the Hardin 30' x 60' Quadrangle, Montana*. Montana Bureau of Mines and Geology, Geologic Map GM-57, 1:100,000.

FIGURES

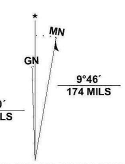
FIGURE 1 – SITE VICINITY MAP

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 13T
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

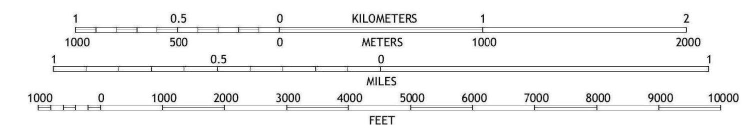
Imagery....................NAIP, August 2017 - January 2018
Roads....................U.S. Census Bureau, 2016 - 2016
Names....................GNIS, 1980 - 2023
Hydrography....................National Hydrography Dataset, 2002 - 2022
Contours....................National Elevation Dataset, 2021
Boundaries....................Multiple sources; see metadata file 2021 - 2022
Public Land Survey System....................BLM, 2018
Wetlands....................FWS National Wetlands Inventory Not Available



UTM GRID AND 2023 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
BL CL
Grid Zone Designation 13T

SCALE 1:24 000



CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES

1 Chimney Creek
2 Ninemile Point
3 The Dugout
4 Walker Hill
5 Little Dry Creek
6 Hardin SW
7 Prante Ranch
8 Crow Agency

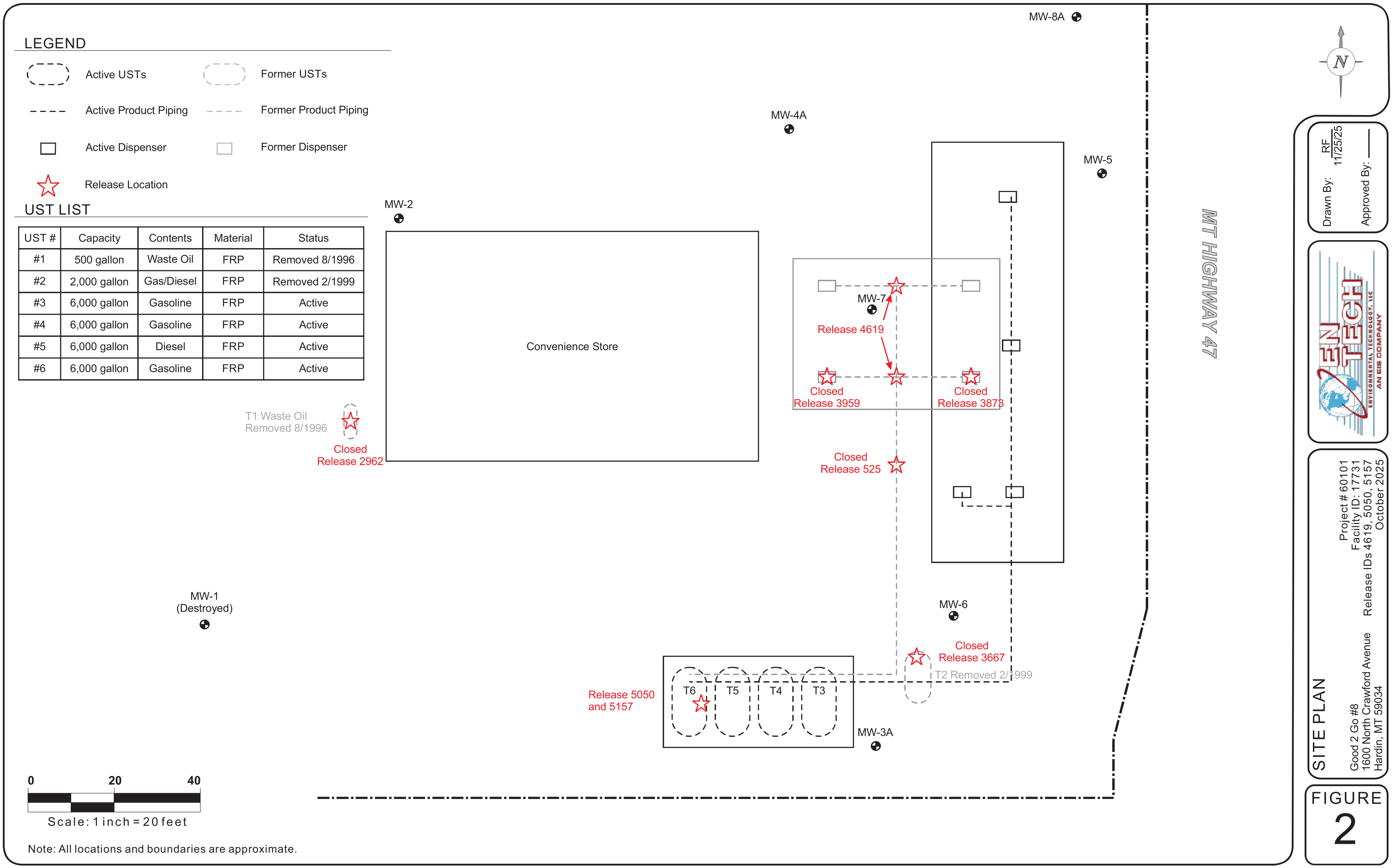
Drawn By: RF 5/6/26
Approved By:

ENVIRONMENTAL TECHNOLOGY, LLC
AN EIS COMPANY

SITE VICINITY and TOPOGRAPHIC MAP
Good2Go #8
1600 N Crawford Ave
Hardin, MT 59034
Project # 60101
Facility ID: 02-00538
Release ID: 5157
May 2026

FIGURE 1

FIGURE 2 – SITE PLAN



UST LIST

UST #	Capacity	Contents	Material	Status
#1	500 gallon	Waste Oil	FRP	Removed 8/1996
#2	2,000 gallon	Gas/Diesel	FRP	Removed 2/1999
#3	6,000 gallon	Gasoline	FRP	Active
#4	6,000 gallon	Gasoline	FRP	Active
#5	6,000 gallon	Diesel	FRP	Active
#6	6,000 gallon	Gasoline	FRP	Active

ATTACHMENTS

ATTACHMENT A – RESOURCE TECHNOLOGIES INC REPORTS

Remedial Investigation and Soil Excavation Report Red Eagle Store #8 1600 North Crawford Street Hardin, Montana

Facility ID# 02-00538
Release # 4619

July 13, 2010

Prepared For:

Montana Department of Environmental Quality
Petroleum Technical Section
P.O. Box 200901
Helena, Montana 59620-0901

Prepared By:
Resource Technologies Inc.
1050 East Main Street, Suite 4
Bozeman, Montana 59715
Phone: (406) 585-8005

EXECUTIVE SUMMARY

Resource Technologies Inc. (RTI) completed excavation of 3,395 bank cubic yards of gasoline impacted soils at the Hardin Shell located at 1600 North Crawford Street in Hardin, Montana. The extent of contamination was much larger than existing data indicated. The large volume of impacted soil was due to released fuel migrating substantial distances laterally along the base of a shallow fill layer before percolating into underlying soils. Excavated soils were landfarmed adjacent to a gravel pit located approximately 2 miles west of the site.

At the time of excavation, substantial thicknesses of free-product (gasoline) were measured in site monitoring wells MW-4 (4 feet) and MW-5 (7.8 feet).

Confirmation soil samples collected at the limit of excavation indicate that the majority of impacted vadose-zone soils were excavated; however, a small volume of impacted soil remains in place beyond the western limit of excavation beneath the station building. In addition, impacted soils within the zone of groundwater fluctuation (smear zone) likely extend well beyond the limits of excavation.

One monitoring well (MW-4) was destroyed during excavation.

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APPENDICES

1.0 INTRODUCTION

Resource Technologies, Inc. has completed excavation and landfarming of approximately 3,400 bank cubic yards of gasoline impacted soil from the Red Eagle Oil Company Store #8 (Hardin Shell) located at 1600 North Crawford Street in Hardin, Montana (Figure 1). Excavation activities were undertaken in response to a reported release of gasoline from the UST system that occurred during October, November, and December 2007 (Release #. The MDEQ-PTS approval of the soil excavation workplan dated October 29, 2009 authorized excavation of up to 500 bank cubic yards of soil; however, released fuel migrated substantial distances laterally along the interface between the surficial fill layer and underlying fine-grained native soils resulting in a much larger volume of impacted soil than anticipated.

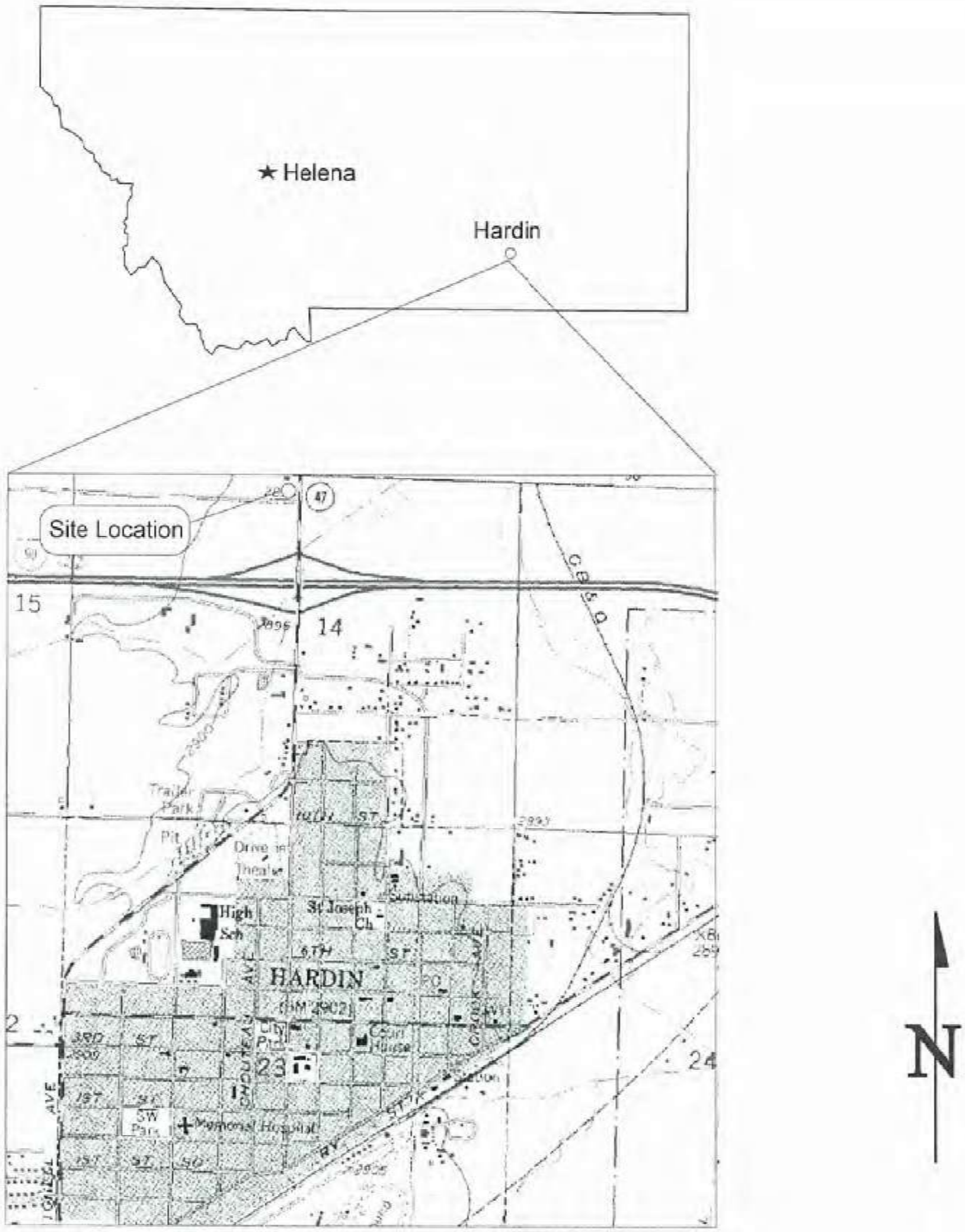
1.1 Site History

A gasoline service station and/or convenience store has existed on the site since as early as the 1960s. The site is currently occupied by the Red Eagle Oil Company Store #8 retail fuel dispensing facility, convenience store, and casino. Fuel at the facility is dispensed from four 6,000 gallon fiberglass-reinforced plastic USTs. Three of the USTs stored gasoline and one UST stored diesel fuel. The USTs and piping were equipped with automated leak detection.

A suspected release of premium gasoline was discovered at the site on December 17, 2007, when the premium fuel line failed a manual line tightness test performed by Northwest Fuel Systems. The facility manager had noted inventory shortages from the premium gasoline UST in October 2007; however, automated line-leak detection equipment including a Veederoot TLS 350 system did not indicate a line leak. The premium line was shut down and the product level in the tank was monitored for two days. No shortages were noted. On December 12, 2007, Paul Ferro of Red Eagle Oil, Inc. performed forced line leak testing over a period of 8 hours with no fuel being dispensed. The line passed the 0.1 gallon per hour test; however, an inventory shortage corresponding to a 2 to 3 gallon per hour loss was noted.

Manual line tightness testing completed on December 13, 2007, by Marketing Secialties of Billings was inconclusive. Additional line tightness testing completed on December 17, 2007, by Northwest Fuel Systems indicated the line was leaking. Mr. Ferro reported the suspeted release to the Montana Department of Environmental Quality (MDEQ) on December 18, 2007.

Subsequent helium testing of the premium line located two leaks in the line: one from a failed coupling, and one from a small puncture. The premium line was subsequently repaired in January 2009 under Emergency Permit #08-0081. Release locations are shown in Figure 2.



