REVISED RECORD OF DECISION

For the

BILLINGS BYPASS

NCPD 56(55)
Control Number 4199

FINAL ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana

By: BRIAN D HASSELBACH Digitally signed by BRIAN D HASSELBACH Date: 2022.09.22 09:28:12 -06'00' _____ Date: _____

Federal Highway Administration

REVISED RECORD OF DECISION

For the

BILLINGS BYPASS

NCPD 56(55)
Control Number 4199

FINAL ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana

In accordance with Title 18, Chapter 2, Section 252, Administrative Rules of Montana (ARM 18.2.252), I hereby accept and concur with the findings and decision as documented in the U.S. Department of Transportation Federal Highway Administration's Revised Record of Decision for this project as approved on 09/22/2022.

By: _____ Date: 10/5/22

Montana Department of Transportation

TABLE OF CONTENTS

1 INTRODUCTION AND BACKGROUND 2
2 DESIGN DECISIONS AND CHANGES TO THE PROJECT SINCE THE JULY 2014 ROD 3
2.1 Johnson Lane/I-90 Interchange and Johnson Lane 4
2.2 North Frontage Road Realignment 4
2.3 Intersection of Old Hardin Road and Becraft Lane 5
2.4 Intersection of Old Hardin Road and Cole Street 5
2.5 Intersection of Cole Street and Becraft Lane 5
2.6 Updated Project Footprint 6
3 SUMMARY OF IMPACTS, MITIGATION, AND MEASURES TO MINIMIZE HARM 6
3.1 Access 6
3.2 Pedestrian and Bicycle Facilities 7
3.3 Environmental Justice 7
3.4 Cultural Resources 7
3.5 Noise 8
3.6 Hazardous Materials 8
3.7 Waterbody Modifications 9
3.8 Wetland Modifications 9
3.9 Threatened and Endangered Species 10
3.10 Species of Concern 11
3.10.1 Bald and Golden Eagles 11
3.10.2 Greater Sage Grouse 11
4 COORDINATION AND PUBLIC OUTREACH 12
4.1 Comments Received 12
5 DECISION 13

APPENDICES

APPENDIX A – JULY 2014 ROD
APPENDIX B – JOHNSON LANE INTERCHANGE SEGMENT RE-EVALUATED EIS
APPENDIX C – PUBLIC COMMENTS AND RESPONSES

1 INTRODUCTION AND BACKGROUND

The Federal Highway Administration (FHWA) and the Montana Department of Transportation (MDT) environmental process for the Billings Bypass was initiated in 2010 with a Draft Environmental Impact Statement (DEIS) provided to the public in August 2012. The Final Environmental Impact Statement (FEIS) was released in March 2014, with the Record of Decision (ROD) approved and released in July 2014. The issuance of the July 2014 ROD (Appendix A) approved Mary Street Option 2 as the Preferred Alternative and authorized moving forward with Phase I of the Preferred Alternative. This included the construction of an initial two-lane bypass along the entire length of the Preferred Alternative alignment and all right-of-way acquisition for a future four-lane road (Phase II full buildout). The Preferred Alternative approved in the 2014 ROD, however, did not specify the approved option for the Johnson Lane/Interstate 90 (I-90) Interchange. Instead, the ROD stated that the precise configuration of the Johnson Lane interchange and associated secondary intersections would be determined during final design, and a maximum potential footprint for the interchange was used to address potential impacts. Full buildout of the proposed Johnson Lane Interchange project would occur as part of Phase I.

Since the July 2014 ROD approval, FHWA and MDT have agreed to implement Phase I of the Billings Bypass Preferred Alternative as seven separate project segments based on availability and type of funding. Given the length of time since the 2014 FEIS and ROD, FHWA and MDT determined the FEIS should be re-evaluated with each project segment to determine the potential need for a Supplemental EIS (SEIS). The Council on Environmental Quality (CEQ) regulations require FHWA to prepare an SEIS when the agency makes substantial changes to a proposed action, or when new circumstances or information are relevant to environmental concerns. Further, FHWA regulations require a SEIS if the changes or new information may result in significant environmental impacts that were not evaluated in the FEIS (23 Code of Federal Regulations [CFR] 771.130).

As of September 2022, the FEIS has been re-evaluated for five of the seven project segments: Five Mile Road, Yellowstone River, Yellowstone River to Railroad Overpass, Railroad Overpass, and Johnson Lane Interchange. During the FEIS re-evaluation for these segments, notable design modifications along the Yellowstone River segment and along the Railroad Overpass segment were identified. Notable design decisions, modifications, and project updates for the Johnson Lane Interchange segment were also identified. Several of these design decisions and modifications/updates were not identified in the 2014 FEIS and 2014 ROD. No notable design modifications were identified for the Five Mile Road segment. To date, the design modifications within the Yellowstone River segment, which include construction of one 4-lane bridge across the Yellowstone River instead of two 2-lane bridges, were addressed in a Revised ROD signed on February 5, 2020. The design modifications within the Railroad Overpass segment were addressed in a Revised ROD signed on May 13, 2021, and included construction of a single 2-lane bridge over the Montana Rail Link (MRL) railroad tracks and Coulson Road instead of two 2-lane bridges. This bridge is designed to allow for future widening to accommodate two additional 12-foot travel lanes at full buildout. In addition, a temporary connector from the new Railroad Overpass segment to Coulson Road would be constructed to allow access/connectivity to Coulson Road until the Johnson Lane Interchange-Railroad Overpass segment is built.

The Johnson Lane/I-90 interchange alternative carried forward to design was presented as one of five interchange options in the 2014 FEIS and 2014 ROD; however, it was not identified as the preferred alternative in the FEIS and ROD. The design modifications to the secondary intersections, other proposed roadway improvements, and the expansion of the Johnson Lane Interchange project footprint were also not identified in the 2014 FEIS and 2014 ROD. Based on a thorough review of the September 2022 re-

evaluation for the Johnson Lane Interchange segment, the July 2014 ROD, and the March 2014 FEIS, MDT and FHWA have concluded that a SEIS is not required, as described in 23 CFR 771.130, and that the requirements of both the National and Montana Environmental Policy Acts (NEPA and MEPA) would be met for the Johnson Lane Interchange segment, under Phase I, through Re-Evaluated EISs (refer to Appendix B) as described in 23 CFR 771.129(b).

The identification of a preferred alternative for the Johnson Lane Interchange, the design modifications to the secondary intersections, other proposed roadway improvements, and expansion of the Johnson Lane Interchange project footprint, however, do require preparation of a Revised ROD in accordance with 23 CFR 771.127(b). This regulation states:

> If the Administration subsequently wishes to approve an alternative which was not identified as the preferred alternative, but was fully evaluated in the final EIS, or proposes to make substantial changes to the mitigation measures or findings discussed in the ROD, a revised ROD shall be subject to review by those Administration offices which reviewed the final EIS under CFR 771.125(c). To the extent practicable, the approved revised ROD shall be provided to all persons, organizations, and agencies that received a copy of the final EIS pursuant to CFR 771.125(g).

The preferred Johnson Lane/I-90 Interchange alternative, secondary intersection modifications, additional roadway improvements, and the project footprint expansion that are proposed as part of the Johnson Lane Interchange segment would not require substantial changes to the findings discussed in the 2014 ROD, as these design decisions and modifications are primarily within the Preferred Alternative right-of-way that was studied in the 2014 FEIS and 2014 ROD (though some expansion to the footprint is required). They are, however, considered a design alternative that was not identified as part of the Mary Street Option 2 Preferred Alternative in the 2014 ROD.

This Revised ROD documents MDT and FHWA's decision to reaffirm the approval of the Preferred Alternative, as described in the July 2014 ROD, for Phase I of Mary Street Option 2 and incorporates the design decisions, modifications, and additional improvements, as described in the September 2022 Re-Evaluated EIS for the Johnson Lane Interchange segment. Except for the findings and decisions referenced in the sections below, the findings and determinations made in the July 2014 ROD are unaltered and remain valid. However, additional revisions to the ROD may be required at a later date as subsequent FEIS re-evaluations take place and designs are finalized for future project segments.

2 DESIGN DECISIONS AND CHANGES TO THE PROJECT SINCE THE JULY 2014 ROD

This section describes the proposed project design decisions, modifications, and additional improvements for the Johnson Lane Interchange segment of the Mary Street Option 2 Preferred Alternative. The proposed design for the Johnson Lane Interchange segment would be constructed primarily within the footprint identified in the March 2014 FEIS and July 2014 ROD; however, expansion of the footprint is required to accommodate additional roadway and secondary intersection improvements. Refer to the September 2022 Johnson Lane Interchange Re-evaluated EIS in Appendix B for additional information.

2.1 JOHNSON LANE/I-90 INTERCHANGE AND JOHNSON LANE

As outlined in the March 2014 FEIS and July 2014 ROD, five interchange options were developed for the Johnson Lane/I-90 Interchange and associated secondary intersections at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft, and Johnson Lane/North Frontage Road; however, a preferred alternative was never determined and outlined in the 2014 FEIS and 2014 ROD. A diverging diamond interchange (identified in the 2014 FEIS and 2014 ROD as the double crossover diamond interchange) has been selected as the preferred alternative and is being carried forward to final design.

Under the diverging diamond interchange design, the two directions of traffic on Johnson Lane would cross to the opposite side on both sides of the I-90 overpass bridges. The general location of the I-90 westbound and eastbound ramps would be maintained; however, their approach alignments with Johnson Lane would be modified. The off-ramp and crossover sections would be signalized. Johnson Lane through the Johnson Lane/I-90 Interchange would vary between two or three through lanes to accommodate on and off ramps.

At the signalized Johnson Lane and Old Hardin Road Intersection, both Johnson Lane and Old Hardin Road would be widened to accommodate additional through lanes and designated left- and right-turn lanes.

2.2 NORTH FRONTAGE ROAD REALIGNMENT

Under the diverging diamond option (double crossover diamond) outlined in the March 2014 FEIS and July 2014 ROD, the North Frontage Road would have essentially remained on its existing alignment, crossing Johnson Lane at its current location, with a new traffic signal proposed at the intersection.

Under the proposed Johnson Lane Interchange project segment, the configuration of the diverging diamond would now extend further to the north along Johnson Lane. In order to accommodate sufficient storage lengths for the proposed turn lanes at the new interchange, adequate spacing between the North Frontage Road Intersection and the proposed ramp terminals would be required. This means shifting the North Frontage Road and Johnson Lane intersection approximately 450 feet to the north of the existing location. To connect to the new intersection, the North Frontage Road alignment west of Johnson Lane would curve north through the east end of the Town Pump parking lot. The alignment would then curve back east to the new intersection location.

Since the Firth Street residential area is located on the east side of Johnson Lane, several connection/access alternatives for the North Frontage Road east of Johnson Lane were evaluated. The preferred alternative would realign the eastern segment of North Frontage Road through the residential area on Firth Street to connect this eastern segment at the new intersection with Johnson Lane and the North Frontage Road western segment. This alternative was chosen because it maintained the direct connection to North Frontage Road east of Johnson Lane, which businesses along that segment of roadway relied upon, particularly commercial truck traffic coming off I-90. The new North Frontage Road alignment would directly impact five residential structures and one commercial warehouse.

The North Frontage Road realignment and shifting of the North Frontage Road and Johnson Lane intersection were not outlined in the 2014 FEIS and 2014 ROD.

The new North Frontage Road and Johnson Lane intersection would be a signal-controlled intersection. Both Johnson Lane and the North Frontage Road would be widened at the intersection to accommodate designated left- and right-turn lanes.

2.3 INTERSECTION OF OLD HARDIN ROAD AND BECRAFT LANE

Under the diverging diamond option (double crossover diamond) outlined in the March 2014 FEIS and July 2014 ROD, the lane configuration at the Old Hardin Road and Becraft Lane Intersection included one eastbound through lane and one eastbound designated right-turn lane onto Becraft Lane. Northbound traffic on Becraft Lane were forced to make a right-turn only onto Old Hardin Road, as no left-turn option would be available. This intersection configuration also did not provide a left-turn option for westbound traffic on Old Hardin Road wanting to turn left on to Becraft Lane. A traffic signal was not proposed at this intersection.

Under the proposed Johnson Lane Interchange project segment, the lane configuration at the Old Hardin Road and Becraft Lane Intersection includes two eastbound through lanes, with the option to turn right onto Becraft Lane. The designated right-turn only lane for northbound traffic on Becraft Lane has been removed; however, northbound traffic would still be required to turn right, as a left-turn option is not available. A designated left-turn lane for westbound traffic on Old Hardin Road has been included, which allows traffic to turn left on to Becraft Lane. The intersection would remain unsignalized.

2.4 INTERSECTION OF OLD HARDIN ROAD AND COLE STREET

Under the diverging diamond option (double crossover diamond) outlined in the March 2014 FEIS and July 2014 ROD, a signalized intersection was proposed at Old Hardin Road and Cole Street, and Cole Street would be improved (i.e., widened) south of Old Hardin Road to provide a new connector street to Becraft Lane. Under the proposed Johnson Lane Interchange project segment, the intersection is still proposed as a signalized intersection and Cole Street south of Old Hardin Road would still be improved. The lane configuration at the intersection on Old Hardin Road, however, has been updated to include one eastbound through lane and one designated eastbound right-turn lane onto Cole Street, two westbound through lanes with the option to turn right onto Cole Street, and a designated left-turn lane at the intersection for both east and westbound traffic to turn left onto Cole Street.

2.5 INTERSECTION OF COLE STREET AND BECRAFT LANE

The diverging diamond (double crossover diamond) outlined in the March 2014 FEIS and July 2014 ROD included improvements (i.e., widened) to Cole Street, south of Old Hardin Road, that ended in a skewed T-intersection connection at Becraft Lane. During design refinements for the proposed Johnson Lane Interchange project segment, several alternatives were considered for the Cole Street and Becraft Lane intersection.

The preferred alternative for the Cole Street and Becraft Lane intersection is a Y-shaped configuration where eastbound traffic on Becraft Lane is stop controlled and Cole Street is free-flow onto the east segment of Becraft Lane. Because of the Y-shape configuration, driveways to homes south of Becraft Lane would be extended to meet the new intersection alignment. This intersection design change was not outlined in the 2014 FEIS and 2014 ROD.

2.6 UPDATED PROJECT FOOTPRINT

To accommodate the new design features now included in the Johnson Lane Interchange project, the footprint in which impacts may occur, or area of potential effect (APE), was updated from what was shown in the March 2014 FEIS and July 2014 ROD. The APE along Johnson Lane now extends from the Coulson Road intersection to approximately 750 feet south of its intersection with Old Hardin Road. The APE along Old Hardin Road now extends from the intersection of Rykken Circle to approximately 680 feet east of its intersection with Cole Street. Cole Street, from approximately 190 feet north of the Old Hardin Road intersection to its intersection with Becraft Lane, and the Becraft Lane and Cole Street intersection are now included. The APE along I-90 is extended from approximately 3,660 feet west of the Johnson Lane/I-90 overpass to 3,695 feet east of the overpass, including the eastbound and westbound on and off ramps. The APE surrounding the North Frontage Road remains relatively the same. This updated footprint is the area evaluated for the documentation of changes to the affected environmental and potential impacts.

3 SUMMARY OF IMPACTS, MITIGATION, AND MEASURES TO MINIMIZE HARM

Potential impacts, mitigation, and reasonable measures to minimize harm under the Preferred Alternative were discussed in the March 2014 FEIS and July 2014 ROD (Appendix A). Unless otherwise noted, these impacts are still valid and all mitigation and reasonable measures to minimize harm have been adopted.

The Johnson Lane Interchange Re-evaluated EIS (September 2022) examined all of the environmental issues originally investigated and reported in the March 2014 FEIS and July 2014 ROD. This examination looked at the current environmental conditions (2020-2021) within and adjacent to the Preferred Alternative footprint for this segment. The Johnson Lane Interchange segment Re-evaluated EIS determined the preferred Johnson Lane Interchange alternative, secondary intersection design modifications, and additional roadway improvements would not result in substantial changes to identified project impacts associated with these resources. A discussion of proposed impacts and additional mitigation measures are found in the Johnson Lane Interchange segment Re-evaluated EIS (Appendix B). The following is a summary of changes to existing conditions since the approval of the July 2014 ROD, potential impacts to environmental resources associated with the proposed design decisions, modifications, and improvements, and the mitigation added in response to changes in existing environmental conditions and potential impacts.

3.1 ACCESS

The Johnson Lane Interchange project would realign the North Frontage Road and modify the Becraft Lane and Cole Street intersection. The realignment of the North Frontage Road would still maintain direct access to residents and businesses along this roadway. Design changes at the Becraft Lane and Cole Street intersection would also maintain/enhance accessibility for vehicles traveling along these routes.

These changes would not alter the conclusion in the March 2014 FEIS and July 2014 ROD. No additional minimization measures are proposed.

3.2 PEDESTRIAN AND BICYCLE FACILITIES

Pedestrian and bicycle facilities for the Johnson Lane Interchange project segment were not discussed in the 2014 FEIS and 2014 ROD, as an interchange option was never approved. As part of the diverging diamond interchange design, accommodations for pedestrians and bicyclists would be made. Pedestrians would be routed via the signalized crossovers to raised center medians for traveling through the interchange area. Bike lanes would also be provided for bicyclists adjacent to the raised center medians.

These changes would not affect the overall findings made in the March 2014 FEIS and July 2014 ROD. No additional minimization measures are proposed.

3.3 ENVIRONMENTAL JUSTICE

Because of the refinements/updates to the Johnson Lane Interchange project design, particularly the realignment of North Frontage Road through the Firth Street residential area, the 2020 Decennial U.S Census data and the 2019 American Community Survey (ACS) 5-year estimates were reviewed to determine if any substantial changes to low-income or minority population characteristics in the project area had occurred since the 2014 FEIS and 2014 ROD. According to the recent census data, no relative concentrations of minority populations or low-income populations were identified within the Johnson Lane Interchange project area.

As part of the proposed Johnson Lane Interchange project, the North Frontage Road would be realigned further to the north. This would require a realignment through the Firth Street residential area. Through this realignment, approximately five residences and one commercial warehouse would be directly impacted. The access drive to another residence would also be impacted. Census data provides a general overview of the attributes of a larger subject population. The data associated with small subpopulations, however, within the boundaries of these same areas (i.e., the residential area on Firth Street) may be diluted to such a point that the data is not representative of the subpopulation. During data collection for the Johnson Lane Interchange project, residents along Firth Street were contacted and properties were reviewed. Designated low-income housing units were not identified in Firth Street area. None of the available information suggests that the proposed displacements of residence on Firth Street would impact a low-income or minority population.

Therefore, the Johnson Lane Interchange project would not result in disproportionately high and adverse effects on minority or low-income populations. MDT concludes that the Environmental Justice assessment and proposed mitigation outlined for the Johnson Lane Interchange project are consistent with the findings of the March 2014 FEIS and July 2014 ROD.

3.4 CULTURAL RESOURCES

Due to refinements/changes to the Johnson Lane Interchange project design scope and updates to the project footprint, a Class III Cultural Resources Inventory was completed in January 2021 for the updated Johnson Lane Interchange project APE south of the Johnson Lane/I-90 Interchange, along Old Hardin Road, and along Sannon Boulevard. An additional Class III Cultural Resources Inventory was completed in November 2021 along the updated APE for the North Frontage Road realignment and for the improvements at the Cole Street and Becraft Lane Intersection. These 2021 reports also updated the previously recorded sites identified in the 2011 Cultural Resources Inventory Report, the 2012 report addendum, and the 2014 FEIS and 2014 ROD.

Nine historic building properties (residences) and two irrigation ditches (the Coulson Ditch and the Lockwood Ditch) were documented within the updated APE as part of the January and November 2021 inventories. All 11 historic sites were determined not eligible for listing on the National Register of Historic Places (NRHP). A twelfth site that was previously recorded was also noted in the APE. This site was previously determined as eligible for listing on the NRHP; however, this site was destroyed when the Flying J Travel Plaza was constructed. Therefore, MDT recommended that this site's status be revised to not eligible as it no longer exists. SHPO concurred with the updated ineligibility determination for the Myaer Farm on December 27, 2021.

Based on the eligibility of recorded sites within the APE, the proposed Johnson Lane Interchange project is anticipated to have ***No Effect*** on significant cultural properties and would not affect the overall findings made in the March 2014 FEIS and July 2014 ROD. SHPO concurrence was received on December 27, 2021.

3.5 NOISE

Due to refinements/changes to the Johnson Lane Interchange project design and updates to the project footprint since the 2014 FEIS and 2014 ROD, a Detailed Noise Analysis Report was completed in December 2021. The report identified 51 noise-sensitive receptors within 500 feet of the closest proposed travel lane for the Johnson Lane Interchange project. This includes 38 noise-sensitive receptors south of the Johnson Lane/I-90 Interchange (along Old Hardin Road, Johnson Lane, and Becraft Lane), 11 noise-sensitive receptors north of the Johnson Lane/I-90 Interchange that were previously identified in the March 2012 noise report and 2014 FEIS and 2014 ROD, and two additional receptors north of I-90. The 2021 Detailed Noise Analysis Report predicted noise related impacts from construction of the Johnson Lane Interchange project for 10 noise receptors. This includes five residences north of I-90 in the Firth Street residential area and five residences south of Old Hardin Road on Rykken Circle.

Similar to the 2012 noise report and the 2014 FEIS and ROD, the 2021 noise report concluded that no feasible or reasonable mitigation measures were found for the impacts associated with the Johnson Lane Interchange project. Four of the receptors impacted by the North Frontage Road realignment would be relocated, leaving only one impacted receptor. A barrier near the five impacted receptors south of Old Hardin Road would not meet MDT's noise reduction design goals and reasonableness criteria.

Overall, the change in noise impacts would not affect the overall findings and proposed mitigation made in the March 2014 FEIS and July 2014 ROD.

3.6 HAZARDOUS MATERIALS

As outlined in the 2014 FEIS and 2014 ROD, the required Phase II and asbestos survey mitigation has been completed. Subsurface investigations were completed within the MDT right-of-way near three underground storage tanks where leaks/spills had previously occurred or may have occurred. These included the Town Pump Pilot Truck Stop, the Flying J Travel Plaza, and Casey's Corner Store. The results of the subsurface investigation indicated no soil impacts above Montana Department of Environmental Quality Risk-Based Screening Levels for extractable petroleum hydrocarbon and volatile petroleum hydrocarbon. Further investigation of potential petroleum impacts is not warranted and no additional mitigation is proposed.

An Asbestos Survey report for the Johnson Lane/I-90 overpass bridges was completed in February 2021. The asbestos survey indicated no asbestos detected in any of the suspect material samples. No additional mitigation is proposed.

One additional impact was identified since the 2014 FEIS and 2014 ROD. With the proposed design change to the North Frontage Road, which includes a realignment further to the north, the above-ground storage tank (AST) associated with a residence on Firth Street would likely be impacted. Mitigation outlined in the 2014 FEIS and 2014 ROD related to AST impacts is still valid.

The updated project footprint was also compared to the extents of the Billings Carbon Monoxide Maintenance Area. The updated footprint is east of and remains entirely outside the boundaries of the Billings Carbon Monoxide Maintenance Area. As such, additional coordination with DEQ and EPA is not required. There are no changes to the mitigation outlined in the 2014 FEIS and ROD related to air quality.

Overall, the change in impact to hazardous materials would not affect the overall findings and proposed mitigation made in the March 2014 FEIS and July 2014 ROD.

3.7 WATERBODY MODIFICATIONS

A wetland delineation was completed in 2011 during the development of the Billings Bypass FEIS. As it had been more than 10 years since the original wetland delineation was conducted, and to ensure all wetlands and waterbodies were identified within the current design footprint for the Johnson Lane Interchange project, a new delineation was conducted in 2020. During the 2020 delineation, two irrigation ditches, the Coulson Ditch and the Lockwood Ditch, were identified within the current Johnson Lane Interchange footprint.

Impacts to the Coulson Ditch are being avoided as part of the Johnson Lane Interchange project. Improvements at the Lockwood Ditch include culvert extensions within the ditch and a segment of the ditch being piped (150 linear feet). This would result in approximately 0.018 acre of permanent impact to the Lockwood Ditch.

The change in impacts to waterbodies is consistent with the findings and proposed mitigation in the March 2014 FEIS and July 2014 ROD.

3.8 WETLAND MODIFICATIONS

A wetland delineation was completed in 2011 during the development of the Billings Bypass FEIS. As it had been more than 10 years since the original wetland delineation was conducted, and to ensure all wetlands were identified within the current design footprint for the Johnson Lane Interchange project, a new wetland delineation was conducted in 2020. The new delineation served to verify the 2011 wetland boundaries and add any new wetlands that were identified during the 2020 effort. During the 2020 wetland delineation, one additional wetland, a wetland fringe along Lockwood Ditch, was identified. Coulson Ditch was also updated from a ditch wetland to a non-wetland irrigation ditch.

To compare wetland impacts, the wetlands mapped in 2020 and the proposed Johnson Lane Interchange segment design were reviewed against the 2011 wetland mapping and the 2014 FEIS and 2014 ROD. Under the Preferred Alternative outlined in the 2014 FEIS and 2014 ROD, approximately 0.37 acres of wetland impact was identified for the Johnson Lane Interchange segment. Based on the refinement and changes to the Johnson Lane Interchange project design and the 2020 wetland delineation, the permanent

wetland impacts for the Johnson Lane segment have been updated to approximately 0.38 acres. This slight increase in wetland impacts is due to updates to the wetland boundaries, a reduction in the proposed impacts from what was stated in the 2014 FEIS and 2014 ROD due to design refinements/changes, and additional new impacts to the fringe wetland that was identified during the 2020 field delineation.

The revised impacts to wetlands from the proposed design are consistent with the findings in the March 2014 FEIS and July 2014 ROD. No additional minimization measures are proposed. Impacts to wetlands resulting from the project would be mitigated in compliance with Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers.

3.9 THREATENED AND ENDANGERED SPECIES

The analysis of potential effects to Threatened and Endangered species under the Endangered Species Act is a continuous process. Information in this section provides an update to information presented in the March 2014 FEIS and July 2014 ROD, and a discussion on potential effects to these species based on the proposed interchange design, intersection modifications, and additional improvements at the Johnson Lane Interchange segment.

Due to the time lapse since the March 2014 FEIS and July 2014 ROD, Biological Resources Addendum Reports are being prepared for each project segment. An Addendum Report was completed for the Johnson Lane Interchange segment on March 4, 2022. According to the Johnson Lane Interchange Addendum Report, the greater sage-grouse (*Centrocercus urophasianus*), black-footed ferret (*Mustela nigripes*), and Sprague's pipit (*Anthus spragueii*) have been removed from the list of endangered, threatened, proposed, and candidate species for Yellowstone County. Red knot (*Calidris canutus rufa*) and monarch butterfly (*Danaus plexippus*) have been added to the Yellowstone County list. Whooping crane (*Grus Americana*) remains on the list.

There are no records of whooping crane or red knot breeding in the state. They are known to migrate through Montana on occasion in the spring and fall as they head to breeding territories in northern Canada and the Arctic, respectively. There are three observations for whooping crane within a 30-mile radius of the proposed Johnson Lane Interchange project over the last 100 years. The nearest observation was documented more than 10 miles to the northeast as a fly-over in April 2010. One observation of red knot is documented less than 1.0-mile northwest of the proposed Johnson Lane Interchange project limits. This individual was a transient documented in 1975, and not seen since. Two other red knot observations in the general geographic area are greater than 30 miles from the project vicinity. Monarch butterflies also migrate through Montana in the spring and fall as they move between central Mexico and Canada. While monarch butterflies may migrate through the area, suitable foraging and resting habitat is limited within the Johnson Lane Interchange project footprint. The closest recorded observation of a monarch butterfly was over 30 miles southwest of the project limits in 2016. In addition, during migration, monarchs do not typically arrive in Montana until June or July. The Johnson Lane Interchange project would likely start, and vegetation removed, prior to that arrival.

Neither the whooping crane nor red knot would be anticipated in the Johnson Lane Interchange project area, as limited-to-no-appropriate habitat is present. Therefore, a ***No Effect*** determination has been made for the proposed Johnson Lane Interchange project activities for both the whooping crane and red knot. Additionally, the monarch butterfly is not anticipated in the project area due to limited habitat and timing of construction. Therefore, the Johnson Lane Interchange project ***Would Not Jeopardize the Continued Existence*** of monarch butterfly. No additional minimization measures are proposed.

3.10 SPECIES OF CONCERN

The Johnson Lane Interchange 2022 Biological Addendum includes an updated state Species of Concern recorded occurrence list from Montana Natural Heritage Program (MTNHP) and updated data on bald eagle nests in the area. The MTNHP list identified 13 wildlife Species of Concern and one plant Species of Concern within three miles of the Johnson Lane Interchange Project. Eleven of these Species of Concern were discussed in the March 2014 FEIS and July 2014 ROD. No additional impacts or concerns related to the 11 original species have been identified. Of the remaining two wildlife species and one plant species not discussed in the 2014 FEIS and 2014 ROD, limited suitable habitat is found within the Johnson Lane Interchange project vicinity for these species. Permanent vegetation impacts would occur within the proposed construction limits, with both upland and wetland habitat being impacted; however, with much of the project footprint already developed, these impacts would be minor. Direct mortality to some species may occur due to inability to disperse during construction. Temporary noise related impacts would also occur during construction. Overall, impacts to state Species of Concern that may be present within the project limits are likely to be negligible and will not result in a declining trend in the population or the species as a whole.

These proposed impacts are consistent with those identified in the March 2014 FEIS and July 2014 ROD. No additional minimization measures are proposed.

3.10.1 BALD AND GOLDEN EAGLES

The 2020 Montana Fish, Wildlife, and Parks (FWP) observation data on Bald Eagles, provided by MTNHP, shows several documented occurrences of Bald Eagle and Bald Eagle nests along the Yellowstone River Corridor; however, no Bald Eagle nests or occurrences have been documented within 0.5 miles of the project limits. MTNHP data shows the closest documented nesting Bald Eagle was over 0.5-miles northwest of the Johnson Lane Interchange northern limits. The nest was last documented in 2006. Additionally, MTNHP eagle data shows no documented occurrences of Golden Eagles or nests within three miles of the project footprint.

Therefore, additional minimization measures and timing restrictions for the Johnson Lane Interchange segment are not proposed.

3.10.2 GREATER SAGE GROUSE

On September 22, 2015, USFWS determined that protection for the Greater Sage-Grouse under the Endangered Species Act was no longer warranted and withdrew the species from the candidate species list. In Montana, the state has management authority over Sage Grouse as outlined under the 2015 Greater Sage-Grouse Stewardship Act and Montana Governor's Executive Orders 10-2014, 12-2015, and 21-2015. The Sage Grouse Habitat Conservation Program was created to facilitate implementation of the Executive Orders. State actions implemented by MDT in designated Greater Sage-Grouse habitat must comply with the conservation program.

The Johnson Lane Interchange project segment is not within Greater Sage-Grouse designated core habitat, connectivity habitat, or general habitat. The nearest designated Sage Grouse habitat, which is general habitat, is approximately 2.8 miles northwest of the project segment. The Johnson Lane Interchange project activities are consistent with the Montana Sage Grouse Conservation Strategy. No additional minimization measures are proposed.

4 COORDINATION AND PUBLIC OUTREACH

Since the release of the July 2014 Final ROD, additional public information meetings for the Billings Bypass project have been conducted. Public informational meetings were conducted on September 27 and 28, 2017; July 2, 2020; and November 9, 2021. The intent of these informational meetings was to provide an update to the public on project schedule, project phasing (i.e., the Bypass being split into six project segments), and design refinements/changes. The Johnson Lane Interchange project segment was included as part of these meetings, particularly the July 2, 2020, and November 9, 2021, meetings, which provided information on the diverging diamond interchange concept, the realignment of the North Frontage Road, improvements to Old Hardin Road, potential improvements to Sannon Boulevard, and the new intersection configuration at Cole Street and Becraft Lane.

The September 2017 meetings were conducted in a public open house format. The September 27, 2017, meeting took place at Independent Elementary School located on US 87 to accommodate the public located north of the Yellowstone River. The September 28, 2017, meeting took place at Eileen Johnson Middle School in Lockwood to accommodate the public located south of the Yellowstone River. The two July 2, 2020, meetings (at 11:00 am and 5:30 pm) were conducted online via a Zoom webinar, due to the COVID-19 pandemic. The November 9, 2021, public informational meetings included a Zoom webinar (at 2:00 pm) and public open house at the Metra Park Montana Pavilion (from 5:30 pm to 7:30 pm). Additional public outreach materials included postcards, display ads in the Billings Gazette and Yellowstone County News, and press releases. In addition to the public meetings, an April 29, 2022, letter was provided to property owners in the vicinity of Sannon Boulevard notifying them that potential improvements to Sannon Boulevard were no longer proposed as part of the Johnson Lane Interchange project. Throughout the outreach process the public was encouraged to provide comments/input at the meetings or to submit a comment via mail, email, or through the project website. In addition, personal contacts with adjacent landowners explaining the work to be performed will be offered during the right-of-way phase of the Johnson Lane Interchange project.

4.1 COMMENTS RECEIVED

Approximately 71 comments specific to the Johnson Lane Interchange segment of the bypass project were received during and following the September 2017, July 2020, and November 2021 public information meetings. Issues, concerns, and opportunities noted in those comments include the following:

- Accommodations for pedestrians and bicyclists within the diverging diamond interchange design
- Sidewalk extensions along Johnson Lane and Old Hardin Road
- Business opposition to medians on Old Hardin Road
- Concerns regarding the local community's understanding of how to use a diverging diamond interchange
- The design of the diverging diamond accommodating large trucks
- Potential Sannon Boulevard improvements and right-of-way impacts to adjacent landowners
- Impacts to adjacent landowners from improvements on Johnson Lane
- Access to North Frontage Road and the businesses along the North Frontage Road

- Impacts to properties on Firth Street due to the Frontage Road realignment and improvements on Johnson Lane
- Temporary access concerns for businesses and residences during construction
- Permanent access changes for businesses and residences once the project is complete
- The decision for signalized intersections versus roundabouts
- A general excitement for a different type of interchange (i.e., diverging diamond)

No comments were received regarding the April 29, 2022, letter provided to property owners in the vicinity of Sannon Boulevard.

Appendix C of this Revised ROD contains copies of the comments received and associated responses.

5 DECISION

Based upon the information presented in the Johnson Lane Interchange Re-evaluated EIS (September 2022), FHWA's decision, in agreement with MDT, is to provide environmental approval for the construction of the Diverging Diamond Interchange, the requested secondary intersection design modifications, and the additional roadway improvements proposed for the Johnson Lane Interchange segment and incorporate the changes into the previously approved Preferred Alternative. This decision confirms that the design decisions, modifications, and additional roadway improvements do not constitute a significant change as described in 23 CFR 771.129(c). The original July 2014 ROD remains valid and is incorporated in this Revised ROD.

APPENDIX A

JULY 2014 ROD

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

Record of Decision

Billings Bypass

July 2014

NCPD 56 (55) Control Number 4199

MONTANA
MDT
DEPARTMENT OF TRANSPORTATION

U.S. Department of Transportation
Federal Highway Administration

RECORD OF DECISION

For the

BILLINGS BYPASS

NCPD 56(55)
Control Number 4199

FINAL ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana

By: _____ Date: 7/25/2014

Federal Highway Administration

RECORD OF DECISION

For the

BILLINGS BYPASS

NCPD 56(55)
Control Number 4199

FINAL ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration
Helena, Montana

In accordance with Title 18, Chapter 2, Section 252, Administrative Rules of Montana (ARM 18.2.252), I hereby accept and concur with the findings and decision as documented in the U.S. Department of Transportation Federal Highway Administration's Record of Decision for this project as approved on 7/25/14.

By: _____ Date: 7/28/14

Montana Department of Transportation

TABLE OF CONTENTS

1 INTRODUCTION AND BACKGROUND 3
2 ALTERNATIVES CONSIDERED AND THE SELECTION OF THE PREFERRED ALTERNATIVE 4
2.1 Alternatives Considered 4
2.1.1 Alternatives Development and Screening 4
2.1.2 Alternatives Evaluated in the FEIS 5
2.2 Basis for Identification of Mary Street Option 2 as the Preferred Alternative 5
2.2.1 Performance Relative to Purpose and Need 6
2.2.2 Performance Relative to Impacts 6
3 DEVELOPMENT AND DESCRIPTION OF PHASE 1 OF THE PREFERRED ALTERNATIVE 6
3.1 Description of Phase 1 Improvements 7
3.1.1 Primary Corridor Improvements 7
3.1.2 Secondary Corridor Improvements 8
3.1.3 Typical Sections 8
3.1.4 Access to Adjacent Properties 11
3.1.5 Interchange and Intersection Options 11
3.1.6 Construction Sequencing 11
3.2 Improvements Remaining for Full Buildout 12
4 CLARIFICATIONS TO THE FINAL EIS 12
4.1 Clarifications regarding the Johnson Lane Interchange 12
4.2 Clarifications regarding Impacts to Planned John H. Dover Memorial Park 13
4.3 Clarifications regarding the MRL Railroad Bridge 14
4.4 Correction regarding Sidewalks on Five MIle Road 15
5 SUMMARY OF IMPACTS, MITIGATION, AND MEASURES TO MINIMIZE HARM FOR PHASE 1 OF THE PREFERRED ALTERNATIVE 16
6 APPROVALS/DOCUMENTATION WITH STATE AND FEDERAL REQUIREMENTS 30
6.1 Environmentally Preferable Alternative 30
6.2 Least Environmentally Damaging Practicable Alternative 31
6.3 Endangered Species Act 31
6.4 Historic and Cultural Resources 31
6.5 Section 4(f) Determination 32
7 PERMITS AND APPROVALS 33
8 COORDINATION PROCESS AND COMMENTS ON THE FINAL EIS 34

8.1 Coordination and Public Outreach 34
8.2 Comments Received 35
9 DECISION 35

LIST OF FIGURES

Figure 1. Mary Street Option 2 Alternative – Phase 1 9

LIST OF TABLES

Table 1. Clarification of Table 4.10 Direct and Indirect Impacts Summary – Parks and Recreational Facilities 13
Table 2. Mary Street Option 2 Phase 1 Impacts, Minimization Measures, and Mitigation 16

APPENDICES

APPENDIX A – PREFERRED ALTERNATIVE MAP AND PHASE 1 DESIGN SIMULATIONS

Figure A.1. Preferred Alternative – Mary Street Option 2 ..... A-1
Figure A.2. Phase 1 Design Simulation, Looking Northeast Near Johnson lane Interchange A-3
Figure A.3. Phase 1 Design Simulation, South of Yellowstone River Looking Northwest A-4
Figure A.4. Phase 1 Design Simulation, Bridge Over Yellowstone River Looking Northwest A-5
Figure A.5. Phase 1 Design Simulation, Crossing Yellowstone River Looking South A-6
Figure A.6. Phase 1 Design Simulation, Looking Northeast at Mary Street/Five Mile Road Convergence A-7
Figure A.7. Phase 1 Design Simulation, Looking West Near Flaming Creek Drive A-8
Figure A.8. Phase 1 Design Simulation, Mary Street Looking East from US 87 and Main Street A-9
Figure A.9. Phase 1 Design Simulation, Five Mile Road Looking South Near Old Hwy 312 ..... A-10

APPENDIX B – PUBLIC OUTREACH MATERIALS

APPENDIX C – RESPONSES TO COMMENTS ON THE FINAL EIS

1 INTRODUCTION AND BACKGROUND

The Federal Highway Administration (FHWA) and the Montana Department of Transportation (MDT) published a Notice of Intent to prepare an Environmental Impact Statement (EIS) in 2010, in accordance with the Council on Environmental Quality and FHWA regulations for implementing the National Environmental Policy Act of 1969 (NEPA), to identify and evaluate alternatives to improve access and connectivity between I-90 and Old Highway (Hwy) 312 in Billings, Montana. The U.S. Army Corps of Engineers (COE) is the only cooperating agency for the Billings Bypass EIS.

FHWA published a Draft EIS on August 17, 2012. The 45-day public comment period ended on October 1, 2012. The lead agencies solicited written and oral comments from the public, agencies, and organizations during the comment period. A public hearing, held at Lockwood Middle School on September 12, 2012, gave citizens an opportunity to learn more about the project and comment on the Draft EIS. In addition to comments received in person at the public hearing, MDT accepted comments by mail, email, and through the project website.

In March of 2014 the lead agencies released a Final EIS (or FEIS) that updated the information presented in the Draft EIS, incorporated additional information, and responded to comments made during the public comment period. The FEIS presented the Preferred Alternative—the Mary Street Option 2 Alternative, and a fundable Phase 1 for the NEPA process. The FEIS is incorporated into this Record of Decision (ROD) by reference. Information about its availability is included in this ROD on the back of the title page. The FEIS describes in detail the decision-making process and summarizes the analysis of considerations for identifying the alternatives that were fully evaluated in the FEIS, their impacts, and their ability to meet the project's purpose and need. In addition, the FEIS includes an evaluation of the potential impacts to Section 4(f) resources.

As described in the FEIS, the lead agencies identified the four-lane Mary Street Option 2 Alternative as the Preferred Alternative. Current federal regulations require the project to be included in the fiscally constrained long-range transportation plan before a ROD can be signed, but sufficient funding for construction of the four-lane Preferred Alternative (Full Buildout) has not yet been identified.

FHWA guidance allows for the issuance of phased RODs from a single EIS document under certain conditions. This approach allows FHWA to issue a NEPA decision document (a ROD) for only a section or portion of the proposed project if that section or portion has independent utility and logical termini. Subsequent RODs may be issued for additional phases of the project, as funding is identified. The Billings Bypass will be implemented in phases, as is allowed by FHWA guidance for RODs, because of a lack of available funding to construct the full Preferred Alternative as described in the FEIS. The Preferred Alternative has been separated into two phases, which are referred to throughout the FEIS as Phase 1 (an initial two-lane road) and the Full Buildout (a final four-lane road). Phase 1 will design and construct the initial two lanes of road along the entire length of the Preferred Alternative alignment, and pursue right-of-way acquisition for a future four-lane road. Phase 1 has independent utility and logical termini. The second phase will require a NEPA re-evaluation and separate ROD(s) to design and construct the Full Buildout four-lane road along this alignment. A supplemental EIS would be required prior to the issuance of a second ROD if the re-evaluation reveals new significant information (for example, if detailed design warrants large changes that would pose new significant impacts).

This ROD is issued for Phase 1 of the Preferred Alternative and has been prepared in compliance with 23 Code of Federal Regulations (CFR) 771 and 774, Council on Environmental Quality Regulations 40 CFR

1500-1508, and the requirements of NEPA, as amended. This ROD is the final step in the NEPA process for Phase 1 of the Preferred Alternative.

This ROD summarizes the alternatives considered and the selection of the preferred alternative, identifies how the preferred alternative was developed and why it was selected, clarifies impacts related to John H. Dover Memorial Park from the FEIS, and summarizes impacts, mitigation, permits needed for the project, and summarizes public outreach and input received after publication of the FEIS. Finally, Section 9 of this ROD concludes with the decision made to select Phase 1 of the Preferred Alternative.

2 ALTERNATIVES CONSIDERED AND THE SELECTION OF THE PREFERRED ALTERNATIVE

This section explains the basis for selecting the Mary Street Option 2 Alternative as the Preferred Alternative, describes the Phase 1 improvements, and summarizes the improvements that would be needed to complete the Full Buildout of the Preferred Alternative.

2.1 ALTERNATIVES CONSIDERED

2.1.1 ALTERNATIVES DEVELOPMENT AND SCREENING

To determine which alternatives would best meet the project purpose and need while minimizing impacts to the community and environment, the project team completed a three-step screening process described in the FEIS and summarized below:

- Level 1: Does the alternative make a connection between the interstate and Old Hwy 312?
- Level 2A: Does the alternative meet the project purpose and need? (Rate High, Moderate, or Poor), and does it:
  - Reduce physical barrier impacts? (Does alternative traverse physical barriers?)
  - Improve connectivity between Lockwood and Billings? (How does alternative route distance between the Johnson Lane Interchange and the intersection of Wicks Lane and Main Street compare with existing route distance?)
  - Improve mobility to and from Billings Heights? (Would alternative provide an alternate route between Billings Heights and the interstate?)
  - Improve truck/commercial vehicle access to and through Billings? (Would alternative provide new truck/commercial vehicle access to and through Billings with direct connection to US 87? Would alternative easily extend west from US 87 to Montana (MT) 3 in the future?)
  - Affect known cultural/historic sites?
  - Create floodplain impacts (linear feet across or adjacent to floodplain)?
- Level 2B: What are the alternative's:
  - Travel time benefits?
  - ROW impacts (number of parcels and structures)?
  - Possible floodplain impacts (linear feet across or adjacent to floodplain)?
  - Other potential issues (impacts to community resources, such as schools, churches, cemeteries, parks and recreational facilities, and neighborhoods)?
- Level 3: Consider traffic data and construction cost. What is the alternative's:
  - Projected Average Daily Traffic (ADT) for 2035 - Origin-Destination? The preliminary traffic data was evaluated to identify the percentage of trips using the proposed alternative alignments

that were traveling to or from Billing Heights versus to or from the outlying area northeast of Billings.
- Project-generated traffic? Traffic patterns were evaluated to determine how the alternatives would affect traffic volumes on existing connecting streets.
- ADT reduction on Main Street?
- Estimated cost of mainline, bridges, interchanges, and channel crossings, as well as ROW, preliminary engineering, construction engineering, mobilization, and also estimated amount for contingency and miscellaneous items?

As explained in Section 2.2.2 of the FEIS, more than 60 alternatives were evaluated and screened. Numerous alternatives were suggested that were not carried forward into detailed analysis in the EIS. The EIS considered three build alternatives, as described in Section 2.3 of the FEIS: Mary Street Option 1 Alternative, Mary Street Option 2 Alternative, and the Five Mile Road Alternative.

2.1.2 ALTERNATIVES EVALUATED IN THE FEIS

The EIS considered three build alternatives and the No Build Alternative. Each of the build alternatives begins at the Johnson Lane Interchange with I-90 and uses approximately the same alignment north across the railroad towards one of two potential locations for crossing the Yellowstone River. North of the river, three corridors were identified to complete the connection to Old Hwy 312:

- Mary Street Option 1 Alternative
- Mary Street Option 2 Alternative
- Five Mile Road Alternative

The project team analyzed multiple project elements including alternative cross sections, alignments, and intersection locations and configurations. Cross sections were developed based on projected traffic volumes. At the interstate, connections at both existing and new interchange locations were considered, and multiple interchange configurations were developed. For intersections requiring signalization, roundabouts were also considered. Alternatives were further refined, as appropriate, using the purpose and need statement, design objectives, and data analysis.

Multiple preliminary conceptual designs for the interchange and intersections were evaluated in the FEIS. These concepts are presented in Appendix H of the FEIS and discussed in further detail in Section 2.3.3 of the FEIS. The precise configuration of the Johnson Lane Interchange and other intersections with existing roadways will be determined during final design.

Section 2.3 of the FEIS describes and depicts in more detail the alternatives advanced to the EIS analysis.

2.2 BASIS FOR IDENTIFICATION OF MARY STREET OPTION 2 AS THE PREFERRED ALTERNATIVE

This section describes the basis for identification of the Preferred Alternative. The first step in selecting a preferred alternative was to compare the performance of each build alternative in meeting the project's purpose and need; then environmental impacts associated with each of the build alternatives were examined to determine which was preferable. More detail of the reasoning for selection of Mary Street Option 2 Alternative as the Preferred Alternative can be found in Chapter 2 of the FEIS.

2.2.1 PERFORMANCE RELATIVE TO PURPOSE AND NEED

The first step in selecting a preferred alternative was to compare the performance of each build alternative in meeting the project's purpose and need. The FEIS evaluated a No Build Alternative and three build alternatives for the proposed project: the Mary Street Option 1 Alternative, the Mary Street Option 2 Alternative, and the Five Mile Road Alternative. The No Build Alternative, which does not meet the purpose and need, was included in the evaluation to provide a baseline for evaluating the performance of the build alternatives.

The FEIS analysis demonstrated that both of the Mary Street alternatives performed better than the Five Mile Road Alternative, specifically for factors related to the purpose and need, including traffic operations, connectivity between Lockwood and Billings, and mobility improvements. The performance differences between the two Mary Street alternatives were negligible. Because both Mary Street alternatives outperformed the Five Mile Road Alternative relative to Purpose and Need, the focus turned to determining which Mary Street alternative would be the Preferred Alternative based on a comparison of the social and environmental impacts of the two Mary Street alternatives (see Section 2.2.2 below).

2.2.2 PERFORMANCE RELATIVE TO IMPACTS

After purpose and need parameters were evaluated, the next analysis considered environmental impacts associated with each of the build alternatives to determine which was preferable. The No Build Alternative provided a baseline for comparing the impacts of the build alternatives.

Table 2.5 in Section 2.4 of the FEIS shows the overall impacts associated with each of the build alternatives, omitting those resources where differences in impacts were minor. As discussed in Chapter 4 of the FEIS, there is no substantial difference among all three build alternatives regarding impacts to air quality; hazardous materials; floodplains; vegetation; and wildlife (including threatened and endangered species); land use (including local plans, social conditions, and environmental justice); ROW and utilities; cultural resources; visual resources and noise; farmlands; irrigation; and energy.

The focus of the comparisons for other resources was between the Mary Street Option 1 Alternative and the Mary Street Option 2 Alternative, because those alternatives met the purpose and need of the project better than the Five Mile Road Alternative. Considering cost, transportation, and environmental factors, the Mary Street Option 2 Alternative was recommended as the Preferred Alternative over the Mary Street Option 1 Alternative. It is important to note that although the Five Mile Road Alternative has 11 residential relocations compared to 13 for Mary Street Option 2, the lead agencies determined that the Mary Street Option 2 Alternative's ability to better meet purpose and need (improved traffic operations) outweighed the impacts associated with two additional relocations.

3 DEVELOPMENT AND DESCRIPTION OF PHASE 1 OF THE PREFERRED ALTERNATIVE

The lead agencies identified the Mary Street Option 2 Alternative as the Preferred Alternative for the project in the Final EIS. The Preferred Alternative is described in Section 2.3.2, Build Alternatives, of the Final EIS. Appendix A of this ROD includes a figure of the Preferred Alternative. The FEIS also describes two phases of implementation for the project, and documents the applicable environmental laws and requirements that would be adhered to for each phase before and during construction. Additionally, the FEIS illustrated how Phase 1 of the Preferred Alternative would be consistent with the fiscally constrained long-range transportation plan.

In this ROD, FHWA approves the selection of Phase 1 of the Preferred Alternative as described in this section for implementation. As illustrated in the FEIS, the first phase identified a subset of components with an estimated cost equal to the identified project funds in the fiscally constrained long-range transportation plan.

The improvements implemented under Phase 1 of the Preferred Alternative (the Mary Street Option 2 Alternative described in the FEIS) are depicted in Figure 1 and are described below. The figures in Appendix A of this ROD show bird's-eye views of the Phase 1 edge-of-road and right-of-way on recent aerial imagery of the area.

These improvements (Phase 1) are considered a reasonable expenditure of funds and would incrementally contribute to addressing the purpose and need of the project, even if no additional transportation improvements are made in the area. The improvements proposed in Phase 1 would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. The transportation improvements to be constructed in Phase 1 would have independent utility in that they would provide transportation benefits, be a reasonable expenditure even if no additional improvements are made in the area, and each element has logical termini. Because the EIS addressed the regional transportation needs, the study considered environmental resources on a broad scope.

3.1 DESCRIPTION OF PHASE 1 IMPROVEMENTS

This section describes the primary corridor improvements, secondary corridor improvements, typical sections, property access, interchange and intersection options, and construction sequencing associated with the Phase 1 improvements.

3.1.1 PRIMARY CORRIDOR IMPROVEMENTS

The primary corridor is the roadway between the I-90 Johnson Lane Interchange, bridging across the Yellowstone River and other waters, and connecting to Old Hwy 312. Phase 1 will design and construct the first two lanes of the primary corridor for the Preferred Alternative alignment. Although the footprint of Phase 1 would be narrower than the footprint of the Full Buildout, the ROW needed for the Full Buildout will be purchased (to the extent possible) during development of Phase 1, and Phase 1 will be built along the same alignment with generally the same access control and pedestrian and bicycle facilities as with the final four-lane road.

South of the Yellowstone River, Phase 1 will:

- Reconstruct the existing I-90/Johnson Lane Interchange
- Connect to I-90 at Johnson Lane.
- Proceed north from I-90 along Johnson Lane and follow the existing Coulson Road alignment northeast for approximately 0.3 mile.
- Veer off of the existing Coulson Road alignment and continue northeast roughly along the boundaries of parcels with industrial use. This alignment will include an at-grade connection with Coulson Road approximately 0.35 mile northeast of Johnson Lane. The existing segment of Coulson Road between Johnson Lane and this new connection will be removed.
- Cross over Coulson Road and the MRL railroad via a grade-separated structure. This bridge will be constructed as a two-lane bridge with sufficient right-of-way (ROW) acquired to accommodate the later construction of a second two-lane bridge during the Full Buildout of the Preferred Alternative.
- Proceed northwest toward the Yellowstone River traversing agricultural land and the Yellowstone River floodplain.

To cross the Yellowstone River, Phase 1 will:

- Cross the river to the north of the Five Mile Creek confluence. The bridge will be a two-lane bridge approximately 1,890 feet long and will have up to nine piers in the water.
- The Yellowstone River bridge will be constructed as a two-lane bridge with sufficient right-of-way (ROW) acquired to accommodate the later construction of a second two-lane bridge during the Full Buildout of the Preferred Alternative.

North of the Yellowstone River, Phase 1 will:

- Proceed northwest through undeveloped private land that is planned as a regional park.
- Arc to the southwest toward the Mary Street corridor from the new intersection with Five Mile Road.
- Add a new two-lane bridge crossing over Five Mile Creek. The bridge will be designed and constructed to be large enough to allow for the eventual expansion for the Full Buildout without the need for modifications.
- Parallel the north side of Mary Street approximately 80 to 100 feet north of the existing Mary Street corridor for approximately 1.6 miles and traverse land with residential and agricultural uses.
- Terminate at Old Hwy 312 near the intersection with Bench Boulevard.

Aside from improvements to implement the four intersection connections to the Mary Street Option 2 Alternative alignment, Mary Street will not be altered as part of Phase 1 of the Preferred Alternative. All culverts will be designed and constructed to be large enough to allow for the eventual expansion for the Full Buildout without the need for modifications.

3.1.2 SECONDARY CORRIDOR IMPROVEMENTS

The secondary corridor improvements are proposed modifications to existing roads, or construction of new roads; needed to address additional traffic on connecting routes necessary to meet traffic and safety design objectives within the 20-year planning horizon. All of the secondary corridor improvements identified for the Preferred Alternative are anticipated to be completed during Phase 1 including:

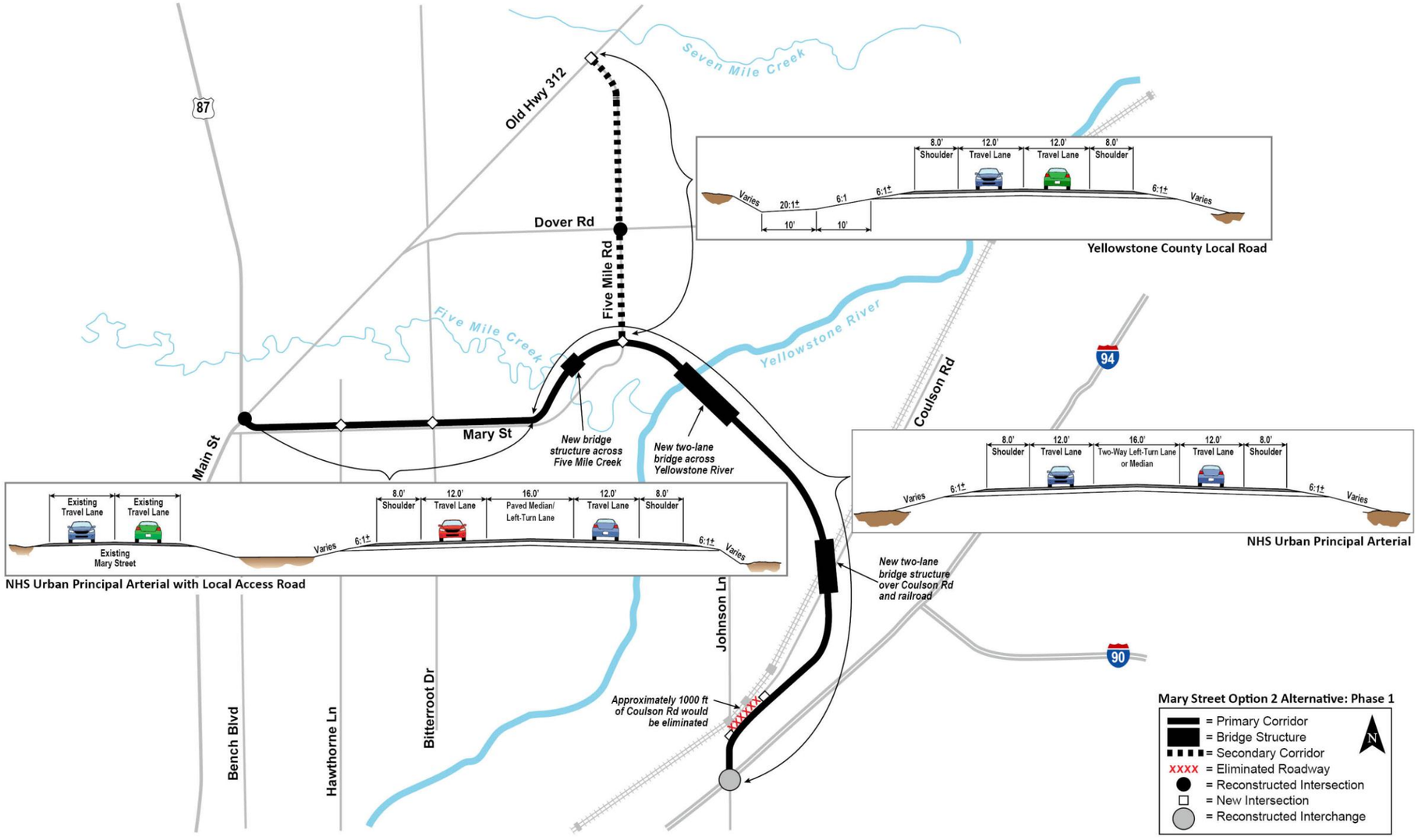
- Reconstruction of Five Mile Road to MDT standards north of the primary corridor, including shoulder and slope improvements.
- Construction of a new segment of Five Mile Road from Dover Road, terminating at Old Hwy 312 approximately 1 mile north of Dover Road, directly north of Westgate Machinery Company.

The secondary corridor will be two lanes with 8-foot shoulders and with design speeds of 60 mph.

3.1.3 TYPICAL SECTIONS

Typical sections for Phase 1 of the Preferred Alternative are presented in Figure 1 below.

Figure 1. Mary Street Option 2 Alternative – Phase 1



Intentional Blank Page.

3.1.4 ACCESS TO ADJACENT PROPERTIES

The existing Mary Street corridor will continue to be used for local resident access. Residents currently living on the north side of Mary Street with access to Mary Street will be provided an access to the new arterial route. The new access either will be at the same location or, in some cases, will be realigned to the safest access point.

3.1.5 INTERCHANGE AND INTERSECTION OPTIONS

Additional interchange and intersection options were developed for the traffic expected on the Phase 1 two-lane road. These options are included in Appendix H of the FEIS and are outlined below.

3.1.5.1 BITTERROOT DRIVE – TWO-LANE ROUNDABOUT

The Mary Street Option 1 Alignment Bitterroot Drive Intersection Alternative B Roundabout option was evaluated to determine whether a two-lane alignment will operate efficiently (See Appendix H for drawings of the Full Buildout and Phase 1 roundabout options at Bitterroot Drive). This Phase 1 intersection concept was evaluated using single approach lanes and single circulation lanes within the roundabout, and a two-way stop-controlled intersection on Mary Street and Bitterroot Drive adjacent to the alignment intersection. This concept was found to provide sufficient capacity and operating performance.

3.1.5.2 US 87/OLD HWY 312/MAIN STREET/MARY STREET – ADJACENT SIGNALIZED INTERSECTIONS

As described in Section 2.6.2.3.3 of the FEIS, Phase 1 incorporates two adjacent signalized intersections. MDT is currently in the process of finalizing plans for reconstruction and signalization of the Main Street and Bench Boulevard intersection, and the anticipated implementation date is within the next two years. One feature of that project is the construction of a raised median in Bench Boulevard, which will change traffic operations at the intersection of Mary Street and Bench Boulevard. Because it is anticipated that the Phase 1 alignment will be constructed after the Main Street and Bench Boulevard intersection is complete, it was decided that the intersection of the Mary Street Option 2 Alternative with Old Hwy 312 could be designed to incorporate the majority of improvements that are associated with the Main Street and Bench Boulevard project.

Therefore, it was determined that northbound and southbound traffic could be split, so that southbound traffic on US 87 will enter Bench Boulevard directly at the Main Street intersection, and will access the Mary Street Option 2 Alternative alignment directly at the Hwy 312 intersection. Northbound US 87 traffic will originate from the Mary Street Option 2 Alternative alignment as a through movement at the Old Hwy 312 intersection and as a left-turn movement from Main Street.

3.1.6 CONSTRUCTION SEQUENCING

Phase 1 will be constructed sequentially during a 20-year time frame as specific funding becomes available for the project. Construction sequencing strategies are required for a project of this size and will take into account minimization of related impacts. The construction schedule will take into account various construction activities, grouped into categories of mobilization, utility relocation, site preparation, interchange and structure construction, and lane construction. Components providing independent utility will be identified as final design work is completed. Construction will occur as funding becomes available. Because the project is at a preliminary level of design, project details and construction methods have not been fully defined, and these may change somewhat as the design evolves and funding becomes

available. Due to the availability and type of funding, the Yellowstone River bridge, Johnson Lane Interchange, MRL railroad crossing structure, alignment north of Lockwood, and connections north of the Yellowstone River bridge are likely to be constructed as separate projects during the implementation of Phase 1.

3.2 IMPROVEMENTS REMAINING FOR FULL BUILDOUT

The Full Buildout will require another ROD in the future to expand the roadway to four lanes. Before a second ROD can be issued, changes in regulations and/or site conditions will be evaluated. A supplemental EIS would be required prior to the issuance of a second ROD if the re-evaluation reveals new significant information (for example, if detailed design warrants large changes that would pose new significant impacts).

The primary corridor would be expanded from two lanes to four lanes in the Full Buildout. Typical sections for the primary corridor for the Preferred Alternative—the Mary Street Option 2 Alternative—are described in more detail and shown in Section 2.3.3 of the FEIS. The primary corridor would be four lanes wide with a median or median turn lane and 8-foot shoulders, and design speeds will be 55 mph.

Bitterroot Drive and the US 87/Old Hwy 312/Main Street/Mary Street intersections would be expanded during the Full Buildout to accommodate the four-lane arterial. Section 2.3 of the FEIS describes the intersection improvements planned for the Full Buildout of the Mary Street Option 2 Alternative.

4 CLARIFICATIONS TO THE FINAL EIS

This section identifies clarifications to the FEIS published in March 2014 based on comments received and the availability of new information. Page numbers refer to the FEIS which is available on-line at http://www.mdt.mt.gov/pubinvolve/billingsbypass. Text deleted is shown in strikeout text (e.g., ~~project area~~). Text added is shown as underlined (for example, project area).

4.1 CLARIFICATIONS REGARDING THE JOHNSON LANE INTERCHANGE

The FEIS is not clear about the plans for construction at the Johnson Lane/I-90 Interchange. All of the improvements needed for the Full Buildout will occur during Phase 1. The clarifications made to the text below do not change the impacts described in the FEIS for Phase 1, since the maximum footprint of the interchange was assumed for the analysis and the remainder of the FEIS did not say there was a difference in the treatment of this interchange between Phase 1 and the Full Buildout.

Modified text is presented below, with deleted text presented in strikeout. No new text is proposed. All of FEIS Section 2.6.2.3.1 is struck-out, because there is no difference in impacts under Phase 1 compared to the Full Buildout and the text does not make this clear.

~~FEIS SECTION 2.6.2.3.1 JOHNSON LANE INTERCHANGE (ALL BUILD ALTERNATIVES) – TEMPORARY USE OF EXISTING STRUCTURES~~

~~With the Phase 1 option, the existing overpass structures at the Johnson Lane/I-90 Interchange would remain in place. Johnson Lane would be widened to accommodate a second northbound lane but would maintain a single lane in the southbound direction. The three adjacent intersections (Old Hardin Road, North Frontage Road, and Becraft Lane) would be improved to match one of the proposed concepts for~~

~~these intersections as described in the Full Buildout options discussion in Section 2.3.4, because it was anticipated that those improvements would be required before the year 2035.~~

4.2 CLARIFICATIONS REGARDING IMPACTS TO PLANNED JOHN H. DOVER MEMORIAL PARK

The impacts to the planned, private John H. Dover Memorial Park were not reported consistently in Section 4.3.2 of the FEIS. Clarifying language is presented below. New text is underlined. No text was deleted. Changes were to add "(primary corridor)" to the direct impact description for Mary Street Option 2 and Five Mile Creek Alternatives in Table 4.10, and to add a bullet to the description of impacts for Mary Street Option 2.

The John H. Dover Memorial park is a planned, privately-owned park and is not currently a Section 4(f) resource. If the park becomes a Section 4(f) resource as the project progresses, impacts would need to be evaluated in a re-evaluation and possibly a supplemental EIS.

Table 1. Clarification of Table 4.10 Direct and Indirect Impacts Summary – Parks and Recreational Facilities

ALTERNATIVES	DIRECT IMPACTS	INDIRECT IMPACTS
NO BUILD ALTERNATIVE		
	• None.	• None.
MARY STREET OPTION 1 ALTERNATIVE		
	• Alignment crosses planned extension of Kiwanis Trail (primary corridor). • Maintains connections to existing arterial bike routes (primary corridor). • Does not affect existing Kiwanis Trail. • Impacts Two Moon Park to Five Mile Creek trail extension if trail is constructed before roadway improvements/bridge (primary corridor). • Alignment crosses southern portion of planned John H. Dover Memorial Park (secondary corridor).	• Expedited completion of planned bicycle network. • Visual and noise impacts to park users from roadway crossing through John H. Dover Memorial Park may occur. • Access and movement within John H. Dover Memorial Park interrupted by roadway construction (secondary corridor) if park is developed. • Enhanced access to study area parks.
MARY STREET OPTION 2 ALTERNATIVE		
	• Maintains connections to existing arterial bike routes (primary corridor). • Does not affect existing Kiwanis Trail. • Alignment crosses planned extension of Kiwanis Trail (primary corridor). • Alignment crosses planned trail along Five Mile Creek (primary corridor). • Alignment crosses southern portion of planned John H. Dover Memorial Park <u>(primary corridor)</u>.	• Expedited completion of planned bicycle network. • Visual and noise impacts to park users from roadway crossing through John H. Dover Memorial Park may occur. • Access and movement within John H. Dover Memorial Park interrupted by roadway construction if park is developed. • Enhanced access to study area parks.

ALTERNATIVES	DIRECT IMPACTS	INDIRECT IMPACTS
FIVE MILE ROAD ALTERNATIVE		
	• Maintains connection to existing Kiwanis Trail and arterial bike routes (secondary corridor). • Alignment crosses planned extension of Kiwanis Trail (secondary corridor). • Alignment crosses planned trail along Five Mile Creek (secondary corridor). • Alignment crosses southern portion of planned John H. Dover Memorial Park (primary corridor).	• Expedited completion of planned bicycle network. • Visual and noise impacts to park users from roadway crossing through John H. Dover Memorial Park may occur. • Access and movement within John H. Dover Memorial Park interrupted by roadway construction (primary and secondary corridor) if park is developed. • Enhanced access to study area parks.

FEIS SECTION 4.3.2.2.3 MARY STREET OPTION 2 ALTERNATIVE

Full Buildout

Direct Impacts – Parks and Recreation: Mary Street Option 2 Alternative

Direct impacts to parks and recreation under the Mary Street Option 2 Alternative would be the same as those indicated for the Mary Street Option 1 Alternative, with the following exceptions:

- The alignment crosses a planned trail along Five Mile Creek.
- This alternative would not impact the Two Moon Park to Five Mile Creek trail extension.
- The primary corridor would cross through the planned John H. Dover Memorial Park

4.3 CLARIFICATIONS REGARDING THE MRL RAILROAD BRIDGE

In Phase 1, the bridge over the MRL railroad will be constructed as a two-lane bridge with sufficient right-of-way acquired on the bridge approaches to accommodate the later construction of a second, adjacent two-lane bridge for the Full Buildout. This is the same approach that will be used for the bridge over the Yellowstone River. The FEIS was not always clear that this approach would occur for both bridges. Clarifying text to FEIS text is presented below.

From page 2-50 of the FEIS (second paragraph, section 2.6.2):

In general, Phase 1 would not have substantially different effects than the Full Buildout. Although the footprint of Phase 1 would be narrower than the footprint of the Full Buildout, the ROW needed for the Full Buildout would be purchased (to the extent possible) during development of Phase 1, and Phase 1 would be built along the same alignment with generally the same access control and pedestrian and bicycle facilities as with the final four-lane road. The crossings of the MRL railroad and ~~the bridge across~~ the Yellowstone River ~~initially~~ would each be constructed as a two-lane bridge with sufficient ROW acquired on the bridge approaches to accommodate the later construction of a second, adjacent two-lane bridge. The other bridges and the culverts that would be required for the project would be built wide enough to allow for the eventual expansion to a four-lane road, and thus the impacts associated with those improvements would be similar when comparing Phase 1 to the Full Buildout.

From page 2-56 of the FEIS (first paragraph, Section 2.6.3):

In general, Phase 1 would not have substantially different effects than the Full Buildout. Although the footprint of Phase 1 would be narrower than the footprint of the Full Buildout, the ROW needed for the Full Buildout would be purchased (to the extent possible) during development of Phase 1, and Phase 1 would be built along the same alignment with generally the same access control and pedestrian and bicycle facilities as with the final four-lane road. The crossings of the MRL railroad and ~~the bridge across~~ the Yellowstone River ~~initially~~ would each be constructed as a two-lane bridge with sufficient ROW acquired on the bridge approaches to accommodate the later construction of a second, adjacent two-lane bridge. The other bridges and the culverts that would be required for the project would be built wide enough to allow for the eventual expansion to a four-lane road, and thus the impacts associated with those improvements would be similar when comparing Phase 1 to the Full Buildout.

From page 4-2, first full paragraph:

In general, Phase 1 would not have substantially different effects than the Full Buildout. Although the footprint of Phase 1 would be narrower than the footprint of the Full Buildout, the right-of-way needed for the Full Buildout would be purchased (to the extent possible) during development of Phase 1, and Phase 1 would be built along the same alignment with generally the same access control and pedestrian and bicycle facilities as with the final four-lane road. The crossings of the MRL railroad and ~~the bridge across~~ the Yellowstone River ~~initially~~ would each be constructed as a two-lane bridge with sufficient ROW acquired on the bridge approaches to accommodate the later construction of a second, adjacent two-lane bridge. The other bridges and the culverts that would be required for the project would be built wide enough to allow for the eventual expansion to a four-lane road, and thus the impacts associated with those improvements would be similar when comparing Phase 1 to the Full Buildout.

4.4 CORRECTION REGARDING SIDEWALKS ON FIVE MILE ROAD

In Table 2.7 of the FEIS, the row summarizing pedestrian and bicycle impacts and mitigation misstated that the secondary improvements on Five Mile Road would include sidewalks. This is not correct. Five Mile Road will be constructed with 8-foot shoulders. The Executive Summary, typical sections, impact analysis throughout Chapter 4, and the remainder of Chapter 2 correctly report this information. Corrected text is included below.

Pedestrian and Bicycle Facilities		
~~Bike Route Features and Connections, Long-Term Changes~~ *Planned 8-ft shoulders would accommodate bike travel* *~~Five Mile Road improvements would include 4-ft bike lanes~~*	Maintains connection to secondary bike routes. Maintains connection to Kiwanis Trail. Adds shoulders to Five Mile Road, a primary bike route, and provides connection to primary bike routes along Mary Street and Dover Road. The existing secondary bicycle route on Coulson Road would be interrupted for 1,000 feet, sending users on another indirect route.	Bicycle and pedestrian accommodations will be taken into consideration during final design.

Pedestrian and Bicycle Facilities		
~~Pedestrian Facilities, Long-Term Impacts~~ ~~*Project would provide sidewalks along entire length of Five Mile Road*~~	~~Improved pedestrian facilities along Five Mile Road.~~ ~~No changes to other existing roadways.~~	~~No mitigation required.~~

5 SUMMARY OF IMPACTS, MITIGATION, AND MEASURES TO MINIMIZE HARM FOR PHASE 1 OF THE PREFERRED ALTERNATIVE.

Table 2 summarizes the Phase 1 impacts and mitigation for the Mary Street Option 2 Alternative. Further information regarding the impacts and mitigation summarized in this table can be found in Chapter 4 of the FEIS.

