

Corrective Action Plan 34681

Excavation Volume Adjustment

Tom's Super Service

301 S. Main Street

Conrad, MT 59425

Facility ID# 37-06114, Release# 6296

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Emergency Response



Industrial Services

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1.0 Introduction

West Central Environmental Consultants (WCEC) has prepared this corrective action plan for the former Tom's Super Service facility (Facility ID 37-06114 (TID 32471), Release 6296.) This work plan submittal has been adjusted from the initial corrective action plan submittal for WPID 34681. This adjustment was made to meet funding limitations put in place by the Montana Petroleum Tank Compensation Board. The adjusted work plan does not attempt to remediate any soil outside of the property boundary, and acceptance of this adjusted work plan is requested to expedite remediation inside of the property boundary to allow the new property owners to advance redevelopment of this property. It is understood that additional remedial action will be required by Montana DEQ to address hydrocarbon impacts that are not included within the scope of this excavation work plan. These impacts will be further delineated with monitoring wells installed under this corrective action plan.

1.1 Site Location

The former Tom's Super Service facility is located at 301 S. Main St., Conrad, Montana. A site location map is included as Figure 1 and a current site details map is included as Figure 2. The Public Land Survey System (PLSS) description for the site is the SW/4, NE/4, NE/4 of Section 23, T28N, R3W. The approximate geographic coordinates are N 48.1700°, W -111.9460°. Township, range, and section information was obtained using the United States Geological Survey (USGS) Conrad, Montana 1:24,000 Quadrangle. The site is located within the Marias River Hydrologic Unit.

1.2 Geologic/ Hydrogeologic Setting

The surficial geology in Conrad, Montana consists of clay at the site location. This is underlain by of the Kevin Member of the Marias River Formation from the Upper Cretaceous. These deposits consist of gray to brown calcareous fissile shale [MT MBMG, 2002]. Groundwater monitoring wells at the facility have historically contained static water levels between 4 and 8 feet below ground surface depending on location. All drinking water in Conrad is supplied through the municipal system. No drinking water wells are recorded on the GWIC system near the facility.

2.0 Site History

The release was discovered during a tank pull at the former Tom's Super Service in June 2021. The facility had been used as a gas station/ service station for more than 30 years. The current tank system that was in use prior to 2021 was originally installed in 1993. This system replaced a prior tank system reportedly installed in the same tank basin. During the tank removal two additional tanks that were installed at an unknown date were discovered near the corner of 3rd Street and Main.

Two other corners of the intersection of 3rd and Main historically were occupied by gas stations and are both considered active release sites by the MTDEQ. The former Texaco Station (Facility 99-95057, Release 4621) is located on the northwest corner of the intersection and Conrad Motor and Tire (Facility 37-03293, Release 4650) is located on the northeast corner of the intersection. Multiple monitoring wells are associated with each of these facilities.

At the time of the tank pull excavation equipment was used to complete 10 test pits. WCEC collected soil samples from the depth that exhibited greatest hydrocarbon impacts. All of the samples were analyzed for VPH and EPH screen. Five of these samples exceeded one or more MTDEQ Risk Based Screening Levels (RBSLs).

Further investigation of the release was requested by Montana DEQ in August 2021. A LIF/Soil Boring investigation was conducted in March 2022. This investigation delineated soil impacts underlying the facility. The total area of the 2D horizontal NAPL plume is approximately 5,750 square feet. The locations exhibiting the greatest hydrocarbon impacts were located near the northwest corner of the facility property and north/northeast across 3rd street toward the adjacent Conrad Tire release site.

The vertical extent of hydrocarbon impacts ranged in depth between 3 and 11 feet below ground surface. Most of the petroleum impacts at the facility are between 4 and 10 feet below ground surface.

The total volume of the hydrocarbon plume body is approximately 2000 cubic yards. It does not appear at this time that notable down gradient migration of impacts has occurred. The primary area of impacts is located near the corner of Main and 3rd Street with some impacts extending under 3rd Street. One well associated with the Conrad Tire facility is located in the middle of 3rd street and it is possible that impacts extend across 3rd street to the location of the historic excavation that was conducted at the Conrad Tire facility. Additional soil excavation may be necessary to address impacts underlying SE 3rd Ave. in the direction of the former Conrad Motor and Tire. Historic excavation of the Conrad Motor and Tire facility was stopped at the edge of 3rd Avenue.