Base Map: U.S.G.S. Hardin Quadrangle, 7.5 Minute Series - Scale: 1:24,000

Figure 1

Site Location Map
Hardin Shell
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

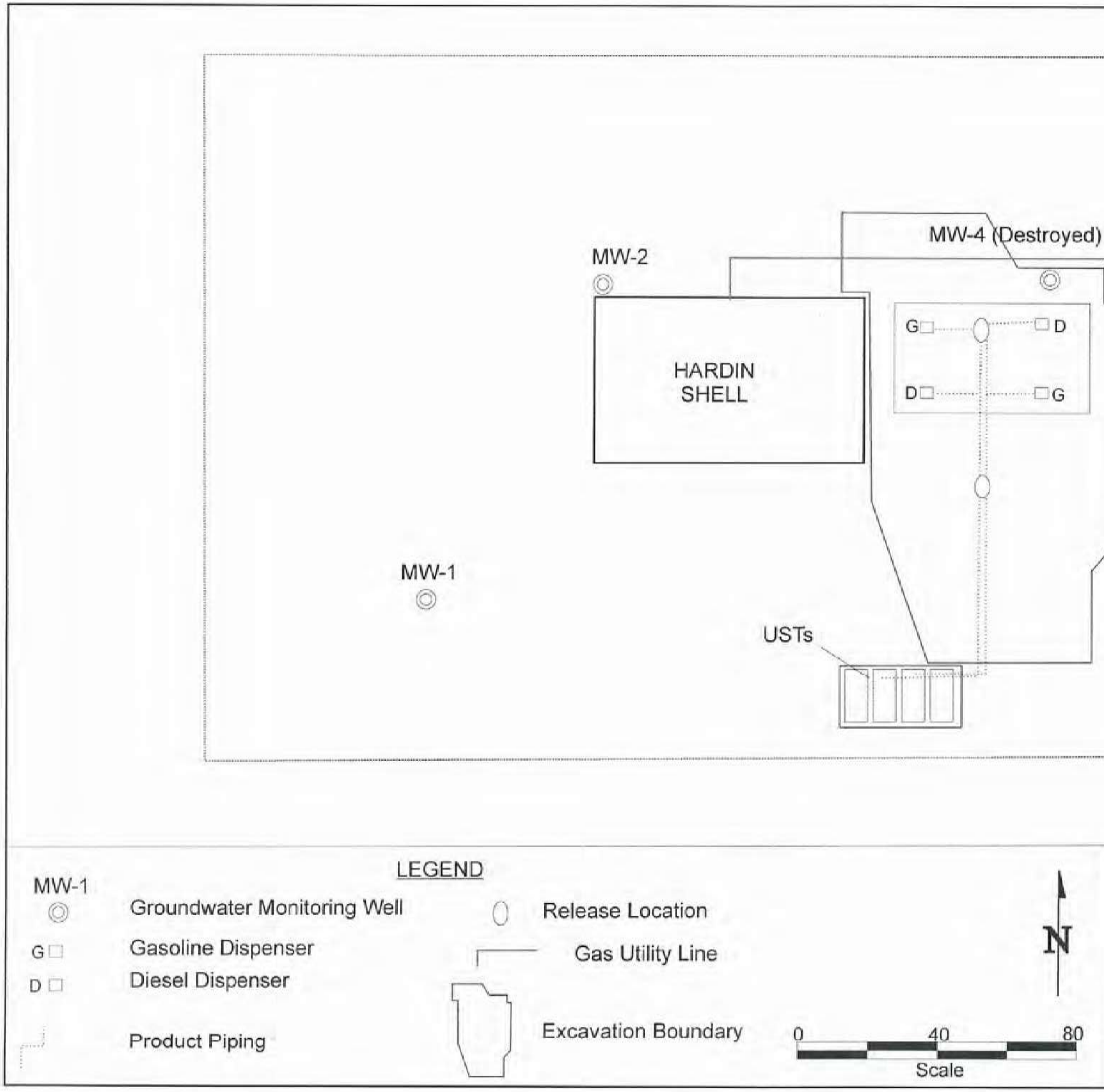


Figure 2

Site Layout
Hardin Shell
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

2.0 SCOPE OF WORK

Corrective actions completed at the site consisted of excavation and landfarming of soils impacted by the documented release. Specific work tasks included:

- Assess impacted soil volume during upgrade of piping and dispensers;
- If volume of impacted soil appears to be greater than 100 cubic yards, locate and permit one-time temporary landfarm(s);
- Excavate and stockpile impacted soil pending permitting landfarm;
- Excavate and transport soil and stockpiled soil to permitted landfarms;
- Screen excavated soils for VOCs with a PID;
- Collect samples of excavated soil for waste characterization;
- Collect confirmation soil samples at limit of excavation and submit samples for VPH analysis;
- Collect sample of water accumulated in excavation and submit for VPH analysis;
- Pump accumulated water from excavation and apply to surface of landfarmed soils;
- Measure excavation dimensions for volume calculation;
- Measure disrupted paved surfaces;
- Report results.

Work tasks, methods, and results are documented in the following sections.

2.1 Initial Assessment

Piping and dispenser upgrade activities began on May 3, 2010. The excavation contractor was Marketing Specialties of Billings, Montana. RTI personnel noted evidence of soil contamination beneath each of the dispensers. In addition, fuel-wet soil was noted beneath the product pipes approximately 10 feet south of the dispensers. On May 4, 2010, RTI personnel supervised excavation of a test pit at the release location south of the dispenser area. Excavated soils were screened for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID) calibrated with 100 part per million (ppm) isobutylene span gas. Soils with VOC concentrations exceeding the limit of the PID (>3000 ppm) persisted to a depth of at least 10 feet in the release area. The test pit was extended 30 feet to the south where soils collected at a depth of 8 feet exhibited a PID reading of 850 ppm.

Due to high winds, no soil excavation beneath the canopy was completed on May 4; however, water levels were checked in monitoring wells MW-4 and MW-5 and the wells were found to contain 4 feet and eight feet of free product respectively.

On the basis of the substantial lateral migration of contaminants observed along the piping trench, the free product in wells MW-4 and MW-5, and the evidence of releases in the dispenser area, we determined that the volume of impacted soil would be well in excess of 100 yards and that the canopy over the dispenser area would need to be removed to facilitate effective excavation in the dispenser area.

2.2 Landfarm Permitting

A prospective landfarm site was located adjacent to a gravel pit owned by Craig Mehling approximately 2 miles west of the site (6.5 miles by road). RTI transmitted landfarm information (location, maps, and photo) to John Raty of MDEQ-PTS on May 10, 2010. Mr. Raty subsequently authorized RTI to prepare the permit application for the site and authorized hauling of contaminated soil to the landfarm site.

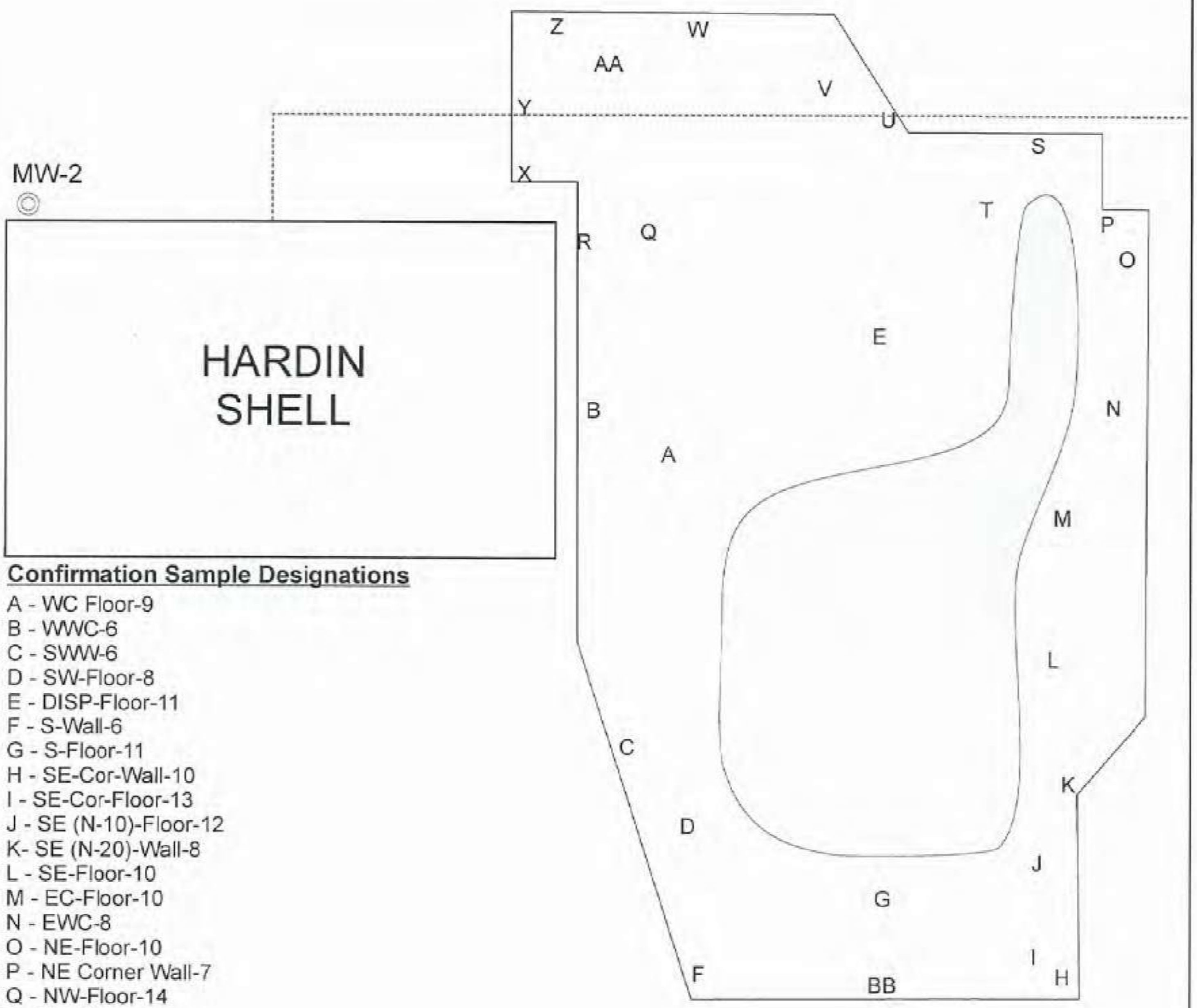
By May 24, 2010, it became apparent that the volume of excavated soil to be landfarmed would exceed 1,600 yards by a wide margin. Consequently, a second area at the Mehling gravel pit, located approximately ¼ mile south of the first landfarm site, was permitted as a one time temporary landfarm for the remainder of the excavated soil.

2.3 Soil Excavation

Excavation and stockpiling of contaminated soil on site began on May 5, 2010. Transport of contaminated soil to the first landfarm site commenced on May 10, 2010.

Prior to excavation, concrete and asphalt were stripped from the area to be excavated. Stripped concrete and asphalt was deposited at the Mehling gravel pit. During excavation, excavated soils were screened for the presence of VOCs with a PID. Discrete confirmation soil samples were collected from the excavation sidewalls at 25 to 30 foot intervals and at inflection points and corners. Discrete confirmation samples were collected from the excavation floor in areas that were not under water. In addition to confirmation samples, samples of "worst case" soils left in place under the facility building and at depths well below the water table in the northwest portion of the excavation were also collected. Soil samples were submitted to Advanced Analytical Associates of Bozeman for volatile petroleum hydrocarbons (VPH) analysis. Confirmation soil sample locations are shown in Figure 3. Confirmation soil sample results are shown in Table 1 and laboratory analytical reports are included in Appendix A.

A total of seven waste characterization samples were collected from soils that were ultimately landfarmed. Waste characterization samples were submitted to Advanced Analytical Associates of Bozeman for VPH analysis. Waste characterization soil sample results are shown in Table 2 and laboratory analytical reports are included in Appendix A.



Confirmation Sample Designations

A - WC Floor-9
B - WWC-6
C - SWW-6
D - SW-Floor-8
E - DISP-Floor-11
F - S-Wall-6
G - S-Floor-11
H - SE-Cor-Wall-10
I - SE-Cor-Floor-13
J - SE (N-10)-Floor-12
K- SE (N-20)-Wall-8
L - SE-Floor-10
M - EC-Floor-10
N - EWC-8
O - NE-Floor-10
P - NE Corner Wall-7
Q - NW-Floor-14
R - WWN-7
S - NWE-7
T - NNE-Floor-12
U - N Wall Ctr-8
V - N Floor Ctr-12
W - NWW-7
X - NW-SWC-7
Y - NW-WW-7
Z - NW-NW-7
AA - NW Cor Floor-15
BB - SW-7

LEGEND

Excavation Boundary

Gas Utility Line

Water In Excavation

0 20 40
Scale

N

Figure 3
Confirmation Soil Sample Locations
Hardin Shell
1600 North Crawford Ave
Hardin, Montana

Resource
Technologies
Inc.

Table 1. Confirmation Soil Sample Results; Hardin Shell; Hardin, Montana

									VPH		
Sample ID	Date	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	Naph-thalene mg/kg	TPH mg/kg	C5-C8 Aliphatics mg/kg	C9-C12 Aliphatics mg/kg	C9-C10 Aromatics mg/kg
WC-Floor-9	5/13/10	ND	ND	4	ND	4	ND	44	40	3	2
WWC-6	5/13/10	ND	ND	45	27	86	ND	370	170	ND	201
SWW-6	5/13/10	ND	ND	1	ND	1	ND	ND	ND	ND	ND
SW-Floor-8	5/13/10	ND	ND	5	2	8	ND	110	97	8	5
DISP-Floor-11	5/14/10	ND	ND	2	ND	1	ND	38	36	2	ND
S-Wall-6	5/14/10	ND	ND	ND	ND	ND	ND	42	40	2	ND
S-Floor-11	5/14/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SE-Cor Wall-10	5/18/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SE-Cor-Floor-13	5/18/10	ND	ND	ND	ND	ND	ND	160	150	5	ND
SE (N-10)-Floor-12	5/19/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SE (N-20)-Wall-8	5/19/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SE-Floor-10	5/20/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EC-Floor-10	5/20/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EWC-8	5/20/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NE-Floor-10	5/28/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NE-Corner Wall-7	5/28/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NW-Floor-14	6/1/10	ND	ND	5	ND	18	ND	310	240	35	36
WWN-7	6/1/10	ND	ND	3	1	14	ND	210	160	ND	52
Tier 1 RBSLs*		0.08	0.04	10	10	200	9	500	300	500	100

TPH = total purgeable hydrocarbons
VPH = volatile petroleum hydrocarbons
mg/kg = milligrams per kilogram
ND = Not detected above practical quantitation limit
*Tier 1 RBSLs = Tier 1 Risk Based Screening Levels for Subsurface Soil <10 Feet to Groundwater

Table 1. **Confirmation Soil Sample Results: Hardin Shell: Hardin, Montana Continued**

Sample ID	Date	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	Naph-thalene mg/kg	TPH mg/kg	VPH C5-C8 Aliphatics mg/kg	VPH C9-C12 Aliphatics mg/kg	VPH C9-C10 Aromatics mg/kg
NWE-7	6/2/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NNE-Floor-12	6/2/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Wall Ctr-8	6/4/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N Floor Ctr-12	6/4/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NW Cor Floor-15	6/4/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NWW-7	6/7/10	ND	ND	3	ND	ND	ND	ND	ND	ND	ND
NW-SWC-7	6/7/10	ND	ND	5	ND	ND	ND	ND	ND	ND	ND
NW-WW-7	6/7/10	ND	ND	3	ND	ND	ND	ND	ND	ND	ND
NW-NW-7	6/7/10	ND	ND	5	ND	ND	ND	ND	ND	ND	ND
SW-7	6/7/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tier 1 RBSLs*		0.08	0.04	10	10	200	9	500	300	500	100

TPH = total purgeable hydrocarbons
VPH = volatile petroleum hydrocarbons
mg/kg = milligrams per kilogram
ND = Not detected above practical quantitation limit
*Tier 1 RBSLs = Tier 1 Risk Based Screening Levels for Subsurface Soil <10 Feet to Groundwater

Table 2. **Waste Characterization Soil Sample Results; Hardin Shell; Hardin, Montana**

									VPH		
Sample ID	Date	MTBE mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Xylenes mg/kg	Naph-thalene mg/kg	TPH mg/kg	C5-C8 Aliphatics mg/kg	C9-C12 Aliphatics mg/kg	C9-C10 Aromatics mg/kg
Waste Char 1	5/10/10	ND	11	54	80	130	99	1,800	1,400	ND	420
Waste Char 2	5/10/10	ND	12	130	63	200	96	690	370	ND	320
EWS-7	5/20/10	ND	15	15	35	110	ND	1,600	1,100	ND	520
Waste Char III	5/28/10	ND	ND	10	49	110	ND	2,000	790	ND	1,200
Waste Char 4	6/2/10	ND	38	460	180	1,400	430	6,300	3,200	ND	3,100
Waste Char 5	6/3/10	ND	ND	7	24	6	ND	300	130	86	87
Waste Char 6	6/4/10	ND	ND	120	140	1,200	810	4,300	550	ND	3,700
Tier 1 RBSLs*		0.08	0.04	10	10	200	9	500	300	500	100

TPH = total purgeable hydrocarbons
VPH = volatile petroleum hydrocarbons
mg/kg = milligrams per kilogram
ND = Not detected above practical quantitation limit
*Tier 1 RBSLs = Tier 1 Risk Based Screening Levels for Subsurface Soil <10 Feet to Groundwater

The excavation was 125 long, north to south and extended from the north end of the UST basin to approximately 30 feet north of the station building. The maximum width of the excavation was 80 feet across the northern end and the excavation narrowed to just under 50 feet at the southern end. The excavation extended approximately 10 feet west past the northeast corner of the station building.