Table 2. Mary Street Option 2 Phase 1 Impacts, Minimization Measures, and Mitigation

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
TRANSPORTATION		
Traffic Operations		
Project adds new arterial roadway and adds connection to Five Mile Road	Increase of 3,360 Vehicle Miles Traveled (VMT) compared to the No Build in 2035 (<1%).	None.
	Time spent traveling decreases: 1,270 fewer vehicle hours traveled (VHT) than the No Build in 2035.	No mitigation required.
Project improves existing intersections and distributes traffic more evenly through project area	Corridor Intersections have same or improved operations in terms of delay: Levels of Service (LOS) C or better on all study intersections, compared to 6 with worse performance in No Build.	No mitigation required.
Project construction will disrupt traffic operations	Temporary impacts including reduced speeds and construction at intersections and along the new alignment.	Develop traffic management plans during final design in accordance with the Manual on Uniform Traffic Control Devices.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Accessibility		
Project provides new connection between Lockwood and Billings, and through and within Billings Heights	Improved accessibility between Lockwood and Billings/Billings Heights. Much improved accessibility between Lockwood and Mary Street and north along US 87.	No mitigation required.
Project construction will impede traffic at existing intersections	Temporary impacts to: I-90/Johnson Lane Interchange, Coulson Road, Five Mile Road, Mary Street, US 87/Old Hwy 312/Main Street intersection.	Develop traffic management plans during final design in accordance with the Manual on Uniform Traffic Control Devices. The traffic management plan will ensure maintenance of access to local businesses/residences.
Safety		
Safety: Long-Term Impacts *Project will move traffic from existing streets to newer, safer facilities, and will have positive impact to vehicular safety*	37 fewer crashes within the project area compared to the no build in 2035 (7% decrease in crashes).	No mitigation required.
Project construction *Construction will impede traffic flow and may result in increased conflicts*	Crash rates in and near construction zones may increase, though lower speeds may result in lower crash severity rates	The project will follow MDT and FHWA safety standards as outline in *MDT Work Zone Safety and Mobility Guidelines* (2009).
Pedestrian and Bicycle Facilities		
Planned 8-ft shoulders will accommodate bike travel	Maintains connection to secondary bike routes. Maintains connection to Kiwanis Trail. Adds shoulders to Five Mile Road, a primary bike route and provides connection to primary bike routes along Mary Street and Dover Road. The existing secondary bicycle route on Coulson Road will be interrupted for 1,000 feet, sending users on another indirect route.	Bicycle and pedestrian accommodations would be taken into consideration during final design.
Construction Impacts: *Project construction will interrupt travel and may require detours for bicycles and pedestrians*	Temporary impacts due to construction (slower travel times and longer trip distances possible).	Develop traffic management plans during final design in accordance with the Manual on Uniform Traffic Control Devices. The traffic management plan will minimize access restrictions to existing bike routes and trails and provide safe and travel-efficient detours with appropriate signage to the extent practicable.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
SOCIAL AND ECONOMIC		
Land Use and Local Plans		
Land Use *Alignment is inside Urban Planning Area (UPA)*	Provides improved access to planned future residential development along Mary Street. Compatible with planned land uses south of the Yellowstone River.	No mitigation required.
Parks and Recreation		
Kiwanis Trail (existing and planned) *Project places arterial roadway in between the terminus of the existing trail and the start of the planned Kiwanis Trail Extension*	Maintains connection to existing Kiwanis Trail. Project uses 0.43 acres right-of-way of the planned extension of Kiwanis Trail. The project will not preclude the planned extension of Kiwanis Trail north of Mary Street.	MDT will coordinate with City of Billings throughout final design to ensure that the final project provides for safe and effective pedestrian and bicycle movement across the project corridor at the Kiwanis Trail crossing. The following steps will be taken to minimize impacts to parks and recreational facilities during construction: • MDT will coordinate with City of Billings to include appropriate signage and/or public notifications regarding temporary trail closures.
Planned trail along Five Mile Creek	Alignment crosses planned trail along Five Mile Creek (primary corridor) via a bridge.	Bridge design will consider accommodating potential trail crossing under the bridge.
Planned John H. Dover Memorial Park	Primary corridor crosses southern portion of planned John H. Dover Memorial Park.	Coordinate with park planners regarding impacts to John H. Dover Memorial Park during final design.
Socioeconomic Conditions		
Access to adjacent neighborhoods and/or communities *Project expands access and mobility in the study area (see Transportation, above)*	No change in existing access to neighborhoods. Adjacent communities will benefit from proximity to an improved travel way and maintenance of existing access. Wide shoulders and a clear zone on the arterial will improve operations, access, and response time for police, fire protection, and emergency ambulance services.	Use existing roadway alignments and vacant lands to minimize the amount of property required for acquisition. Proposed intersection improvements will be designed in coordination with the City of Billings. To mitigate construction impacts before and during construction, coordination with emergency services and school districts will be undertaken to minimize disruption to services.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Community cohesion	Localized impacts resulting from physical or perceived isolation or separation, bridges, structures, or other barriers. Potential disruptions to community during construction. Billings Heights neighborhood will retain character of development, allowing for planned growth.	
Changes in neighborhood travel patterns	Adjacent communities will benefit from proximity to an improved travel way and maintenance of existing access.	
Population changes	Enhanced mobility and access in the study area may expedite planned growth and convert vacant or agricultural lands to higher density land uses.	
Environmental Justice		
Environmental Justice	No disproportional impacts to Environmental Justice populations.	No mitigation required.
Right-of-Way and Utilities		
Land Converted to Right-of-Way	254.4 acres 13 residential structures impacted 3 commercial structures Impacted	Reconfigure access points, steepen side slopes adjacent to the roadway, construct retaining walls, and/or shift the alignment to avoid or minimize impacts to structures to the extent practicable. Comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, 42 USC 4601 et. seq., 49 CFR Part 24, if acquisition of land is necessary.
Railroads *The project crosses the MRL with a bridge*	No impact to the railroad right-of-way. Project will require an easement for crossing over railroad right-of-way.	No mitigation required.
Utilities	Multiple utilities may require relocation.	Relocate utilities as needed in consultation with utility providers.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Historic and Cultural Resources		
Northern Pacific Railway (NP) Mainline	No Adverse Effect to Northern Pacific Railway Mainline (Site 24YL277).	No mitigation required.
Billings Bench Water Association Canal	No Adverse Effect to Billings Bench Water Association Canal (Site 24YL0161).	No mitigation required.
Billings and Central Montana Railroad	Billings and Central Montana Railroad (Site 24YL1592) is covered under terms of MDT's Abandoned Historic Railroad Grade Programmatic Agreement.	No mitigation required.
Historic and Cultural Resources *No archaeological resources were identified in the project area*	No impacts to archaeological resources or materials subject to cultural patrimony are anticipated.	Although no adverse impacts to cultural or historic resources are anticipated, should evidence of historic or pre-historic sites be discovered during construction, in accordance with MDT Standard Specifications 107, the contractor will be required to immediately stop work in the area until the significance of the site is determined and appropriate measures implemented.
Visual		
Change in Visual Quality	• Decrease of visual quality overall, but with increase in visual quality toward the road at the north end of Firth Street near Johnson Lane. • Larger decrease in visual quality for viewers toward the road at residential subdivision north of Dover Road and east of Pioneer Road. • Larger decrease in visual quality for viewers toward the road at intersection of Five Mile Road extension with Old Hwy 312. • Substantial decrease in visual quality for viewers toward the road of the Yellowstone River bridge crossing, although views will remain moderately high. Viewers will be recreationists at the proposed park. (Note: If the bridges were built before the park, there will be no visual change from existing conditions.)	In accordance with Standard Specification 201, clearing and grubbing activities will occur only within staked construction limits in order to minimize disturbances to native plant communities and specimen trees. Maintain as many trees as possible by allowing minimal fill around the base of trees. During final design retaining walls, "do not disturb areas" will be incorporated into the plans as needed. Select seed mixtures that include native grasses and forbs to blend cut and fill slopes and other construction-related disturbances with adjacent land uses. Maintain as many trees as possible, set clearing and grading limits, and plant trees at key locations. Select bridge type that is low and horizontal, with low-contrast materials. Use wall treatments that blend with the colors and textures of surrounding landscapes to the extent practicable. Use low-profile guardrails with a weathering finish to blend into the setting. If used, blend luminaires with natural colors; shield fixtures to minimize glare and spillover to the extent practicable.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Noise		
Project will result in noise increases due to increased traffic volumes and speed	10 residences will experience noise impacts above federal thresholds; two of these will likely be acquired for right-of-way, leaving 8 residences experiencing noise impacts above federal thresholds.	No feasible or reasonable mitigation measures were found for the impacts associated with the project. Coordination between local officials and developers is suggested to require setbacks for future developments, or development of noise-compatible uses near the roadway.
Farmlands		
The project area contains prime and important farmland, as valued by the National Resource Conservation Service	Project will use 43 acres of important farmland, with the majority of impacts south of the Yellowstone River.	No mitigation required.
Irrigation		
Coulson Ditch *Project will require: a new mainline crossing of Coulson Ditch, a new culverted approach crossing, and relocation of two sections of the ditch to the north (650 and 1,400* ft)	Potential for construction impacts to ditch when construction occurs outside of existing ROW. Construction activities could temporarily disrupt irrigation flow and/or increase sedimentation.	Ditch modifications will be designed and constructed in coordination with the ditch owners/operators. Contractors will be required to adhere to all applicable water quality laws and regulations in accordance with MDT standard specifications.
24 Acre Center Pivot	Roadway will impact approximately 12 acres of the 24 irrigated acres, resulting in a loss of irrigated land.	Coordination with landowner to identify necessary system modifications.
Minor Irrigation Features *Project will install new approach and crossing culverts* *Project may require minor channel changes*	Temporary impacts to several minor privately owned irrigation supply ditches. Construction activities could temporarily disrupt irrigation flow and/or increase sedimentation.	Irrigation structures will be designed and constructed in coordination with the irrigation owners/operators. Contractors will be required to adhere to all applicable water quality laws and regulations in accordance with MDT standard specifications.
Billings Bench Water Association (BBWA) Lateral *Project will replace one substandard corrugated metal pipe crossing culvert*	Culvert replacement will be improvement to infrastructure. Construction activities could temporarily disrupt irrigation flow and/or increase sedimentation.	See above mitigation for other irrigation features.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Drainage Ditch near Five Mile Road	Potential for construction impacts to ditch when construction occurs outside of existing ROW. Construction activities could temporarily disrupt irrigation flow and/or increase sedimentation.	See above mitigation for other irrigation features.
Energy		
Energy Use: Operations *Energy use includes vehicle fuel consumption in the project area and electrical power for lighting*	Project will result in approximately 0.5% more energy use from vehicles in the study area than would occur with the No Build.	No mitigation required.
Energy Use: Construction *Energy will be required to construct the project (supplies, transport, operation of machinery)*	Energy will be used to generate and transport construction materials, and from operation of construction equipment.	No mitigation required.
Section 4(f)		
Recreational Resources	*De minimis* impact to Kiwanis Trail and planned Kiwanis Trail extension.	MDT will coordinate with the City of Billings throughout final design to ensure that the final project provides for safe and effective pedestrian and bicycle movement across the project corridor at the Kiwanis Trail crossing. MDT will coordinate with the City of Billings to include appropriate signage and/or public notifications regarding temporary trail closures.
Historic and Cultural Resources	No adverse effects determination by SHPO and *de minimis* determination by FHWA.	See Historic and Cultural Resources section of this table (above).
Wildlife and Waterfowl Refuges	None present in the project area.	No mitigation required.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
ENVIRONMENTAL		
Air Quality		
Carbon Monoxide (CO)	Projected CO levels are below national standards.	In accordance with MDT Standard Specification 107, the contractor will be required to adhere to applicable air quality rules and regulations, which may require the use of dust suppression and emission control measures to minimize short-term construction-related impacts. Operation of all equipment including, but not limited to, hot-mix paving plants and aggregate crushers must meet the minimum air quality standards established by federal, state, and local agencies in accordance with MDT Standard specification 107.11.3.
Particulate Matter (PM)	No hot-spot analysis required; project is not a project of concern due to area attainment status.	
Mobile Source Air Toxics (MSATs)	Project has "low potential" for MSATs effects.	
Greenhouse Gases	No contribution at a cumulatively considerable level.	
Hazardous Materials		
Permanent Impacts: *Disturbing contaminated ground or waters can cause release of hazardous materials into the environment* *Right-of-way acquisition of contaminated properties can require expensive cleanup*	Potential impacts at four UST/LUST sites, three AST sites, one automotive site, two "Other" sites, one spill site, and one substation. Three groundwater monitoring wells will be relocated or protected in place.	• Sites in the immediate proximity of the alignment will be further investigated under a Phase II assessment before property acquisition to determine the magnitude and extent of contamination, if any. This will include a site visit, review of agency documents, and interviews with agency personnel. • Where appropriate, surface soil, subsurface soil, and/or groundwater samples will be collected and analyzed for probable contaminants of concern.
	Structures being acquired and removed within proposed right of way may contain asbestos, lead paint or other hazardous materials.	Hazardous materials associated with acquired structures: • Before construction, all buildings that have been or will be acquired for the project and proposed for demolition will be surveyed by a state-licensed inspector for asbestos and other sources of contamination. • A National Emissions Standards for Hazardous Air Pollutants Demolition/Renovation Notification form will be filed with MDEQ for all relocated or demolished structures. • If needed, asbestos removal would be performed in accordance with the OSHA requirements, Montana Department of Labor and Industry occupational safety and health requirements, and MDEQ rules and permit requirements for demolitions / renovations.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Construction: *Due to the urban nature of portions of the project, there is potential to encounter previously undiscovered hazardous materials, substances and/or solid waste and contaminated groundwater*	Previously undiscovered hazardous materials, substances and/or solid waste and contaminated groundwater may be discovered during construction.	• Contaminated soils, groundwater, hazardous substances, and USTs encountered during construction will be handled by Sections 107.23 and 107.24 of MDT Standard Specifications for Road and Bridge Construction.
Water Resources and Water Quality		
Permanent Impacts: *Impervious surface causes runoff which can increase delivery of pollutants to waterways and thus decrease water quality*	55.6 acres additional impervious surface compared to existing conditions.	Design bridges and culverts to minimize impacts to rivers, floodplain, hydraulics, river riffle/pool complexes, and channel migration zone, as practical. If practicable, direct drainage of bridge deck runoff will be eliminated. In accordance with MDT Standard Specifications 107 and 208, the contractor will be required to adhere to applicable water quality rules, regulations, and permit conditions.
Temporary impacts: *Construction activities will expose new areas to wind and water erosion and bridge and culvert work will disturb waterways*	Potential increases in runoff during construction activities and prior to restoration of disturbed areas.	In accordance with MDT Standard Specifications 107 and 208, the contractor will be required to adhere to applicable water quality rules, regulations, and permit conditions. The design will be prepared in accordance with the existing municipal storm sewer system (MS4) permit requirements including inclusion of low impact development practices as practicable. Erosion and sediment control(s) will be required as necessary to minimize damage to the highway and adjacent properties and abate pollution of surface and ground water resources. Routine site monitoring will be conducted as necessary to ensure all pollution control measures are installed, maintained, and functioning correctly.
Wild and Scenic Rivers		
Wild and Scenic Rivers *The Yellowstone River and its tributaries are not designated as National Wild and Scenic Rivers*	No impacts.	No mitigation required.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Water Body Modifications		
Water Body Modifications: Permanent Impacts *Project requires new crossings of Yellowstone River and Five Mile Creek, and several irrigation facilities*	Placement of bridges in/over the Yellowstone River will directly impact hydrology and channels of the Yellowstone River. New bridge over Five Mile Creek will span the bed and bank of the waterway. Replacement, relocation, and/or construction of irrigation and drainage ditches throughout the project corridors.	New structures will be designed to minimize disturbance to stream hydrology and banks and to minimize channel alterations. All stream crossings will be designed in accordance with 23 CFR 650 Subpart A and in coordination with the appropriate regulatory agencies Modifications to irrigation facilities will be designed and constructed in coordination with the irrigation owners/operators. (See Irrigation section, above, for more information.)
Water Body Modifications: Construction Impacts *For the Yellowstone River crossing, construction impacts will occur during both the construction of the Phase 1 improvements and again during construction of the Full Buildout* *For the Five Mile Creek crossing, all construction impacts will occur during Phase 1*	Impacts to water quality due to construction activities.	All work will be performed in accordance with state and federal guidelines regarding water quality and permit conditions. These include the applicable regulations under the Federal Clean Water Act of 1972, as amended (i.e., Section 404 Permit), Section 10 of the Rivers and Harbors Act, and specific permit requirements from the Montana Stream Protection Act (SPA) 124 authorization; Montana Floodplain and Floodway Management Act, Section 402/MPDES permit; MS4 permit, and utilization of the current BMPs. To re-establish permanent vegetation and to reduce the spread and establishment of noxious weeds, disturbed areas within MDT right-of-way and easements will be seeded with desirable plant species, as soon as practicable, as recommended and determined feasible by the MDT Botanist.
Floodplains		
Yellowstone River *Project will require new structure crossing the Yellowstone River (second structure to be built during Full Buildout)*	Less than a 0.5-foot rise in the base flood elevation.	The crossing of the Yellowstone River will require a substantial amount of fill and some removal of fill from within the floodplain to achieve the backwater requirements of no rise above 0.5 feet in base flood elevation. The proposed project will be designed in compliance with Executive Order (E.O.) 11988, Floodplain Management. State of Montana drainage design standards will be applied to achieve results that will not increase or significantly change the flood elevations and/or limits. Mitigation will be in accordance with permitting requirements of Yellowstone County.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Five Mile Creek *Project will construct new bridge across Five Mile Creek; bridge will be constructed to accommodate the future Full Buildout*	Less than a 0.5-foot rise in the base flood elevation.	No mitigation required.
Culverts *Project will require multiple new culverts; culverts will be constructed to accommodate the future Full Buildout*	No roadway overtopping for the 50-year design flood. No backwater damage to adjacent property.	No mitigation required.
Wetlands		
Wetlands Impacted *Wetland areas will be impacted during construction of the roadways, bridges, culverts, and landscaping due to the placement of fill in the form of soil, riprap, concrete, various sizes of rock, and other construction materials. The area of loss was minimized to the extent practicable during preliminary design*	Estimated total wetland impacts of 4.36 acres.	Impacts to wetlands will be avoided and minimized to the maximum extent practicable. For unavoidable wetland impacts, mitigation will be provided in accordance with Executive Order #11990 and the US Army Corps of Engineers Clean Water Act permit requirements. Appropriate monitoring will be conducted to ensure that any wetland mitigation site functions as intended.
U.S. Army Corps of Engineers Jurisdictional Wetlands Impacted	Of the 4.36 acres of wetlands impacted, an estimated 3.36 acres have preliminarily been deemed jurisdictional under Section 404 of the Clean Water Act.	Same as above for wetlands impacted.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Vegetation		
Riparian Impacts *The project will cross multiple riparian areas*	6.0 acres	To re-establish permanent vegetation and to reduce the spread and establishment of noxious weeds, disturbed areas within MDT right-of-way and easements will be seeded with desirable plant species, as soon as practicable, as recommended and determined feasible by the MDT Botanist. Post-construction, the site will be monitored until final stabilization is met. In accordance with Standard Specification 201, clearing and grubbing activities will occur only within staked construction limits. To control the spread of noxious weeds, the contractor will be required to wash all equipment prior to transport into the project area as specified in the Supplemental Specifications.
Cliff Impacts *Cliff areas are part of the native vegetation*	0.1 acre	Same as Riparian Impacts.
Pond Impacts *Project avoids pond areas*	0 acre	No mitigation required.
Sage Steppe Impacts *Project avoids sage steppe areas*	0 acre	No mitigation required.
Wildlife and Aquatic Species		
Wildlife Species Impacts	Loss of habitat due to construction and increased habitat fragmentation (barrier effect).	Compliance with Section 208 of MDT's *Standard Specifications, Water Pollution Control and Stream Preservation* (MDT 2006), and adherence to resource agency conditions. MDT will continue to evaluate the appropriateness and necessity of additional wildlife crossings measures near the Yellowstone River, Five Mile Creek, or other locations. In accordance with the Migratory Bird Treaty Act (MBTA) of 1918 and the Bald and Golden Eagle Protection Act of 1940, impact to known breeding locations such as avian nests or burrows will be avoided or minimized as required. In conformance to the MBTA, seasonal restrictions or deterrent methods are used to ensure that active nests are not harmed during the breeding season.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Aquatic Species Impacts	Direct mortality and loss of habitat at ground-disturbed or pier locations. Minor impact to aquatic habitat associated with canals and ditches.	Mitigation for substantive negative impacts to aquatic species is anticipated during final design of the bridge crossing and culverts for this project and the implementation of standard specifications and BMPs. Bridge crossings are planned for the fish-bearing streams. Avoidance and minimization of impacts to aquatic species is anticipated through measures including the following: • Design bridges to optimize the shape, size, number, and placement of pier locations in a manner that will maintain uninterrupted fish passage. • Schedule in-water work for bridge construction during low water levels to minimize construction during spawning periods. • Adhere to Section 208 of MDT's Standard Specifications for Road and Bridge Construction (2006). • Adhere to special conditions set forth by the resource agencies.
State Species of Concern		
Grasshopper Sparrow	None.	No mitigation required, however MBTA requirements will apply (see below).
Pinyon Jay	None.	
Brewer's Sparrow	None.	
Greater Short Horned Lizard	None.	
Loggerhead Shrike	None.	
Common Sagebrush Lizard	Direct mortality may occur due to inability to disperse during construction.	Compliance with Section 208 of MDT's Standard Specifications and adherence to resource agency conditions. Implementation of the "Recommended Conservation Measures" for general wildlife species Complying with the conditions of the resource agencies will avoid or minimize impacts to species of concern.
Milksnake	Direct mortality may occur due to inability to disperse during construction.	
Western Hog-nosed Snake	Direct mortality may occur due to inability to disperse during construction.	
Spiny Softshell	Negligible direct impacts.	
Snapping Turtle	Negligible direct impacts.	
Sauger	Potential for disruption of spawning locations.	Complying with the conditions of the resource agencies will avoid or minimize impacts to species of concern. The *Fish and Wildlife Recommendations for Subdivisions* address state species of concern.
Yellowstone Cutthroat Trout	Negligible direct impacts.	

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Black-billed Cuckoo	May experience direct mortality in nesting locations within riparian areas, wetlands, or ditches that are affected by construction activities.	Compliance with Section 208 of MDT's Standard Specifications and adherence to resource agency conditions. Implementation of the "Recommended Conservation Measures" particularly in regard to the MBTA will avoid the majority of breeding schedules. Complying with the conditions of the resource agencies will avoid or minimize impacts to species of concern.
Veery	May experience direct mortality in nesting locations within the riparian areas, wetlands, or ditches that are affected by construction activities.	
Hoary Bat	May experience direct mortality in rearing locations within the riparian areas, wetlands, or ditches that are affected by construction activities.	
Eagle	Long-term: Potential increases in wildlife/vehicle collisions could attract scavenging eagles and put them at risk.	MDT will continue to evaluate the appropriateness and necessity of wildlife crossings locations and other measures to minimize the potential increase of available carrion for bald eagles.
	Construction: May experience temporary disturbance during construction if roosting area and/or nests are found within 0.5 mile of project limits.	Implementation of the "Recommended Conservation Measures" particularly in regard to the MBTA and the Bald and Golden Eagle Protection Act, will avoid the majority of breeding schedules, if necessary. Complying with the conditions of the resource agencies will avoid or minimize impacts to species of concern, in particular, *The Montana Bald Eagle Guidelines Addendum, 2010* addresses the bald eagle buffers, seasonal construction restrictions, and habitat conservation. The location of the eagle nests and communal roosting sites will be verified by a preconstruction survey or through coordination with resource agencies or organizations. Coordination with the USFWS and MTFWP is required if blasting is to occur within ½ mile of nests or roosts.
Great Blue Heron	No anticipated impacts to documented Rookeries in the project area.	No mitigation required.
Small burrowing animals, hibernating reptiles, and amphibians	May experience direct mortality in the riparian areas, wetlands, or ditches that are affected by construction activities.	Compliance with Section 208 of MDT's Standard Specifications and adherence to resource agency conditions. Implementation of the "Recommended Conservation Measures" for general wildlife species.

RESOURCE	MARY STREET OPTION 2 PHASE 1 IMPACTS	PHASE 1 MINIMIZATION MEASURES AND MITIGATION
Threatened and Endangered Species		
Whooping crane	Not likely to adversely affect	No conservation measures are likely to be necessary with respect to threatened and endangered species. However, MBTA requirements will apply to all migratory bird species. If whooping crane rookeries are identified or birds are observed in or adjacent to the study area during construction, work would be halted and MDT would contact the USFWS. Migration peaks for whooping crane are in April and October. Sprague's pipit is also protected by the MBTA requirements. Sage-grouse and Sprague's pipit are candidate species under the Endangered Species Act (ESA) and currently receive no statutory protection under the ESA. If these species become listed in the future then they would be subject to conservation measures identified in the ESA, and consultation as appropriate.
Black-footed ferret	No Effect	
Greater sage-grouse	Not likely to jeopardize continued existence	
Sprague's pipit	Not likely to jeopardize continued existence	

6 APPROVALS/DOCUMENTATION WITH STATE AND FEDERAL REQUIREMENTS

6.1 ENVIRONMENTALLY PREFERABLE ALTERNATIVE

As required by 40 CFR Section 1505.2(b), in cases where an EIS has been prepared, the ROD must identify all alternatives that were considered, ". . . specifying the alternative or alternatives which were considered to be environmentally preferable." Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; but it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

The first step in selecting a preferred alternative was to compare the performance of each alternative for the purpose and need. Results of the FEIS analysis demonstrate that the Mary Street alternatives perform better than the Five Mile Road Alternative.

After consideration of performance compared to the purpose and need, the next analysis was to consider environmental impacts associated with each of the alternatives, and consider which was preferable. The focus of the comparisons among environmental impacts was between the Mary Street Option 1 and Mary Street Option 2 alternatives, because those alternatives better met the purpose and need of the project than the Five Mile Road Alternative. Of the Mary Street Alternatives, Mary Street Option 2 had lower impacts to wetlands (total and jurisdictional), riparian areas, land used for highway ROW, and fewer anticipated residential displacements than Mary Street Option 1.

As discussed in Chapter 4, there is no discernible difference among all three build alternatives regarding impacts to air quality; hazardous materials; wild and scenic rivers; floodplains; vegetation; and wildlife (including threatened and endangered species); land use (including local plans, social conditions, and environmental justice); ROW and utilities; cultural resources; visual resources and noise; farmlands; irrigation; and energy.

Based on a consideration of the range of impacts and benefits associated with the build alternatives, the Mary Street Option 2 Alternative will provide the best, most cost-effective long-term solution to meet the project's purpose and need while minimizing impacts to the environment and surrounding community. Chapter 4 of the FEIS includes detailed descriptions of potential impacts associated with the No Build Alternative and the build alternatives.

6.2 LEAST ENVIRONMENTALLY DAMAGING PRACTICABLE ALTERNATIVE

An assessment of the "Least Environmentally Damaging Practicable Alternative" required for Clean Water Act Section 404(b)(1) (and thus focused on wetland impacts) determined that Phase 1 of the Mary Street Option 2 Alternative shared the least environmentally damaging practicable alternative status with the Five Mile Road Alternative. For more information, see Appendix F of the FEIS, the Clean Water Act Section 404(b)(1) Evaluation.

6.3 ENDANGERED SPECIES ACT

FHWA consulted with the U.S. Fish and Wildlife Service (USFWS) as required by Section 7 of the Endangered Species Act. As documented in the FEIS, Section 4.4.11, a determination of effect was documented and submitted for USFWS review and concurrence.

In a letter dated July 26, 2012, the USFWS concurred with MDT's determination that the project is not likely to adversely affect the whooping crane and acknowledged MDT's no effect determination for the black-footed ferret. USFWS also acknowledged MDT's determination that the proposed action is not likely to jeopardize the existence of greater sage-grouse and Sprague's pipit (both currently candidate species). USFWS also noted that the letter indicated conclusion of informal consultation pursuant to regulations (50 CFR 402.13). The letter is included in Appendix B of the FEIS.

6.4 HISTORIC AND CULTURAL RESOURCES

FHWA consulted with the State Historic Preservation Officer on determinations of eligibility and effects. As documented in the FEIS, Section 4.3.6, No Adverse Effects to any eligible historic resources are anticipated, as summarized below:

- No Adverse Effect to Northern Pacific Railway Mainline (Site 24YL277) and Billings Bench Water Association Canal (Site 24YL0161).
- Billings and Central Montana Railroad (Site 24YL1592) is covered under the terms of MDT's Abandoned Historic Railroad Grade Programmatic Agreement.
- No Adverse Effect to the Billings Bench Water Association Canal.

The FEIS, Appendix D, provides documentation of the coordination with the State Historic Preservation Office according to Section 106 of the National Historic Preservation Act.

No prehistoric or historic districts, archeological resources, or tribal cultural properties were identified.

6.5 SECTION 4(f) DETERMINATION

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 was set forth in Title 49 United States Code (USC), Section 303. In 2008, the Section 4(f) Final Rule was moved to 23 CFR Part 774.

Section 4(f) states that the Secretary of the USDOT

> *shall not approve any transportation program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as so determined by such officials unless*
>
> > *(1) there is no feasible and prudent alternative to the use of such land, and*
> >
> > *(2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.*

Further, in 2005, Congress enacted the Safe, Accountable, Flexible & Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) and amended Section 4(f). The amendment authorizes the FHWA to approve a project that results in a *de minimis* impact to a Section 4(f) resource without the evaluation of avoidance alternatives typically required in a Section 4(f) evaluation. Section 6009 of SAFETEA-LU amended 23 USC 138, which now states:

> *[T]he Secretary shall not approve any program or project (other than any project for a park road or parkway under Section 204 of this title) which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use.*

With respect to the proposed Billings Bypass project, consultation and coordination has occurred with jurisdictions in which public parks and recreation areas are considered significant resources by Section 4(f) criteria. There is no wildlife or waterfowl refuge in the study area. Consultation also occurred with the Montana State Historic Preservation Office (SHPO) regarding cultural resources.

The City of Billings has jurisdiction for the park and recreational resources in the project's study area. MDT has coordinated with the City of Billings Parks and Recreation Department throughout the development of the Draft EIS and the FEIS. The potential *de minimis* findings, possible measures to minimize harm, and general mitigation strategies were discussed with the city before and after selection of the Preferred Alternative. In February 2014, the City of Billings concurred with the *de minimis* findings presented in the FEIS for two resources—the existing Kiwanis Trail and the planned Kiwanis Trail Extension. The letter indicating the concurrence of the City of Billings is included in Appendix B of the FEIS.

Through consultation with the Montana SHPO during the Section 106 of the National Historic Preservation Act process, it was determined that the Preferred Alternative will have no adverse effects to identified historical resources in the study area. The FEIS, Appendix D, provides documentation of the coordination with the State Historic Preservation Officer according to Section 106 of the National Historic Preservation Act.

Thus, FHWA made *de minimis* findings for the 4(f) resources in the project area. These are documented in the FEIS.

7 PERMITS AND APPROVALS

The permits listed below will be required for Phase 1 of the Preferred Alternative:

- Clean Water Act (CWA) Section 402/Montana Pollutant Discharge Elimination System (MPDES) authorization from MDEQ Permitting and Compliance Division. The MPDES permit requires a storm water pollution prevention plan (SWPPP) that includes a temporary erosion and sediment control plan. The erosion and sediment control plan identifies BMPs, as well as site-specific measures to minimize erosion and prevent eroded sediment from leaving the work zone. The construction contractor will be contractually obligated to prepare and comply with the SWPPP.

- Compliance with the existing municipal storm sewer system (MS4) permit. The design will be prepared in accordance with the permit requirements including inclusion of low impact development practices as practicable.

- CWA Section 404 permit from the U.S. Army Corps of Engineers (COE) for any activities that may result in the discharge or placement of dredged or fill materials in waters of the U.S., including wetlands. Permits for permanent facilities will be obtained during final design. The construction contractor will be contractually obligated to obtain permits for temporary facilities and construction practices.

- Federal Rivers and Harbors Act (Section 10 Permit) from the U.S. Army Corps of Engineers (COE) for any the construction of any structure in or over any federally listed navigable waters of the U.S.

- A Montana Department of Natural Resources and Conservation (MDNRC) land use license or easement application and the Application for Licensing Structures & Improvements on Navigable Water Bodies (Form DS 432) for the construction, placement, or modification of a structure or improvements in, over, below, or above a navigable stream.

- Montana Stream Protection Act (SPA 124) from the MFWP-Fisheries Division. The Montana SPA 124 is required for projects that may affect the bed or banks of any stream in Montana. SPA 124 authorization for permanent facilities will be obtained during final design. The construction contractor will be contractually obligated to obtain additional SPA 124 authorizations for temporary facilities and construction practices.

- Short-Term Water Quality Standard for Turbidity related to construction activity (318 Authorization) from the MDEQ-Water Quality Bureau for any activities that may cause unavoidable violations of state surface water quality standards for turbidity, total dissolved solids, or temperature. The construction contractor will be contractually obligated to obtain this authorization.

- Floodplain Development Permit from the Yellowstone County Floodplain Administrator.

8 COORDINATION PROCESS AND COMMENTS ON THE FINAL EIS

8.1 COORDINATION AND PUBLIC OUTREACH

A Notice of Availability (NOA) of the FEIS was published in the Federal Register on March 28, 2014. A news release announcing the availability of the FEIS was submitted to area newspaper, television, and radio news outlets. Almost 1,500 postcards were mailed to interested parties on the project mailing list on March 26, 2014. In addition, this information was made available on the project and MDT websites (www.billingsbypass.com and www.mdt.gov/pubinvolve/eis-ea.html). *(Please note, the project website has been moved to http://www.mdt.mt.gov/pubinvolve/billingsbypass.)*

Three display ads were purchased in the Billings Gazette; the first was placed March 28 and announced the release of the FEIS; the second and third ads were placed March 30 and April 6 respectively to announce the public open house. News releases were also submitted to Billings area media outlets on March 28, with the placement and announcement of the news release at the discretion of each individual media outlet.

The FEIS was available for a 30-day public review period beginning March 28, 2014 and ending April 28, 2014. The FEIS was distributed for review to the federal, state, and local agencies listed in the FEIS in Chapter 8, Distribution List, and to members of the public at their request. The FEIS was made available for review at the following locations:

Montana Department of Transportation Billings District Office 424 Morey Street Billings, MT 59101	**Montana State University Billings Library** 1500 University Drive Billings, MT 59101
City-County Planning Department 2825 3rd Avenue North, 4th Floor Billings, MT 59101	**Yellowstone County Commissioners Office** (County Courthouse) 217 North 27th Street, Room 403 Billings, MT 59101
Montana Department of Transportation Environmental Services Bureau 2960 Prospect Avenue Helena, MT 59601	**Lockwood Water & Sewer District** 1644 Old Hardin Road Lockwood, MT 59101

MDT and FHWA held an informational public open house in Billings on April 9, 2014. That meeting provided the public an opportunity to learn more about the project, ask questions of project staff, and share their comments and concerns. One hundred fifteen people signed in for that meeting.

See Appendix B for public outreach and coordination materials: the postcard mailed announcing publication of the FEIS, copies of display ads advertising the release of the FEIS and the public meeting, and sign-in sheets from the open house.

8.2 COMMENTS RECEIVED

Thirty-one written comments were received from the public and state and federal agencies during the 30-day review period. Appendix C of this ROD contains copies of the comments received and the associated responses.

9 DECISION

Based on the information provided in the Billings Bypass Final EIS (March 2014), which has been incorporated by reference into this ROD, and information contained in this ROD, MDT and FHWA conclude that selecting Phase 1 of the Preferred Alternative, as described in this document, for the Billings Bypass Project is in the best overall public interest, uses all practicable means to restore and enhance the quality of the human environment, and avoids or minimizes any possible adverse effects.

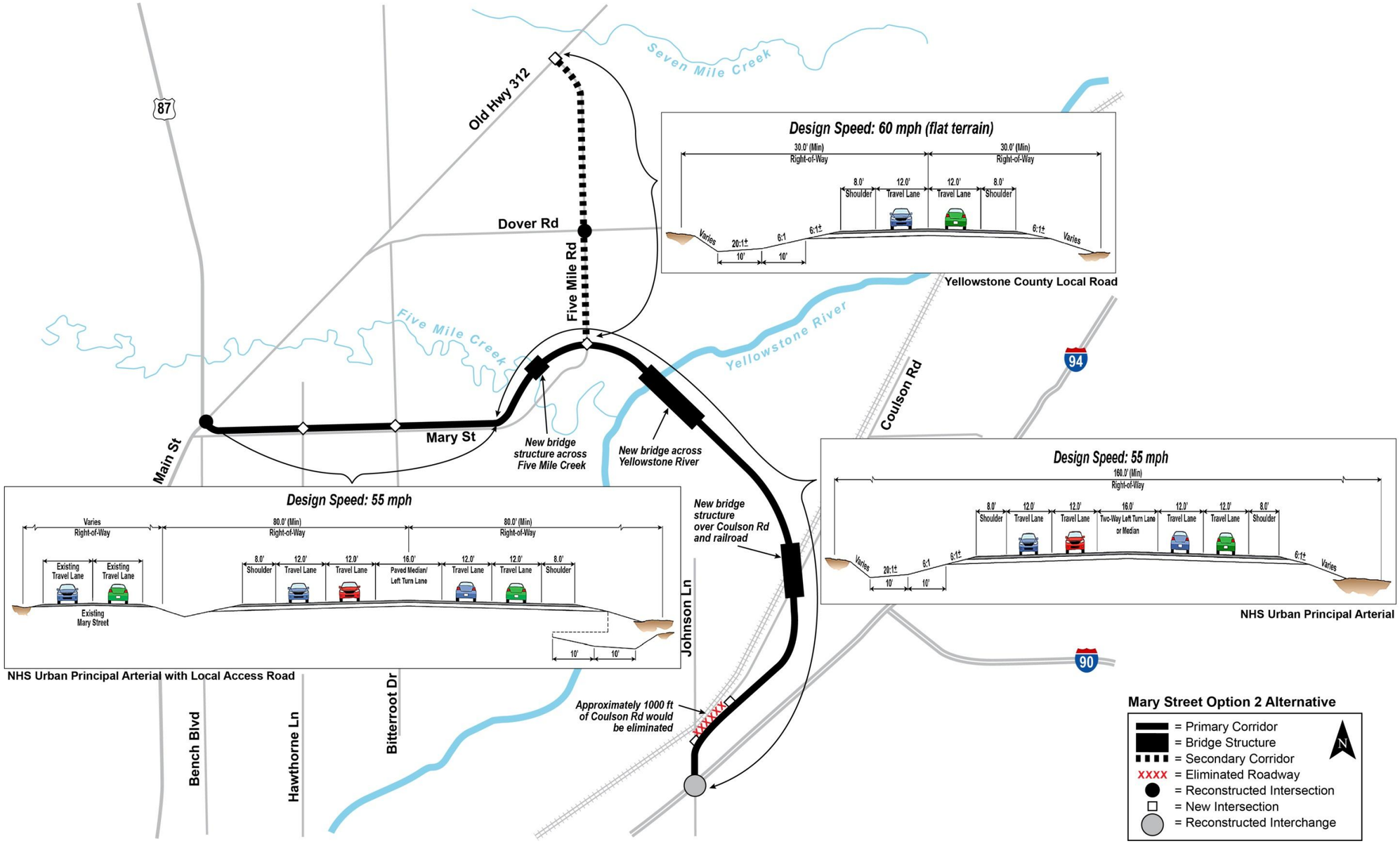
Intentional Blank Page.

APPENDIX A

PREFERRED ALTERNATIVE MAP AND PHASE 1 DESIGN SIMULATIONS

Intentional Blank Page.

Figure A.1. Preferred Alternative – Mary Street Option 2



Intentional Blank Page.

Figure A.2. Phase 1 Design Simulation, Looking Northeast Near Johnson lane Interchange

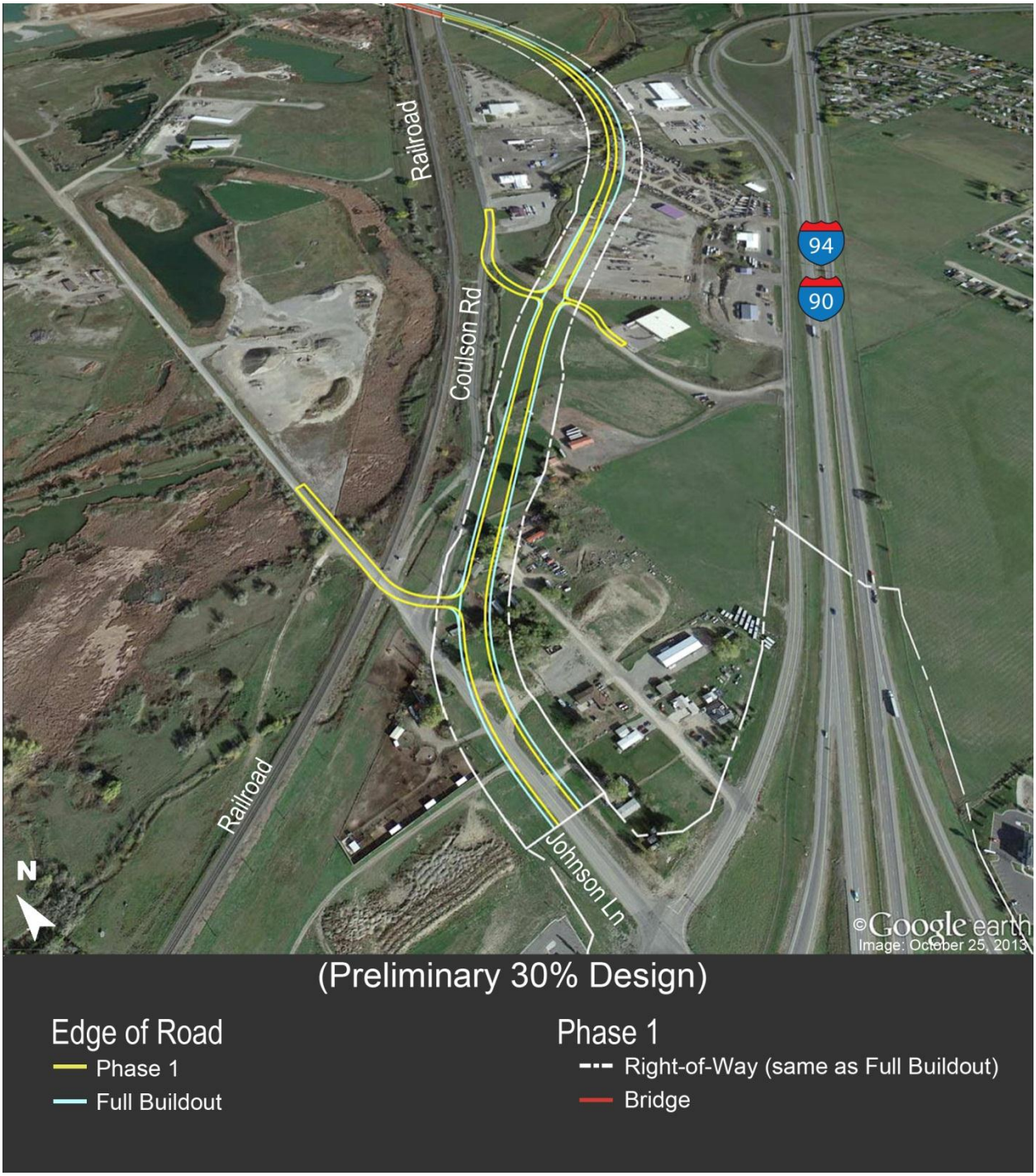


Figure A.3. Phase 1 Design Simulation, South of Yellowstone River Looking Northwest

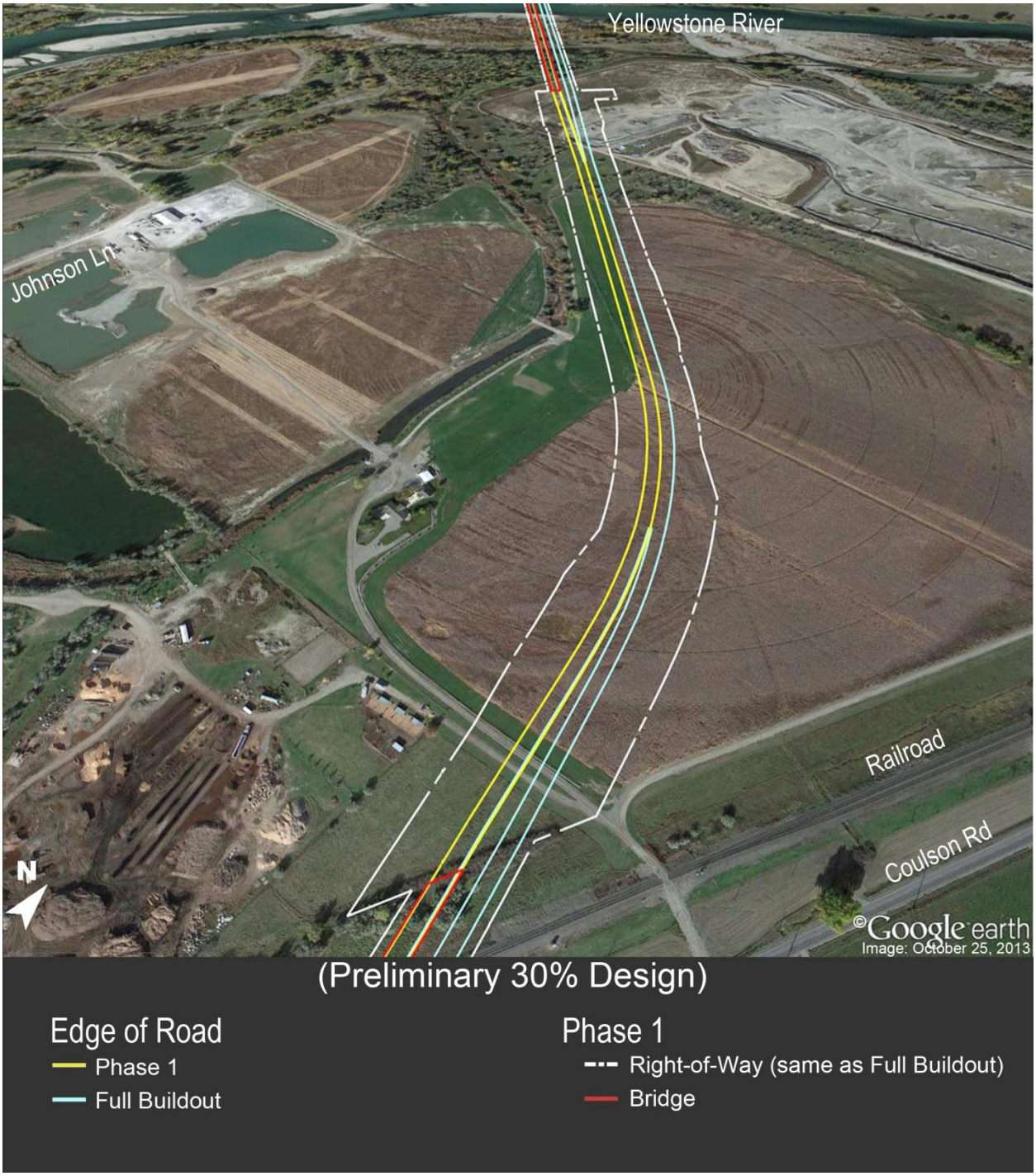


Figure A.4. Phase 1 Design Simulation, Bridge Over Yellowstone River Looking Northwest

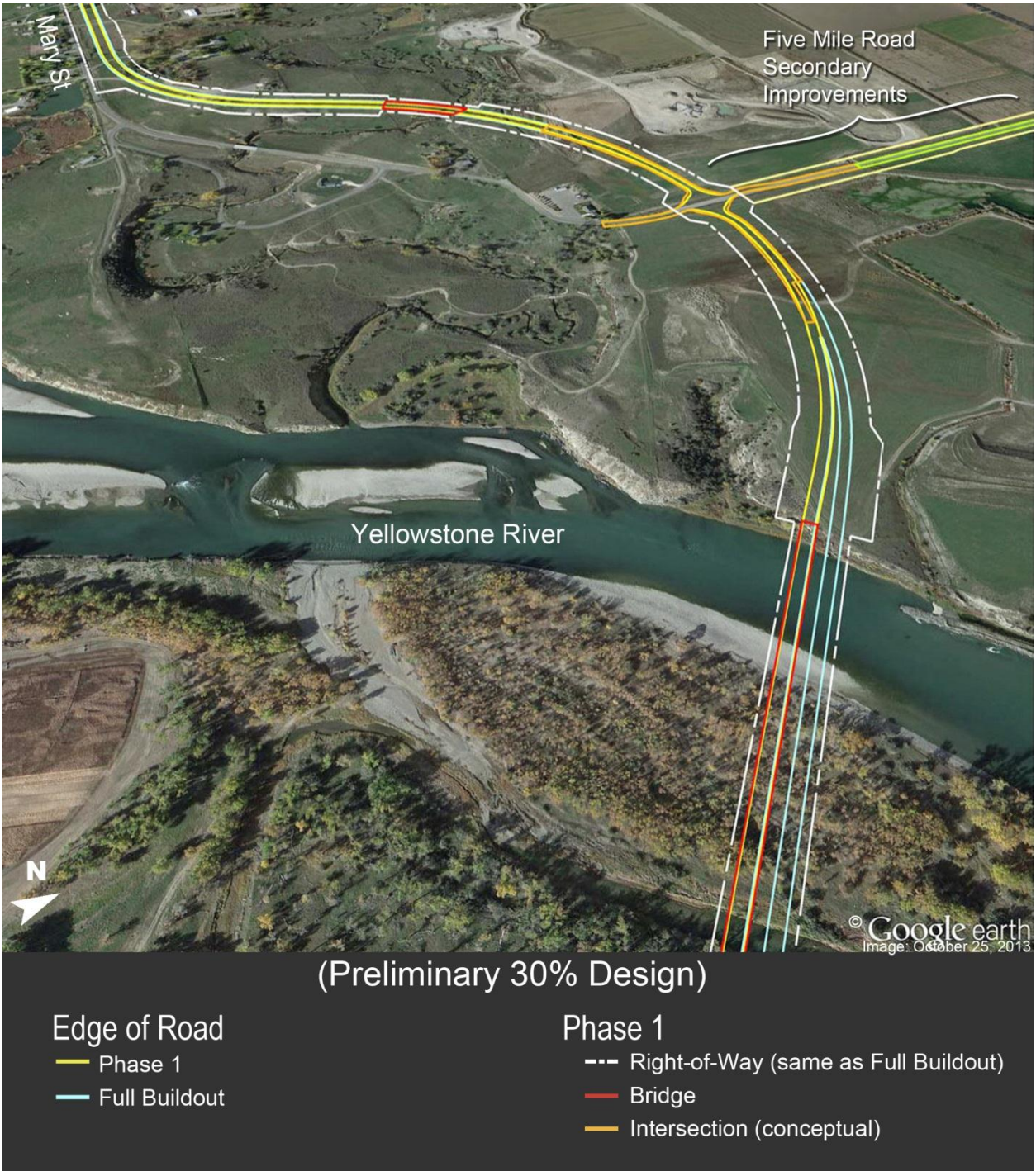


Figure A.5. Phase 1 Design Simulation, Crossing Yellowstone River Looking South

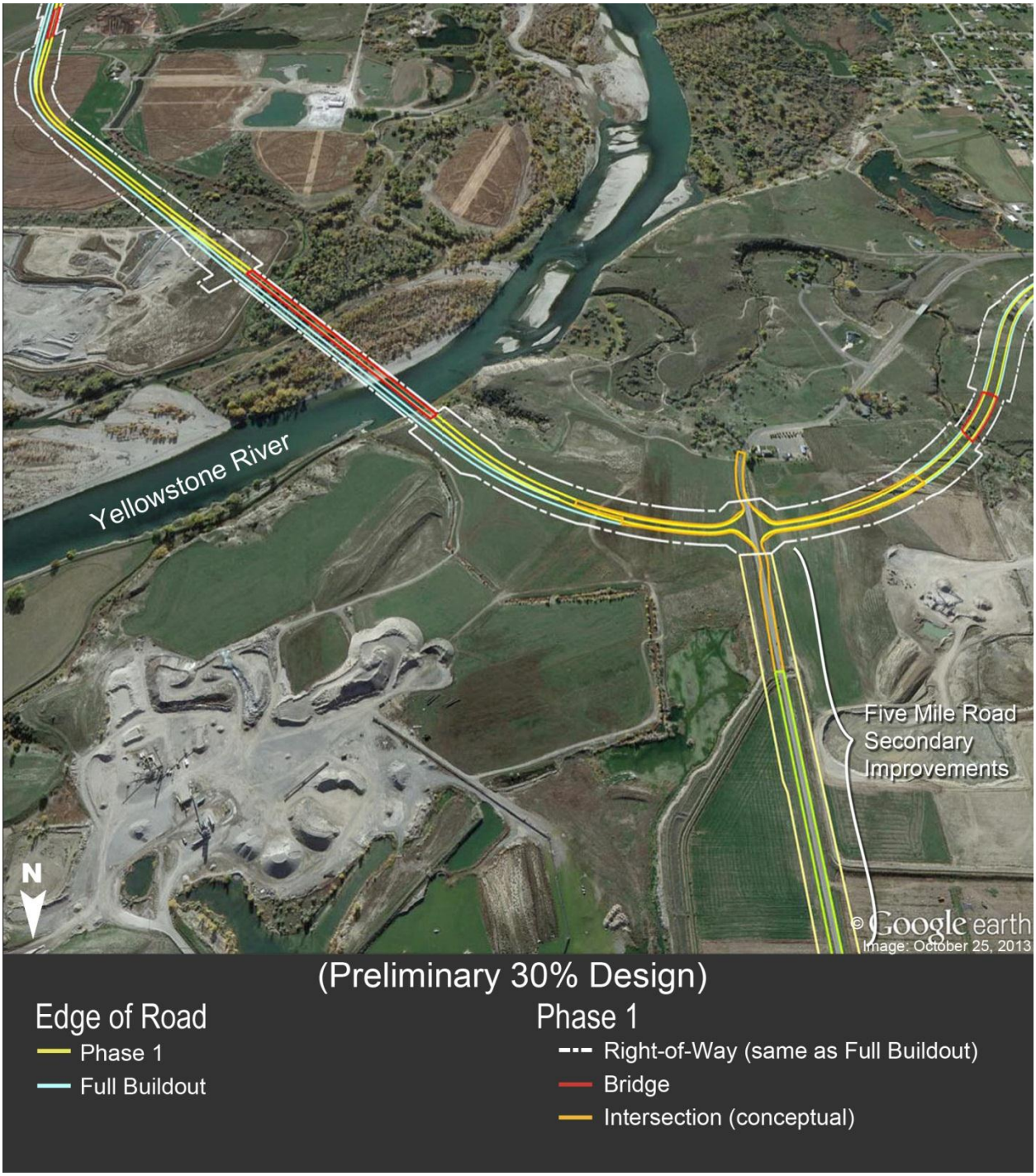


Figure A.6. Phase 1 Design Simulation, Looking Northeast at Mary Street/Five Mile Road Convergence

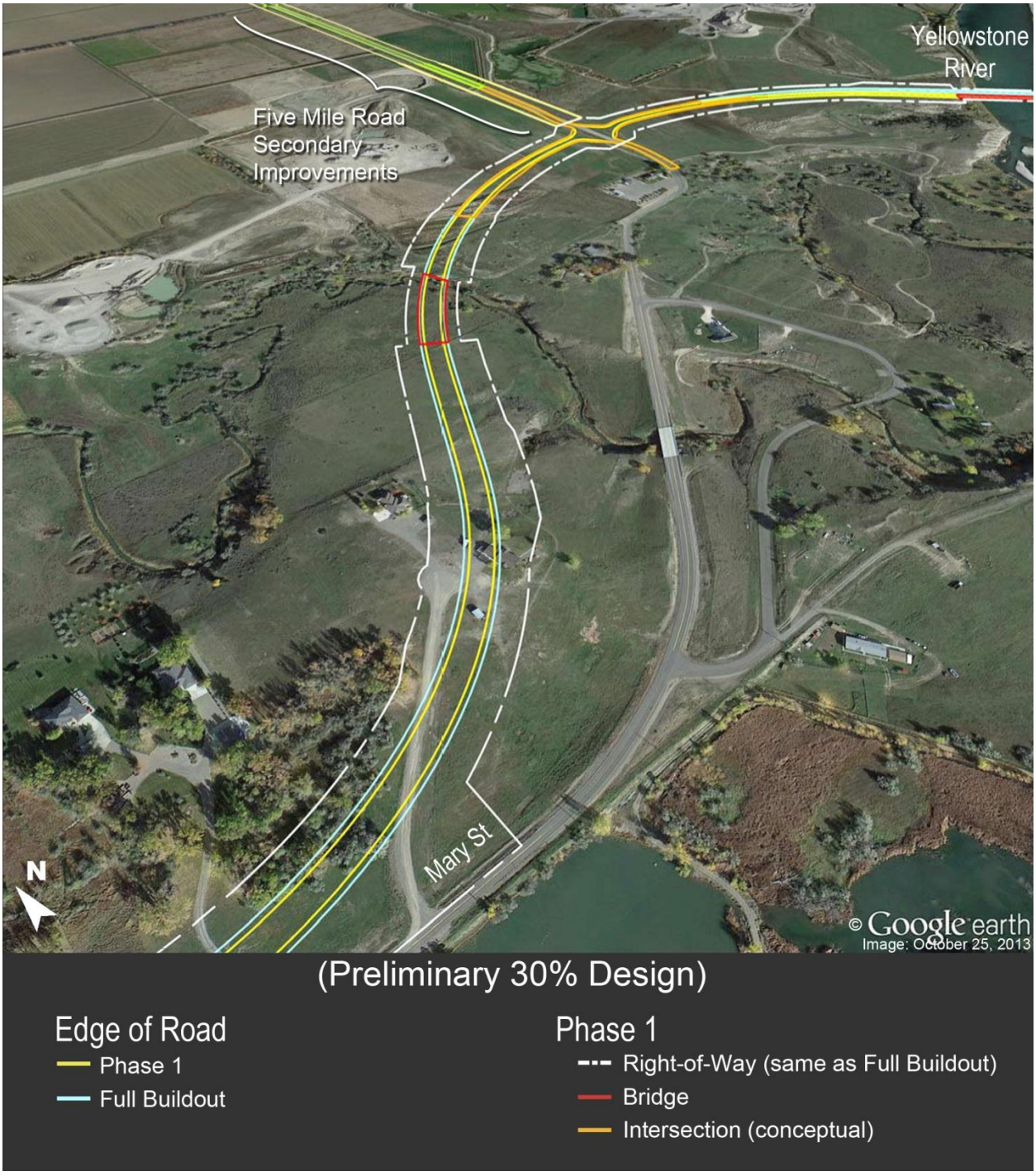


Figure A.7. Phase 1 Design Simulation, Looking West Near Flaming Creek Drive

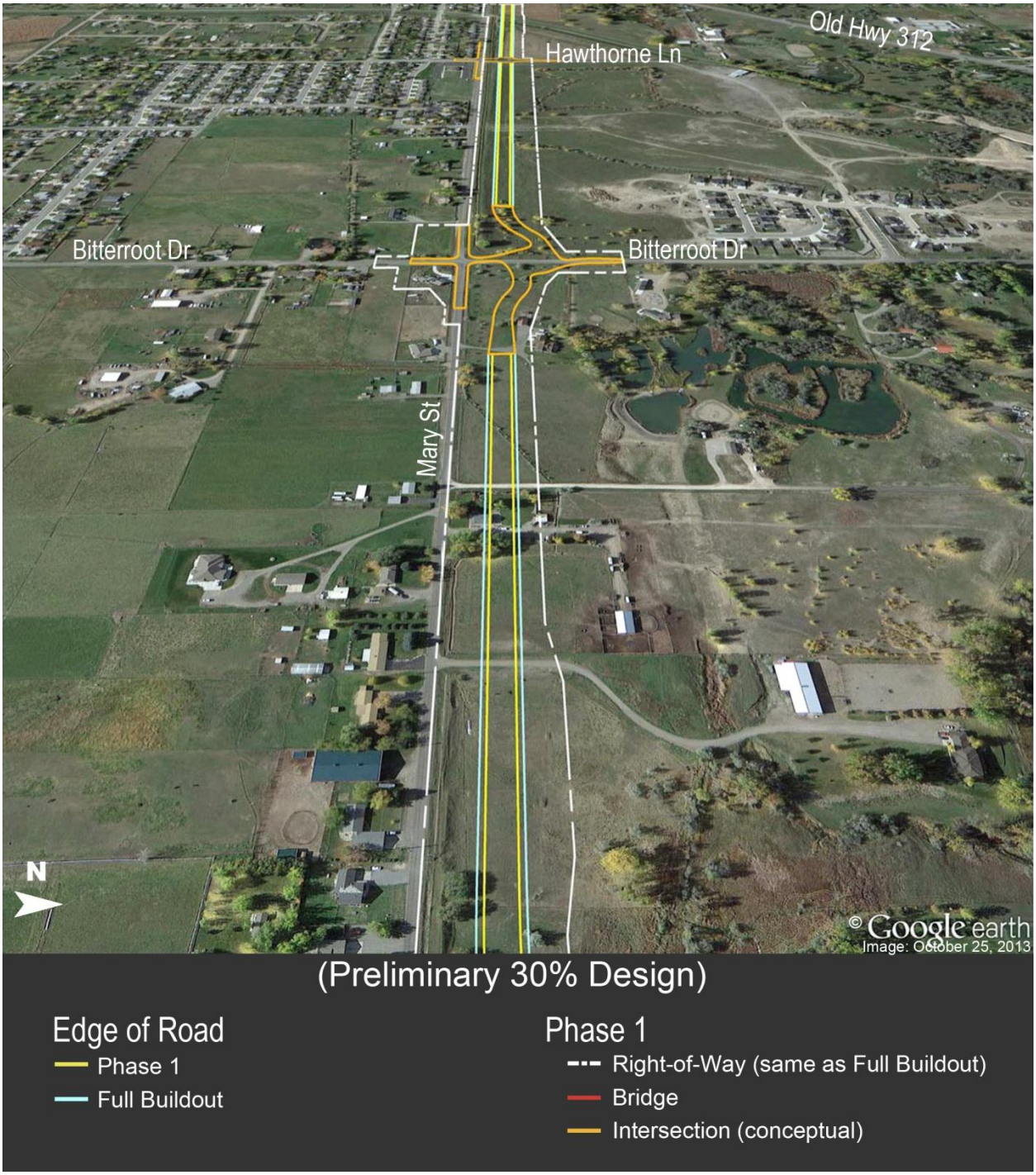
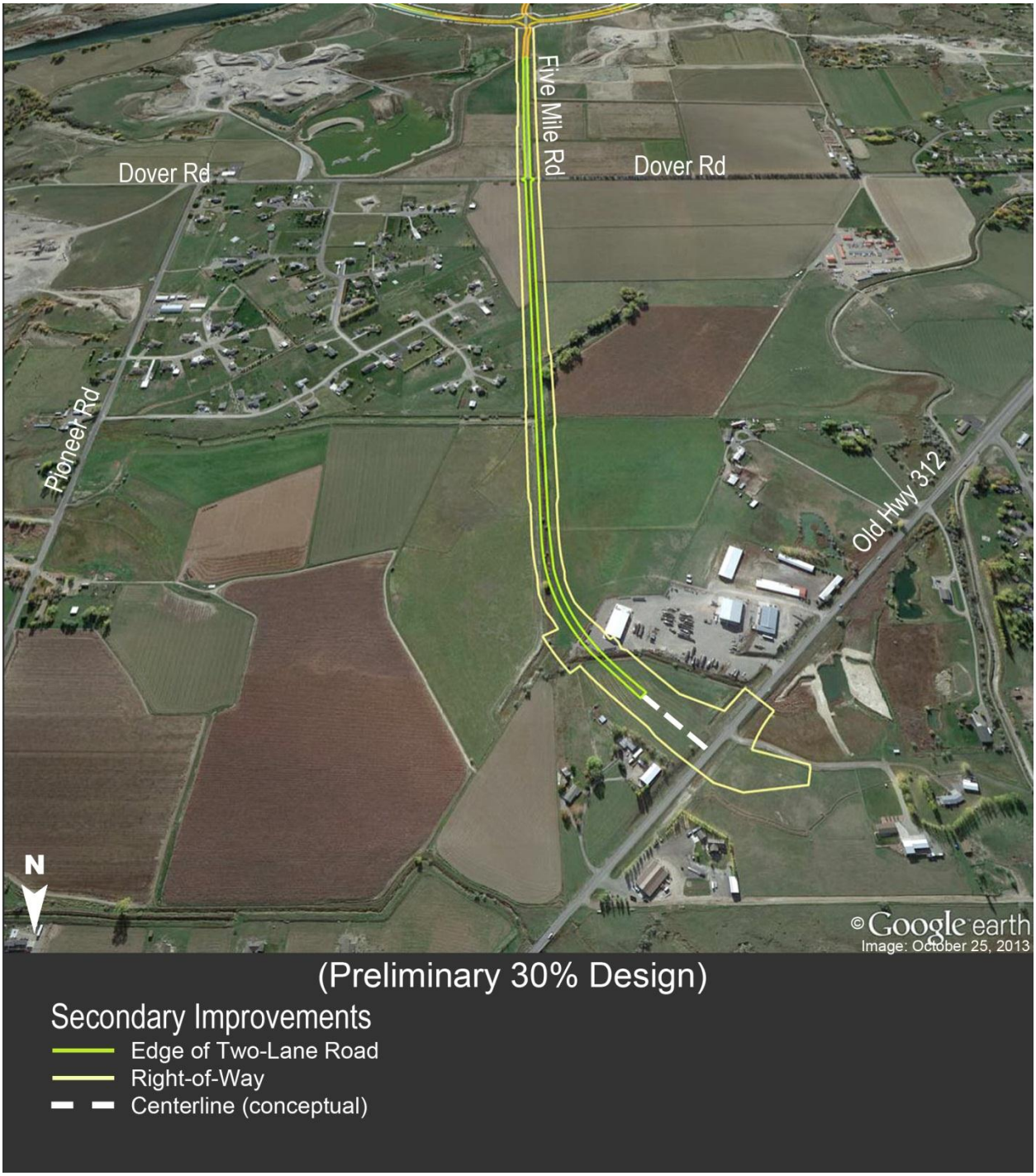


Figure A.8. Phase 1 Design Simulation, Mary Street Looking East from US 87 and Main Street

Figure A.9. Phase 1 Design Simulation, Five Mile Road Looking South Near Old Hwy 312



APPENDIX B

PUBLIC OUTREACH MATERIALS

Intentional Blank Page.

NOTICE OF AVAILABILITY

Billings Bypass - Final Environmental Impact Statement

The Final Environmental Impact Statement (FEIS) is now available for public review. The Billings Bypass FEIS examines alternatives to construct a new principal arterial connecting Interstate 90 (I-90) east of Billings with Old Highway 312 (Old Hwy 312). The purpose of the proposed project is to improve access and connectivity between I-90 and Old Hwy 312 and to improve mobility in the eastern area of Billings.

The FEIS is available for Review at:

- Montana Department of Transportation (MDT), 424 Morey Street, Billings, MT
- Montana State University Billings Library, 1500 University Drive, Billings, MT
- City-County Planning Department, 2825 3rd Avenue North, 4th Floor, Billings, MT
- Yellowstone County Commissioners Office (County Courthouse), 217 N. 27th Street, Room 403, Billings, MT
- Lockwood Water & Sewer District, 1644 Old Hardin Rd., Lockwood, MT
- MDT Environmental Services Office - 2960 Prospect Ave., Helena, MT
- Online at: http://www.mdt.mt.gov/pubinvolve/eis-ea.shtml
- Call MDT Environmental Services at (406) 444-7228 or (406) 444-9437

Written Comments:

- Submit written comments to Tom Martin, MDT, Environmental Services Bureau Chief, PO Box 201001, 2960 Prospect Ave., Helena, MT 59620-1001, or
- Online at: http://www.mdt.mt.gov/mdt/env-commentform.shtml

For More Information:

- Tom Martin, MDT, Environmental Services Bureau Chief, (406) 444-7228
- Stefan Streeter, MDT, Billings District Administrator, (406) 252-4138

MDT attempts to provide accommodations for any known disability that may interfere with a person's participation in any service, program or activity of our department. If you require reasonable accommodations to participate in this open house, please call Mary Guse, David Evans & Associates, Inc. at (720) 225-4608 at least two days before the open house. For the hearing impaired, the TTY number is (406) 444-7696 or 1-800-335-7592, or call Montana Relay at 711. Alternative accessible formats of this information will be provided upon request.

OPEN HOUSE

There will not be a formal presentation at the open house

Wednesday, April 9, 2014 6:00 PM - 8:00 PM

Bitterroot Elementary School Gymnasium

1801 Bench Blvd., Billings, MT

OPEN HOUSE

Billings Bypass - Final Environmental Impact Statement

The Final Environmental Impact Statement (FEIS) is now available for public review. The Montana Department of Transportation (MDT) and Federal Highway Administration (FHWA) will host an informal open house to update the public about the FEIS and the next steps in the process on Wednesday, April 9, 2014 from 6:00 PM- 8:00PM at the Bitterroot Elementary School Gymnasium, 1801 Bench Blvd., Billings, MT. There will not be a formal presentation at the open house.

The Billings Bypass FEIS examines alternatives to construct a new principal arterial connecting Interstate 90 (I-90) east of Billings with Old Highway 312 (Old Hwy 312). The purpose of the proposed project is to improve access and connectivity between I-90 and Old Hwy 312 and to improve mobility in the eastern area of Billings.

The FEIS is available for Review at:

- Montana Department of Transportation (MDT), 424 Morey Street, Billings, MT
- Montana State University Billings Library, 1500 University Drive, Billings, MT
- City-County Planning Department, 2825 3rd Avenue North, 4th Floor, Billings, MT
- Yellowstone County Commissioners Office (County Courthouse), 217 N. 27th Street, Room 403, Billings, MT
- Lockwood Water & Sewer District, 1644 Old Hardin Rd., Lockwood, MT
- MDT Environmental Services Office - 2960 Prospect Ave., Helena, MT
- Online at: http://www.mdt.mt.gov/pubinvolve/eis-ea.shtml
- Call MDT Environmental Services at (406) 444-7228 or (406) 444-9437

Written Comments:

- Submit written comments to Tom Martin, MDT, Environmental Services Bureau Chief, PO Box 201001, 2960 Prospect Ave., Helena, MT 59620-1001, or
- Online at: http://www.mdt.mt.gov/mdt/env-commentform.shtml

For More Information:

- Tom Martin, MDT, Environmental Services Bureau Chief, (406) 444-7228
- Stefan Streeter, MDT, Billings District Administrator, (406) 252-4138

MDT attempts to provide accommodations for any known disability that may interfere with a person's participation in any service, program or activity of our department. If you require reasonable accommodations to participate in this open house, please call Mary Guse, David Evans & Associates, Inc. at (720) 225-4608 at least two days before the open house. For the hearing impaired, the TTY number is (406) 444-7696 or 1-800-335-7592, or call Montana Relay at 711. Alternative accessible formats of this information will be provided upon request.

OPEN HOUSE

There will not be a formal presentation at the open house

Wednesday, April 9, 2014 6:00 PM - 8:00 PM

Bitterroot Elementary School Gymnasium

1801 Bench Blvd., Billings, MT

BILLINGS BYPASS EIS
NCPD 56/55/CN 4199

Billings Bypass Open House

Wednesday, April 09, 2014 6:00PM - 8:00PM

Bitterroot Elementary School Gymnasium

1801 Bench Blvd Billings, MT

MDT and FHWA will host an informal open house to update the public about the FEIS and next steps. Information will be available on the public involvement process, the alternatives considered, the Preferred Alternative, phased implementation of the Preferred Alternative, changes in the Final EIS, and the next steps for the project. There will not be a formal presentation at the open house, but staff will be available to answer questions.

MDT attempts to provide accommodations for any known disability that may interfere with a person's participation in any service, program or activity of our department. If you require reasonable accommodations to participate in this meeting, please contact Mary Guse of David Evans and Associates, Inc. at (720) 225-4608 or mrg@deainc.com at least two days before the open house. For the hearing impaired, the TTY number is (406) 444-7696 or 1 (800) 335-7592, or call Montana Relay at 711. Alternative accessible formats of pertinent information will be provided upon request.

1550 copies of this publication were produced at an approximate cost of $1.07 each for a total cost of $1,662. Alternative accessible formats of pertinent information will be provided on request. For further information, contact Mary Guse at (720) 225-4608 or mrg@deainc.com.

MONTANA DEPARTMENT OF TRANSPORTATION

Tom Martin, P.E.
Environmental Services Bureau Chief
Montana Department of Transportation
Environmental Services
2701 Prospect Avenue
PO Box 201001
Helena, MT 59620-1001

BILLINGS BYPASS EIS
NCPD 56/55/CN 4199

Billings Bypass
Final Environmental Impact Statement

The Final Environmental Impact Statement (FEIS) is now available for public review. The Billings Bypass FEIS examines alternatives to construct a new principal arterial connecting Interstate 90 (I-90) east of Billings with Old Highway 312 (Old Hwy 312). The purpose of the proposed project is to improve access and connectivity between I-90 and Old Hwy 312 and to improve mobility in the eastern area of Billings.

The Billings Bypass FEIS is available for review beginning Friday, March 28, 2014 at the following locations:

- Online at: http://www.mdt.mt.gov/pubinvolve/eis-ea.shtml

or

- MDT Billings District Office, 424 Morey Street, Billings, MT
- Montana State University Billings Library, 1500 University Drive, Billings, MT
- City-County Planning Department, 2825 3rd Avenue North, 4th Floor, Billings, MT
- Yellowstone County Commissioners Office (County Courthouse), 217 N. 27th Street, Room 403, Billings, MT
- Lockwood Water & Sewer District, 1644 Old Hardin Road, Lockwood, MT
- MDT Environmental Services Bureau, MDT Headquarters, 2960 Prospect Avenue, Helena, MT
- Call MDT Environmental Services at (406) 444-7228 or (406) 444-9437

Written Comments

- Submit written comments to Tom Martin, MDT, Environmental Services Bureau Chief, PO Box 201001, 2960 Prospect Ave., Helena, MT 59620

or

- Online at: http://www.mdt.mt.gov/mdt/env-commentform.shtml

Contacts

Tom Martin *MDT Environmental Services Bureau Chief* | *(406) 444-7634*

Stefan Streeter *Billings District Administrator* | *(406) 252-4138*

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
1	Alan Redman	2120 S. Andrews Dr. Billings 59105
2	Bob Murry	512 1/2 16th St W Billings MT 59102
3	Kathy Kastelitz	3505 Pioneer Rd Billings 59105
4	Brad Zink	3536 Summerfield Cr. Billings, MT 59105
5	Tom Shaw	2522 Mary Blgs MT 59105
6	Doug McCloskey	1737 Mary St Blgs MT 59105
7	Glenn French	3510 Summerfield Cir Billings MT 59105
8	Chelsea Schwartz	4109 Stone St. Blgs MT 59101
9	Liz Robillard	1606 Mary St.
10	Rick Pentland	2195 B. Heights Dr 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
12 (TOTAL TAKE =)	Hillary + Greg Gnerer	2425 Flaming Creek Dr. Billings, MT 59105
13 (total take =)	Catherine Dove	1156 Firth St #1 Billings 59101
14	Denis Pitman	726 Aquarius Pl Billings MT 59105
15	Diane Fischer	4395 Hwy 87 N. Billings, Mt 59105
16	Travis Heggem	3534 Summerfield Circle Billings, MT 59105
18	Danielle + Fred Schmidt	2701 Hwy 312 Bp. Mt 59105
19	Greg Schmidt	Hwy 312 Billings, MT 59105
21	Sharon + Keera Bowers	1708 Caroline St. Billings, Mt. 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
22	Steve Edwards	1832 Barrett Rd. - Blgs, MT 59105
23	Jan "	" "
24	Kenneth Kuhn	1922 Ave C Blgs 59102
25	Sarah Newman	817 Garnet Avenue Billings MT 59105
26	Joni Pentland	2495 Bitterroot Dr.
27	Matt Brosovich	PO. Box 20318 Billings MT. 59104
28	DON VANICA	2225 N. ECHO DR. BILLINGS MT 59105
29	ANGELA CIMMINO	1745 SYLVAN LANE BILLINGS, MT 59105
30	Matt Martinson	5724 Larimer Ln Billings, MT 59105
31	Bill Howe	3335 DOVER LANE BILLINGS MT 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
32	Sue Anderson	1251 Gardenia Drive Billings MT 59105
33	Kelly Bussey	1204 Caroline St Blgs, MT 59105
36	Robert, Victoria & Maddie Wagenaar	2903 Legacy Lane Blg 59105
37	Dennis Anderson	1436 STALLION Route Blgs, 59105 Please add to mailing list ✓ did not get a card
38	Tim Wiens	4785 Middle Valley Dr. Billings 59105
40	Jason + Michelle Lang	904 Mary St Blgs 59105
41	Gary Dickhaut	3045 Arnold Palmer Blgs 59106
42	Roger Williams	2512 Irving Pl. Billings, MT 59102
43	Ron Smith	2927 Cook Ave Billings MT 59102 rhughsmith@gmail.com
45	Stan & Nancy Johnson	1904 Brian Ln Billings, MT. 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
46	James Mollerstuen	P.O. Box 50040 Billings MT 59105
47	Pam Ebb	2000 Outlook Drive 59105
48	Kirk Spalding	726 Agate, 59105
49	Tom Zurbuchen	1747 Wicks
50	David Jay	HTVQ

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
51	Marvi Triggs	1031 Johnson Ln Billings MT 59101
52	Colleen Shaw	2522 Mary St. Billings, MT 59105
53	Blue Eyes Walks Overice	9728 Cormier Rd. Billings MT 59101
54	Diane Kostelecky	2920 Bunker Hill Dr Billings MT 59105
55	Evelyn Degchard	2547 Roundup Road Billings MT 59105
56	Peter Light	2904 Bitterroot Dr Billings MT 59105
58	Christina Lasater & Chris Gomer	1215 Gardenia Dr. Billings, MT 59105
60	Jim & Linda Boyd	2946 US Hwy 312 East Bgp MT 59105
61	RICHARD SCHUELER	1040 NUTTER BILLINGS 59105
62	Virgil Middendorf	1642 Natalie St Billings 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
64	Kristie Tony Oosterwegel	1985 Mary St. Billings MT 59105
65	CHRIS RILEY	PO BOX 9508 HELENA, MT 59604
66	Kevin M'Govern	P.O. Box 80252 Billings, MT 59108
67	DAVID SCHUMAN	P.O. BOX 31956 BLGS, MT. 59107-1956
68	Duane L. Meiers	
69	John Thompson	404 Tamarisk Dr. Billings MT 59105
70	Ron Beck	1724 Deep Powder Drive Billings MT 59105
71	Don Thoreson	1335 MARY ST Billings MT 59105
72	LEON SCHEELER	1144 Mary St. Billings, Mt 59105
73	Shirley Hample	5219 US Hwy 312 Billings, MT 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
74	Kelly Selph	2347 Columbine St Billings 59105
75	J Chapman	1745 Mary St Billings MT 59105
76	Mike Southworth	2464 Clear water Way Billings MT 59105
77	Tom Lanyess	1233 Gardenia Dr Billings, MT 59105
78	Cole Kortum	1414 3rd Ave N Blgs 59101
79	Sherrill Helderop	1808 Prescott Dr.
80	Cheryl Cathey	1705 Mary St.
81	Roger Webb	1132 Ginger Ave. 59105
82	Eric Skaggs	946 Mary St 59105
83	Bobbie Skaggs	946 Mary St 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
84	Terry Odegard	2101 Lake Hills Drive Billings, MT 59105
85	Jim Ronquillo	820 South 28th 59101
86	Virginia Sindelar	3114 Dover Rd 59105
87	AMY CATHEY	1506 MARY ST 59105
89	Bob & Darlene Broderson	3927 US Hwy 312 59105
90	Brandy Dangerfield	1803 US HWY 87 E #3 Billings, MT 59101
92	Larry & Arlene Van Dyke	Alwyn Lane Billings mt.
93	Ellen Johnsrud	1650 Mary St
95	Nina & Jerry Miller	1920 Mary St.
96	MIKE BROWN	2341 COLUMBINE 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
97	Don Hofer	3345 Dover Lane Billings MT 59105
98	Kris Schmidt	10 Almadin Lane
99	Norm Shoethal	Two Moon Rd.
100	Susan Gilbertz	City/Co. Planning Board
101	Nic Rockenbach	2024 1/2 Zoo Dr 59105
102	Greg Kimmell	916 Mary ST
same as 102? 103	Greg Kimmell	910 Mary ST
104	Kim Coomber	2046 Mary St.
105	Sharon Williams	1043 N 23rd, Apt 1 59101
106	Tracy Thoreson	~~1835~~ 1835 Mary St. Billings, MT. 59105

BILLINGS BYPASS EIS
NCPD 56(55)CN 4199

MONTANA MDT DEPARTMENT OF TRANSPORTATION

SIGN-IN SHEET
(Please Print)

INFORMAL OPEN HOUSE
April 9, 2014

	First and Last Name	Complete Mailing Address
107	Rob Dunn	2301 Bitterroot Drive
108	Sherry Milburn	2662 Clearwater Way 59105
109	Ingrid Allen	1432 Mary St
110	Joe Allen	1432 Mary St
111	Steph Allen	1414 Mary St
112	M. Souza	1512 MARY ST
113	Paul Van Tricht	1134 N. 24th
114	Bob Riehl	126 Rolling Meadow Dr. 59101
115	Bruce W. Larsen	316 Bench 59105
116	Alley Chapman	1745 Mary Street

APPENDIX C

RESPONSES TO COMMENTS ON THE FINAL EIS

Intentional Blank Page.