The Site Conceptual Model (SCM) for the facility was created combining historical infrastructure, soil lithology, and soil analytical data. The SCM includes the following assertions:

1. The subsurface hydrology/lithology consists of clay and silt from glacial lakebed sediments.
2. Hydrocarbon impacts exist near the location of the old metal UST basin and near the former pump islands. The highest concentration of NAPL on site exists in the northwest corner of the site.
3. LNAPL transport is limited due to the clay soils underlying the site and minimal movement of LNAPL impacts appears to be occurring.
4. The primary factor limiting vertical migration of NAPL at the site is the presence of shallow groundwater, measured in wells at a depth of 4 to 8 feet below ground surface. Most of the soil borings contained saturated soils at a depth of approximately 8 feet below ground surface. This in conjunction with the fine sediments has limited most of the NAPL impacts to a depth less than 10 feet below ground surface.
5. The NAPL plume appears to be stable and immobile at the current time. This assertion is based on its area of spread and elapsed time since the release occurred. The release appears to be primarily associated with the oldest known tank basin and piping at the facility.

Following submittal of a work plan to excavate all known impacts the PTRCB raised concerns that groundwater impacts may not exist at the facility due to the placement of monitoring wells outside of the known LNAPL plume. The installation of monitoring wells in downgradient location from the LNAPL plume was done to ensure that newly installed wells were not immediately removed during the anticipated excavation.

In an attempt to move the process forward WCEC submitted a Form 8 adjustment to install a single additional well (MW5) inside the delineated LNAPL plume body to document groundwater impacts and confirm the anticipated exceedances in these soils that the DEQ's RBSLs predicted. Groundwater collected from MW5 exceeded regulatory standards for seven constituents of concern in March 2024.

Due to unresolvable differences of opinion on the appropriate scope of excavation and assumed future cost for alternative remedial options the Montana DEQ approved work plan was not obligated funds by the Montana PTRCB. This lack of funding delayed all remedial action to the current time.

This adjusted work plan is being submitted in an attempt to move the site forward at the current time and to ensure that structures are not built over known areas of source impacts. If this were to occur the cost and time needed to remediate these impacts would increase substantially. It is anticipated that additional future

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remedial actions will be required by Montana DEQ to address impacts that will exist following the remedial excavation covered in this work plan.

3.0 Scope of Work

3.1 Scope of Work

The scope of work required by the MTDEQ consists of:

- Propose a plan to excavate, transport, and dispose of petroleum contaminated soil.
- Collect post-excavation soil samples to assess any risk from petroleum-contaminated soil unable to be excavated.
 - o At a minimum, include 1 soil sample for every 25 linear feet or 4 points from each side wall of excavation. Select soil sample locations to include the 0-2 feet below ground surface (bgs) interval, 2.5-10 feet bgs interval, 10.5-to base of excavation interval, and the area exhibiting the highest photo ionization detector (PID) reading.
 - o At a minimum, include 1 soil sample every 625 sq feet from the base of excavation.
- Drill up to 8 soil borings to be completed as groundwater monitoring wells to determine the extent and magnitude of petroleum impacts to soil and groundwater.
- Collect soil samples from each soil boring from the area with the highest PID reading, the soil/groundwater interface, and the base of the boring.
- Survey all newly installed groundwater monitoring wells
- Conduct semiannual groundwater monitoring post-excavation for one year.
- Analyze soil and groundwater samples for petroleum constituents as required by the Montana Risk-Based Corrective Action Guidance for Petroleum Releases.
- Validate all laboratory analytical data using DEQ's Data Validation Summary Form (DVSF).
- Discuss ongoing work plan tasks and results with DEQ's project manager; submit written agreed-upon work plan modifications as required to complete the work plan objectives.
- Prepare an updated Release Closure Plan (RCP); discuss results with DEQ's project manager.
- Prepare and submit Cleanup Report detailing the results of the excavation. The Report is expected to include all the content outlined in the Cleanup Guidance Report format and the following:
 - o Cumulative data tables to include all historical soil and groundwater data.
 - o Append groundwater monitoring field forms, laboratory analytical data, completed DVSFs, and the updated RCP.
- Use standardized DEQ work plan and report formats found online.
- Submit work plan and reports electronically following the PTCS submittal requirements.