The depth of the excavation ranged from approximately 11 feet at the south end and north central portion of the excavation to 15 feet in the south-central portion and northwest portion of the excavation. Although static water level was measured in MW-2 at approximately 10.5 feet below ground surface, soil was excavated to the maximum attainable depth of 15 feet where soil screening data indicated that substantial impacts persisted to at least the 15 foot depth. Groundwater generally did not discharge to the excavation in these deeper areas.

A 10-foot wide, 6-foot deep bench extended along the central portion of the east wall and a 12 to 15 foot wide, 9-foot deep bench extended along the central portion of the west excavation wall.

2.4 Excavation Water Sampling and Removal

Due to runoff from heavy rains early in the week of May 24 combined with minor groundwater infiltration, several feet of water accumulated in the northeast corner of the excavation. RTI and the excavation contractor determined that the amount of water in the excavation would inhibit compaction of backfill materials. Following consultation with the MDEQ case manager, it was determined that the water could be pumped from the excavation and be spray applied over the top of landfarmed soil. RTI personnel collected a sample of the excavation water (Sample EXC) for characterization purposes on May 27, 2010. The sample was submitted to Energy Laboratories of Billings for rush VPH analysis. Laboratory analytical reports for the excavation water sample are included in Appendix B.

The excavation water sample contained 461 micrograms per liter (μg/l) total MBTEXN that included 202 μg/l benzene. TPH was reported in the sample at 1,280 μg/l. Excavation water was pumped from the excavation with a vacuum tank truck on May 27, 2010, and the water was transported to the landfarm site where the water was spray applied over the top of landfarmed soil.

2.5 Utility Location and Repair

Prior to excavation, all underground utilities in the anticipated excavation area were located by a utility locating service. A 1-inch plastic natural gas service line providing gas service to the station building passed approximately 30 feet north of the dispenser area (Figures 2 and 3). When it became known that contamination extended beyond (north) of the gas line. RTI contacted Montana Dakota Utilities (MDU) to disconnect the gas line. MDU disconnected the service line outside the anticipated area of excavation and connected temporary gas tanks to the gas service meter on the north side of the excavation. Following excavation and backfilling to the level of the gas line, MDU replaced the length of gas line disrupted during excavation.

The gas service line was inspected at the limit of excavation. There was no evidence (visual or PID) that contamination migrated along the gas line beyond the limit of excavation.

2.6 Backfilling and Compaction

The excavation was backfilled with sandy gravel from the Mehling gravel pit. The backfill was deposited in 6-inch to 1-foot lifts and was compacted with a vibrating sheep's-foot roller. The excavation was backfilled to the level of the top of the surrounding asphalt.

3.0 RESULTS

3.1 Excavated Soil Volume Calculation

Excavated soil volume was initially estimated in the field by measuring prisms of the excavation of roughly equal depth and summing the resulting volumes. Assuming an average depth of 12 feet for the central portion of the excavation yielded an estimated volume of 3,300 bank cubic yards. The excavation volume was refined by creating a three-dimensional representation of the excavation. A data file was created with a series of X (north), Y (east), and Z (actual measured depth) coordinates at maximum 5-foot intervals. The data-point intervals were reduced to as little as 1 foot to better define sharp changes in depth within the excavation. SURFER™ graphics software was used to generate a contour map and orthographic map, and to calculate the negative (excavated) volume from the data file. The volume calculated by this method was 91,670 cubic feet or 3,395 cubic yards. An excavation contour map is included as Figure 4 and an orthographic excavation map is included as Figure 5. Excavation photographs are included in Appendix C.

3.2 Confirmation Soil Sample Results

A total of 28 confirmation soil samples were collected from the sidewalls and floor of the excavation. Three of the samples were representative of contaminated material left in place. Samples WWC-6 (west wall center 6) and WWN-7 (west wall north 7) were representative of contaminated material remaining in place under the station building. Sample NW-Floor-14 was representative of contaminated material in the floor of the excavation at depths greater than 14 feet near the northeast corner of the building. These samples contained detectable concentrations of toluene, ethylbenzene, xylenes, total purgeable hydrocarbons (TPH) and VPH range aliphatic and aromatic compounds. Only sample WWC-6 contained gasoline range compounds at concentrations exceeding applicable Tier 1 risk based screening levels (RBSLs). Toluene and ethylbenzene were detected in the sample at 45 milligrams per kilogram (mg/kg) and 27 mg/kg respectively. Samples WWN-7 and NW-Floor-14 contained TPH at concentrations of 210 mg/kg and 310 mg/kg respectively.

Hydrocarbon compounds were detected at concentrations below RBSLs in samples WC-Floor-9 (west center floor 9), SWW-6 (southwest wall 6), SW-Floor-8 (southwest floor 8), Disp-Floor-11 (dispenser floor 11), S-Wall-6 (south wall 6), SE-Cor-Floor-13 (southeast corner floor 13), NWW-7 (north wall west 7), NW-SWC-7 (northwest

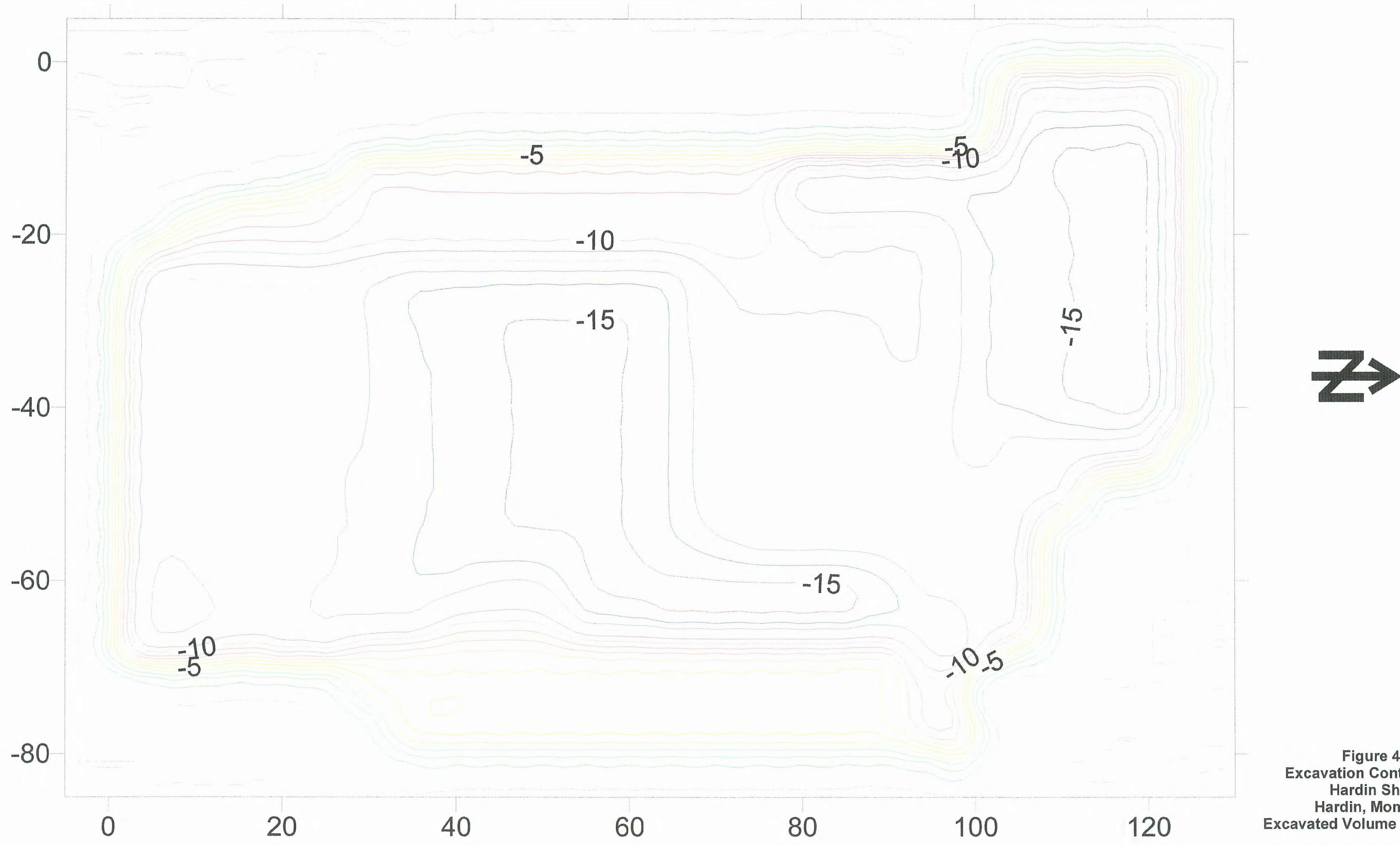


Figure 4.
Excavation Contour Map
Hardin Shell
Hardin, Montana
Excavated Volume - 3,395 BC

Resource Technologies, Inc.

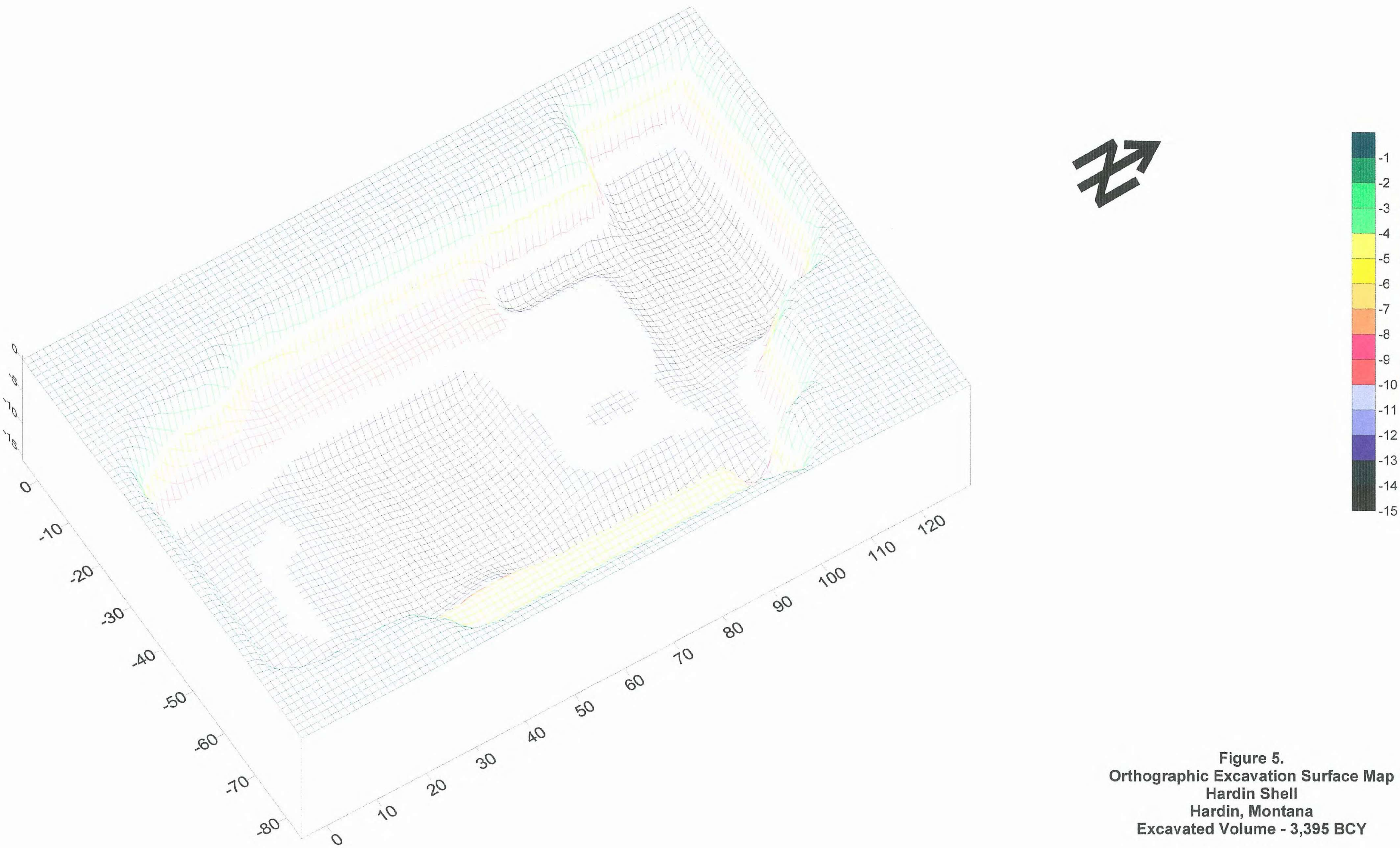


Figure 5.
Orthographic Excavation Surface Map
Hardin Shell
Hardin, Montana
Excavated Volume - 3,395 BCY

Resource Technologies, Inc.

excavation, southwest corner), NW-WW-7 (northwest excavation, west wall 7), and NW-NW-7 (northwest excavation, north wall 7).

MBTEXN compounds that consisted of toluene with or without ethylbenzene and xylenes were detected in samples WC-Floor-9, SWW-6, SW-Floor-8, Disp Floor-11, NWW-7, NW-SWC-7, NW-WW-7, and NW-NW-7. TPH was reported in samples WC-Floor-9, SW-Floor-8, Disp Floor-11, S-Wall-6, and SE-Corner Floor-13. In this group of samples, the highest toluene concentration was 5 mg/kg (samples SW-Floor-8, NW-SWC-7, and NW-NW-7); the highest ethylbenzene concentration was 2 mg/kg (sample SW-Floor-8); and the highest xylenes concentration was 8 mg/kg (sample SW-Floor-8). The highest TPH concentrations in this group of samples were reported in samples SW-Floor-8 (110 mg/kg) and SE-Cor-Floor-13 (160 mg/kg). Where detected, TPH was composed primarily of C5-C8 aliphatics.

No hydrocarbon compounds were detected in confirmation samples S-Floor-11, SE-Cor-Wall-10, SE (N-10) Floor-12, SE (N-20) Wall-8, SE-Floor-10, EC-Floor-10, EWC-8, NE-Floor-10, NE Corner Wall-7, NWE-7, NNE-Floor-12, N Wall Ctr-8, N-Floor-Ctr-12, or SW-7.

3.2 Site Geology

Site soils underlying the site consisted primarily of fine-grained sediments composed mainly of very stiff clay with lesser quantities of softer silty clay. In the area of the excavation, fine grained native sediments were overlain by a mantle of sandy gravel fill. This fill layer was approximately four feet thick at the western margin of the excavation adjacent to the store building and tapered to less than two feet thick at the eastern and southern margins of the excavation.