APPENDIX C – RESPONSES TO COMMENTS ON THE FINAL EIS

Comments on the Final Environmental Impact Statement (FEIS) were grouped into the following categories: Agencies, Organizations and Interest Groups, and Individuals. MDT received 31 separate communications in the form of letters, emails, and comments entered on MDT's "Contact Us" webpage.

Each correspondence is numbered. Responses were prepared for each correspondence. In cases where there are multiple questions or comments to address within just one correspondence, each individual comment has been numbered and delineated with a bracket. In general, the correspondence will appear on the left-hand pages of the appendix and the response to comments will be on the right-hand pages, across from the correspondence.

Alphabetized Index of Comments Received on the FEIS

NAME	DOCUMENT ID	SOURCE	PAGE
AGENCIES			
Montana Historical Society Montana State Historic Preservation Office Kathryn Ore, Review and Compliance Officer	AGN-1	Letter	C-4
Montana Historical Society Montana State Historic Preservation Office Kathryn Ore, Review and Compliance Officer	AGN-2	Letter	C-6
U.S. Environmental Protection Agency Region 8 Robin Coursen	AGN-3	MDT "Contact Us" Webpage	C-8
ORGANIZATIONS AND INTEREST GROUPS			
County Water District of Billings Heights Duke Nieskens, General Manager	ORG-1	MDT "Contact Us" Webpage	C-10
Lockwood Steering Committee Bob Riehl	ORG-2	MDT "Contact Us" Webpage	C-12
John H. Dover Memorial Park (Dover Park) Bruce W. Larsen	ORG-3	MDT "Contact Us" Webpage	C-14
Yellowstone River Parks Association Alan Parker	ORG-4	Email	C-18
Yellowstone River Parks Association Roger Williams	ORG-5	MDT "Contact Us" Webpage	C-28
INDIVIDUALS			
Adian, Dan	IND-1	MDT "Contact Us" Webpage	C-30
Belcher, Gayle	IND-2	MDT "Contact Us" Webpage	C-32
Brown, Jim	IND-3	MDT "Contact Us" Webpage	C-34
Fiscus, Clayton	IND-4	Letter	C-36

NAME	DOCUMENT ID	SOURCE	PAGE
Fiscus, Clayton	IND-5	Letter	C-38
French, Glenn	IND-6	MDT "Contact Us" Webpage	C-42
George	IND-7	MDT "Contact Us" Webpage	C-44
Heggem, Travis	IND-8	MDT "Contact Us" Webpage	C-48
Martin, Janet	IND-9	MDT "Contact Us" Webpage	C-50
Martin, Jesse	IND-10	MDT "Contact Us" Webpage	C-52
Parker, Alan	IND-11	Email	C-54
Pitman, Denis	IND-12	MDT "Contact Us" Webpage	C-56
Reichert, Mona	IND-13	Letter	C-58
Rogers, RJ	IND-14	MDT "Contact Us" Webpage	C-60
Roller, Steven	IND-15	MDT "Contact Us" Webpage	C-62
Skaggs, Bobbie	IND-16	MDT "Contact Us" Webpage	C-64
Southworth, James O.	IND-17	Letter	C-66
Thoreson, Tracy E.	IND-18	MDT "Contact Us" Webpage	C-68
Thoreson, Tracy E.	IND-19	MDT "Contact Us" Webpage	C-72
Wiens, Tim	IND-20	MDT "Contact Us" Webpage	C-74
Wilde, Tom	IND-21	MDT "Contact Us" Webpage	C-76
Zurbuchen, Kathryn	IND-22	MDT "Contact Us" Webpage	C-78
Zurbuchen, Tom	IND-23	MDT "Contact Us" Webpage	C-80

Intentional Blank Page.

Comment AGN-1 Montana Historical Society, Montana State Historic Preservation Office, Kathryn Ore, Review and Compliance Officer

Big Sky. Big Land. Big History.
Montana Historical Society

Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center

RECEIVED
APR - 2 2014
ENVIRONMENTAL

April 1, 2014

Mr. Tom Martin, PE
Environmental Services Bureau Chief
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

RE: Billings Bypass Final Environmental Impact Statement
BILLINGS BYPASS – EIS
Project No. NCPD 56(55)
Control Number: 4199

Dear Mr. Martin:

Thank you for the letter (received March 31, 2014) and opportunity to comment on the provided Final Environmental Impact Statement (FEIS). According to our records, no formal determination of effect to historic properties has been completed by the Montana Department of Transportation for the Billings Bypass undertaking. Therefore, the Section 106 review process has not been formally concluded.

We would like to remind you that when coordinating Section 106 review with the development and approval of an EIS under the National Environmental Policy Act (NEPA), it is required that Section 106 review is completed prior to signing the Record of Decision (ROD). If you have any questions, please consult *NEPA and NHPA: A Handbook for Integrating NEPA and Section 106* available online at the Advisory Council on Historic Preservation's website at http://www.achp.gov/docs/NEPA_NHPA_Section_106_Handbook_Mar2013.pdf.

Do not hesitate to contact me with any comments or concerns at (406) 444-0388 or kore@mt.gov. Thank you for consulting with us.

Sincerely,

Kathryn Ore
Review and Compliance Officer
Montana State Historic Preservation Office

Cc: Jon Axline, Historian, Environmental Services, Montana Department of Transportation

File: MDT – 2014 – 2014033104

225 North Roberts Street
P.O. Box 201201
Helena, MT 59620-1201
(406) 444-2694
(406) 444-2696 FAX
montanahistoricalsociety.org

Response AGN-1 Montana Historical Society, Montana State Historic Preservation Office, Kathryn Ore, Review and Compliance Officer

Gocksch, Thomas

From: Axline, Jon
Sent: Thursday, April 03, 2014 7:19 AM
To: Ore, Kathryn
Cc: Gocksch, Thomas; Martin, Tom
Subject: NCPD 56(55)/Billings Bypass - EIS/UPN 4199

Expires: Tuesday, September 30, 2014 12:00 AM

Kathryn- We are in receipt of your letter of April 1, 2014 in regards to the cultural resource section of the final EIS for the above project. We wish to point out, however, that the MDT received SHPO concurrence on December 29, 2011 for the Determination of Effect submitted to your office the previous month. We have, therefore, completed the Section 106 process for this MDT project. Information provided to you since 2011 has been in regards to the National Register eligibility of historic properties on the periphery of the project, all of which were determined ineligible for the NRHP. If you have any questions, I would refer you to the EIS, which is available electronically on the MDT's website.

Jon Axline
Historian
Environmental Services
Montana Department of Transportation
2701 Prospect Avenue
Helena, MT 59620-1001

1

Comment AGN-2 Montana Historical Society, Montana State Historic Preservation Office, Kathryn Ore, Review and Compliance Officer

Big Sky. Big Land. Big History.
Montana Historical Society

Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center

RECEIVED
APR – 4 2014
ENVIRONMENTAL

April 3, 2014

Mr. Tom Martin, PE
Environmental Services Bureau Chief
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

RE: Billings Bypass Final Environmental Impact Statement
BILLINGS BYPASS – EIS
Project No. NCPD 56(55)
Control Number: 4199

Dear Mr. Martin:

Thank you for the prompt response to our April 1, 2014 comments regarding the Billings Bypass Final Environmental Impact Statement. We are happy to be reminded that the Montana Department of Transportation has completed a determination of effect (December 29, 2011) for the proposed undertaking, pursuant to 36 C.R.F 800. Additionally, since the provided addendums to the completed Class III Cultural Resource Survey did not identify any historic properties, we agree that the initial determination of effect remains applicable.

Do not hesitate to contact me with any comments or concerns at (406) 444-0388 or kore@mt.gov. Thank you for consulting with us.

Sincerely,

Kathryn Ore
Review and Compliance Officer
Montana State Historic Preservation Office

Cc: Jon Axline, Historian, Environmental Services, Montana Department of Transportation

225 North Roberts Street
P.O. Box 201201
Helena, MT 59620-1201
(406) 444-2694
(406) 444-2696 FAX
montanahistoricalsociety.org

Response AGN-2 Montana Historical Society, Montana State Historic Preservation Office, Kathryn Ore, Review and Compliance Officer

Thank you for your correspondence confirming that the Section 106 process is complete.

Comment AGN-3 U.S. Environmental Protection Agency, Region 8, Robin Coursen

From: www@mdt.mt.gov
Sent: Wednesday, April 02, 2014 3:43 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/02/2014 15:43:15
Name: Robin Coursen
Email Address: coursen.robin@epa.gov

Comment or Question:
The EPA REgion 8 office has not received an official copy for our review. Please transmit asap. Thank you.

Reference Number = bypasscomment_80853271484375

1

Response AGN-3 U.S. Environmental Protection Agency, Region 8, Robin Coursen

In accordance with the project's Coordination Plan for Agency & Public Involvement, the EPA Montana Division office is considered the point of contact for the EPA and received an electronic copy of the FEIS on March 28, 2014. Following receipt of your e-mail a member of the project team contacted you and provided a CD containing a copy of the FEIS. Please note that the FEIS was also available at the MDT public involvement website.

Comment ORG-1 County Water District of Billings Heights, Duke Nieskens, General Manager

From: www@mdt.mt.gov
Sent: Monday, March 31, 2014 2:49 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 03/31/2014 14:48:56
Name: Duke Nieskens, G.M.
Email Address: cwdbh@hotmail.com

Comment or Question:
This may not be the right time to bring this up but the County Water District of Billings Heights has existing water mains crossing at the proposed intersections at Bitterroot, Columbine and Hawthorne that will need to be cased being they will be under the proposed Bypass. We assume this will be paid for completely by the State as part of the project.

Thanks,
Duke Nieskens, General Manager
County Water District of Billings Heights
1540 Popelka Dr.
Billings, MT 59105
T 406-252-0539
F 406-252-0518

Reference Number = bypasscomment_2679443359375

1

Response ORG-1 County Water District of Billings Heights, Duke Nieskens, General Manager

Thank you for your letter. The information about the water utilities is useful and will be considered and addressed as the project proceeds to final design.

Comment ORG-2 Lockwood Steering Committee, Bob Riehl

From: www@mdt.mt.gov
Sent: Thursday, April 10, 2014 4:34 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/10/2014 16:33:54
Name: Bob Riehl
Email Address: briehl@usadig.com

Comment or Question:
I am with the Lockwood Steering Committee and would like to thank MDT for it's work on what appears to be a very complete EIS. We agree with the selection of the preferred alternative it follows the criteria defined at the outset of the project.

Your public process was very effective in our community and we thank you for taking our input.

Thanks,
Bob Riehl
860-0272
Lockwood Steering Committee, Treasurer

Reference Number = bypasscomment_680633544921875

1

Response ORG-2 Lockwood Steering Committee, Bob Riehl

Thank you for your comment.

Comment ORG-3 John H. Dover Memorial Park (Dover Park), Bruce W. Larsen

From: www@mdt.mt.gov
Sent: Monday, April 28, 2014 5:18 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/28/2014 17:18:05
Name: Bruce W Larsen
Email Address: bigideacompany@aol.com

Comment or Question:
John H. Dover Memorial Park (Dover Park) is a Master Plan for a future 350+ acre public park directly in the path of the Billings Bypass Plan Mary Street Option 2. The Dover Park Master Plan is an ongoing project of Yellowstone River Parks Association (YRPA), a 501C3 organization established in the early 90's whose mission is to create public Greenways and parks along the Yellowstone River in the vicinity of Billings, Montana. The Dover Park Master Plan was submitted to Montana Department of Transportation (MDT) by YRPA during a previous meeting with MDT consultants (Evans and Associates).

YRPA now owns contiguous lands to be included in the Dover Park Plan while other contiguous portions of the Park plan are slated to be donated to YRPA sometime in the near future. Those lands are currently being mined for gravel of which the royalty payments from the gravel production are donated to YRPA for use in Dover Park.

The Dover Park Plan has now been implemented on lands under an agreement with the Nature Conservancy. The lands within this Conservation Easement are also affected by the Bypass Plan as part of the Five Mile Road Secondary Alignment. Trails, the Trail Head Parking Area and a new 200' suspension bridge within the easement will be completed by the end of this year. These three projects are within the Conservation Easement and will be substantially impacted by the Bypass Plan.

All these lands were donated by James Sindelar, an heir of John H. Dover for use as a natural public park, wildlife and low impact recreation area. A bypass highway through this area was never part of that plan--nor should it be.

The Mary Street Option 2 and Five Mile Road Alignment Alternatives effectively divide Dover Park in half rendering it significantly less effective as a large scale land and wildlife preservation effort. Connectivity between the halves will be lost. Projected noise impacts (which are largely underestimated in the MDT proposal) from the Bypass Project are not compatible with this naturally secluded area. Highway traffic noise is disturbing both to wildlife and those who will visit Dover Park for itâ€™s solitude.

With the exception of the Five Mile Road Secondary Alignment physical and visual impacts upon Dover Park per the Mary Street Option 1 are less than the other two alternatives. Dover Park is a work of art and must not be framed or marred by a highway running through it.

I am a longtime Board member of YRPA and actively engaged in the design and implementation of trails and green space within several parks along the Yellowstone River, especially John H.
Dover Memorial Park. The Bypass Project does not belong in this park. It is not esthetic or complimentary in any way and a detriment to our Master Plan. The work YRPA plans and engages in is funded by very generous people who are as

1

Response ORG-3 John H. Dover Memorial Park (Dover Park), Bruce W. Larsen

Thank you for your letter and information regarding plans for Dover Park. MDT and FHWA are committed to working with the YRPA as the project proceeds to final design and construction.

Based on comment letters from members of the YRPA on the DEIS, the FEIS was modified to clarify the potential impacts to the future John H. Dover Memorial Park, and further clarification is presented in the ROD in Section 4. None of the build alternatives would preclude development of the park, but there would be impacts associated with the project, as disclosed in the FEIS in Section 4.3.2.

The FEIS also acknowledges (in Appendix J) that "the proposed bridge for Mary Street Option 2 would be an encroachment onto the landscape. The contrasting elements it introduces would increase the vividness of the view and make it more memorable. Intactness would decrease due to the addition of the structure, which is large and conspicuous from this perspective, therefore dominating and encroaching onto the view . . . . Park users from this viewpoint would likely see the bridge as an encroachment given its proximity and the overall decrease in visual quality expected here." Additionally, noise would increase in this area where the future park is proposed, given that minimal traffic noise currently exists in that location.

As noted in the FEIS and the ROD, MDT and FHWA will coordinate with park planners regarding impacts to the planned John H. Dover Memorial Park during final design. As indicated in the FEIS (response to ORG-3 in Appendix J), MDT and FHWA will work closely with the YRPA to mitigate impacts and implement safety measures regarding the proposed future park to the extent possible.

Comment ORG-3 John H. Dover Memorial Park (Dover Park), Bruce W. Larsen (cont.)

passionate about parks and greenways as I am. YRPA facilitates their wishes. We and our donors ultimately serve the public in a way which can only be created by capturing and presenting something as beautiful as this natural landscape by integrating trails and other amenities for the people in our community. Our mission is our priority and our perfomance speaks for itself.

Bruce W Larsen
Boardmember, Yellowstone River Parks Association

Reference Number = bypasscomment_240020751953125

2

Response ORG-3 John H. Dover Memorial Park (Dover Park), Bruce W. Larsen (cont.)

Thank you again for your input. Comments addressed on previous page.

Comment ORG-4 Yellowstone River Parks Association, Alan Parker

From: Gocksch, Thomas <tgocksch@mt.gov>
Sent: Monday, April 28, 2014 10:57 AM
To: Alan Parker
Cc: Mara Krinke; Bente, Fredrick; Ron Bockelman
Subject: RE: For Mary Street Option 1, Against Mary Street Option 2

Thank you for taking the time to submit comments on the FEIS. I will make sure that they are included in the public record and considered during development of the Record of Decision.

From: Alan Parker [mailto:montanaphlowerco@gmail.com]
Sent: Saturday, April 26, 2014 3:18 PM
To: Gocksch, Thomas
Cc: Darryl Wilson; Don Wirth; Roger Williams; Ken Reiter, Jr.; ron.smith@yrpa.org; bigbicycle .; Earl Guss; Merry Ann Peters; Lee, Terry Zee; Walters, Terri; Jim Bauer; Bob Liddell; Bob Mackin; Boris Krizek; Gary Buchanan; Cameron Parker; Sue Dow; Drake Smith; Fran Nunn; Sandra Fischer; Billie Hicks; Janna Hafer; Randy Hafer; John Spencer; Mihail Kennedy; Benjamin Landry; Norm Schoenthal; Sharon Brogan
Subject: For Mary Street Option 1, Against Mary Street Option 2

Tom,

Thank you tor the time you took to explain some of the fine points of the project at this stage.

Attached please find my expanded comments regarding the FEIS, Preferred Alternative, And YRPA holdings, development, and status.

Please enter my comments into the FEIS public comment database, attached here in .pdf format.

Regards,

Alan Parker, YRPA boardmember
alan.parker@YRPA.org

1

Response ORG-4 Yellowstone River Parks Association, Alan Parker

Detailed comments begin on the next page.

Comment ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)

Comment on the FEIS for Billings Bypass, March 2014, NCPD 56 (55) Control Number 4199

My Name is Alan Parker, I live in Billings Heights.

I am a member of the board of directors of Yellowstone River Parks Association. (www.YRPA.org) We are a 501c3 non profit. Our general email contact address is: yrpa@yrpa.org .

Our Mission Statement is: The Yellowstone River Parks Association is an organization that makes the most of the Yellowstone River, its banks, and environs for recreation, nature, study, tourism, education, commerce, ecology, and sport. Yellowstone River Parks Association precipitates, coordinates, and promotes projects and events which open up the beauty and usefulness of the river to all our residents and visitors.

Our partners have included Federal, State, and City governments, Civic groups. Other non-profit entities, and a wide army of volunteers and donors.

Our history begins in the mid 1980's. By 1991 YRPA had sprouted and we commissioned the Yellowstone Greenway Master Plan by Wirth Design Associates in 1994, a comprehensive study of resources and opportunities from Duck Creek west of Billings to Dover Island to the East. The ensuing decades have included numerous park, trail, and collaborative projects mostly in the public sector and some such as the Audubon Conservation Education Center in conjunction with other non-profit organizations.

My comments today **for Mary Street Option 1** of the Billings Bypass Project to those conducting the FEIS, will Expand, Clarify, and Update our earlier comments during the project's life.
By reference these comments are included as identified in Appendix J, ORG 5,6, & 7 and Appendix G letters dated 6/17/11, 9/13/12, and 9/21/12. I will further wish to comment on Section 3.2.2 of the FEIS, 4(f) status, and YRPA development of John H. Dover Memorial Park.
I am also voicing **against Mary Street Option 2** and to our need of mitigation against aesthetic degradation of visual, noise, and access of our property and diminished property area, value, and utilization, especially as they relate to Mary Street Option 2 effects upon our property in particular and the project's effects on the community in general especially for non motorized trail users.

Changes to John H. Dover Memorial Park (JHDMP) since late 2012. We have substantially completed removal of cross fences, scrap, derelict buildings and bridges. We have also established hundreds of yards of primary trails and secondary trails, including two new steel span bridges and one new cable suspension bridge over 5 Mile Creek. See Google Earth for ~August 2013 progress. The Rocky Mountain College biodiversity study is now complete.
We will during this coming work season complete two additional suspension bridges, surfacing of trails, adding additional primary trails in the permanent easement right of way on the bench lands, re-introduce irrigation in some areas, and otherwise conduct full-on the development of this incredible parkland resource. Our goal is to open to the general public in 2015. While fulfilling our entire 2010 Master Plan may hinge on circumstances beyond our control, our initial ~150 acre holding will soon be completed. We are a 501c3 with open membership, we are public. And we are looking for a public entity to collaborate with. In short we are creating a public park.

We anticipate in the phased development scenario currently envisioned for Billings Bypass Project that YRPA will provide significant input to further project refinement and engineering design.

Response ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)

Thank you for your comments and for the updated information regarding John H. Dover Memorial Park (developments since late 2012 to today). The information you provided regarding suspension bridges, parking lot, and trails will be shared with the design team moving forward with the Mary Street Option 2 Alternative.

Regarding your concerns about impacts, as indicated in the FEIS and repeated above (response to ORG-3), MDT and FHWA will work closely with the YRPA to minimize or mitigate impacts and implement safety measures to the extent practicable regarding the proposed future park.

Comment ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)

Specifically crossings of non motorized users above the road grade. The road grade shielded from view by siting it below terrain grade wherever possible and by appropriate barriers or screens where this in impracticable. Further that the 5 Mile Road re-alignment should be shifted west to avoid conflict with the JHDMP parking lot and ravine suspension bridges.

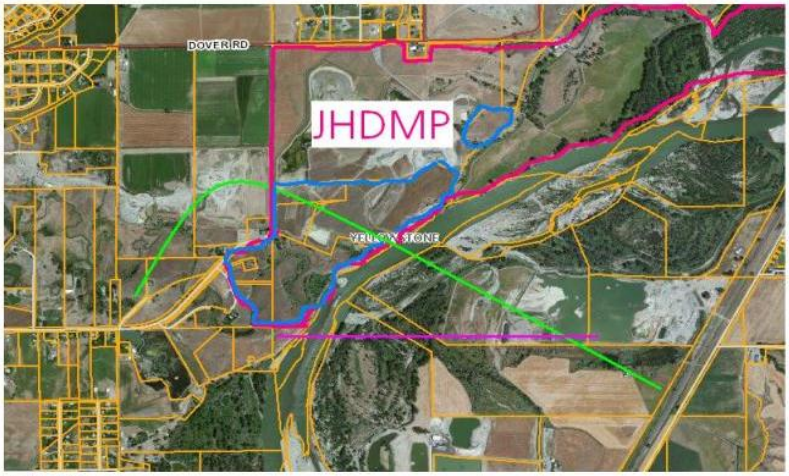
In 1995 the Sindelar family began protecting this special place under conservation easements. In 1998 they had chosen YRPA as the organization to bring the park into reality. YRPA continues to honor our donor's wishes to see their vision of a park honoring their patriarch and the original homesteader John H Dover fully realized.

For Mary Street Option 1 Yes! Greater long term flexibility for all stakeholders.

Against Mary Street Option 2.

When you go with the cheapest route, one thing you may surely get... the least valuable outcome.

Should you wish to have a more valuable, effective outcome some enhancements may be worth the cost.



I press these questions:

Will John H Dover Memorial Park be more valuable as a single contiguous space, capable of evolving as users refine their utilization of the space, or as a bisected space of diminished area with inflexible access points?

Will the local communities use be diminished forever by having this road pass through the center of a place intended for appreciation of the natural world and the pioneers efforts?

Will other community minded land owners be encouraged by your actions in Option 2, in their decades of effort to place gifts in the public realm for recreation and enjoyment of all?

Does Option 2 in any way outperform Option 1 in operational functionality?

In closing, thank you for this opportunity to be on the record.

Regards,
Alan Parker
alan.parker@yrpa.org

Response ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)

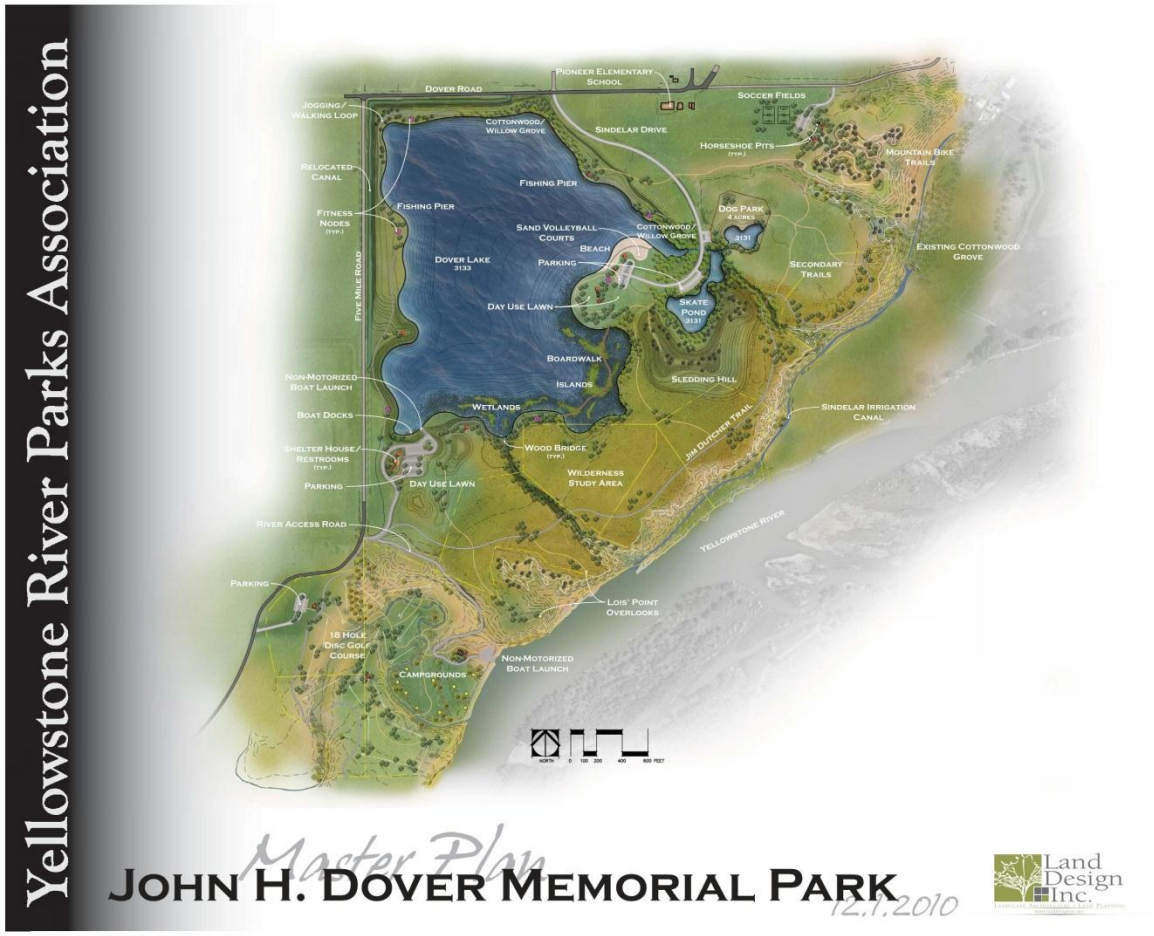
Response continued from above.

Regarding the question below the map about operational functionality:

Mary Street Option 1 and Mary Street Option 2 Alternatives had similar operational performance. The decision to select Mary Street Option 2 was based on environmental and social performance, as well as cost. The reasons for selecting the Preferred Alternative are summarized in Section 2.2 of the ROD and presented in greater detail in Section 2.4 of the FEIS.

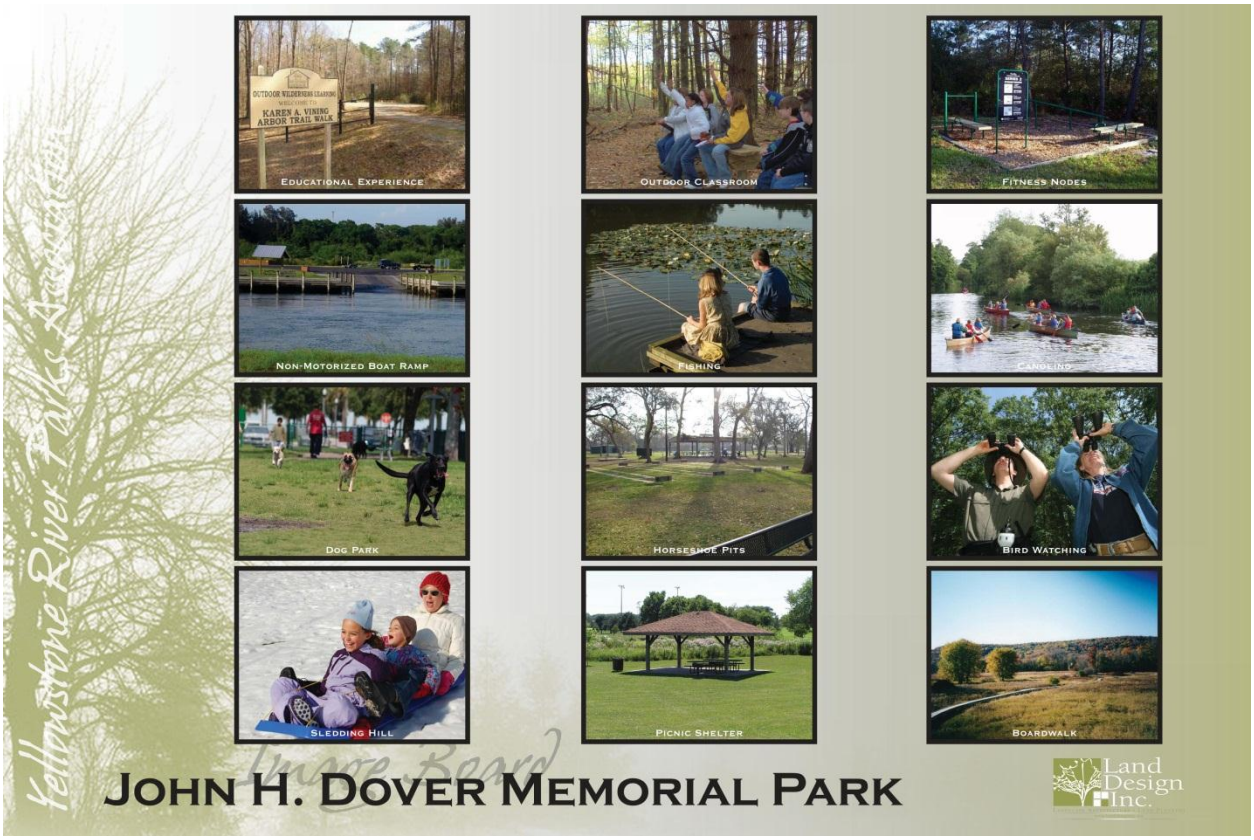
Thank you again for taking the time to submit comments and remain engaged on the project.

Comment ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)

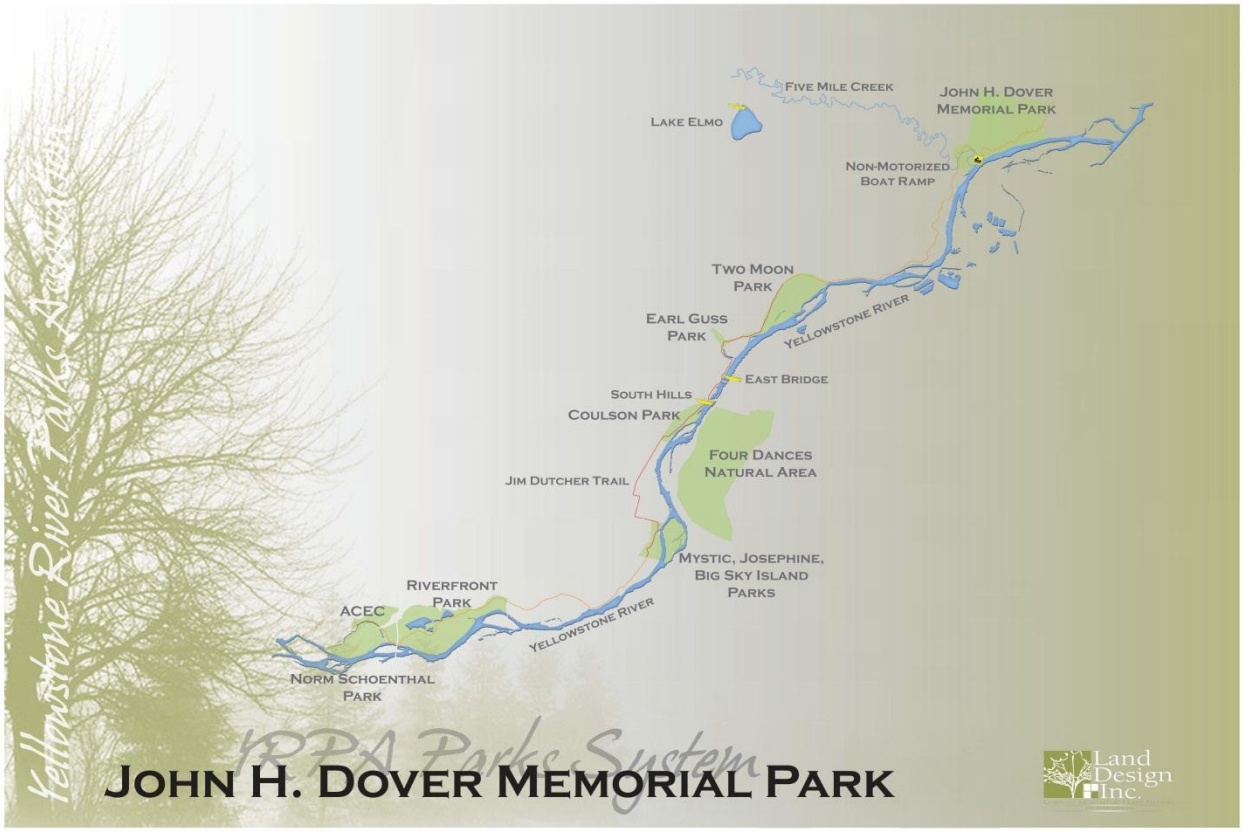


Comment ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)

Comment ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)



Comment ORG-4 Yellowstone River Parks Association, Alan Parker (cont.)



Comment ORG-5 Yellowstone River Parks Association, Roger Williams

From: www@mdt.mt.gov
Sent: Monday, April 28, 2014 1:12 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/28/2014 13:11:53
Name: Roger Williams
Email Address: roger.williams@yrpa.org

Comment or Question:
RE: Billings Bypass (MDT Project No. NCPD 56 (55) CN 4199)

I am the past-president of Yellowstone River Parks Association (YRPA). My comments are meant to supplement those of Alan Parker, YRPA Board member, submitted earlier.

YRPA owns approximately 150 acres of land along the west bank of the Yellowstone River, at the mouth of Five Mile Creek, and at the junction of Mary St. and Five Mile Rd. The land was gifted by adjacent landowners (James and Francis Sindelar, descendants of the original homesteader form the 1880â€™s) and deeded with the restriction that it be used only for development into a public park, the John H. Dover Memorial Park. The land is also under conservation and public access easements. The parkland includes the scenic Five Mile Creek bottom and its estuary with the Yellowstone River. It has a rolling terrain with deep coulees and benches that offer a spectacular vista of native wildlife and riparian habitat.

Much progress has been made toward park development in the last three years, including the addition of a north gate, trail development, and the construction of two traditional steel bridges and a steel-cable suspension bridge over Five Mile Creek. Another tandem steel-cable suspension bridge is under construction over coulees in the northwest corner of the park, near Five Mile Rd. We anticipate that park development will be complete enough for a ceremonial opening to the public in the summer of 2015.

This public park will be severely and adversely impacted by the Billings Bypass highway!

YRPA is on record (2012) as preferring the â€œno-buildâ€ option presented by the Draft EIS. However, we are conflicted by the other three choices. Mary St. Option 1 impacts YRPA less, but severely impacts our neighbors to the west. Mary St. Option 2 and the Five Mile option are centered squarely on YRPA property and bisect the parkland.

Developing the John H. Dover Memorial Park is an ambitious project that will take many years to develop fully, and will probably cost several million dollars. YRPA is seeking partners
and benefactors to accomplish this long-term goal. However, the presence of a major highway in its midst will substantially diminish the parkâ€™s attractiveness to donors, as well as the general public.

If this project moves forward, YRPA, as a stakeholder, insists that our concerns be addressed in the initial engineering stages. At a minimum we will require financial compensation for lost property, over- or underpasses for the safe passage of pedestrians and wildlife, visual barriers, and noise mitigation.

Respectfully,

Roger Williams
YRPA Past-President

Reference Number = bypasscomment_46051025390625

Response ORG-5 Yellowstone River Parks Association, Roger Williams

Thank you for the updated information regarding John H. Dover Memorial Park. The information you provided regarding new bridges, north gate, and trail development, along with a planned public opening in 2015 will be shared with the design team moving forward with the Mary Street Option 2 Alternative.

As indicated in the FEIS and repeated above, MDT and FHWA will work closely with the YRPA to minimize or mitigate impacts and implement safety measures to the extent practicable regarding the proposed future park.

Comment IND-1 Dan Adian

From: www@mdt.mt.gov
Sent: Thursday, April 10, 2014 8:35 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/10/2014 20:35:18
Name: Dan Adian
Email Address: danadian80@yahoo.com

Comment or Question:
So MDT spends hundreds of thousands of dollars, probably over a million dollars, to prepare an environmental document, which is supposed to disclose impacts to stakeholders and the general public, but you have to download a 39MB file in order to read it? You really think that is providing the public a service of disclosing impacts by posting a document that is 39MB? I am only interested in one item, but I have to download a 39MB file to get that information? So much for disclosing impacts to the public in a readily accessible way.

Reference Number = bypasscomment_240142822265625

1

Response IND-1 Dan Adian

Thank you for your comment. The document was available on-line and also at multiple viewing locations in Billings and Helena. During the Public Open House held on April 9, 2014, several copies of the FEIS were available for review, and project team members were available to answer questions and address concerns one-on-one with the public. CDs containing the electronic files were also available by request. We trust you were able to complete the download of the document, or otherwise access the FEIS, and were able to find the information of interest.

Comment IND-2 Gayle Belcher

From: www@mdt.mt.gov
Sent: Thursday, April 03, 2014 9:49 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/03/2014 21:48:45
Name: Gayle Belcher
Email Address: dgayle.com@gmail.com

Comment or Question:
If this bypass is to serve the semi-truck driver, then please do not put in those ridiculous roundabouts. A big truck has no room to turn on those things. They are terrible enough on the regular passenger vehicle. A simple straight route with stop lights would be the most efficient choice.

Reference Number = bypasscomment_71173095703125

1

Response IND-2 Gayle Belcher

Thank you for your comment. As noted in the description of the selected alternative, intersection designs have not yet been determined, but will be developed during final design. Roundabouts, if used, will be designed to accommodate the standard MDT design vehicle (i.e., an interstate truck).

Comment IND-3 Jim Brown

From: www@mdt.mt.gov
Sent: Saturday, March 29, 2014 12:09 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 03/29/2014 12:08:48
Name: Jim Brown
Email Address: jmjkbrown@gmail.com

Comment or Question:
This is something that has been needed for decades. Delaying it will only add to the expense and the safety concerns of the people on the north side of the Yellowstone River.

Reference Number = bypasscomment_36376953125

1

Response IND-3 Jim Brown

Thank you for your comment.

Comment IND-4 Clayton Fiscus

The Big Sky Country

MONTANA HOUSE OF REPRESENTATIVES

RECEIVED
APR 28 2014
ENVIRONMENTAL

REPRESENTATIVE CLAYTON FISCUS
HOUSE DISTRICT 46

HELENA ADDRESS:
CAPITOL BUILDING
PO BOX 200400
HELENA, MONTANA 59620-0400
PHONE: (406) 444-4800

HOME ADDRESS:
1800 MARY STREET
BILLINGS, MT 59105
CELL: (406) 860-6400

COMMITTEES:
JUDICIARY
TRANSPORTATION

Helena Montana Department of Transportation (MDOT)

Response; MDOT using Mary Street area as a "Billings Bypass" as described in the published impact statement.

1.I am totally opposed to using Mary Street as a,I-90, I-94 transportation ,semi truck and car route. The effect on family life, property values, noise, pollution, Loss of home value coupled with total opposition of the folks who live there. — IND-4-a

2. There is an urgent need for MDOT to provide public notice and a public hearing on the environmental impact statement report. **Question;** will the MDOT, permit one?

3. What was the results of a survey of the residences on Mary Street area for support versus opposition? Percentage Support?, sent Opposition? — IND-4-b

4. Has the city of Billings city Council gave their support or opposition to the environmental impact statement? Supply evidence, Please.

5. Has the County commissioners of Yellowstone County given their support or opposition to the bypass impact statement? Supply evidence, Please. — IND-4-c

6. Mary Street area, N. Boundary line, has Hwy. 312 with a (5) lane State truck route. Doesn't this make adding another (5) lane along Mary ST roadway 100 to 1700 yard to the south, senseless. Yes or no. Explain. — IND-4-d

7 What Impact will the Mary Street route have on Yellowstone River park? On Main street 300 businesses + 3000 employees? On the one mile Bench irrigation lateral on Mary? Explain each — IND-4-e

8. Why was there only 2 public hearings; October and December 2012, over the last 10-years on the changes being made to the bypass? (Including scrapping the original old plan of Highway 312 to highway 87 to Hwy 3.)

9. The public deserves answers; through public hearings and participation! I have talked to numerous people and listened to them at the 2 public hearings in 2012 and they are 100% stating they were left in the dark the decisions were made behind closed doors. Do you agree? — IND-4-f

Thank you for your time.
Rep. Clayton Fiscus
April 24, 2014

Response IND-4 Clayton Fiscus

IND-4-a Thank you for your comments. The Preferred Alternative proposes developing an arterial route parallel to the existing Mary Street. The existing Mary Street would not be changed with the implementation of the Preferred Alternative. It would remain a local road, with access to the bypass provided at Old Hwy 312, Hawthorne Lane, Bitterroot Drive, and Five Mile Road. Mary Street is expected to carry no more traffic with the construction of the bypass than it does today.

IND-4-b The NEPA process is intended to gather public input at discrete points in the project development process. MDT and FHWA pursued an active public involvement process, as summarized in Chapter 6 of the FEIS and Section 8 of the ROD. Chapter 6 of the FEIS describes agency and public coordination including information regarding public meetings held throughout the development of the EIS, from initial scoping meetings, to a public hearing associated with the release of the Draft EIS, to the most recent informational public open house held in Billings on April 9, 2014 to provide the public with information about the FEIS.

Finally, MDT complied with the requirements of public participation under NEPA for the project. Please refer to "A Citizen's Guide to the NEPA" published by the Council on Environmental Quality for more information regarding NEPA regulatory requirements. http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf. Page 27 of the Citizen's Guide indicates that the number of comments received is not to be counted as "votes" for or against the project.

IND-4-c The Coordination Plan for Agency & Public Involvement for the project outlines the approach and strategy for engagement of the public, local, state, and federal agencies, and other stakeholders in the project. One group of stakeholders convened by the project was the Billings Bypass Advisory Committee (BBAC). The work and conclusions of the BBAC are summarized in Section 6.2.1 of the FEIS.

IND-4-d The build alternatives are designed to meet the project purpose and need, as described in Chapter 1, to improve connectivity and accessibility throughout the study area and the region. Chapter 4 of the FEIS discloses benefits and negative impacts related to the proposed project, including impacts associated with the proximity of the roadway.

IND-4-e The FEIS discloses the potential impacts associated with a No Build and three Build Alternatives. Impacts are summarized in Chapter 4 of the FEIS. Any of the alternatives would have impacts on the built and natural environment. Section 4.3.2 discloses potential impacts to parks and recreational resources, Section 4.2 addresses traffic impacts, Section 4.3.5 addresses acquisitions and displacements, and Section 4.3.3 addresses socioeconomic impacts.

IND-4-f Chapter 6 provides details on the entire public and agency outreach process since the project inception in 2003. MDT and FHWA strived to be as inclusive as possible in identifying and involving affected stakeholders in the project process. There have been four public meetings, an active website, and six newsletters sent to study area residents.

Comment IND-5 Clayton Fiscus

The Big Sky Country

MONTANA HOUSE OF REPRESENTATIVES

REPRESENTATIVE CLAYTON FISCUS
HOUSE DISTRICT 46

HELENA ADDRESS:
CAPITOL BUILDING
PO BOX 200400
HELENA, MONTANA 59620-0400
PHONE: (406) 444-4800

HOME ADDRESS:
1800 MARY STREET
BILLINGS, MT 59105
CELL: (406) 860-6400

COMMITTEES:
JUDICIARY
TRANSPORTATION

RECEIVED
APR 29 2014
FHWA
MONTANA DIVISION

April 25, 2014

Personal Comments To: MDOT Kevin Mclaury, Mike Tooley & Tom Martin.

Please include the following in your record of decision on the Billings bypass. Please determine the following:

Cost Savings:

Cost Savings; opt out of using the Mary Street residential restricted area for a truck route area ; costing $15-$20 million for a highway: For a cost-saving use Highway 312; a 5 Lane wide Hwy that starts at the East end of Mary running along the north boundary of Mary Street area for 2 1/2 miles to a point straight north then to south to Yellowstone River Bridge saving Montana millions of dollars and the destruction of Mary Street. Tell me where I'm wrong. IND-5-a

The Mary Street option has several negative impacts; not an issue in the 5-mile option.

The cost of replacing the 1 1/2 miles of elevated Billings Bench irrigation lateral that runs along Mary Street that will have to be made environmentally safe-with uninterrupted use . **(Not a cost issue in the 5-mile option).**

The millions of dollars lost in home value being next to a truck route and the added cost from demolishing of single-family residential homes. **(Not a cost issue in the 5-mile option).**

Maintaining sewer and water services during construction phase . **(Not a cost issue in the 5-mile option).** IND-5-b

-1-

Response IND-5 Clayton Fiscus

Thank you for your comments and concerns about the cost effectiveness of the Billings Bypass selected alternative, Mary Street Option 2. Individual comments are addressed below.

IND-5-a The build alternatives are designed to meet the project purpose and need, as described in Chapter 1, to improve connectivity and accessibility throughout the study area and the region.

Throughout the development of the project, many alternatives were considered but eliminated from further study. The alternatives considered and the reasons for their elimination can be found in Chapter 2 of the FEIS and in the alternatives development memo (Appendix I of the FEIS, available here: http://www.mdt.mt.gov/pubinvolve/billingsbypass).

IND-5-b As described in Chapter 2 of the FEIS, both the Five Mile Road Alternative and the Mary Street Alternatives (Option 1 and Option 2) would have impacts on Mary Street. The difference is that the Mary Street Alternatives would create a new roadway north of the existing Mary Street, while the Five Mile Road Alternative would expand the existing Mary Street to accommodate additional traffic volumes.

Based on the comments in your letter, it appears there is a misconception regarding the design of the Five Mile Road Alternative. The Five Mile Road Alternative would include secondary improvements along Mary Street, and these would be associated with costs to irrigation, right-of-way, etc. and also would require construction interruptions for residents along Mary Street while the existing Mary Street would be reconstructed. Under Mary Street Options 1 and 2, however, Mary Street remains a local road and would only be affected at the intersections that provide access to the new arterial to the north, the proposed Mary Street Option 2 primary corridor.

Regarding the Billings Bench irrigation ditch, this would be impacted under any of the Build Alternatives due to construction along Mary Street. All costs identified in the letter would also incur if the Five Mile Road Alternative were constructed; these impacts would not be avoided for the Five Mile Option. Impacts and mitigation for the irrigation ditch are discussed in Section 4.3.10 of the FEIS and Table 2 of the ROD.

Comment IND-5 Clayton Fiscus (cont.)

Public Safety: The health and environmental cost to protect the families from the 2 1/2 miles consequences of intercity from road construction. **(Not a cost issue in the 5-mile option).**

Public Safety: The added costs to protect families who reside on the 2 1/2 mile Mary Street, and near neighborhoods. This highway truck traffic from; garbage, air, noise, light pollution, road hazard accidents when a truck route is funneled down a single - family residential area. **(Not a cost issue or public safety issue using the 5 mile option.)**

IND-5-c

Using the Mary Street option we have the cost of connecting 15 lanes of traffic to; Mary Streets 5 lanes; at the connection corner of Bench (2),Main St.(6), Roundup Road (2)and Highway 312 (5) . (15 lanes). With Mary the result is an unneeded 20 lane connection. Hwy 312 truck route will not result in a 20- lane connection. **(Saving highway construction dollars.)**

IND-5-d

Right-of- way costs from eminent domain, or right-of-way costs running through a cities single-family restricted zoned area will be (20 to 30 times) higher; plus the cost from demolishing homes would make the 5-mile option superior with lower costs.

IND-5-e

The five-mile option also agrees with the 20 year real bypass plan protecting Billings built-up areas: (the Mary Street plan does just the opposite.) The residents in the Heights area are strong supporters of the 5 mile plan and are nearly 100% opposed using the 2 1/2 miles on Mary Street a residential neighborhood.

The record clearly shows that the Billings Heights and Mary Street Residents were unaware of a shift from a real Bypass Route using Hwy 87, Hwy 3 & Hwy 312. There is a need in the law which I will provide next session to mitigate the issue and make public awareness number one.

IND-5-f

Recommend: **don't throw us under the bus.**

Clayton Fiscus

Rep. Clayton Fiscus
406-860-6400

- 2-

Response IND-5 Clayton Fiscus (cont.)

IND-5-c See response IND-5-b above explaining that Mary Street would be affected under the Five Mile Road Alternative (it would be widened to accommodate anticipated traffic as part of the "secondary corridor"). The main difference between the build alternatives is that the Mary Street Alternatives would create a new roadway north of the existing Mary Street, while the Five Mile Road Alternative would expand the existing Mary Street to accommodate additional traffic volumes.

The impacts associated with the build alternatives are summarized (and compared) in Chapter 4 of the FEIS.

IND-5-d The "Highway 312 truck route" would not meet the project purpose and need of the project. The Purpose and Need established for the project is presented in Chapter 1 of the FEIS, to improve connectivity and accessibility throughout the study area and the region.

IND-5-e The anticipated right-of-way acquisitions are summarized in Section 4.3.5 of the FEIS. The cost estimate presented in Section 2.3.5 of the FEIS includes right-of-way costs. The Five Mile Road Alternative and the Mary Street Alternatives would all require right-of-way acquisition at properties adjacent to Mary Street and throughout the project corridors.

IND-5-f The Executive Summary and Chapter 1 of the FEIS explain that dedicated funding requires that the Bypass name be retained, even though the revised purpose and need statement is more restrictive than that for the original project. Chapter 2 also includes information on the screening and development of the build alternatives analyzed in the FEIS and information on the design objectives for build alternatives. MDT does not have a "formal" definition of a bypass, and the current functional classification of the facility is proposed as an "arterial." Examples of existing arterial roadways within the study include Mary Street, Bitterroot Drive, and Old Hwy 312.

When the project was re-scoped in 2009 due to FHWA's guidance, the purpose and need were re-evaluated to determine the needs within the revised study area. Those needs were found to be: reducing physical barrier impacts to the transportation system, improving connectivity between Lockwood and Billings, improving mobility to and from the Billings Heights, and improving truck/commercial vehicle access to and through Billings. The concept of building a full bypass of Billings was no longer the main focus of the re-scoped project; however, the long-term vision of a future bypass route was maintained by including the objective of locating the western terminus of the route so that it could support a future connection to US 87 and MT 3.

Comment IND-6 Glenn French

From: www@mdt.mt.gov
Sent: Tuesday, April 15, 2014 4:30 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/15/2014 16:29:52
Name: Glenn French
Email Address: gfrenchfa@gmail.com

Comment or Question:
I hope when the design phase starts there will be some consideration to shifting the alignment of the the 5 mile alignment north of Dover Rd to the West slightly to eliminate the need to purchase land from the the residents on the east side of the alignment in the Reichenberger Subdivision.

A couple of the lots could be impacted in an adverse way since it might invade the space allocated for their above ground drain fields and make it impossible to move those drain fields.

Please let me know when the design phase starts so I could talk to some one specifically about our neighborhoods concerns.

Thank you for your time and consideration.

My best,

Glenn E. French
406-281-7741

Reference Number = bypasscomment_26824951171875

1

Response IND-6 Glenn French

Thank you for your comment. Please note that the corridor that was studied in the DEIS and FEIS was wide enough to accommodate shifts in the alignment. MDT has a general policy to move roadway facilities away from buildings and toward open space. During detailed design, MDT will consider shifting the Five Mile Road secondary corridor alignment to the west to address the concerns raised in your letter.

Comment IND-7 George

From: www@mdt.mt.gov
Sent: Monday, March 31, 2014 4:14 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 03/31/2014 16:14:12
Name: George
Email Address: filehouse@att.net

Comment or Question:
None of your PDF files open. You need to check that.

Reference Number = bypasscomment_7205810546875

1

Response IND-7 George

Thank you for your comment. A member of the project team contacted you to assist you in resolving the issue. Ultimately you were able to access the information. A record of the email exchange follows.

From: Filehouse [mailto:filehouse@att.net]
Sent: Monday, March 31, 2014 5:24 PM
To: Mary Guse
Subject: Re: Commenting on Billings Bypass

Thanks for getting back to me. I found that if I saved them to my computer I was able to open them.

----- Original Message -----

From: Mary Guse

To: filehouse@att.net

Cc: tgocksch@mt.gov ; Ron Bockelman ; Kacey Meis ; Mara Krinke

Sent: Monday, March 31, 2014 5:11 PM

Subject: Commenting on Billings Bypass

Dear George –

Thank you for your interest in the Billings Bypass project. We received your comment on Billings Bypass: "None of your PDF files open. You need to check that."

MDT checked with their information technology people who suggested that you download the most recent version of adobe acrobat and then try to access the Billings Bypass FEIS PDF. Also, hard copies of the FEIS are available at the following locations:

AVAILABILITY OF FEIS REVIEW COPIES	
Montana Department of Transportation Billings District Office 424 Morey Street Billings, MT 59101	**Montana State University Billings Library** 1500 University Drive Billings, MT 59101
City-County Planning Department 4th Floor Parmly Billings Library 510 North Broadway Billings, MT 59101	**Yellowstone County Commissioners Office** (County Courthouse) 217 North 27th Street, Room 403 Billings, MT 59101

Response IND-7 George (cont.)

AVAILABILITY OF FEIS REVIEW COPIES	
Montana Department of Transportation Environmental Services Bureau 2960 Prospect Avenue Helena, MT 59601	**Lockwood Water & Sewer District** 1644 Old Hardin Road Lockwood, MT 59101

Again, thank you for your interest in the Billings Bypass project. Please feel free to contact me if you have additional problems accessing the FEIS.

Best regards,
Mary

Mary Guse | Senior Project Coordinator / Environmental Planning
David Evans and Associates, Inc. | Transit / Transportation
1331 17th Street, Suite 900 | Denver, CO 80202 | www.deainc.com
d: 720.225.4608 | o: 720.946.0969 | mrg@deainc.com

DAVID EVANS AND ASSOCIATES INC.

Follow us on LinkedIn | Twitter | Facebook | YouTube

Intentional Blank Page.

Comment IND-8 Travis Heggem

From: www@mdt.mt.gov
Sent: Sunday, April 13, 2014 12:46 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/13/2014 12:45:48
Name: Travis Heggem
Email Address: travisheggem@yahoo.com

Comment or Question:
I own the property at 3554 Summerfield Circle and I am concerned with the Five Mile Road extension as it currently is proposed.
The current proposal is worrisome for several reasons:

1) The roadway comes only a few feet from my drain field. I am worried how this will effect its operation. It also prohibits me from planting trees on my property because now those trees will be too close to the septic system. We were hoping to plant trees to block peoples view from the new road into our yard. IND-8-a

2) Water levels are already very high in the area. Originally our house was to be set one foot lower into the ground, but because of the water level we had to leave it out of the ground an extra foot. Now, with the highway across our property the ground that once would have absorbed rain and snow melt will be covered by asphalt pushing more water towards my house and presumably into my basement. IND-8-b

3) I am also worried about the increased noise level and the loss of privacy. Of all the houses in the subdivision our yard was the farthest from the roads and gravel pits in the area. The house was set back on the property so that the backyard would be more secluded. Now, both the quiet and privacy will be compromised and when you consider that our ability to plant trees will be extremely limited, our lifestyle is being greatly compromised.

This is by no means a complete list, but they are the ones that we feel will need to be addressed. There are numerous other concerns from pollution, garbage, security, loss of the drainage ditch, no more wildlife, and the destruction of the cottonwood trees. IND-8-c

Travis Heggem
3554 Summerfield Circle
Billings, MT 59105

Reference Number = bypasscomment_506866455078125

1

Response IND-8 Travis Heggem

Thank you for your comments regarding the extension of Five Mile Road as a secondary corridor for the Preferred Alternative.

IND-8-a Please note that the corridor that was studied in the DEIS and FEIS was wide enough to accommodate shifts in the alignment (see Chapter 2 of the FEIS and Appendix A in this ROD for maps showing Phase 1 of the Preferred Alternative). MDT has a general policy to move roadway facilities away from buildings and toward open space. During detailed design, MDT will consider shifting the Five Mile Road secondary corridor alignment to the west to address the concerns raised in your letter.

IND-8-b Thank you for raising the concerns about the water table in your letter. These concerns will be shared with the design team and considered during final design. The road will be designed with roadside ditches to catch and direct stormwater runoff. Further, the existing irrigation runoff ditch along the proposed alignment is expected to be perpetuated. For information about anticipated impacts to water resources, including groundwater, see Section 4.4.3 of the FEIS.

IND-8-c The FEIS discloses the potential impacts associated with a No Build and three Build Alternatives. Impacts are summarized in Chapter 4 of the FEIS. Specific to your concerns, noise impacts are summarized in Section 4.3.8 of the FEIS, and the noise study is included as Appendix E of the FEIS. The loss of privacy is noted.

All of the alternatives considered would impact the built and natural environment. Access will be maintained to allow the provision of services such as mail and garbage. Mitigation measures proposed for the project are outlined in Table 1 of this Record of Decision (ROD).

Your concerns will be shared with the design team and considered during final design. During detailed design, MDT will consider shifting the Five Mile Road secondary corridor alignment to the west to address the concerns raised in your letter.

Comment IND-9 Janet Martin

From: www@mdt.mt.gov
Sent: Tuesday, April 29, 2014 11:20 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/29/2014 11:20:16
Name: JANET MARTIN
Email Address: martinj@billingsschools.org

Comment or Question:
As a Heights resident, I am voicing my support of the Billings Bypass project. I feel the growth of the Heights area, the need for better access to Heights and Lockwood for both trucks and emergency vehicles should make this project a priority.

Reference Number = bypasscomment_983642578125

1

Response IND-9 Janet Martin

Thank you for your comment.

Comment IND-10 Jesse Martin

From: www@mdt.mt.gov
Sent: Tuesday, April 29, 2014 10:27 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/29/2014 10:27:23
Name: Jesse Martin
Email Address: jmartin@sm-energy.com

Comment or Question:
Please continue the process to build the bypass as alternative 1 as soon as possible and do not delay as this project will become more expensive and more contentious as time continues.

Reference Number = bypasscomment_478546142578125

1

Response IND-10 Jesse Martin

Thank you for your comment. FHWA and MDT plan to proceed with the development of Phase 1 of the Mary Street Option 2 Alternative.

Comment IND-11 Alan Parker – (Comment sent directly to project Team Member via e-mail after Public Open House)

From: Alan Parker [mailto:montanaphlowerco@gmail.com]
Sent: Tuesday, April 22, 2014 12:08 PM
To: Gocksch, Thomas
Subject: Billings bypass project

Tom,

I am reviewing the drawings in the EIS.
I have a question regarding the Lockwood side alignment from Johnson Lane.

The project originally involved direct connection from the I90 / I94 junction to Hwy 87 / 312. In 2009 after a round of public input, the project underwent "Re-scoping" and new criteria were to be used in selecting routes, and needs to be met in the project.

It appears the segment from the Johnson Lane interchange paralleling I94 to the northeast brings the project directly to the original alignment with the I94 /I90 junction.

First can you provide a link to drawings for the original Lockwood side alignment connection to I94 / I90 to the river, pre 2009?

Second and more to the point: Since the criteria under the 2009 re-scope is primarily connecting two communities and removing physical barriers, to reduce travel times and distances between the communities, were other more efficient routes between Johnson Lane and Bitterroot Lane investigated? Post Re-Scope?

My highly technical measurement indicates a 35% shorter route is available by traveling straight north on Johnson Lane and crossing the river on the Mary Street 1 alignment.

Please provide any information you are aware of regarding this significant issue affecting the communities for decades to come.

Regards,

Alan Parker

Response IND-11 Alan Parker

From: Gocksch, Thomas <tgocksch@mt.gov>
Sent: Tuesday, April 22, 2014 2:24 PM
To: Alan Parker
Cc: MDT Comments - BillingsBypass
Subject: RE: Billings bypass project

Good afternoon Mr. Parker,

Thank you for taking the time to review the Billings Bypass – Final Environmental Impact Statement (FEIS) and for providing comment. I will make sure that your comment is incorporated into the permanent record, and considered during development of the Record of Decision in accordance with the National Environmental Policy Act (NEPA).

I believe the information you are looking for is included in the Final Alternatives Report which is located in Appendix I of the FEIS. This report includes Maps showing all of the alternatives considered, including those eliminated, along with a full explanation of the screening process.

Appendix I can be accessed online at this location: http://www.mdt.mt.gov/pubinvolve/docs/eis_ea/blg_bypass/feis_blg_bypass_appi.pdf

Thank you again for taking the time to comment. Additional information related to the NEPA Environmental Impact Statement development process can be found in the document titled "A Citizen's Guide to NEPA" located at the following link. http://www.blm.gov/pgdata/etc/medialib/blm/nm/programs/planning/planning_docs.Par.53208.File.dat/A_Citizens_Guide_to_NEPA.pdf

If I can be of any further assistance please feel free to give me a call.
Tom Gocksch

Tom Gocksch, P.E. -- MDT Environmental Services -- Billings District Project Development Engineer -- (406) 444-9412

The link you requested was provided by Tom Gocksch in his response to your email.

After the project was rescoped, more than 60 alternatives were considered between I-90 and Old Hwy 312 (see Figure 2.12 in the FEIS for a sketch of the alternatives considered). An alternative called the "Southern Alignment" extends north from Johnson Lane and is similar to what you've described. The southern alignment alternative originated under the 2001 purpose and need and was considered for the project, but that alignment was dismissed due to a substantial longitudinal encroachment of the Yellowstone River floodplain. Figure 2.12 in the FEIS shows the floodplain of the Yellowstone River and the "Southern Alignment" alternative for your reference.

Comment IND-12 Denis Pitman

From: www@mdt.mt.gov
Sent: Friday, April 11, 2014 1:05 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/11/2014 13:05:05
Name: Denis Pitman
Email Address: PitmanWard2@aol.com

Comment or Question:
I support this vital and important project and hope that we can get is started as quickly as possible.

Reference Number = bypasscomment_922943115234375

1

Response IND-12 Denis Pitman

Thank you for your comment.

Comment IND-13 Mona Reichert

April 30, 2014

To : Tom Martin

Environmental Services Bureau Chief

Montana Department of Transportation

RE: The Mary Street Tragedy.....The Five Lane Rip Off.....

Hello, my name is Mona Reichert and I am a realtor in Billings, MT. I live and work in the Heights. Mary Street is an area 2 ½ miles long and 1 ½ miles wide. It connects with three other major roads, plus Bench Boulevard. That's a total of fifteen lanes. There are already three major truck routes. If Mary Street is used as another truck route, with five lanes, we would then have twenty lanes. Doesn't that seem a little crazy?

I shudder to think what this will do to the Mary Street neighborhood. According to medical reports there will be increased health issues with this much traffic. Replacing the one mile elevated irrigation lateral that runs along Mary Street will give the highway department costly headaches trying to please Bench Water. As a realtor, I know that obtaining right of way thru a single-family restricted area will be very costly and very upsetting to the residents. Decreased property values in the area is also a very real probability.

I have years of experience in the transportation and logistics industry. I have to wonder why Highway 312 is not being considered as an alternate option. It has already been widened to accommodate an increased flow of traffic. Using this option would not destroy the Mary Street neighborhood. Thank you for your consideration in this matter.

Sincerely,

Mona Reichert

Response IND-13 Mona Reichert

Thank you for your comment.

The build alternatives are designed to meet the project purpose and need, as described in Chapter 1, to improve connectivity and accessibility throughout the study area and the region. The Preferred Alternative proposes developing an arterial route parallel to the existing Mary Street. The existing Mary Street would not be changed with the implementation of the Preferred Alternative. It would remain a local road, with access to the bypass provided at Old Hwy 312, Hawthorne Lane, Bitterroot Drive, and Five Mile Road. Mary Street is expected to carry no more traffic with the construction of the bypass than it does today.

Throughout the development of the project, many alternatives were considered but eliminated from further study. The alternatives considered and the reasons for their elimination can be found in Chapter 2 of the FEIS and in the alternatives development memo. Widening of Old Highway 312 was not considered as an alternative, as the purpose of the project was to improve access and connectivity between I-90 and Old Hwy 312 to improve mobility in the eastern area of Billings.

The existing alternatives were developed to maintain the long-term vision of the Bypass (i.e., they will not preclude future considerations of a roadway to connect to MT 3). Retaining the potential for a future bypass is part of the design objectives for the project. For more information regarding the development of the project, and of potential alternatives, refer to Chapters 1 and 2 of the FEIS. Chapter 2 also includes information on the screening and development of the build alternatives analyzed in the FEIS and information on the design objectives for build alternatives.

With respect to health concerns, air quality modeling analysis has determined that there would be an improvement in air quality in the study area if any of the build alternatives were constructed, though it is possible that localized increases in emissions may occur along the build alternatives. However, even if localized increases do occur, total emissions would be substantially lower in future years due to fleet turnover and the implementation of EPA's vehicle and fuel regulations. In summary, for each of the build alternatives in the design year, the total emissions in the project corridor are expected to be significantly lower than those emitted today, even when taking into account the small projected increase in vehicle miles traveled in some project locations. (See Section 4.4.1 of the FEIS for the Air Quality Analysis, and the response to a public comment letter in Appendix J (comment IND-118-a) for more information.)

Comment IND-14 RJ Rogers

From: www@mdt.mt.gov
Sent: Thursday, April 10, 2014 12:48 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/10/2014 12:48:08
Name: RJ Rogers
Email Address: chex.offers@gmail.com

Comment or Question:
I am a concerned citizen living in Lockwood and deal with Johnson Lane / Becraft / Old Hardin Road OVER CROWDING on a daily basis.

Just because the proposed plan looks good "as the bird flies"
and on some piece of paper can't convince me it's the best solution - since the cost will impact residents for DECADES to come, "cheapest" isn't best either.

I can't believe anyone wants to increase the already OVERLOADED traffic on TWO-LANE Johnson Lane??????????????????????

Marys Road residents aren't the only ones being negatively impacted by connecting Johnson Lane to the Highway north. It's NOT a welcome solution from our "end of the bridge" either - if anything you should be looking for ways to eliminate the HORRIBLE BOTTLENECK that exists there already, not compounding it!!

One of you "decision makers" needs to come sit at Johnson Lane intersection with I-90 / Old Hardin / Becraft roads some morning or evening to experience the overwhelming traffic congestion (then add in School Buses and all the 18-wheeler traffic that impact it) - the lights there are atrocious and poorly planned.
It's two lanes ONLY and you want MORE TRAFFIC THERE??? Good grief. . .

Why not extend I-94 interchange north and take advantage of the existing freeway infrastructure? What kind of flooding is going to impact a new bridge -there are swamps, marshes, low flood plains in that area??? wow...

SERIOUSLY, Pull off the blinders already!!!

Reference Number = bypasscomment_130157470703125

Response IND-14 RJ Rogers

Chapter 2 provides information on the alternative screening process, including the estimated cost of alternatives considered. Section 2.4 provides the rationale for selecting the Preferred Alternative, which was based upon a broad range of factors, including the ability to meet the purpose and need, social, economic, and environmental impacts, as well as cost.

The Johnson Lane Interchange will be reconstructed as part of the project. Multiple preliminary conceptual designs for the Johnson Lane Interchange have been evaluated. All of the concepts would improve the effectiveness of operations and traffic flow at the interchange. These concepts are discussed in detail in Chapter 2 and graphic depictions are presented in Appendix H. The precise configuration of the Johnson Lane Interchange will be determined during final design. A complete description of the traffic analysis may be found in the Combined Traffic Reports included as supplemental material to the FEIS.

Alternatives originating from the I-90/I-94 interchange were analyzed during the alternatives screening process. These alternatives and a brief summary of the reasons for elimination are described in Chapter 2. The alternatives screening process is described in more detail in Appendix I, the Alternatives Report.

Regarding your questions related to flooding, the bridge and the roadway will be designed to handle the appropriate flooding event. Additional large diameter or box culverts are also planned along the roadway within the floodplain to provide additional relief during flooding events. More information can be found in Section 4.4.6 of the FEIS (available on-line at http://www.mdt.mt.gov/pubinvolve/billingsbypass).

Comment IND-15 Steven Roller

From: www@mdt.mt.gov
Sent: Sunday, April 13, 2014 10:57 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/13/2014 10:56:54
Name: Steven Roller
Email Address: sdrollers@bresnan.net

Comment or Question:
Let's see how fast can you build this!

Reference Number = bypasscomment_85894775390625

1

Response IND-15 Steven Roller

Thank you for your comment.

Comment IND-16 Bobbie Skaggs

From: www@mdt.mt.gov
Sent: Wednesday, April 09, 2014 11:10 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/09/2014 23:10:24
Name: Bobbie Skaggs
Email Address: bubblesskaggs@yahoo.com

Comment or Question:

I oppose this bypass! I think it is a waste of money and land.
All it would save is 5 miles so people don't have to travel down Main Street. What will happen to the value of my property? Will my property taxes increase to help with this project. I live on Mary Street and the proposal of this bypass in front of my house is redicules. There are several children and animals that live in this neighborhood. This bypass will effect our way of life. IND-16-a

We already have traffic issues on Mary Street and no law enforcement to enforce the speed limit. My concerns are the noise levels, possible chemical spills (that can effect the residential community if hazardous) and the impact on the animals that frequent the field that this road is proposed to go through. We have a new Junior High being built a few blocks away in the upcoming year. This will increase foot tragic of children walking too and from school. IND-16-b

When Main Street was built, it's main purpose was a Truck Route. What I don't understand is why was there a bypass in the works for the past
20 years, then was scraped? So many Residence are going to suffer from this project. People losing their properties and their livelihood to this project is disgraceful. I feel sorry for those families who will be loosing their houses. Especially when they have saved all their hard earned money fixing them up
so they can retire in them. At tonights open house, I did not
talk to one single individual that was for this bypass. I know that I can speak for the majority of the residence on Mary Street when I say, "we DO NOT want a highway running through our
neighborhood." There are too many unforeseen factors that can
play a role in the future of this bypass in our community. IND-16-c

Please consider the residence and animals that call this little piece of country heaven our home. Thank you, Bobbie Skaggs IND-16-d

Reference Number = bypasscomment_62652587890625

Response IND-16 Bobbie Skaggs

Thank you for your comment.

IND-16-a The build alternatives are designed to meet the project purpose and need, as described in Chapter 1 of the FEIS, to improve connectivity and accessibility throughout the study area and the region.

The 2009 Billings Urban Area Long Range Transportation Plan Amendment does not identify local taxes as a source of funding for the project. However, the plan indicates that developer fees are a potential source of funding for the project.

The Preferred Alternative proposes developing an arterial route parallel to the existing Mary Street. The existing Mary Street would not be changed with the implementation of the Preferred Alternative. It would remain a local road, with access to the bypass provided at Old Hwy 312, Hawthorne Lane, Bitterroot Drive, and Five Mile Road. Mary Street is expected to carry no more traffic with the construction of the bypass than it does today.

Please contact the local police department regarding enforcement of speed limits on local roads.

IND-16-b The FEIS discloses the potential impacts associated with a No Build and three Build Alternatives. Impacts are summarized in Chapter 4 of the FEIS. Any of the alternatives would have impacts on the built and natural environment. Section 4.3.8 discusses noise impacts, Section 4.2 discusses transportation issues, including safety issues for pedestrians and bicyclists, and Sections 4.4.9 and 4.4.10 discuss potential impacts to wildlife and protected species.

As discussed in Section 4.3.5.2 of the FEIS, MDT and FHWA follow state and federal requirements when compensating landowners for physical acquisition of property for right-of-way. These requirements rely on data from real estate transactions in the area to form an objective basis for fair market value. Agency policies do not allow cash compensation for proximity impacts to properties or structures not being acquired for right-of-way.

IND-16-c Regarding the original bypass project planned for Billings area, that concept was modified based on guidance from FHWA in 2008 regarding project planning using financial constraints. MDT coordinated with the local Policy Coordinating Committee (PCC) of the Billings urban area transportation planning process on potential approaches to proceed with the project. In November 2009, the PCC voted to re-scope this project to focus only on the eastern segment between I-90 and Old Hwy 312. Thus, the concept of building a full bypass of Billings was no longer the main focus of the re-scoped project. However, the long-term vision of a future bypass route was maintained by including the objective of locating the western terminus of the route so that it could support a future connection to US 87 and MT 3. See Section 1.1.1 of the FEIS for more detail on the history of the project.

IND-16-d Thank you for attending the informational open house on April 9, 2014.

Comment IND-17 James O. Southworth

RECEIVED
APR -9 2014
ENVIRONMENTAL

Tom Martin April 7 2014
Dear Sir
I Approve the Billings Bypass impact Statement. And the Sooner the better, each Step will Allow Billings to Grow. And the next Step is, Bridge The River, on Mary St And Tie in To I 90
Good work on your part Billings The County And the Nation benifit From this type progression
Your Humble Servant
James O Southworth

James O Southworth
1317 yellow stone Ave
Billings MT 59102
545-9761

Response IND-17 James O. Southworth

Thank you for your comment.

Comment IND-18 Tracy E. Thoreson

From: www@mdt.mt.gov
Sent: Monday, April 28, 2014 10:35 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/28/2014 22:34:29
Name: Tracy E Thoreson
Email Address: hudecek1@hotmail.com

Comment or Question:
Billings Bypass EIS

Tom Martin, MDT, Environmental Services Bureau Chief Stefan Streeter, MDT, Billings District Administrator Tom Gocksch, Environmental Service desk Allen Woodmansey

A primary goal for purposed billings bypass is to improve traffic flow including safety and mobility of residence, if this is the case several flaws in the design and location have been brought to the MTDOT attention, unfortunately MTDOT and local commissioners are determined to push this project through regardless of clear obstacles.

How did the formal environmental review advance? It is my understanding that alignment options developed during the Alignment Study are determined to have public, agency and local political support. Notice the first part of the sentence PUBLIC (It is noted that there is little community support regarding any of the alignment options down or around Mary Street) if the community does not support this by pass how can the planning have gone this far?

Why has all this time and funds been spent on a project that is not put together with common goals for all involved? IND-18-a

No EPA employees have done any onsite studies of the property located at 1835 Five Mile Road, Billings MT 59105. This property is available for a complete onsite evaluation, contact can be made with Tracy Thoreson 406-245-2856.

How can a report be complete without proper studies? The property listed above has 2 year round water sources including small wetland area that feed year round into 5 Mile Creek and directly to Yellowstone River.