3.2 Remedial Excavation

WCEC will direct Stokes Contracting LLC of Conrad, Montana in the removal of impacted soils. Historical data from the tank pull, soil boring investigation, field observations, and photoionization detector (PID) headspace readings will be used to delineate hydrocarbon impacts and direct the excavation of impacted soils. The PID will be calibrated daily using fresh air and span gas calibration points. Isobutylene span gas at a concentration of 100 parts per million (ppm) will be used in the calibration procedure. The area of planned excavation is depicted in Figure 3. The total surface area of the excavation is reduced in this proposed adjustment from 5,575 square feet to **2,870 square feet** to meet funding mandates from the PTRCB. The estimated depth of excavation prior to encountering groundwater is 9 feet. Based on these measurements the new total volume of soil delivered to the landfill has been reduced from 2000 cubic yards of material to **960 cubic yards** of material. WCEC estimates that each cubic yard of material will weigh approximately 1.3 tons, yielding a reduced volume of **1,250 tons** of material for disposal.

This reduction in the scope of excavation volume will leave impacted soil under the sidewalk and 3rd Street. It is expected that some of these soils will exceed Montana DEQ RBSLs. Remediation of these impacts will either need to be addressed with remedial injections or additional excavation during future work plans. Additional wells installed under this work plan will help delineate the extent and magnitude of soil and groundwater impacts under 3rd Street. The purpose of this adjustment is to move the facility forward in the cleanup process and address soils inside the property boundary prior to planned construction of the property.

3.3 Soil Disposal

Petroleum hydrocarbon impacted soil will be hauled to the Northern Montana Joint Refuse class II landfill in Valier, Montana. The total estimated volume of the excavation has been reduced from 2000 cubic yards/ 2600 tons to **950 cubic yards/1,250 tons**. It is anticipated that the historic soil analytical from the site will be adequate for the landfill approval process. Limited concrete removal along main street will occur under this plan and no asphalt will be removed. Soil disposal cost has increased notably since the initial work plan submittal due to soil disposal fees being increased from \$12 per ton to \$36 per ton.

3.4 Confirmation Soil Sampling

VPH soil analysis will include collection of discrete soil samples from each excavation sidewall at a depth of 0-2 feet below grade (bgs), and 2-10 feet bgs. One soil sample from each soil horizon will be collected from every 25 linear feet of the sidewall. It is anticipated that groundwater intrusion will prevent excavation at

depths greater than 10 feet bgs. WCEC will ensure that samples collected from the depths described above also represent the highest PID reading on each sidewall. Samples will be collected from every 625 square feet of excavation pit bottom. The volume of samples may be decreased if groundwater intrusion prevents effective soil sample collection from the bottom of the excavation.

EPH soil analysis will consist of collection of one composite sample from every 25 linear feet of sidewall at depths of 0-2 ft and 2-10 ft bgs. An additional composite sample will be collected from every 625 square feet of excavation pit bottom.

Soil samples will be packed on ice and submitted to Energy Laboratory, Inc. (Energy) in Helena, Montana. Samples will be analyzed for VPH and EPH screen using the Montana Method, as required by the MTDEQ Risk-Based Corrective Action Guidance for Petroleum Release (MTDEQ, 2018). All samples that exceed 200 mg/kg EPH screen will be analyzed for total extractable hydrocarbons. (TEH). The locations of sample collection will be surveyed using a Trimble centimeter grade GPS unit.

3.5 Site Reconstruction

Backfill and compaction will be completed by Stokes Contracting LLC of Conrad, Montana. Fill material will be sourced from a gravel pit with representative proctor compaction test data available. Soil compaction test data for this material will be compared to nuclear density field testing of compaction to ensure that 95% compaction as defined by ASTM D1557 for cohesive materials is achieved. Per ASTM standards compaction testing will be completed for every 1000 square feet of area of excavation underlying areas of potential future development.

3.6 Monitoring Well Installation

Three bids were obtained for drilling activities on site. WCEC Drilling was the low-cost bidder for soil boring and monitoring well installation. Soil boring and monitoring well installation includes up to 6 additional monitoring wells at the facility. Wells will be installed at the approximate location of the former dispensing islands and location of historic tanks. Additional wells will be placed down gradient and cross gradient from the known source area to delineate all dissolved phase groundwater impacts at the site. These locations will be selected following receipt of analytical confirmation samples to address any apparent data gaps for soil or groundwater that remain. The monitoring well borings will be advanced using 4.25-inch ID diameter hollow-stem auger tooling with well construction consisting of 2-inch Sch. 40 PVC riser and 0.010 slot PVC screen. Each monitoring well will be screened from 3 to 15 feet bgs with solid riser extending from 3 feet bgs to near ground surface. The well annulus will be filled with 10/20 silica sandpack from the bottom of the boring to 6

inches above the screened interval, with the remainder of the boring annulus consisting of a bentonite seal. Surface completions will consist of 8-inch flush mount monuments set in concrete. Soil cuttings will be thin spread across the ground surface.