On May 5, 2010, RTI personnel measured a groundwater level in monitoring well MW-2 of 10.80 feet (approximately 10 feet below ground surface. Groundwater flow direction in the vicinity of the site is anticipated to be to the northeast.

4.0 DISCUSSION

The greater-than-expected volume of impacted soil at the site appears to have been caused by the configuration of the sandy gravel fill overlying native materials. Across the majority of the excavated area, RTI personnel noted that the base of the gravel fill layer exhibited very high PID readings or was actually fuel wet. This condition indicates that released fuel migrated substantial distances laterally beyond the release points along the fill/native material boundary before percolating into the underlying native sediments. The varying vertical extent of contamination appears to be related to variations in the native sediments. Contamination penetrated to greater depths where the softer silty clay predominated and to lesser depths where the stiffer clay predominated.

The only area where vadose-zone contamination was left in place was along the west wall of the excavation beneath the station building. The limit of contamination in the northwest portion of the excavation suggests that contamination persists for no more than 10 feet west beneath the building. Worst-case samples WWC-6 and WWN-7 quantify the magnitude of contamination left in place beneath the station building.

Elevated hydrocarbon compounds in some floor samples collected at depths well below the water table (SE-Cor-Floor-13, NW-Floor-14) demonstrate that hydrocarbon impacts persist to depths well below the water table as measured in well MW-2. It is probable that these smear-zone impacts may extend beneath areas of the excavation where floor samples from shallower depths indicated that the vertical limit of contamination had been reached. The presence of free product at MW-5 further indicates that substantial "smear-zone" contamination persists beyond the limit of excavation in the downgradient direction.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Confirmation sampling results indicate that excavation activities were successful at removing all but a small volume of impacted vadose zone soils. The magnitude of impacts in soils left in place beneath the building is relatively small as indicated by analytical results for samples WWC-6 and WWN-7. Only sample WWC-6 contained any hydrocarbons at concentrations exceeding the applicable RBSLs (toluene, ethylbenzene, and C9-C10 aromatics).

RTI offers the following recommendations:

- Replace destroyed monitoring well MW-4 and install one additional monitoring well northeast of MW-5;
- Install a passive free-product recovery skimmer in well MW-5; and
- Monitor groundwater on a periodic basis to determine the effectiveness of soil excavation and monitor plume dynamics.

We do not recommend any additional corrective actions to mitigate impacted soils beneath the site building since the volume of impacted soil appears to be small, the magnitude of impacts is relatively small, and the impacted soils (clay and silty clay) will not be conducive to in-situ to soil-vapor extraction.

If you have any questions or comments regarding this report, please feel free to call.

Sincerely,
Resource Technologies, Inc.

Joe Laudon
Hydrogeologist

Resource Technologies, Inc.
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Internet: rti@montana.net • Voice: (406) 585-8005 • Telefax: (406) 585-0069

June 20, 2018

Marla Stremcha
Montana Department of Environmental Quality
Petroleum Tank Cleanup Section
1371 Rimtop Drive
Billings, Montana 59105

Subject: Standardized Initial RI Report
Good 2 Go Store #8, 1600 North Crawford Avenue, Hardin, Montana
Facility ID 02-00538, Release 5157, Work Plan 10592

Responsible Party: Brad Hall & Associates (#8 Hardin Montana Property LLC)
Attention: Duane Dalby (Brad Hinze)
PO Box 50620, Idaho Falls, ID 83405
(208) 523-6582

Dear Ms. Stremcha,

On behalf of Brad Hall & Associates (BHA), this report describes the results of soil borehole and groundwater monitoring activities conducted by Resource Technologies, Inc. (RTI) at the Good 2 Go Store #8 (Facility) located at 1600 North Crawford Avenue in Hardin, Montana (Figure 1). The investigation activities were conducted under the Standard Initial RI Corrective Action Plan, original dated May 16, 2017 and revised dated June 5, 2017. The Montana Department of Environmental Quality – Petroleum Tank Cleanup Section (DEQ) approved the scope of work in their June 5, 2017 letter to Duane Dalby of BHA. Based on the initial findings, the scope of work was expanded to include installation and sampling of a monitoring well. The Corrective Action Plan Modification Form was approved by DEQ on August 21, 2017.

Respectfully Submitted,
Resource Technologies, Inc.

Pamela McDevitt
Environmental Scientist

cc: Brad Hall & Associates

Table of Contents

FIGURES

TABLES

APPENDICES

Initial Remedial Investigation Report
Good 2 Go Store #8, 1600 North Crawford Avenue, Hardin
Release #5157
June 20, 2018

1.0 BACKGROUND

The Good 2 Go Store #8 (Facility), located at 1600 North Crawford Avenue in Hardin, Montana, is currently used as a convenience store with gasoline and diesel fuel distribution. The Facility has been an operating fuel station since about 1974. Fuel at the facility is dispensed from four 6,000-gallon fiberglass-reinforced plastic underground storage tanks (USTs). Three of the USTs store gasoline and one UST stores diesel fuel. The USTs are located south of the building, and fuel is distributed through underground piping to dispenser islands in front (east) of the building. The USTs and piping are equipped with automated leak detection.

Previously, there was a 2,000-gallon gasoline/diesel fuel UST located in the southeast portion of the Facility, and a 500-gallon waste oil UST located behind the building to the west.

1.1 Previous Investigations and Corrective Actions

There have been eight petroleum releases at the Facility as summarized on Table 1.

In 1991, an unknown volume of contaminated soil associated with Release #525 (gasoline piping) was removed.

In 1996, approximately 2 cubic yards of contaminated soil associated with Release #2962 (500-gallon waste oil UST) was removed.

In 1999, approximately 80 cubic yards of contaminated soil associated with Release #3667 (2000-gallon gasoline/diesel UST) was removed.

In 2000, approximately 45 cubic yards of contaminated soil associated with Release #3969 (diesel piping) was removed.

A remedial investigation of Releases #3667, #3873, and #3959 was conducted in September 2003, and included test pit excavations and soil sampling, completion of five boreholes and soil sampling, and installation of four monitoring wells and groundwater sampling. Residual contamination remained at the former UST basin associated with Release #3667. Residual contamination associated with Release #3873 was limited to an approximate 6- to 12-inch layer at about 5- to 6-feet below ground surface. Some residual diesel contamination associated with Release #3959 remained at about 7 feet below ground surface (bgs). Buried electrical and natural gas utilities in the vicinity of the diesel fuel dispenser prohibited removal of additional soil.

Semi-annual groundwater monitoring was conducted between November 2004 and August 2005. Concentrations of petroleum contaminates showed a decreasing trend.

In 2010, an estimated 3,395 cubic yards of contaminated soil associated with Release #4619 (gasoline fuel line), and also Release #3667 and Release #3873 was removed. Monitoring well MW-4 was removed as part of the excavation activities.

In December 2010, four soil borings (MW-4A, MW-6, MW-7, and MW-8) were installed and completed as monitoring wells. Free product was present in wells MW-5 and MW-7. Groundwater sampling results indicated that the extent of the dissolved hydrocarbon plume had not been defined to the north and east. Analytical data for well MW-6 indicated that excavation was effective at mitigating groundwater impacts from historic releases near the UST basin.

In September 2011, two soil borings (MW-9 and MW-10) were installed and completed as monitoring wells. A passive free-product recovery canister was installed in well MW-7 on May 19, 2011. The canister was moved to well MW-5 on September 28, 2011. The downgradient extent of the dissolved hydrocarbon plume appeared to be defined by MW-10. Analytical data for wells MW-1 and MW-2 indicated that residual dissolved impacts associated with historic releases on the western portion of the Facility are limited to naphthalene. Increases in dissolved contamination since the 2005 monitoring exhibited in wells MW-4A and MW-8 were attributed to rising groundwater levels directly contacting impacted soil in the zone of groundwater fluctuation that remain in place beyond the boundaries of the 2010 excavation.

Annual groundwater monitoring was conducted in July 2015. Monitoring wells MW-8, MW-9, and MW-10 were abandoned following sampling as requested by the Montana Department of Transportation. Analytical results indicated substantial attenuation downgradient of the former excavation. Free product accumulation persists at MW-5 and minor intermittent free product remained at MW-7.

Annual groundwater monitoring was conducted in June 2016. Groundwater analytical data indicate substantial contaminant attenuation downgradient of the former excavation. Substantial free product accumulation persists at MW-5. Well MW-7 consistently exhibits anomalously high groundwater elevations indicating that the former excavation is receiving additional recharge. Groundwater mounding within the former excavation may have a beneficial effect by increasing the volume of groundwater flow within the dissolved contaminant plume.

1.2 Current Site Conditions

Surface conditions consist of asphalt or concrete paving with gravel cover behind the store building to the west. The area of the 2016 spill in the cultivated field to the south was re-vegetated with no apparent residual impacts.

Soils underlying the Facility consisted primarily of fine-grained sediments composed mainly of very stiff clay with lesser quantities of softer silty clay. In the area of the major excavation, fine grained native sediments were overlain by a mantle of sandy gravel fill. This fill layer was approximately four feet thick at the western margin of the excavation adjacent to the store building and tapered to less than two feet thick at the eastern and southern margins of the excavation.

Groundwater levels ranged from 7.72 to 10.83 feet below ground surface during the June 2016 monitoring event. Groundwater flow direction in the vicinity of the Facility was to the north/northeast at a gradient of 0.010 between MW-2 and MW-4A.

2.0 PURPOSE AND OBJECTIVES

The purpose of this investigation was to determine the extent and magnitude of residual hydrocarbon contamination in the subsurface soil, and in the groundwater beneath the Facility that may be associated with Release #5157. Specific objectives of the investigation described herein are to:

- Advance six (6) subsurface soil borings using direct push technology (DPT);
- Collect soil samples for field screening and laboratory analysis;
- Collect two (2) groundwater grab samples for laboratory analysis;
- Advance one (1) subsurface soil boring using a hollow-stem auger rig, and complete as permanent monitoring well.
- Collect one groundwater sample from the new well MW-3A and existing well MW-6 for laboratory analysis;
- Inspect the irrigation ditch to the south and collect a surface water sample for laboratory analysis;
- Prepare a release Closure Plan (RCP); and
- Submit an investigation report.

3.0 MAPS AND TECHNICAL INFORMATION

3.1 Maps and Tables

A site location map is included as Figure 1. A Facility layout map is included as Figure 2. A hydrocarbon contaminant distribution map for DPT soil is included as Figure 3. Figure 4 is an interpretation of the groundwater potentiometric surface based on January 2018 water level measurements. Figure 5 shows the benzene/total petroleum hydrocarbon (TPH) impacted groundwater plume and Figure 6 shows the total extractable hydrocarbon (TEH) impacted groundwater plume.

Table 1 summarizes all of the petroleum releases at the Facility. Table 2 contains DPT soil and groundwater grab analytical results. Table 3 provides groundwater level measurements and elevations. Table 4 summarizes current groundwater analytical results and Table 4A summarizes cumulative groundwater analytical results for all Facility wells.

3.2 Utility Locating

Prior to commencing field work, the underground utility locating service was contacted to identify public utilities. In addition, Last Call Locating (of Billings, Montana) provided locating services for private utilities (i.e., underground electrical and fuel lines). Public and known private utilities are illustrated on Figure 2.

3.3 Soil Investigation

RTI developed a Site Health & Safety Plan for the field activities. Standard practices for construction safety were implemented to control vehicle and pedestrian traffic around the work zone.

RTI supervised the completion of six soil borings using a DPT rig (Geoprobe) on July 6, 2017. Stantec of Butte, Montana provided drilling services.

RTI supervised the completion of a soil boring for a monitoring well using a hollow-stem auger rig on November 28, 2017. HazTech Drilling of Billings, Montana provided drilling services.

RTI conducted groundwater monitoring for Release #4619 on January 8, 2018 including MW-6. MW-3A was buried beneath a large snow pile when this sampling occurred and could not be accessed.

On April 26, 2018, RTI completed groundwater monitoring at MW-3A for Release #5157.

3.3.1 Direct Push Technology

The DPT soil borings were advanced to a depth of 12 feet bgs, except for DPT-5 which was refused at 9 feet bgs due to sloughing gravel. Soil samples were collected continuously from each borehole. The RTI scientist supervising sampling activities recorded borehole lithologies on a borehole log. Soil borehole logs are included in Appendix A.

Soil samples were field screened for the presence of hydrocarbon vapors with a photoionization detector (PID) and standard headspace methods. Results of field screening are included on the borehole logs in Appendix A.

The soil sample from each borehole exhibiting the highest PID reading and the sample collected immediately above the soil groundwater interface were submitted for laboratory analysis. PID readings were not elevated at DPT-2 and only the sample from the soil-groundwater interface was submitted for laboratory analysis.

The samples were placed on ice and transported under chain-of-custody procedures to the laboratory for VPH and EPH screen analyses. Soil samples exceeding the EPH screening limit (200 mg/kg) were further analyzed for EPH fractions. DPT soil analytical results are summarized on Table 2 and illustrated on Figure 3. Soil laboratory reports are provided in Appendix B.

Cuttings from the boreholes were spread out in open areas along the southern boundary of the Facility.

3.3.2 Soil Boring and Well Installation

The MW-3A soil boring was advanced to a depth of 15 feet, and samples were obtained at approximate five-foot intervals using a split-barrel sampler driven into undisturbed soil beyond the tip of the lead auger. The RTI scientist supervising sampling activities recorded borehole lithologies and other relevant information on a borehole log. Soil borehole logs are provided on the well completion record included in Appendix A.

Soil samples were field screened for the presence of hydrocarbon vapors using a PID and standard headspace methods. Results of field screening are included on the well completion logs in Appendix A. Since soil samples were previously collected at this location during the DPT investigation, no soil samples were submitted for the well installation. Cuttings from the borehole were obviously contaminated and were stockpiled on plastic sheeting and covered pending laboratory analysis and appropriate disposal.

The soil boring was completed as a groundwater monitoring well. The monitoring well was constructed using 2-inch schedule 40 PVC casing and 10-foot length of 0.010-inch well screen positioned to intercept the water table allowing for seasonal fluctuations. The well was completed using a traffic rated-flush mounted manhole set in concrete. New well construction details are included on the well completion log in Appendix A.

Following completion, the monitoring well was developed by surging and pumping until continued pumping produced no further improvement in discharge turbidity.

New and existing wells were surveyed to Montana State Plane Coordinates by Morrison-Maierle, Inc of Billings, Montana on December 14, 2017. A copy of the surveyor's report is included in Appendix A.

3.4 Groundwater Sampling

At locations DPT-4 and DPT-6, the borehole was further advanced to 15 feet bgs to allow for collection of groundwater grab samples. New three-quarter inch PVC casing and screen was placed in the open borehole, and the groundwater sample was collected using a peristaltic pump and new tubing for each location. In addition, a groundwater grab sample was collected from existing well MW-6, nearest Release #5157.

Groundwater samples were collected using a new PVC bailer and string for each location. Groundwater was transferred from the bailer to laboratory provided containers, and appropriately preserved as specified by each analytical method. The sample containers were placed in iced coolers, and transported under chain-of-custody procedures to the Energy Laboratories for VPH and EPH screen analysis. EPH screen results with a total extractable hydrocarbon value greater than 1,000 µg/L were further analyzed for EPH fractions. Groundwater results are shown in Table 4 with laboratory reports included in Appendix B.

The ditch for the cultivated field to the south was dry, and therefore, a surface water sample was not collected. No residual product was observed on the ditch sides or bottom, or vegetation.