The wetland area supports a variety of organisms, plant life, amphibians, mammals including a natural filter for clean water it is truly life at its core. This area has been left untouched for the last 15 years the property owners understand the value of the wetland area and do not intend to let any outside sources destroy this. IND-18-b

How will the EPA and MTDOT protect this area from the road run off air pollution and garbage resulting from a road built next to the wetland? IND-18-c

In the final report it does not appear to have all updated pictures identifying the R-7000 Bitterroot Heights subdivision see figure listed. IND-18-d

1

Response IND-18 Tracy E. Thoreson

IND-18-a The project has been developed following the requirements of the National Environmental Policy Act (NEPA), which requires, for projects of this scope and scale, comprehensive public and agency outreach, development and analysis of multiple alternatives, and a public review process. The NEPA process is described further in Chapter 1 of the FEIS. The USEPA has reviewed and commented on the project scoping documents and the DEIS. You can see EPA comments on the DEIS in Appendix J of the FEIS.

Please refer to "A Citizen's Guide to the NEPA" published by the Council on Environmental Quality for more information regarding NEPA regulatory requirements. http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf

IND-18-b The biology team spent three days in the vicinity of Mary Street. The study area included 250 feet north of the right-of-way and followed the right-of-way line to the south. The wetlands along Mary Street were identified in the Biological Resources Report (DEA 2011). Wetland impacts were a criterion during the alternatives screening process, and impacts analysis continued throughout the NEPA process. These impacts and the proposed mitigation are described in Chapter 4. More information can be found in Appendix F, the Clean Water Act Section 404(b)(1) Evaluation.

Impacts to wetlands were assessed for the build alternatives and are presented in Section 4.4.7 of the FEIS. MDT and FHWA have been coordinating with the USEPA and the Army Corps of Engineers (COE), the official with jurisdiction over wetlands/waters of the US, since early on in the project. The USEPA and COE reviewed and commented on the project scoping documents and the DEIS. You can see USEPA and COE comments on the DEIS in Appendix J of the FEIS.

IND-18-c Water quality and wetland impacts and mitigation are described in the FEIS in Sections 4.4.3 and 4.4.7, and summarized in Table 1 of this ROD. Additionally, Appendix F of the FEIS contains the Clean Water Act Section 404(b)(1) Evaluation, which further describes measures to minimize harm to wetlands.

IND-18-d Regarding concerns related to the Bitterroots Heights subdivision, the images used in the FEIS were based on the most recently available data. MDT is aware that the build-out of this subdivision continues to progress.

Comment IND-18 Tracy E. Thoreson (cont.)

Figure 11 appendix H phase 1 (page 37 does not show housing in Bitterroot subdivision

Has the project been skimmed over and pictures not updated through out the entire report being submitted the State and Federal Highway Department?

IND-18-d (cont.)

The alternative road is shown to cross wetland across Bitterroot Subdivision this area consists of solid and wetland areas. The wetland feeds to Five Mile Creek and flows year round the road would be built over the top. How is EPA going to protect this area from road waste?

IND-18-e

Bitterroot Subdivision has been built on the site of Empire Sand and Gravel, the company would dig pits on this property and dump all waste into pits and cover with dirt this point was brought up by former employees of Empire Sand and Gravel during County Commissioners Meeting at the time of approval of building subdivision. What measure and funds have been set aside for clean up if pits will be exposed during construction?

IND-18-f

Is it legal to build a Highway through R-7000 zoning?

IND-18-g

I have included an attachment it is a study called Dangerous by Design please take the time to review this report as it has many key points that would determine safety features that could be added to the Billings Bypass if the project goes forward.

IND-18-h

Tracy Thoreson
1835 Five Mile Road
Billings, Montana 59105
406-245-2856
Hudecek1@hotmail.com

Reference Number = bypasscomment_1021728515625

2

Response IND-18 Tracy E. Thoreson (cont.)

IND-18-e See response to wetlands comment above (IND-18-c).

IND-18-f Concerns about clean-up of the Bitterroot Subdivision should be directed to the City/County Planning Department.

IND-18-g The location of the proposed project is legal. The road classification for the Mary Street Option 2 Alternative is a principal arterial, not an interstate highway. Bench Boulevard is an example of a principal arterial road in the Billings area that passes next to lots zoned as R-70R, or RESIDENTIAL 7,000 RESTRICTED.

IND-18-h Thank you for information about the Dangerous by Design study. Specific safety measures for the Billings Bypass will be identified during final design. The project will be designed to the most current design standards which are based on building a safe transportation system.

Comment IND-19 Tracy E. Thoreson

From: www@mdt.mt.gov
Sent: Monday, April 28, 2014 10:44 PM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/28/2014 22:43:56
Name: Tracy E Thoreson
Email Address: hudecek1@hotmail.com

Comment or Question:
2009-11-09 Dangerous by Design is study completed concerning safety measured used to improve all travel allong high traveled
roads. The file attachment could not be added to this message.

What measured can be used in the design of Billings by pass from this safety study? Tracy Thoreson

Reference Number = bypasscomment_1263427734375

1

Response IND-19 Tracy E. Thoreson

Thank you for information about the Dangerous by Design study.

The new roadway would be constructed to the most current standards of safety for motor vehicles, bicycles, and pedestrians. The design will incorporate Billings' Bike Net bike trail crossings and other provisions as required. Pedestrian and bicycle safety are addressed in Section 4.2.4 of the FEIS. Section 2.3.3 of the FEIS describes typical sections for different sections of the alternatives, including proposed speeds.

Specific safety measures for the Billings Bypass will be identified during final design.

Comment IND-20 Tim Wiens

From: www@mdt.mt.gov
Sent: Thursday, April 24, 2014 8:10 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/24/2014 08:09:56
Name: Tim Wiens
Email Address: tim@timwiens.com

Comment or Question:
The proposed construction on Mary Street seems to be essentially redundant to Highway 312, a portion of which was recently widened to four lanes a few years back.

The proposed Mary Street option, forcing Mary Street to be transformed into a busy highway, may have stirred up quite a hornet's nest. Instead of building one leg of a bypass which goes around Billings (which I thought was the goal), the proposed Mary Street option instead paves a street back into town, seems short-sighted and ends up needlessly turning a residential street into a noisy, smelly, high-speed, four-lane highway.

If there is a concern that truckers (or cars) will use Mary Street rather than take the five-mile road option up to Highway 312, I'd suggest that MDT could work with Mary Street residents to install speed bumps if needed/wanted to discourage truck traffic and/or signage which restricts through traffic.

Widening Mary Street to four lanes will most assuredly attract trucks to it. If it's not broken, don't fix it. The more common-sense approach seems to be to build the five-mile route, leave Mary Street alone and use the funds to widen Highway 312 a few more miles. I just hope common sense prevails, so that this much-needed bypass is built efficiently and expeditiously.

Thanks for your kind consideration of these comments and for all that you do.

Reference Number = bypasscomment_174468994140625

1

Response IND-20 Tim Wiens

As described in Chapter 2 of the FEIS, the Mary Street Option 2 Alternative will not transform Mary Street into a busy highway. The Mary Street Option 2 Alternative would construct a separate new roadway located to the north of the existing Mary Street. The proposed road classification for the Mary Street Option 2 Alternative is a principal arterial, not an interstate highway. The existing Mary Street roadway will remain unchanged under this alternative with the exception of minor modifications at cross streets that access the new roadway alignment to the north. Appendix A of the ROD shows a map of the typical section and anticipated footprint of the project.

The existing Mary Street corridor is maintained by the City/County; as such, any proposed traffic control measures to be implemented along the existing Mary Street corridor would need to be discussed with the City/County and not MDT.

As described in Chapter 2 of the FEIS, the Five Mile Road Alternative would require secondary improvements along existing Mary Street in order to accommodate increased traffic that would be generated by this alternative. Traffic impacts for each alternative are summarized in Chapter 4. A complete description of the traffic analysis may be found in the Combined Traffic Reports included as supplemental material to the FEIS.

Comment IND-21 Tom Wilde

From: www@mdt.mt.gov
Sent: Monday, April 07, 2014 9:27 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/07/2014 09:26:35
Name: Tom Wilde
Email Address: tomwilde2008@yahoo.com

Comment or Question:
I am writing to Suppory the Yellowstone river bridge connecting between Lockwood and the heights. The preferred alternative is a great project for billings and provides a crucial transportation path for the heights as well as travel to Alberta

Reference Number = bypasscomment_269012451171875

1

Response IND-21 Tom Wilde

Thank you for your comment.

Comment IND-22 Kathryn Zurbuchen

From: www@mdt.mt.gov
Sent: Thursday, April 17, 2014 9:28 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/17/2014 09:28:06
Name: Kathryn Zurbuchen
Email Address: knzurbuchen@bresnan.net

Comment or Question:
At 95 years of age I've seen Billings change a lot. This change has been in the works for over 30 years. I was beginning to think I would never see it materialize, and now it is almost here. I hope nothing stands as a further road-block!

Reference Number = bypasscomment_80242919921875

1

Response IND-22 Kathryn Zurbuchen

Thank you for your comment.

Comment IND-23 Tom Zurbuchen

From: www@mdt.mt.gov
Sent: Friday, April 11, 2014 10:04 AM
To: mdtbillingsbypasseis@mt.gov
Subject: Billings Bypass Submitted

A question, comment or request has been submitted via the "Contact Us" web page.

Project/Study Commenting On:Billings Bypass
Submitted: 04/11/2014 10:03:56
Name: Tom Zurbuchen
Email Address: zurbuchen@bresnan.net

Comment or Question:
The FEIS is out, the open house meeting went well, it is time to build the Bypass according to option II ASAP!

Reference Number = bypasscomment_32879638671875

1

Response IND-23 Tom Zurbuchen

Thank you for your comment.

Intentional Blank Page.

MDT attempts to provide accommodation for any known disability that may interfere with a person participating in any service, program or activity of the Department. Alternative accessible formats of this information will be provided upon request. For further information, call 406.444.7228 or TTY (800.335.7592) or call Montana Relay at 711.

Intentional Blank Page.

APPENDIX B

JOHNSON LANE INTERCHANGE SEGMENT

RE-EVALUATED EIS

MONTANA
Department of Transportation

Malcolm "Mack" Long, Director

2701 Prospect ▪ PO Box 201001
Helena MT 59620-1001

August 24, 2022

Lucia Olivera
Division Administrator
Federal Highway Administration
585 Shepard Way
Helena, MT 59601-9785

Subject: Request for Concurrence on Re-evaluated FEIS/Amended ROD
BBP – Johnson Lane Interchange
NCDP-MT 56(55)
CN: 4199007

Dear Lucia Olivera,

Due to availability and type of funding, the Montana Department of Transportation (MDT) will implement Phase I of the Billings Bypass Project as seven separate construction projects. The fifth project to be constructed as part of Phase I is the Johnson Lane Interchange segment. This segment of the Billings Bypass is located within the community of Lockwood, Yellowstone County, Montana. The current project footprint encompasses an area that includes Johnson Lane from the Coulson Road Intersection to approximately 750 feet south of its intersection with Old Hardin Road; Old Hardin Road from the intersection of Rykken Circle to approximately 680 feet east of its intersection with Cole Street; Cole Street approximately 190 feet north of the Old Hardin Road Intersection to its intersection with Becraft Lane; the Becraft Lane/Cole Street Intersection; Interstate 90 (I-90) from approximately 3,660 feet west of the Johnson Lane/I-90 overpass to 3,695 feet east of the overpass, including the eastbound and westbound on and off ramps; and the North Frontage Road from approximately 1,250 feet west of Town Pump to its intersection with Sannon Boulevard. The Johnson Lane Interchange project is located within Sections 19 and 30 of Township 1 North, Range 27 East. A project location map and current footprint (Figure 1) are provided in Attachment 1.

The Billings Bypass Final Environmental Impact Statement (FEIS) was signed by your agency on March 18, 2014, and the Final Record of Decision (ROD) was signed by your agency on July 25, 2014. Additionally, two Revised RODs were prepared in 2019 and 2021 to address design modifications to the Yellowstone River segment and the Railroad Overpass segment of the Billings Bypass Project. The Revised RODs were signed by the Federal Highway Administration (FHWA) on December 18, 2019, and May 13, 2021.

MDT Environmental Services Bureau has reviewed the Johnson Lane Interchange segment, the previously approved FEIS and ROD for the Billings Bypass, the Revised RODs for the Yellowstone and Railroad Overpass segments, the current regulatory requirements, and the current conditions within the Johnson Lane Interchange project footprint. Based on this analysis, MDT concludes that the requirements of both the National and Montana Environmental Policy Acts (NEPA and MEPA) are met for the subject project through a Re-evaluated Environmental Impact Statement (REIS) as described in 23 Code of Federal Regulations (CFR) 771.129(b) rather than a Supplemental Environmental Impact Statement (SEIS) as described in 23 CFR 771.130. However, notable design changes within the Johnson Lane Interchange segment will require an amendment to the ROD, as described in 23 CFR 771.127(b).

The purpose of this letter is to demonstrate MDT NEPA/MEPA compliance by documenting changes to environmental conditions within the current project footprint, design refinements/changes to the Johnson Lane Interchange segment since the 2014 FEIS and ROD and explaining why these differences do not

constitute a "significant" change that would trigger a SEIS as opposed to a REIS. This letter also requests FHWA concurrence that the proposed design for the Johnson Lane Interchange segment and the updated environmental information would not require preparation of a SEIS, but that a Revised ROD would be required in accordance with 23 CFR 771.127(b).

As part of the 2014 Billings Bypass FEIS, five options were developed for the Johnson Lane/I-90 Interchange and associated secondary intersections at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft, and Johnson Lane/North Frontage Road. A preferred alternative for the Johnson Lane Interchange segment was never determined and outlined in the 2014 Billings Bypass FEIS and ROD. The FEIS and ROD instead stated that the precise configuration of the Johnson Lane Interchange and associated secondary intersections would be determined during final design. For the purpose of impact analysis in the 2014 FEIS and ROD, a maximum potential footprint in which impacts may occur was determined for the Johnson Lane Interchange project. The maximum footprint (i.e., area of potential effect [APE]) outlined in the FEIS included the Johnson Lane/I-90 Interchange and approximately 0.75 mile of I-90 (3,960 feet), the North Frontage Road, Sannon Boulevard, and Johnson Lane from the Coulson Road Intersection to approximately 440 feet south of its intersection with Old Hardin Road. At Old Hardin Road, the APE only extended 450 west of the Johnson Lane Intersection and ended at its intersection with Becraft Lane. Figure 1 in Attachment 1 shows the APE from the 2014 FEIS and ROD versus the current project footprint.

The following re-evaluation discusses new information or circumstances relevant to the development of the Johnson Lane Interchange project and ensures that current environmental requirements are addressed. This re-evaluation focuses on the changes to the design, the amended maximum APE, the potential for new impacts, and new project-related issues that have arisen since approval of the 2014 Billings Bypass FEIS and ROD.

As described in Chapter 1.3 of the FEIS, the purpose of the Billings Bypass project is to improve access and connectivity between I-90 and Old Highway 312 and to improve mobility in the eastern area of Billings. The purpose of and need for the Johnson Lane Interchange project segment of the Billings Bypass has not changed since the approval of the 2014 FEIS and ROD.

DESCRIPTION OF CHANGED CONDITIONS

The Billings Bypass project has been split into seven project segments. Johnson Lane Interchange is the fifth of those segments to be designed. Construction is expected to begin during the 2023 construction season. Since the Billings Bypass ROD in July 2014, there have been design refinements/changes and updated supporting evaluations for the Johnson Lane Interchange segment of the Bypass, including a re-evaluation of the Biological Resources within and adjacent to the proposed Johnson Lane Interchange footprint (revisiting threatened and endangered species, species of concern, and greater sage-grouse); an update to the wetlands evaluation within the proposed footprint; a re-evaluation and updated impact assessment for noise, cultural resources, and hazmat materials/contaminated soils; and an updated review of environmental justice concerns. Additional public involvement has also been conducted since the 2014 ROD was issued. The associated design refinements/changes, environmental changes, and public involvement updates, which are the subject of this re-evaluation, are described below. The overall proposed design for the Johnson Lane Interchange project segment is depicted in Figure 2 found in Attachment 1.

Design Refinement/Change 1: Johnson Lane/I-90 Interchange and Johnson Lane

Five interchange options were developed for the Johnson Lane/I-90 Interchange and associated secondary intersections at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft, and Johnson Lane/North Frontage Road; however, a preferred alternative was never determined and outlined in the 2014 Billings

Bypass FEIS and ROD. A diverging diamond interchange (identified in the 2014 FEIS and ROD as the double crossover diamond interchange) has been selected as the preferred alternative and carried forward to final design (Figures 2 and 4 in Attachment 1). This interchange alternative was carried forward as it would minimize right-of-way (ROW) impacts, reduce conflict points, eliminate left turns across opposing traffic at the interchange, improve traffic flow, and maintain or enhance access for most of the businesses and properties in the area.

Under the diverging diamond interchange design, the two directions of traffic on Johnson Lane would cross to the opposite side on both sides of the I-90 overpass bridges. The general location of the I-90 westbound and eastbound ramps would be maintained; however, their approach alignments with Johnson Lane would be modified. The off-ramp and crossover sections would be signalized. Johnson Lane through the Johnson Lane/I-90 Interchange would vary between two or three through lanes to accommodate on and off ramps.

At the signalized Johnson Lane and Old Hardin Road Intersection, the proposed lane configuration includes one eastbound through lane, with the option to turn right; two eastbound left-turn lanes onto Johnson Lane; and one westbound through lane for the west leg of Old Hardin Road. One westbound through lane, two westbound designated right-turn lanes onto Johnson Lane, and one westbound left-turn lane onto Johnson Lane are proposed for the east leg of Old Hardin Road. The lane configuration for the south leg of Johnson Lane would include two northbound through lanes, with the option to turn right onto Old Hardin Road; one northbound designated left-turn lane onto Old Hardin Road; and one southbound through lane. The north leg of Johnson Lane would include one southbound through lane, one southbound designated right-turn lane onto Old Hardin Road, two southbound designated left-turn lanes onto old Hardin Road, and two northbound through lanes.

The proposed diverging diamond interchange would require realigning the North Frontage Road further to the north and is outlined below under Design Refinement/Change 2.

Design Refinement/Change 2: North Frontage Road

Under the diverging diamond option (double crossover diamond) outlined in the 2014 FEIS and ROD, the North Frontage Road would have essentially remained on its existing alignment, crossing Johnson Lane at its current location, with a new traffic signal proposed at the intersection.

Under the proposed Johnson Lane Interchange segment, the configuration of the diverging diamond would now extend further to the north along Johnson Lane. Adequate spacing between the North Frontage Road Intersection and the proposed ramp terminals is required in order to accommodate sufficient storage lengths for the proposed turn lanes at the new interchange. This meant shifting the North Frontage Road and Johnson Lane Intersection approximately 450 feet to the north of the existing location. To connect to the new intersection, the North Frontage Road alignment west of Johnson Lane would curve north through the east end of the Town Pump parking lot. The alignment would then curve back east to the new intersection location.

Since the Firth Street residential area is located on the east side of Johnson Lane, several connection/access alternatives for the North Frontage Road east of Johnson Lane were evaluated. Alternatives that were evaluated included:

- Eliminating the eastern North Frontage Road connection to Johnson Lane and connecting the eastern North Frontage Road to the future Billings Bypass alignment via an improved Sannon Boulevard.
- Connecting the eastern segment of North Frontage Road to Johnson Lane at a new signalized intersection with the western segment of North Frontage Road and Johnson Lane.

- Providing a right-in, one-way eastbound connection from Johnson Lane to the eastern segment of North Frontage Road at the current intersection of North Frontage Road and Johnson Lane in conjunction with the approach to use an improved Sannon Boulevard to connect to the future Billings Bypass.
- Connecting the eastern segment of North Frontage Road to Johnson Lane at the new intersection of Johnson Lane and the proposed Billings Bypass alignment.
- Connecting the eastern segment of North Frontage Road to Johnson Lane at a new signalized intersection with the western segment of North Frontage Road and Johnson Lane in conjunction with an improved connection from the North Frontage Road to the future Billings Bypass alignment via Sannon Boulevard.

Connecting the eastern segment of the North Frontage Road to Johnson Lane at a new signalized intersection with the western segment of North Frontage Road and Johnson Lane is the preferred alternative (Figures 2 and 3 in Attachment 1). This alternative was chosen because it maintained the direct connection to North Frontage Road east of Johnson Lane that businesses along that segment of roadway relied upon, particularly commercial truck traffic coming off I-90. The preferred alternative would require realignment of North Frontage Road through the residential area on Firth Street in order to connect with the new intersection. The new North Frontage Road alignment would directly impact five residential structures and one commercial warehouse.

The new North Frontage Road and Johnson Lane Intersection would be a signal-controlled intersection. The lane configuration on North Frontage Road would include two westbound through lanes, with an option to turn right onto Johnson Lane; two designated westbound left-turn lanes onto Johnson Lane; and one eastbound through lane on the east leg of North Frontage Road. One eastbound through lane, one designated eastbound right-turn lane onto Johnson Lane, one designated eastbound left-turn lane onto Johnson Lane, and two westbound through lanes make up the west leg of North Frontage Road. The lane configuration on the south leg of Johnson Lane includes two northbound through lanes, one designated northbound right-turn lane onto North Frontage Road, two designated northbound left-turn lanes onto North Frontage Road, two southbound through lanes, and one designated southbound right-merge lane onto westbound I-90. For the north leg of Johnson Lane, two northbound through lanes, two southbound through lanes, a designated southbound left-turn lane onto North Frontage Road, and a designated southbound right-turn lane onto North Frontage Road are proposed.

The North Frontage Road Realignment (east and west of Johnson Lane) would require approximately 7.5 acres of new ROW. However, the impacts to residential structures east of Johnson Lane may require a total property purchase by MDT. This would be negotiated during ROW discussions.

Design Refinement/Change 3: Old Hardin Road and Becraft Lane Intersection

Under the diverging diamond option (double crossover diamond) outlined in the 2014 FEIS and ROD, the lane configuration at the Old Hardin Road and Becraft Intersection included one eastbound through lane and one eastbound designated right-turn lane onto Becraft Lane. Northbound traffic on Becraft Lane was forced to make a right-turn only onto Old Hardin Road as no left-turn option would be available. This intersection configuration also did not provide a left-turn option for westbound traffic on Old Hardin Road wanting to turn left on to Becraft Lane. A traffic signal was not proposed at this intersection.

Under the proposed Johnson Lane Interchange segment, the lane configuration at the Old Hardin Road and Becraft Intersection includes two eastbound through lanes, with the option to turn right onto Becraft Lane. The designated right-turn only lane for northbound traffic on Becraft Lane has been removed; however, northbound traffic would still be required to turn right, as a left-turn option is not available. A designated left-turn lane for westbound traffic on Old Hardin Road has been included, which allows

traffic to turn left on to Becraft Lane. The intersection would remain unsignalized (Figures 2 and 5 in Attachment 1).

Design Refinement/Change 4: Old Hardin Road and Cole Street Intersection

Under the diverging diamond option (double crossover diamond) outlined in the 2014 FEIS and ROD, a signalized intersection was proposed at Old Hardin Road and Cole Street. The lane configuration on Old Hardin Road included one eastbound through lane with the option to turn right onto Cole Street, one westbound through lane with the option to turn right onto Cole Street, and a designated left-turn lane at the intersection for both east and westbound traffic to turn left onto Cole Street. Cole street would be improved (i.e., widened) south of Old Hardin Road to provide a new connector street to Becraft Lane.

Under the proposed Johnson Lane Interchange segment, the intersection is still proposed as a signalized intersection. The lane configuration on Old Hardin Road would now include one eastbound through lane and one designated eastbound right-turn lane onto Cole Street, two westbound through lanes with the option to turn right onto Cole Street, and a designated left-turn lane at the intersection for both east and westbound traffic to turn left onto Cole Street. Cole street would be improved (i.e., widened) south of Old Hardin to provide a new connector street to Becraft Lane (Figures 2 and 5 in Attachment 1).

Design Refinement/Change 5: Cole Street and Becraft Lane Intersection

The diverging diamond (double crossover diamond) outlined in the 2014 FEIS and ROD included improvements (i.e., widened) to Cole Street, south of Old Hardin Road, that ended in a skewed T-intersection connection at Becraft Lane.

During design refinements for the proposed Johnson Lane Interchange segment, several alternatives were considered for the Cole Street and Becraft Lane Intersection. Alternatives included a T-intersection where Cole Street is stop controlled and Becraft Lane is free-flow (Option 1A), a Y-shaped configuration where Becraft Lane is stop controlled and Cole Street is free-flow (Option 1B), and a mini roundabout (Option 1C).

The preferred alternative for the Cole Street and Becraft Lane Intersection is Option 1B, because Cole Street traffic would have a continuous connection with the east segment of Becraft Lane and the Old Hardin Road and Cole Street intersection. The proposed Y-shaped intersection configuration would include a stop control at the intersection for eastbound traffic on Becraft Lane. Because of the Y-shape configuration, driveways to homes south of Becraft Lane would be extended to meet the new intersection alignment.

Improvements to Cole Street and to the Cole Street and Becraft Lane Intersection would require approximately 0.725 acre of new ROW (Figures 2 and 5 in Attachment 1).

Design Refinement/Change 6: Updated Project Footprint

As indicated in the 2014 FEIS and ROD, the maximum potential footprint in which impacts may occur for the Johnson Lane Interchange segment included the Johnson Lane/I-90 Interchange and approximately 0.75 mile of I-90 (3,960 feet), the North Frontage Road, Sannon Boulevard, and Johnson Lane from the Coulson Road Intersection to approximately 440 feet south of its intersection with Old Hardin Road. At Old Hardin Road, the APE only extended approximately 450 west of the Johnson Lane Intersection and ended at its intersection with Becraft Lane.

To accommodate the new design features now included in the Johnson Lane Interchange segment, the footprint, in which impacts may occur (i.e., the APE), was updated from what was shown in the 2014 FEIS and ROD. The APE along Johnson Lane now extends from the Coulson Road Intersection to

approximately 750 feet south of its intersection with Old Hardin Road. The APE along Old Hardin Road now extends from the intersection of Rykken Circle to approximately 680 feet east of its intersection with Cole Street. Cole Street, from approximately 190 feet north of the Old Hardin Road Intersection to its intersection with Becraft Lane, and the Becraft Lane and Cole Street Intersection are now included. The APE along I-90 is extended from approximately 3,660 feet west of the Johnson Lane/I-90 overpass to 3,695 feet east of the overpass, including the eastbound and westbound on and off ramps. The APE surrounding the North Frontage Road and Sannon Boulevard remains relatively the same. Figure 1 in Attachment 1 shows the APE from the 2014 FEIS and ROD compared to that of the current project footprint.

This updated footprint is the area that was evaluated for the documentation of changes to the environmental conditions as well as any updates to the supporting environmental evaluations.

Design Change 7: Sannon Boulevard

A new alignment and profile for Sannon Boulevard was considered from the North Frontage Road to Coulson Road as part of the Johnson Lane Interchange project. The new alignment and profile would include two, long s-curves to decrease the maximum grade (a decrease of 4.54%) and flatten the horizontal curves. The roadway profile would include two 12-foot travel lanes with 2-foot shoulders. The proposed alignment was meant to provide access improvements for vehicles, particularly for large trucks, that may use Sannon Boulevard as a connector between the North Frontage Road and Coulson Road. This alignment would also impact a small segment of the Coulson Ditch. This proposed alignment was presented during public meetings that took place in 2020 and 2021.

In April 2022, MDT determined that the proposed Sannon Boulevard improvements were no longer warranted as the proposed realignment of the North Frontage Road would provide more suitable access/connectivity to Coulson Road and the future Railroad Overpass to Johnson Lane segment of the Billing Bypass. In addition, approximately one-third of the proposed Sannon Boulevard improvements would need to be obliterated and then connected to the Billings Bypass when the Railroad Overpass to Johnson Lane segment is constructed. For these reasons, Sannon Boulevard was removed from the Johnson Lane Interchange project; MDT will no longer be impacting the Coulson Ditch at this location. A letter, dated April 29, 2022, was provided to property owners within the vicinity of Sannon Boulevard notifying them of the proposed design change.

Environmental Change 1: Biological Resources Update

Threatened and Endangered Species and State Species of Concern

A Final Biological Resources Report/Biological Assessment (BRR/BA) was completed for the Billings Bypass EIS in November 2011. Two addenda to that report were completed in June 2012 and August 2013. The 2011 BRR/BA Report and the 2012 report addendum served as a basis for informal consultation with the US Fish and Wildlife Service (USFWS) concerning potential effects of future Billings Bypass projects on federally listed species. In a letter dated July 26, 2012, the USFWS concurred with MDT's determination that the Billings Bypass project is not likely to adversely affect whooping crane (*Grus Americana*), would have ***No Effect*** on the black-footed ferret (*Mustela nigripes*), and is ***Not Likely to Jeopardize the Existence*** of the greater sage-grouse (*Centrocercus urophasianus*) and Sprague's pipit (*Anthus spragueii*). The August 2013 addendum was completed to confirm there had been no changes to the USFWS Yellowstone County list of threatened and endangered species since the 2012 addendum and confirm the USFWS determination was still current.

Due to the Billings Bypass project now being split into seven construction projects, and due to the time lapse since the August 2013 addendum, BRR/BA Addendum Reports are being prepared for each project segment as updates to the original BRR/BA and addenda. A BRR/BA Addendum Report was completed

for the Johnson Lane Interchange segment on March 4, 2022. According to the Johnson Lane Interchange Addendum Report, the greater sage-grouse, black-footed ferret, and Sprague's pipit have been removed from the October 2021 list of endangered, threatened, proposed, and candidate species for Yellowstone County. Red knot (*Calidris canutus rufa*) and monarch butterfly (*Danaus plexippus*) have been added to the Yellowstone County list. Red Knot was listed on January 12, 2015, and monarch butterfly was designated as a candidate species on December 15, 2020. Whooping crane remains on the list.

The 2022 report also states that there are no records of whooping crane or red knot breeding in the state. They are known to migrate through Montana on occasion in the spring and fall as they head to breeding territories in northern Canada and the Arctic, respectively. There are three observations for whooping crane within a 30-mile radius of the proposed Johnson Lane Interchange project over the last 100 years. The nearest observation was documented more than 10 miles to the northeast as a fly-over in April 2010. One observation of red knot is documented less than a mile northwest of the proposed Johnson Lane Interchange project limits. This individual was a transient (non-breeding and short-term) documented in 1975 and not seen since. Two other red knot observations in the general geographic area are greater than 30 miles from the project vicinity.

Monarch butterflies migrate through Montana in the spring and fall as they move between central Mexico and Canada. While monarch butterflies may migrate through the area, suitable foraging and resting habitat is limited within the Johnson Lane Interchange segment footprint. According to the Montana Natural Heritage Program (MTNHP), the closest recorded observation of a monarch butterfly was over 30 miles southwest of the project limits in 2016. In addition, migrating monarchs do not typically arrive in Montana until June or July. Construction on the Johnson Lane Interchange project would likely start, and the vegetation would be removed, prior to their arrival.

Neither the whooping crane nor red knot would be anticipated in the Johnson Lane Interchange project area, as limited-to-no-appropriate habitat is present. Therefore, a ***No Effect*** determination has been made for the proposed Johnson Lane Interchange project activities for both whooping crane and red knot. Additionally, the monarch butterfly is not anticipated in the project area due to limited habitat and timing of construction. Therefore, the Johnson Lane Interchange project ***Would Not Jeopardize the Continued Existence*** of the monarch butterfly.

The Johnson Lane Interchange 2021 addendum includes an updated state Species of Concern recorded occurrence list from MTNHP and updated data on bald eagle nests in the area. The 2021 list identified 13 wildlife Species of Concern and one plant Species of Concern within three miles of the Johnson Lane Interchange project. Eleven of these Species of Concern were discussed in the 2011 BRR/BA and 2014 FEIS. No additional impacts or concerns related to the 11 original species have been identified since the 2011 BRR/BA and 2014 FEIS. Of the remaining two wildlife species and one plant species not discussed in the 2011 BRR/BA and 2014 FEIS, limited suitable habitat is found within the Johnson Lane Interchange project vicinity for these species. Permanent vegetation impacts would occur within the proposed construction limits, with both upland and wetland habitat being impacted; however, with much of the project footprint already developed, these impacts would be minor. Direct mortality to some species may occur due to inability to disperse during construction. Temporary noise related impacts would also occur during construction.

The 2020 Montana Fish, Wildlife, and Parks (FWP) observation data on bald eagles shows several documented occurrences of bald eagle and bald eagle nests along the Yellowstone River corridor; however, no bald eagle nests or occurrences have been documented within 0.5 mile of the Johnson Lane Interchange project limits. The MTNHP data shows the closest documented nesting bald eagle was over 0.5-mile northwest of the northern project limits for the Johnson Lane Interchange segment. This nest was last documented in 2006. Additionally, the MTNHP eagle data shows no documented occurrences of golden eagles or golden eagle nests within three miles of the project's footprint. Therefore, additional

minimization measures and timing restrictions for the Johnson Lane Interchange segment are not proposed.

The Johnson Lane Interchange Addendum to Final Biological Resource Report/Biological Assessment dated March 4, 2022, is included in Attachment 2. MDT concludes that the impacts of the Johnson Lane Interchange project on sensitive species are consistent with the findings of the FEIS and ROD.

Greater Sage Grouse

On September 22, 2015, USFWS determined that the protection for the greater sage grouse under the Endangered Species Act was no longer warranted and withdrew the species from the candidate species list. In Montana, the state has management authority over sage grouse as outlined under the 2015 Greater Sage Grouse Stewardship Act and Montana Governor's Executive Orders 10-2014, 12-2015, and 21-2015. The Sage Grouse Habitat Conservation Program was created to facilitate implementation of the Executive Orders. State actions implemented by MDT in designated greater sage-grouse habitat must comply with the conservation program.

The Johnson Lane Interchange project segment is not within greater sage-grouse designated core habitat, connectivity habitat, or general habitat. The nearest designated sage grouse habitat, which is general habitat, is approximately 2.8 miles northwest of the proposed segment. The Johnson Lane Interchange project activities are consistent with the Montana Sage Grouse Conservation Strategy.

Wetlands

A wetland delineation was completed in 2011 as part of the developing Billings Bypass EIS. As more than 10 years have passed since the original wetland delineation was conducted, and to ensure all wetlands were identified within the current design footprint for the Johnson Lane Interchange segment, a wetland delineation following US Army Corps of Engineers (USACE) delineation guidelines was conducted in September 2020. During the 2020 wetland delineation effort, the 2011 wetland boundaries were updated to current conditions. Two irrigation ditches, the Coulson Ditch and the Lockwood Ditch, were identified within the current Johnson Lane Interchange footprint, and one additional wetland, a fringe wetland along the Lockwood Ditch, was also delineated. In the 2011 delineation, Coulson Ditch was delineated entirely as wetland (Wetland S). During the 2020 delineation effort, the Coulson Ditch was reviewed within the project limits for wetland indicators. Water was not flowing in Coulson Ditch, and the ditch appeared to have not conveyed flows for a very long time. The bed and bank of the ditch were vegetated with upland species. Therefore, this aquatic resource has been updated to a non-wetland irrigation ditch. MDT is avoiding any impacts to the Coulson Ditch as part of this project.

To compare wetland impacts, the 2020 delineated wetlands and proposed Johnson Lane Interchange project design were reviewed against the wetland impact information presented in the 2014 FEIS and ROD. As outlined in the 2014 FEIS, approximately 0.37 acres of wetland impact was identified for the Johnson Lane Interchange segment. Based on the refinement/changes to the Johnson Lane Interchange project design and the 2020 wetland delineation, the permanent wetland impacts for the Johnson Lane segment have been updated to approximately 0.38 acres. This slight increase in wetland impacts is due to updates to the wetland boundaries, a reduction in the proposed impacts from what was stated in the 2014 FEIS and ROD due to design refinements/changes, and additional new impacts to the fringe wetland that was identified during the 2020 field delineation. The difference for the purposes of comparing impacts is minor and would not alter the conclusions in the FEIS and ROD.

A Clean Water Act Section 404 permit from the USACE will be required for impacts to wetlands and other aquatic resources considered waters of the United States. It is expected that the authorization from USACE will be under a Nationwide Permit. Potential wetland impacts require compensatory mitigation in accordance with applicable USACE regulations and Executive Order 11990. Wetland mitigation may

occur in the form of credits from one of MDT's wetland mitigation reserves, purchasing credits from a wetland mitigation bank, in-lieu fee credits, or developing on-site wetland restoration, enhancement, or creation.

The 2020 delineated wetlands are found in the Johnson Lane Interchange BRR/BA Addendum Report included in Attachment 2. MDT concludes that the impacts of the Johnson Lane Interchange project on wetlands are consistent with the findings of the FEIS and ROD.

Environmental Change 2: Noise Analysis Update

A Final Traffic Noise Impact Assessment was completed during the development of the Billings Bypass EIS in March 2012. In the 2012 noise report and 2014 FEIS and ROD, only noise-sensitive receptors north of the Johnson Lane/I-90 Interchange were assessed for potential noise impacts. This included 12 receptors within and directly adjacent to Johnson Lane Interchange project footprint. The 2012 noise report and 2014 FEIS and ROD identified six of those receptors where noise impacts were predicted from construction of the Johnson Lane Interchange project and the subsequent Railroad Overpass to Johnson Lane segment of the Billings Bypass. The noise report, FEIS, and ROD concluded that no feasible or reasonable mitigation measures were found for the impacts associated with the Johnson Lane Interchange project. Coordination between local officials and developers was suggested to require setbacks for future developments or the development of noise-compatible uses near the roadway.

Due to refinements/changes to the project scope and updates to the project footprint for the Johnson Lane Interchange segment, a Detailed Noise Analysis Report was completed in December 2021. The December 2021 report updates the March 2012 noise report for Johnson Lane Interchange and includes traffic noise analysis for additional noise-sensitive receptors found south of the Johnson Lane / I-90 Interchange, along Old Hardin Road, and at the Cole Street and Becraft Lane intersection, that were not included in the 2012 report. The 2021 report also revisits noise impacts to those noise receptors north of I-90 due to the realignment of the North Frontage Road.

The 2021 Johnson Lane Interchange Detailed Noise Report identified 51 noise-sensitive receptors within 500 feet of the closest proposed travel lane for the Johnson Lane Interchange segment. This includes 38 noise-sensitive receptors south of the Johnson Lane/I-90 Interchange (along Old Hardin Road, Johnson Lane, and Becraft Lane), 11 of the previously identified noise-sensitive receptors (one mobile home was relocated) north of the Johnson Lane/I-90 Interchange, and two additional receptors north of I-90. The 2021 Detailed Noise Report predicted noise related impacts from construction of the Johnson Lane Interchange project for 10 noise receptors. This includes five residences north of I-90 in the Firth Street residential area and five residences south of Old Hardin Road on Rykken Circle. Predicted impacts to the five receptors north of I-90 are due to the proposed realignment of the North Frontage Road and improvements on Johnson Lane. Three of the receptors along Old Hardin Road are currently noise impacted under existing conditions. Traffic noise impacts are predicted for these same receptors plus an additional two receptors due to improvements along Old Hardin Road.

Similar to the 2012 noise report and the 2014 FEIS and ROD, the 2021 noise report concluded that no feasible or reasonable mitigation measures were found for the impacts associated with the Johnson Lane Interchange segment. Four of the receptors impacted by the North Frontage Road realignment would be relocated, leaving only one impacted receptor. A barrier near the five impacted receptors south of Old Hardin Road would not meet MDT's noise reduction design goals and reasonableness criteria.

The Johnson Lane Interchange Detailed Noise Report dated December 1, 2021, is included in Attachment 3. This report used MDTs older planning cost of $\$40/ft^2$ for determining if noise mitigation is reasonable. MDTs new planning cost for noise mitigation is $\$45/ft^2$. However, an evaluation using the updated higher planning cost did not change the results or findings of the noise study. Therefore, MDT concludes that

noise impacts of the Johnson Lane Interchange segment on noise sensitive receptors and proposed mitigation are consistent with the findings of the FEIS and ROD.

Environmental Change 3: Cultural Resources Update

A Cultural Resources Inventory Report was completed during the development of the Billings Bypass EIS in September 2011. An addendum to that report was completed in 2012. Within the Johnson Lane Interchange APE outlined in the 2011 Cultural Resources Inventory Report, the 2012 report addendum, and the 2014 FEIS and ROD, five historic building properties and one irrigation ditch were identified north of the Johnson Lane/I-90 Interchange. These properties were determined not eligible for listing on the National Register of Historic Places (NRHP). The State Historic Preservation Office (SHPO) concurred with this determination on September 12, 2013, and September 16, 2013. No historic properties were noted south of the Johnson Lane/I-90 Interchange, as the APE at that time did not include Old Hardin Road, Cole Street, or Becraft Lane.

Due to refinements/changes to the project scope and updates to the project footprint for the Johnson Lane Interchange segment, a Class III Cultural Resources Inventory was completed in January 2021 for the updated Johnson Lane Interchange project APE south of the Johnson Lane/I-90 Interchange, along Old Hardin Road, and for Sannon Boulevard (along the proposed alignment). An additional Class III Cultural Resources Inventory was completed in November 2021 along the updated APE for the North Frontage Road Realignment and for the improvements at the Cole Street and Becraft Lane Intersection. These 2021 reports also updated the previously recorded sites found within the original APE.

Nine historic building properties (residences) and two irrigation ditches (the Coulson Ditch and the Lockwood Ditch) were documented within the updated APE as part of the January and November 2021 inventories. All 11 historic sites were determined not eligible for listing on the NRHP. A twelfth site that was previously recorded, the Myaer Farm (24YL0641) was also noted in the APE. This site was previously determined as eligible for listing on the NRHP; however, this site was destroyed when the Flying J Travel Plaza was constructed. Therefore, MDT recommended that this site's status be revised to not eligible as it no longer exists. SHPO concurred with the updated ineligibility determination for the Myaer Farm on December 27, 2021. The remaining 11 sites within the APE also are, or remain, ineligible for listing on the NRHP. SHPO concurred with these eligibility determinations on December 27, 2021. SHPO concurrence is found in Attachment 4.

Environmental Change 4: Hazardous Materials and Air Quality Update

During development of the Billings Bypass EIS, an Initial Site Assessment (ISA) was performed in 2011 to identify hazardous materials/substances that could be affected by ground disturbance associated with the proposed project. According to the 2011 ISA and the 2014 FEIS, eight hazardous sites were identified within the Johnson Lane Interchange project footprint. These sites include:

- Underground storage tank (UST) and spill (sewage and diesel) at Town Pump Pilot Truck Stop (North Frontage Road)
- Above ground storage tank (AST) at residence (Firth Street)
- AST at residence (west of Sannon Boulevard)
- UST, leaking UST (LUST), and spill (oil) at Flying J Travel Plaza (Old Hardin Road)
- UST and LUST at Casey's Corner Store (Old Hardin Road)
- Electrical substation (Johnson Lane)
- Spill (oil) at Fly in Lube (Johnson Lane)

The 2014 FEIS and ROD included potential impacts associated with construction activities at or near the Flying J Travel Plaza and Casey's Corner Store. This included the presence of contaminated soils. Mitigation outlined in the FEIS and ROD included a Phase II assessment, including surface soil, subsurface soil, and groundwater samples, to determine probable contaminants of concern. Asbestos surveys were also included as part of the mitigation for structures removed during construction.

Since the 2014 FEIS and ROD, the required Phase II and asbestos survey mitigation has been completed. The results of those efforts and any updates to hazardous materials impacts are described below.

Due to the potential presence of contaminated soils within the Johnson Lane Interchange construction limits, a Billings Bypass Subsurface Investigation Report was completed for the Johnson Lane Interchange project segment in January 2021. Subsurface investigations were completed with the MDT ROW near three underground storage tanks where leaks/spills had previously occurred or may have occurred. These included the Town Pump Pilot Truck Stop, the Flying J Travel Plaza, and Casey's Corner Store. The results of the subsurface investigation indicated no soil impacts above Montana Department of Environmental Quality Risk-Based Screening Levels were identified during the investigation for extractable petroleum hydrocarbon and volatile petroleum hydrocarbon. Further investigation of potential petroleum impacts is not warranted, and no additional mitigation is proposed.

An Asbestos Survey report for the Johnson Lane/I-90 overpass bridges was completed in February 2021. The survey was conducted to identify potential hazardous materials (asbestos) that may be present in the bridge building materials prior to the demolition of the bridges. The results of the survey indicated no asbestos was detected in any of the suspect materials samples. No additional mitigation is proposed.

The Johnson Lane Interchange Subsurface Investigation Report dated January 26, 2021, and the Asbestos Survey of the Johnson Lane Interchange Bridges dated February 12, 2021, are included in Attachments 5 and 6. The results from these studies would not alter the conclusions in the FEIS and ROD.

One additional impact was identified since the 2014 FEIS and ROD within the Johnson Lane Interchange segment footprint. With the proposed design change to the North Frontage Road, which includes a realignment further to the north, the AST associated with the residence on Firth Street would likely be impacted. The mitigation outlined in the 2014 FEIS and ROD related to AST impacts is still valid.

The updated project footprint was also compared to the extents of the Billings Carbon Monoxide Maintenance Area. The updated footprint is east of and remains entirely outside the boundaries of the Billings Carbon Monoxide Maintenance Area. As such, additional coordination with DEQ and EPA is not required. There are no changes to the mitigation outlined in the 2014 FEIS and ROD related to air quality.

MDT concludes that both the hazardous materials and air quality impacts and their proposed mitigation outlined for the Johnson Lane Interchange project are consistent with the findings of the FEIS and ROD.

Environmental Change 5: Environmental Justice Update

The Johnson Lane Interchange project limits are located within Block Groups 1, 2, and 3 of Census Tract 8. The 2014 FEIS and ROD provided census data information for populations below the poverty level and minority populations to assess whether the Billings Bypass project would have disproportionately high or adverse human health and environmental effects on these populations. According to the 2014 FEIS and ROD, a slightly higher Hispanic population percentage was identified in Block Group 3 of Census Tract 8; however, it was not notably higher than the percentages for the community of Lockwood, the City of Billings, or Yellowstone County. Low-income populations, which were assessed at the Census Tract level, did not show a higher population concentration for Census Tract 8. The 2014 FEIS and ROD concluded that no disproportionately high and adverse impacts to Environmental Justice populations were

anticipated.

Because of the refinements/updates to the Johnson Lane Interchange project design, particularly the realignment of North Frontage Road through the Firth Street residential area, the 2020 Decennial U.S Census data and the 2019 American Community Survey (ACS) 5-year estimates were reviewed to determine if substantial changes to low income or minority population characteristics in the project area had occurred since the 2014 FEIS and ROD. The following tables outline minority population statistics and low-income population statistics within the Johnson Lane Interchange project area. Minority population data could be ascertained from the 2020 Census data at the Block Group level (Block Groups 1, 2, and 3 within Census Tract 8). Low-income populations, however, are not provided in the current 2020 data or at the Block Group level. Therefore, the ACS 2019 five-year estimates for Census 8 were used.

Minority Populations

	Total Population	***White***	***African American***	***Native American***	***Asian***	***Native Hawaiian or Pacific Islander***	***Hispanic or Latino***	***Other***
BG1/CT8	1,115	918/ 82%	7/0.6%	66/5.9%	7/0.6%	0/0%	74/6.6%	24/ 2.2%
BG2/CT8	1,600	1,315/ 82%	10/0.6%	101/6.3%	2/0.1%	2/0.1%	105/6.6%	38/ 2.4%
BG3/CT8	1703	1,455/ 85%	13/0.8%	60/3.5%	6/0.4%	0/0%	103/6.0%	39/ 2.3%
Lockwood	7,195	6,635/ 92%	33/0.5%	408/5.7%	27/0.4%	4/0.1%	468/6.5%	130/ 1.8%
Billings	117,116	97,840/84%	1,148/ 1.0%	5,788/ 4.9%	1,087/ 0.9%	205/0.2%	7,937/ 6.8%	2,256/1.9%
Yellowstone County	164,731	139,965/ 85%	1,309/ 0.8%	7,226 /4.4%	1,320/ 0.8%	232/0.1%	10,115/ 6.4%	2,841/1.7%

2020 Decennial Census data (data.census.gov/cedsci/table)

Populations Below Poverty Level

	Total Population*	***Below Poverty Level***
Census Tract 8	5,391	882 / 16.4%
Lockwood	7,968	1,027 / 12.9%
Billings	106,471	10,652 / 10%
Yellowstone County	155,174	15,199 / 9.8%

2019 ACS 2014-2019 five-year estimates (data.census.gov/cedsci/table)

According to the 2020 census data, the percentages of minority populations for Block Groups 1, 2, and 3 of Census Tract 8 are consistent with the percentages for the community of Lockwood, city of Billings, and Yellowstone County. No notable differences in percentages were identified. Based on the census data provided, there are no relative concentrations of minority populations identified within the Johnson Lane Interchange project area.

For low-income populations, the percentage for Census Tract 8 (16.4%) was slightly higher than the percentages for the community of Lockwood (12.9%), the City of Billings (10%), and Yellowstone County (9.8%). This percentage, however, is not meaningfully higher than the percentages for the

comparison populations and is not great enough to indicate a relative population concentration. Based on the data evaluated, no relative concentrations of residents below the poverty level were identified.

As part of the proposed Johnson Lane Interchange project, the North Frontage Road would be realigned further to the north. This would require a realignment of the road through the Firth Street residential area. Through this realignment, approximately five residences and one commercial warehouse would be directly impacted. The access drive to another residence would also be impacted. Census data provides a general overview of the attributes of a larger subject population. The data associated with small subpopulations, however, within the boundaries of these same areas (i.e., the residential area on Firth Street) may be diluted to such a point that the data is not representative of the subpopulation. During data collection for the Johnson Lane Interchange project, residents along Firth Street were contacted and properties were reviewed. Designated low-income housing units were not identified in Firth Street area. None of the available information suggests that the proposed displacement of residences on Firth Street would impact a low-income or minority population. Therefore, the Johnson Lane Interchange project would not result in disproportionately high and adverse effects on minority or low-income populations.

MDT concludes that the Environmental Justice assessment and proposed mitigation outlined for the Johnson Lane Interchange project are consistent with the findings of the FEIS and ROD.

Public Involvement Update

Public informational meetings for the Billings Bypass project were conducted on September 27 and 28, 2017, July 2, 2020, and November 9, 2021. The intent of the informational meetings was to provide an update to the public on project schedule, project phasing (i.e., the Bypass being split into six project segments), and design refinements. The Johnson Lane Interchange project was included as part of these meetings, particularly the July 2, 2020, and November 9, 2021, meetings, which provided information on the diverging diamond interchange concept, the realignment of the North Frontage Road, proposed improvements to Sannon Boulevard and Old Hardin Road, and the new intersection configuration at Cole Street and Becraft Lane. The public was encouraged to provide comments/input at the meetings or to submit a comment via mail, email, or through the Billings Bypass project website.

The September 2017 meetings were conducted in a public open house format. The September 27, 2017, meeting took place at Independent Elementary School located on US 87 to accommodate the public located north of the Yellowstone River. The September 28, 2017, meeting took place at Eileen Johnson Middle School in Lockwood to accommodate the public located south of the Yellowstone River. The two July 2, 2020, meetings (at 11:00 am and 5:30 pm) were conducted online via a Zoom webinar due to the Covid-19 pandemic. The November 9, 2021, public informational meetings included a Zoom webinar (at 2:00 pm) and public open house at the Metra Park Montana Pavilion (from 5:30 pm to 7:30 pm). Additional public outreach materials included postcards, display ads in the Billings Gazette and Yellowstone County News, and press releases.

Approximately 71 comments specific to the Johnson Lane Interchange segment of the bypass project were received during and following the September 2017, July 2020, and November 2021 public information meetings. Issues, concerns, and opportunities noted in those comments include the following.

- Accommodations for pedestrians and bicyclists within the diverging diamond interchange design.
- Sidewalk extensions along Johnson Lane and Old Hardin Road.
- Business opposition to medians on Old Hardin Road.
- Concerns regarding the local community's understanding of how to use a diverging diamond interchange.

- The design of the diverging diamond accommodating large trucks.
- Sannon Boulevard improvements and ROW impacts to adjacent landowners.
- Impacts to adjacent landowners from improvements on Johnson Lane.
- Access to North Frontage Road and the businesses along the North Frontage Road.
- Impacts to properties on Firth Street due to the Frontage Road Realignment and improvements on Johnson Lane.
- Temporary access concerns for businesses and residences during construction.
- Permanent access changes for businesses and residences once the project is complete.
- The decision for signalized intersections versus roundabouts.
- A general excitement for a different type of interchange (i.e., diverging diamond).

In addition to the public meetings, an April 29, 2022, letter was provided to property owners in the vicinity of Sannon Boulevard notifying them that improvements to Sannon were no longer proposed as part of the Johnson Lane Interchange project. No comments were received.

Personal contacts with adjacent landowners explaining the work to be performed will be offered during the right-of-way phase for the Johnson Lane Interchange project.

RE-EVALUATION

The scope of this re-evaluation includes updated design/environmental information. This re-evaluation includes a review of the Billings Bypass 2014 FEIS and the 2014 ROD for changes in previously identified environmental resources, impacts, and mitigation commitments associated with the environmental changes.

Resource Category Re-Evaluation

The following resource categories were previously examined in the Billings Bypass FEIS and have been re-evaluated in the context of the Johnson Lane Interchange project as currently proposed and, where applicable, new or updated information is provided. Table 1 provides an overview of the resource category and whether a change in impact or a change in mitigation has occurred within the Johnson Lane Interchange footprint. Resource categories with changed conditions are described in greater detail below.

Table 1. Re-evaluation of Resource Categories

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Traffic Operations	No	No	No additional impacts to or concerns related to traffic operations have been identified since the FEIS/ROD. As part of the Johnson Lane Interchange project, the North Frontage Road would be realigned further to the north. This was done to maintain traffic operations at the Johnson Lane/I-90 Interchange as discussed in the FEIS and ROD.
Access	Yes	No	The realignment of the North Frontage Road would still maintain direct access to residents and businesses along this roadway. Design changes at the Becraft Lane and Cole Street intersection would also maintain/enhance accessibility for vehicles traveling along these routes. These changes would not alter the conclusion in the FEIS/ROD and is consistent with the findings in the FEIS/ROD. No other concerns related to access have been identified since the FEIS/ROD.
Safety	No	No	No additional impacts to or concerns related to safety have been identified since the FEIS/ROD.
Pedestrian and Bicycle Considerations	Yes	No	A slight change in pedestrian and bicycle safety has occurred since the FEIS/ROD. Accommodations for pedestrians and bicyclists would be made as part of the diverging diamond interchange design. Pedestrians would be routed via the signalized crossovers to raised center medians for traveling through the interchange area. Bike lanes would also be provided for bicyclists adjacent to the raised center medians. This change would not alter the conclusion in the FEIS/ROD and is consistent with the findings in the FEIS/ROD.
Land Use	No	No	No changes in land use have occurred since the FEIS/ROD.
Parks and Recreation	No	No	No additional parks or recreational facilities have been identified within the proposed Johnson Lane Interchange footprint.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Social	No	No	The social conditions described in the FEIS are based on 2010 Census data. 2020 Decennial Census Data and 2019 American Community Survey data related to population, income, and race were reviewed. There have been no substantial changes in social characteristics within the Johnson Lane Interchange project area since the FEIS. Any subtle changes in project area demographics would not affect the overall findings made in the FEIS/ROD.
Economic	No	No	No change to the economic conditions has been identified since the FEIS and ROD.
Environmental Justice	No	No	2020 Decennial Census Data and 2019 American Community Survey data related to low-income and minority populations were reviewed. There have been no substantial changes in environmental justice characteristics within the Johnson Lane Interchange project area since the FEIS. Any subtle changes in project area demographics would not affect the overall findings made in the FEIS/ROD. Additionally, none of the available information suggests that the proposed displacements of residence on Firth Street would impact a low-income or minority population. Therefore, no potential impacts have been identified since the FEIS/ROD that would disproportionately impact low-income or minority populations.
Right-of-Way	Yes	No	The specific ROW requirements for the Johnson Lane Interchange project segment were not outlined in the 2014 FEIS and ROD, which only provided overall ROW impacts for the entire Billings Bypass preferred alternative. The ROW requirements to construct the Johnson Lane Interchange project totals approximately 11.35 acres. This includes 7.5 acres for the North Frontage Road realignment and 0.725 acre for the Cole Street and Becraft Lane Intersection improvements, which are design elements not included in the FEIS and ROD. Five residences and one commercial warehouse would also be directly impacted by the North Frontage Road realignment. This change in ROW impacts would not affect the overall findings and proposed mitigation made in the FEIS/ROD and would not be considered “significant” in terms of context and intensity.
Railroad	No	No	No railroads are located within or adjacent to the Johnson Lane Interchange project segment. No impacts to or concerns with railroads have been identified in the FEIS/ROD for this segment of the Billings Bypass.
Utilities	No	No	Impacts to utilities are consistent with the findings in the FEIS/ROD.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Historic and Cultural Resources	No	No	Due to refinements/changes to the Johnson Lane Interchange project design scope and updates to the project footprint, a Class III Cultural Resources Inventory was completed in January 2021 for the updated Johnson Lane Interchange project APE south of the Johnson Lane/I-90 Interchange, along Old Hardin Road, and for Sannon Boulevard. A second, Class III Cultural Resources Inventory was completed in November 2021 along the updated APE for the North Frontage Road Realignment and for the improvements at the Cole Street/Becraft Lane Intersection. Nine historic building properties and two irrigation ditches were documented within the updated APE as part of the January and November 2021 inventories. All 11 historic sites were determined not eligible listing on the NRHP. A twelfth previously recorded site, the Myaer Farm was also noted in the APE. This site was destroyed when the Flying J Travel Plaza was constructed. Therefore, this site is no longer eligible for the NRHP. SHPO concurred with these 12 eligibility determinations on December 27, 2021 Based on the proposed design, MDT concludes that the Johnson Lane Interchange project would have *No Effect* on significant cultural properties and would not affect the overall findings made in the FEIS/ROD.
Section 4(f) and Section 6(f) Resources	No	No	A Section 4(f) Evaluation was prepared as part of the original FEIS. In addition, an update to the Cultural Resources Survey was also completed in January and November 2021. The Johnson Lane Interchange project would not impact Section 4(f) resources, and there would be no "use" as no Section 4(f) resources were identified in the FEIS and ROD, nor have any been identified since the FEIS and ROD, within the Johnson Lane Interchange project area. The additional historic sites identified during the 2021 cultural resource surveys were all determined as not eligible for listing on the NRHP, and a determination of *No Effect* to these resources was made. No Section 6(f) resources have been identified within the Johnson Lane Interchange project footprint. No change in impacts to Section 4(f) or Section 6(f) resources has occurred since the FEIS/ROD.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Visual Resources	Yes	No	Proposed design changes since the 2014 FEIS and ROD include realigning the North Frontage Road further to the north and through the Firth Street residential area. Moving the frontage road further north would be visually evident to those living along Firth Street, as the roadway would introduce new form, lines, and color within the residential area. These new roadway elements, however, would be consistent with the existing visual character of the surrounding area, the overall visual character that would be created by the Preferred Alternative within the project limits, and the overall visual impact findings made in the FEIS/ROD. The change in visual impacts would not affect the overall findings and proposed mitigation made in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.
Noise	Yes	No	Due to refinements/changes to the Johnson Lane Interchange project design and updates to the project footprint since the 2014 FEIS and ROD, a Detailed Noise Analysis Report was completed in December 2021. The report identified 51 noise-sensitive receptors within 500 feet of the closest proposed travel lane for the Johnson Lane Interchange project. This includes 38 noise-sensitive receptors south of the Johnson Lane/I-90 Interchange (along Old Hardin Road, Johnson Lane, and Becraft Lane), 11 of the previously identified noise-sensitive receptors (one mobile home was relocated) north of the Johnson Lane/I-90 Interchange, and two additional receptors north of I-90. The 2021 detailed noise report predicted noise related impacts from construction of the Johnson Lane Interchange project for 10 noise receptors. This includes five residences north of I-90 in the Firth Street residential area and five residences south of Old Hardin Road on Rykken Circle. Similar to the 2012 noise report and the 2014 FEIS and ROD, the 2021 noise report concluded that no feasible or reasonable mitigation measures were found for the impacts associated with the Johnson Lane Interchange project. Four of the receptors impacted by the North Frontage Road realignment would be relocated, leaving only one impacted receptor. A barrier near the five impacted receptors south of Old Hardin Road would not meet MDT's noise reduction design goals and reasonableness criteria. The change in noise impacts would not affect the overall findings and proposed mitigation made in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Farmland	Yes	No	A slight change in farmland impacts has been identified since the FEIS/ROD. As part of the North Frontage Road realignment, the east leg of the frontage road realignment would now cross an agricultural field designated as farmland of statewide importance and prime farmland if irrigated. This would convert approximately 1.05 acre of designated farmland of statewide importance to a transportation use. This change in farmland impacts would not affect the overall findings and proposed mitigation made in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.
Irrigation	Yes	No	Due updates to the Johnson Lane Interchange project footprint since the 2014 FEIS and ROD, a new irrigation ditch, the Lockwood Ditch, has been identified within the project limits. The ditch parallels Old Hardin Road to the south. Improvements to this ditch would include piping approximately 150 linear feet of ditch and culvert extensions. This would impact approximately 0.018 acre of the Lockwood Ditch. MDT is avoiding the Coulson Ditch and there will not be any impacts to the Coulson Ditch as part of this project. This change in irrigation impacts would not affect the overall findings and proposed mitigation made in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.
Energy	No	No	No change in impacts or concerns related to energy has occurred since the FEIS/ROD.
Air Quality	No	No	The updated project footprint remains entirely outside the boundaries of the Billings Carbon Monoxide Maintenance Area. Additional coordination with DEQ and EPA is not required. No change in impacts related to air quality have occurred since the FEIS/ROD.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Hazardous Materials	Yes	No	A review of current the Montana Department of Environmental Quality database was conducted. No additional hazardous materials sites were identified during the review. Since the 2014 FEIS and ROD, the required Phase II and asbestos survey mitigation has been completed. Subsurface investigations were completed with the MDT ROW near three underground storage tanks where leaks / spills had previously occurred or may have occurred. These included the Town Pump Pilot Truck Stop, the Flying J Travel Plaza, and Casey's Corner Store. The results of the subsurface investigation indicated no soil impacts above Montana Department of Environmental Quality Risk-Based Screening Levels for extractable petroleum hydrocarbon and volatile petroleum hydrocarbons. Further investigation of potential petroleum impacts is not warranted, and no additional mitigation is proposed. The asbestos survey indicated no asbestos detected in any of the suspect materials samples. No additional mitigation is proposed. One additional impact was identified since the 2014 FEIS and ROD. With the proposed design change to the North Frontage Road, which includes a realignment further to the north, the AST associated with the residence on Firth Street would likely be impacted. Mitigation outlined in the 2014 FEIS and ROD related to AST impacts is still valid. The change in impact to hazardous materials would not affect the overall findings made in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Water Resources and Water Quality	Yes	No	Within the current Johnson Lane Interchange project footprint, two irrigation ditches were identified during the September 2020 wetland delineation. The Coulson Ditch was identified crossing Sannon Boulevard. The Lockwood Ditch parallels Old Hardin Road on the south side of the roadway. MDT is avoiding the Coulson Ditch and there will not be any impacts to the Coulson Ditch as part of this project. Improvements at the Lockwood Ditch include culvert extensions within the ditch and a segment of the ditch being piped (150 linear feet). This would result in approximately 0.018 acre of permanent impact to the Lockwood Ditch. No additional groundwater wells were identified within the project vicinity. The change in impacts to water resources and water quality is consistent with the findings in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.
Wild and Scenic Rivers	No	No	The Johnson Lane Interchange project would not impact a Wild and Scenic River, as the closest river (the Yellowstone River) is not designated as a Wild and Scenic River. No changed conditions have occurred since the FEIS/ROD.
Waterbody Modifications	Yes	No	Within the current Johnson Lane Interchange project footprint, two irrigation ditches were identified during the September 2020 wetland delineation. The Coulson Ditch was identified crossing Sannon Boulevard. The Lockwood Ditch parallels Old Hardin Road on the south side of the roadway. MDT is avoiding the Coulson Ditch and there will not be any impacts to the Coulson Ditch as part of this project. Improvements at the Lockwood Ditch include culvert extensions within the ditch and a segment of the ditch being piped (150 linear feet). This would result in approximately 0.018 acre of permanent impact to the Lockwood Ditch. The change in impacts to waterbodies is consistent with the findings in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.
Floodplains	No	No	The delineated floodplains identified in the FEIS are not within or directly adjacent to the Johnson Lane Interchange project footprint. The Johnson Lane Interchange project would not impact delineated floodplains. No changed conditions have occurred since the FEIS/ROD.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Wetlands	Yes	No	A wetland delineation was completed in 2011 as part of the developing Billings Bypass FEIS. As more than 10 years have passed since the original wetland delineation was conducted and to ensure all wetlands were identified within the proposed footprint for the Johnson Lane Interchange project, a new wetland delineation was conducted in September 2020. As outlined in the 2014 FEIS for the Johnson Lane Interchange segment, approximately 0.37 acre of wetland impact was determined. Permanent wetland impacts as a result of the current Johnson Lane Interchange project design and the updated wetland delineation is approximately 0.38 acre. The slight increase in wetland impacts results from changes in wetland boundaries, a reduction in proposed impacts from what was stated in the FEIS and ROD, and the additional impacts to the fringe wetland identified during the 2020 field delineation. The difference for the purposes of comparing impacts is minor and would not alter the conclusion in the FEIS and ROD. The change in impacts to wetlands is consistent with the findings in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.
Vegetation	No	No	No additional impacts or concerns related to vegetation impacts have been identified since the FEIS/ROD.
Wildlife and Aquatic Resources	No	No	No additional impacts or concerns related to wildlife and aquatic resources have been identified since the FEIS/ROD. The Johnson Lane Interchange project would incorporate special provisions into the final bid package to ensure compliance with the Migratory Bird Treaty Act.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
State Species of Concern and Special Status Species	Yes	Yes	A BRR/BA Addendum Report was completed for Johnson Lane Interchange segment on March 4, 2022. The report includes an updated state Species of Concern recorded occurrence list from MTNHP and updated data on bald eagle nests in the area. The MTNHP list identified 13 wildlife Species of Concern and one plant Species of Concern within three miles of the Johnson Lane Interchange project. These include 11 species that were discussed in the FEIS; and two new wildlife species and one plant species, which were not discussed in the FEIS. Of the remaining two wildlife species and one plant species not discussed in the 2014 FEIS, limited suitable habitat is found within the Johnson Lane Interchange project and its vicinity for listed species. Permanent vegetation impacts would occur within the proposed construction limits, with both upland and wetland habitat being impacted; however, with much of the project footprint already developed, these impacts would be minor. Direct mortality to some species may occur due to inability to disperse during construction. Temporary noise related impacts would also occur during construction. 2020 Montana FWP observation data on bald eagles, provided by MTNHP, shows several documented occurrences of bald eagle and bald eagle nests along the Yellowstone River corridor; however, no bald eagle nests or occurrences have been documented within 0.5 mile of the Johnson Lane Interchange project limits. MTNHP data shows the closest documented nesting bald eagle was over 0.5-mile northwest of the Johnson Lane Interchange northern limits. The nest was last documented in 2006. Additionally, MTNHP eagle data shows no documented occurrences of golden eagles or nests within three miles of the project footprint. Therefore, additional minimization measures and timing restrictions for the Johnson Lane Interchange segment are not proposed. The change in impacts to state Species of Concern and Special Status Species are consistent with the findings in the FEIS/ROD and would not be considered “significant” in terms of context and intensity.

Resource Category	Change in Impact? Yes/No	Change in Mitigation? Yes/No	Discussion
Threatened and Endangered Species	Yes	No	A BRR/BA Addendum Report was completed for Johnson Lane Interchange segment on March 4, 2022. According to the report, the greater sage-grouse, black-footed ferret, and Sprague's pipit have been removed from the October 2021 list of endangered, threatened, proposed, and candidate species for Yellowstone County. Red knot and monarch butterfly have been added to the Yellowstone County list. Whooping crane remains on the list. There are no records of whooping crane or red knot breeding in the state. They are known to migrate through Montana on occasion in the spring and fall as they head to breeding territories in northern Canada and the Arctic, respectively. There are three observations for whooping crane within a 30-mile radius of the proposed Johnson Lane Interchange project over the last 100 years. The nearest observation was documented more than 10 miles to the northeast as a fly-over in April 2010. One observation of red knot is documented less than 1.0-mile northwest of the proposed Johnson Lane Interchange project limits. This individual was a transient documented in 1975, and not seen since. Two other red knot observations in the general geographic area are greater than 30 miles from the project vicinity. Monarch butterfly also migrates through Montana in the spring and fall as they move between central Mexico and Canada. While monarch butterflies may migrate through the area, suitable foraging and resting habitat is limited within the Johnson Lane Interchange project footprint. The closest recorded observation of a monarch butterfly was over 30 miles southwest of the project limits in 2016. In addition, during migration, monarchs do not typically arrive in Montana until June or July. The Johnson Lane Interchange project would likely start, and vegetation removed, prior to that arrival. Neither the whooping crane nor red knot would be anticipated in the Johnson Lane Interchange project area, as limited-to-no-appropriate habitat is present. Therefore, a ***No Effect*** determination has been made for the proposed Johnson Lane Interchange project activities for both the whooping crane and red knot. Additionally, the monarch butterfly is not anticipated in the project area due to limited habitat and timing of construction. Therefore, the Johnson Lane Interchange project ***Would Not Jeopardize the Continued Existence*** of the monarch butterfly. The change in impacts to Threatened and Endangered species is consistent with the findings in the FEIS/ROD and would not be considered "significant" in terms of context and intensity.

CONCLUSION

Through this re-evaluation, MDT has determined that no substantive changes within the Johnson Lane Interchange project footprint have occurred since the FEIS and ROD were signed in 2014. The design and environmental updates described in this re-evaluation would not affect the ability of the Johnson Lane Interchange project segment of the Billings Bypass to meet the stated purpose as described in the FEIS and ROD. Additionally, MDT has determined that the impacts of these design and environmental updates are not, individually or cumulatively, significant nor significantly different from those impacts described in the FEIS and ROD. However, a Revised ROD will be required to document the notable design changes within the Johnson Lane Interchange segment, per 23 CFR 771.127(b).

MDT has determined that changes to the design and the environmental updates would have no effect on the ultimate decision documented in the ROD and that approving this updated NEPA/MEPA evaluation and forthcoming Revised ROD for the Johnson Lane Interchange project segment is consistent with 23 CFR 771.