Soil samples will be collected using WCEC Standard Operating Procedures (SOPs), and in accordance with MTDEQ requirements. A soil sample will be collected from the groundwater interface located between 2-10 feet below ground surface. If PID field screening exceeds 50ppm an additional sample from 0-2 feet below ground surface will be collected from this horizon to quantify impacts relative to MTDEQ RBSLs. Soil samples will be packed on ice and submitted under chain of custody to Energy Laboratories, Inc. (Energy) in Helena, Montana. All soil samples will be analyzed for volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) screen. In the event the EPH Screen exceeds 200 mg/kg, total extractable hydrocarbon (TEH) fractions analysis will be requested.

WCEC will survey the top of casing on all monitoring wells at the facility to The Forth Order (0.10 feet times the square root of total distance of the level loop in miles) with a measurement precision of 0.01 feet. The latitude and longitude of all site wells will be surveyed using a Trimble Geo 7X GPS with 1-centimeter post processed accuracy. Site well casing elevations will be correlated to the North American Vertical Datum of 1988 (NAVD 88) using an onsite elevation control point which will be created using the Trimble Geo 7x GPS.

3.7 Groundwater Monitoring

Groundwater sampling of all site monitoring wells will be performed on a semiannual basis for a period of one year during seasonally high and low groundwater periods. Well sampling will be conducted using low flow sampling methodologies in accordance with MTDEQ requirements and WCEC SOPs. WCEC will use a peristaltic pump to purge and sample each monitoring well. Groundwater quality parameter data (conductivity, pH, salinity, dissolved oxygen, temperature, ORP, and turbidity) will be acquired from all site wells sampled during each event using a flow through cell. Groundwater sample collection from each well will be completed following stabilization of groundwater quality parameters. Groundwater quality parameter, purge, and stabilization data for each well will be recorded in the field using WCEC's Well Sampling Form. Depth to water measurements will be recorded from all the site wells during each groundwater monitoring event to provide an accurate potentiometric surface plot, flow direction, and gradient. All site wells will be sampled according to the table below.

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Analytical Analysis Chart					
High & low groundwater semiannual event sampling event					
Sample Location	VPH	EPH	Lead Scavengers	Intrinsic Biological Indicators -IBI	Depth to Water only
MW1	x	x	x		
MW2	x	x	x		
MW4	x	x	x		
MW -New well 6	x	x	x		
MW -New well 7	x	x	x		
MW -New well 8	x	x	x		
MW -New well 9	x	x	x		
MW -New well 10	x	x	x		
MW -New well 11	x	x	x		
New well duplicate sample	x	x	x		
Analysis Each SA Event	10	10	10	0	0
Total all events	20	20	20	0	0

Groundwater samples will be preserved with hydrochloric acid, packed on ice, and shipped to Energy Laboratories Inc. in Helena, Montana under chain of custody. Groundwater samples will be submitted for VPH, EPH screen, ethylene dibromide (EDB), and 1,2-dichloroethane (DCA) analysis. Additionally, EPH fraction analysis will be performed for any samples which exceed the EPH screening limit of 1,000 µg/L. A duplicate sample will be collected from one of the newly installed monitoring wells for use in data validation, and a trip blank will be submitted for each sampling event.

3.8 Data Validation

WCEC will complete the MTDEQ – Waste Management and Remediation Division Data Validation Summary Form for each analytical laboratory report. WCEC will submit one trip blank and one field duplicate sample for analysis of relative percent difference (RPD) of groundwater laboratory results for each event. WCEC will collect duplicate samples from a monitoring well that represents source area impacts. The completed data validation form will be included as an appendix to the monitoring report.