On April 26, 2018, a groundwater sample was collected from MW-3A. The depth to water was measured with an electronic water-level indicator. Groundwater elevation data are included in Table 2. A groundwater sample was collected using a stainless-steel bladder pump, polyethylene bladder and tubing, and low-flow sampling methods. During sampling, water quality parameters including temperature, conductivity, pH, dissolved oxygen (DO), and oxidation/reduction potential (ORP) were recorded. The groundwater sample was submitted with chain-of-custody documentation to Energy Laboratories for VPH, and EPH screen analyses. The sample exhibited TEH screen concentrations greater than 1,000 micrograms per liter (µg/l) and was further analyzed for EPH-range aliphatic and aromatic fractions. Groundwater results are summarized in Table 4. A copy of the MW-3A groundwater laboratory report is included in Appendix B.

3.5 Geology and Hydrogeology

The Natural Resources Conservation Service (NRCS) web soil survey unit description of the soils underlying the Facility is Kyle Silty Clay (Ks) with 0 to 2 percent slopes. The soil is formed from parent material of clayey alluvium. The soil is well drained with moderately low water movement in the most restrictive layer. (NRCS, 2017).

The published surface geologic formation in the vicinity of the Facility is the alluvial terrace deposit (Qat), consisting of gravel, sand, silt, and clay underlying alluvial terrace surfaces adjacent to and higher in elevation than modern streams and rivers (Vuke, et al; 2000).

Based on this investigation, surface conditions consisted of three-inches of asphalt overlying a gravel base at four of the locations and gravel base at the remaining two locations. Native site soils underlying asphalt and gravel base material consist primarily of fine-grained sediments composed mainly of very stiff clay with lesser quantities of softer silty clay. The 2010 excavation (Figure 2) that ranged from 11 to 15 feet in depth was backfilled with sandy gravel.

Depth to groundwater at the Facility in July 2017, measured in the temporary piezometers and MW-6, ranged from 6.86 to 7.46 feet bgs.

Depth to groundwater at the Facility measured in January 2018 ranged from 7.45 feet at MW-6 to 12.77 feet at MW5 (with 2.15' of LNAPL). Depths to groundwater in site monitoring wells were, on average, 0.74 feet lower than the elevations for the same wells measured in June 2016. Except for MW-6 which was 1.60 feet higher. The depth to groundwater measured in MW-3A in April 2018 was 2.03 bgs.

A potentiometric surface map illustrating groundwater table configuration on January 8, 2018 is included as Figure 4. The gradient magnitude measured between MW-6 and MW-4 based on the January 2018 water level measurements is 0.03 feet/foot. Prior to soil excavation completed in 2010, groundwater flow beneath the Facility was typically to the northeast. Since excavation, the excavated area appears to receive increased recharge resulting in groundwater mounding within the former excavation. Consequently, groundwater flow appears to vary from northwest to northeast beyond the boundaries of the former excavation. Monitoring well MW-8A exhibited an anomalously high groundwater level, presumably due to increased recharge at the well location. This well is set in an oval borrow ditch that receives substantial runoff from the adjacent paved areas and highway. The groundwater level at MW-3A was also high. This well is set immediately adjacent to the UST basin which was backfilled with pea-gravel.

3.6 Utilities, Migration Pathways, and Potential Receptors

Buried utilities at the Facility include water, sewer, electric, natural gas, communication lines, and fuel distribution and vent lines (Figure 2). Underground public utilities are located west and north of the Facility. Given that only the shallow electrical and fuel lines are present in the UST basin area, utility trenches are not likely a potential preferred contaminant migration pathway.

The Facility is located within commercial properties, and vacant and agricultural properties north of Hardin. Potential human receptors are limited to short-term occupants of the Facility, and adjacent restaurant to the north and C-store across the street to the east.

An irrigation ditch runs south of the UST basin and along the east edge of the cultivated field to the south. The ditch was dry at the time of the July and August 2017, and January 2018 field events.

The site is located in the southeast quarter of the northwest quarter of Section 14 Township 1 South, Range 33 East. A listing of wells located in Section 14 obtained from the Montana Bureau of Mines and Geology Groundwater Information Center is included in Appendix C. There are 62 well listings for Section 14 of which 13 are located in the north-half of Section 14. Wells in the south-half of Section 14 are upgradient of the site with Interstate 90 lying between the site and those wells. Due to distance and position relative to the site, these wells are not considered potential receptors. Five of the wells in the listing have no location information.

The two wells located in the north-half of Section 14 that are closest to the Facility are the MacOil, Inc. Public Water Supply well (GWIC Listing #94371), located approximately 400 feet north-northwest of the release area, and the Leo Seder well (GWIC Listing #94370) located approximately one-quarter mile to the northeast. The MacOil well is the public water supply well for the Facility. The well is 32 feet deep with steel casing to the total depth and perforations from 28 to 32 feet. The Seder well is 28 feet deep and is screened from 24 to 28 feet.

On the basis of distance from the release area and historic monitoring data from abandoned wells MW-9 and MW-10 defining the northeast extent of the dissolved hydrocarbon plume associated with Release #4619, the Seder well does not appear to be threatened by the release. The MacOil well also appears to lie beyond the downgradient margin of the dissolved hydrocarbon plume; however, the extent of the plume directly north of the release area remains poorly defined.

4.0 RESULTS

4.1 Soil Results

Analytical results from soil samples collected for the DPT boreholes are summarized on Table 1. Figure 3 displays soil contaminant concentrations from the DPT samples.

No VPH or EPH range compounds were detected in the soil sample from DPT-2 at 10 to 12 feet bgs. VPH and/or EPH range compounds were detected in the soil samples from DPT 1 at 10 to 12 Feet bgs and DPT-5 at 4 to 8 feet bgs; however, no applicable Tier 1 risk-based screening levels (RBSLs) for soil were exceeded. VPH and/or EPH range compounds were detected at concentrations exceeding applicable soil RBSLs in the remaining soil samples.

<u>DPT-1</u>. Target analyte concentrations that exceeded applicable soil RBSLs included C9-C10 Aromatics [193 milligrams per kilogram (mg/kg)] and C9-C18 aliphatics (972 mg/kg) in the 5 to 7 foot sample.

<u>DPT-3</u>. Benzene was the only compound that exceeded the RBSL in the 6 to 8 foot sample (0.89 mg/kg) and the 10 to 12 foot sample (0.74 mg/kg).

DPT-4. Target analytes reported in the 6 to 8 foot sample at concentrations exceeding RBSLs included benzene (1.0 mg/kg), C5-C8 aliphatics (365 mg/kg), and C9-C10 aromatics (197 mg/kg). Target analytes reported in the 10 to 12 foot sample at concentrations exceeding RBSLs included benzene (1.9 mg/kg), C5-C8 aliphatics (540 mg/kg), and C9-C10 aromatics (184 mg/kg).

DPT-6. Target analytes reported in the 6 to 8 foot sample at concentrations exceeding RBSLs included benzene (3.4 mg/kg), toluene (48 mg/kg), C5-C8 aliphatics (305 mg/kg), and C9-C10 aromatics (159 mg/kg). Benzene was the only compound that exceeded the RBSL in the 10 to 12 foot sample (0.22 mg/kg).

4.2 Groundwater Results

Analytical results of groundwater grab samples collected from select DPT boreholes and MW-6 in July 2017 are summarized on Table 2.

DPT-4. Target analytes detected at concentrations exceeding groundwater RBSLs included benzene [2020 micrograms per liter μg/L], toluene (4870 μg/L), ethylbenzene (1920 μg/L), naphthalene (485 μg/L), C5-C8 aliphatics (16400 μg/L), C9-C12 aliphatics (16000 μg/L), and C9 to C10 aromatics (7770 μg/L).

TEH was also reported in this sample at a concentration of 6880 μg/L. Fraction analytical results for this samples indicated non-detectable concentration of C19-C36 aliphatics, and detectable concentrations of C9-C18 aliphatics (523 μg/L) and C11-C22 aromatics (584 μg/L) that were below the groundwater RBSLs.

DPT-6. Target analytes detected at concentrations exceeding groundwater RBSLs included benzene (3750 μg/L), toluene (23300 μg/L), ethylbenzene (2950 μg/L), total xylenes (15800 μg/L), naphthalene (885 μg/L), C5-C8 aliphatics (56700 μg/L), and C9-C12 aliphatics (29100 μg/L), and C9 to C10 aromatics (17300 μg/L).

TEH was also reported in this sample at a concentration of 15200 μg/L. Fraction analytical results for this samples indicated non-detectable concentration of C19-C36 aliphatics, and detectable concentrations of C9-C18 aliphatics (3580 μg/L) and C11-C22 aromatics (1410 μg/L) that exceeded the groundwater RBSLs

MW-6 Grab. The only target analyte exceeding the groundwater RBSL was benzene (14 μg/L).

Analytical results of groundwater samples collected from Site monitoring wells in January and April 2018 are summarized on Table 3.

In the January sample from MW-6, the only target analyte exceeding the groundwater RBSL was C19 to C36 aliphatics at a concentration of 1,200 μg/L.

Target analyte concentrations exceeding groundwater RBSLs in the sample collected from MW-3A included benzene (1,220 µg/L), ethylbenzene (1,180 µg/L), naphthalene (153 µg/L), C5 to C8 aliphatics (4,880 µg/L), C9 to C12 aliphatics (4,340 µg/L), and C5 to C8 aromatics (2,990 µg/L). TEH was also reported in this sample at a concentration of 6,630 µg/L. EPH fraction analytical results for this sample indicated non-detectable concentrations.

Concentrations of DO were measured at 0.10 mg/l at MW-3A and 2.09 at MW-6. Measurements of ORP were negative for both wells.

5.0 RELEASE CLOSURE PLAN

A Release Closure Plan (RCP) was prepared in the format provided by MDEQ. Based on the RCP, RTI recommends pursuing soil vapor extraction (SVE) in the release area with potential application of amendments to groundwater to accelerate attenuation. While native site soils do not appear to be conducive to SVE, released gasoline probably migrated downward via the UST basin so the majority of impacts are expected to be within the basin fill. If SVE were implemented at the Facility, the extraction well or wells would be placed within the UST basin fill. A copy of the RCP for Release #5157 is provided in Appendix D.

6.0 EXTENT AND MAGNITUDE OF CONTAMINATION

6.1 Soil Conditions

The excavation activities in the field south of the UST basin removed the gasoline-impacted soil, except for one sample from the floor at the northeast portion of the excavation that exhibited a benzene concentration above RBSL. Soil analytical data from the DPT investigation and the confirmation sampling following the soil excavation indicate that soil with significant impacts remain along the south and east walls of the UST basin.

Soil immediately west of the UST basin (DPT-1) has a diesel component.

6.2 Groundwater Conditions

Groundwater analytical data indicate the presence of two overlapping dissolved hydrocarbon plumes: one composed primarily of gasoline range hydrocarbons and the second composed primarily of diesel-range hydrocarbons (Figures 5 and 6).

6.2.1 Gasoline Plume

The gasoline plume extends beyond the north and northeastern boundaries of the 2010 excavation with two areas of elevated benzene and TPH concentrations; MW-3A to the south, and MW-5 and MW-4A to the north.

The smaller hot spot centered on the UST basin is attributable to Release #5157. This release was composed entirely of gasoline and the majority of that release appears to have flowed across the ground surface south of the UST basin. However, some of the residual gasoline from Release #5157 has reached groundwater immediately adjacent to the UST basin at DPT-6 to the south and DPT-4/MW-3A to the east and appears to be migrating to MW-6 northeast of the UST basin. Low levels of benzene, ethylbenzene, xylenes, and TPH were reported in sample MW-6 in January 2018 that has exhibited non-detectable contaminant concentrations during previous sampling events.

The source of the larger northern hot area appears to be attributable to LNAPL that migrated downgradient of the Release #4619 area prior to excavation. Elevated contaminant concentrations at MW-4A and LNAPL at MW-5 demonstrate that a substantial contaminant mass persists in the zone of groundwater fluctuation beyond the north and northeastern boundaries of the 2010 excavation.

The downgradient margin of the plume associated with Release #4619 was defined by data from abandoned wells MW-9 and MW-10. Those data indicate that the downgradient margin of the dissolved gasoline plume extends a short distance north of new well MW-8A.

Cumulative groundwater analytical data indicate that the gasoline plume is attenuating; however, the persistence of LNAPL at MW-5 and the fine-grained site soils suggest that the time required for the plume to attenuate to levels that would allow for site closure will be many years. In addition, migration of gasoline range contaminants from Release #5157 could alter the concentrations in the gasoline plume in the near future.

6.2.2 Diesel Plume

The diesel plume appears to originate at the UST basin and is attributable to Release #5050 that occurred in September 2014 when diesel fuel was mistakenly delivered to a gasoline UST that resulted in a diesel/gasoline mixture flowing out of the UST vent pipe. The fuel was released mainly to the asphalt surface and seeped through the joint between the asphalt and UST basin and through cracks in the asphalt.

6.3 Recommendations

Based on the findings of this investigation and previous monitoring at the Facility, RTI recommends installing one SVE well at the southeast corner of the UST basin within basin fill and installing two soil probes within native materials at distances of five and ten feet from the SVE well. We further recommend conducting a SVE pilot test to provide data for system design and to assess influence within native soils.

At this time, we do not recommend additional groundwater monitoring until remediation of the vadose zone source is underway. The current extent of the diesel plume presumably associated with Release #5050 should be predictive of the future extent of the plume associated with Release #5157.