REVIEWED/AUTHORIZED

Date: By Tom Martin at 9:50 am, Aug 24, 2022

Tom Martin, P.E.
Environmental Services Bureau Chief

BRIAN D HASSELBACH Digitally signed by BRIAN D HASSELBACH Date: 2022.09.02 13:48:36 -06'00'

Date:

Federal Highway Administration

Electronic copies:

Rod Nelson	Billings District Administrator
Tom Martin	Environmental Services Bureau Chief
Tom Gocksch	Environmental Services Bureau Engineering Section Supervisor
Damian Krings	Highways Engineer
Jason Gilliam	Right-of-Way Bureau Chief
Fred Bente	EPS Project Manager
Darrin Reynolds	Engineering Construction Contracting Bureau Chief
Lisa Hurley	Fiscal Programming Section Supervisor
Tommy Griffeth	Billings District Project Development Engineer
Brian Hasselbach	FHWA Deputy Division Administrator
Montana Legislative Branch Environmental Quality Council (EQC)	

copies: Environmental Services Bureau File

Attachment 1: Project Figures

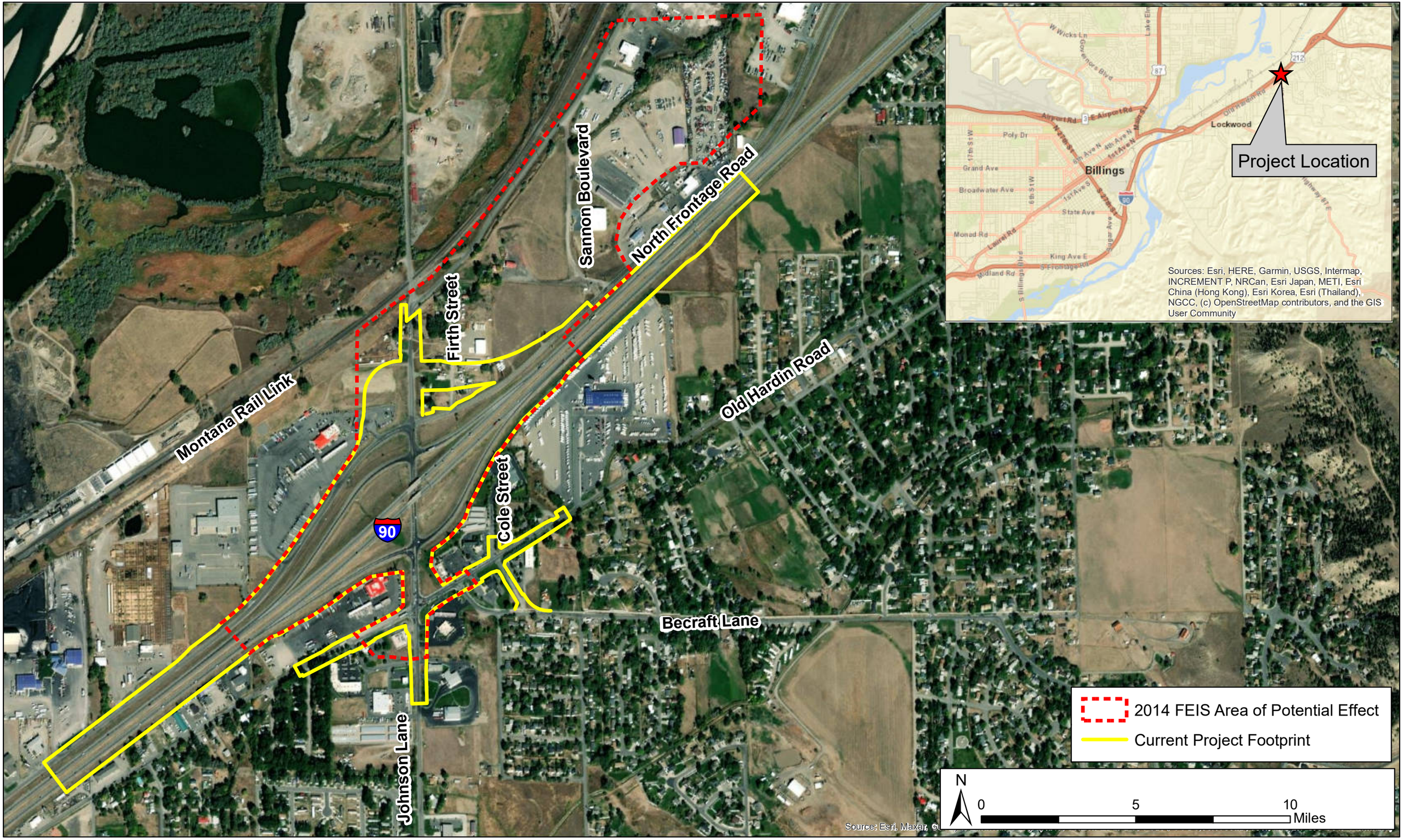


Figure 1

Project Location and Limits

PRELIMINARY

DOWL

FIGURE 2

PROJECT OVERVIEW

BILLINGS BYPASS - JOHNSON LANE INTERCHANGE

IM-CMBL-STPU-NCPD-NHPB 56(53), UPN 4199007

SCALE: 1"=800'

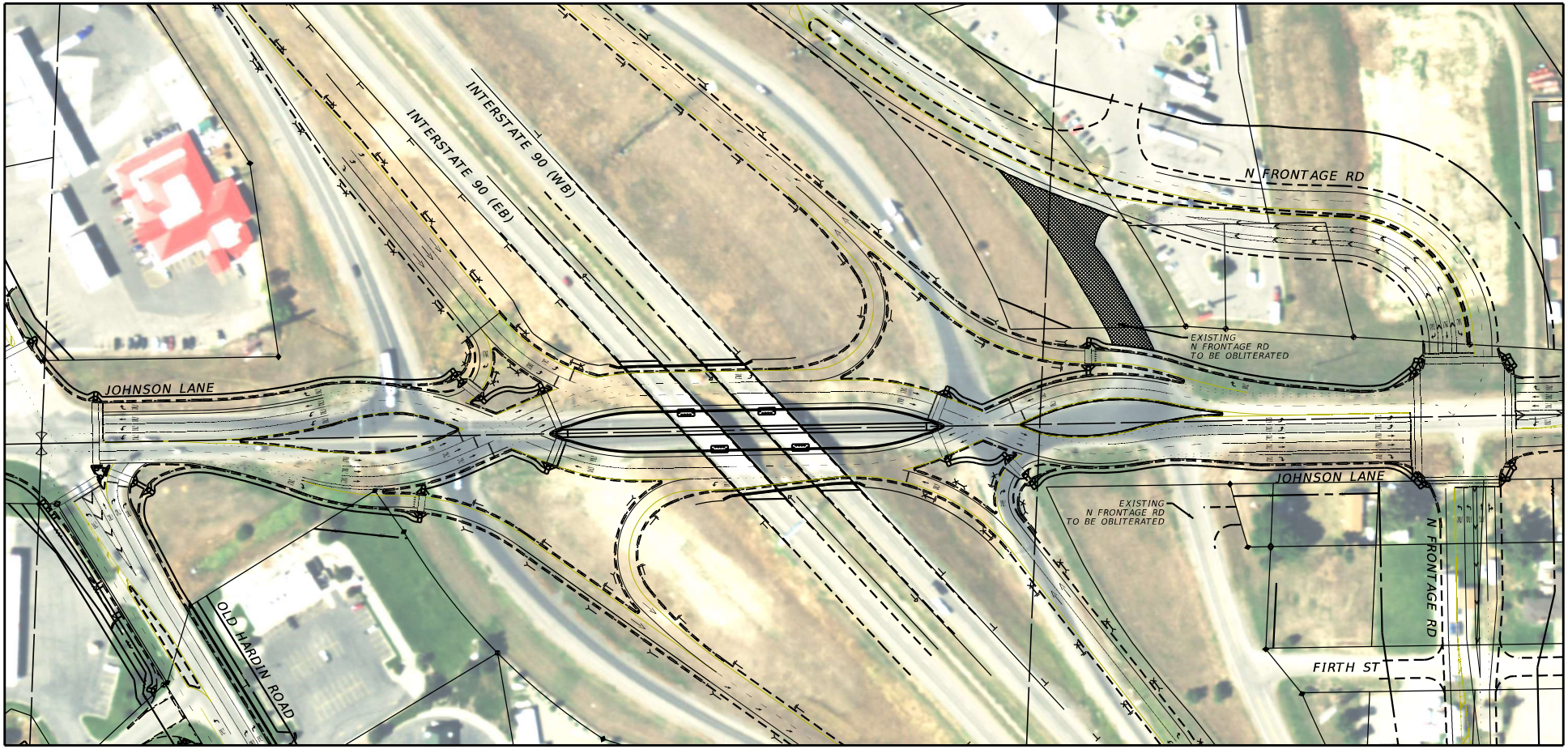
N

PRELIMINARY

DOWL

FIGURE 3

N FRONTAGE RD
BILLINGS BYPASS - JOHNSON LANE INTERCHANGE
IM-CMBL-STPU-NCPD-NHPB 56(53), UPN 4199007
SCALE: 1"=300'



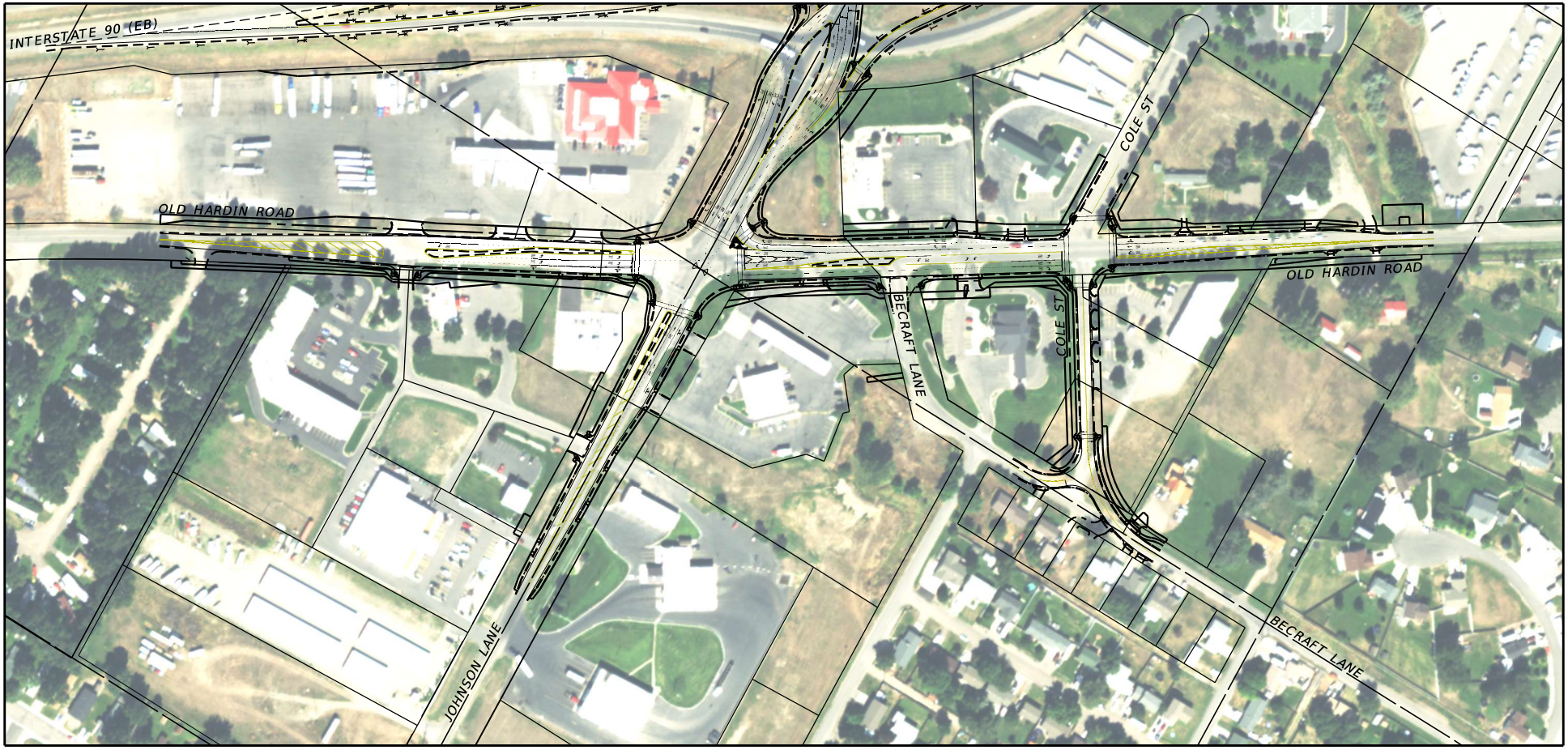
PRELIMINARY

DOWL

FIGURE 4

JOHNSON LANE INTERCHANGE

BILLINGS BYPASS - JOHNSON LANE INTERCHANGE
IM-CMBL-STPU-NCPD-NHPB 56(53), UPN 4199007
SCALE: 1"=150'



PRELIMINARY

DOWL

FIGURE 5

OLD HARDIN RD, COLE ST & BECRAFT LN
BILLINGS BYPASS - JOHNSON LANE INTERCHANGE
IM-CMBL-STPU-NCPD-NHPB 56(53), UPN 4199007
SCALE: 1"=100'

N

Attachment 2: Johnson Lane Interchange BRR/BA Addendum Report

Johnson Lane Interchange Addendum to Final Biological Resources Report / Biological Assessment

MDT Activity 196

BBP – Johnson Lane Interchange
NCDP-MT 56(55)
CN: 4199007

Prepared for:

MONTANA
Department of Transportation

Helena, MT

Prepared by:

DOWL

1300 Cedar Street
Helena, Montana 59601

March 4, 2022

Principal Author:

Emily Peterson
DOWL Environmental Manager
406.442.0370

TABLE OF CONTENTS

LIST OF ACRONYMS II

EXECUTIVE SUMMARY III

1.0 INTRODUCTION 1

2.0 BRR/BA SECTION 1.1 – PROJECT DESCRIPTION UPDATES 1

3.0 BRR/BA SECTION 3.0 – GENERAL VEGETATION AND WILDLIFE 5

4.0 BRR/BA SECTION 4.0 – AQUATIC RESOURCES 6
4.1 WATERWAYS 6
4.2 GENERAL AQUATIC SPECIES 7

5.0 BRR/BA SECTION 5 – SPECIES OF CONCERN AND SPECIAL STATUS SPECIES 7

6.0 BRR/BA SECTION 6 – THREATENED AND ENDANGERED SPECIES - BIOLOGICAL ASSESSMENT 10

7.0 WETLANDS 13

8.0 REFERENCES 15

FIGURES

Figure 1. Project Limits and Vicinity 3

TABLES

Table 1. Updates to State Species of Concern within the Johnson Lane Interchange project vicinity 8

Table 2. 2020 Johnson Lane Interchange Segment Delineated Wetlands 14

APPENDICES

A Johnson Lane Interchange Design Figure
B 2020 Johnnson Lane Interchange Wetland Delineation Figures
C Montana Species of Concern in Project Vicinity
D US Fish and Wildlife Species List for Yellowstone County, Montana
E Wetland Determination Forms and MDT Montana Wetland Assessment Forms

LIST OF ACRONYMS

BA……..Biological Assessment
BMP……..Best Management Practices
BRR…….. Biological Resources Report
CWA…….Clean Water Act
FEIS……..……Final Environmental Impact Statement
FWP…….. Montana Fish, Wildlife, and Parks
I-90…….. Interstate 90
MDT……Montana Department of Transportation
MTNHP……Montana Natural Heritage Program
NWI…….. National Wetland Inventory
ROD…….. Record of Decision
USACE……United States Army Corps of Engineers
USGS……United States Geological Service
USFWS……United States Fish & Wildlife Service

EXECUTIVE SUMMARY

A Final Biological Resources Report/Biological Assessment (BRR/BA) was completed for the Billings Bypass in November 2011. Two addenda to that report were completed in June 2012 and August 2013. The 2011 BRR/BA Report and the 2012 report addendum served as a basis for informal consultation with the US Fish and Wildlife Service (USFWS) concerning potential effects of future Billings Bypass projects on federally listed species. The August 2013 addendum was completed to confirm there had been no changes to the USFWS Yellowstone County list of threatened and endangered species since the 2012 addendum and confirm the USFWS determination was still current. Impacts to biological resources were also evaluated in the 2014 Billings Bypass Final Environmental Impact Statement (FEIS).

Due to the Billings Bypass project now being split into six construction projects and the time lapse since the August 2013 addendum and 2014 FEIS, BRR/BA Addendums are being prepared for each project segment as updates to the original BRR/BA, addenda, and Billings Bypass FEIS.

This BRR/BA Addendum Report has been prepared for the Johnson Lane Interchange project segment of the Billings Bypass to document changes in the Johnson Interchange project limits and vicinity from what was presented in the November 2011 BRR/BA, subsequent 2012 and 2013 addenda, and the 2014 FEIS. The addendum includes updates to the Johnson Lane Interchange project footprint and project description. It also provides general wildlife and vegetation updates, aquatic resources and wetlands updates, state Species of Concern updates, and updated information on federally threatened and endangered species within the Johnson Lane Interchange project vicinity. The addendum will be included as part of the FEIS Re-evaluation for the Johnson Lane Interchange project segment.

ADDENDUM SUMMARY

As part of the 2014 Billings Bypass FEIS, five options were developed for the Johnson Lane/Interstate 90 (I-90) Interchange and associated secondary intersections at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft, and Johnson Lane/North Frontage Road. A preferred alternative for the Johnson Lane Interchange project segment, however, was never determined and outlined in the 2014 Billings Bypass FEIS and Record of Decision (ROD). The FEIS and ROD instead stated that the precise configuration of the Johnson Lane Interchange and associated secondary intersections would be determined during final design. For the purpose of impact analysis in the 2014 FEIS and ROD, a maximum potential footprint for the Johnson Lane Interchange project, in which impacts may occur, was determined.

The Johnson Lane Interchange existing conditions within that footprint, along with the avoidance and minimization measures, impacts, and recommended conservation measures described in the 2011 BRR/BA, subsequent 2012 and 2013 addenda, and the 2014 Billings Bypass FEIS are still valid and remain unchanged except as outlined below.

- Refinements/changes to the Johnson Lane Interchange project since the BRR/BA and FEIS include constructing a new diverging diamond interchange at the Johnson Lane/I-90 interchange; shifting the North Frontage Road and Johnson Lane Intersection approximately 450 feet to the north of the existing location to accommodate the new interchange, realigning the North Frontage Road to connect with the new Johnson Lane intersection, alignment and profile improvements to Sannon Boulevard, and intersection improvements at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft Lane, Old Hardin Road/Cole Street, and Cole Street/Becraft Lane.

- The Johnson Lane Interchange project footprint has been expanded to accommodate the proposed improvements.

- A wetland delineation was completed in 2011 as part of the developing Billings Bypass FEIS. As more than 10 years have passed since the original wetland delineation was conducted, and to ensure all wetlands were identified within the current design footprint for the Johnson Lane Interchange project, a wetland delineation was conducted in September 2020. During the 2020 wetland delineation effort, the 2011 wetland boundaries were updated to current conditions. Two irrigation ditches, Coulson Ditch and Lockwood Ditch, were identified within the current Johnson Lane Interchange footprint, and one additional wetland, a fringe wetland along the Lockwood Ditch, was also delineated. As outlined in the 2014 FEIS, approximately 0.37 acre of permanent wetland impact was determined for the Johnson Lane Interchange segment, with all impacts occurring at Wetland JI-WL2 (previously labeled Wetland T). Permanent wetland impact as a result of the refinement/changes to the Johnson Lane Interchange project design and updated wetland delineation is approximately 0.38 acre. Total wetland impacts only increased slightly (from 0.37 to 0.38 acre) due to the change in acreage delineated for Wetland JI-WL2 from 2011 to 2020 (0.37 acre in 2011 to 0.36 acre in 2020). The additional 0.02 acre of impacts are to the fringe wetland identified during the 2020 field delineation.

- The 2021 state Species of Concern recorded occurrences list from Montana Natural Heritage Program (MTNHP) identified 13 wildlife Species of Concern and one plant Species of Concern within 3.0 miles of the Johnson Lane Interchange Project. Eleven of these Species of Concern were discussed in the 2011 BRR/BA and 2014 FEIS. No additional impacts or concerns related to the 11 original species have been identified since the 2011 BRR/BA and 2014 FEIS. Of the remaining two wildlife species and one plant species not discussed in the 2011 BRR/BA and 2014 FEIS, limited suitable habitat is found within the Johnson Lane Interchange project vicinity for listed species. Permanent vegetation impacts would occur within the proposed construction limits, with both upland and wetland habitat being impacted; however, with much of the project footprint already developed, these impacts would be minor. Direct mortality to some species may occur due to inability to disperse during construction. Temporary noise related impacts would also occur during construction.

- Current 2020 Montana Fish, Wildlife, and Parks (FWP) observation data on Bald Eagles shows documented occurrences of Bald Eagle and Bald Eagle nests along the Yellowstone River corridor; however, no Bald Eagle nests or occurrences have been

documented within 0.5 miles of the Johnson Lane Interchange project limits. MTNHP data shows the closest documented nesting Bald Eagle was over 0.5-miles northwest of the Johnson Lane Interchange northern limits. The nest was last documented in 2006. Additionally, MTNHP eagle data shows no documented occurrences of Golden Eagles or nests within 3.0 miles of the project footprint. Therefore, additional minimization measures and timing restrictions for the Johnson Lane Interchange segment are not proposed. Should a new active nest be constructed and identified within 0.5 miles of the project limits, the Montana Department of Transportation (MDT) District Biologist would be contacted to coordinate with Montana FWP to determine if a timing restriction on construction activities is warranted.

- The Greater Sage-Grouse (*Centrocercus urophasianus*), black-footed ferret (*Mustela nigripes*), and Sprague's Pipit (*Anthus spragueii*) have been removed from the list of endangered, threatened, proposed, and candidate species for Yellowstone County. Therefore, the project effect determinations for these species stated in the 2011 BRR/BA, 2012 addendum, and the USFWS 2012 concurrence letter will remain valid. Monarch butterfly (*Danaus plexippus*) and Red Knot (*Calidris canutus rufa*) have been added to the Yellowstone County list. Whooping Crane (*Grus americana*) remains on the list.

  There are no records of Red Knot or Whooping Crane breeding in the state. Both species are known to migrate through Montana on occasion in the spring and fall as they head to breeding territories in northern Canada and the Arctic, respectively. There are three observations for Whooping Crane within a 30-mile radius of the proposed Johnson Lane Interchange project over the last 100 years. The nearest observation was documented more than 10 miles to the northeast as a fly-over in April 2010. One observation of Red Knot is documented less than 1.0 mile northwest of the proposed Johnson Lane Interchange project limits. This individual was a transient (non-breeding and short-term) documented in 1975, and not seen since. Two other Red Knot observations in the general geographic area are greater than 30 miles from the project vicinity.

  Monarch butterflies also migrate through Montana in the spring and fall as they move between central Mexico and Canada. While monarch butterflies may migrate through the area, suitable foraging and resting habitat is limited within the Johnson Lane Interchange project footprint. According to MTNHP, the closest recorded observation of a monarch butterfly was over 30 miles southwest of the project limits in 2016. In addition, during migration, monarchs do not typically arrive in Montana until June or July. The Johnson Lane Interchange project would likely start, and vegetation removed, prior to that arrival.

  Neither the Whooping Crane nor Red Knot would be anticipated in the Johnson Lane Interchange project area, as limited-to-no-appropriate habitat is present. Therefore, a ***no effect*** determination has been made for the proposed Johnson Lane Interchange project activities for both the Whooping Crane and Red Knot. Additionally, the monarch butterfly is not anticipated in the project area due to limited habitat and timing of construction. Therefore, the Johnson Lane Interchange project would ***not jeopardize the continued existence*** of monarch butterfly.

- On September 22, 2015, USFWS determined that the protection for the Greater Sage-Grouse under the Endangered Species Act was no longer warranted and withdrew the species from the candidate species list. In Montana, the state has management authority over Sage Grouse as outlined under the 2015 Greater Sage-Grouse Stewardship Act and Montana Governor's Executive Orders 10-2014, 12-2015, and 21-2015. The Sage Grouse Habitat Conservation Program was created to facilitate implementation of the Executive Orders. State actions implemented by MDT in designated Greater Sage-Grouse habitat must comply with the conservation program.

  The Johnson Lane Interchange project segment is not within greater sage-grouse designated core habitat, connectivity habitat, or general habitat. The nearest designated sage grouse habitat, which is general habitat, is approximately 2.8 miles northwest of the proposed segment. The Johnson Lane Interchange project activities are consistent with the Montana Sage Grouse Conservation Strategy.

1.0 INTRODUCTION

Due to availability and type of funding, the Montana Department of Transportation (MDT) will implement Phase I of the Billings Bypass Project as six separate construction projects. The fourth potential project to be constructed as part of Phase I is the Johnson Lane Interchange project. This segment of the Billings Bypass is located within the community of Lockwood, Yellowstone County, Montana, and includes Johnson Lane from the Coulson Road Intersection to approximately 750 feet south of its intersection with Old Hardin Road; Old Hardin Road from the intersection of Rykken Circle to approximately 680 feet east of its intersection with Cole Street; Cole Street approximately 190 feet north of the Old Hardin Road Intersection to its intersection with Becraft Lane; the Becraft Lane/Cole Street Intersection; Interstate 90 (I-90) from approximately 3,660 feet west of the Johnson Lane/I-90 overpass to 3,695 feet east of the overpass, including the eastbound and westbound on and off ramps; the North Frontage Road from approximately 1,250 feet west of Town Pump to its intersection with Sannon Boulevard; and Sannon Boulevard from its intersection with North Frontage Road to its intersection with Coulson Road. The Johnson Lane Interchange project is located within Sections 19 and 30 of Township 1 North, Range 27 East (Figure 1).

This Biological Resources Report/Biological Assessment (BRR/BA) Addendum Report has been prepared as part of BRR/BA re-evaluation of the Johnson Lane Interchange segment of the Billings Bypass project. This report provides general biological resources updates, aquatic resources and wetlands updates, state Species of Concern updates, and updated information on federally threatened and endangered species within the Johnson Lane Interchange project vicinity since the August 2013 BRR/BA addendum and 2014 Billings Bypass Final Environmental Impact Statement (FEIS). The report also includes an updated assessment of potential impacts to these resources as a result of the proposed Johnson Lane Interchange project.

For the purposes of this document, “project limits” refers to the limits of potential construction; whereas, “project vicinity” refers to a 3.0-mile radius around the project limits in which specific biological resources are evaluated.

2.0 BRR/BA SECTION 1.1 – PROJECT DESCRIPTION UPDATES

As part of the 2014 Billings Bypass FEIS, five options were developed for the Johnson Lane/I-90 Interchange and associated secondary intersections at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft, and Johnson Lane/North Frontage Road. A preferred alternative for the Johnson Lane Interchange project segment, however, was never determined and outlined in the 2014 Billings Bypass FEIS and ROD. The FEIS and ROD instead stated that the precise configuration of the Johnson Lane Interchange and associated secondary intersections would be determined during final design. For the purpose of impact analysis in the 2014 FEIS and ROD, a maximum potential footprint for the Johnson Lane Interchange project, in which impacts may occur, was determined. The maximum footprint outlined in the FEIS included the Johnson Lane/I-90 Interchange and approximately 0.75 miles of I-90 (3,960 feet), the North Frontage Road, Sannon Boulevard, and Johnson Lane from the Coulson Road Intersection to approximately 440 feet south of its intersection with Old Hardin Road. At Old Hardin Road, the footprint only

extended 450 west of the Johnson Lane Intersection and ended at its intersection with Becraft Lane.

Since the August 2013 BRR/BA addendum and 2014 Billings Bypass FEIS and ROD, there have been several design refinements/changes to the Johnson Lane Interchange project segment. The associated design refinements/changes are described below. The overall proposed design for the Johnson Lane Interchange project segment is depicted in Figure 2, found in Appendix A.

Design Refinement/Change 1: Johnson Lane/I-90 Interchange and Johnson Lane. Five interchange options were developed for the Johnson Lane/I-90 Interchange and associated secondary intersections at Old Hardin Road/Johnson Lane, Old Hardin Road/Becraft, and Johnson Lane/North Frontage Road; however, a preferred alternative was never determined and outlined in the 2014 Billings Bypass FEIS and ROD. A diverging diamond interchange (identified in the 2014 FEIS and ROD as the double crossover diamond interchange) has been selected as the preferred alternative and carried forward to final design.

Under the diverging diamond interchange design, the two directions of traffic on Johnson Lane would cross to the opposite side on both sides of the I-90 overpass bridges. The general location of the I-90 westbound and eastbound ramps would be maintained; however, their approach alignments with Johnson Lane would be modified. The off-ramp and crossover sections would be signalized. Johnson Lane through the Johnson Lane/I-90 Interchange would vary between two or three through lanes to accommodate on and off ramps.

At the signalized Johnson Lane and Old Hardin Road Intersection, both Johnson Lane and Old Hardin Lane would be widened to accommodate additional through lanes and designated left- and right-turn lanes.

Design Refinement/Change 2: North Frontage Road. Under the diverging diamond option (double crossover diamond) outlined in the 2014 FEIS and ROD, the North Frontage Road would have essentially remained on its existing alignment, crossing Johnson Lane at its current location, with a new traffic signal proposed at the intersection.

Under the proposed Johnson Lane Interchange project segment, the configuration of the diverging diamond would now extend further to the north along Johnson Lane. In order to accommodate sufficient storage lengths for the proposed turn lanes at the new interchange, adequate spacing between the North Frontage Road Intersection and the proposed ramp terminals would be required. This meant shifting the North Frontage Road and Johnson Lane intersection approximately 450 feet to the north of the existing location. To connect to the new intersection, the North Frontage Road alignment west of Johnson Lane would curve north through the east end of the Town Pump parking lot. The alignment would then curve back east to the new intersection location.

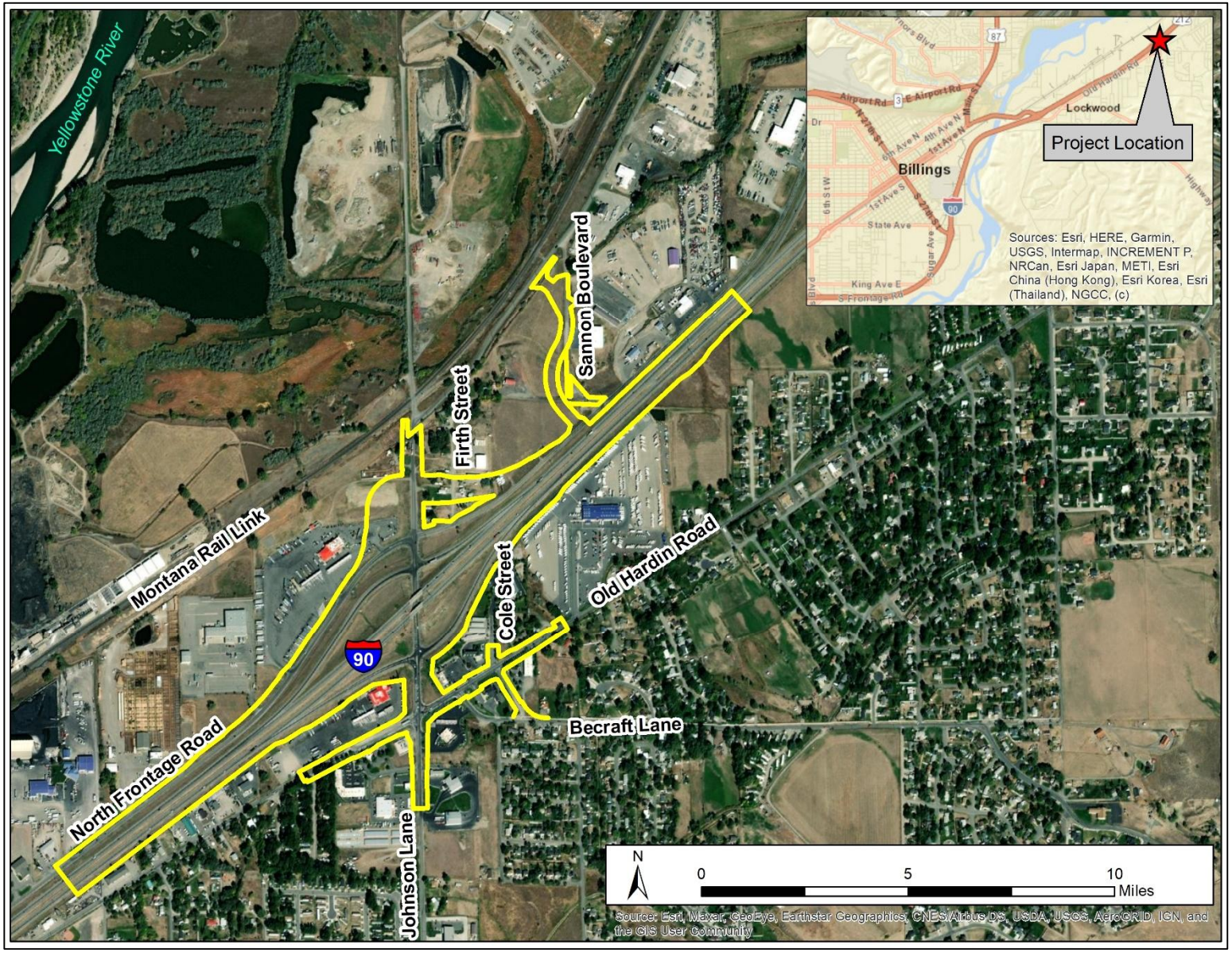


Figure 1. Project Limits and Vicinity

Because the Firth Street residential area is located on the east side of Johnson Lane, several connection/access alternatives for the North Frontage Road east of Johnson Lane were evaluated. The preferred alternative would realign the eastern segment of North Frontage Road through the residential area on Firth Street to connect the eastern segment at the new intersection with Johnson Lane and the North Frontage Road western segment. This alternative was chosen because it maintained the direct connection to North Frontage Road east of Johnson Lane, which businesses along that segment of roadway relied upon, particularly commercial truck traffic coming off I-90. The new North Frontage Road alignment would directly impact five residential structures and one commercial warehouse.

The new North Frontage Road and Johnson Lane intersection would be a signal-controlled intersection. Both Johnson Lane and the North Frontage Road would be widened at the intersection to accommodate designated left- and right-turn lanes.

Design Refinement/Change 3: Sannon Boulevard. Due to the steep grades along the existing Sannon Boulevard alignment, a new alignment and profile for the roadway, from the North Frontage Road to Coulson Road, is proposed. The new alignment and profile would include two, long s-curves to decrease the maximum grade (a decrease of 4.54%) and flatten the horizontal curves. The roadway profile would include two, 12-foot travel lanes and 2-foot shoulders. This new alignment and profile would provide an access improvement for vehicles, particularly for large trucks, that may use Sannon Boulevard as a connector between the North Frontage Road and Coulson Road. Approximately one-third of the Sannon Boulevard reconstruction would be obliterated and connected to the Billings Bypass when the Railroad Overpass to Johnson Lane segment is constructed.

Design Refinement/Change 4: Old Hardin Road and Becraft Lane Intersection. Under the diverging diamond option (double crossover diamond) outlined in the 2014 FEIS and ROD, a Y-shaped configuration was proposed at the Becraft intersection with Old Hardin Road. The lane configuration on Old Hardin Road included one eastbound through lane and one eastbound designated, free-flow, right-turn only lane onto Becraft Lane. Northbound traffic on Becraft Lane would be forced to use a designated right-turn only lane onto Old Hardin Road, as no left-turn option would be available. This intersection configuration also did not provide a left-turn option for westbound traffic on Old Hardin Road wanting to turn left on to Becraft Lane, due to the Y-shaped configuration. A traffic signal was not proposed at this intersection.

Under the proposed Johnson Lane Interchange project segment, the Y-shaped configuration at the Becraft intersection has been removed. The lane configuration at the Old Hardin Road and Becraft Intersection includes two eastbound through lanes, with the right through lane providing the ability to turn right onto Becraft Lane. A designated right-turn only lane for northbound traffic on Becraft Lane would remain, as a left-turn option onto Old Hardin Road is not available. However, a designated left-turn lane for westbound traffic on Old Hardin Road has been included, which would allow westbound traffic to turn left on to Becraft Lane. The intersection would remain unsignalized.

Design Refinement/Change 5: Old Hardin Road and Cole Street Intersection. Under the diverging diamond option (double crossover diamond) outlined in the 2014 FEIS and ROD, a signalized intersection was proposed at Old Hardin Road and Cole Street and Cole Street would be improved (i.e., widened) south of Old Hardin Road to provide a new connector street to Becraft Lane. Under the proposed Johnson Lane Interchange project segment, the intersection is still proposed as a signalized intersection and Cole Street south of Old Hardin Road would still be improved. The lane configuration at the intersection on Old Hardin Road, however, has been updated to include one eastbound through lane and one designated eastbound right-turn lane onto Cole Street, two westbound through lanes with the option to turn right onto Cole Street, and a designated left-turn lane at the intersection for both east and westbound traffic to turn left onto Cole Street.

Design Refinement/Change 6: Cole Street and Becraft Lane Intersection. The diverging diamond (double crossover diamond) outlined in the 2014 FEIS and ROD included improvements (i.e., widened) to Cole Street, south of Old Hardin Road, that ended in a skewed T-intersection connection at Becraft Lane. During design refinements for the proposed Johnson Lane Interchange project segment, several alternatives were considered for the Cole Street and Becraft Lane intersection.

The preferred alternative for the Cole Street and Becraft Lane intersection is a Y-shaped configuration where eastbound traffic on Becraft Lane is stop controlled and Cole Street is free-flow onto the east segment of Becraft Lane. Because of the Y-shape configuration, driveways to homes south of Becraft Lane would be extended to meet the new intersection alignment.

Design Refinement/Change 7: Updated Project Footprint. To accommodate the new design features now included in the Johnson Lane Interchange project, the footprint in which impacts may occur or area of potential effect (APE), was updated from what was shown in the 2014 FEIS and ROD. The APE along Johnson Lane now extends from the Coulson Road intersection to approximately 750 feet south of its intersection with Old Hardin Road. The APE along Old Hardin Road now extends from the intersection of Rykken Circle to approximately 680 feet east of its intersection with Cole Street. Cole Street, from approximately 190 feet north of the Old Hardin Road intersection to its intersection with Becraft Lane, and the Becraft Lane and Cole Street intersection are now included. The APE along I-90 is extended from approximately 3,660 feet west of the Johnson Lane/I-90 overpass to 3,695 feet east of the overpass, including the eastbound and westbound on and off ramps. The APE surrounding the North Frontage Road and Sannon Boulevard remains relatively the same. This updated footprint is the current footprint for documenting any changes to biological conditions.

3.0 BRR/BA Section 3.0 – General Vegetation and Wildlife

The Johnson Lane Interchange existing general vegetation and general wildlife conditions, avoidance and minimization measures, and recommended conservation measures described in the 2011 BRR/BA, subsequent 2012 and 2013 addenda, and the 2014 Billings Bypass FEIS are still valid and remain unchanged. The preferred design for

the Johnson Lane/1-90 Interchange, proposed intersection improvements, updates to the North Frontage Road realignment (an additional 7.5 acres of new right-of-way [ROW]), and improvements to Sannon Boulevard (an additional 2.8 acres of new ROW) are not anticipated to greatly increase impacts to general vegetation and general wildlife and will not be addressed further in this addendum report.

4.0 BRR/BA SECTION 4.0 – AQUATIC RESOURCES

4.1 WATERWAYS

Methods

In 2011, a wetland delineation was completed as part of the developing Billings Bypass EIS. As it has been more than 10 years since the original wetland delineation was conducted, and to ensure all wetlands and other waters were identified within the refined design footprint for the Johnson Lane Interchange project, a new wetland delineation was conducted in September 2020. Prior to the field visit, the Johnson Lane Interchange project limits were researched for the potential presence of aquatic resources. Various mapping resources were used, including the US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, US Geological Service (USGS) topographic quad maps, and aerial photographs. During the site visit, the project limits were investigated for waterways and other aquatic resources according to the US Army Corps of Engineers (USACE) Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification (USACE, 2005). Wetlands and waterways identified during the September 2020 field visit are shown in Appendix B.

Results

Two irrigation ditches were identified within the Johnson Lane project limits. Coulson Ditch was identified within the Sannon Boulevard portion of the project limits. In the 2011 delineation, this ditch was delineated entirely as wetland (Wetland S). During the 2020 delineation effort, the ditch was reviewed within the project limits for wetland indicators. Water was not flowing in the ditch, and the ditch appeared to have not conveyed flows for a very long time. The bed and bank of the ditch were vegetated with upland species, including showing milkweed (*Asclepias speciosa*), smooth brome (*Bromus inermis*), spreading dogbane (*Apocynum androsaemifolium*), and Russian olive (*Elaeagnus angustifolia*). This aquatic resource has been updated to a non-wetland irrigation ditch, with a Riverine, Unknown Perennial, Unconsolidated Bottom, which is Semi-permanently Flooded and Excavated (R5UBFx) classification. The width of the channel within the project limits is approximately 7 to 9 feet wide. Coulson Ditch eventually flows into the Yellowstone River.

One additional irrigation ditch, the Lockwood Ditch, was identified adjacent to the south side of Old Hardin Road. This ditch was not included as part of the 2011 delineation. The USFWS NWI database identifies this ditch as Riverine, Unknown Perennial, Unconsolidated Bottom, which is Semi-permanently Flooded and Excavated (R5UBFx). This aquatic resource is a man-made ditch that varies from 5 to 7 feet wide. Within the project limits, approximately 475 linear feet of the ditch is open/daylighted. The remaining 1,965 linear feet is conveyed through a buried pipe. The ditch primarily conveys irrigation

water and some stormwater. The irrigation water from the ditch eventually flows into Coulson Ditch.

Potential Impacts, Avoidance, Minimization, and Recommended Conservation Measures

Improvements under the Johnson Lane Interchange project include a 70 linear foot arched culvert within Coulson Ditch to accommodate the new Sannon Boulevard connection to Coulson Road. This would result in approximately 0.013 acres of permanent impact to Coulson Ditch. Improvements under the proposed project also include culvert extensions within the Lockwood Ditch and a segment of the Lockwood Ditch being piped (150 linear feet). This would result in approximately 0.018 acres of permanent impact to the Lockwood Ditch. Impacts to irrigation ditches, along with avoidance/minimization measures and recommended conservation measures, are described in the 2014 Billings Bypass FEIS, and still remain valid.

Coulson Ditch and Lockwood Ditch are anticipated to be USACE jurisdictional due to their potential downstream connection to the Yellowstone River, a known water of the US. The USACE reserves the final determination of jurisdictional status. Any placement of fill material within the ditch channels would require permitting under Section 404 of the Clean Water Act (CWA), should these ditches be determined as jurisdictional. The USACE is the regulatory agency with authority to permit the placement of fill or dredged materials into aquatic resources under their jurisdiction. A permit application would be submitted to the USACE.

MDT Standard Specifications for Road and Bridge Construction effectively address resources including water pollution controls as defined by state, local, and federal laws and regulations. These requirements limit vegetation disturbance within the staked boundaries of the project, thus minimizing effects on surrounding, more productive habitats, and reducing erosion during construction.

4.2 GENERAL AQUATIC SPECIES

The Montana Fish, Wildlife, and Parks' (FWP) FishMT database provides information on fish species distribution, supporting data for distribution, and information related to the management of aquatic species in Montana's waterways. The FishMT database does not provide information on irrigation ditches, which is the only type of waterway identified within the project limits. Given the lack of suitable habitat within the project limits, no aquatic species are likely to occur and no impacts to aquatic species under the proposed Johnson Lane Interchange project are anticipated.

5.0 BRR/BA SECTION 5 – SPECIES OF CONCERN and SPECIAL STATUS SPECIES

Methods

A data request was submitted to MTNHP to determine if there were any changes to state Species of Concern or Special Status Species in or near the Johnson Lane Interchange project vicinity since the 2011 BRR/BA, subsequent 2012 and 2013 addenda, and the

2014 Billings Bypass FEIS (MTNHP, 2021a). Additionally, Montana FWP Bald and Golden Eagle information was requested from MTNHP. Appendix C provides all information received from the formal MTNHP request.

Results

Documented occurrences of 13 wildlife state Species of Concern and one plant Species of Concern were recorded within 3.0 miles of the Johnson Lane Interchange project limits (Appendix C, MTNHP, 2021a). Eleven of these species have been addressed in the 2011 BRR/BA and 2014 FEIS. Information on these species is still valid and remains unchanged; therefore, no additional discussion on these 11 species is included in this addendum. The three additional recorded Species of Concern not addressed in the 2011 BRR/BA or the 2014 FEIS, their conservation status, habitat requirements, and potential to occur in the project limits are outlined below in Table 1.

Table 1. Updates to State Species of Concern within the Johnson Lane Interchange project vicinity

Species	Status*	Last Observed in Project Vicinity	Habitat Requirements	Potential to Occur in Project Limits
Mammals				
Long-eared Myotis (*Myotis evotis*)	S3, G5	2021	Occupy a wide range of rocky and forested habitats over a broad elevation gradient. Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, under loose bark, and rock fissures. Hibernacula include caves and abandoned mines.	Low potential to occur within the project limits. The project limits have been heavily disturbed and include I-90, local roadways, and commercial and residential development. Very little suitable habitat exists.
Little Brown Myotis (*Myotis lucifugus*)	S3, G3	2021	Found in a variety of habitats across a large elevation gradient. Commonly forages over water. Summer day roosts include attics, barns, bridges, snags, loose bark, and bat houses. Known maternity roosts in Montana are primarily buildings. Hibernacula include caves and mines.	Low potential to occur within the project limits. The project limits have been heavily disturbed and include I-90, local roadways, and commercial and residential development. Very little suitable habitat exists.
Plants				
Bractless Hedge-hyssop *(Gratiola ebracteate)*	S2, G4	2018	Drying mud around ponds in the foothills and on the plains.	Unlikely to occur in project limits due to lack of suitable habitat.

Source: MTNHP, 2021a and Montana Field Guide (fieldguide.mt.gov)

*Key to rankings: G=Global rank based on range-wide status, S=State rank based on status in Montana, S1: At high risk because of extremely limited and/or rapidly declining population numbers, range and/or habitat, making it highly vulnerable to global extinction or extirpation in the state; S2: At risk because of very limited and/or potentially declining population numbers, range and/or habitat,

making it vulnerable to global extinction or extirpation in the state; S3: Potentially at risk because of limited and/or declining numbers, range and/or habitat, even though it may be abundant in some areas; S4: Apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining; G4: Uncommon but not rare (although it may be in parts of its range), and usually widespread; G5: Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

Bald and Golden Eagles are dually protected under the Bald and Golden Eagle Protection Act of 1940 and the Migratory Bird Treaty Act. 2020 Montana FWP observation data on Bald Eagles shows documented occurrences of Bald Eagle and Bald Eagle nests along the Yellowstone River corridor; however, no Bald Eagle nests or occurrences have been documented within 0.5 miles of the Johnson Lane Interchange project limits. MTNHP data shows the closest documented nesting Bald Eagle was over 0.5-miles northwest of the Johnson Lane Interchange northern limits. The nest was last documented in 2006. Additionally, MTNHP eagle data shows no documented occurrences of Golden Eagles or nests within 3.0 miles of the project footprint. During the September 2020 field visit of the Johnson Lane interchange project limits, no Bald or Golden Eagles or their nests were observed within or adjacent to the project limits.

A review of the Montana Sage Grouse Habitat Conservation Map (2021) shows the Johnson Lane Interchange project limits are not within core, general, or connectivity habitat for Greater Sage-Grouse. The nearest designated Sage Grouse habitat, which is general habitat, is approximately 2.8 miles northwest of the Johnson Lane Interchange project segment.

Potential Impacts, Avoidance, Minimization, and Recommended Conservation Measures

Impacts to 11 state Species of Concern, along with avoidance/minimization measures and recommended conservation measures, are described in the 2011 BRR/BA, subsequent 2012 and 2013 addenda, and the 2014 Billings Bypass FEIS, and still remain valid and unchanged.

Of the three additional Species of Concern, limited suitable habitat is found within the Johnson Lane Interchange project limits. This habitat is likely more conducive for foraging. More suitable habitat for Species of Concern is found north of the project limits along the Yellowstone River.

Construction activities may affect foraging individuals in the area through noise, vibration, human activity, and construction equipment. These impacts would be temporary and cease once construction is complete. Overall, impacts to state Species of Concern that may be present within the project limits are likely to be negligible and will not result in a declining trend in the population or the species as a whole.

Permanent impacts to mature trees and shrubs may affect avian habitat. In order to maintain compliance with USFWS and Migratory Bird Treaty Act guidance, disruption to nesting birds and disturbance of active nests will be avoided. Measures would be implemented to avoid the taking of migratory birds, their eggs, hatchlings, or fledglings during construction. This will include removing any suitable nesting habitats (i.e., trees and shrubs) existing within the construction limits, and that would be affected by

construction, outside of the nesting season (August 16 to April 15). If an active nest, including before or after the local nesting window, is discovered, the nest will be left in place and protected until the young hatch and depart.

MTNHP 2020 observation data on Bald Eagles shows several documented occurrences of Bald Eagle and Bald Eagle nests along the Yellowstone River Corridor; however, no Bald Eagle nests or occurrences have been documented within 0.5 miles of the project limits. Additionally, MTNHP eagle data shows no documented occurrences of Golden Eagles or nests within 3.0 miles of the project footprint. Therefore, additional minimization measures and timing restrictions for the Johnson Lane Interchange segment are currently not proposed. Should a new active nest be constructed and identified within 0.5 miles of the project limits, the MDT District Biologist would be contacted to coordinate with Montana FWP to determine if a timing restriction on construction activities is warranted.

6.0 BRR/BA SECTION 6 – THREATENED AND ENDANGERED SPECIES - BIOLOGICAL ASSESSMENT

Methods

The October 2021 USFWS Endangered, Threatened, Proposed, and Candidate Species list for Yellowstone County and the USFWS Information for Planning and Consultation (IPaC) database for the project vicinity were reviewed to determine if there were any changes in federally listed species in or near the Johnson Lane Interchange project vicinity since the 2011 BRR/BA, subsequent 2012 and 2013 addenda, and the 2014 Billings Bypass FEIS (USFWS, 2021a and 2021b). The MTNHP database for threatened or endangered species was also reviewed for occurrences within and adjacent to the project limits (MTNHP, 2021a).

Results

Since the 2011 BRR/BA, subsequent addenda, and the 2014 FEIS, the Greater Sage-Grouse (*Centrocercus urophasianus*), black-footed ferret (*Mustela nigripes*), and Sprague's Pipit (*Anthus spragueii*) have been removed from the list of endangered, threatened, proposed, and candidate species for Yellowstone County. The USFWS determined that the protection for the Greater Sage-Grouse under the Endangered Species Act was no longer warranted and withdrew the species from the candidate species list in September 2015. In April 2016, the USFWS determined that listing the Sprague's Pipit as an endangered or threatened species was not warranted throughout all or a significant portion of its range and removed the species from candidate status.

Currently, the USFWS shows two federally listed species and one candidate species with the potential to occur in Yellowstone County, Montana (Appendix D). These include Whooping Crane (*Grus Americana*), Red Knot (*Calidris canutus*), and monarch butterfly (*Danaus plexippus*). The IPaC database for the project vicinity only lists two of these species, Red Knot and monarch butterfly, as potentially occurring in the Johnson Lane Interchange project vicinity. Whooping Crane was addressed in the 2011 BRR/BA, subsequent addenda, and 2014 FEIS. Red Knot and monarch butterfly were not assessed in the 2011 BRR/BA, subsequent addenda, and 2014 FEIS, because Red Knot was not listed until January 12, 2015, and monarch butterfly was designated as a

candidate species on December 15, 2020. The following information is provided in this BRR/BA Addendum Report to supplement the effects analysis.

Red Knot

Species Description

Red Knot is a medium-sized sandpiper that is about 9 to 10 inches (23 to 25 centimeters [cm]) in length (Baker et al., 2013). Red Knot has a distinctive breeding plumage that is salmon-red to brick-red color. It has a light-colored lower belly and under tail region. The back and tail feathers are generally dark gray with light edges and subterminal rust-colored spots (Baker et al., 2013).

Red Knots annually migrate between arctic tundra breeding grounds and marine wintering habitats as far south as Tierra del Fuego, an annual migration distance of up to 30,000 km (Baker et al., 2013), using stopover sites in the Northern Great Plains of the United States and Canada.

Migratory stopovers in Montana are rare but are most common at larger wetlands. The majority (60 percent) of the documented migratory stopovers in Montana have been at Freezeout Lake, Benton Lake National Wildlife Refuge, and Lake Bowdoin National Wildlife Refuge (FWP, 2021).

Reason for Decline and Federal Status

Red Knot was listed as Threatened on January 12, 2015, due to loss of breeding and nonbreeding habitat, disruption of natural predator cycles on breeding grounds, reduced prey availability throughout the nonbreeding range, and increasing frequency and severity of mismatches in the timing of the birds' annual migratory cycle relative to favorable food and weather conditions (Federal Register 79(238):73706-73748).

Occurrence in Project Limits

The last known observation of a Red Knot in the vicinity of the Johnson Lane Interchange project limits was in 1975. The observation was of a transient individual.

Monarch Butterfly

Species Description

Adult monarch butterflies are large butterflies with orange wings with black borders and black veins, as well as white speckling. Larvae emerge from their eggs on obligate milkweed host plants after two to five days. The larvae transition through five larval instars over the course of 9 to 18 days. Lastly, they pupate into a chrysalis before emerging 6 to 14 days later as an adult Monarch Butterfly (USFWS, 2021c).

Monarchs prefer open places, native prairie, foothills, open valley bottoms, roadsides, open weedy fields, pastures, and marshes. During migration, monarchs need nighttime roosting sites. In the western population, roosting generally occurs in both native and nonnative deciduous and evergreen trees. Monarchs have been observed using narrow-leaved tree species such as willows, Russian olives, locusts, pines, and eucalyptus as roosting sites (USFWS, 2021d). Monarch butterflies living east of the Rocky Mountains

migrate from Canada to central Mexico where they overwinter. Monarchs typically do not arrive in Montana until June or July and migrate south between September and October (FWP, 2021).

Reason for Decline and Federal Status

The monarch butterfly was designated as a Candidate Species on December 15, 2020, due to long-term declines in overwintering populations, largely due to loss and degradation of habitat, exposure to insecticides, and climate change (Federal Register 85(243):81813-81822).

Occurrence in Project Limits

Monarch butterflies migrate through Montana in the spring and fall as they move between central Mexico and Canada. While monarch butterflies may migrate through the area, suitable foraging and resting habitat is limited within the Johnson Lane Interchange project footprint, as most of the area has been heavily disturbed and developed. According to MTNHP, the closest recorded observation of a monarch butterfly was over 30 miles southwest of the project limits in 2016.

Potential Impacts, Avoidance, Minimization, and Recommended Conservation Measures

There are no records of Red Knot or Whooping Crane breeding in the state, although they are known to migrate through Montana on occasion in the spring and fall as they head to breeding territories in northern Canada and the Arctic, respectively. There are three observations for Whooping Crane within a 30-mile radius of the proposed Johnson Lane Interchange project over the last 100 years. The nearest observation was documented more than 10 miles to the northeast as a fly-over in April 2010.

One observation of Red Knot is documented less than 1.0 mile from the proposed Johnson Lane Interchange project limits. This individual was a transient (non-breeding and short-term) documented in 1975, and not seen since. Neither of these species would be anticipated in the project vicinity as limited-to-no-appropriate habitat is present and neither species is documented as spending any considerable time in the state. The documented observations of these species are individuals flying over the general area, or, as in the case of the Red Knot, an unanticipated short-term stopover. Therefore, a ***No Effect*** determination has been made for the proposed Billings Bypass Johnson Lane Interchange project activities for both the Whooping Crane and Red Knot.

Additionally, the monarch butterfly is not anticipated in the project area due to limited habitat and timing of construction. During migration, monarchs do not typically arrive in Montana until June or July. The Johnson Lane Interchange project would likely start, and vegetation removed, prior to that arrival. Therefore, the Johnson Lane Interchange project would ***not jeopardize the continued existence*** of monarch butterfly.

7.0 WETLANDS

Methods

In 2011, a wetland delineation was completed as part of the developing Billings Bypass EIS. As more than 10 years have passed since the original wetland delineation was conducted, and to ensure all wetlands and other waters were identified within the refined design footprint for the Johnson Lane Interchange project, a new wetland delineation was conducted in September 2020. Prior to the field visit, the Johnson Lane Interchange project limits were researched for the potential presence of wetlands. Various mapping resources were used, including USFWS NWI maps, USGS topographic quad maps, aerial photographs, and Natural Resource Conservation Service soils maps. The 2011 Billings Bypass wetland delineation information was also reviewed.

During the site visit, wetland delineations were conducted following the Routine Method described in the USACE wetland delineation manual (USACE, 1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (USACE, 2010). A Wetland Determination Data Form – Great Plains Region was completed for paired locations throughout the project limits to document wetland and upland conditions, and wetland habitats were assessed for 12 function and value variables in accordance with the MDT Montana Wetland Assessment Method (MDT 2008) (Appendix E). Because the area has been heavily developed, the Johnson Lane Interchange proposed ROW and easements were used as the survey limits to capture all wetlands that could be potentially impacted by the project. Wetlands and other non-wetland aquatic resources identified during the September 2020 field visit are shown in Appendix B.

Results

The 2011 wetland delineation effort identified two wetlands within the Johnson Lane Interchange project limits, Wetland T and Wetland S. Wetland T was made up of three, connected, small wetlands located within a drainage that conveys irrigation runoff and stormwater through the Johnson Lane/I-90 Interchange and into Coulson Ditch. Wetland S was an emergent wetland associated with Coulson Ditch. During the September 2020 wetland delineation, the 2011 wetland boundaries for Wetland T, within the survey limits were updated to current conditions. This included paired data plots at each small wetland and re-delineating the wetland boundaries with a map-grade GPS unit. To meet current naming conventions, Wetland T was relabeled as Wetland JI-WL2a-c. Coulson Ditch and Wetland S, within the project limits, was also reviewed for wetland indicators. Water was not flowing in the ditch, and the ditch appeared to have not conveyed flows for a very long time. The bed and bank of the ditch were vegetated with upland species, including showing milkweed, smooth brome, spreading dogbane, and Russian olive. This aquatic resource has been updated to a non-wetland irrigation ditch, with a Riverine classification.

One additional wetland was identified and delineated within the Johnson Lane Interchange project limits during the 2020 delineation effort. This wetland (JI-WL1a-b) is an emergent fringe wetland along Lockwood Ditch. Table 2 provides the 2020 updated information for all wetlands identified within the survey limits.

Table 2. 2020 Johnson Lane Interchange Segment Delineated Wetlands

Wetland		2020 Acreage	Wetland Cowardin Classification	MDT Functional Rating	Likely Jurisdictional	Wetland Description/ Jurisdictional Justification
JI-WL1 (WL not previously identified)	WL1a	0.024	PEM	IV	Yes	Wetland fringe along Lockwood Ditch, which eventually flows into Coulson Ditch, which flows into the Yellowstone River.
	WL1b	0.022				
JI-WL2 (Formerly labeled WL T)	WL2a	0.129	PEM	IV	Yes	A group of small, connected wetlands found within a drainage that that conveys irrigation runoff and stormwater through the Johnson Lane/I-90 Interchange and into Colson Ditch, which flows into the Yellowstone River.
	WL2b	0.206				
	WL2c	0.024				
WL S (No longer WL)		0.00	R5UBFx	–	Yes	No wetland indicators were identified in 2020. This aquatic resource has been updated to a non-wetland irrigation ditch, with a Riverine classification (Refer to Coulson Ditch in Section 4.1)
Total		**0.405**				

Potential Impacts, Avoidance, Minimization, and Recommended Conservation Measures

Under the scope of work for the Johnson Lane Interchange segment outlined in the 2011 BRR/BA, subsequent addenda, and 2014 FEIS, approximately 0.37 acres of wetland impact was determined. Permanent wetland impact because of the refinement/changes to the Johnson Lane Interchange project design and updated wetland delineation is approximately 0.38 acres. As outlined in the 2014 FEIS, approximately 0.37 acre of permanent wetland impact was determined for the Johnson Lane Interchange segment, with all impacts occurring at Wetland JI-WL2. Permanent wetland impact as a result of the refinement/changes to the Johnson Lane Interchange project design and updated wetland delineation is approximately 0.38 acre. Total wetland impacts only increased slightly (from 0.37 to 0.38 acre) due to the change in acreage delineated for Wetland JI-WL2 from 2011 to 2020 (0.37 acre in 2011 to 0.36 acre in 2020). The additional 0.02 acre of impacts are to the fringe wetland (JI-WL1) identified during the 2020 field delineation.

Impacted wetlands considered jurisdictional by the USACE would require permitting under Section 404 of the CWA. A permit application would be submitted to the USACE when final construction limits are finalized through design. The USACE has the authority to determine appropriate mitigation for jurisdictional wetlands that are impacted by fill placement or ground disturbance. Off-site wetland mitigation is recommended to accommodate the mitigation acreage that may be required to offset wetland impact acreage. Consultation with the USACE will be necessary to determine acceptable mitigation sites. Unavoidable wetland impacts may be mitigated at an established MDT Wetland Reserve or through an established in-lieu fee program. Final mitigation requirements to satisfy unavoidable impacts to wetlands require USACE approval prior to project construction and would occur during the project permitting phase. In addition, mitigation for wetland impacts would be required for federally funded highway projects under 23 CFR Part 777.

8.0 REFERENCES

Baker, A.P. Gonzalez, R.I.G. Morrison and B.A. Harrington. 2013. Red Knot (Calidris canutus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/563. (Accessed 02 January 2018.)

DNRC. 2021. Montana Sage Grouse Habitat Conservation Map. https://sagegrouse.mt.gov/ projects/. Accessed August 2021.

FWP. 2021. Montana Field Guide. Accessed August 2021. http://fieldguide.mt.gov

MDT. 2008. Montana Wetland Assessment Method. https://www.mdt.mt.gov/other/webdata/external/planning/wetlands/2008_wetland_assessment/2008_mwam_manual.pdf

MDT. 2021. Montana Department of Transportation Standard Specifications for Road and Bridge Construction. www.mdt.mt.gov/business/contracting/standard-specs.aspx

MTNHP. 2021a. Montana Natural Heritage Program. Species of Concern Report. Provided by MTNHP in October 2021.

MTNHP. 2021b. Montana Natural Heritage Program. 2020 Bald Eagle Data. Provided by MTNHP in October 2021.

USACE.1987. *Corps of Engineers Wetland Delineation Manual.* Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

USACE. 2005. RGL 05-05: Regulatory Guidance Letter on Ordinary High Water mark Identification. Issued December 7, 2005.

USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region*. Engineer Research and Development Center.

USFWS. 2021a. US Fish and Wildlife Service Ecological Services Montana Field Office. Endangered, Threatened, Proposed, and Candidate Species for Montana Counties. October 2021.

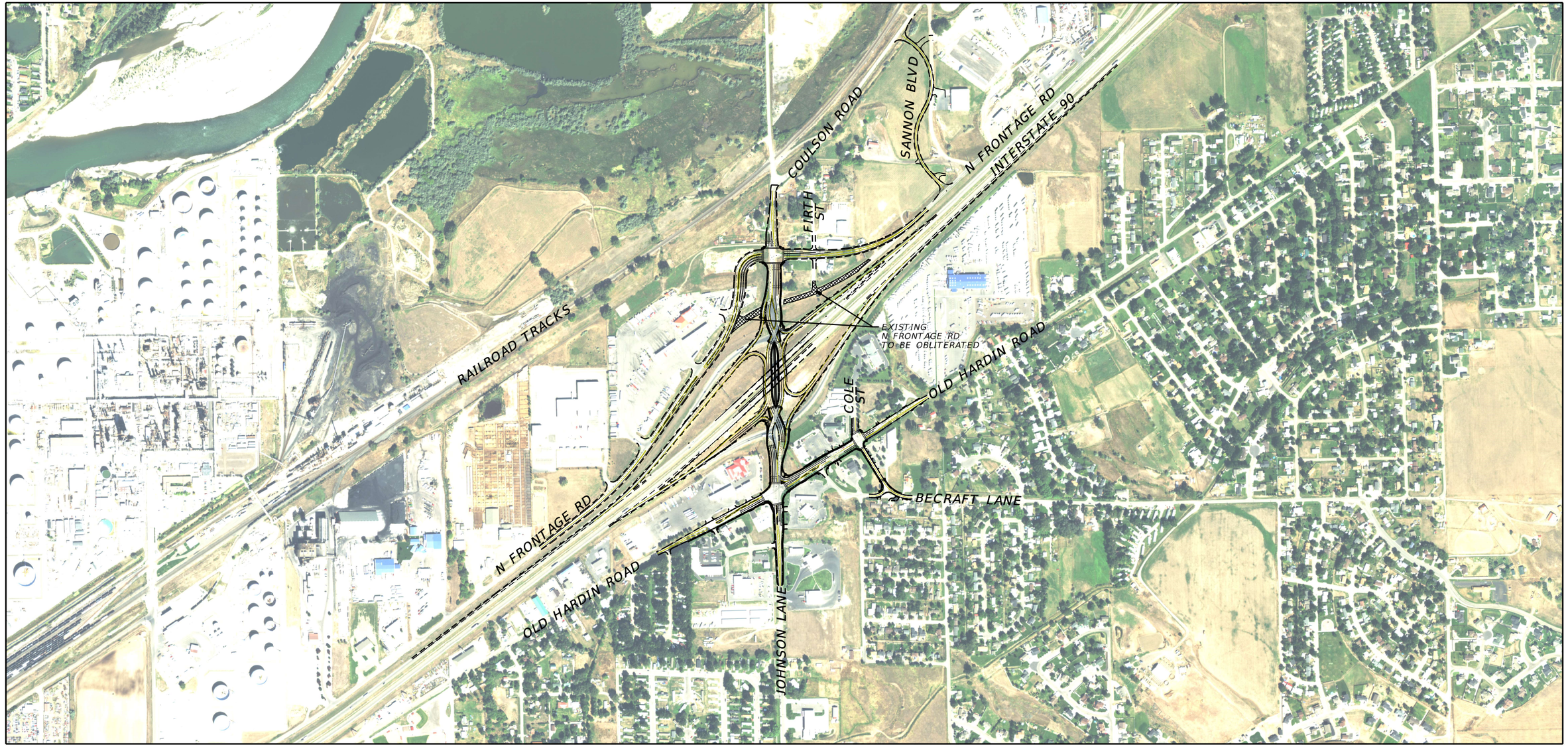
USFWS. 2021b. US Fish and Wildlife Service Information for Planning and Consultation. https://ecos.fws.gov/ipac/. November 2021.

USFWS. 2021c. Environmental Conservation Online System. Monarch Butterfly (*Danaus plexippus*). https://ecos.fws.gov/ecp/species/9743. Accessed November 2021.

USFWS. 2021d. Monarch Butterflies – Pollinators. https:// www.fws.gov/pollinators/features/Monarch_Butterfly.html#:~:text=Monarchs%20need%20nighttime%20roosting%20sites,and%20eucalyptus%20as%20roosting%20sites. Accessed November 2021.

APPENDIX A

PROPOSED JOHNSON INTERCHANGE DESIGN FIGURE



PRELIMINARY

DOWL

FIGURE 2

PROJECT OVERVIEW

BILLINGS BYPASS - JOHNSON LANE INTERCHANGE

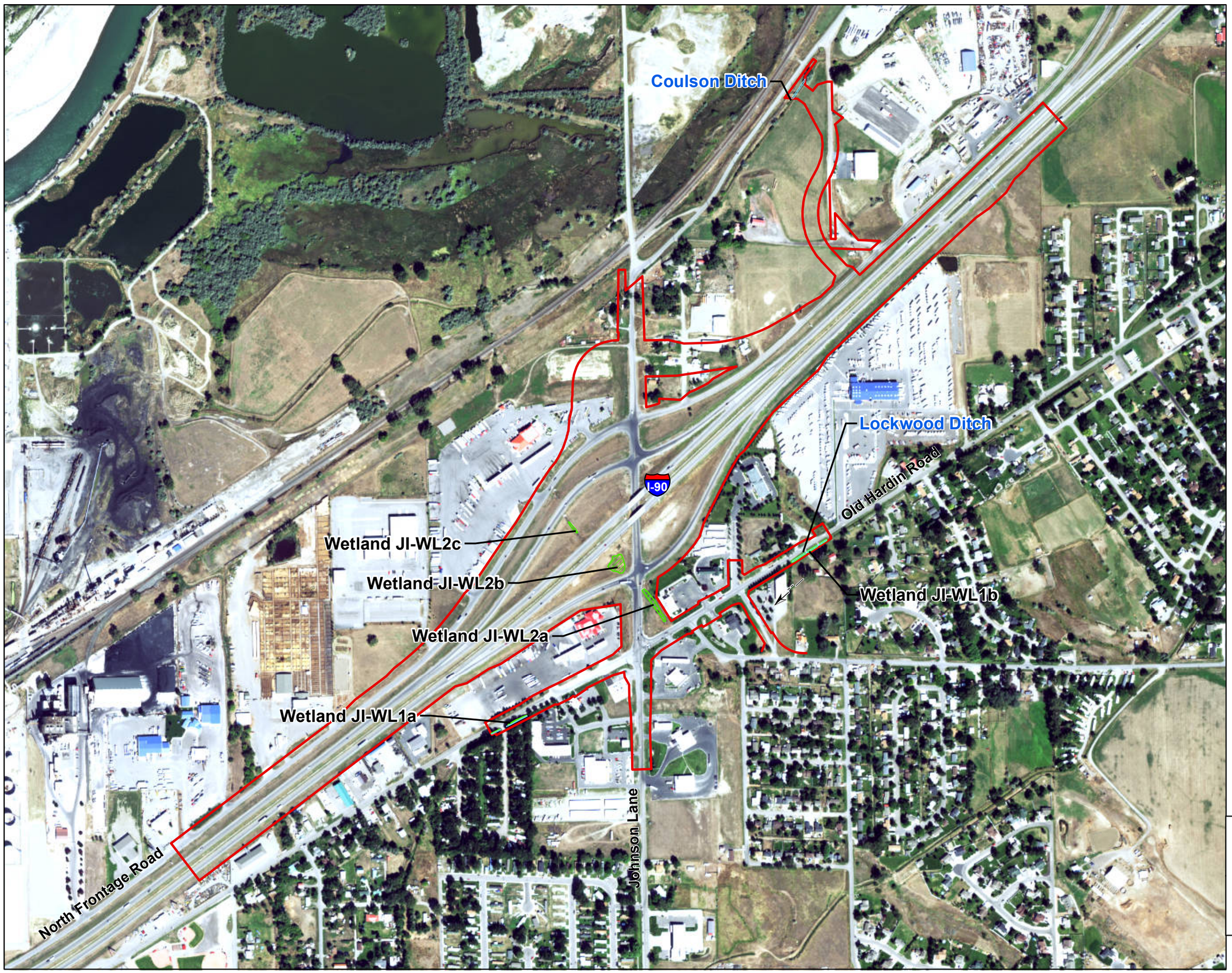
IM-CMBL-STPU-NCPD-NHPB 56(53), UPN 4199007

SCALE: 1"=800'

N

APPENDIX B

2020 JOHNSON LANE INTERCHANGE WETLAND DELINEATION FIGURES



Legend

- Delineated OHWM
- Delineated Wetland
- Project Footprint
- Flow Arrow

N
W E
S

0 250 500 1,000
Feet

Billings Bypass
Johnson Lane Interchange
Wetland and Other Aquatic Resources Delineation

Sheet 1

Legend

- Data Plot
- Delineated OHWM
- Delineated Wetland
- Project Footprint
- Flow Arrow

N
W E
S

0 100 200 400
Feet

Billings Bypass
Johnson Lane Interchange
Wetland and Other Aquatic Resources Delineation

Sheet 1a

Legend

- Data Plot
- Delineated OHWM
- Delineated Wetland
- Project Footprint
- Flow Arrow

N
W E
S

0 100 200 400 Feet

Billings Bypass
Johnson Lane Interchange
Wetland and Other Aquatic Resources Delineation

Sheet 1b

Lockwood Ditch

UP1b-SP

WL1b-SP

Wetland JI-WL1b

Old Hardin Road

Becraft Lane

Legend

- Data Plot
- Delineated OHWM
- Delineated Wetland
- Project Footprint
- Flow Arrow

N

W E

S

0 100 200 400 Feet

Billings Bypass
Johnson Lane Interchange
Wetland and Other Aquatic Resources Delineation

Sheet 1c

Legend

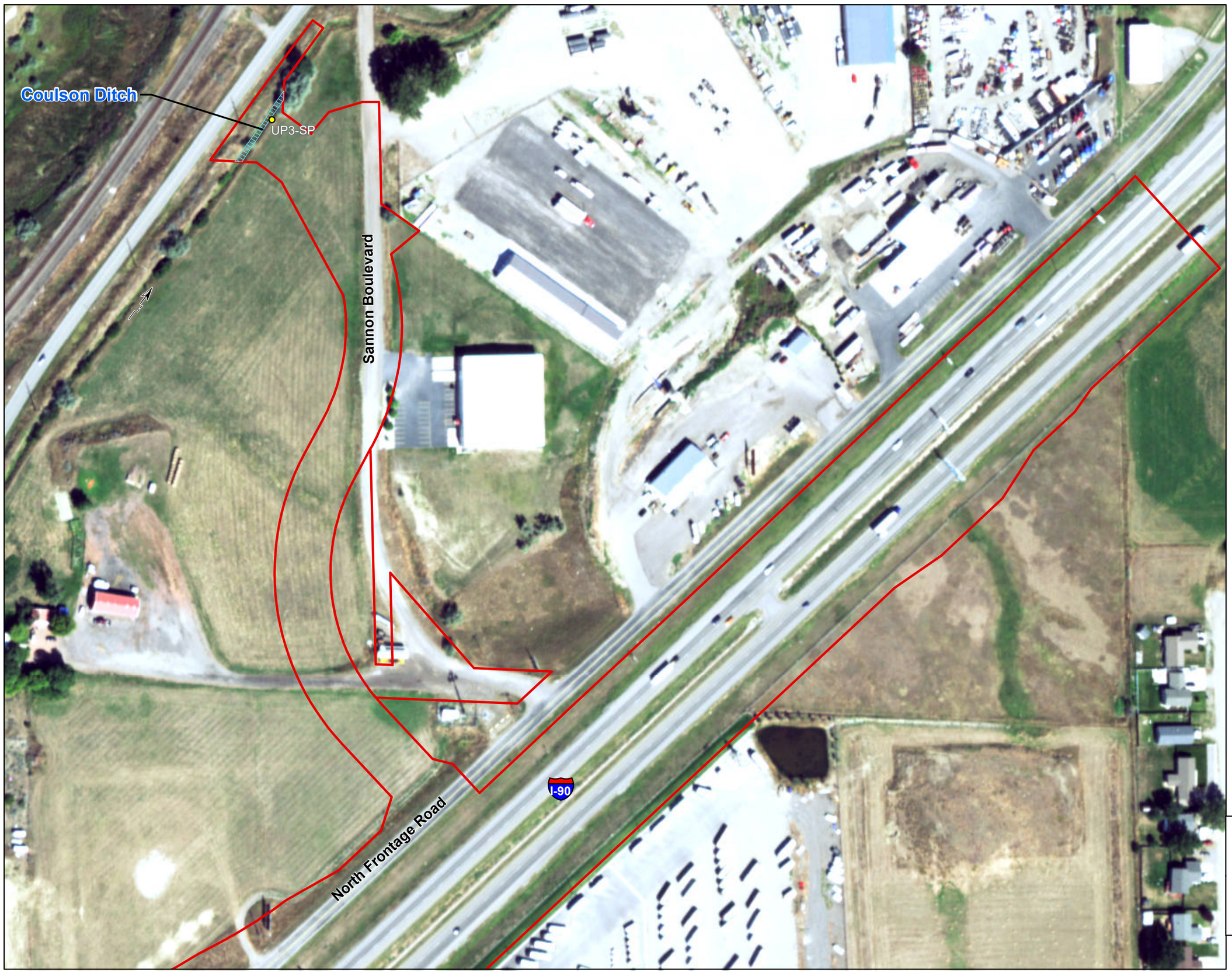
- Data Plot
- Delineated OHWM
- Delineated Wetland
- Project Footprint
- Flow Arrow

N
W E
S

0 100 200 400 Feet

Billings Bypass
Johnson Lane Interchange
Wetland and Other Aquatic Resources Delineation

Sheet 1d



Legend

- Data Plot
- Delineated OHWM
- Delineated Wetland
- Project Footprint
- Flow Arrow

N
W E
S

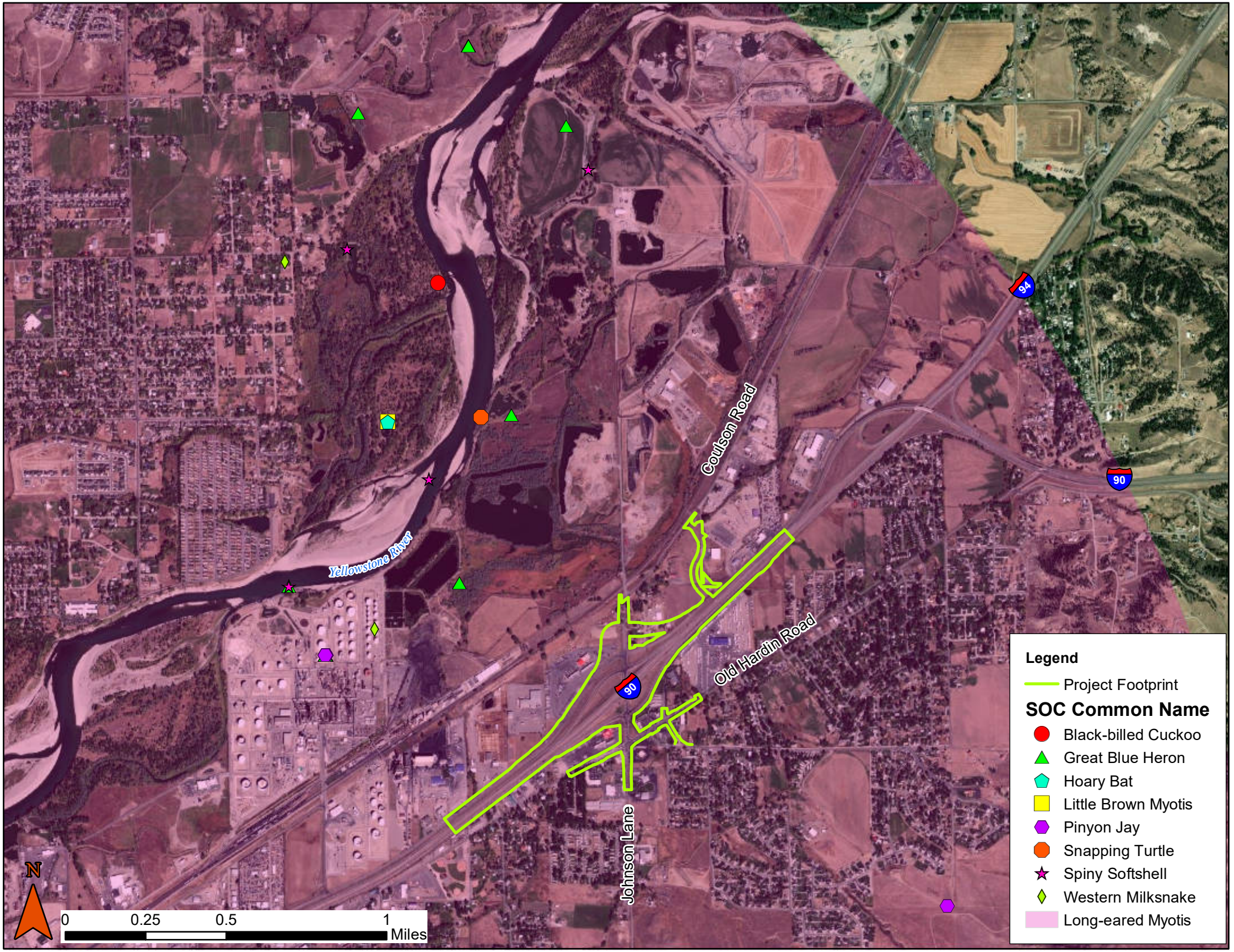
0 100 200 400 Feet

Billings Bypass
Johnson Lane Interchange
Wetland and Other Aquatic Resources Delineation

Sheet 1e

APPENDIX C

MONTANA SPECIES OF CONCERN IN PROJECT VICINITY


Coulson Road
Old Hardin Road
Johnson Lane
Yellowstone River
94
90
90
Legend
Project Footprint
SOC Common Name
Black-billed Cuckoo
Great Blue Heron
Hoary Bat
Little Brown Myotis
Pinyon Jay
Snapping Turtle
Spiny Softshell
Western Milksnake
Long-eared Myotis
N
0
0.25
0.5
1
Miles

APPENDIX D

US FISH AND WILDLIFE SPECIES LIST FOR YELLOWSTONE COUNTY, MONTANA

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Montana Ecological Services Field Office
585 Shephard Way, Suite 1
Helena, MT 59601-6287
Phone: (406) 449-5225 Fax: (406) 449-5339

In Reply Refer To:
Consultation Code: 06E11000-2022-SLI-0068
Event Code: 06E11000-2022-E-00163
Project Name: 4024.20946.01

November 08, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

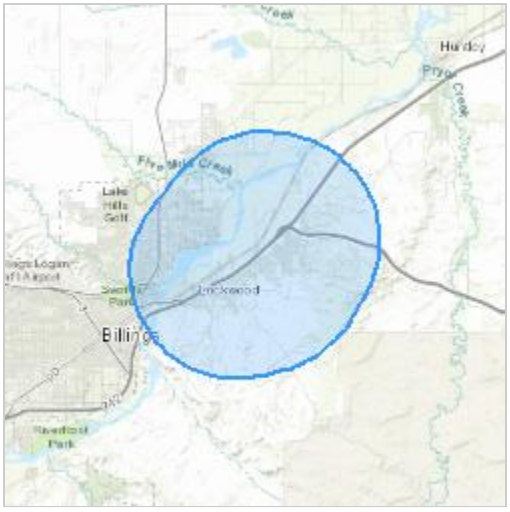
This species list is provided by:

Montana Ecological Services Field Office
585 Shephard Way, Suite 1
Helena, MT 59601-6287
(406) 449-5225

Project Summary

Consultation Code: 06E11000-2022-SLI-0068
Event Code: Some(06E11000-2022-E-00163)
Project Name: 4024.20946.01
Project Type: ** OTHER **
Project Description: NCDP 56(55)
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@45.8156483,-108.41435762209406,14z



Counties: Yellowstone County, Montana

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX E

WETLAND DETERMINATION FORMS AND MONTANA WETLAND ASSESSMENT FORMS

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: WL1a-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 30, T1N, R27E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR G Lat: 45.811382 Long: -108.416899 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 0 to 1 percent slopes (Ta) NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:
Wetland data plot for Wetland JI-WL1a, a emergent fringe wetland along Lockwood Ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Phalaris arundinacea	90	Yes	FACW
2. Bromus inermis	10	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 90	x 2 = 180
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species 10	x 5 = 50
Column Totals: 100 (A)	230 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Small fringe of hydrophytic vegetation along irrigation ditch.