3.9 Reporting

Remedial Excavation Report

A Remedial Excavation Report documenting the completion of soil removal, waste handling, confirmation sampling, and site restoration activities associated with this corrective action plan will be completed following receipt of analytical from the excavation event. This report will document field screening used to delineate impacted soil for removal, sampling procedures, soil disposal, and the location that all samples were collected at including depth. Analytical results for excavation soil samples will be presented in a table with associated DEQ-7 and Montana DEQ Tier 1 Risk-Based Screening Levels (RBSLs) for reference. The location of all samples will be depicted on the site details map with the excavation boundary, utilities, and historic UST and fueling islands overlayed on an orthophoto of the site. This report will be used to facilitate discussion between WCEC and the Montana DEQ on the exact location that monitoring wells need to be placed to ensure that petroleum impacts at the site are fully delineate at the completion of this work plan.

Monitoring Well Installation Report

A Monitoring Well Installation Report will be generated following the monitoring well installation event. It will document well construction and soil sampling activities completed during the event. Monitoring well logs will detail borehole lithology, well construction, well dimensions, depth of screened intervals, depth of seal, and total boring depth. Photo ionization (PID) readings and sample depths will also be included on the well logs.

All analytical collected during this event will be tabulated and included with cumulative soil data for the facility. The location of each monitoring well will be added to the site details map. Casing elevation survey data for both mean sea level and location in Montana state plane will be included in the report.

Groundwater Monitoring Report

The Groundwater Monitoring Report will present analytical results, field sampling protocol, interpretation, and recommendations for additional remedial action at the facility. The report will include a summary of site conditions, description of the monitoring well network, sampling procedures, field measurements, and analytical results with comparison to applicable cleanup standards or risk-based screening levels.

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Potentiometric maps depicting groundwater flow direction and gradient will be created for each monitoring event. An isoconcentration map will be created for a select constituent of concern that best depicts the hydrocarbon impacts underlying the facility. A site details map will include all monitoring wells, utilities, and historical fueling systems overlaid on historic orthophotos of the facility. Cumulative analytical tables will be included for all soil and groundwater analytical results. Analytical results for soil and groundwater will be compared to the Montana Numeric Water Quality Circular 7 (DEQ-7 standards). Hydrocarbon constituents that do not have associated DEQ-7 standards will be compared to Montana DEQ Tier 1 Risk-Based Corrective Action Guidance for Petroleum Releases (RBCA). Data validation summary forms will be included with all analytical reports.

WCEC will include discussion and recommendations for additional remedial actions based on evaluation of all site data collected during the excavation, monitoring well installation, groundwater monitoring, and analysis completed during completion of the RCP.

4.0 Time Line and Costs

The attached *Estimated costs sheet for Corrective Action at the Former Tom's Super Service Facility* and *PTRCB Groundwater Monitoring and Sampling Unit Cost Work Sheet* [Appendix A] details anticipated project costs to complete the MTDEQ required scope of work. The scope of work outlined in this work plan will be conducted following approval of the MTDEQ. WCEC has tentatively scheduled the initiation of remedial action for the summer of 2026, with groundwater monitoring continuing through 2027.

4.1 Planned Workflow & Cost Explanations

The estimated costs in Appendix A include completion of a remedial excavation, monitoring well installation, and a year of semiannual groundwater monitoring. WCEC will complete these tasks during 2026 and 2027 during a total of four individual events as follows:

Event 1: Remedial excavation and site reconstruction. (Project Manager, 1 vehicle), (Excavation staff and equipment delineated in subcontractor bid)

Event 2: Groundwater monitoring well installation (1 Staff scientist, 1 vehicle), (Drilling equipment, staff, and vehicles are included drilling subcontractor bid)

Event 3: Semiannual groundwater monitoring, (1 staff, 1 vehicle)

Event 4: Semiannual groundwater monitoring (1 staff, 1 vehicle)

The monitoring well installation (Event 2) will be scheduled following receipt and analysis of excavation confirmation analytical sampling data to allow for strategic placement of monitoring wells. This will ensure that data gaps or issues with soil exceedances can be monitored effectively with the monitoring well network that is installed at the facility. The attached *PTRCB Groundwater Monitoring and Sampling Unit Cost Worksheet* includes groundwater sampling costs only. Work plan preparation, excavation, site reconstruction, monitoring well installation, and surveying costs are detailed in the *Estimated costs for Corrective Action Plan 34681* spreadsheet.

List of Figures

Figure 1: Site Location Map

Figure 2: Site Details Map

Figure 3: Planned Excavation Area