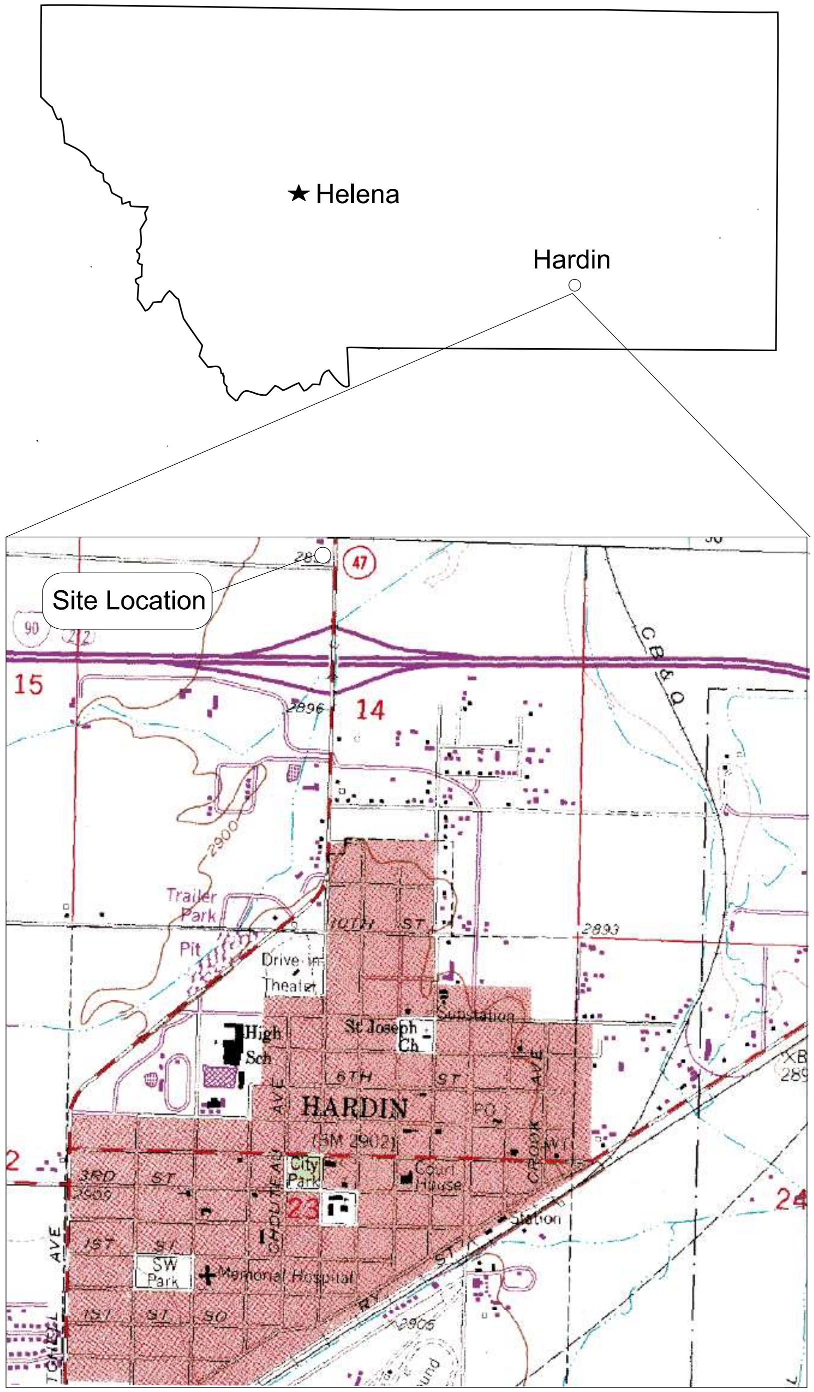
Since the most substantial impacts at the Facility remain the smear-zone impacts and LNAPL associated with Release #4196 that persist beyond the north and northeastern boundaries of the 2010 soil excavation completed in response to Release #4196, we anticipate that impacts from Releases #5050 and #5157 will not substantially affect the magnitude of groundwater impacts downgradient of the 2010 soil excavation.

7.0 REFERENCES

Natural Resources Conservation Service (NRCS); online web soil survey; http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx; accessed July 25, 2017.

Vuke, S.M., Wilde, E.M., and Bergantino, R.N.; *Geologic map of the Hardin 30′ x 60′ Quadrangle, Montana*; Montana Bureau of Mines and Geology Geologic Map 57; 2000.

FIGURES



Base Map: U.S.G.S. Hardin Quadrangle, 7.5 Minute Series - Scale: 1:24,000

Figure 1

Site Location Map
Good 2 Go Store #8
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

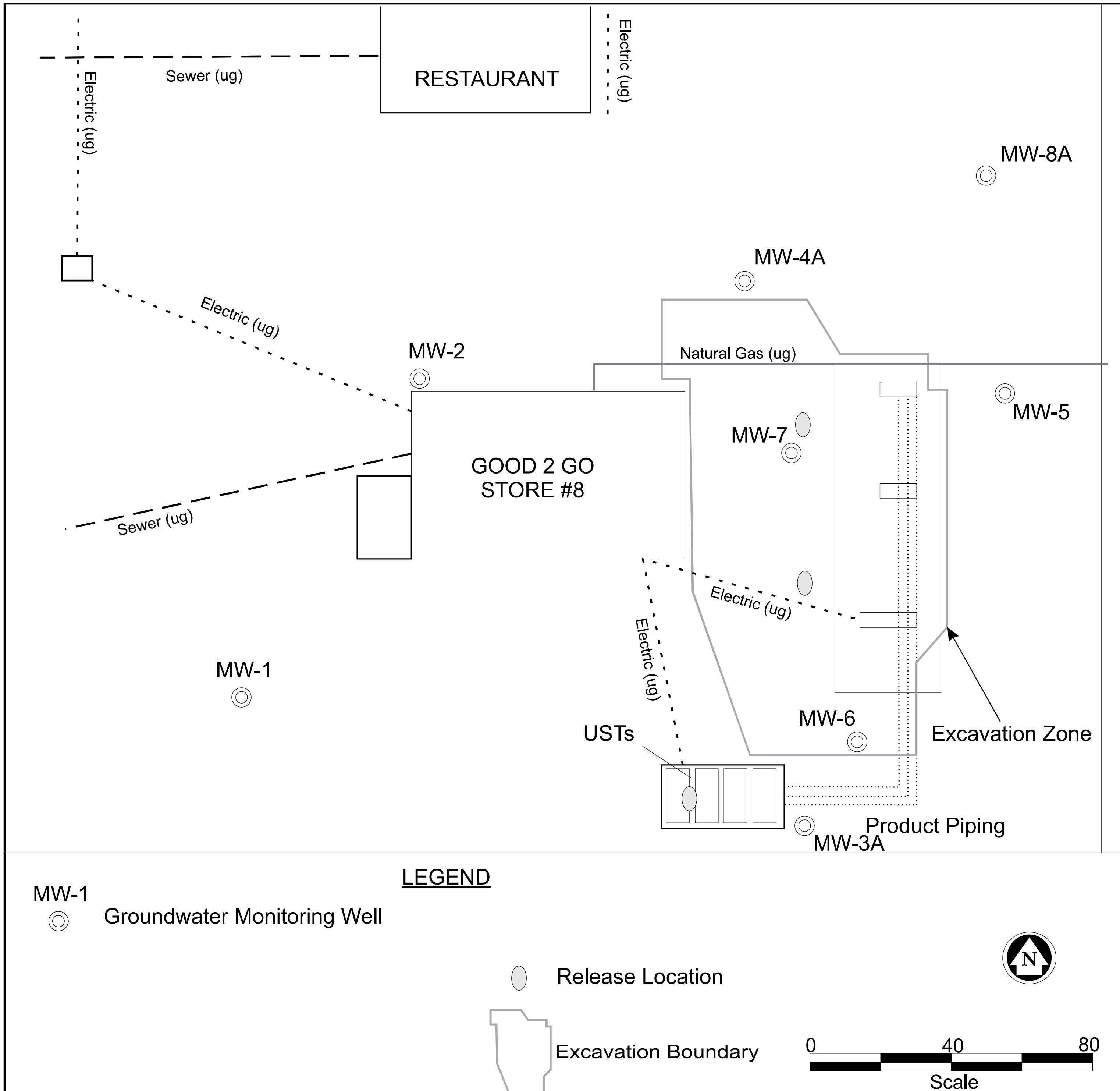


Figure 2

Site Layout
Good 2 Go Store #8
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

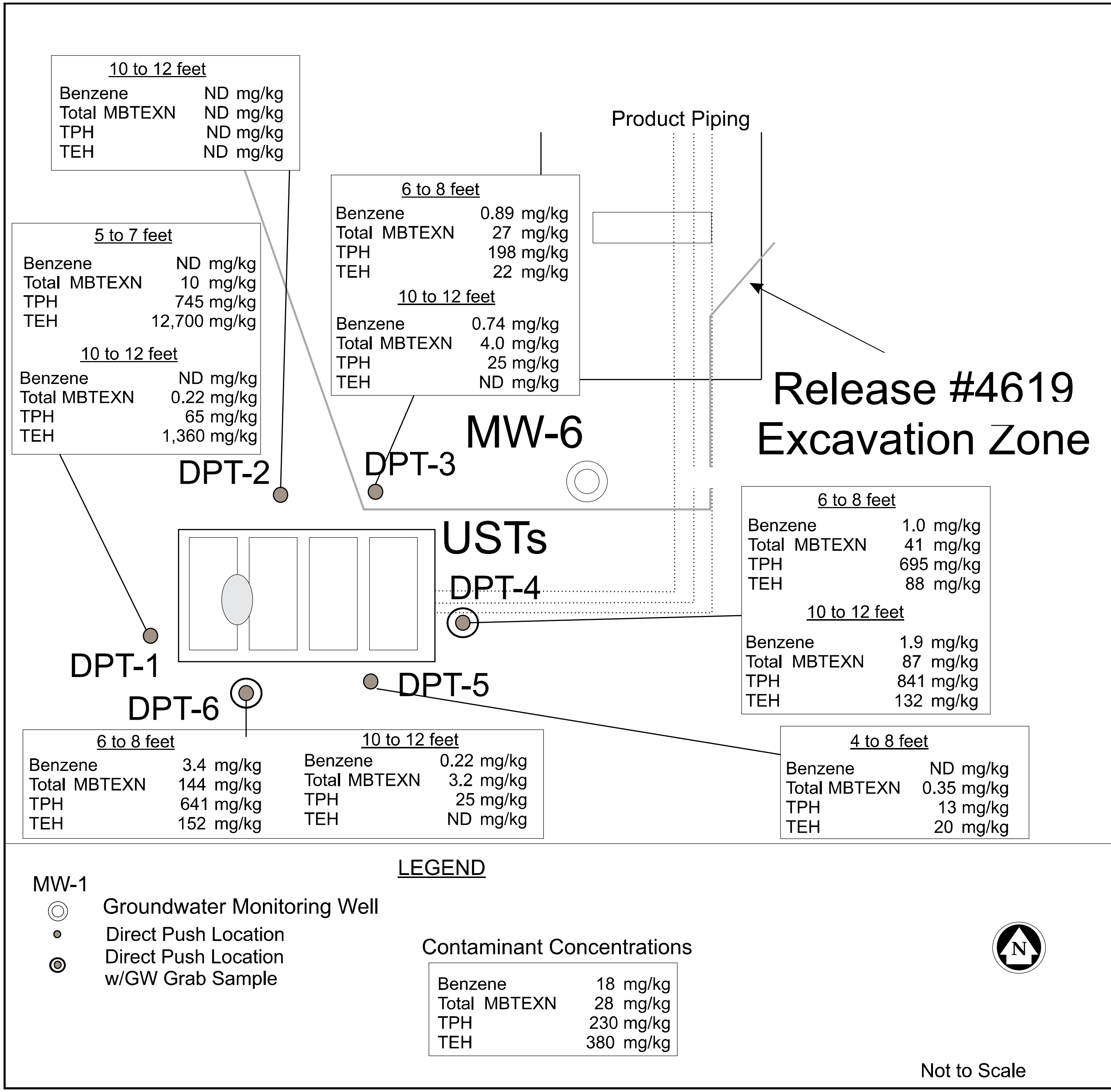
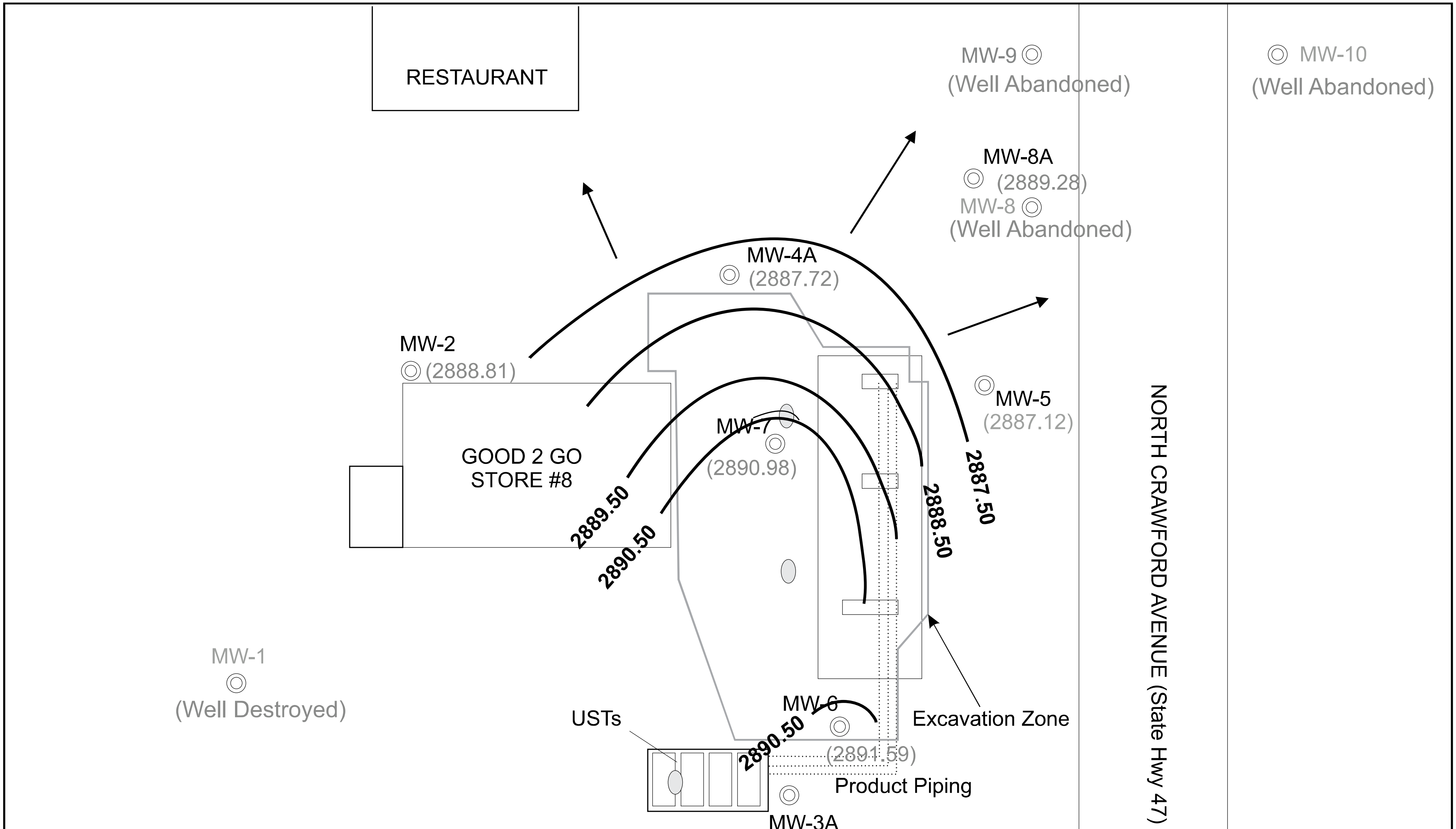


Figure 3

DPT Soil Concentrations

Good 2 Go Store #8
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.