SOIL

Sampling Point: WL1a-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					silt clay	
6-16	2.5Y 5/2	97	10YR 4/6	3	C	M	silt clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Depleted Matrix at 6 inches below surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soils were moist. Plot taken in the fall when irrigation flows had been turned off. Hydrology likely present in spring and summer. Site still met secondary indicators.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: UP1a-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 30, T1N, R27E

Landform (hillslope, terrace, etc.): Top of slope Local relief (concave, convex, none): convex Slope (%): 3

Subregion (LRR): LRR G Lat: 45.811397 Long: -108.416908 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 0 to 1 percent slopes (Ta) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Upland plot to WL1a-SP and Wetland JI-WL1a.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Bromus inermis	95	Yes	UPL
2. Medicago sativa	5	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species 100	x 5 = 500
Column Totals: 100 (A)	230 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
All upland vegetation along top of bank.

SOIL

Sampling Point: UP1a-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					silt clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Matrix color was consistent down to 16 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Plot taken at top of irrigation ditch bank. No hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: WL1b-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): LRR G Lat: 45.814301 Long: -108.409526 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 0 to 1 percent slopes (Ta) NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:
Wetland data plot for Wetland JI-WL1b, a emergent fringe wetland along Lockwood Ditch

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Phalaris arundinacea	60	Yes	FACW
2. Carex utriculata	45	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	60	x 2 =	120
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	105 (A)		165 (B)

Prevalence Index = B/A = 1.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Small fringe of hydrophytic vegetation along irrigation ditch.

SOIL

Sampling Point: WL1b-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					silt clay	
3-14	2.5Y 5/2	95	10YR 4/6	5	C	M	silt clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Depleted Matrix at 3 inches below surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soils were moist. Plot taken in the fall when irrigation flows had been turned off. Hydrology likely present in spring and summer. Site still met secondary indicators. Cracked soils in ditch channel adjacent to wetland plot.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: UP1b-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Top of slope Local relief (concave, convex, none): convex Slope (%): 3

Subregion (LRR): LRR G Lat: 45.814317 Long: -108.409553 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 0 to 1 percent slopes (Ta) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Upland plot to WL1b-SP and Wetland JI-WL1b.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Bromus inermis	90	Yes	UPL
2. Medicago sativa	15	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species 105	x 5 = 525
Column Totals: 105 (A)	525 (B)

Prevalence Index = B/A = 5.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
All upland vegetation along top of bank.

SOIL

Sampling Point: UP1b-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					silt clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Matrix color was consistent down to 16 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Plot taken at top of irrigation ditch bank. No hydrology indicators were present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: WL2a-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR G Lat: 45.813100 Long: -108.413329 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 4 to 7 percent slopes (Tc) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:
Wetland data plot for Wetland JI-WL2a, a depressional emergent wetland within an unnamed drainage.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 100	x 2 = 200
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Depressional area of hydrophytic vegetation made up entirely of reed canary grass.

SOIL

Sampling Point: WL2a-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					clay loam	
5-16	2.5Y 5/2	90	10YR 4/6	10	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Depleted Matrix at 5 inches below surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soils were moist. Plot taken in the fall. Hydrology likely present in spring and summer. Site still met secondary indicators.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: UP2a-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 8

Subregion (LRR): LRR G Lat: 45.813125 Long: -108.413262 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 4 to 7 percent slopes (Tc) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Upland plot to WL2a-SP and Wetland JI-WL2a.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Bromus inermis	90	Yes	UPL
2. Phalaris arundinacea	10	No	FACW
3. Cirsium arvense	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	10	x 2 =	20
FAC species	_____	x 3 =	_____
FACU species	5	x 4 =	20
UPL species	90	x 5 =	450
Column Totals:	105 (A)		490 (B)

Prevalence Index = B/A = 4.66

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
Dominant upland vegetation along hillslope.

SOIL

Sampling Point: UP2a-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					clay loam	
12-16	10YR 4/2	100					sandy clay loam	layer with more sandy soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Matrix color was consistent down to 12 inches then changed to more of a sandy soil. Did not meet depleted matrix indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators present. Plot was very dry.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: WL2b-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR G Lat: 45.813955 Long: -108.414523 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 4 to 7 percent slopes (Tc) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Wetland data plot for Wetland JI-WL2b, a depressional emergent wetland within an unnamed drainage.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 100	x 2 = 200
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Depressional area of hydrophytic vegetation made up entirely of reed canary grass.

SOIL

Sampling Point: WL2b-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1	100					silty clay	
4-16	10YR 2/1	30					silty clay	
	10YR 5/2	65	10YR 5/6	5	C	M	silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Depleted Matrix at 4 inches below surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soils were moist. Plot taken in the fall. Hydrology likely present in spring and summer. Site still met secondary indicators. Area was very hummocky and looked like standing water had ponded in area at some point for a long duration.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: UP2b-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR): LRR G Lat: 45.813887 Long: -108.414499 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 4 to 7 percent slopes (Tc) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:
Upland plot to WL2b-SP and Wetland JI-WL2b.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Bromus inermis	70	Yes	UPL
2. Poa pratensis	20	No	FACU
3. Agropyron cristatum	10	No	XX
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species 20	x 4 =	80
UPL species 70	x 5 =	350
Column Totals: 90 (A)		430 (B)

Prevalence Index = B/A = 4.77

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
Dominant upland vegetation along hillslope.

SOIL

Sampling Point: UP2b-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Matrix color was consistent down to 16 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators present. Plot was very dry.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: WL2c-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR G Lat: 45.814701 Long: -108.415581 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 4 to 7 percent slopes (Tc) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:
Wetland data plot for Wetland JI-WL2c, a narrrow, linear, depressional emergent wetland within an unnamed drainage.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Phalaris arundinacea	100	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		
% Bare Ground in Herb Stratum _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 100	x 2 = 200
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 100 (A)	200 (B)

Prevalence Index = B/A = 2.0

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:
Depressional area of hydrophytic vegetation made up entirely of reed canary grass.

SOIL

Sampling Point: WL2c-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	100					silt clay loam	
5-8	10YR 2/1	60					silt clay loam	
	2.5Y 4/1	35	10YR 3/6	5	C	M	silt clay loam	
8-16	2.5Y 5/2	65	10 YR 3/6	15	C	M	silt clay loam	
	10 YR 2/1	20					silt clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** _____

Remarks:

Depleted Matrix at 8 inches below surface.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soils were moist. Plot taken in the fall. Hydrology likely present in spring and summer. Site still met secondary indicators.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: UP2c-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 3

Subregion (LRR): LRR G Lat: 45.814688 Long: -108.415663 Datum: NAD 83

Soil Map Unit Name: Thurlow clay loam, 4 to 7 percent slopes (Tc) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Upland plot to WL2c-SP and Wetland JI-WL2c.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Poa pratensis	70	Yes	FACU
2. Phalaris arundinacea	15	No	FACW
3. Bromus tectorum	10	No	XX
4. Thlaspi arvense	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 15	x 2 = 30
FAC species _____	x 3 = _____
FACU species 75	x 4 = 300
UPL species _____	x 5 = _____
Column Totals: 90 (A)	330 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
Dominant upland vegetation along terrace.

SOIL

Sampling Point: UP2c-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Matrix color was consistent down to 12 inches. Very hard-packed soils.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators present. Plot was very dry.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Billings Bypass - Johnson Lane Interchange City/County: Lockwood / Yellowstone Sampling Date: 9/23/2020

Applicant/Owner: Montana Department of Transportation State: MT Sampling Point: UP3-SP

Investigator(s): Peterson - DOWL Section, Township, Range: Section 19, T1N, R27E

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): LRR G Lat: 45.822317 Long: -108.409787 Datum: NAD 83

Soil Map Unit Name: Fort Collins and Thurlow clay loams, 1 to 4 percent slopes (Ft) NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No _____	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Sample Plot for Coulson Ditch. Previous delineation called the ditch a wetland; however, no hydrophytic vegetation or hydrology was observed. The ditch has not been active for years.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Elaeagnus angustifolia	30	Yes	FACU
2.			
3.			
4.			
	30 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5 feet)			
1. Bromus inermis	80	Yes	UPL
2. Asclepias speciosa	10	No	FAC
3. Apocynum cannabinum	15	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC−): 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species 25	x 3 =	75
FACU species 30	x 4 =	120
UPL species 80	x 5 =	400
Column Totals: 135 (A)		595 (B)

Prevalence Index = B/A = 4.40

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:
Primarily upland vegetation with some FAC species. Does not meet dominance or prevalence test.

SOIL

Sampling Point: UP3-SP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR F**)
- ___ 1 cm Muck (A9) (**LRR F, G, H**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) (**LRR G, H**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR F**)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) (**MLRA 72 & 73 of LRR H**)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR I, J**)
- ___ Coast Prairie Redox (A16) (**LRR F, G, H**)
- ___ Dark Surface (S7) (**LRR G**)
- ___ High Plains Depressions (F16) (**LRR H outside of MLRA 72 & 73**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

Soil pit was not dug given no hydrology or hydrophytic vegetation indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where not tilled**)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (**where tilled**)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No hydrology indicators were present. Only one secondary indicator could be checked, as the plot was taken in the bottom of an inactive channel.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Johnson Lane Interchange **2. MDT Project #:** NCDP-MT 56(55) **Control #:** 4199007

3. Evaluation Date: 09/23/2020 **4. Evaluator(s):** Peterson **5. Wetlands/Site #(s):** WL1a and 1b

6. Wetland Location(s): i. Legal: T1N,R27E,30 ;T1N,R27E,19 **Latitude/Longitude:** 45.811382, -108.416899 : 45.814301, -108.409526 :

ii. Approx. Stationing or Mileposts: 25+51 to 28+06 and 14+33 to 16+97

iii. Watershed: 14

Watershed Name, County: Middle Yellowstone, Yellowstone

7. a. Evaluating Agency: MDT

b. Purpose of Evaluation:

1. X Wetlands potentially affected by MDT project

2. __ Mitigation wetlands; pre-construction

3. __ Mitigation wetlands; post-construction

4. __ Other:

8. Wetland size: 1.000 acres (estimated)

9. Assessment area (AA): 0.050 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
R	EM	A	SI	100.00

Abbreviations: *(see manual for definitions)*

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

COMMON

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) list)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	**high disturbance**

Comments: (types of disturbance, intensity, season, etc.): Wetland is a fringe wetland along an irrigation ditch that parallels Old Hardin Road in a heavily developed area (commercial and residential).

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Some reed canary grass and some Canada thistle.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: Area is heavily developed with Interstate 90, secondary roadways, and commercial and residential development.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	**Initial Rating**	**Is current management preventing (passive) existence of additional vegetated classes?**		**Modified Rating**
>= 3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	**M**	<-- NO	YES -->	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: AA consists for primarily reed canary grass (60 to 90 percent) with beaked sedge making up the second dominant species (10 to 40 percent).

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species) **Secondary habitat (list species)** **Incidental habitat (list species)**

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
Functional Points and Rating	1H	.9H	.8M	.7M	.3L	.1L	**0L**

Sources for documented use (e.g. observations, records, etc): AA is a small fringe wetland along an irrigation ditch. No suitable habitat for T&E species is present.

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species) **Secondary habitat (list species)** **Incidental habitat (list species)**

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
***S1 Species:** Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
***S2 and S3 Species:** Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	.1L	**0L**

Sources for documented use (e.g. observations, records, etc): AA is a small fringe wetland along an irrigation ditch. No suitable habitat for state sensitive species is present.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):

- ___ observations of abundant wildlife #s or high species diversity (during any period)
- ___ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ presence of extremely limiting habitat features not available in the surrounding area
- ___ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ___ few or no wildlife observations during peak use periods
- X little to no wildlife sign
- X sparse adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ___ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ___ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ adequate adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	**L**	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Moderate
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	**.1L**

Comments: AA is a small fringe wetland along an irrigation ditch in a developed area. Very little suitable habitat is present.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark **X** **NA** and proceed to 14E.)

Type of Fishery: Cold Water **(CW)** ___ Warm Water **(WW)** ___ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA:

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? ___ *If yes, reduce score in i above by 0.1.*

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ___ *If yes, add 0.1 to the adjusted score in **i** or **iia.***

iii. Final Score and Rating: NA **Comments:** The AA is an irrigation ditch. Fish are likely not present and the ditch does not provide suitable habitat.

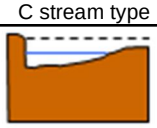
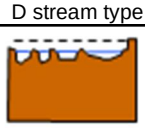
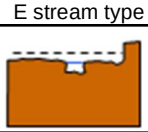
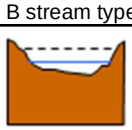
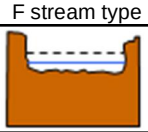
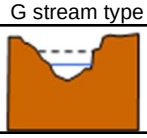
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	**.1L**

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

8 /	6 =	**1.33**
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*

Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** A very entrenched irrigation ditch that floods AA during irrigation season. Outlet is unrestricted during the irrigation season.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, mark ___ **NA** and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			<=1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **>= 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	**.3L**	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: AA floods every year when irrigation flows start in the spring.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, mark ___ **NA** and proceed to 14H.)

i. Rating

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	>= 70%		< 70%		>= 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	**.9H**	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: AA is within a developed area with adjacent impervious surfaces. AA receives runoff from adjacent development and roadways.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, mark ___ **NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of >=6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
>= 65%	1H	**.9H**	.7M
35-64%	.7M	.6M	.5M
35%	.3L	.2L	.1L

Comments: Irrigation flows in the spring and summer. Bank dominated by reed canary grass (stability rating of 9).

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	H	M	**L**

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component < 1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	**.3L**	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB):** Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference? ___ *If yes, add 0.1 to the score in ii above.*

iv. Final Score and Rating: **0.30L** **Comments:** AA along irrigation ditch that has a surface outlet. Located in developed area. Area around ditch is maintained and mowed periodically.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators

_____ The AA is a slope wetland
_____ Springs or seeps are known or observed
_____ Vegetation growing during dormant season/drought
_____ Wetland occurs at the toe of a natural slope
_____ AA permanently flooded during drought periods
_____ Wetland contains an outlet, but no inlet
_____ Shallow water table and the site is saturated to the surface
_____ Other:

ii. Recharge Indicators

_____ Permeable substrate present without underlying impeding layer
_____ Wetland contains inlet but no outlet
_____ Stream is a known 'losing' stream; discharge volume decreases
_____ Other:

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information	**N/A**			

Comments: Seasonal irrigation flows. AA likely does not provide groundwater recharge.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	**.2L**	.1L

Comments: Common irrigation wetland fringe in the Billings area.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) ___ (if 'Yes' continue with the evaluation; if 'No' then mark **X** **NA** and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ___Educational/scientific study; ___Consumptive rec.; ___Non-consumptive rec.; ___Other :

iii. Rating:

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments: No recreation potential for the AA.

General Site Notes
Low quality emergent fringe along irrigation ditch in developed area.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): WL1a and 1b

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	L	0.00	1	0.00	
C. General Wildlife Habitat	L	0.10	1	0.01	
D. General Fish Habitat	NA				
E. Flood Attenuation	L	0.10	1	0.01	
F. Short and Long Term Surface Water Storage	L	0.30	1	0.02	*
G. Sediment/Nutrient/Toxicant Removal	H	0.90	1	0.05	*
H. Sediment/Shoreline Stabilization	H	0.90	1	0.05	*
I. Production Export/Food Chain Support	L	0.30	1	0.02	*
J. Groundwater Discharge/Recharge	NA				
K. Uniqueness	L	0.20	1	0.01	
L. Recreation/Education Potential (bonus points)	NA				
Totals:		2.80	9.00	0.17	
Percent of Possible Score			31%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)

_____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**

_____ Score of 1 functional point for Uniqueness; **or**

_____ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**

_____ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)

_____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**

_____ Score of .9 or 1 functional point for General Wildlife Habitat; **or**

_____ Score of .9 or 1 functional point for General Fish Habitat; **or**

_____ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**

_____ Score of .9 functional point for Uniqueness; **or**

_____ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

X "Low" rating for Uniqueness; **and**

X Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**

X Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: IV

Summary Comments: Low quality emergent fringe along irrigation ditch in developed area.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Johnson Lane Interchange **2. MDT Project #:** NCPD-MT 56(55) **Control #:** 4199007

3. Evaluation Date: 09/23/2020 **4. Evaluator(s):** Peterson **5. Wetlands/Site #(s):** Wetland 2a, 2b, 2c

6. Wetland Location(s): i. Legal: T1N,R27E,19 **Latitude/Longitude:** 45.8131, -108.413329 : 45.813955, -108.414523 : 45.814701, -108.415581 :

ii. Approx. Stationing or Mileposts: 17+17 to 21+55 and 1103+99

iii. Watershed: 14

Watershed Name, County: Middle Yellowstone, Yellowstone

7. a. Evaluating Agency: MDT

b. Purpose of Evaluation:

1. X Wetlands potentially affected by MDT project

2. __ Mitigation wetlands; pre-construction

3. __ Mitigation wetlands; post-construction

4. __ Other:

8. Wetland size: 0.359 acres (measured)

9. Assessment area (AA): 0.359 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	EM	NA	SI	100.00

Abbreviations: *(see manual for definitions)*

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

COMMON

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) list)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	low disturbance	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	**high disturbance**

Comments: (types of disturbance, intensity, season, etc.): Wetland is located within an unnamed drainage swale that has been diverted and culverted to accommodate development in the area.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Reed canary grass and some Canada thistle

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: Lands surrounding the AA are developed and include Interstate 90 and the Johnson Lane Interchange, secondary roads, and commercial and residential development.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	**Initial Rating**	**Is current management preventing (passive) existence of additional vegetated classes?**		**Modified Rating**
>= 3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	M	<-- NO	YES -->	L
1 class, monoculture (1 species comprises >= 90% of total cover)	**L**	NA	NA	NA

Comments: Reed canary grass is the dominant species in this wetland system.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species) **Secondary habitat (list species)** **Incidental habitat (list species)**

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
Functional Points and Rating	1H	.9H	.8M	.7M	.3L	.1L	**0L**

Sources for documented use (e.g. observations, records, etc): Given the location of the AA and low quality of wetland (all reed canary grass), the AA is not suitable habitat for T&E species.

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species) **Secondary habitat (list species)** **Incidental habitat (list species)**

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
***S1 Species:** Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
***S2 and S3 Species:** Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	.1L	**0L**

Sources for documented use (e.g. observations, records, etc): Given the location of the AA and low quality of wetland (all reed canary grass), the AA is not suitable habitat for state species of concern.

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):

- ___ observations of abundant wildlife #s or high species diversity (during any period)
- ___ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ presence of extremely limiting habitat features not available in the surrounding area
- ___ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):

- ___ few or no wildlife observations during peak use periods
- X little to no wildlife sign
- X sparse adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):

- ___ observations of scattered wildlife groups or individuals or relatively few species during peak periods
- ___ common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ adequate adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	E	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	**L**	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Moderate
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	**.1L**

Comments: No structural diversity. AA located in a developed area near the interstate. The AA provides minimal suitable habitat for wildlife species.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark **X** **NA** and proceed to 14E.)

Type of Fishery: Cold Water **(CW)** ___ Warm Water **(WW)** ___ **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA:

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? ___ *If yes, reduce score in i above by 0.1.*

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ___ *If yes, add 0.1 to the adjusted score in **i** or **iia.***

iii. Final Score and Rating: NA **Comments:** Seasonal drainage swale that does provide suitable habitat for fish.

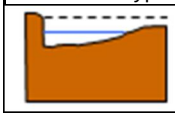
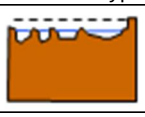
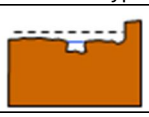
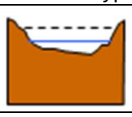
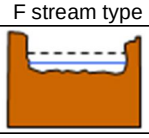
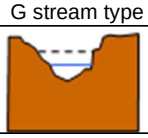
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark **X** **NA** and proceed to 14F.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

/	=	
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*

Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** Wetlands are in a depressional swale and basin that does not have in-channel flow.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, mark ___ **NA** and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			<=1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **>= 5 out of 10 years**	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	**.2L**	.1L

Comments: Seasonal flows from upland sources and precipitation may flood these wetlands from time to time. May not occur every year depending on snow melt and precipitation for the year.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, mark ___ **NA** and proceed to 14H.)

i. Rating

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	>= 70%		< 70%		>= 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	**1H**	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: AA has several culverts that may restrict the outlet to some degree. AA does receive surface runoff from adjacent sources.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, mark **X** **NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of >=6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
>= 65%	1H	.9H	.7M
35-64%	.7M	.6M	.5M
35%	.3L	.2L	.1L

Comments: No standing water subject to wave motion in the AA.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	M	M	L
N/A	H	M	**L**

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component < 1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	**.3L**	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB):** Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference? ___ *If yes, add 0.1 to the score in ii above.*

iv. Final Score and Rating: **0.30L** **Comments:** AA is primarily within roadway right-of-way limits and see occasional mowing.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators

_____ The AA is a slope wetland
_____ Springs or seeps are known or observed
_____ Vegetation growing during dormant season/drought
_____ Wetland occurs at the toe of a natural slope
_____ AA permanently flooded during drought periods
_____ Wetland contains an outlet, but no inlet
_____ Shallow water table and the site is saturated to the surface
_____ Other:

ii. Recharge Indicators

_____ Permeable substrate present without underlying impeding layer
_____ Wetland contains inlet but no outlet
_____ Stream is a known 'losing' stream; discharge volume decreases
_____ Other:

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L
Insufficient Data/Information	**N/A**			

Comments: Some ponding within the AA, wetland 2b, may provide some recharge, but this cannot be reasonably ascertained.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	**.2L**	.1L

Comments: Common depressional wetlands found in vegetated swales throughout the Billings area.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) ___ (if 'Yes' continue with the evaluation; if 'No' then mark **X** **NA** and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: ___Educational/scientific study; ___Consumptive rec.; ___Non-consumptive rec.; ___Other :

iii. Rating:

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	.15H
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments: There are no recreation or educational opportunities at this AA.

General Site Notes
Low quality wetland within a developed area.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): Wetland 2a, 2b, 2c

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	L	0.00	1	0.00	
C. General Wildlife Habitat	L	0.10	1	0.04	
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	L	0.20	1	0.07	*
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	0.36	*
H. Sediment/Shoreline Stabilization	NA				
I. Production Export/Food Chain Support	L	0.30	1	0.11	*
J. Groundwater Discharge/Recharge	NA				
K. Uniqueness	L	0.20	1	0.07	*
L. Recreation/Education Potential (bonus points)	NA				
Totals:		1.80	7.00	0.65	
Percent of Possible Score			26%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)

_____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**

_____ Score of 1 functional point for Uniqueness; **or**

_____ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**

_____ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)

_____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**

_____ Score of .9 or 1 functional point for General Wildlife Habitat; **or**

_____ Score of .9 or 1 functional point for General Fish Habitat; **or**

_____ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**

_____ Score of .9 functional point for Uniqueness; **or**

_____ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

X "Low" rating for Uniqueness; **and**

X Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**

X Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: IV

Summary Comments: Low quality wetland within a developed area.

Attachment 3: Johnson Lane Interchange Noise Addendum Report

BILLINGS BYPASS-JOHNSON LANE INTERCHANGE
NCDP-MT 56(55), UPN 4199007
DETAILED NOISE ANALYSIS

Prepared for:

MONTANA MDT DEPARTMENT OF TRANSPORTATION

and

DOWL, Inc.

Completed by:

Big Sky Acoustics

December 1, 2021

BILLINGS BYPASS-JOHNSON LANE INTERCHANGE
NCDP-MT 56(55), UPN 4199007
DETAILED NOISE ANALYSIS

EXECUTIVE SUMMARY

The Montana Department of Transportation (MDT) is planning to develop the 4th segment of the Billings Bypass (BBP), by reconstructing the Interstate 90 (I-90) Johnson Lane Interchange and associated roadways (i.e., I-90 on/off ramps, Johnson Lane, Old Hardin Road, Cole Street, Becraft Lane, North Frontage Road and Sannon Boulevard) in Lockwood, Montana (**Figure 1**, attached). The BBP-Johnson Lane Interchange Project is bisected by I-90 (west/east) and Johnson Lane (north/south), and will include a new Diverging Diamond interchange, alignment shifts, additional travel lanes, modified intersections, new and upgraded traffic signals, etc. (DOWL 2021a).

This Detailed Noise Analysis for the BBP-Johnson Lane Interchange Project was completed by Big Sky Acoustics (BSA) according to the U.S. Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (2011), and MDT's *Traffic Noise Analysis and Abatement Policy* (MDT 2017). The intent of the noise study was to evaluate existing traffic noise levels at noise-sensitive receptors, and predict noise levels due to vehicles traveling on the reconstructed roadways (**Figure 1**). The Record of Decision and Final Environmental Impact Statement (EIS) for the complete BBP project (Segments 1 through 6) were finalized in 2014, and sections have been updated subsequently (MDT 2014a, MDT 2014b). The attached report revises BSA's 2012 BBP *Traffic Noise Impact Assessment* (BSA 2012) (used in the EIS analysis) for this Segment 4-Johnson Lane Interchange section only, and includes traffic noise analyses for the additional roadways located north and south of I-90 that were not included in BSA's 2012 analysis.

The BBP-Johnson Lane Interchange Project is located within a suburban area, with agriculture/farm, commercial, hotel, industrial, medical facilities, offices, residential, restaurant/bar, and retail land uses located within 500 feet of the edge of the closest travel lane. The Project was evaluated as a Type I project per 23 CFR 772 due the major modifications of the Johnson Lane Interchange, the significant horizontal alignment shift and construction of the North Frontage Road in a new location, and the addition of through-traffic lanes (MDT 2017). For the noise analysis, BSA evaluated traffic noise level impacts for the No Build Alternative (i.e., not reconstructing the interchange or roads) and for the Build Alternative.

For traffic noise studies, the equivalent noise level during a one-hour period, $L_{eq}(h)$ is used. The units of the $L_{eq}(h)$ are A-weighted decibels (dBA). The equivalent noise level is defined as the steady state noise level that has the same acoustical energy as the actual, time-varying noise signal during the same time period. The $L_{eq}(h)$ metric is useful for traffic noise studies because it uses a single number to describe the constantly fluctuating noise levels at a receptor location as vehicles pass by during a one-hour period.

The Federal Highway Administration (FHWA) and MDT identify traffic noise impacts according to Noise Abatement Criteria (NAC) for various land uses and zoning (FHWA 2010, MDT 2017). For Activity Category B and C land uses, such as residences, churches, medical facilities, recreation areas, etc., the exterior NAC is 67 dBA. Therefore, traffic noise impacts occur if the

predicted traffic noise levels are 66 dBA or greater in the Design Year of a project, or if the predicted traffic noise levels are 13 dBA higher than the Present Year noise levels. Activity Category C land uses, such as churches and medical facilities, also have an interior NAC of 52 dBA that is used when no exterior uses are present. For Activity Category E land uses, such as hotels, offices, and restaurants/bars, the exterior NAC is 72 dBA. Activity Category F land uses, such as agriculture, industrial and retail facilities, as well as undeveloped lands that are not currently permitted for development (Activity Category G), do not have a NAC and were not evaluated for this noise analysis (**Table 3-1**).

BSA evaluated traffic noise level impacts for both the No Build and Build Alternatives for this Segment 4 BBP-Johnson Lane Interchange Project (**Figure 1**). BSA completed six noise level measurements in July 2021 to determine the existing ambient noise levels within the project limits (**Section 4.1**), and to verify that the TNM computer models used to predict the traffic noise levels were reasonably accurate (**Section 4.2**). Noise-sensitive receptors were identified within approximately 500 feet of the edge of the closest travel lane. A total of 51 noise-sensitive receptors are depicted on **Figures 2 and 3** (attached), including 35 single-family and mobile home residences, three medical offices, one hotel, two offices, and 10 restaurants/bars.

The TNM-predicted traffic noise levels for both the No Build and Build Alternatives are summarized in **Table 5-1**. Three traffic noise impacts are predicted due to the No Build Alternative in the Present Year (2019) and six impacts in the Design Year (2042). For the Build Alternative, 10 traffic noise impacts are predicted in the Design Year. As shown on **Figure 2**, the Firth Street neighborhood will be bisected by the new North Frontage Road alignment. Subsequently, five residences (Receptors J2, J3, J10, J11 and J13) are planned to be relocated for this Project, and four of these relocated residences are also predicted to be noise-impacted (**Table 5-1**). However, the highest Build Alternative Design Year traffic noise level (L_{eq}(h) 69 dBA) is predicted for the remaining Receptor J1 that may also need to be relocated due to right-of-way (ROW) and/or property access issues.

As shown on **Figure 3** and in **Table 5-1**, three residences (Receptors H1, H3 and H4) located adjacent to Old Hardin Road and west of the intersection with Johnson Lane are noise-impacted, and currently experiencing high traffic noise levels (No Build Alternative-Present Year). Traffic noise impacts are also predicted for these same residences plus an additional two mobile homes (Receptors H1-2 and H2) for the No Build and Build Alternatives in the Design Year (2042).

Because traffic noise impacts were predicted, BSA evaluated traffic noise mitigation measures and determined if the measures are reasonable or feasible (**Section 6.0**), including the construction of noise barriers, modifying the proposed build alternatives, acquisition of real property, and traffic management measures. Five Firth Street noise-impacted receptors located adjacent to Receptor J1 are currently planned to be relocated for this Project (**Figure 2**), and therefore, a barrier is not feasible for one receptor (J1). BSA evaluated the reasonableness for a barrier for the mobile home park located adjacent to Old Hardin Road along Rykken Circle (**Figure 3**). The CEI results are summarized in **Table 6-1**, however, a barrier wall would not meet MDT's noise reduction design goal, and the CEI values are above MDT's reasonableness criteria. Therefore, barriers are not reasonable for traffic noise mitigation of the Build Alternative.

In order to eliminate the noise-impact at Receptor J1 (**Figure 2**), the Johnson Lane alignment north of I-90 would need to shift 150 feet west, which is not feasible. Additionally, the mobile home park at Old Hardin Road and Rykken Circle (**Figure 3**) is located at the west end of the project limits, and moving the alignment north is not feasible when realigning to the existing configuration.

Traffic control devices are already included in the Project design (DOWL 2021a). Restricting certain vehicle types, limiting the time of day that certain vehicles may use the roads, exclusive lane designations or changing the speed limits are also not reasonable mitigation measures for the connectivity of the BBP and the functionality of the Project. However, to avoid future traffic noise impacts in Activity Category G undeveloped lands, BSA determined the minimum setback distances from the nearest Build Alternative centerline to where the Design Year L_{eq}(h) 60 and 64 dBA noise levels are predicted to occur (**Table 7-1**). Local officials should strongly encourage developers to incorporate noise-compatible planning measures to avoid traffic noise problems in the future (MDT 2008).

TABLE OF CONTENTS

Section **Page**

EXECUTIVE SUMMARY ES-1

TABLE OF CONTENTS i

1.0 INTRODUCTION 1

2.0 TERMINOLOGY 2

3.0 ACTIVITY CATEGORIES AND NOISE ABATEMENT CRITERIA 2

4.0 AFFECTED ENVIRONMENT 4
- 4.1 Ambient Noise Level Measurements 4
- 4.2 Creating and Verifying the Traffic Noise Model 5
- 4.3 Traffic Data Used for the Traffic Noise Predictions 7

5.0 ENVIRONMENTAL CONSEQUENCES 8
- 5.1 Results and Discussion – No Build vs. Build Alternatives 9
- 5.2 Construction Noise 11

6.0 MITIGATION CONSIDERATIONS 12
- 6.1 Noise Barriers 12
- 6.2 Design Modifications 13
- 6.3 Acquisition of Real Property 13
- 6.4 Traffic Management Measures 14

7.0 COORDINATION WITH LOCAL OFFICIALS 14

8.0 CONCLUSION 15

9.0 REFERENCES 17

10.0 STANDARD OF CARE 18

TABLES

Table 3-1 Noise Abatement Criteria
Table 4-1 Outdoor Ambient Noise Level Measurements
Table 4-2 Atmospheric Conditions during the Noise Level Measurements
Table 4-3 Measured Ambient vs. Predicted Noise Levels
Table 4-4 Traffic Data Used for Noise Level Predictions
Table 5-1 Predicted Traffic Noise Levels
Table 6-1 Summary of Estimated CEI Values
Table 7-1 Traffic Noise Level vs. Minimum Setback Distances

FIGURES

Figure 1 Project Overview
Figure 2 Receptor and Measurement Locations: North of I-90
Figure 3 Receptor and Measurement Locations: South of I-90

1.0 INTRODUCTION

The Montana Department of Transportation (MDT) is planning to develop the 4th segment of the Billings Bypass (BBP), by reconstructing the Interstate 90 (I-90) Johnson Lane Interchange and associated roadways (i.e., I-90 on/off ramps, Johnson Lane, Old Hardin Road, Cole Street, Becraft Lane, North Frontage Road and Sannon Boulevard) in Lockwood, Montana (**Figure 1**, attached). The BBP-Johnson Lane Interchange Project is bisected by I-90 (west/east) and Johnson Lane (north/south), and will include a new Diverging Diamond interchange, alignment shifts, additional travel lanes, modified intersections, new and upgraded traffic signals, etc. (DOWL 2021a).

This Detailed Noise Analysis for the BBP-Johnson Lane Interchange Project was completed by Big Sky Acoustics (BSA) according to the U.S. Code of Federal Regulations Part 772 (23 CFR 772) *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (2011), and MDT's *Traffic Noise Analysis and Abatement Policy* (MDT 2017). The intent of the noise study was to evaluate existing traffic noise levels at noise-sensitive receptors, and predict noise levels due to vehicles traveling on the reconstructed roadways (**Figure 1**). The Record of Decision and Final Environmental Impact Statement (EIS) for the complete BBP project (Segments 1 through 6) were finalized in 2014, and sections have been updated subsequently (MDT 2014a, MDT 2014b). The attached report revises BSA's 2012 BBP *Traffic Noise Impact Assessment* (BSA 2012) (used in the EIS analysis) for this Segment 4-Johnson Lane Interchange section only, and includes traffic noise analyses for the additional roadways located north and south of I-90 that were not included in BSA's 2012 analysis.

The Project is located in Yellowstone County and within the City of Lockwood. As shown on **Figure 1**, in the northern section of the Project, the east and west sections of the North Frontage Road will be realigned, creating a 4-way signalized intersection with Johnson Lane, and the existing alignment will shift approximately 410 feet north. This intersection portion of the new North Frontage Road alignment will be constructed on undeveloped land and on the eastern portion of the Town Pump parking lot west of Johnson Lane, and through portions of the neighborhood located along Firth Street east of Johnson Lane. The eastern segment of the North Frontage Road will intersect with Sannon Boulevard approximately 0.3 miles east of Johnson Lane. Sannon Boulevard will be realigned with an "S" configuration extending north from the North Frontage Road and intersecting with Coulson Road (DOWL 2021a). Modifications to Coulson Road and the intersection with Johnson Lane are planned for the Segment 5 BBP-Johnson Lane Interchange-Railroad Overpass project, that is scheduled to be constructed after this Project (DOWL 2021b, MDT 2021).

Johnson Lane will be reconstructed with a new Diverging Diamond interchange, traffic signals, and modified I-90 on/off ramps (**Figure 1**). The Johnson Lane improvements will begin about 760 feet south of Old Hardin Road, extend under I-90 and 0.6 miles north where it will terminate at the existing intersection with Coulson Road. The Johnson Lane/Old Hardin Road intersection will be widened to accommodate the additional travel lanes, turn lanes and an updated traffic signal. The Old Hardin Road improvements, which includes a shift in alignment to accommodate the new lane configuration, will extend approximately 0.2 miles west and 0.27 miles east of the intersection with Johnson Lane. A traffic signal will be constructed to accommodate the new traffic and turn lanes at the intersection of Old Hardin Road and Cole Street. Cole Street will be improved north and south of Old Hardin Road, and the south leg will extend nearly 500 feet and tie into a modified intersection with Becraft Lane (DOWL 2021a).

The BBP-Johnson Lane Interchange Project is located within a suburban area, with agriculture/farm, commercial, hotel, industrial, medical facilities, offices, residential, restaurant/bar, and retail land uses located within 500 feet of the edge of the closest travel lane. The Project was evaluated as a Type I project per 23 CFR 772 due the major modifications of the Johnson Lane Interchange, the significant horizontal alignment shift and construction of the North Frontage Road in a new location, and the addition of through-traffic lanes (MDT 2017). For the noise analysis, BSA evaluated traffic noise level impacts for the No Build Alternative (i.e., not reconstructing the interchange or roads) and for the proposed Build Alternative. Based on MDT's traffic and design data provided, BSA evaluated the Project with a Present Year of 2019 and Design Year of 2042 (MDT 2019, DOWL 2021a).

2.0 TERMINOLOGY

Noise levels are quantified using units of decibels (dB). Noise levels can also be expressed as A-weighted decibels (dBA). Humans typically have reduced hearing sensitivity at low frequencies compared with their response at high frequencies, and the A-weighting of noise levels closely correlates to the frequency response of normal human hearing. By utilizing A-weighted noise levels in a study, a person's response to noise can be assessed. Decibels are logarithmic values, and cannot be combined using normal algebraic addition. For example, the combined noise level of two 50-dBA noise sources would be 53 dBA, not 100 dBA.

When traveling from a noise source to a receptor in an outdoor environment, noise levels decrease with increasing distance between the source and receptor. Traffic noise levels typically decrease between 3 and 4.5 dBA every time the distance between the road and receptor is doubled, depending on the characteristics of the source and the conditions over the path that the noise travels. The reduction in noise levels can be increased if a solid barrier, such as a man-made wall, or natural topography is located between the source and receptor.

The ambient noise at a receptor location in a given environment is the all-encompassing sound associated with that environment, and is due to the combination of noise sources from many directions, near and far, including the noise source of interest. The background noise at a given location is due to any sources that are not associated with the noise source of interest.

For environmental noise studies, ambient noise levels and noise impact criteria are typically based on A-weighted equivalent noise levels, L_{eq}, during a certain time period. The equivalent noise level during a one-hour period is represented as $L_{eq}(h)$ and is the metric used by Federal Highway Administration (FHWA) and MDT for traffic noise studies. The equivalent noise level is defined as the steady state noise level that has the same acoustical energy as the actual, time-varying noise signal during the same time period. The $L_{eq}(h)$ metric is useful for traffic noise studies because it uses a single number to describe the constantly fluctuating ambient noise levels at a receptor location during one hour of time.

3.0 ACTIVITY CATEGORIES AND NOISE ABATEMENT CRITERIA

23 CFR 772 outlines the procedures to determine if traffic noise impacts will occur for a project and when traffic noise abatement measures will be considered. FHWA and MDT identify traffic noise impacts according to Noise Abatement Criteria (NAC) for various land uses and zoning (FHWA 2010, MDT 2017). MDT's Noise Policy (2017) and 23 CFR 772 (2011) state that traffic

noise impacts occur for highway projects when the predicted $L_{eq}(h)$ noise level at a receptor location in a project's Design Year approaches or exceeds the NAC values listed in **Table 3-1**, or when the predicted traffic noise levels in the Design Year substantially exceed the existing ambient noise levels at a receptor. In determining and abating traffic noise impacts, 23 CFR 772, Section 772.11–*Noise Abatement*, gives primary consideration to receptor locations that represent exterior areas where frequent human use occurs and a lowered noise level would be of benefit. MDT defines "approach" as 1 dBA, and "substantially exceed" as 13 dBA (MDT 2017).

For Activity Category B and C land uses, such as residences, churches, medical facilities, recreation areas, etc., the exterior NAC is 67 dBA. Therefore, traffic noise impacts occur if the predicted traffic noise levels are 66 dBA or greater in the Design Year of a project, or if the predicted traffic noise levels are 13 dBA higher than the Present Year noise levels. Activity Category C land uses, such as churches and medical facilities, also have an interior NAC of 52 dBA that is used when no exterior uses are present. For Activity Category E land uses, such as hotels, offices, and restaurants/bars, the exterior NAC is 72 dBA. Activity Category F land uses, such as agriculture, industrial and retail facilities, as well as undeveloped lands that are not currently permitted for development (Activity Category G) and are located within the project limits, do not have a NAC and were not evaluated for this noise analysis (**Table 3-1**). When traffic noise impacts are identified at noise-sensitive receptor locations, MDT considers reasonable and feasible noise abatement measures to reduce traffic noise levels at a receptor (MDT 2017).

Table 3-1: Noise Abatement Criteria

Activity Category	Activity Criteria[1] $L_{eq}(h)$ dBA	Evaluation Location	Activity Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[2]	67	Exterior	Residential
C[2]	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio stations, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[2]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D, or F.
F	---	---	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities, (water resources, water treatment, electrical), and warehousing.
G	---	---	Undeveloped lands that are not permitted.

Source: MDT 2017

Notes:

[1] The $L_{eq}(h)$ Activity Criteria values are for impact determination only, and are not design standards for noise abatement measures.

[2] Includes undeveloped lands permitted for this Activity Category.

Underlined designates receptors identified within 500 feet of the edge of the closest travel lane in the project limits.

4.0 AFFECTED ENVIRONMENT

4.1 Ambient Noise Measurements

BSA completed six noise level measurements on July 26–27, 2021 to determine the existing ambient noise levels at representative locations near receptors. The measurements were 30 to 60 minutes in duration, and the $L_{eq}(h)$ for each one-hour period was calculated from the measurement data. The measurement locations are depicted on **Figures 2 and 3**, attached.

BSA conducted the ambient noise level measurements using Larson Davis Model 831 and CEL Instruments Model 593 Type I Sound Level Meters with preamplifiers and 0.5-inch diameter microphones. The meters were calibrated using a CEL Instruments Model 284/2 Acoustical Calibrator prior to and checked after each measurement. The sound level meters were set to "slow" response per FHWA requirements (FHWA 2010). The sound level meters were mounted on tripods such that the microphones were approximately 5 feet above the ground surface, and windscreens were used over the microphones. Temperature, relative humidity and wind speed were measured using a Kestrel 3000 meter. **Table 4-1** summarizes the measured ambient $L_{eq}(h)$ noise levels, and **Table 4-2**, on the next page, summarizes the atmospheric conditions during the field measurements.

Table 4-1: Outdoor Ambient Noise Level Measurements

Meas. Location (Figures 2 & 3)	Date & Time (hours)	Description	Approx. Distance & Direction from Nearest Centerline	Measured $L_{eq}(h)$ (dBA)	Dominant Noise Sources during Measurements[3]
1	7/26/21 1622 to 1722	Northwest corner of intersection of Becraft Lane & Cole Street, across from residences	42 feet north of Becraft Lane	62 dBA	Rush hour traffic on Becraft Lane, and diesel pick-up trucks pulling trailers
2	7/26/21 1636 to 1706	Southwest corner of intersection of Old Hardin Road & Rykken Circle (west) in mobile home park	55 feet south of Old Hardin Road	63 dBA[1]	Rush hour traffic & heavy trucks on Old Hardin Road, and an idling truck in trailer park
3	7/26/21 1733 to 1803	North side of Old Hardin Road, south of Holiday Inn Express, west of residences, and north of the Cole Street shopping center	67 feet north of Old Hardin Road	61 dBA[1]	Rush hour traffic on Old Hardin Road
4	7/27/21 0859 to 0929	East side of Johnson Lane, and west of Firth Street residences	70 feet east of Johnson Lane	62 dBA[1]	Steady traffic & heavy trucks on Johnson Lane, Coulson Road, North Frontage Road & I-90, passing train (and horn), and barking dogs
5	7/27/21 1005 to 1035	West side of Firth Street at the driveway and mailbox of the 1044 Firth Street residence	25 feet west of Firth Street	57 dBA[1]	Steady traffic & heavy trucks on Johnson Lane, Coulson Road, North Frontage Road & I-90, passing train (and horn), and aircraft
6	7/27/21 1104 to 1204	North side of Coulson Road (south of railroad tracks) and across from residences	64 feet north of Coulson Road	60 dBA[2]	Steady traffic & heavy trucks on Coulson Road, three passing trains (and horns), and aircraft

Notes:

[1] The $L_{eq}(h)$ noise level was calculated from the 30-minute measurement data.

[2] The measured noise level at Location 6 (72 dBA) was heavily influenced by three passing trains and horns at the at-grade railroad crossing at Johnson Lane. Therefore, the train data was removed to calculate the $L_{eq}(h)$ noise level due to traffic.

[3] Traffic on I-90 was audible from all measurement locations, especially during low traffic periods on the adjacent roads.

Table 4-2: Atmospheric Conditions during the Noise Level Measurements

Measurement Locations	Date & Time (hours)	Temperature	Relative Humidity	Conditions & Wind Speed/Direction
1, 2 & 3	7/26/21 1620 to 1800	100.5 to 102°F	16%	Hazy from wildfire smoke and calm
4 & 5	7/27/21 0900 to 1030	76°F	30%	Hazy and 3 to 9 mph from south
6	7/27/21 1100 to 1200	93 to 95°F	18 to 20%	Hazy and calm

4.2 Creating and Verifying the Traffic Noise Model

BSA predicted traffic noise levels at the receptors for the No Build and Build Alternatives using the FHWA-approved Traffic Noise Model (TNM), Version 2.5 software (FHWA 2010). This section describes the information and assumptions that were used to create the TNM models which predicts the noise due to moving vehicles. The ambient noise level measurements taken by BSA (**Table 4-1**) were used to verify that the TNM models were reasonably accurate for the No Build and Build Alternatives.

TNM 2.5 uses a three-dimensional coordinate system (x, y, and z) to define the location of the roads, receptor locations and terrain elevations. The number and type of vehicles traveling on the roads that were tallied during the measurements, the approximate speed of the traffic, the location of the centerlines of the driving lanes, the ground elevations between the measurement locations and the roads, and the measurement locations were entered into the models. Topographic elevations of the receptor locations, the roadway conditions, and the location of the proposed Build Alternative were based on Preliminary Plan in Hand Road Plans and updated line work (DOWL 2021a, DOWL 2021b).

Table 4-3 on the next page lists the traffic data BSA counted during the field measurements, and the measured ambient and TNM-predicted noise levels. BSA counted the traffic on the road(s) closest to and with a clear line of sight from the measurement locations. The traffic count data were used to compare the field-measured noise levels to the traffic noise levels predicted by the TNM models at the measurement locations. Measurement Location 6 was heavily influenced by three passing trains and horns at the at-grade railroad crossing at Johnson Lane, and therefore, the train data was removed to calculate the $L_{eq}(h)$ noise level due to traffic.

For all measurements, the calculated difference between each field-measured $L_{eq}(h)$ noise level and the level predicted by the TNM models for the traffic conditions during each measurement period was 1 to 2 dBA. A difference of +/- 3 dBA between measured and predicted traffic noise levels indicates that the TNM models are reasonably accurate (MDT 2017). Therefore, the TNM models are reasonably accurate and acceptable for traffic noise level predictions at the receptor locations (**Table 4-3**).

Table 4-3: Measured Ambient vs. Predicted Noise Levels

Meas. Location (Figures 2 & 3)	Date & Time (hours)	Approx. Distance & Direction from Nearest Centerline	Road and Directional Traffic Tallied During Measurement	Road and Directional Traffic Tallied During Measurement[1]	Measured $L_{eq}(h)$	Predicted $L_{eq}(h)$ by TNM Model
1	7/26/21 1622 to 1722	42 feet north of Becraft Lane	**Becraft Lane Eastbound** Autos: 227 MT: 14 HT: 0	**Becraft Lane Westbound** Autos: 120 MT: 3 HT: 1	62 dBA	61 dBA
			Cole Street Northbound Autos: 6 MT: 0 HT: 0	**Cole Street Southbound** Autos: 3 MT: 1 HT: 0		
2	7/26/21 1636 to 1706	55 feet south of Old Hardin Road	**Old Hardin Road Eastbound[1]** Autos: 198 MT: 8 HT: 4	**Old Hardin Road Westbound[1]** Autos: 156 MT: 12 HT: 2	63 dBA[2]	61 dBA
3	7/26/21 1733 to 1803	67 feet north of Old Hardin Road	**Old Hardin Road Eastbound[1]** Autos: 318 MT: 8 HT: 6	**Old Hardin Road Westbound[1]** Autos: 160 MT: 6 HT: 2	61 dBA[2]	60 dBA
4	7/27/21 0859 to 0929	70 feet east of Johnson Lane	**Johnson Lane Northbound[1]** Autos: 28 MT: 10 HT: 14	**Johnson Lane Southbound[1]** Autos: 38 MT: 6 HT: 28	62 dBA[2]	61 dBA
5	7/27/21 1005 to 1035	25 feet west of Firth Street	**I-90 Eastbound[3]** Autos: NA MT: NA HT: NA **I-90 Eastbound Offramp[3]** Autos: NA MT: NA HT: NA **North Frontage Road Eastbound[1]** Autos: 16 MT: 2 HT: 2 **Firth Street Northbound[1]** Autos: 4 MT: 2 HT: 2 **Johnson Lane Northbound[1]** Autos: 14 MT: 6 HT: 24	**I-90 Westbound[1]** Autos: 430 MT: 56 HT: 60 **I-90 Westbound Offramp[1]** Autos: 34 MT: 6 HT: 30 **North Frontage Road Westbound[1]** Autos: 12 MT: 4 HT: 6 **Firth Street Southbound[1]** Autos: 0 MT: 0 HT: 0 **Johnson Lane Southbound[1]** Autos: 14 MT: 8 HT: 22	57 dBA[2]	56 dBA
6	7/27/21 1104 to 1204	64 feet north of Coulson Road	**Coulson Road Eastbound** Autos: 48 MT: 10 HT: 20	**Coulson Road Westbound** Autos: 48 MT: 7 HT: 24	60 dBA[4]	62 dBA

Notes:

Autos Automobiles – 2-axle, 4-wheel vehicles including pickup trucks (FHWA Vehicle Classes 1 – 3)

MT Medium trucks – 2-axle, 6-wheel vehicles, plus automobiles pulling trailers (FHWA Vehicle Classes 4 – 5)

HT Heavy trucks – 3 or more axles (FHWA Vehicle Classes 6 – 16)

1 Traffic tallied during the 30-minute measurement periods was doubled to estimate 1-hour total traffic counts.

2 The $L_{eq}(h)$ was calculated from the 30-minute measurement data.

3 I-90 eastbound traffic was not visible from Measurement Location 5.

4 The measured noise level at Location 6 ($L_{eq}(h)$ 72 dBA) was heavily influenced by three passing trains and horns at the at-grade railroad crossing at Johnson Lane. Therefore, the train data was removed to calculate the $L_{eq}(h)$ noise level due to traffic.

4.3 Traffic Data Used for the Traffic Noise Predictions

BSA calculated the traffic noise levels for the No Build and Build Alternatives for the Project using TNM modeling (**Section 5.0**). BSA used three sources of traffic data for the noise analysis, including MDT's Traffic Data Collection and Analysis Section data (MDT 2019), MDT's online Arc-GIS Montana Traffic Data (MDT 2021b), and DOWL's updated traffic data for the modified alignments (DOWL 2021b). BSA calculated the traffic data for a Present Year of 2019, a projected Design Year of 2042, an Average Annual Daily Traffic (AADT), and Design Hourly Volume (DHV) per vehicle class for the Project roads. **Table 4-4** shows the traffic data BSA used for the TNM noise level predictions.

Table 4-4: Traffic Data Used for Noise Level Predictions

Road	Posted Speed	Design Condition	Year	AADT	DHV	Autos	MT	HT
Becraft Lane-East[2, 4]	35 mph	No Build	2019	5410	490	97.2%	2.2%	0.6%
			2042	6800	610			
		Build Alternative	2042					
Becraft Lane-West[2, 4]	35 mph	No Build	2019	1130	100	97.2%	2.2%	0.6%
			2042	1420	130			
		Build Alternative	2042					
Cole Street[1, 2, 4]	25 mph	No Build	2019	5630	510	97.2%	2.2%	0.6%
			2042	7080	640			
		Build Alternative	2042					
Old Hardin Road-East	35 mph	No Build	2019	6430	740	97.2%	2.2%	0.6%
			2042	8080	930			
		Build Alternative	2042					
Old Hardin Road-West	35 mph	No Build	2019	4480	500	83.8%	3.9%	12.3%
			2042	5630	630			
		Build Alternative	2042					
Johnson Lane (South of Old Hardin Rd)	35 mph	No Build	2019	2070	290	91.6%	5.1%	3.3%
			2042	3820	540			
		Build Alternative	2042					
Johnson Lane (Between Old Hardin & I-90)	35 mph	No Build	2019	13460	1472	89.3%	3.4%	7.3%
			2042	16920	1850			
		Build Alternative	2042					
I-90 (Eastbound & Westbound)	65 mph	No Build	2019	22460	2380	80.7%	2%	17.3%
			2042	33850	3590			
		Build Alternative	2042					
I-90 Eastbound Offramp[3]	decelerating	No Build	2019	5140	545	80.7%	2%	17.3%
			2042	6460	685			
		Build Alternative	2042					
I-90 Eastbound Onramp[3]	accelerating	No Build	2019	2200	233	80.7%	2%	17.3%
			2042	2780	295			
		Build Alternative	2042					
I-90 Westbound Offramp[3]	decelerating	No Build	2019	1960	208	80.7%	2%	17.3%
			2042	2464	261			
		Build Alternative	2042					
I-90 Westbound Onramp[3]	accelerating	No Build	2019	5210	552	80.7%	2%	17.3%
			2042	6550	694			
		Build Alternative	2042					
Johnson Lane (Between I-90 & N. Frontage Rd)	35 mph	No Build	2019	13460	1550	89.3%	2.3%	8.4%
			2042	16920	1950			
		Build Alternative	2042					

Table 4-4: Traffic Data Used for Noise Level Predictions

Road	Posted Speed	Design Condition	Year	AADT	DHV	Autos	MT	HT
Johnson Lane (North of N. Frontage Rd)	35 mph	No Build	2019	2120	246	84.4%	3.7%	11.9%
			2042	2670	310			
		Build Alternative	2042					
North Frontage Road-East	45 mph	No Build	2019	1060	96	82.1%	3.9%	14%
			2042	1330	120			
		Build Alternative	2042					
North Frontage Road-West	45 mph	No Build	2019	8180	740	82.1%	3.9%	14%
			2042	10280	930			
		Build Alternative	2042					
Sannon Boulevard[1, 2, 5]	30 mph	No Build	2019	860	80	82.1%	3.9%	14%
			2042	1080	100			
		Build Alternative	2042					
Coulson Road[1, 6]	50 mph	No Build	2019	2120	246	84.4%	3.7%	11.9%
			2042	2670	310			
		Build Alternative	2042					

Sources: MDT 2019, MDT 2021b, DOWL 2021b

Notes:

[1] BSA assumed traffic data would be divided equally in both directions.

[2] AADT was provide as a range, so BSA used the highest range data for a worst-case scenario (DOWL 2021b).

[3] For the I-90 ramps, BSA used the same vehicle class mix as the I-90 main line.

[4] For Becraft Lane and Cole Street, BSA used the same vehicle class mix as Old Hardin Road-East.

[5] For Sannon Boulevard, BSA used the same vehicle class mix as North Frontage Road-East.

[6] For Coulson Road, BSA used the same traffic volume and vehicle class mix as Johnson Lane north of the North Frontage Road.

AADT Average Annual Daily Traffic

DHV Design Hourly Volume

Autos Automobiles – 2-axle, 4-wheel vehicles including pickup trucks (FHWA Vehicle Classes 1 – 3)

MT Medium trucks – 2-axle, 6-wheel vehicles, plus automobiles pulling trailers (FHWA Vehicle Classes 4 – 5)

HT Heavy trucks – 3 or more axles (FHWA Vehicle Classes 6 – 16)

5.0 ENVIRONMENTAL CONSEQUENCES

The purpose of the traffic noise level predictions is to determine if traffic noise impacts will occur at noise-sensitive receptor locations in the Design Year (2042). Noise-sensitive receptors were identified within approximately 500 feet of the edge of the closest travel lane using aerial photographs and BSA's fieldwork observations in July 2021. A total of 51 noise-sensitive receptors are depicted on **Figures 2 and 3**. As categorized in **Table 3-1**, the receptors evaluated included 35 single-family and mobile home residences (i.e., 32 first-row and three second-row) (Activity Category B), three medical offices (Activity Categories C/D), one hotel, two offices (i.e., banks) and 10 restaurants/bars (Activity Category E). Some agriculture/farm uses and numerous industrial and retail facilities are also located within 500 feet of the project limits. However, these Activity Category F uses, and undeveloped lands that are not currently permitted (Activity Category G), do not have an NAC and were not evaluated for this noise analysis (MDT 2017). No planned or proposed subdivisions or new developments were identified adjacent to the project limits (Yellowstone County 2021).

5.1 Results and Discussion – No Build vs. Build Alternatives

The TNM-predicted traffic noise levels for both the No Build and Build Alternatives are summarized in **Table 5-1**. As shown, for the noise-sensitive receptors located adjacent to the Project roads, three traffic noise impacts are predicted due to the No Build Alternative in 2019 (i.e., not building the Project in the Present Year), and six impacts in the Year 2042 (i.e., not building the Project in the Design Year). For the Build Alternative (i.e., constructing the proposed BBP-Johnson Lane Interchange Project), 10 traffic noise impacts are predicted in the Design Year (2042) as discussed after **Table 5-1**. Because traffic noise impacts were predicted for the Project, BSA evaluated noise mitigation measures (**Section 6.0**).

Table 5-1: Predicted Traffic Noise Levels

Receptor Number (Figures 2–3)	Description	Land Use Category (Table 3-1)	Impact Criteria[a] (Table 3-1)	No Build Alternative Present Year 2019 L_{eq}(h) (dBA)	No Build Alternative Design Year 2042 L_{eq}(h) (dBA)	Build Alternative Design Year 2042 L_{eq}(h) (dBA)	Build Alt Design Year minus No Build Alt Present Year[a]
J1[f]	Mobile home	B	66	63	64	69	6
J2[d]	Mobile home	B	66	61	62	67	Relocate
J3[d]	Single-family residence	B	66	59	60	64	Relocate
J5	Mobile home	B	66	61	62	65	4
J6[e, f]	Mobile home	B	66	57	59	60	3
J7[e, f]	Mobile home	B	66	60	61	62	2
J8[f]	Mobile home	B	66	56	58	58	2
J9[f]	Single-family residence	B	66	56	58	58	2
J10[d]	Single-family residence	B	66	62	64	66	Relocate
J11[d]	Single-family residence	B	66	61	63	NC	Relocate
J12[f]	Mobile home	B	66	57	58	59	2
J13[d]	Single-family residence	B	66	64	66	66	Relocate
J14	McDonald's / MT Lil's Casino/bar	E	71	60	61	63	3
H1	Mobile home	B	66	66	68	68	2
H1-2[b]	Mobile home (second-row)	B	66	64	66	66	2
H2	Mobile home	B	66	65	66	66	1
H2-2[b]	Mobile home (second-row)	B	66	64	65	65	1
H3	Mobile home	B	66	66	67	67	1
H4	Mobile home	B	66	66	67	67	1
H4-2[b]	Mobile home (second-row)	B	66	64	65	65	1
H5	Jin's Buffet Chinese Restaurant	E	71	65	66	66	1
H6	Dairy Queen Restaurant	E	71	63	64	64	1
H7	Subway Restaurant	E	71	62	63	63	1
H8	Magic Diamond Casino/bar	E	71	67	68	68	1
H9	Burger King Restaurant	E	71	66	67	68	2
H10	Western Security Bank	E	71	64	66	66	2
H11	First Security Bank	E	71	63	65	65	2
H12[c]	Lockwood Dental office (interior)	D	51[c]	44	45	46	2
H13[c]	Jenkins Chiropractor (interior)	D	51[c]	43	44	45	2
H14	Oscars Casino/bar	E	71	62	64	64	2
H15[c]	Holistic Releaf by Design (interior)	D	51[c]	41	43	44	3
H16	Yellowstone Coffee & Canvas	E	71	62	63	63	1
H17	Single-family residence	B	66	64	65	65	1
H18	Single-family residence	B	66	64	65	65	1
H19	Single-family residence	B	66	62	63	63	1
H20	Single-family residence	B	66	62	64	64	2
H21	Single-family residence	B	66	60	61	61	1
H22	Single-family residence	B	66	59	60	60	1

Table 5-1: Predicted Traffic Noise Levels

Receptor Number (Figures 2–3)	Description	Land Use Category (Table 3-1)	Impact Criteria[a] (Table 3-1)	No Build Alternative Present Year 2019 L_{eq}(h) (dBA)	No Build Alternative Design Year 2042 L_{eq}(h) (dBA)	Build Alternative Design Year 2042 L_{eq}(h) (dBA)	Build Alt Design Year minus No Build Alt Present Year[a]
H23	Jackrabbit Red's Casino/bar	E	71	67	68	68	1
H24	Sandees Restaurant	E	71	63	64	64	1
C1	Holiday Inn Express Hotel	E	71	66	68	68	2
B1	Single-family residence	B	66	62	64	62	0
B2	Single-family residence	B	66	62	63	62	0
B3	Single-family residence	B	66	62	63	63	1
B4	Single-family residence	B	66	61	62	62	1
B5	Single-family residence	B	66	63	64	64	1
B6	Single-family residence	B	66	62	64	64	2
B7	Single-family residence	B	66	63	64	64	1
B8	Single-family residence	B	66	60	61	61	1
B9	Single-family residence	B	66	62	63	63	1
B10	Single-family residence	B	66	58	60	60	2

Notes:

[a] MDT defines "approach" as 1 dBA less than NAC value (**Table 3-1**) and "substantially exceed" as at least 13 dBA greater than Present Year noise level (**Section 3.0**).

[b] Represents a second-row receptor evaluated for noise mitigation (**Section 6.0**).

[c] Due to no identified areas of outdoor use, the interior NAC was evaluated (**Section 3.0**).

[d] Receptor planned to be relocated for this Project.

[e] Receptor planned to be relocated for the Segment 5 BBP-Johnson Lane Railroad Overpass project (MDT 2014b).

[f] Receptor predicted to be noise-impacted by the Segment 5 BBP-Johnson Lane Railroad Overpass project (BSA 2012).

NC The L_{eq}(h) could not be calculated by the TNM noise model due to the location of the alignment overlapping the receptor.

Relocate Receptor planned to be relocated for this Project due to the proposed alignment and/or ROW.

Shading Indicates that the predicted traffic noise level meets or exceeds the traffic noise impact criteria (**Section 3.0**).

Figure 2 shows the noise-sensitive receptors identified north of I-90. BSA used the same numbering system for these receptors identified in the original BBP *Traffic Noise Impact Assessment* (BSA 2012) and used in the Final BBP EIS (MDT 2014a). (Note that mobile home Receptor J4 has been relocated since 2014, and was not used for this Project.) The Firth Street neighborhood, which includes single-family residences, mobile home residences and industrial business uses, will be bisected by the new North Frontage Road alignment. Subsequently, five residences (Receptors J2, J3, J10, J11 and J13) are currently planned to be relocated for this Project, and four of these relocated residences are also predicted to be noise-impacted (**Table 5-1**). However, the highest Build Alternative Design Year traffic noise level (L_{eq}(h) 69 dBA) is predicted for remaining Receptor J1, located adjacent to the southeast corner of the new North Frontage Road/Johnson Lane intersection (**Figure 2**). Based on the proposed alignment, this receptor may also need to be relocated due to right-of-way (ROW) and/or property access issues.

Future modifications to the Johnson Lane/Coulson Road intersection are planned for the Segment 5 BBP-Johnson Lane Interchange-Railroad Overpass project (DOWL 2021b, MDT 2021). As shown on **Figure 2** and in **Table 5-1**, Receptors J6 and J7 are planned to be relocated for the Segment 5 project, and four out of five remaining residences (Receptors J1, J8, J9 and J12) are predicted to be noise-impacted by the Segment 5 Preferred Alternative (i.e., Mary Street Option 2) (BSA 2012, MDT 2014a, MDT 2014b). Therefore, cumulatively 11 of the 12 existing residences located in this area, adjacent to Johnson Lane, Firth Street and/or Coulson Road

(i.e., Receptors J1– J3 and J6–J13), are predicted to be noise-impacted and/or will be relocated by the BBP Segment 4 and/or Segment 5 projects (**Figure 2**).

Figure 3 shows the noise-sensitive receptors located south of I-90. Restaurant/bar businesses and a mobile home park are located adjacent to Old Hardin Road and west of the intersection with Johnson Lane. BSA evaluated both first-row and second-row receptors in the mobile home park located on Rykken Circle at the end of the project limits. As identified in **Table 5-1**, three residences (Receptors H1, H3 and H4) are noise-impacted, and currently experiencing high traffic noise levels (No Build Alternative-Present Year). Traffic noise impacts are also predicted for these same residences plus an additional two mobile homes (Receptors H1-2 and H2) for the No Build and Build Alternatives in the Design Year (2042).

As shown on **Figure 3** and in **Table 5-1**, receptors located east of the Old Hardin Road/Johnson Lane intersection include restaurants/bars, bank offices, medical facilities, a hotel, and single-family residences, located adjacent to Old Hardin Road, Cole Street, and/or Becraft Lane. No traffic noise impacts were predicted for these receptors.

5.2 Construction Noise

Road construction causes localized, intermittent, short-duration noise impacts, which may cause annoyance to people living in the area. Construction noise will vary by construction phase, types of equipment used, and distance between activities and a listener location. During construction of the BBP-Johnson Lane Interchange project, the contractor should comply with all Federal, State, County and City applicable regulations governing equipment source levels. The contractor should consider using the following techniques to reduce construction noise impacts at the identified receptors:

1. Place stationary noise sources away from noise-sensitive receptors, including residences.
2. Use portable noise barriers or use natural terrain to provide shielding between equipment and receptors.
3. Turn idling equipment off.
4. Drive equipment forward instead of backward; lift instead of drag materials; and avoid scraping or banging activities.
5. Confine work to between the hours of 7:00 a.m. to 7:00 p.m.
6. Use quieter equipment with properly sized and maintained mufflers, engine intake silencers, less obtrusive backup alarms (such as manually adjustable, self-adjusting or broadband alarms, instead of traditional “beep-beep-beep” alarms), engine enclosures, noise blankets, rubber truck bed linings, etc.

6.0 MITIGATION CONSIDERATIONS

When traffic noise impacts are predicted, possible abatement measures for the mitigation of traffic noise needs to be considered, and the measures are assessed to determine if they are feasible and reasonable (MDT 2017). Possible abatement measures may include construction of noise barriers, modifying the proposed build alternatives, acquisition of real property, traffic management measures, or building modifications for Activity Category D public use or institutional structures. Barriers typically provide the highest level of noise reduction of these mitigation measures.

According to MDT's Noise Policy, to determine if a mitigation measure is feasible, the measure must provide a minimum 5-dBA reduction in noise levels for at least three first-row impacted receptors, and must not cause safety hazards or maintenance, utility or access limitations. To determine if a mitigation measure is reasonable involves an examination of costs, public support, and whether a noise reduction design goal of 7 dBA can be achieved for 60% of the first-row benefited receptors (MDT 2017).

6.1 Noise Barriers

A barrier is most effective when it is continuous and solid, and it blocks the direct line-of-sight between the road and a receptor. Barriers can be constructed using built up dirt to create a berm, using concrete, concrete block, other similar masonry materials, metal panels, or thick wood to create a wall, or a combination of a berm or Jersey barrier with a shorter wall on top. An earthen berm typically has a very large base for support and may also require additional ROW to accommodate construction. To be effective, the barrier wall must be continuous and solid with no gaps, holes or openings in it, including between the bottom edge of the barrier wall and the ground surface (MDT 2017).

As shown on **Figures 2 and 3** and in **Table 5-1**, the predicted noise-impacted receptors that are not currently planned to be relocated for the Project include Receptor J1, located southeast of the new Johnson Lane/North Frontage Road intersection, and the mobile home park (Receptors H1, H1-2, H2, H3 and H4) located south of Old Hardin Road at Rykken Circle. Because the other Firth Street noise-impacted receptors located adjacent to Receptor J1 are planned to be relocated for this Project, a barrier is not feasible for one isolated receptor (J1) (**Section 6.0**). However, the five noise-impacted Rykken Circle mobile home receptors are grouped together, and a barrier is feasible per MDT's Noise Policy (MDT 2017).

MDT uses a Cost-Effectiveness Index (CEI) to determine if a barrier is reasonable. The CEI takes into consideration the noise reduction the barrier will provide and the number of benefited receptors. The CEI is calculated for each barrier configuration. MDT currently uses a planning cost \$40/ft^2 for noise barriers, which includes wall and foundation construction. A CEI that exceeds \$5,600 is not considered reasonable (MDT 2017). Barriers are more likely to be cost-effective for areas with a high density of receptors.

BSA evaluated the reasonableness for a barrier for the mobile home park first-row and second-row residences located adjacent to Old Hardin Road along Rykken Circle as shown on **Figure 3**. For access, a barrier would not be continuous at the Old Hardin Road/Rykken Circle intersections, which reduces the barrier effectiveness. The CEI results for four different height barriers are summarized in **Table 6-1** on the next page. As shown, an 8- to 14-foot-tall barrier wall would not

meet a noise reduction design goal of 7 dBA for 60% of the first-row benefited receptors (**Section 6.0**), and the CEI values are above MDT's $5,600 reasonableness criteria. Therefore, barriers are not reasonable for traffic noise mitigation for the Build Alternative.

Table 6-1: Summary of Estimated CEI Values

Receptors (Figure 3)	Barrier Location	Barrier Length	Barrier Height (feet)	Number of Benefited Receptors	Average Noise Reduction for Benefited Receptors (dBA)	Estimated CEI
H1, H2, H3, H4, H1-2, H2-2, H4-2	On ROW south of Old Hardin Road, adjacent to the mobile home park, with an opening an at Rykken Circle	440 feet	8	0	NA	NA
			10	4	5.8	$7,619
			12	4	6.3	$8,348
			14	4	6.7	$9,226

6.2 Design Modifications

Shifting the horizontal and/or vertical alignments of the Build Alternative to reduce traffic noise impacts can provide more distance between a road and a receptor, resulting in lower noise levels. Many alignment alternatives have been evaluated by the Design Team, and only the preferred alignments were evaluated for this noise analysis (DOWL 2021a, 2021b). As shown on **Figure 2**, in order to eliminate the noise-impact at Receptor J1, the Johnson Lane alignment north of I-90 would need to shift 150 feet west, which may alter the geometry of the Diverging Diamond interchange, create a noise-impact at Receptor J5, and/or alter the future alignment of the Johnson Lane/Coulson Road intersection to be constructed as part of the BBP Segment 5 project (DOWL 2021b, MDT 2021). Therefore, shifting the Johnson Lane alignment is not feasible. As shown on **Figure 3**, mobile home park at Rykken Circle is located at the west end of the project limits on Old Hardin Road. Therefore, moving the alignment of Old Hardin Road north is not feasible when realigning to the existing configuration.

6.3 Acquisition of Real Property

Acquisition of Real Property or interests therein (predominantly unimproved property) is evaluated as a noise mitigation measure to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise (MDT 2017). Referring to **Figure 1**, for future developments additional ROW could be acquired in various undeveloped areas within the project limits to reduce traffic noise impacts, based on the setback distances shown in **Section 7.0**, **Table 7-1**.

Also, as shown on **Figure 2** and in **Table 5-1**, MDT is currently planning to relocate five Firth Street neighborhood homes for the east leg of North Frontage Road, which eliminates noise-impacts at four receptors (i.e., J2, J10, J11 and J13). However, the highest Project noise level is predicted for Receptor J1, located directly southeast of the Johnson Lane/North Frontage Road intersection, and MDT may want to consider relocating this mobile home due to ROW and/or property access issues.

6.4 Traffic Management Measures

Traffic management measures include traffic control devices, signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modifying speed limits, and exclusive lane designations (MDT 2017). Traffic control devices are already included in the Project design (DOWL 2021a). Signalized intersections are designed at the Johnson Lane/North Frontage Road intersection, within the Diverging Diamond Johnson Lane Interchange, and at the Johnson Lane/Old Hardin Road and Old Hardin Road/Cole Street intersections. Stop-controlled intersections are also planned for Sannon Boulevard at North Frontage Road and Coulson Road.

Due to the heavy industrial and truck uses in the project limits, restricting certain vehicle types, limiting the time of day that certain vehicles may use the roads, or exclusive lane designations are not reasonable mitigation measures for the connectivity of the BBP and the functionality of the Project. Modifying speed limits is a potential noise mitigation measure if it does not hinder the function of the roadways, and the current posted speed limits are listed in **Table 4-4**. However, speed limits are generally set by the Transportation Commission, and are usually reduced for safety concerns rather than noise impacts (MDT 2017), and therefore, were not evaluated.

7.0 COORDINATION WITH LOCAL OFFICIALS

Traffic noise can significantly affect the value and usefulness of property near highways. Traffic noise at future areas of frequent residential outdoor use can be annoying, distracting and hinder communication. In March 2008, MDT published *Growing Neighborhoods in Growing Corridors: Land Use Planning for Traffic Noise*, and recommended that traffic noise levels of $L_{eq}(h)$ 60 dBA be used to determine the location of outdoor use areas and the location of residential building façades closest to the road, and to avoid traffic noise problems in the future (MDT 2008). For comparison, 60 dBA represents the typical exterior background noise levels of a large urban area and the background noise levels inside large busy offices. If the 60 dBA criteria can be met by planning a site accordingly, then the need for traffic noise control measures, such as barrier walls, earthen berms, improved window configurations, etc., can be avoided.

Although, no new subdivisions or developments are currently planned or proposed within the project limits (Yellowstone County 2021), to avoid traffic noise impacts at future developments (**Figure 1**) BSA determined the minimum setback distances from the Build Alternative centerlines to where the Design Year $L_{eq}(h)$ 60 and 64 dBA noise levels are predicted to occur (MDT 2008). **Table 7-1** lists the setback distances for the modeled 60 and 64 dBA contour lines.

Table 7-1: Traffic Noise Level vs. Minimum Setback Distances from the Build Alternative Centerlines

Road	60 dBA Contour Line	64 dBA Contour Line
Johnson Lane – North of I-90	310 ft	170 ft
Johnson Lane – North of North Frontage Road	90 ft	< 50 ft
North Frontage Road – East	70 ft	< 50 ft
North Frontage Road – West	250 ft	170 ft
Sannon Boulevard	< 50 ft	< 50 ft
I-90 & On/Off Ramps	450 ft	300 ft
Old Hardin Road – East	110 ft	50 ft
Cole Street/Becraft Lane – East	75 ft	< 50 ft

Local officials should strongly encourage developers to incorporate noise-compatible development on their planned/proposed properties. Examples of noise-compatible development include providing greenbelts, open space, or parkland between the residents and the highway. Garages, carports or storage sheds should front the road rather than residences. If residential buildings must be located along the highway, the homes should be designed so that less-sensitive rooms, such as kitchens, laundry rooms, utility rooms, and storage spaces face the road rather than bedrooms or living rooms. Windows in the road-side of the building should be avoided. Strategies that incorporate noise-compatible development concepts are proactive and preventative in nature and can avoid traffic noise impact problems in the future.

8.0 CONCLUSION

BSA evaluated traffic noise level impacts for both the No Build and Build Alternatives for this Segment 4 BBP-Johnson Lane Interchange Project (**Figure 1**). BSA completed six noise level measurements in July 2021 to determine the existing ambient noise levels within the project limits (**Section 4.1**), and to verify that the TNM computer models used to predict the traffic noise levels were reasonably accurate (**Section 4.2**).

Noise-sensitive receptors were identified within approximately 500 feet of the edge of the closest travel lane using aerial photographs and BSA's fieldwork observations in July 2021. A total of 51 noise-sensitive receptors are depicted on **Figures 2 and 3**. As categorized in **Table 3-1**, the receptors evaluated include 35 single-family and mobile home residences (Activity Category B), three medical offices (Activity Category D), one hotel, two offices, and 10 restaurants/bars (Activity Category E).