LEGEND

MW-2 (2885.12) Groundwater Monitoring Well with Groundwater Elevation (feet/mean sea level)

2888.5 Groundwater Equipotential Isopleth with Elevation (feet/mean sea level)

Groundwater Flow Direction

N

0 40 80
Scale

Figure 4

Potentiometric Surface Map
January 8, 2018
Good 2 Go Store #8
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

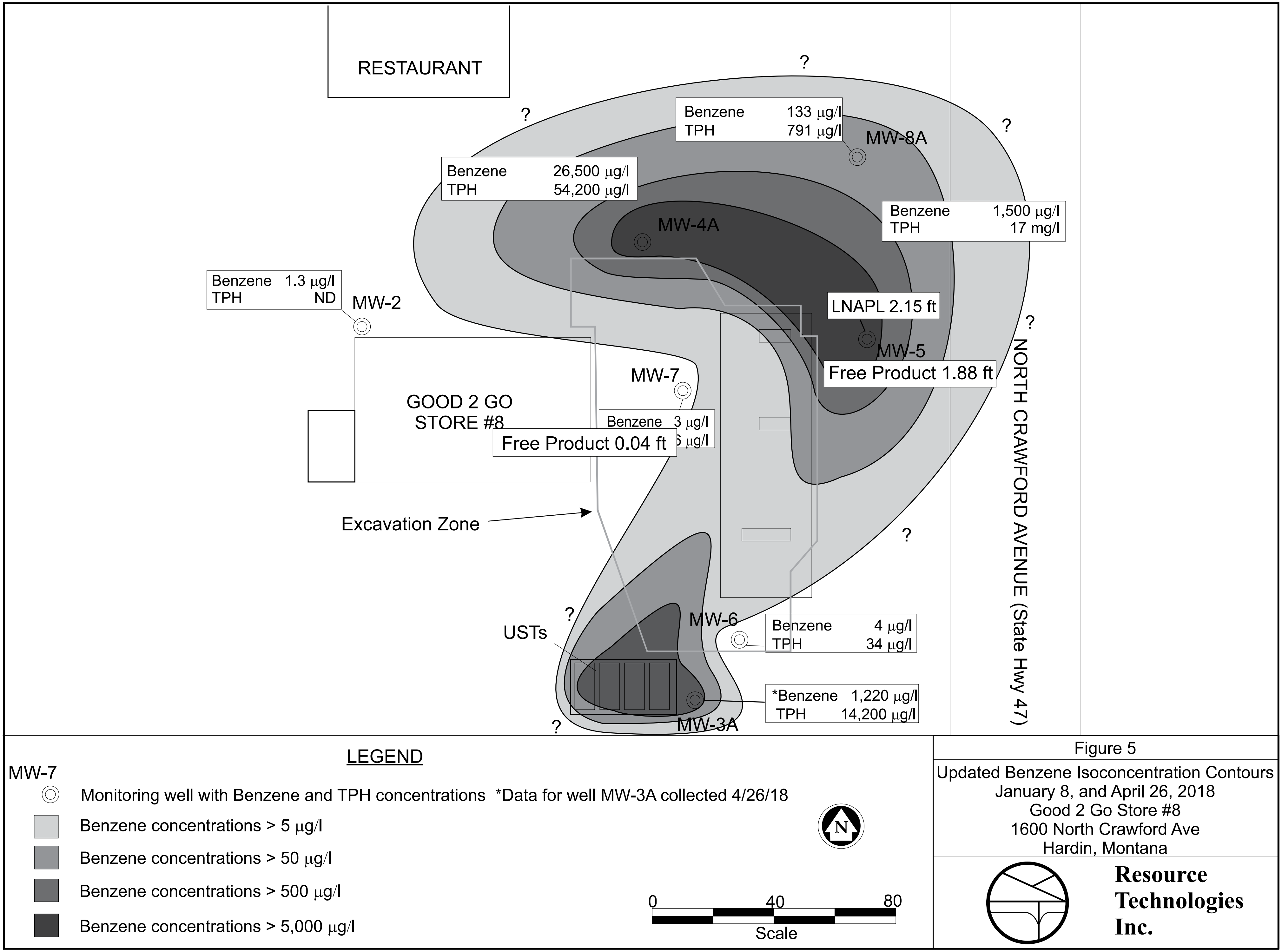


Figure 5

Updated Benzene Isoconcentration Contours
January 8, and April 26, 2018
Good 2 Go Store #8
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

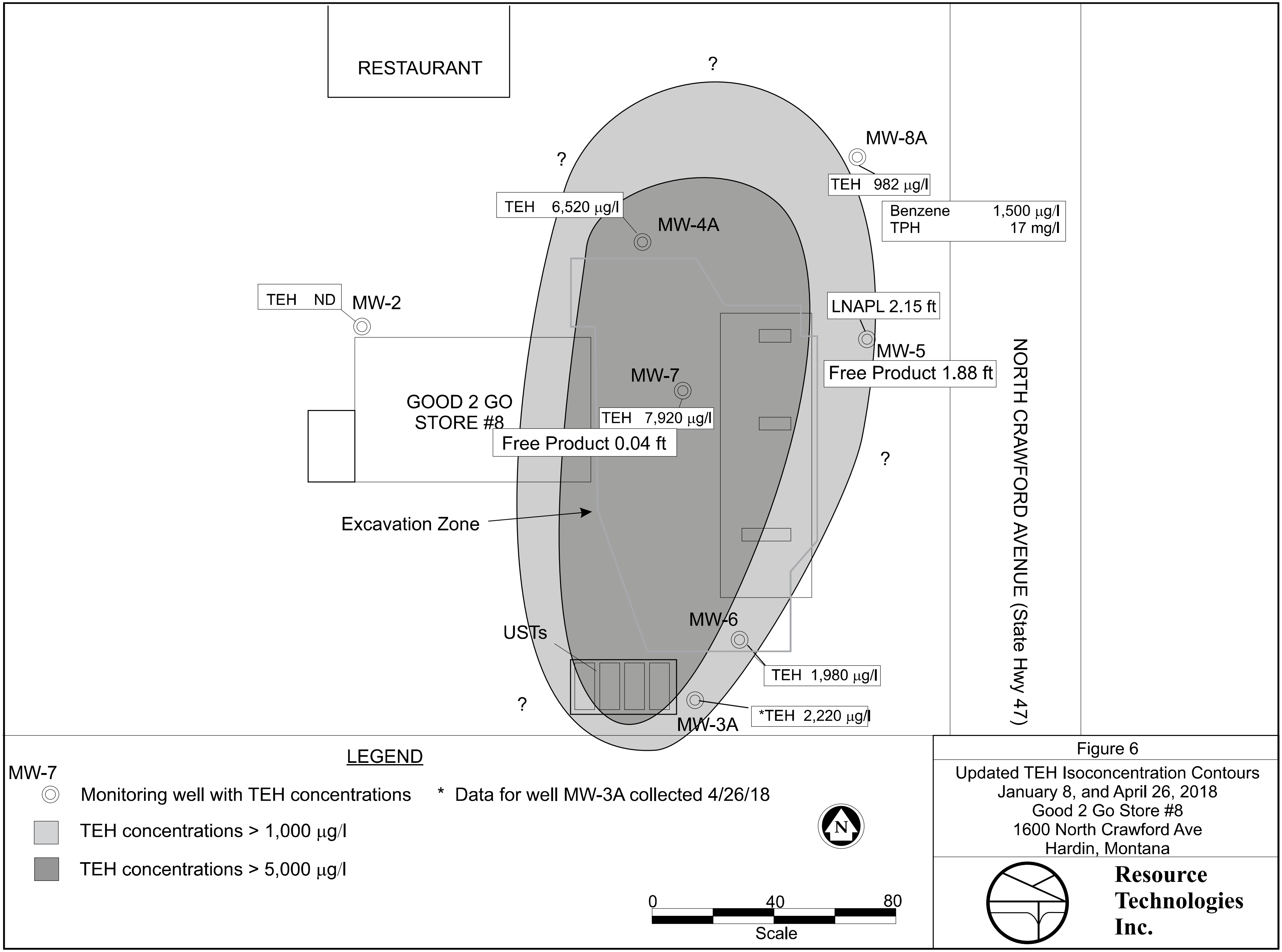


Figure 6

Updated TEH Isoconcentration Contours
January 8, and April 26, 2018
Good 2 Go Store #8
1600 North Crawford Ave
Hardin, Montana

Resource Technologies Inc.

TABLES

Table 1. Summary of Petroleum Releases; Good 2 Go #8; Hardin, Montana

Release #525: Hardin Interstate Texaco	**Reported: 12/17/1990**	**Resolved: 9/12/1991**
Unknown volume of gasoline released from piping determined through line tightness test (leak rate = 0.0225 gal/min). Unknown volume of contaminated soil removed. No further action based on post-excavation soil results and follow-up line tightness test.		
Release #2962: Hardin Interstate Texaco	**Reported: 7/15/1996**	**Resolved: 9/12/1996**
Unknown volume of waste oil released through holes in UST on southwest side of building. About 2 yards of contaminated soil removed and thin-spread on west side of building.		
Release #3667: Hardin Interstate Texaco	**Reported: 2/9/1999**	**Resolved: 4/2/2014**
Unknown volume of gasoline/diesel from 2000-gallon UST located in the southeast portion of the Facility, and removed from the ground 02/1999. About 80 yards of petroleum contaminated soil was removed from the UST basin. Excavation associated with Release #4619 removed all the residual petroleum-impacted soil associated with Release #3667.		
Release #3873: Hardin Interstate Texaco	**Reported: 12/1/7/1999**	**Resolved: 8/5/2011**
Approximately 100 gallons of gasoline released from dispenser island damaged by a vehicle. Excavation associated with Release #4619 removed all the residual petroleum-impacted soil associated with Release #3873.		
Release #3959: Hardin Interstate Texaco	**Reported: 4/27/2000**	**Resolved: 11/13/2015**
Unknown volume of diesel released from piping to southwest corner of property. About 45 cubic yards of petroleum impacted soils were excavated around the diesel island. Residual soil contamination remains near the west dispenser location at 2 – 4 feet below ground surface. Groundwater sample analytical results from MW-2 were below laboratory analytical method detection indicating petroleum contaminates are not leaching to groundwater in this area.		
Release #4619: Hardin Interstate Texaco	**Reported: 12/17/2007**	**ACTIVE**
Discovered when premium grade gasoline fuel line failed a manual line tightness test. Approximately 3,395 cubic yards of petroleum impacted soil were excavated. Unknown volume of diesel released from piping at dispenser island		
Release #5050: Good 2 Go Stores	**Reported: 9/26/2014**	**ACTIVE**
Approximately 200 gallons of diesel/gasoline flowed out of UST vent pipe during delivery. Sorbent pads used to recover fuel on pavement.		
Release #5157: Good 2 Go Stores	**Reported: 10/28/2016**	**ACTIVE**
Fuel flowed out of vent pipe during delivery releasing an estimated 800 – 1,000 gallons of gasoline which spread across the cultivated field to the south. Approximately 400 gallons of gasoline was recovered. The calculated volume of petroleum-impacted soil was 281 bank cubic yards. Some residual soil contamination remains immediately next to the UST containment. A product sheen was observed on the irrigation ditch to the south, although analytical results indicate concentrations below WQB-7 standards.		

Table 2. DPT Borehole Analytical Results; Good 2 Go #8; Hardin, Montana

	VPH ANALYSIS										EPH ANALYSIS				
	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C_5-C_8 Aliphatics	C_9-C_{12} Aliphatics	C_9-C_{10} Aromatics	Total Purgeable HC	EPH Screen	Total Extractable HC	C_9-C_{18} Aliphatics	C_{19}-C_{36} Aliphatics	C_{11}-C_{22} Aromatics
SOIL SAMPLES (mg/kg)															
Soil RBSLs [1]	*0.078*	*0.07*	*21*	*26*	*320*	*12*	*220*	*640*	*130*	--	*200*	--	*900*	*200,000*	*370*
DPT-1 @ 5 to 7 ft.	ND	ND	ND	ND	2.1	8.0	21	183	**193**	745	**12,400**	12,700	**972**	8,490	**2,110**
DPT 1 @ 10 to 12 ft.	ND	0.058J	ND	0.22	ND	ND	3.9	21	18	65	**14,300**	1,360	56	1	206
DPT-2 @ 10 to 12 ft.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
DPT-3 @ 6 to 8 ft.	ND	**0.89**	6.4	3.9	15.0	1.1	119	38	43	198	22				
DPT-3 @ 10 to 12 ft.	ND	**0.74**	0.75	0.55	1.8	0.14	16	4.6	4.9	25	ND				
DPT-4 @ 6 to 8 ft.	ND	**1.0**	0.93	7.4	28	4.0	**365**	185	**197**	695	88				
DPT-4 @ 10 to 12 ft.	ND	**1.9**	4.6	13	62	5.6	**540**	155	**184**	841	132				
DPT-5 @ 4 to 8 ft.	ND	ND	ND	ND	0.15	0.20	10	13	9.1	13	20				
DPT-6 @ 6 to 8 ft.	ND	**3.4**	**48**	10	77	5.1	**305**	135	**159**	641	152				
DPT-6 @ 10 to 12 ft.	ND	**0.22**	0.076	0.48	2.1	0.31	12	6.3	7.2	25	ND				
WATER SAMPLES (ug/L)															
Groundwater RBSLs [2]	*30*	*5*	*1,000*	*700*	*10,000*	*100*	*650*	*1,400*	*1,100*	--	*1,000*	--	*1,400*	*1,000*	*1,100*
WQB-7 Standards [3]	*30*	*5*	*1,000*	*700*	*10,000*	*100*	--	--	--	--	--	--	--	--	--
DPT-4 Grab	ND	**2,020**	**4,870**	**1,920**	8,320	**485**	**16,400**	**16,000**	**7,770**	44,800	**14,900**	6,880	523	ND	584
DPT-6 Grab	ND	**3,750**	**23,300**	**2,950**	**15,800**	**885**	**56,700**	**29,100**	**17,300**	114,000	**28,900**	15,200	**3,580**	ND	**1,410**
MW-6 Grab	ND	**14**	0.056	0.71	0.43	ND	43	3.4	16	65	830				
MW-6 (06/19/16)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
SW-4 (07/06/17, 01/08/18, 04/26/18)	*No Sample - Ditch Dry*														
SW-4 (11/03/16)	ND	ND	3.9	7.8	60	48	ND	396	970	1,400	2,110	1220	ND	ND	554

Notes:
1 - Tier 1 Subsurface Soil (>2 ft) Risk-based Screening Levels (<10 feet to groundwater) Montana DEQ, May 2018.
2 - Tier 1 Groundwater Risk-based Screening Levels and Standards, Montana DEQ, May 2018.
3 - Numeric Water Quality Standards, Surfacer Water Human Health Standard, Montana DEQ-Circular WQB-7, January 2004.
-- - Standard has not been established by Montana DEQ.
Bold - Indicates concentration exceeds RBSL/WQB-7 Standard.
ND - Not detected above laboratory reporting limit.
NA - Not analyzed.

**Table 3. Groundwater Elevation Data;
Good 2 Go #8; Hardin, Montana**

Well ID	Date	TOC Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	Change Since Previous (ft)	Free Product (ft)
MW-3A	4/26/2018	2898.71	2.03	2896.68	NA	-
MW-2	1/8/2018	2900.38	11.57	2888.81	-1.38	-
MW-3A	1/8/2018	2898.71	NM	-	NA	-
MW-4A	1/8/2018	2899.19	11.47	2887.72	-0.64	-
MW-5	1/8/2018*	2898.28	12.77	2887.12	-0.44	2.15
MW-6	1/8/2018	2899.04	7.45	2891.59	1.60	-
MW-7	1/8/2018	2899.45	8.47	2890.98	-0.75	-
MW-8A	1/8/2018	2897.73	8.45	2889.28	NA	"-
MW-1	6/9/2016	2893.63	-	-	-	-
MW-2	6/9/2016	2895.31	10.19	2885.12	-1.02	-
MW-4A	6/9/2016	2894.98	10.83	2884.15	-1.75	-
MW-5	6/9/2016	2893.76	10.18	2883.58	-0.09	1.62
MW-6	6/9/2016	2894.96	9.05	2885.91	-0.10	-
MW-7	6/9/2016	2895.51	7.72	2887.79	0.12	-
MW-1	7/29/2015	2893.63	-	-	-	-
MW-2	7/29/2015	2895.31	9.17	2886.14	-1.22	-
MW-4A	7/29/2015	2894.98	9.08	2885.9	-1.28	-
MW-5	7/29/2015	2893.76	10.09	2883.67	-1.18	1.74
MW-6	7/29/2015	2894.96	8.95	2886.01	-1.18	-
MW-7	7/29/2015	2895.51	7.84	2887.67	-1.19	0.04
MW-8	7/29/2015	2894.05	8.73	2885.32	-1.24	-
MW-9	7/29/2015	2893.59	8.28	2885.31	-1.20	-
MW-10	7/29/2015	2892.49	7.6	2884.89	-1.13	-
MW-1	8/28/2014	2893.63	-	-	-	-
MW-2	8/28/2014	2895.31	7.95	2887.36	1.20	-
MW-4A	8/28/2014	2894.98	7.80	2887.18	1.43	-
MW-5	8/28/2014	2893.76	8.91	2884.85	0.70	1.92
MW-6	8/28/2014	2894.96	7.77	2887.19	1.54	-
MW-7	8/28/2014	2895.51	6.65	2888.86	2.26	-
MW-8	8/28/2014	2894.05	7.49	2886.56	1.41	-
MW-9	8/28/2014	2893.59	7.08	2886.51	1.13	-
MW-10	8/28/2014	2892.49	6.47	2886.02	1.01	-
MW-1	9/28/2011	2893.63	7.20	2886.43	-	-
MW-2	9/28/2011	2895.31	9.15	2886.16	1.40	-
MW-4A	9/28/2011	2894.98	9.23	2885.75	1.90	-
MW-5	9/28/2011	2893.76	9.61	2884.15	7.09	1.34
MW-6	9/28/2011	2894.96	9.31	2885.65	1.20	-
MW-7	9/28/2011	2895.51	8.91	2886.60	1.99	-
MW-8	9/28/2011	2894.05	8.90	2885.15	1.14	-
MW-9	9/28/2011	2893.59	8.21	2885.38	-	-
MW-10	9/28/2011	2892.49	7.48	2885.01	-	-
MW-1	12/14/10	2893.63	-	-	-	-
MW-2	12/14/10	2895.31	10.55	2884.76	-	-
MW-4A	12/14/10	2894.98	11.13	2883.85	-	-
MW-5	12/14/10	2893.76	16.70	2877.06	-	8.99
MW-6	12/14/10	2894.96	10.51	2884.45	-	-
MW-7	12/14/10	2895.51	10.90	2884.61	-	0.03
MW-8	12/14/10	2894.05	10.04	2884.01	-	-

Table 4. Groundwater Analytical Results; Good 2 Go #8; Hardin, Montana

Well ID	Date	VPH ANALYSIS										EPH ANALYSIS					Field Dissolved Oxygen
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C_5-C_8 Aliphatics	C_9-C_{12} Aliphatics	C_9-C_{10} Aromatics	Total Purgeable Hydrocarbons	Total Extractable Hydrocarbons Screen	C9-C18 Aliphatic	C19-C36 Aliphatic	C11-C22 Aromatic	Total Extractable Hydrocarbons (Post-SPE)	
		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	mg/l
*Tier 1 RBSLs**		*30*	*5*	*1,000*	*700*	*10,000*	*100*	*650*	*1,400*	*1,100*	*1,000*	*1,000*	*1,400*	*1,000*	*1,100*		
MW-1	1/18/18	**Not Found**															
MW-2	1/8/18	ND	1.3	ND	ND	0.31	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	0.47
MW-3A	1/8/18	**Well Buried Under Snow - No Sample Collected**															
	4/26/18	ND	**1,220**	78	**1,180**	1,600	**155**	**4,880**	**4,340**	**2,990**	**14,200**	**6,360**	ND	ND	ND	2,210	0.10
MW-4A	1/8/18	ND	**265,000**	236	**1,680**	2,520	**301**	**28,800**	**4,470**	3,180	**54,200**	**19,500**	**1,760**	608	923	6,520	0.41
MW-5	1/18/18	**Free Product - No Sample Collected**															
MW-6 (Grab)	7/6/17	ND	**14**	0.056	0.71	0.43	ND	43	3.4	16	65	830					
MW-6	1/8/18	ND	4.0	ND	0.74	1.9	ND	20	14	ND	34	3,760	ND	**1,200**	ND	1,980	2.09
MW-7	1/8/18	ND	3.0	1.3	1.8	4.3	1.0	250	70	50	326	**9,440**	**1,470**	**5,000**	891	7,920	0.31
MW-8A	1/8/18	ND	**133**	5.5	53	40	6.7	355	157	216	791	932	NA	NA	NA	NA	NM

**Tier 1 RBSLs = Tier 1 Risk Based Screening Levels for Groundwater*
VPH = volatile petroleum hydrocarbons
EPH = extractable petroleum hydrocarbons
µg/l = micrograms per liter
NA = not analyzed
ND = not detected above practical quantitation limit

Table 4A: Summary of Cumulative Groundwater Analytical Results

Well ID	Date	VPH ANALYSIS										EPH ANALYSIS				
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C_5-C_8 Aliphatics	C_9-C_{12} Aliphatics	C_9-C_{10} Aromatics	Total Purgeable Hydrocarbons	Total Extractable Hydrocarbons Screen	C9-C18 Aliphatic	C19-C36 Aliphatic	C11-C22 Aromatic	Total Extractable Hydrocarbons (Post-SPE)
		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
*Tier 1 RBSLs**		*30*	*5*	*1,000*	*700*	*10,000*	*100*	*650*	*1,400*	*1,100*	*1,000*	*1,000*	*1,400*	*1,000*	*1,100*	
MW-1	9/28/11	ND	ND	ND	ND	ND	29	ND	ND	ND	ND	NA				
	8/28/14			**Well Destroyed - No Sample Collected**												
MW-2	5/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	9/28/11	ND	ND	ND	ND	ND	35	ND	ND	ND	ND	NA				
	8/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	7/29/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	6/9/16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	1/8/18	ND	1.3	ND	ND	0.31	ND	ND	ND	ND	ND	ND				
MW-3A	1/8/18			**Well Buried Under Snow - No Sample Collected**												
	4/26/18	ND	1,220	78	1,180	1,600	155	4,880	4,340	2,990	14,200	6,360	ND	ND	ND	2,210
MW-4A	5/10/10	ND	**1,900**	170	420	540	ND	**2,200**	ND	**1,200**	**3,400**	NA				
	9/28/11	ND	**50,000**	**4,000**	**3,700**	7,000	**410**	**42,000**	990	**9,600**	**53,000**	NA				
	8/28/14	ND	**25,900**	312	**1,750**	1,340	**395**	**29,500**	**4,970**	ND	**45,700**	NA				
	7/29/15	ND	**2,400**	**4,600**	**1,000**	**3,600**	**350**	**20,000**	**10,000**	6,700	**37,000**	NA				
	6/9/16	ND	**1,800**	**3,600**	**1,800**	**5,700**	**480**	**170,000**	**48,000**	3,000	**230,000**	NA				
	1/8/18	ND	**26,500**	**236**	**1,680**	**2,520**	**301**	**28,800**	**4,470**	3,180	**54,200**	**19,500**	1,760	608	923	6,520
MW-5	5/10/10			**Free Product - No Sample Collected**												
	9/28/11			**Free Product - No Sample Collected**												
	8/28/14			**Free Product - No Sample Collected**												
	7/29/15			**Free Product - No Sample Collected**												
	6/9/16			**Free Product - No Sample Collected**												
	1/8/18			**Free Product - No Sample Collected**												

Table 4A: Summary of Cumulative Groundwater Analytical Results

Well ID	Date	VPH ANALYSIS										EPH ANALYSIS				
		MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	C_5-C_8 Aliphatics	C_9-C_{12} Aliphatics	C_9-C_{10} Aromatics	Total Purgeable Hydrocarbons	Total Extractable Hydrocarbons Screen	C9-C18 Aliphatic	C19-C36 Aliphatic	C11-C22 Aromatic	Total Extractable Hydrocarbons (Post-SPE)
		µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
MW-6	5/10/10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	9/28/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	8/28/14	ND	1.3	ND	ND	ND	ND	40	ND	ND	40	NA				
	7/29/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	6/9/16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	7/6/17	ND	**14**	0.056	0.71	0.43	ND	43,000	3,400	16,000	65,000	NA				
	1/8/18	ND	4.0	ND	0.7	1.9	ND	20	14	ND	34	3,760	ND	1,200	ND	1,980
MW-7	5/10/10			Free Product - No Sample Collected												
	9/28/11	ND	**760**	**5,100**	**2,100**	**11,000**	**670**	**120,000**	**13,000**	**25,000**	**160,000**	NA				
	8/28/14	ND	**191**	42	**2,310**	2,760	**297**	**62,000**	**15,700**	**22,400**	**80,600**	NA				
	7/29/15			Free Product - No Sample Collected												
	6/9/16	ND	ND	ND	ND	ND	ND	**5,400**	**2,200**	20	**7,500**	NA				
	1/8/18	ND	3.0	1.3	1.8	4.3	1.0	**250**	**70**	50	**326**	**9,440**	1,470	5,000	891	7,920
MW-8	5/10/10	ND	**350**	110	230	460	ND	**1500**	ND	**1300**	**2,800**	NA				
	9/28/11	ND	**6,000**	41	**1,600**	1,800	**320**	**16000**	**2200**	**4600**	**23,000**	NA				
	8/28/14	ND	**2,500**	ND	**1,270**	71	50	**5,110**	**1,500**	**1,580**	**9,240**	NA				
	7/29/15	ND	**1,500**	48	**1,400**	ND	**120**	**10,000**	**4,500**	**2,100**	**17,000**	NA				
MW-8A	1/8/18	ND	**133**	5.5	**53**	40	**6.7**	**355**	**157**	**216**	**791**	932				
MW-9	9/28/11	ND	**1,600**	ND	210	ND	ND	**4,600**	100	300	**5,000**	NA				
	8/28/14	ND	**453**	2.4	69	1.7	ND	**1,070**	164	200	**1,490**	NA				
	7/29/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
MW-10	9/28/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	8/28/14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				
	7/29/15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA				

**Tier 1 RBSLs = Tier 1 Risk Based Screening Levels for Groundwater*

VPH = volatile petroleum hydrocarbons

EPH - extractable petroleum hydrocarbons

µg/l = micrograms per liter

NA - Not analyzed

ND = Not detected above practical quantitation limit

STANDARD OPERATING PROCEDURES (SOPs)

ENVIRONMENTAL TECHNOLOGY, LLC
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Standard Operating Procedure (SOP)
Environmental Groundwater Sampling

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1. Purpose

To establish standardized procedures for the collection of groundwater samples to ensure the generation of accurate, reliable, and defensible data for environmental monitoring and compliance.

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2. Scope

This SOP applies to all personnel responsible for collecting groundwater samples from monitoring wells for environmental assessment and regulatory reporting.

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3. Definitions

- **Groundwater Sampling:** The collection of water samples from monitoring wells for analysis of physical, chemical, or biological properties.
- **Monitoring Well:** A well installed for the purpose of accessing groundwater for sampling or measurement.

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4. Responsibilities

- **Project Manager:** Ensures the sampling plan complies with regulatory and project-specific requirements.
- **Field Staff / Field Technicians:** Oversees sampling activities and ensures SOP adherence. Perform groundwater sampling, field measurements, and documentation.

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5. Required Equipment and Materials

- Groundwater sampling device (e.g., peristaltic pump, bladder pump, bailer).
- Field tool and supply kit.
- Water level meter or sounder.
- Field meters for pH, temperature, specific conductivity, dissolved oxygen, and turbidity.
- Flow-through cell (for field parameter stabilization).
- Sample containers (glass or plastic, pre-cleaned, and preservative-added if required).
- Personal protective equipment (PPE).
- Field documentation tools (logs, forms, or electronic devices).
- Decontamination supplies (detergent, water, and brushes).
- Coolers with ice packs (to maintain sample temperature ≤4°C).
- Field tool and supply kit.

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6. Procedure

6.1 Pre-Sampling Preparation

1. **Review Sampling Plan:**
   - Confirm sampling locations, required parameters, and laboratory requirements.
2. **Equipment Check:**
   - Inspect and calibrate all field meters according to manufacturer guidelines.
   - Ensure sampling equipment is clean and functional.
3. **Safety Measures:**
   - Conduct a site safety briefing.
   - Confirm PPE availability and adherence to site-specific safety plans.

6.2 Static Water Level Measurement

1. **Measure and Record Water Level:**
   - Use a water level meter to measure the depth to water in each well before purging.
   - Record the static water level and well casing top elevation.

6.3 Well Purging

1. **Determine Well Volume:**
    - Calculate well volume using the formula: $V=\pi r^2 h$ where r^2 is the well radius and h is the water column height.
2. **Purge Method:**
    - Use a pump or bailer to remove a minimum of three well volumes or until field parameters (pH, temperature, and conductivity) stabilize.
    - Employ low-flow techniques to minimize disturbance in the well.
3. **Monitor Field Parameters:**
    - Use a flow-through cell to measure real-time stabilization of field parameters.
    - Record stabilization criteria (e.g., ±0.1 pH units, ±3% conductivity, ±0.2°C temperature).

6.4 Groundwater Sampling

1. **Sample Collection:**
    - After purging, collect groundwater samples using a clean sampling device.
    - Follow low-flow techniques to minimize turbidity and preserve sample integrity.
2. **Container Filling:**
    - Use pre-cleaned, pre-labeled containers appropriate for the target analysis (e.g., VOCs in glass vials with no headspace).
    - Avoid contamination by wearing gloves and handling containers carefully.
    - Collect samples with preservatives first, then unpreserved bottles.
3. **Preservation:**
    - Add preservatives to samples as required (e.g., HCl for metals, sodium thiosulfate for chlorine).
    - Store samples in a cooler with ice packs to maintain temperature ≤4°C.

6.5 Field Documentation

1. **Field Logs:**
    - Record well ID, date, time, water level, purging details, field parameters, and observations (e.g., color, odor).
2. **Sample Labeling:**
    - Include project ID, well ID, sample ID, date, time, and analysis type on each sample container.

3. **Chain of Custody (COC):**
    - Complete a COC form for all samples to document transfer to the laboratory.

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7. Quality Assurance/Quality Control (QA/QC)

1. **QAPP:** EN TECH follows ADEQ's Quality Assurance Program Plan (QAPP) to ensure quality assurance and control of data collected. https://static.azdeq.gov/wqarf/qaprp.pdf
2. **Duplicate Samples:** Collect duplicate samples at a frequency of 1 per 20 samples or as specified in the QA plan.
3. **Blanks:** Include field blanks, equipment blanks, and trip blanks as required.
4. **Meter Calibration:** Ensure field meters are calibrated daily before and after sampling activities.

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8. Health and Safety

1. **Hazard Assessment:** Identify site-specific hazards, including chemical exposure and confined spaces.
2. **PPE:** Ensure use of appropriate PPE such as gloves, goggles, and steel-toe boots.
3. **Safety Protocols:** Adhere to site-specific health and safety plans, including spill response procedures.

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9. Waste Management

1. **Purge Water:**
    - Collect and store purge water in approved containers for proper disposal.
2. **Decontamination Waste:**
    - Manage and dispose of decontamination fluids according to regulatory requirements.

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10. References

- Applicable federal, state, and local regulations (e.g., EPA groundwater monitoring guidelines, ASTM standards).

- Project-specific quality assurance project plans (QAPP).

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11. Revision History

- Version 1.0 (February 13, 2025): Initial release.

Approval date: 8/1/2025
By:
By:
Date revised: 8/4/2025
Revised by: TB