The TNM-predicted traffic noise levels for both the No Build and Build Alternatives are summarized in **Table 5-1**. For the noise-sensitive receptors located adjacent to the Project roads, three traffic noise impacts are predicted due to the No Build Alternative in the Present Year (2019) and six impacts in the Design Year (2042). For the Build Alternative, 10 traffic noise impacts are predicted in the Design Year.

Figure 2 shows the noise-sensitive receptors identified north of I-90. The Firth Street neighborhood, which includes single-family residences, mobile home residences and industrial business uses, will be bisected by the new North Frontage Road alignment. Subsequently, five residences (Receptors J2, J3, J10, J11 and J13) are currently planned to be relocated for this Project, and four of these relocated residences are also predicted to be noise-impacted (**Table 5-1**). However, the highest Build Alternative Design Year traffic noise level (L_{eq}(h) 69 dBA) is predicted for remaining Receptor J1, located adjacent to the southeast corner of the new North Frontage Road/Johnson Lane intersection (**Figure 2**). Based on the proposed alignment, this receptor may also need to be relocated due to right-of-way (ROW) and/or property access issues.

Future modifications to the Johnson Lane/Coulson Road intersection are planned for the Segment 5 BBP-Johnson Lane Interchange-Railroad Overpass project (DOWL 2021b, MDT 2021). As shown on **Figure 2** and in **Table 5-1**, Receptors J6 and J7 are planned to be relocated for the Segment 5 project, and four out of five remaining residences (Receptors J1, J8, J9 and J12) are predicted to be noise-impacted by the Segment 5 Preferred Alternative (i.e., Mary Street Option 2) (BSA 2012, MDT 2014a, MDT 2014b). Therefore, cumulatively 11 of the 12 existing residences located in this area adjacent to Johnson Lane, Firth Street and/or Coulson Road

(i.e., Receptors J1– J3 and J6–J13) are predicted to be noise-impacted and/or will be relocated by the BBP Segment 4 and/or Segment 5 projects (Figure 2).

Figure 3 shows the noise-sensitive receptors located south of I-90. Restaurant/bar businesses and a mobile home park are located adjacent to Old Hardin Road and west of the intersection with Johnson Lane. As identified in **Table 5-1**, three residences (Receptors H1, H3 and H4) are noise-impacted, and currently experiencing high traffic noise levels (No Build Alternative-Present Year). Traffic noise impacts are also predicted for these same residences plus an additional two mobile homes (Receptors H1-2 and H2) for the No Build and Build Alternatives in the Design Year. No traffic noise impacts were predicted for receptors located east of the Old Hardin Road/Johnson Lane intersection.

Because traffic noise impacts were predicted, BSA evaluated traffic noise mitigation measures and determined if the measures are reasonable or feasible (**Section 6.0**), including the construction of noise barriers, modifying the proposed build alternatives, acquisition of real property, and traffic management measures. Five Firth Street noise-impacted receptors located adjacent to Receptor J1 are currently planned to be relocated for this Project (**Figure 2**), and therefore, a barrier is not feasible for one receptor (J1). BSA evaluated the reasonableness for a barrier for the mobile home park located adjacent to Old Hardin Road along Rykken Circle (**Figure 3**). The CEI results are summarized in **Table 6-1**, however, a barrier wall would not meet MDT's noise reduction design goal, and the CEI values are above MDT's reasonableness criteria. Therefore, barriers are not reasonable for traffic noise mitigation of the Build Alternative.

Shifting the horizontal and/or vertical alignments of the Build Alternative to reduce traffic noise impacts can provide more distance between a road and a receptor, resulting in lower noise levels. Many alignment alternatives have been evaluated by the Design Team, and only the preferred alignments were evaluated for this noise analysis. In order to eliminate the noise-impact at Receptor J1 (**Figure 2**), the Johnson Lane alignment north of I-90 would need to shift 150 feet west, which is not feasible. Additionally, the mobile home park at Old Hardin Road and Rykken Circle (**Figure 3**) is located at the west end of the project limits, and moving the alignment north is not feasible when realigning to the existing configuration.

The acquisition of Real Property or interests therein (predominantly unimproved property) is evaluated as a noise mitigation measure to serve as a buffer zone to preempt development that would be adversely impacted by traffic noise (MDT 2017). For the existing properties, the highest Project noise level is predicted for Receptor J1, and MDT may want to consider relocating this mobile home due to ROW and/or property access issues (**Figure 2** and **Table 5-1**).

Traffic management measures include traffic control devices, signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modifying speed limits, and exclusive lane designations (MDT 2017). Traffic control devices are already included in the Project design (DOWL 2021a). Due to the heavy industrial and truck uses in the project limits, restricting certain vehicle types, limiting the time of day that certain vehicles may use the roads, or exclusive lane designations are not reasonable mitigation measures for the connectivity of the BBP and the functionality of the Project. Speed limits are generally set by the Transportation Commission, and are usually reduced for safety concerns rather than noise impacts (MDT 2017).

To avoid future traffic noise impacts in Activity Category G undeveloped lands, BSA determined the minimum setback distances from the nearest Build Alternative centerline to where the Design Year $L_{eq}(h)$ 60 and 64 dBA noise levels are predicted to occur (**Table 7-1**). Local officials should strongly encourage developers to incorporate noise-compatible planning measures to avoid traffic noise problems in the future (MDT 2008).

9.0 REFERENCES

Big Sky Acoustics, LLC. (BSA). 2012. Final Billings Bypass, NCPD 56(55), CN 4199, Traffic Noise Impact Assessment. March 23.

DOWL, Inc. 2021a. Preliminary Plan in Hand Road Plans for BBP-Johnson Lane Interchange, IM-CMBL-STPU-NCPD-NHPB 56(93), UPN 4199007. October 18.

DOWL, Inc. 2021b. Email communications *BBP Interchange Edge of Pavements* with Teri Swenson, Emily Peterson and Doug Enderson.

DOWL, Inc. 2021c. Email communications *BBP – Johnson Lane Interchange* with Teri Swenson, Emily Peterson and Doug Enderson.

Federal Highway Administration (FHWA). 2010. *Highway Traffic Noise: Analysis and Abatement Guidance.*

Montana Department of Transportation (MDT). 2021a. Billings Bypass online project information. Viewed at https://www.mdt.mt.gov/pubinvolve/billingsbypass/schedule.shtml. November 15.

Montana Department of Transportation (MDT). 2021b. Arc-GIS Montana Traffic Data. Viewed https://www.arcgis.com/home/webmap/viewer.html?webmap=8a0308abed8846b6b533781e7a96eedd. November 15.

Montana Department of Transportation (MDT). 2019. Traffic Data Collection & Analysis Section, NCPD 56(55), BBP-Johnson Lane Interchange, CN 4199007, Work Type 130-Reconstruction with Added Capacity. July 30.

Montana Department of Transportation (MDT). 2017. *Traffic Noise Analysis and Abatement Policy.* January.

Montana Department of Transportation (MDT). 2014a. Record of Decision, Billings Bypass, NCPD 56(55), Control Number 4199. July.

Montana Department of Transportation (MDT). 2014b. Final Environmental Impact Statement, Billings Bypass, NCPD 56(55), Control Number 4199. March.

Montana Department of Transportation (MDT). 2008. *Growing Neighborhoods in Growing Corridors: Land Use Planning for Traffic Noise*.

U.S. Code of Federal Regulations Part 772 (23 CFR 772). 2011. Procedures for Abatement of Highway Traffic Noise and Construction Noise. April.

Yellowstone County. 2021. GIS Subdivision Mapping. Viewed on November 8, 2021 at https://maps.co.yellowstone.mt.gov/mapping/maps/subdivisions/index.html

10.0 STANDARD OF CARE

To complete this report, BSA has endeavored to perform its services consistent with the professional skill and care ordinarily provided by acoustical consultants practicing in similar markets and under similar project conditions. BSA is fully experienced and properly qualified to perform acoustical consulting services. However, BSA makes no warranty, either expressed or implied, as to the professional services it has rendered to complete this report. For the completion of this report, BSA has used data provided by DOWL, Inc. and MDT in performing its services and is entitled to rely upon the accuracy and completeness thereof. Therefore, if the information and assumptions used to create this report change (i.e., traffic data, location of the travel lanes, modification of the Build Alternative alignments, etc.) then the noise analysis and the recommended noise control measures will need to be reevaluated.

FIGURE 1

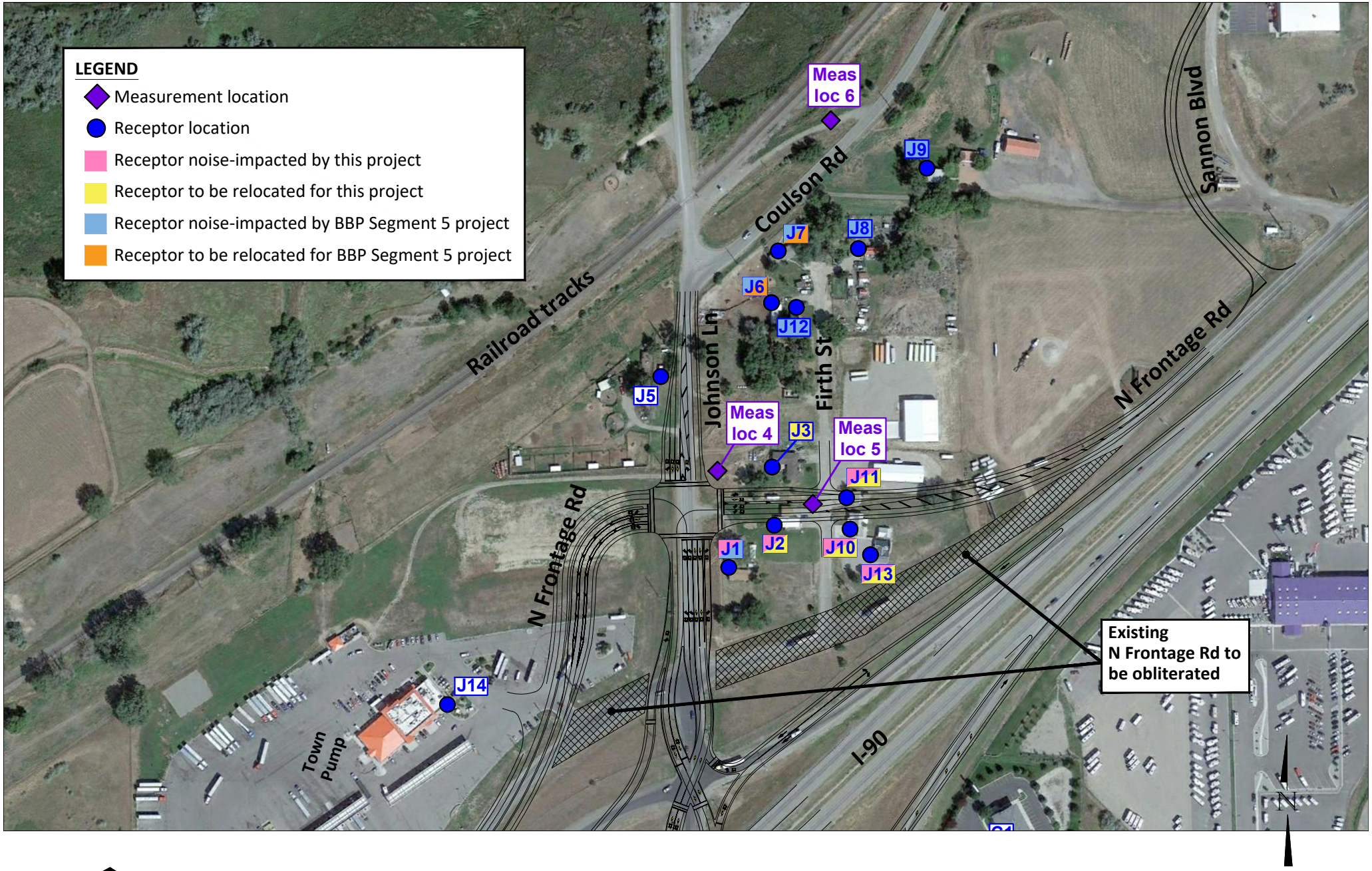
Big Sky Acoustics

Project Overview

Billings Bypass - Johnson Lane Interchange

NCPD-MT 56(55), UPN 4199007

Not-to-scale



Big Sky Acoustics

FIGURE 2

Receptor and Measurement Locations: North of I-90

Billings Bypass - Johnson Lane Interchange

NCPD-MT 56(55), UPN 4199007

Scale: 1" = 300 ft (8.5 x 11)

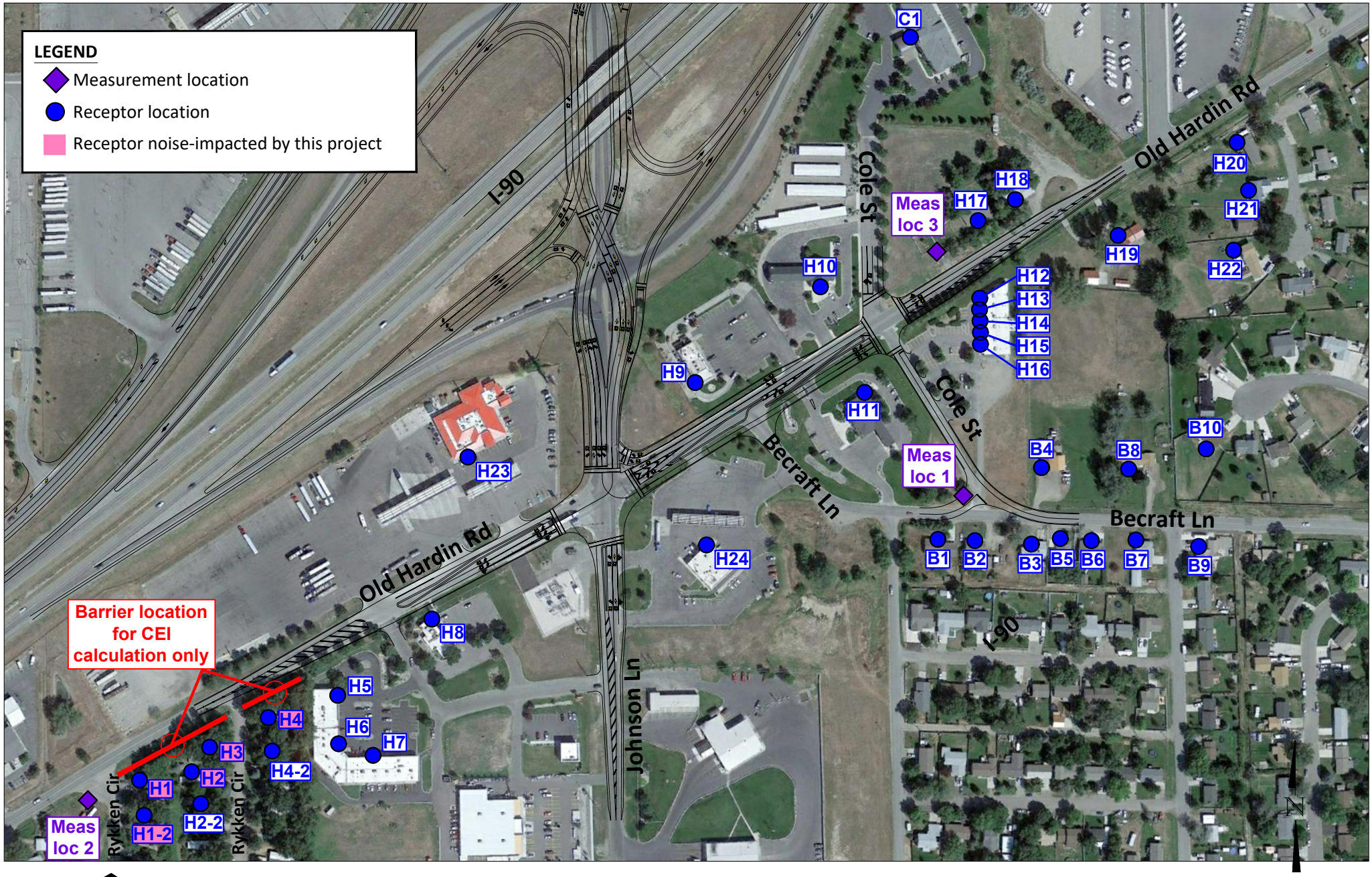


FIGURE 3

Big Sky Acoustics

Receptor and Measurement Locations: South of I-90

Billings Bypass - Johnson Lane Interchange

NCPD-MT 56(55), UPN 4199007

Scale: 1" = 300 ft (8.5 x 11)

Attachment 4: Johnson Lane Interchange SHPO Concurrences

Big Sky. Big Land. Big History.
Montana Historical Society

RECEIVED
DEC 28 2021
ENVIRONMENTAL

Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center

December 27, 2021

Jon Axline, Historian
Montana Department of Transportation
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620-1001

Re: Billings Bypass – Johnson Lane Interchange

Dear Mr. Axline,

Thank you for the letter and associated materials, received December 22, 2021, regarding the Billings Bypass – Johnson Lane Interchange project in Yellowstone County, Montana. We concur with the following eligibility determinations:

- 24YL0271 – Ineligible
- 24YL0272 – Ineligible
- 24YL0641 – Ineligible
- 24YL1874 – Ineligible

Additionally, we noticed on your map of the survey area that there are several other sites (especially 24YL1871, 24LY1872, and 24YL1873) in very close proximity to your project area. We recommend that you take these sites into consideration when assessing effect.

Please note that our concurrence does not substitute for a good faith effort to consult with interested parties, local government authorities, and American Indian tribes. If you receive a comment that substantially relates to a historic property located within or adjacent to the Area of Potential Effect, please submit it to our office for review, including documentation of how the comment was addressed.

If you have any questions or concerns, do not hesitate to contact me at Laura.Marsh@mt.gov. Thank you for consulting with us.

Sincerely,

Laura Marsh, M.A.
Compliance Officer
Montana State Historic Preservation Office

225 North Roberts Street
P.O. Box 201201
Helena, MT 59620-1201
(406) 444-2694
(406) 444-2696 FAX
montanahistoricalsociety.org

File: MDT – 2021 - 2021122205

Big Sky. Big Land. Big History.
Montana
Historical Society

RECEIVED
JAN 0 5 ...
ENVIRONMENTAL

Historic Preservation
Museum
Outreach & Interpretation
Publications
Research Center

27 December 2021

Mr. Jon Axline
Historian
Environmental Services
Montana Department of Transportation
PO Box 201001
Helena, MT 59620-1001

Ref: IM-CMBL-STPU-NCPD-NHPB 56(53)
Billings Bypass – Johnson Lane Interchange
UPN 4199007

Dear Mr. Axline,

Thank you for consulting with the Montana State Historic Preservation Office (SHPO) regarding the Billings Bypass – Johnson Lane Interchange project. After a review of your consultation package, SHPO continues to concur that 24YL1871, 24YL1872, and 24YL1873 are *not eligible* for listing in the National Register of Historic Places. Thank you for providing site update forms for those properties.

In addition, SHPO concurs with your finding that 24YL2304, 24YL2305, 24YL2306, 24YL2307, and 24YL2308 are *not eligible* for listing in the National Register of Historic Places.

Thank you for providing the necessary information to complete this review. Please feel free to contact me if you have any questions or if I can be of any further assistance. I can be reached at 406.444.7717 or at eric.newcombe@mt.gov.

Sincerely,

Eric Newcombe

Eric Newcombe, M.A.
Historic Architecture Specialist
State Historic Preservation Office
Montana Historical Society
P.O. Box 201202/1301 E. Lockey Avenue
Helena, MT 59602
Eric.Newcombe@mt.gov
(406) 444-7717

File ID: MDOT-2021-2021122207

Attachment 5: Johnson Lane Interchange Subsurface Investigation Report

Billings Bypass Subsurface Investigation Report

Montana Department of Transportation Billings Bypass Project I-90 / Johnson Lane Interchange

NCPD-MT 56(55): UPN 41990007

Billings, MT 59101

Prepared for:

Montana Department of Transportation

2701 Prospect Avenue

P.O. Box 201001

Helena, MT 59620

Prepared by:

West Central Environmental Consultants, Inc.

455 Moore Lane, #2

Billings, MT 59101

January 26, 2021

WCEC Project No. 20-13262-70

TABLE OF CONTENTS

1.0 INTRODUCTION 3

1.1 Site Location 3
1.2 Hydrogeologic Setting 4
1.3 Scope of Work 4

2.0 SUBSURFACE SOIL INVESTIGATION 5

2.1 Subsurface Soil Investigation Overview 5
2.2 Subsurface Soil Investigation Results 6
2.2.1 VPH Results 6
2.2.2 EPH Results 6

3.0 GROUNDWATER INVESTIGATION 7

4.0 SUMMARY & DISCUSSION 8

4.1 Field Work Summary 8
4.2 Discussion of Results 8
4.3 Conclusions 8

5.0 REFERENCES 9

FIGURES

Figure 1: Site Location Maps
Figure 2: Borehole Locations Map

TABLES

Table 1: Soil Boring Sample Locations Summary
Table 2: Soil Boring Analytical Results – VPH/EPH

APPENDICES

Appendix A – Boring Logs
Appendix B – Soil Boring Photographic Log
Appendix C – Laboratory Analytical Reports and Data Validation

1.0 Introduction

On behalf of DOWL, West Central Environmental Consultants, Inc. (WCEC) has prepared this subsurface investigation report for the future reconstruction of the Billings Bypass Project – Interstate 90 / Johnson Lane Interchange in Billings, Montana. DOWL contracted WCEC to perform a subsurface investigation identified in the Montana Department of Transportation's (MDT) right-of-way (ROW) near three underground storage tank (UST) / retail fueling facilities. MDT identified these locations where subsurface investigation was warranted. WCEC completed a subsurface investigation and collected soil samples at the identified locations along the project boundary. Soil samples from each boring location, for a total of 20 samples, were collected for laboratory analysis. Soil borings were pushed to 15 feet below ground surface (bgs), and groundwater samples were to be collected from each boring where groundwater was encountered. Groundwater was not encountered before 15 feet bgs in any of the boring locations during the subsurface investigation. The soil profiles were field-screened using a calibrated photoionization detector (PID) and visual/olfactory evidence, and soil samples were collected to determine if potentially impacted soils would be encountered during future MDT construction activities along the project boundary.

1.1 Site Location

The project area consists of three previously identified areas along MDT's ROW. Site location maps are presented as Figure 1. The identified facilities, addresses, and number of associated borings include:

- Town Pump Pilot Truck Stop (2711 North Frontage Road) – 6 borings to the south and east of the site.
- Town Pump Flying J Truck Stop (2775 Old Hardin Road) – 10 borings to the north, east, and south of the site.
- Casey's Corner Store (2816 Old Hardin Road) – 4 borings to the north and west of the site.

The Public Land Survey System (PLSS) description for the project area is Sections 19 and 30, Township 1 North, Range 27 East. The approximate geographic coordinates of each boring are listed in the boring logs presented in Appendix A. Township, range, and section information was obtained using the United States Department of Agriculture, Billings, Montana 1:12,000 Quadrangle [Figure 1]. Elevation of the project area ranges from approximately 3,100 to 3,140 feet above mean sea level. Photographs taken during the investigation are presented in Appendix B.

1.2 Hydrogeologic Setting

The project area lies approximately 4,000 feet southeast of the Yellowstone River. Subsurface lithology consists primarily of alluvium gravel from the Pleistocene era with underlying terraces about 20 to 40 feet above present elevation of the Yellowstone River (Gosling and Pashley, 1973). The underlying terraces consist of mostly cobbles and pebbles with minor amounts of sand and silt. Clasts are mainly granitic igneous rocks, granitic gneiss, schist, and quartzite, with much less limestone and sandstone approximately 40 to 60 feet thick (Gosling and Pashley, 1973). Terrace deposits, part of the Fort Union Formation, can range to 1,000 feet thick in certain places. The alluvium consists of unconsolidated clay, sand, and gravel [Vuke et al, 2001]. The depth to groundwater varies seasonally from approximately 6 to 15 feet bgs depending on the surface elevation of the Yellowstone River [MBMG, 2020]. The groundwater flow direction is to the northwest towards the Yellowstone River.

1.3 Scope of Work

The objective of the investigation is to evaluate whether subsurface soils and groundwater in MDT's ROW have been impacted by petroleum hydrocarbons, adjacent to the previously identified sites in the project area. This will enable MDT to develop a management plan for contaminated soils and groundwater, if encountered during future construction activities. The subsurface investigation included the following task elements:

- Develop and implement a project health and safety plan and maintain safe work conditions for project personnel at all times.

- Locate underground utilities, obtain an MDT encroachment permit, and provide traffic control for field activities.

- Conduct a subsurface investigation using direct push technology to a depth of approximately 15 feet bgs in the project area to collect soil and any encountered groundwater samples at each boring. Visually log and field screen soil using a calibrated PID.

- Collect soil and groundwater grab samples from each boring. Submit samples under standard chain-of-custody (COC) protocol to Energy Laboratories (Energy) according to standard Montana Department of Environmental Quality (MTDEQ) protocols for petroleum release investigations for extractable petroleum hydrocarbon (EPH) Screen and volatile petroleum hydrocarbon (VPH) analysis.

- Characterize and dispose of any investigation-derived wastes.

- Upon receipt of the analytical results, prepare a draft summary report of findings, including site maps with sampling locations, areas of subsurface contamination, a summary of subsurface conditions, and a summary table of laboratory analytical results. The report will also include appropriate appendices including laboratory reports, bore logs, and a photographic log.

2.0 Subsurface Soil Investigation

2.1 Subsurface Soil Investigation Overview

WCEC directed and supervised a subsurface soil investigation between December 9 and December 11, 2020, at the project area. Prior to initiation of field activities, WCEC coordinated an underground utility locate which encompassed the entire project boundary in the MDT ROW of Interstate 90, Johnson Lane, North Frontage Road, and Old Hardin Road. WCEC personnel mobilized to the site, conducted a brief site walkover, in which underground utilities present in the investigation area were discussed and identified. WCEC conducted a site safety meeting to discuss potential issues with the site.

The soil investigation commenced on the morning of December 9, 2020. A Geoprobe model 7822 direct push technology (DPT) drill rig was used to advance the soil borings during the investigation. Soil borings were completed at 20 distinct horizontal locations in the previously identified areas. Soil boring sample locations are summarized in Table 1 and are displayed graphically on Figure 2.

WCEC personnel continuously field screened soils using a Rae Systems MiniRae™ 3000 PID using a heated headspace method, as well as visual and olfactory evidence to determine which horizons may be impacted. The PID was calibrated daily using fresh air and span gas calibration points. Isobutylene span gas at a concentration of 100 parts per million (ppm) was used in the calibration procedure. Soil samples were collected and handled according to WCEC standard operating procedures (SOPs) and in accordance with the MTDEQ requirements.

The soil samples were placed in method-specific, laboratory-provided containers, preserved if necessary, and packed on ice for shipment under COC protocol to Energy in Billings, Montana. Energy was instructed to analyze the samples for VPH and EPH Screen. If the EPH screen exceeded 200 milligrams per kilogram (mg/kg), the sample was also analyzed for total extractable hydrocarbons (TEH) fractions.

WCEC surveyed the soil sample locations using a Trimble Geo 7x centimeter-grade GPS. The raw GPS data was post-processed through Trimble Pathfinder Office software. Horizontal coordinates were exported to

the North American Datum of 1983 Montana State Plane Coordinate System in units of United States Survey Feet. Vertical coordinates were exported to the North American Vertical Datum of 1988 in units of United States Survey Feet.

2.2 Subsurface Soil Investigation Results

A total of 20 soil samples were collected during the subsurface investigation and submitted to Energy for analysis. The results from the soil samples are listed in Table 2. The following sections summarize the results from the soil boring samples for each analytical method. The soil results were compared to the applicable MTDEQ Risk-Based Screening Levels (RBSLs) [MTDEQ, 2018] to determine regulatory compliance. The complete laboratory analytical data package along with the data validation form are included in Appendix C.

2.2.1 VPH Results

All VPH constituents in the soil samples collected were below the RBSLs for all constituents of concern [Table 2].

2.2.2 EPH Results

All EPH constituents in the soil samples collected were below the RBSLs for all constituents of concern [Table 2].

3.0 Groundwater Investigation

Groundwater samples were to be collected in each boring where groundwater was encountered. All borings were advanced to 15 bgs and no groundwater was encountered in any boring at this depth. To attempt to establish groundwater levels, WCEC advanced the first boring to a depth of 20 bgs, installed a temporary piezometer, and allowed it to collect groundwater overnight. The next day, depth to water was recorded in the piezometer at 17.55 feet bgs. This depth is consistent with historical records from the local area and the low-water season of the nearby Yellowstone River. A field determination was made by MDT to continue advancing the borings to 15 feet bgs and, if groundwater was not encountered, only collect soil samples from each boring.

4.0 Summary & Discussion

4.1 Field Work Summary

WCEC conducted a subsurface soil investigation at the site between December 9 and December 11, 2020. A total of 20 soil samples were obtained from 20 distinct locations in previously identified areas of concern for MDT along the interchange of Interstate 90 and Johnson Lane in Billings, Montana. All collected samples were packed on ice and transported to Energy in Billings, Montana for laboratory analysis.

Groundwater samples were to be collected from each boring if groundwater was encountered. Groundwater was not encountered to 15 bgs in any of the advanced soil borings, hence no groundwater samples were collected during this investigation.

4.2 Discussion of Results

The subsurface soil investigation results indicated that petroleum impacts were not identified at the 20 soil boring locations completed within the investigation areas.

4.3 Conclusions

Based on the cumulative results from the subsurface soil investigation completed in December 2020, WCEC believes that the objectives for the scope of work listed in Section 1.3 of this report have been satisfied. No soil impacts above RBSLs were identified during the investigation. Based on this information, WCEC concludes that further investigation of potential petroleum impacts are not warranted in the areas of subsurface investigation along the project boundary.

5.0 References

Montana Bureau of Mines & Geology. (MBMG, 2020). Groundwater Information Center. Website accessed on August 31, 2020: https://mbmggwic.mtech.edu/.

Montana Department of Environmental Quality. (MTDEQ, 2018). *Montana Risk-Based Corrective Action Guidance for Petroleum Releases*. May 2018.

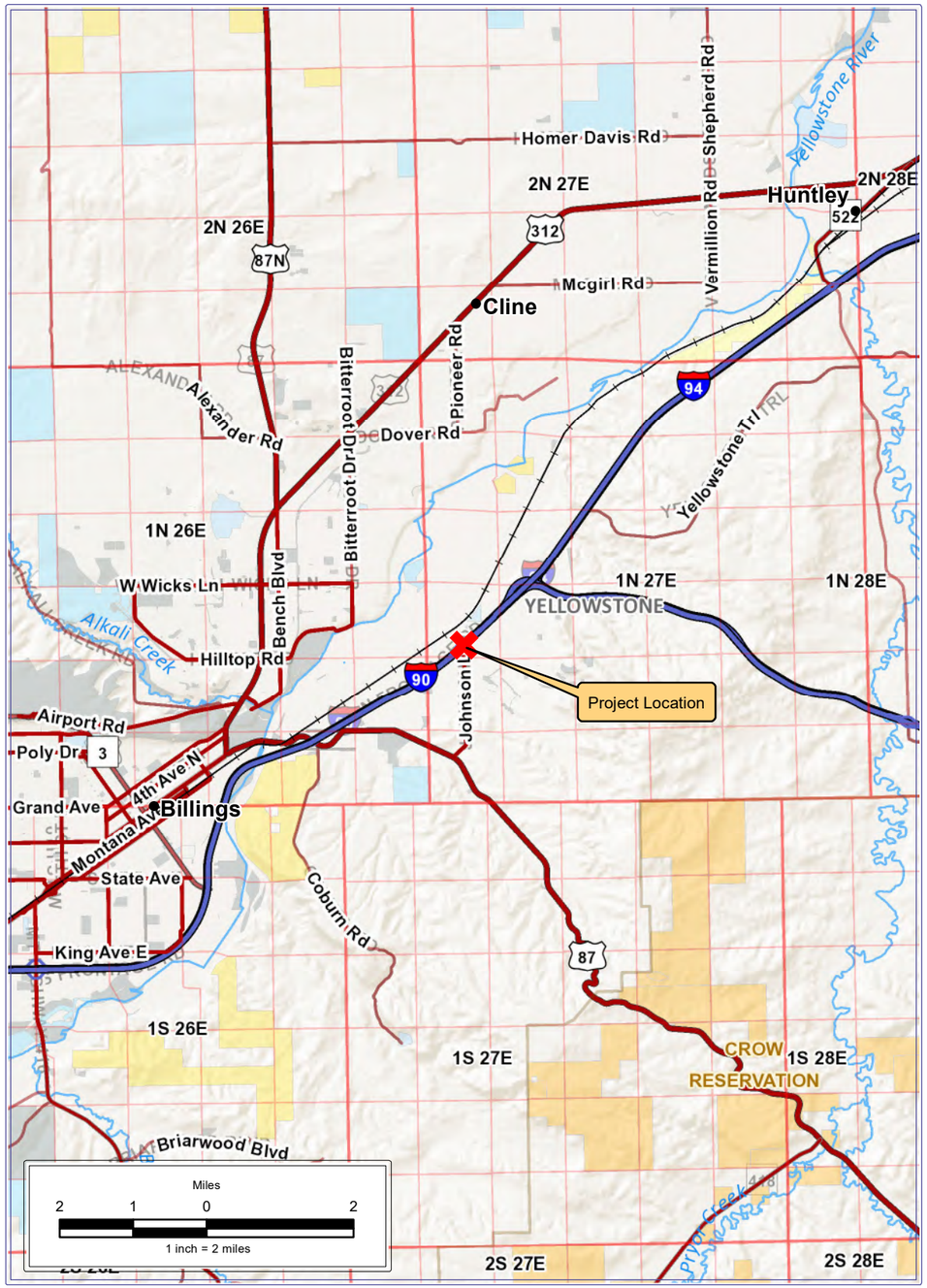
Vuke, S. M., Luft, S. J.,Colton, R. B, and Heffern, E. L. 2001. Geologic Map of the Miles City 30' x 60' Quadrangle, Montana; Montana Bureau of Mines and Geology. Open File Report 426.

Gosling, A.W., and Pashley, E.F., Jr. 1973. *Water resources of the Yellowstone River valley, Billings to Park City, Montana: U.S. Geological Survey Hydrologic Investigations.* Atlas HA-454, 1 sheet, scale 1:48,000.

List of Figures

Figure 1: Site Location Maps

Figure 2: Borehole Locations Map



LEGEND

✖ Site Location

N

Site Location Maps

MDT Subsurface Investigation
I-90 Johnson Lane Interchange
Billings, MT 59101

DRAWN BY: MM
DATE: 12/17/20
SCALE: 1:12,000

PROJECT NUMBER: 20-13262-70

IMAGE SOURCE: ESRI BASEMAPS

WCEC
ENVIRONMENTAL CONSULTANTS

FIGURE 1

Soil Borehole

N

300 150 0 1 inch = 300 feet 300

Borehole Locations Map

MDT Subsurface Investigation
I-90 Johnson Lane Interchange
Billings, MT 59101

DRAWN BY: MM
DATE: 12/17/20
SCALE: 1:3,600

PROJECT NUMBER: 20-13262-70
IMAGE SOURCE: ESRI World

WCEC
ENVIRONMENTAL CONSULTANTS

FIGURE 2

List of Tables

Table 1: Soil Boring Sample Locations Summary

Table 2: Soil Boring Analytical Results – VPH/EPH

TABLE 1
Soil Boring Sample Locations Summary
Billings Bypass Project I-90 / Johnson Lane Interchange
Billings, Montana

Sample ID	Depth Interval (ft)	Approximate Location	Highest PID (ppm)	Comments
SB1	20	East Side of Town Pump Pilot	0.5	This soil boring was advanced east of Town Pump Pilot and west of Johnson Lane.
SB2	15	East Side of Town Pump Pilot	0.3	This soil boring was advanced east of Town Pump Pilot and west of Johnson Lane.
SB3	15	East Side of Town Pump Pilot	0.1	This soil boring was advanced east of Town Pump Pilot and west of Johnson Lane.
SB4	15	Southwest of Town Pump Pilot	1.3	This soil boring was advanced southwest of Town Pump Pilot near the Frontage Road.
SB5	15	South of Town Pump Pilot	0.2	This soil boring was advanced south of Town Pump Pilot's USTs near the Frontage Road.
SB6	15	South of Town Pump Pilot	0.3	This soil boring was advanced south of Town Pump Pilot's USTs near the Frontage Road.
SB7	15	North of Town Pump Flying J	0.2	This soil boring was advanced north of Town Pump Flying J.
SB8	15	North of Town Pump Flying J	0.3	This soil boring was advanced north of Town Pump Flying J's USTs.
SB9	15	North of Town Pump Flying J	0.2	This soil boring was advanced north of Town Pump Flying J's USTs.
SB10	15	North of Town Pump Flying J	0.1	This soil boring was advanced north of Town Pump Flying J commercial building.
SB11	15	North of Town Pump Flying J	2.1	This soil boring was advanced northeast of Town Pump Flying J commercial building.
SB12	15	East of Town Pump Flying J	0.6	This soil boring was advanced east of Town Pump Flying J parking area.
SB13	15	East of Town Pump Flying J	0.4	This soil boring was advanced east of Town Pump Flying J parking area.
SB14	15	East of Town Pump Flying J	0.5	This soil boring was advanced southeast of Town Pump Flying J parking area.
SB15	15	South of Town Pump Flying J	0.3	This soil boring was advanced south of Town Pump Flying J parking area near Old Hardin Road.
SB16	15	South of Town Pump Flying J	1.1	This soil boring was advanced south of Town Pump Flying J parking area near Old Hardin Road.

Sample ID	Depth Interval (ft)	Approximate Location	Highest PID (ppm)	Comments
SB17	15	North of Casey's	0.2	This soil boring was advanced north of Casey's parking area near Old Hardin Road.
SB18	15	North of Casey's	0.6	This soil boring was advanced north of Casey's parking area near Old Hardin Road.
SB19	15	West of Casey's	0.6	This soil boring was advanced west of Casey's parking area near Johnson Lane.
SB20	15	West of Casey's	0.4	This soil boring was advanced west of Casey's parking area near Johnson Lane.

PID = photoionization detector

ppm = parts per million

TABLE 2

Soil Boring Analytical Results - VPH/EPH
Billings Bypass Project I-90 / Johnson Lane Interchange
Billings, Montana

All values reported in mg/kg

Sample Location	Sample Date	Aromatic VPH Constituents							Aliphatic VPH Constituents			EPH Screen
		MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	C9-C10 Aromatics	C5-C8 Aliphatics	C9-C12 Aliphatics	TPH	
SB1	12/09/20	<0.12	<0.061	<0.061	<0.061	<0.061	<0.12	<2.4	<2.4	<2.4	<2.4	12
SB2	12/09/20	<0.12	<0.062	<0.062	<0.062	<0.062	<0.12	<2.5	<2.5	<2.5	<2.5	<12
SB3	12/09/20	<0.11	<0.057	<0.057	<0.057	<0.057	<0.11	<2.3	<2.3	<2.3	<2.3	<11
SB4	12/09/20	<0.11	<0.056	<0.056	<0.056	<0.056	<0.11	<2.2	<2.2	<2.2	<2.2	<11
SB5	12/09/20	<0.12	<0.059	<0.059	<0.059	<0.059	<0.12	<2.4	<2.4	<2.4	<2.4	<12
SB6	12/09/20	<0.12	<0.058	<0.058	<0.058	<0.058	<0.12	<2.3	<2.3	<2.3	<2.3	<12
SB7	12/10/20	<0.11	<0.056	<0.056	<0.056	<0.056	<0.11	<2.2	<2.2	<2.2	<2.2	<11
SB8	12/10/20	<0.11	<0.057	<0.057	<0.057	<0.057	<0.11	<2.3	<2.3	<2.3	<2.3	12
SB9	12/10/20	<0.12	<0.058	<0.058	<0.058	<0.058	<0.12	<2.3	<2.3	<2.3	<2.3	<12
SB10	12/10/20	<0.13	<0.064	<0.064	<0.064	<0.064	<0.13	<2.5	<2.5	<2.5	<2.5	<13
SB11	12/10/20	<0.11	<0.056	<0.056	<0.056	<0.056	<0.11	<2.2	<2.2	<2.2	<2.2	<11
SB12	12/10/20	<0.11	<0.054	<0.054	<0.054	<0.054	<0.11	<2.2	<2.2	<2.2	<2.2	<11
SB13	12/10/20	<0.12	<0.059	<0.059	<0.059	<0.059	<0.12	<2.4	<2.4	<2.4	<2.4	<12
SB14	12/10/20	<0.11	<0.057	<0.057	<0.057	<0.057	<0.11	<2.3	<2.3	<2.3	<2.3	<11
SB15	12/10/20	<0.11	<0.055	<0.055	<0.055	<0.055	<0.11	<2.2	<2.2	<2.2	<2.2	<11
SB16	12/10/20	<0.12	<0.060	<0.060	<0.060	<0.060	<0.12	<2.4	<2.4	<2.4	<2.4	<12
SB17	12/11/20	<0.12	<0.060	<0.060	<0.060	<0.060	<0.12	<2.4	<2.4	<2.4	<2.4	<12
SB18	12/11/20	<0.12	<0.059	<0.059	<0.059	<0.059	<0.12	<2.3	<2.3	<2.3	<2.3	<12
SB19	12/11/20	<0.12	<0.060	<0.060	<0.060	<0.060	<0.12	<2.4	<2.4	<2.4	<2.4	<12
SB20	12/11/20	<0.11	<0.056	<0.056	<0.056	<0.056	<0.11	<2.2	<2.2	<2.2	<2.2	<11
RBSLs[(a)]		0.078	0.07	21	26	320	12	130	220	640	--	--

[(a)] Montana Department of Environmental Quality Risk-Based Screening Levels (RBSLs), commerical soil, <10 ft to groundwater (May 2018)

20-13262-70

VPH = volatile petroleum hydrocarbons

EPH = extractable petroleum hydrocarbons

TPH = total purgeable hydrocarbons

mg/kg = milligrams per kilograms

-- = not analyzed or no RBSL

Appendix A – Boring Logs

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB1**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/9/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**10:20 AM**
DRILLER:	**Liam MacDonald**	-end:	**13:00 PM**
DRILLING METHOD:	**Direct Push**	GPS Location	

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0 - 1ft., Gravel fill material; moist;					
							1 - 3ft., dark brown silty loam; moist; small cobbles <2 cm					
						CL	3 - 5ft., brown to dark brown, silty clay; moist; low plasticity; No HC odor/staining			0.3		
5							Rock push, little recovery. Brown silty clay; moist; low plasticity					
10							Same as above			0.2		
							Δ11-20' light brown to brown silty clay; moist; med plasticity; No HC odor/staining					
15											LS	
									WL			
20							End of Boring @ 20ft.			0.5		
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/9/2020			**WL observed at 17.55 bgs on next day**	**No FP observed**

Comments:

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB2**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/9/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**1:20 PM**
DRILLER:	**Liam MacDonald**	-end:	**1:25 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1.5 ft unconsolidated fill, brown to dark brown, gravel < 2cm					gravel fill
						SP	1.5-13 ft. Light brown, silty loam, moist, low plasticity No HC odor/staining					sandy loam
5							Same as above			0.3		silty loam
10							Same as above			0.1		
						CL	13.5-15ft. Light brown silty clay, medium plasticity, moist, No HC odor/staining				LS	Caly
15							End of Boring @ 15ft.			0.0		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/9/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (1:30 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB3**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/9/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**1:45 PM**
DRILLER:	**Liam MacDonald**	-end:	**2:00 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-6in. Unconsolidated fill material, brown/dark brown, cobbles					gravel fill
						SP	6in.-15ft. Sandy loam , light brown, moist No HC, powdery			0.6		sandy loam
5							Same as above			1.1		
10							Same as above			1.3	LS	
15							End of Boring @ 15ft.					
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/9/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (2:00 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB4**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/9/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**2:25 PM**
DRILLER:	**Liam MacDonald**	-end:	**2:45 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1ft. Unconsolidated fill material, brown, small pebbles <2cm.					
						SC	1-15ft. silty loam, light brown, moist No HC			1.1		
5							Same as above					
10							Same as above			1.0		
15							End of Boring @ 15ft.			1.3	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/9/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (2:35 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB5**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/9/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**2:50 PM**
DRILLER:	**Liam MacDonald**	-end:	**3:10 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1ft. Asphalt, unconsolidated fill material, greyish brown					
						CL	1-3ft. silty loam, brown, moist, medium plasticity No HC observed					
						ML	3-5ft. Clay loam, brown, moist No HC			0.0		
5						SC	5-15ft. Silty loam, brown, moist No HC					
10							Same as above			0.2		
											LS	
15							End of Boring @ 15ft.			0.1		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/9/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (3:05 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB6**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/9/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**3:15 PM**
DRILLER:	**Liam MacDonald**	-end:	**3:35 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1.5ft. Asphalt, unconsolidated fill material, grey					gravel fill
						ML	1.5-8ft. Silty clay loam, low plasticity, moist, brown No HC observed			0.1		sandy loam / silty loam / clay loam
5							Same as above					
						SC	8-15ft. Silty loam, brown, moist No HC			0.3		
10							Same as above					
											LS	
15							End of Boring @ 15ft.			0.2		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/9/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (3:27 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB7**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**9:35 AM**
DRILLER:	**Liam MacDonald**	-end:	**9:55 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1ft. Brown loam, moist, rigid					
							1-13ft. silty loam, light brown/brown, moist, powdery No HC observed			0.0		
5												
10							Same as above			0.2		
						ML	Δ13-14ft. Brown clayey loam, moist No HC				LS	
15							14-15ft. Return to brown silty loam, moist No HC			0.1		
							End of Boring @ 15ft.					
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (09:50 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB8**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**10:05 AM**
DRILLER:	**Liam MacDonald**	-end:	**10:40 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1ft. Brown loam, moist					
							1-13ft. silty loam, light brown, powdery, moist No HC observed			0.1		
5							Same as above					
							Very little recovery, powdery					
10							Same as above			0.0		
						ML	13-14ft. Brown clayey loam, low plasticity, moist				LS	
15							14-15ft. Brown silty loam, moist No HC			0.3		
							End of Boring @ 15ft.					
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (10:35 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB9**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**10:50 AM**
DRILLER:	**Liam MacDonald**	-end:	**11:22 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0												
						SM	0-6ft. Brown loam, moist, rigid compact sand silt and clay No HC observed					
										0.2		
5							Same as above					
						ML	6-13ft. Silty clay loam, brown, moist, low plasticity No HC					
10							Same as above			0.0		
							13-15ft. Silty loam, brown, moist No HC				LS	
15							End of Boring @ 15ft.			0.0		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (11:17 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB10**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**11:30 AM**
DRILLER:	**Liam MacDonald**	-end:	**11:40 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-4ft. Brown silty clayey loam, moist No HC observed					
										0.0		
5						CL	4-6ft. Clayey loam, brown, moist, low-medium plasticity; No HC observed					
							Same as above					
							6-13.5ft. Silty loam, brown, moist No HC					
10							Same as above			0.0		
						CL	13.5-15ft. Silty clay, brown, moist, low-medium plasticity No HC				LS	
15							End of Boring @ 15ft.			0.1		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (11:40 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB11**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**1:05 PM**
DRILLER:	**Liam MacDonald**	-end:	**1:40 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0						ML	0-1ft. Dark brown loam, moist, rigid, dense compact clay and silt No HC observed					
							1-15ft. Light brown to brown silty loam, powdery, moist No HC			0.4		
5							Same as above/very little recovery					
10							Same as above			2.1		
							Δ13ft. Small amounts of clay added to above				LS	
15							End of Boring @ 15ft.			0.9		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (1:30 pM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB12**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**1:50 PM**
DRILLER:	**Liam MacDonald**	-end:	**2:05 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0												
						ML	0-15ft. Silty loam, ridgid compact silt and clay, dark brown to brown No HC					
										0.0		
5							Same as above					
							Δ7ft. Change in color to light brown, same consistancy as above					
10							Same as above			0.0		
											LS	
15							End of Boring @ 15ft.			0.6		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (2:00 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB13**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**2:20 PM**
DRILLER:	**Liam MacDonald**	-end:	**2:40 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1.5ft. Brown loam, moist, rigid compact clay and silt No HC observed					
						ML						
							1.5-7ft. Silty loam, light brown, powdery, moist No HC			0.0		
5							Same as above					
							7-15ft. Silty-sandy loam, light brown to brown, powder, moist No HC					
						SM						
10							Same as above			0.0		
											LS	
15							End of Boring @ 15ft.			0.1		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (2:30 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB14**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**2:40 PM**
DRILLER:	**Liam MacDonald**	-end:	**3:20 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-5ft. Silty clayey loam, brown, ridgid compact silt and clay, low plasticity No HC observed					
						ML						
										0.1		
5							5-15ft. Silty loam, light brown, moist, powdery No HC					
10							Same as above			0.0		
											LS	
15							End of Boring @ 15ft.			0.5		
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (3:15 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB15**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**3:30 PM**
DRILLER:	**Liam MacDonald**	-end:	**3:50 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0												
						ML	0-5ft. Silty clayey loam, brown, ridgid compact silt and clay No HC observed					
5							5-15ft. Silty loam, light brown, moist, little to no plasticity No HC			0.1		
10							Same as above			0.2		
15							End of Boring @ 15ft.			0.3	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (3:45 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB16**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/10/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**4:00 PM**
DRILLER:	**Liam MacDonald**	-end:	**4:25 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-10ft. Silty clay loam. Brown, rigid, dense compact clay and silt No HC observed					
						ML						
5							Same as above			0.1		
10							10-15ft. Silty clayey loam, light brown, moist No HC			0.6		
15							End of Boring @ 15ft.			1.1	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/10/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (4:25 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB17**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/11/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**9:45 AM**
DRILLER:	**Liam MacDonald**	-end:	**10:40 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1ft. Dark brown loam and fill material lithic fragments <2cm					
							1-10ft. Loamy clay, brown, moist, low-mid plasticity					
						SC						
5							Same as above with small lithic fragments			0.0		
10							10-15ft. Silty clayey loam, brown to dark brown, moist, low plasticity No HC observed			0.1		
						ML						
15							End of Boring @ 15ft.			0.2	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/11/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (10:30 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB18**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/11/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**10:50 AM**
DRILLER:	**Liam MacDonald**	-end:	**11:10 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1.5ft. Dark brown loam with fill material and cobbles <3cm					
						ML	1.5-15ft. Silty clayey loam, light brown, low plasticity, moist No HC observed					
5							Same as above			0.1		
10							Same as above			0.2		
15							End of Boring @ 15ft.			0.6	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/11/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (11:00 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB19**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/11/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**11:15 AM**
DRILLER:	**Liam MacDonald**	-end:	**11:50 AM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-2ft. Dark brown loam with fill material, some cobbles <3cm No HC observed					
						ML	2-15ft. Silty clayey loam, light brown, moist, low plasticity No HC					
5							Same as above			0.0		
10							Same as above			0.4		
15							End of Boring @ 15ft.			0.6	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/11/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (11:45 AM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

WCEC SOIL BORING LOG

WCEC PROJECT No:	**20-13262-70**	BORING #:	**SB20**
PROJECT NAME:	**Billings Bypass I-90/Johnson Lane Interchange**	DATE:	**12/11/2020**
DRILLING COMPANY:	**WCEC, Inc.**	TIME -start:	**12:00 PM**
DRILLER:	**Liam MacDonald**	-end:	**12:15 PM**
DRILLING METHOD:	**Direct Push**		

WCEC ENVIRONMENTAL CONSULTANTS

Depth (feet)	Sampling Information T	A	R	B	N	ASTM	Material Description	Geologic Origin	WL	PID (ppm)	Sample Analysis	Lithology symbol
0							0-1.5ft. Dark brown loam and fill material, lithic fragments <2cm No HC observed					
						ML	1.5-7ft. Silty cleyey loam, brown, moist, low plasticity No HC					
5							Same as above			0.4		
							7-15ft. Silty loam, light brown, moist No HC					
10							Same as above			0.1		
15							End of Boring @ 15ft.			0.4	LS	
20												
25												

Water Level Measurements

Date	Time	Elapsed Time	Water Level	Product Level
12/11/2020			**No water encountered**	**No FP observed**

Comments: LS @ 15ft. (12:10 PM)

HC = hydrocarbon

GPS location collected with Trimble Geo7x

gravel fill
sandy loam
silty loam
clay loam

KEY

Sampling Info:
T = sample type
A = attempt
R = recovery
B = blow count
N = N value

Definitions:
WL = Water Level
Elapsed time = time between end of drilling & sampling.

Sample Types:
MS = macro
LB = large bore
DT = Dual Tube
SP15 = Screen point
HA = hand auger
SS = split spoon

Analysis:
LS = lab soil sample
LW =lab water sample

Appendix B – Soil Boring Photographic Log

PHOTO 1: Corner of Johnson Ln & Frontage Road looking north (SB1 – SB3).

PHOTO 2: South of Town Pump Pilot looking north (SB4).

.

PHOTOGRAPHIC LOG

MDT Subsurface Investigation
Billings Bypass Project I-90/Johnson Ln Interchange
Billings, MT

DATE: 01/04/21	SCALE: N/A
PROJECT NO: 13262	

WCEC
ENVIRONMENTAL CONSULTANTS

PHOTO 3: North of Town Pump Flying J looking northeast (SB8 – SB11).

PHOTO 4: West of Casey's looking north (SB19 – SB20).

.

PHOTOGRAPHIC LOG

MDT Subsurface Investigation
Billings Bypass Project I-90/Johnson Ln Interchange
Billings, MT

DATE: 01/04/21	SCALE: N/A
PROJECT NO: 13262	

WCEC
ENVIRONMENTAL CONSULTANTS

Appendix C – Laboratory Analytical Reports and Data Validation

ANALYTICAL SUMMARY REPORT

December 18, 2020

MT Dept of Transportation
PO Box 201001
Helena, MT 59620-1001

Work Order: B20121111

Project Name: MDT Billings Bypass Project I-90/Johnson Ln Interc

Energy Laboratories Inc Billings MT received the following 20 samples for MT Dept of Transportation on 12/11/2020 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B20121111-001	SB1	12/09/20 12:15	12/11/20	Soil	EPH-Ultrasonic Extraction SW3550C Methanol Extraction for Volatiles SW5035 Hydrocarbons, Extractable Petroleum-Scrn Volatile Petroleum Hydrocarbons Moisture Moisture Prep SW3550C Percent Moisture
B20121111-002	SB2	12/09/20 13:30	12/11/20	Soil	Same As Above
B20121111-003	SB3	12/09/20 14:00	12/11/20	Soil	Same As Above
B20121111-004	SB4	12/09/20 14:35	12/11/20	Soil	Same As Above
B20121111-005	SB5	12/09/20 15:05	12/11/20	Soil	Same As Above
B20121111-006	SB6	12/09/20 15:27	12/11/20	Soil	Same As Above
B20121111-007	SB7	12/10/20 9:50	12/11/20	Soil	Same As Above
B20121111-008	SB8	12/10/20 10:35	12/11/20	Soil	Same As Above
B20121111-009	SB9	12/10/20 11:17	12/11/20	Soil	Same As Above
B20121111-010	SB10	12/10/20 11:40	12/11/20	Soil	Same As Above
B20121111-011	SB11	12/10/20 13:30	12/11/20	Soil	Same As Above
B20121111-012	SB12	12/10/20 14:00	12/11/20	Soil	Same As Above
B20121111-013	SB13	12/10/20 14:30	12/11/20	Soil	Same As Above
B20121111-014	SB14	12/10/20 15:15	12/11/20	Soil	Same As Above
B20121111-015	SB15	12/10/20 15:45	12/11/20	Soil	Same As Above
B20121111-016	SB16	12/10/20 16:25	12/11/20	Soil	Same As Above
B20121111-017	SB17	12/11/20 10:30	12/11/20	Soil	Same As Above
B20121111-018	SB18	12/11/20 11:00	12/11/20	Soil	Same As Above
B20121111-019	SB19	12/11/20 11:45	12/11/20	Soil	Same As Above
B20121111-020	SB20	12/11/20 12:10	12/11/20	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

ANALYTICAL SUMMARY REPORT

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-001
Client Sample ID: SB1

Report Date: 12/18/20
Collection Date: 12/09/20 12:15
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	18	wt%		0.2		SW3550C	12/15/20 11:00 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/16/20 13:30 / jp
Benzene	ND	mg/kg-dry		0.061	0.07	MA-VPH	12/16/20 13:30 / jp
Toluene	ND	mg/kg-dry		0.061	21	MA-VPH	12/16/20 13:30 / jp
Ethylbenzene	ND	mg/kg-dry		0.061	6.4	MA-VPH	12/16/20 13:30 / jp
m+p-Xylenes	ND	mg/kg-dry		0.061		MA-VPH	12/16/20 13:30 / jp
o-Xylene	ND	mg/kg-dry		0.061		MA-VPH	12/16/20 13:30 / jp
Xylenes, Total	ND	mg/kg-dry		0.061	72	MA-VPH	12/16/20 13:30 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/16/20 13:30 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	130	MA-VPH	12/16/20 13:30 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	52	MA-VPH	12/16/20 13:30 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	77	MA-VPH	12/16/20 13:30 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.4		MA-VPH	12/16/20 13:30 / jp
Surr: VPH Aromatics Surrogate	94.0	%REC		70-130		MA-VPH	12/16/20 13:30 / jp
Surr: VPH Aliphatics Surrogate	105	%REC		70-130		MA-VPH	12/16/20 13:30 / jp
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	12	mg/kg-dry	J	12	200	SW8015M	12/16/20 17:34 / amn
Surr: o-Terphenyl	63.0	%REC		40-140		SW8015M	12/16/20 17:34 / amn
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							

Report Definitions:

RL - Analyte Reporting Limit
QCL - Quality Control Limit
J - Estimated value - analyte was present but less than the Reporting Limit (RL)
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-002
Client Sample ID: SB2

Report Date: 12/18/20
Collection Date: 12/09/20 13:30
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	20	wt%		0.2		SW3550C	12/15/20 11:14 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/17/20 08:48 / jp
Benzene	ND	mg/kg-dry		0.062	0.07	MA-VPH	12/17/20 08:48 / jp
Toluene	ND	mg/kg-dry		0.062	21	MA-VPH	12/17/20 08:48 / jp
Ethylbenzene	ND	mg/kg-dry		0.062	6.4	MA-VPH	12/17/20 08:48 / jp
m+p-Xylenes	ND	mg/kg-dry		0.062		MA-VPH	12/17/20 08:48 / jp
o-Xylene	ND	mg/kg-dry		0.062		MA-VPH	12/17/20 08:48 / jp
Xylenes, Total	ND	mg/kg-dry		0.062	72	MA-VPH	12/17/20 08:48 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/17/20 08:48 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.5	130	MA-VPH	12/17/20 08:48 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.5	52	MA-VPH	12/17/20 08:48 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.5	77	MA-VPH	12/17/20 08:48 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.5		MA-VPH	12/17/20 08:48 / jp
Surr: VPH Aromatics Surrogate	96.0	%REC		70-130		MA-VPH	12/17/20 08:48 / jp
Surr: VPH Aliphatics Surrogate	106	%REC		70-130		MA-VPH	12/17/20 08:48 / jp
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/16/20 20:31 / amn
Surr: o-Terphenyl	62.0	%REC		40-140		SW8015M	12/16/20 20:31 / amn
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-003
Client Sample ID: SB3

Report Date: 12/18/20
Collection Date: 12/09/20 14:00
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	12	wt%		0.2		SW3550C	12/15/20 11:26 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/16/20 17:05 / jp
Benzene	ND	mg/kg-dry		0.057	0.07	MA-VPH	12/16/20 17:05 / jp
Toluene	ND	mg/kg-dry		0.057	21	MA-VPH	12/16/20 17:05 / jp
Ethylbenzene	ND	mg/kg-dry		0.057	6.4	MA-VPH	12/16/20 17:05 / jp
m+p-Xylenes	ND	mg/kg-dry		0.057		MA-VPH	12/16/20 17:05 / jp
o-Xylene	ND	mg/kg-dry		0.057		MA-VPH	12/16/20 17:05 / jp
Xylenes, Total	ND	mg/kg-dry		0.057	72	MA-VPH	12/16/20 17:05 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/16/20 17:05 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.3	130	MA-VPH	12/16/20 17:05 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.3	52	MA-VPH	12/16/20 17:05 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.3	77	MA-VPH	12/16/20 17:05 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.3		MA-VPH	12/16/20 17:05 / jp
Surr: VPH Aromatics Surrogate	95.0	%REC		70-130		MA-VPH	12/16/20 17:05 / jp
Surr: VPH Aliphatics Surrogate	98.0	%REC		70-130		MA-VPH	12/16/20 17:05 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/16/20 21:15 / amn
Surr: o-Terphenyl	74.0	%REC		40-140		SW8015M	12/16/20 21:15 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-004
Client Sample ID: SB4

Report Date: 12/18/20
Collection Date: 12/09/20 14:35
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	10	wt%		0.2		SW3550C	12/15/20 11:34 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 09:25 / jp
Benzene	ND	mg/kg-dry		0.056	0.07	MA-VPH	12/17/20 09:25 / jp
Toluene	ND	mg/kg-dry		0.056	21	MA-VPH	12/17/20 09:25 / jp
Ethylbenzene	ND	mg/kg-dry		0.056	6.4	MA-VPH	12/17/20 09:25 / jp
m+p-Xylenes	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 09:25 / jp
o-Xylene	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 09:25 / jp
Xylenes, Total	ND	mg/kg-dry		0.056	72	MA-VPH	12/17/20 09:25 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 09:25 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	130	MA-VPH	12/17/20 09:25 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	52	MA-VPH	12/17/20 09:25 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	77	MA-VPH	12/17/20 09:25 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2		MA-VPH	12/17/20 09:25 / jp
Surr: VPH Aromatics Surrogate	95.0	%REC		70-130		MA-VPH	12/17/20 09:25 / jp
Surr: VPH Aliphatics Surrogate	106	%REC		70-130		MA-VPH	12/17/20 09:25 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/16/20 21:59 / amn
Surr: o-Terphenyl	73.0	%REC		40-140		SW8015M	12/16/20 21:59 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-005
Client Sample ID: SB5

Report Date: 12/18/20
Collection Date: 12/09/20 15:05
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	15	wt%		0.2		SW3550C	12/15/20 11:53 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/16/20 18:54 / jp
Benzene	ND	mg/kg-dry		0.059	0.07	MA-VPH	12/16/20 18:54 / jp
Toluene	ND	mg/kg-dry		0.059	21	MA-VPH	12/16/20 18:54 / jp
Ethylbenzene	ND	mg/kg-dry		0.059	6.4	MA-VPH	12/16/20 18:54 / jp
m+p-Xylenes	ND	mg/kg-dry		0.059		MA-VPH	12/16/20 18:54 / jp
o-Xylene	ND	mg/kg-dry		0.059		MA-VPH	12/16/20 18:54 / jp
Xylenes, Total	ND	mg/kg-dry		0.059	72	MA-VPH	12/16/20 18:54 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/16/20 18:54 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	130	MA-VPH	12/16/20 18:54 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	52	MA-VPH	12/16/20 18:54 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	77	MA-VPH	12/16/20 18:54 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.4		MA-VPH	12/16/20 18:54 / jp
Surr: VPH Aromatics Surrogate	94.0	%REC		70-130		MA-VPH	12/16/20 18:54 / jp
Surr: VPH Aliphatics Surrogate	99.0	%REC		70-130		MA-VPH	12/16/20 18:54 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/16/20 22:44 / amn
Surr: o-Terphenyl	73.0	%REC		40-140		SW8015M	12/16/20 22:44 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-006
Client Sample ID: SB6

Report Date: 12/18/20
Collection Date: 12/09/20 15:27
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	14	wt%		0.2		SW3550C	12/15/20 11:53 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/16/20 20:05 / jp
Benzene	ND	mg/kg-dry		0.058	0.07	MA-VPH	12/16/20 20:05 / jp
Toluene	ND	mg/kg-dry		0.058	21	MA-VPH	12/16/20 20:05 / jp
Ethylbenzene	ND	mg/kg-dry		0.058	6.4	MA-VPH	12/16/20 20:05 / jp
m+p-Xylenes	ND	mg/kg-dry		0.058		MA-VPH	12/16/20 20:05 / jp
o-Xylene	ND	mg/kg-dry		0.058		MA-VPH	12/16/20 20:05 / jp
Xylenes, Total	ND	mg/kg-dry		0.058	72	MA-VPH	12/16/20 20:05 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/16/20 20:05 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.3	130	MA-VPH	12/16/20 20:05 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.3	52	MA-VPH	12/16/20 20:05 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.3	77	MA-VPH	12/16/20 20:05 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.3		MA-VPH	12/16/20 20:05 / jp
Surr: VPH Aromatics Surrogate	91.0	%REC		70-130		MA-VPH	12/16/20 20:05 / jp
Surr: VPH Aliphatics Surrogate	98.0	%REC		70-130		MA-VPH	12/16/20 20:05 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/16/20 23:28 / amn
Surr: o-Terphenyl	79.0	%REC		40-140		SW8015M	12/16/20 23:28 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-007
Client Sample ID: SB7

Report Date: 12/18/20
Collection Date: 12/10/20 09:50
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	9.9	wt%		0.2		SW3550C	12/15/20 12:00 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 11:12 / jp
Benzene	ND	mg/kg-dry		0.056	0.07	MA-VPH	12/17/20 11:12 / jp
Toluene	ND	mg/kg-dry		0.056	21	MA-VPH	12/17/20 11:12 / jp
Ethylbenzene	ND	mg/kg-dry		0.056	6.4	MA-VPH	12/17/20 11:12 / jp
m+p-Xylenes	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 11:12 / jp
o-Xylene	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 11:12 / jp
Xylenes, Total	ND	mg/kg-dry		0.056	72	MA-VPH	12/17/20 11:12 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 11:12 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	130	MA-VPH	12/17/20 11:12 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	52	MA-VPH	12/17/20 11:12 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	77	MA-VPH	12/17/20 11:12 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2		MA-VPH	12/17/20 11:12 / jp
Surr: VPH Aromatics Surrogate	97.0	%REC		70-130		MA-VPH	12/17/20 11:12 / jp
Surr: VPH Aliphatics Surrogate	107	%REC		70-130		MA-VPH	12/17/20 11:12 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/17/20 03:08 / amn
Surr: o-Terphenyl	81.0	%REC		40-140		SW8015M	12/17/20 03:08 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-008
Client Sample ID: SB8

Report Date: 12/18/20
Collection Date: 12/10/20 10:35
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	12	wt%		0.2		SW3550C	12/15/20 12:07 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/16/20 21:53 / jp
Benzene	ND	mg/kg-dry		0.057	0.07	MA-VPH	12/16/20 21:53 / jp
Toluene	ND	mg/kg-dry		0.057	21	MA-VPH	12/16/20 21:53 / jp
Ethylbenzene	ND	mg/kg-dry		0.057	6.4	MA-VPH	12/16/20 21:53 / jp
m+p-Xylenes	ND	mg/kg-dry		0.057		MA-VPH	12/16/20 21:53 / jp
o-Xylene	ND	mg/kg-dry		0.057		MA-VPH	12/16/20 21:53 / jp
Xylenes, Total	ND	mg/kg-dry		0.057	72	MA-VPH	12/16/20 21:53 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/16/20 21:53 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.3	130	MA-VPH	12/16/20 21:53 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.3	52	MA-VPH	12/16/20 21:53 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.3	77	MA-VPH	12/16/20 21:53 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.3		MA-VPH	12/16/20 21:53 / jp
Surr: VPH Aromatics Surrogate	97.0	%REC		70-130		MA-VPH	12/16/20 21:53 / jp
Surr: VPH Aliphatics Surrogate	102	%REC		70-130		MA-VPH	12/16/20 21:53 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	12	mg/kg-dry		11	200	SW8015M	12/17/20 03:52 / amn
Surr: o-Terphenyl	80.0	%REC		40-140		SW8015M	12/17/20 03:52 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-009
Client Sample ID: SB9

Report Date: 12/18/20
Collection Date: 12/10/20 11:17
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	14	wt%		0.2		SW3550C	12/15/20 13:52 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/16/20 22:29 / jp
Benzene	ND	mg/kg-dry		0.058	0.07	MA-VPH	12/16/20 22:29 / jp
Toluene	ND	mg/kg-dry		0.058	21	MA-VPH	12/16/20 22:29 / jp
Ethylbenzene	ND	mg/kg-dry		0.058	6.4	MA-VPH	12/16/20 22:29 / jp
m+p-Xylenes	ND	mg/kg-dry		0.058		MA-VPH	12/16/20 22:29 / jp
o-Xylene	ND	mg/kg-dry		0.058		MA-VPH	12/16/20 22:29 / jp
Xylenes, Total	ND	mg/kg-dry		0.058	72	MA-VPH	12/16/20 22:29 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/16/20 22:29 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.3	130	MA-VPH	12/16/20 22:29 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.3	52	MA-VPH	12/16/20 22:29 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.3	77	MA-VPH	12/16/20 22:29 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.3		MA-VPH	12/16/20 22:29 / jp
Surr: VPH Aromatics Surrogate	91.0	%REC		70-130		MA-VPH	12/16/20 22:29 / jp
Surr: VPH Aliphatics Surrogate	101	%REC		70-130		MA-VPH	12/16/20 22:29 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/17/20 04:36 / amn
Surr: o-Terphenyl	79.0	%REC		40-140		SW8015M	12/17/20 04:36 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-010
Client Sample ID: SB10

Report Date: 12/18/20
Collection Date: 12/10/20 11:40
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	21	wt%		0.2		SW3550C	12/15/20 14:02 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.13	0.078	MA-VPH	12/16/20 23:41 / jp
Benzene	ND	mg/kg-dry		0.064	0.07	MA-VPH	12/16/20 23:41 / jp
Toluene	ND	mg/kg-dry		0.064	21	MA-VPH	12/16/20 23:41 / jp
Ethylbenzene	ND	mg/kg-dry		0.064	6.4	MA-VPH	12/16/20 23:41 / jp
m+p-Xylenes	ND	mg/kg-dry		0.064		MA-VPH	12/16/20 23:41 / jp
o-Xylene	ND	mg/kg-dry		0.064		MA-VPH	12/16/20 23:41 / jp
Xylenes, Total	ND	mg/kg-dry		0.064	72	MA-VPH	12/16/20 23:41 / jp
Naphthalene	ND	mg/kg-dry		0.13	4.3	MA-VPH	12/16/20 23:41 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.5	130	MA-VPH	12/16/20 23:41 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.5	52	MA-VPH	12/16/20 23:41 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.5	77	MA-VPH	12/16/20 23:41 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.5		MA-VPH	12/16/20 23:41 / jp
Surr: VPH Aromatics Surrogate	92.0	%REC		70-130		MA-VPH	12/16/20 23:41 / jp
Surr: VPH Aliphatics Surrogate	102	%REC		70-130		MA-VPH	12/16/20 23:41 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		13	200	SW8015M	12/17/20 05:20 / amn
Surr: o-Terphenyl	82.0	%REC		40-140		SW8015M	12/17/20 05:20 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-011
Client Sample ID: SB11

Report Date: 12/18/20
Collection Date: 12/10/20 13:30
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	11	wt%		0.2		SW3550C	12/15/20 14:13 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 00:16 / jp
Benzene	ND	mg/kg-dry		0.056	0.07	MA-VPH	12/17/20 00:16 / jp
Toluene	ND	mg/kg-dry		0.056	21	MA-VPH	12/17/20 00:16 / jp
Ethylbenzene	ND	mg/kg-dry		0.056	6.4	MA-VPH	12/17/20 00:16 / jp
m+p-Xylenes	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 00:16 / jp
o-Xylene	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 00:16 / jp
Xylenes, Total	ND	mg/kg-dry		0.056	72	MA-VPH	12/17/20 00:16 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 00:16 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	130	MA-VPH	12/17/20 00:16 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	52	MA-VPH	12/17/20 00:16 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	77	MA-VPH	12/17/20 00:16 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2		MA-VPH	12/17/20 00:16 / jp
Surr: VPH Aromatics Surrogate	97.0	%REC		70-130		MA-VPH	12/17/20 00:16 / jp
Surr: VPH Aliphatics Surrogate	108	%REC		70-130		MA-VPH	12/17/20 00:16 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/17/20 06:04 / amn
Surr: o-Terphenyl	80.0	%REC		40-140		SW8015M	12/17/20 06:04 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-012
Client Sample ID: SB12

Report Date: 12/18/20
Collection Date: 12/10/20 14:00
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	7.5	wt%		0.2		SW3550C	12/15/20 14:25 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 11:48 / jp
Benzene	ND	mg/kg-dry		0.054	0.07	MA-VPH	12/17/20 11:48 / jp
Toluene	ND	mg/kg-dry		0.054	21	MA-VPH	12/17/20 11:48 / jp
Ethylbenzene	ND	mg/kg-dry		0.054	6.4	MA-VPH	12/17/20 11:48 / jp
m+p-Xylenes	ND	mg/kg-dry		0.054		MA-VPH	12/17/20 11:48 / jp
o-Xylene	ND	mg/kg-dry		0.054		MA-VPH	12/17/20 11:48 / jp
Xylenes, Total	ND	mg/kg-dry		0.054	72	MA-VPH	12/17/20 11:48 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 11:48 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	130	MA-VPH	12/17/20 11:48 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	52	MA-VPH	12/17/20 11:48 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	77	MA-VPH	12/17/20 11:48 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2		MA-VPH	12/17/20 11:48 / jp
Surr: VPH Aromatics Surrogate	96.0	%REC		70-130		MA-VPH	12/17/20 11:48 / jp
Surr: VPH Aliphatics Surrogate	107	%REC		70-130		MA-VPH	12/17/20 11:48 / jp
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/17/20 07:32 / amn
Surr: o-Terphenyl	79.0	%REC		40-140		SW8015M	12/17/20 07:32 / amn
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-013
Client Sample ID: SB13

Report Date: 12/18/20
Collection Date: 12/10/20 14:30
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	15	wt%		0.2		SW3550C	12/15/20 14:32 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/17/20 02:04 / jp
Benzene	ND	mg/kg-dry		0.059	0.07	MA-VPH	12/17/20 02:04 / jp
Toluene	ND	mg/kg-dry		0.059	21	MA-VPH	12/17/20 02:04 / jp
Ethylbenzene	ND	mg/kg-dry		0.059	6.4	MA-VPH	12/17/20 02:04 / jp
m+p-Xylenes	ND	mg/kg-dry		0.059		MA-VPH	12/17/20 02:04 / jp
o-Xylene	ND	mg/kg-dry		0.059		MA-VPH	12/17/20 02:04 / jp
Xylenes, Total	ND	mg/kg-dry		0.059	72	MA-VPH	12/17/20 02:04 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/17/20 02:04 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	130	MA-VPH	12/17/20 02:04 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	52	MA-VPH	12/17/20 02:04 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	77	MA-VPH	12/17/20 02:04 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.4		MA-VPH	12/17/20 02:04 / jp
Surr: VPH Aromatics Surrogate	88.0	%REC		70-130		MA-VPH	12/17/20 02:04 / jp
Surr: VPH Aliphatics Surrogate	92.0	%REC		70-130		MA-VPH	12/17/20 02:04 / jp
- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.							
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.							
EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/17/20 08:16 / amn
Surr: o-Terphenyl	76.0	%REC		40-140		SW8015M	12/17/20 08:16 / amn
- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.							

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-014
Client Sample ID: SB14

Report Date: 12/18/20
Collection Date: 12/10/20 15:15
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	13	wt%		0.2		SW3550C	12/15/20 14:40 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 03:16 / jp
Benzene	ND	mg/kg-dry		0.057	0.07	MA-VPH	12/17/20 03:16 / jp
Toluene	ND	mg/kg-dry		0.057	21	MA-VPH	12/17/20 03:16 / jp
Ethylbenzene	ND	mg/kg-dry		0.057	6.4	MA-VPH	12/17/20 03:16 / jp
m+p-Xylenes	ND	mg/kg-dry		0.057		MA-VPH	12/17/20 03:16 / jp
o-Xylene	ND	mg/kg-dry		0.057		MA-VPH	12/17/20 03:16 / jp
Xylenes, Total	ND	mg/kg-dry		0.057	72	MA-VPH	12/17/20 03:16 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 03:16 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.3	130	MA-VPH	12/17/20 03:16 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.3	52	MA-VPH	12/17/20 03:16 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.3	77	MA-VPH	12/17/20 03:16 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.3		MA-VPH	12/17/20 03:16 / jp
Surr: VPH Aromatics Surrogate	93.0	%REC		70-130		MA-VPH	12/17/20 03:16 / jp
Surr: VPH Aliphatics Surrogate	104	%REC		70-130		MA-VPH	12/17/20 03:16 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/17/20 09:00 / amn
Surr: o-Terphenyl	82.0	%REC		40-140		SW8015M	12/17/20 09:00 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-015
Client Sample ID: SB15

Report Date: 12/18/20
Collection Date: 12/10/20 15:45
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	9.3	wt%		0.2		SW3550C	12/15/20 14:48 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 03:51 / jp
Benzene	ND	mg/kg-dry		0.055	0.07	MA-VPH	12/17/20 03:51 / jp
Toluene	ND	mg/kg-dry		0.055	21	MA-VPH	12/17/20 03:51 / jp
Ethylbenzene	ND	mg/kg-dry		0.055	6.4	MA-VPH	12/17/20 03:51 / jp
m+p-Xylenes	ND	mg/kg-dry		0.055		MA-VPH	12/17/20 03:51 / jp
o-Xylene	ND	mg/kg-dry		0.055		MA-VPH	12/17/20 03:51 / jp
Xylenes, Total	ND	mg/kg-dry		0.055	72	MA-VPH	12/17/20 03:51 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 03:51 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	130	MA-VPH	12/17/20 03:51 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	52	MA-VPH	12/17/20 03:51 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	77	MA-VPH	12/17/20 03:51 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2		MA-VPH	12/17/20 03:51 / jp
Surr: VPH Aromatics Surrogate	93.0	%REC		70-130		MA-VPH	12/17/20 03:51 / jp
Surr: VPH Aliphatics Surrogate	101	%REC		70-130		MA-VPH	12/17/20 03:51 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/17/20 09:44 / amn
Surr: o-Terphenyl	75.0	%REC		40-140		SW8015M	12/17/20 09:44 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-016
Client Sample ID: SB16

Report Date: 12/18/20
Collection Date: 12/10/20 16:25
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	16	wt%		0.2		SW3550C	12/15/20 14:57 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/17/20 05:03 / jp
Benzene	ND	mg/kg-dry		0.060	0.07	MA-VPH	12/17/20 05:03 / jp
Toluene	ND	mg/kg-dry		0.060	21	MA-VPH	12/17/20 05:03 / jp
Ethylbenzene	ND	mg/kg-dry		0.060	6.4	MA-VPH	12/17/20 05:03 / jp
m+p-Xylenes	ND	mg/kg-dry		0.060		MA-VPH	12/17/20 05:03 / jp
o-Xylene	ND	mg/kg-dry		0.060		MA-VPH	12/17/20 05:03 / jp
Xylenes, Total	ND	mg/kg-dry		0.060	72	MA-VPH	12/17/20 05:03 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/17/20 05:03 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	130	MA-VPH	12/17/20 05:03 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	52	MA-VPH	12/17/20 05:03 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	77	MA-VPH	12/17/20 05:03 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.4		MA-VPH	12/17/20 05:03 / jp
Surr: VPH Aromatics Surrogate	89.0	%REC		70-130		MA-VPH	12/17/20 05:03 / jp
Surr: VPH Aliphatics Surrogate	97.0	%REC		70-130		MA-VPH	12/17/20 05:03 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/17/20 14:06 / amn
Surr: o-Terphenyl	77.0	%REC		40-140		SW8015M	12/17/20 14:06 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-017
Client Sample ID: SB17

Report Date: 12/18/20
Collection Date: 12/11/20 10:30
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	16	wt%		0.2		SW3550C	12/15/20 15:04 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/17/20 05:38 / jp
Benzene	ND	mg/kg-dry		0.060	0.07	MA-VPH	12/17/20 05:38 / jp
Toluene	ND	mg/kg-dry		0.060	21	MA-VPH	12/17/20 05:38 / jp
Ethylbenzene	ND	mg/kg-dry		0.060	6.4	MA-VPH	12/17/20 05:38 / jp
m+p-Xylenes	ND	mg/kg-dry		0.060		MA-VPH	12/17/20 05:38 / jp
o-Xylene	ND	mg/kg-dry		0.060		MA-VPH	12/17/20 05:38 / jp
Xylenes, Total	ND	mg/kg-dry		0.060	72	MA-VPH	12/17/20 05:38 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/17/20 05:38 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	130	MA-VPH	12/17/20 05:38 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	52	MA-VPH	12/17/20 05:38 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	77	MA-VPH	12/17/20 05:38 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.4		MA-VPH	12/17/20 05:38 / jp
Surr: VPH Aromatics Surrogate	90.0	%REC		70-130		MA-VPH	12/17/20 05:38 / jp
Surr: VPH Aliphatics Surrogate	100	%REC		70-130		MA-VPH	12/17/20 05:38 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/17/20 14:50 / amn
Surr: o-Terphenyl	42.0	%REC		40-140		SW8015M	12/17/20 14:50 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-018
Client Sample ID: SB18

Report Date: 12/18/20
Collection Date: 12/11/20 11:00
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	14	wt%		0.2		SW3550C	12/15/20 15:12 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/17/20 06:50 / jp
Benzene	ND	mg/kg-dry		0.059	0.07	MA-VPH	12/17/20 06:50 / jp
Toluene	ND	mg/kg-dry		0.059	21	MA-VPH	12/17/20 06:50 / jp
Ethylbenzene	ND	mg/kg-dry		0.059	6.4	MA-VPH	12/17/20 06:50 / jp
m+p-Xylenes	ND	mg/kg-dry		0.059		MA-VPH	12/17/20 06:50 / jp
o-Xylene	ND	mg/kg-dry		0.059		MA-VPH	12/17/20 06:50 / jp
Xylenes, Total	ND	mg/kg-dry		0.059	72	MA-VPH	12/17/20 06:50 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/17/20 06:50 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.3	130	MA-VPH	12/17/20 06:50 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.3	52	MA-VPH	12/17/20 06:50 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.3	77	MA-VPH	12/17/20 06:50 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.3		MA-VPH	12/17/20 06:50 / jp
Surr: VPH Aromatics Surrogate	85.0	%REC		70-130		MA-VPH	12/17/20 06:50 / jp
Surr: VPH Aliphatics Surrogate	94.0	%REC		70-130		MA-VPH	12/17/20 06:50 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/17/20 15:34 / amn
Surr: o-Terphenyl	78.0	%REC		40-140		SW8015M	12/17/20 15:34 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-019
Client Sample ID: SB19

Report Date: 12/18/20
Collection Date: 12/11/20 11:45
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	16	wt%		0.2		SW3550C	12/15/20 15:20 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.12	0.078	MA-VPH	12/17/20 12:24 / jp
Benzene	ND	mg/kg-dry		0.060	0.07	MA-VPH	12/17/20 12:24 / jp
Toluene	ND	mg/kg-dry		0.060	21	MA-VPH	12/17/20 12:24 / jp
Ethylbenzene	ND	mg/kg-dry		0.060	6.4	MA-VPH	12/17/20 12:24 / jp
m+p-Xylenes	ND	mg/kg-dry		0.060		MA-VPH	12/17/20 12:24 / jp
o-Xylene	ND	mg/kg-dry		0.060		MA-VPH	12/17/20 12:24 / jp
Xylenes, Total	ND	mg/kg-dry		0.060	72	MA-VPH	12/17/20 12:24 / jp
Naphthalene	ND	mg/kg-dry		0.12	4.3	MA-VPH	12/17/20 12:24 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.4	130	MA-VPH	12/17/20 12:24 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.4	52	MA-VPH	12/17/20 12:24 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.4	77	MA-VPH	12/17/20 12:24 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.4		MA-VPH	12/17/20 12:24 / jp
Surr: VPH Aromatics Surrogate	92.0	%REC		70-130		MA-VPH	12/17/20 12:24 / jp
Surr: VPH Aliphatics Surrogate	102	%REC		70-130		MA-VPH	12/17/20 12:24 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		12	200	SW8015M	12/17/20 16:17 / amn
Surr: o-Terphenyl	78.0	%REC		40-140		SW8015M	12/17/20 16:17 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: MT Dept of Transportation
Project: MDT Billings Bypass Project I-90/Johnson Ln Interc
Lab ID: B20121111-020
Client Sample ID: SB20

Report Date: 12/18/20
Collection Date: 12/11/20 12:10
DateReceived: 12/11/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	11	wt%		0.2		SW3550C	12/15/20 15:27 / amn
PETROLEUM HYDROCARBONS-VOLATILE (VPH)							
Methyl tert-butyl ether (MTBE)	ND	mg/kg-dry		0.11	0.078	MA-VPH	12/17/20 08:13 / jp
Benzene	ND	mg/kg-dry		0.056	0.07	MA-VPH	12/17/20 08:13 / jp
Toluene	ND	mg/kg-dry		0.056	21	MA-VPH	12/17/20 08:13 / jp
Ethylbenzene	ND	mg/kg-dry		0.056	6.4	MA-VPH	12/17/20 08:13 / jp
m+p-Xylenes	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 08:13 / jp
o-Xylene	ND	mg/kg-dry		0.056		MA-VPH	12/17/20 08:13 / jp
Xylenes, Total	ND	mg/kg-dry		0.056	72	MA-VPH	12/17/20 08:13 / jp
Naphthalene	ND	mg/kg-dry		0.11	4.3	MA-VPH	12/17/20 08:13 / jp
C9 to C10 Aromatics	ND	mg/kg-dry		2.2	130	MA-VPH	12/17/20 08:13 / jp
C5 to C8 Aliphatics	ND	mg/kg-dry		2.2	52	MA-VPH	12/17/20 08:13 / jp
C9 to C12 Aliphatics	ND	mg/kg-dry		2.2	77	MA-VPH	12/17/20 08:13 / jp
Total Purgeable Hydrocarbons	ND	mg/kg-dry		2.2		MA-VPH	12/17/20 08:13 / jp
Surr: VPH Aromatics Surrogate	90.0	%REC		70-130		MA-VPH	12/17/20 08:13 / jp
Surr: VPH Aliphatics Surrogate	100	%REC		70-130		MA-VPH	12/17/20 08:13 / jp

- Note 1: The C5 to C8 Aliphatics value is corrected for aromatic constituents Benzene and Toluene.
- Note 2: The C9 to C12 Aliphatics value is corrected for aromatic constituents Ethylbenzene, m+p-Xylenes, o-Xylene and C9 to C10 Aromatics.

EXTRACTABLE PETROLEUM HYDROCARBONS-SCREEN							
Total Extractable Hydrocarbons	ND	mg/kg-dry		11	200	SW8015M	12/17/20 17:01 / amn
Surr: o-Terphenyl	77.0	%REC		40-140		SW8015M	12/17/20 17:01 / amn

- Note: Total Extractable Hydrocarbons are defined as the total hydrocarbon responses regardless of elution time.

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: MT Dept of Transportation **Work Order:** B20121111 **Report Date:** 12/18/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-VPH										Batch: 151330
Lab ID: LCS-151330	16	Laboratory Control Sample				Run: PE2_201216A				12/16/20 11:42
1,2,4-Trimethylbenzene		2.29	mg/kg	0.10	92	70	130			
2,2,4-Trimethylpentane		2.80	mg/kg	0.10	112	70	130			
2-Methylpentane		2.71	mg/kg	0.10	108	70	130			
n-Butylcyclohexane		2.56	mg/kg	0.10	103	70	130			
n-Decane		2.42	mg/kg	0.10	97	70	130			
n-Pentane		2.69	mg/kg	0.10	108	70	130			
Methyl tert-butyl ether (MTBE)		2.17	mg/kg	0.10	87	70	130			
Benzene		2.33	mg/kg	0.050	94	70	130			
Toluene		2.31	mg/kg	0.050	93	70	130			
Ethylbenzene		2.34	mg/kg	0.050	94	70	130			
m+p-Xylenes		4.78	mg/kg	0.050	96	70	130			
o-Xylene		2.37	mg/kg	0.050	95	70	130			
Naphthalene		2.40	mg/kg	0.10	96	70	130			
Total Purgeable Hydrocarbons		37.7	mg/kg	2.0	101	70	130			
Surr: VPH Aromatics Surrogate				0.10	103	70	130			
Surr: VPH Aliphatics Surrogate				0.10	115	70	130			
Lab ID: MB-151330	14	Method Blank				Run: PE2_201216A				12/16/20 12:54
Methyl tert-butyl ether (MTBE)		ND	mg/kg	0.10						
Benzene		ND	mg/kg	0.050						
Toluene		ND	mg/kg	0.050						
Ethylbenzene		ND	mg/kg	0.050						
m+p-Xylenes		ND	mg/kg	0.050						
o-Xylene		ND	mg/kg	0.050						
Xylenes, Total		ND	mg/kg	0.050						
Naphthalene		ND	mg/kg	0.10						
C9 to C10 Aromatics		ND	mg/kg	2.0						
C5 to C8 Aliphatics		ND	mg/kg	2.0						
C9 to C12 Aliphatics		ND	mg/kg	2.0						
Total Purgeable Hydrocarbons		ND	mg/kg	2.0						
Surr: VPH Aromatics Surrogate				0.10	101	70	130			
Surr: VPH Aliphatics Surrogate				0.10	109	70	130			
Lab ID: B20121111-001AMS	10	Sample Matrix Spike				Run: PE2_201216A				12/16/20 14:05
Methyl tert-butyl ether (MTBE)		2.45	mg/kg-dry	0.12	80	70	130			
Benzene		2.59	mg/kg-dry	0.061	85	70	130			
Toluene		2.58	mg/kg-dry	0.061	84	70	130			
Ethylbenzene		2.63	mg/kg-dry	0.061	86	70	130			
m+p-Xylenes		5.39	mg/kg-dry	0.061	88	70	130			
o-Xylene		2.66	mg/kg-dry	0.061	87	70	130			
Naphthalene		2.68	mg/kg-dry	0.12	88	70	130			
Total Purgeable Hydrocarbons		41.1	mg/kg-dry	2.5	89	70	130			
Surr: VPH Aromatics Surrogate				0.12	98	70	130			
Surr: VPH Aliphatics Surrogate				0.12	106	70	130			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: MT Dept of Transportation **Work Order:** B20121111 **Report Date:** 12/18/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: MA-VPH										Batch: 151330
Lab ID: B20121111-001AMSD	10	Sample Matrix Spike Duplicate				Run: PE2_201216A				12/16/20 15:18
Methyl tert-butyl ether (MTBE)		2.43	mg/kg-dry	0.12	79	70	130	1.1	20	
Benzene		2.61	mg/kg-dry	0.061	85	70	130	0.5	20	
Toluene		2.62	mg/kg-dry	0.061	86	70	130	1.4	20	
Ethylbenzene		2.67	mg/kg-dry	0.061	87	70	130	1.8	20	
m+p-Xylenes		5.49	mg/kg-dry	0.061	90	70	130	1.8	20	
o-Xylene		2.72	mg/kg-dry	0.061	89	70	130	2.0	20	
Naphthalene		2.69	mg/kg-dry	0.12	88	70	130	0.4	20	
Total Purgeable Hydrocarbons		41.4	mg/kg-dry	2.5	90	70	130	0.9	20	
Surr: VPH Aromatics Surrogate				0.12	97	70	130			
Surr: VPH Aliphatics Surrogate				0.12	101	70	130			
Method: MA-VPH										Analytical Run: R353655
Lab ID: CCV_1216PE201r-S	15	Continuing Calibration Verification Standard								12/16/20 11:07
1,2,4-Trimethylbenzene		2.37	mg/kg	0.10	95	75	125			
2,2,4-Trimethylpentane		2.72	mg/kg	0.10	109	75	125			
2-Methylpentane		2.71	mg/kg	0.10	108	75	125			
n-Butylcyclohexane		2.38	mg/kg	0.10	95	75	125			
n-Decane		2.25	mg/kg	0.10	90	75	125			
n-Pentane		2.79	mg/kg	0.10	111	75	125			
Methyl tert-butyl ether (MTBE)		2.15	mg/kg	0.10	86	75	125			
Benzene		2.35	mg/kg	0.050	94	75	125			
Toluene		2.35	mg/kg	0.050	94	75	125			
Ethylbenzene		2.37	mg/kg	0.050	95	75	125			
m+p-Xylenes		4.81	mg/kg	0.050	96	75	125			
o-Xylene		2.40	mg/kg	0.050	96	75	125			
Naphthalene		2.45	mg/kg	0.10	98	75	125			
Surr: VPH Aromatics Surrogate				0.10	91	75	125			
Surr: VPH Aliphatics Surrogate				0.10	100	75	125			
Lab ID: CCV_1216PE239r-S	15	Continuing Calibration Verification Standard								12/17/20 10:00
1,2,4-Trimethylbenzene		2.31	mg/kg	0.10	93	75	125			
2,2,4-Trimethylpentane		2.71	mg/kg	0.10	108	75	125			
2-Methylpentane		2.66	mg/kg	0.10	106	75	125			
n-Butylcyclohexane		2.40	mg/kg	0.10	96	75	125			
n-Decane		2.35	mg/kg	0.10	94	75	125			
n-Pentane		2.73	mg/kg	0.10	109	75	125			
Methyl tert-butyl ether (MTBE)		2.12	mg/kg	0.10	85	75	125			
Benzene		2.29	mg/kg	0.050	92	75	125			
Toluene		2.28	mg/kg	0.050	91	75	125			
Ethylbenzene		2.31	mg/kg	0.050	92	75	125			
m+p-Xylenes		4.70	mg/kg	0.050	94	75	125			
o-Xylene		2.33	mg/kg	0.050	93	75	125			
Naphthalene		2.38	mg/kg	0.10	95	75	125			
Surr: VPH Aromatics Surrogate				0.10	98	75	125			
Surr: VPH Aliphatics Surrogate				0.10	109	75	125			

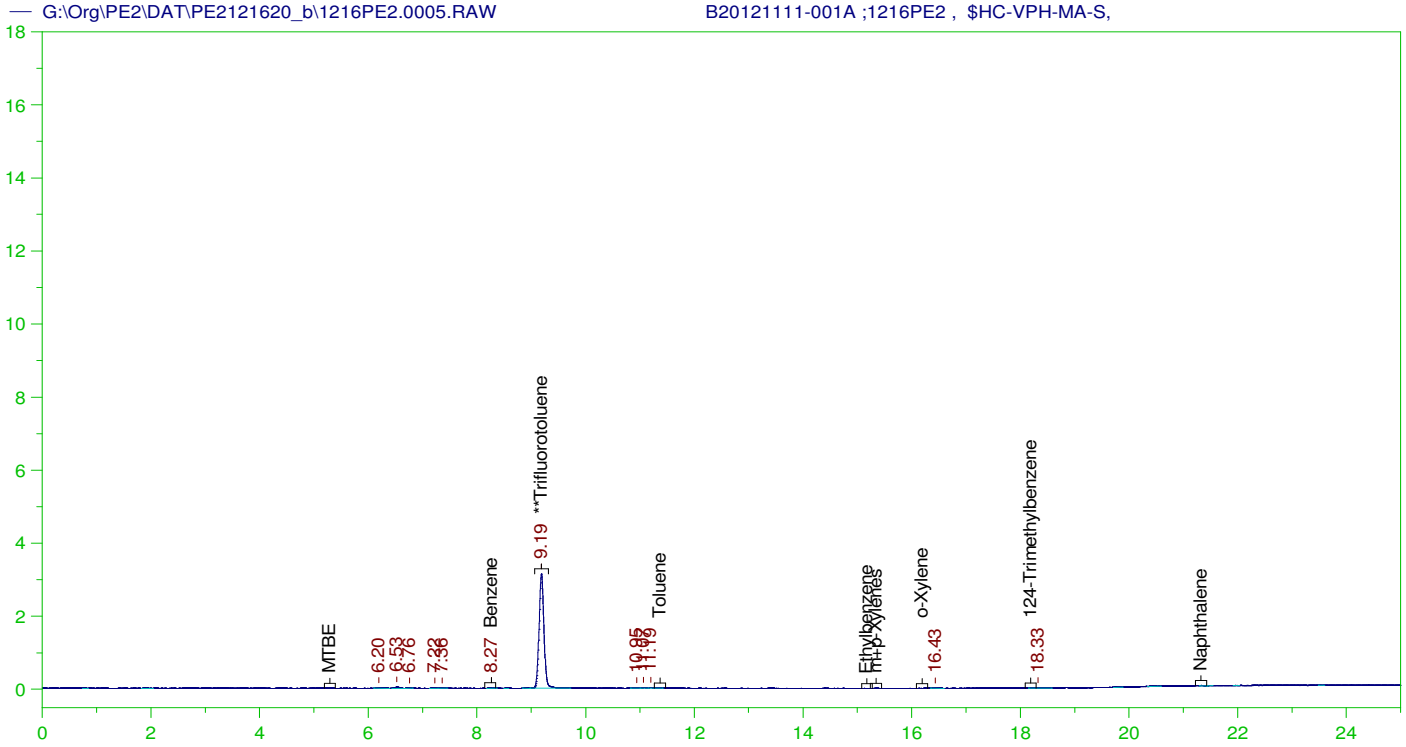
Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

SB1 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0005.RAW B20121111-001A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-001A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0005.RAW
Date & Time Acquired: 12/16/2020 1:30:07 PM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

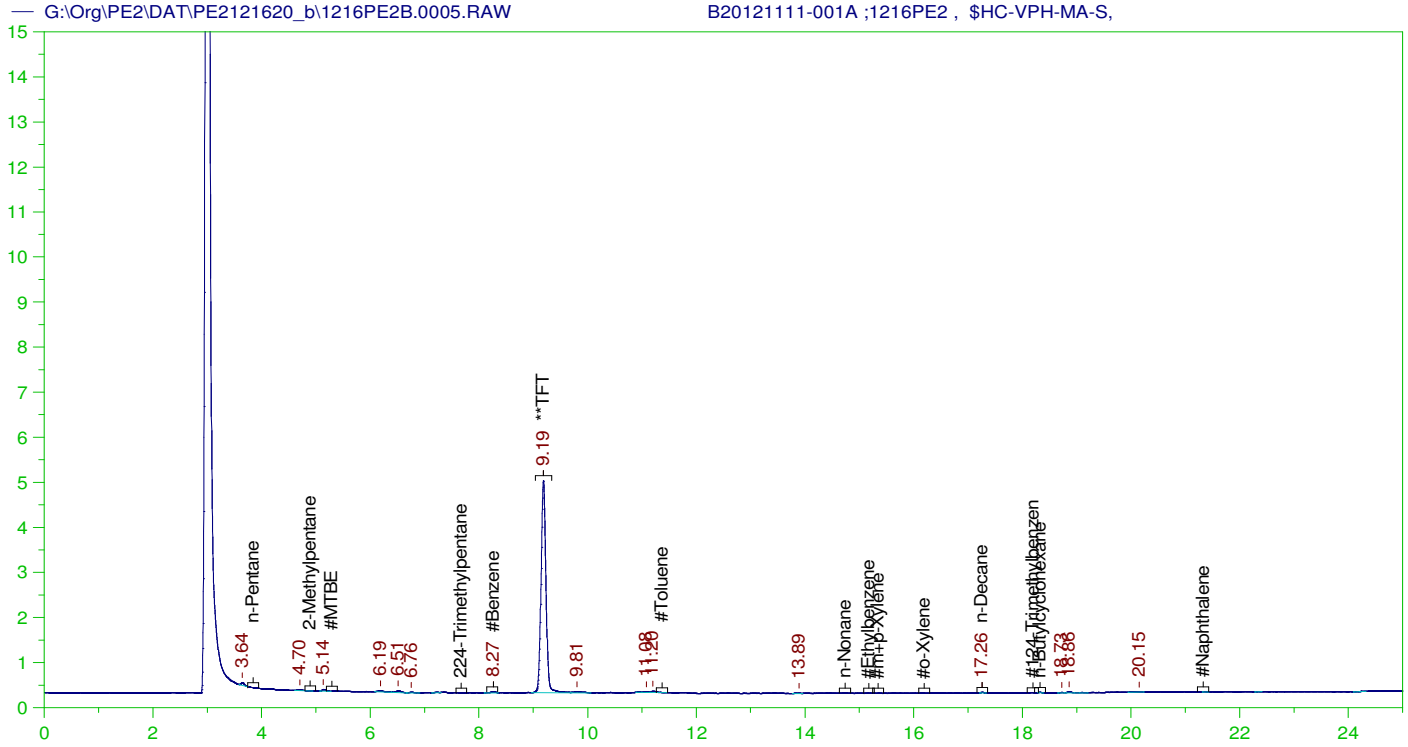
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:274.9338 C9-C10 Aromatics Amount: 1.165881E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.27	8.27	8.27	94	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.187	2.5	2.347	93.89	70-130

SB1 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0005.RAW B20121111-001A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-001A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0005.RAW
Date & Time Acquired: 12/16/2020 1:30:07 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

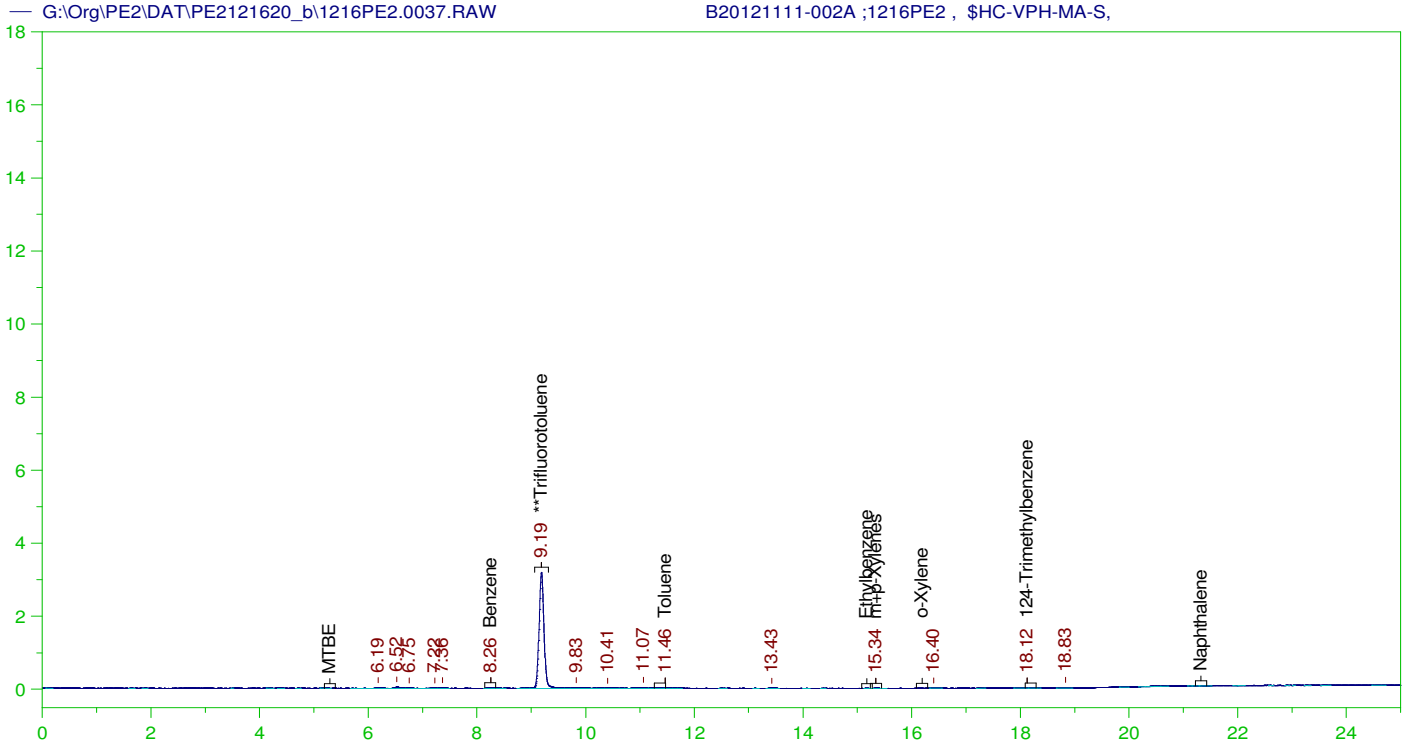
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.187	2.5	2.608	104.34	-

GRO Area:1643.621 GRO Amount: 0.0933326
TPH Area:2455.586 TPH Amount: 0.1394398

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1723.313 C5-C8 Amount: 0.1068936
C9-C12 Area:404.5525 C9-C12 Amount: 2.678311E-02

SB2 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0037.RAW B20121111-002A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-002A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0037.RAW
Date & Time Acquired: 12/17/2020 8:48:58 AM
Method File: G:\Org\PE2\Methods\201111V1111-2%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

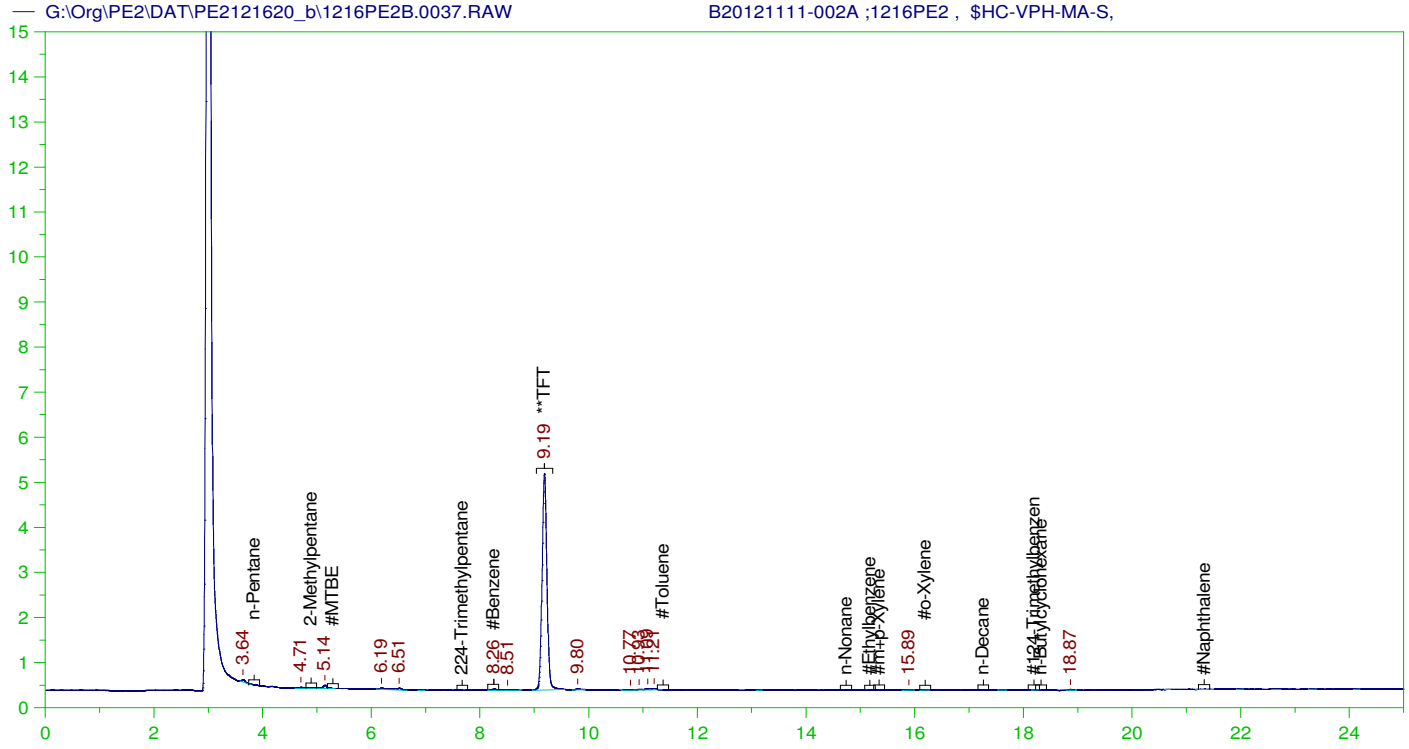
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:435.9271 C9-C10 Aromatics Amount: 1.848587E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.259	8.259	8.259	164	.05	U
Toluene	11.465	11.465	11.465	53	.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.34	15.34	15.34	73	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	18.123	18.123	18.123	59	.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.187	2.5	2.396	95.83	70-130

SB2 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0037.RAW B20121111-002A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-002A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0037.RAW
Date & Time Acquired: 12/17/2020 8:48:58 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

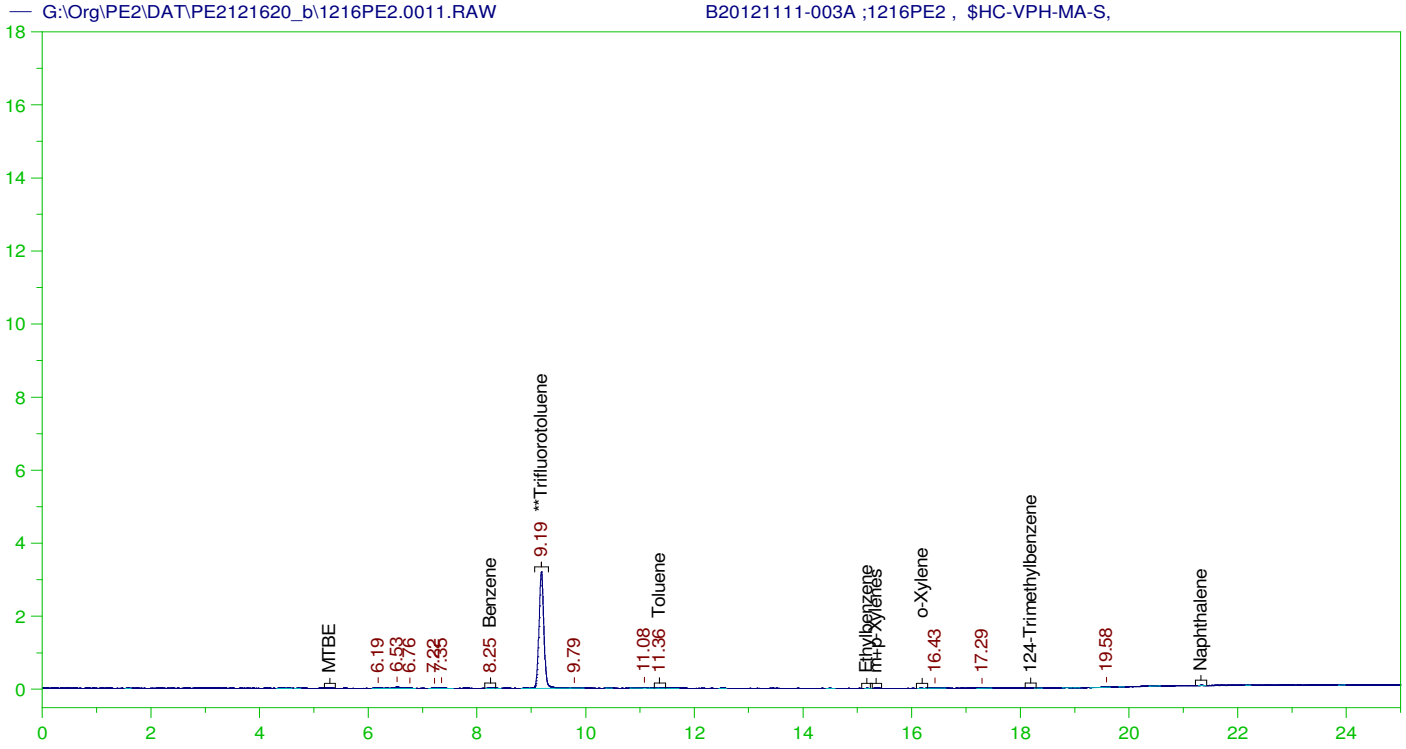
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.188	2.5	2.638	105.53	-

GRO Area:1933.916 GRO Amount: 0.1098169
TPH Area:2713.102 TPH Amount: 0.1540628

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2070.633 C5-C8 Amount: 0.1284372
C9-C12 Area:231.3467 C9-C12 Amount: 1.531614E-02

SB3 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0011.RAW B20121111-003A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-003A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0011.RAW
Date & Time Acquired: 12/16/2020 5:05:55 PM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

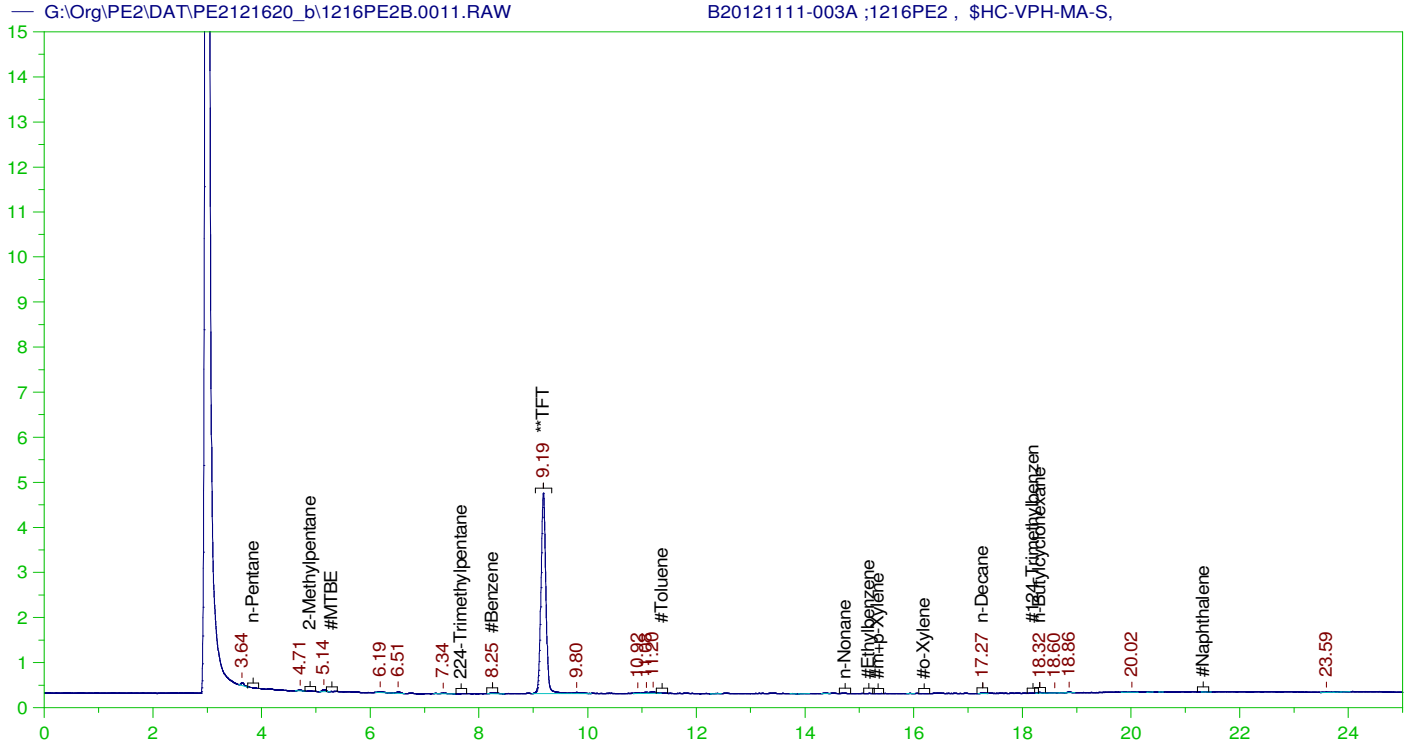
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:431.6695 C9-C10 Aromatics Amount: 1.830532E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.248	8.248	8.248	138	.05	U
Toluene	11.361	11.361	11.361	132	.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.186	2.5	2.384	95.37	70-130

SB3 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0011.RAW B20121111-003A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-003A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0011.RAW
Date & Time Acquired: 12/16/2020 5:05:55 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

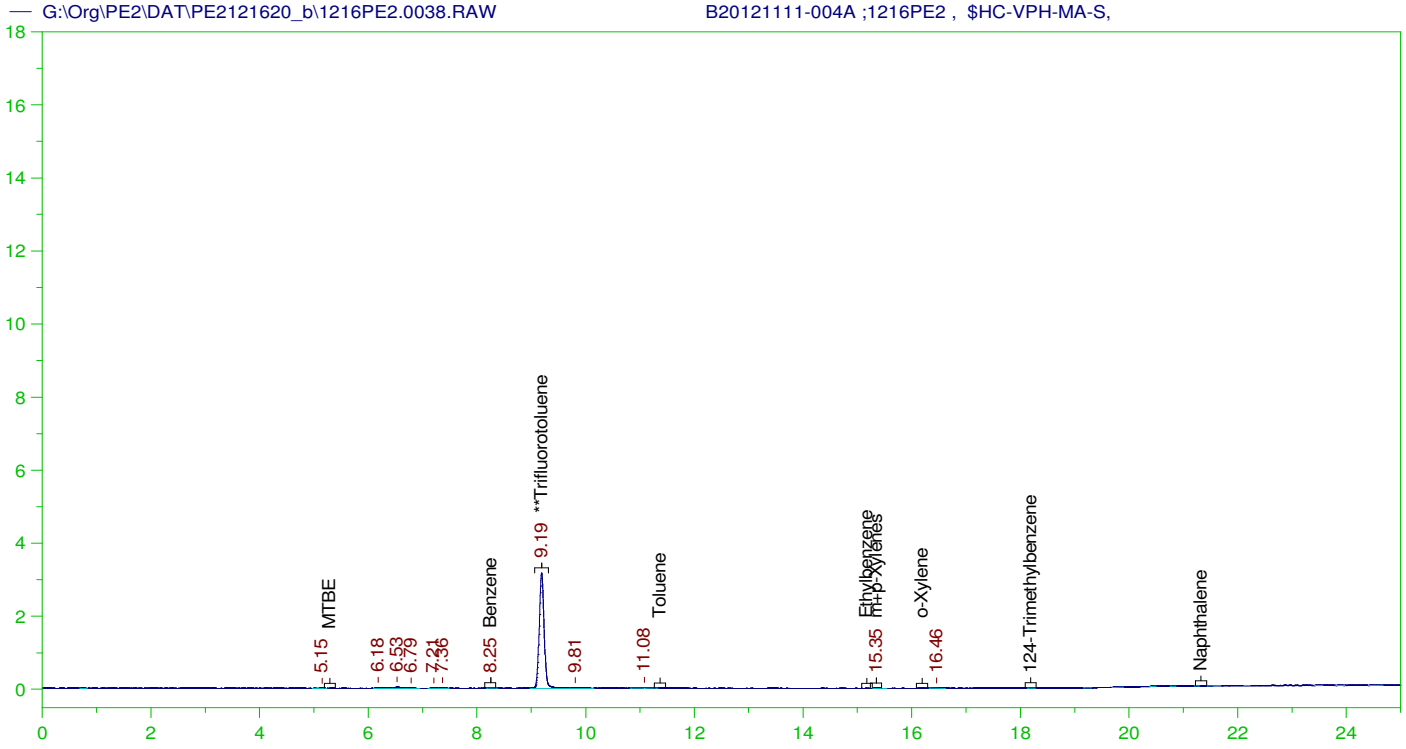
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**TFT	9.186	2.5	2.46	98.41	-

GRO Area:1795.236 GRO Amount: 0.101942
TPH Area:2728.693 TPH Amount: 0.1549482

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1797.236 C5-C8 Amount: 0.1114789
C9-C12 Area:514.2419 C9-C12 Amount: 3.404501E-02

SB4 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0038.RAW B20121111-004A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-004A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0038.RAW
Date & Time Acquired: 12/17/2020 9:25:06 AM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

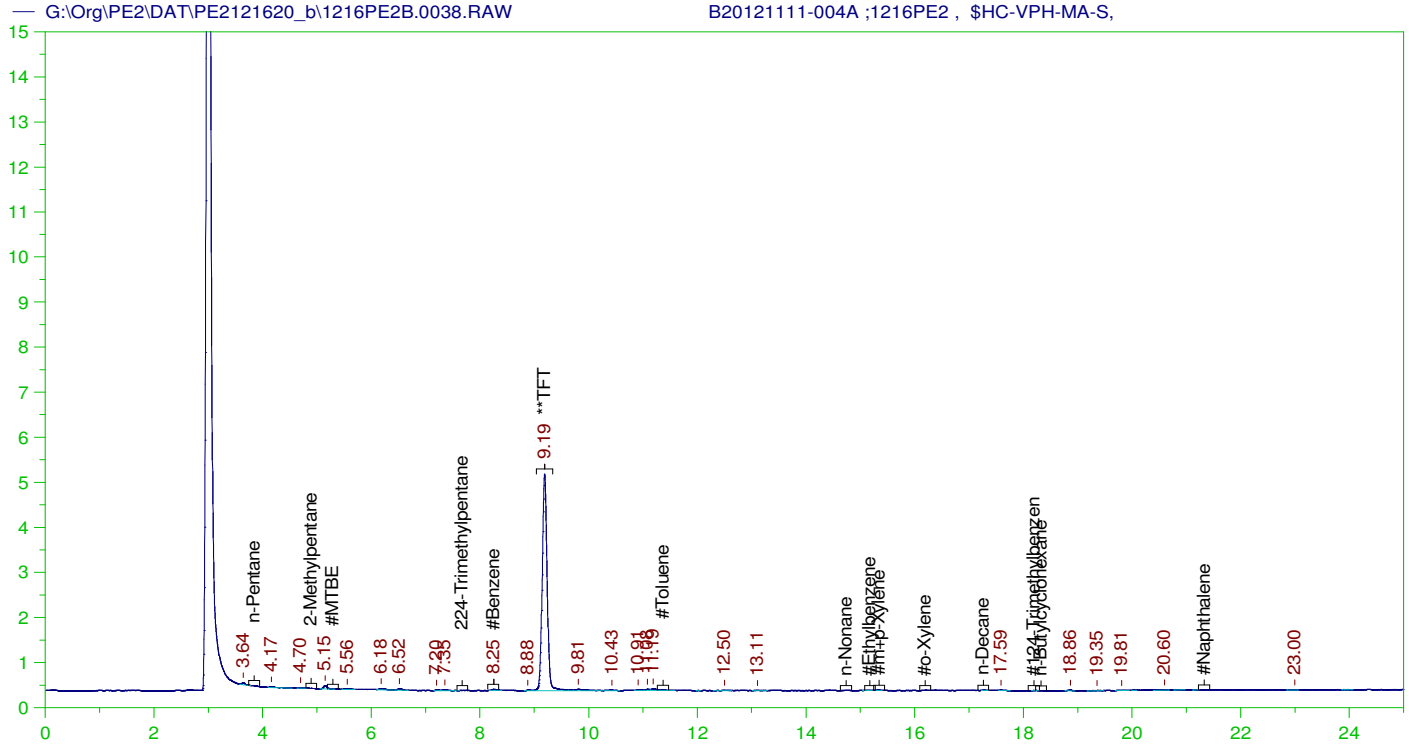
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:238.9246 C9-C10 Aromatics Amount: 1.013181E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.254	8.254	8.254	95	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.351	15.351	15.351	92	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.19	2.5	2.388	95.51	70-130

SB4 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0038.RAW B20121111-004A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-004A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0038.RAW
Date & Time Acquired: 12/17/2020 9:25:06 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

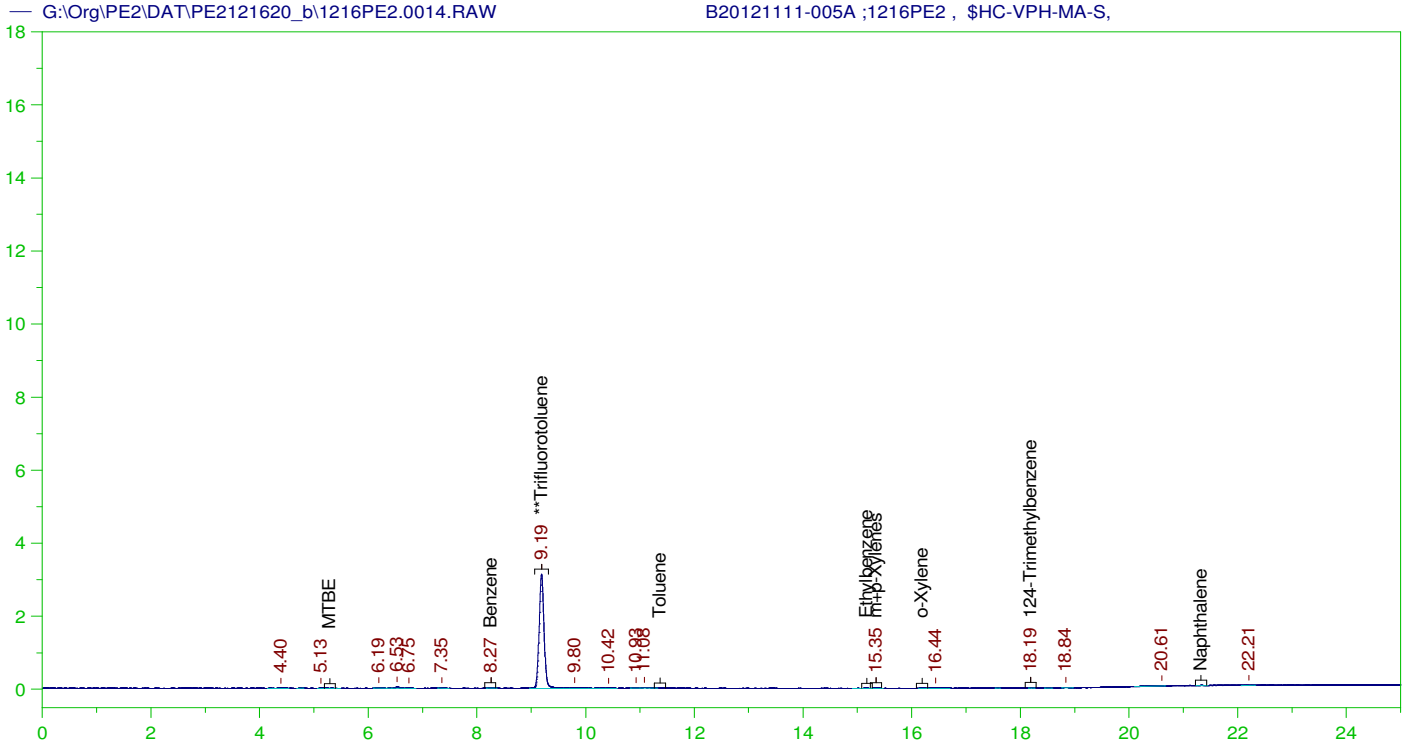
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.191	2.5	2.666	106.63	-

GRO Area:2554.215 GRO Amount: 0.1450404
TPH Area:3523.938 TPH Amount: 0.2001059

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2746.57 C5-C8 Amount: 0.1703642
C9-C12 Area:508.1348 C9-C12 Amount: 0.0336407

SB5 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0014.RAW B20121111-005A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-005A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0014.RAW
Date & Time Acquired: 12/16/2020 6:54:01 PM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

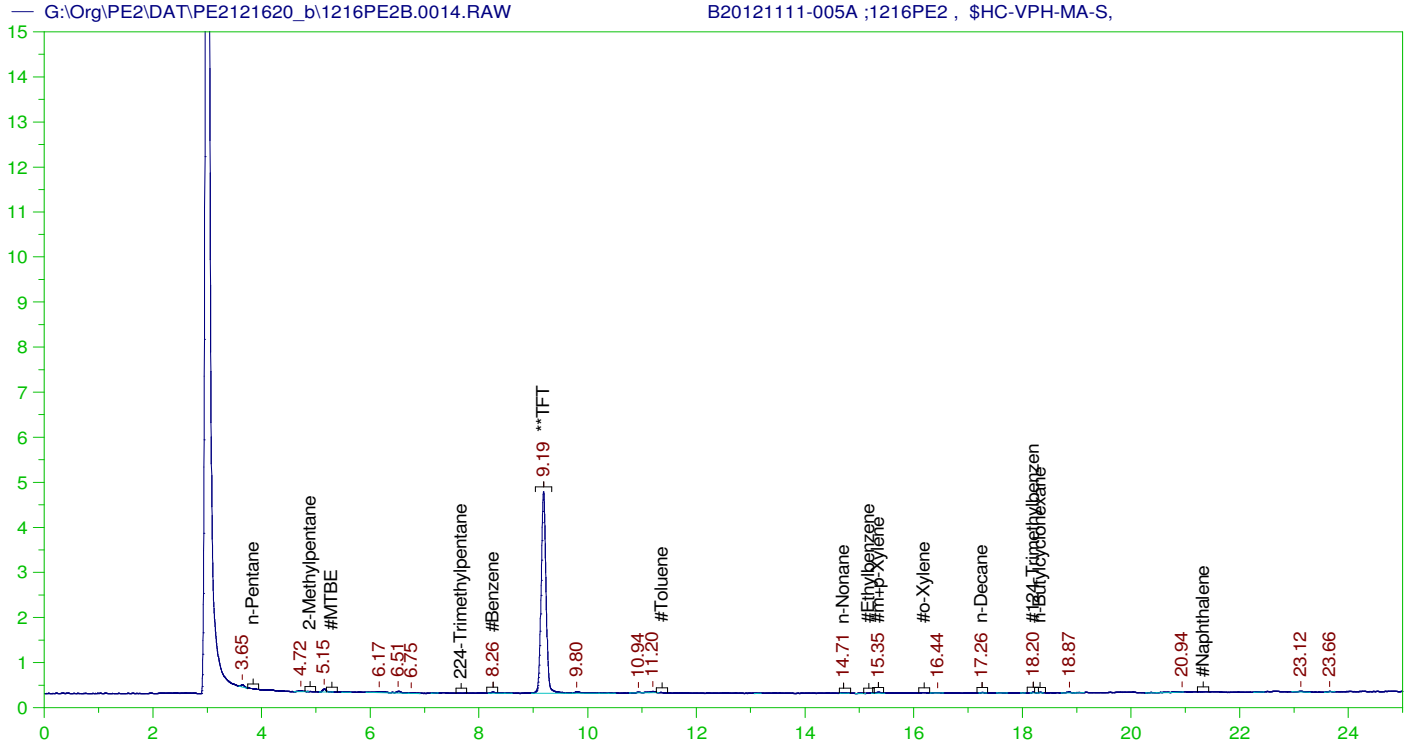
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:477.9224 C9-C10 Aromatics Amount: 2.026672E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.265	8.265	8.265	97	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.347	15.347	15.347	148	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	18.192	18.192	18.192	59	.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.189	2.5	2.352	94.06	70-130

SB5 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0014.RAW B20121111-005A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-005A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0014.RAW
Date & Time Acquired: 12/16/2020 6:54:01 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

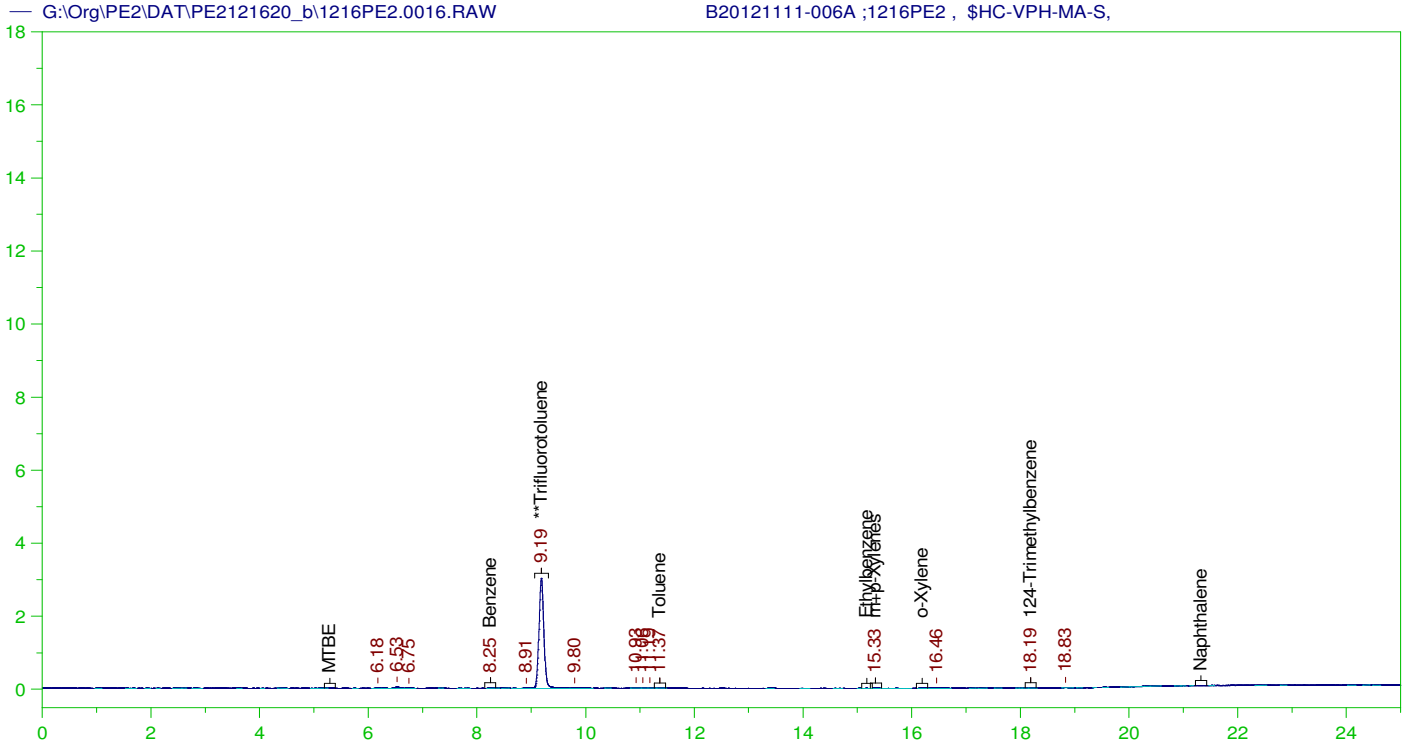
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.189	2.5	2.469	98.77	-

GRO Area:2189.73 GRO Amount: 0.1243433
TPH Area:3171.756 TPH Amount: 0.1801073

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1891.797 C5-C8 Amount: 0.1173443
C9-C12 Area:821.3918 C9-C12 Amount: 5.437965E-02

SB6 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0016.RAW B20121111-006A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-006A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0016.RAW
Date & Time Acquired: 12/16/2020 8:05:57 PM
Method File: G:\Org\PE2\Methods\201111V1111-6%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

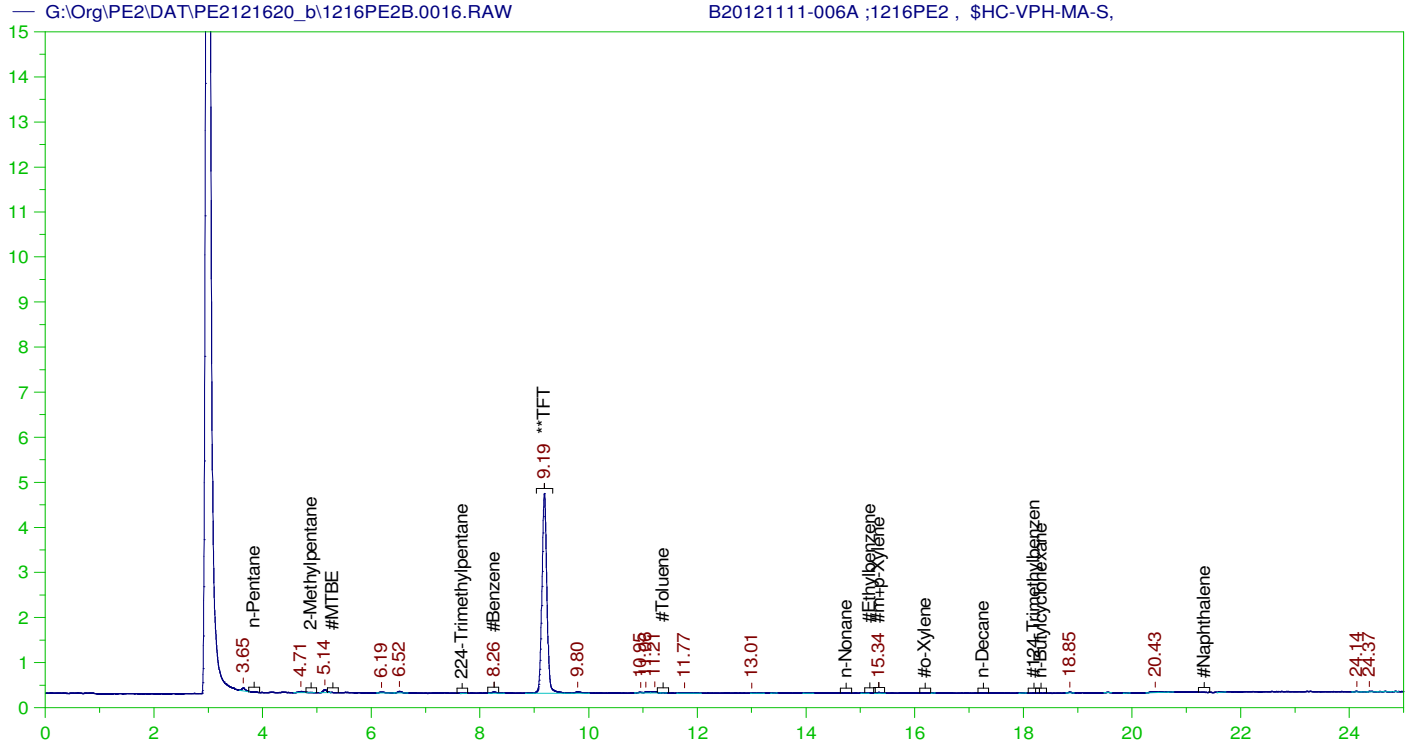
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:607.2934 C9-C10 Aromatics Amount: 2.575281E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.25	8.25	8.25	99	.05	U
Toluene	11.366	11.366	11.366	88	.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.329	15.329	15.329	150	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	18.192	18.192	18.192	56	.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.186	2.5	2.28	91.18	70-130

SB6 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0016.RAW B20121111-006A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-006A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0016.RAW
Date & Time Acquired: 12/16/2020 8:05:57 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

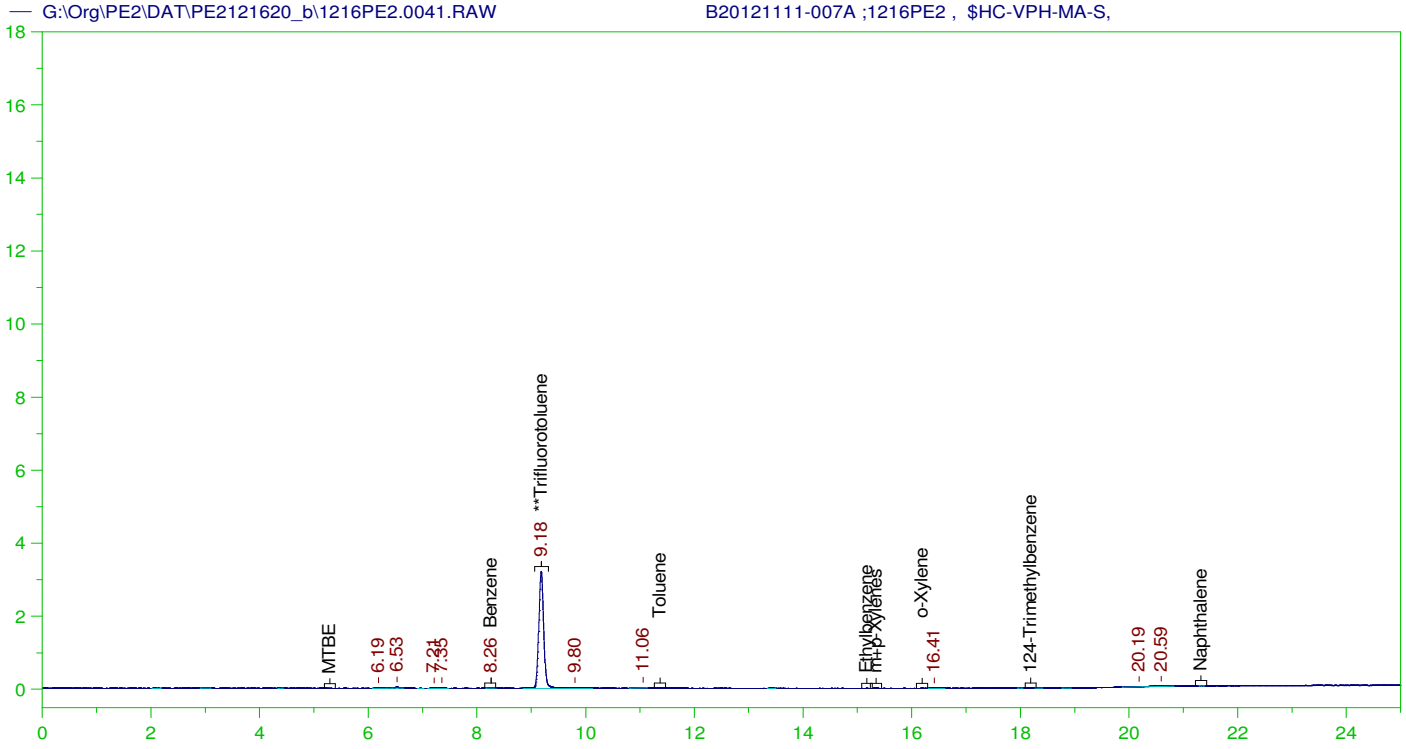
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.186	2.5	2.453	98.1	-

GRO Area:1935.07 GRO Amount: 0.1098825
TPH Area:2926.365 TPH Amount: 0.1661729

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1986.188 C5-C8 Amount: 0.1231992
C9-C12 Area:436.0373 C9-C12 Amount: 2.886754E-02

SB7 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0041.RAW B20121111-007A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-007A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0041.RAW
Date & Time Acquired: 12/17/2020 11:12:19 AM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

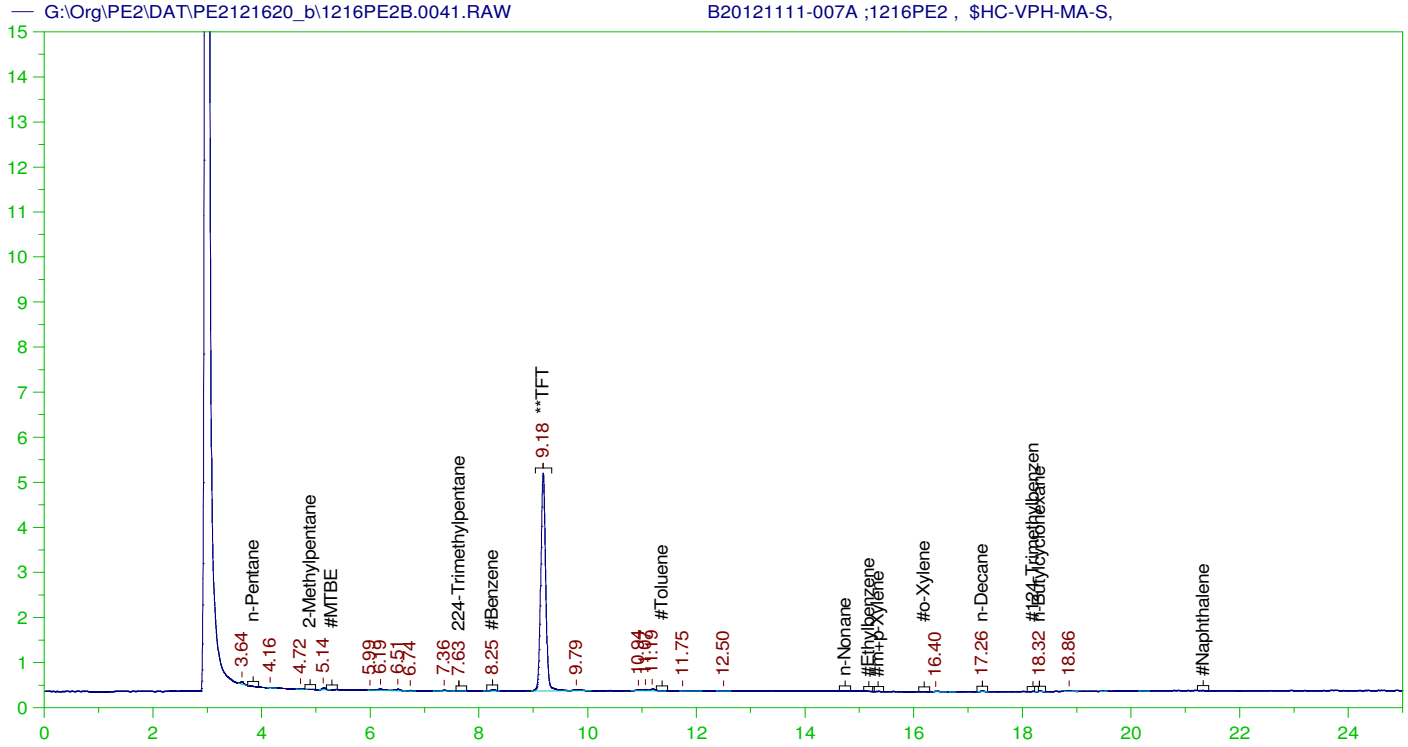
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:480.4996 C9-C10 Aromatics Amount: 2.037601E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.26	8.26	8.26	81	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.182	2.5	2.413	96.52	70-130

SB7 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0041.RAW B20121111-007A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-007A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0041.RAW
Date & Time Acquired: 12/17/2020 11:12:19 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

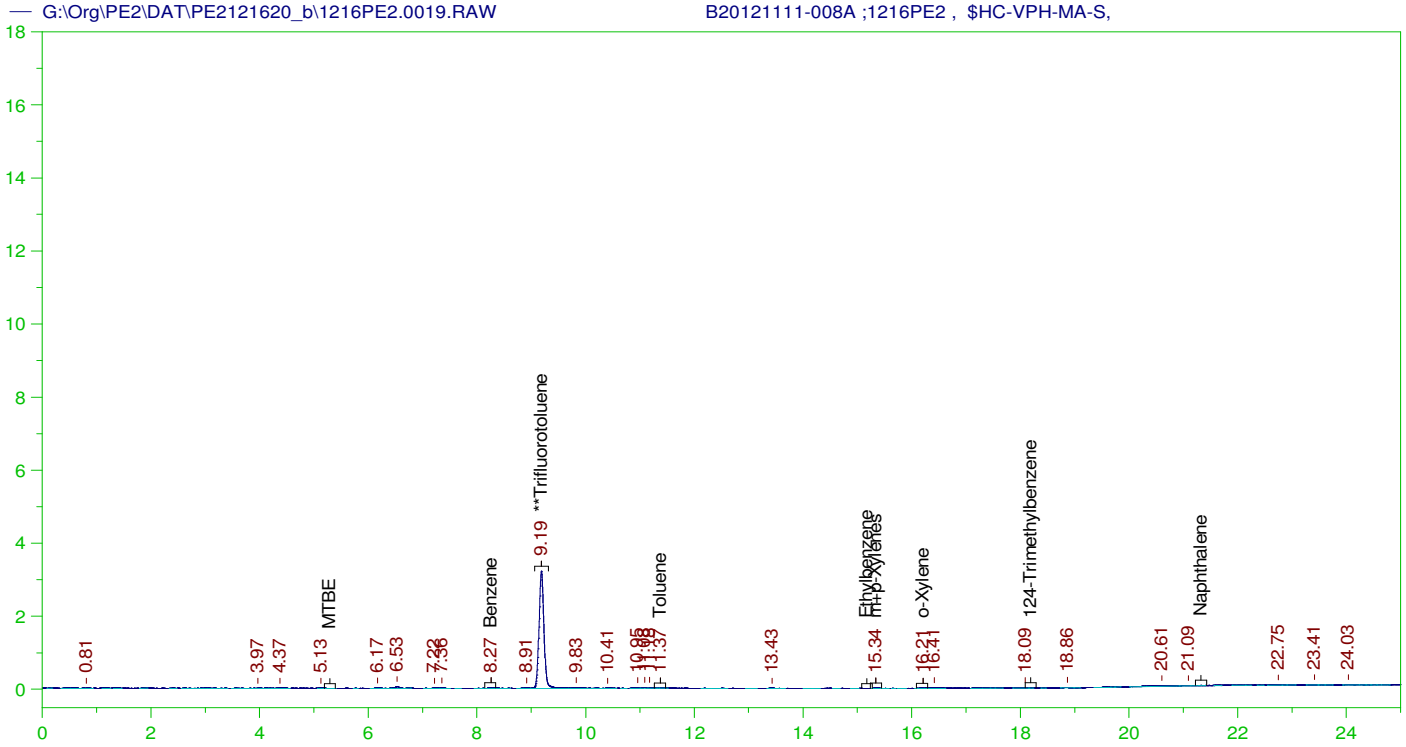
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**TFT	9.182	2.5	2.67	106.79 -

GRO Area:2299.146 GRO Amount: 0.1305564
TPH Area:2901.561 TPH Amount: 0.1647644

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2286.498 C5-C8 Amount: 0.1418269
C9-C12 Area:370.3834 C9-C12 Amount: 2.452097E-02

SB8 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0019.RAW B20121111-008A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-008A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0019.RAW
Date & Time Acquired: 12/16/2020 9:53:39 PM
Method File: G:\Org\PE2\Methods\201111V1111-8%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

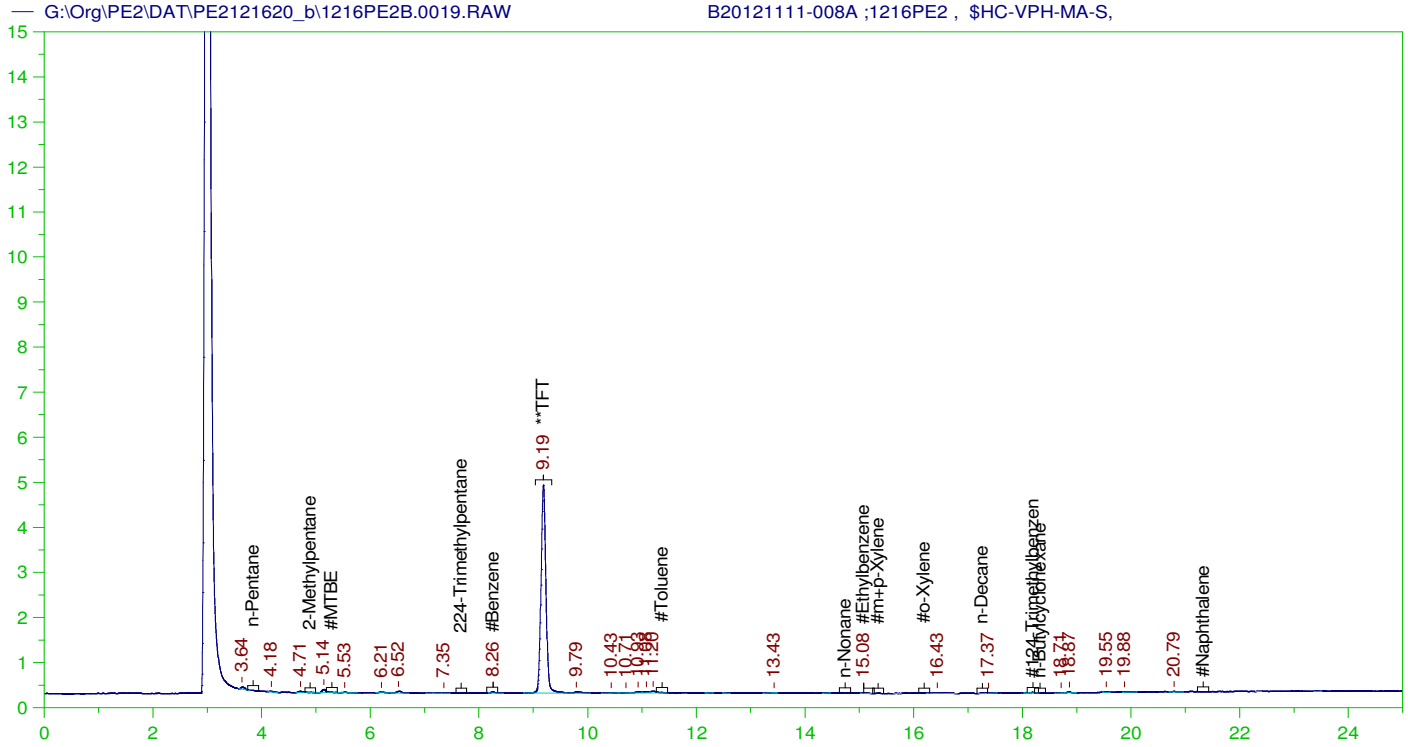
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:1007.755 C9-C10 Aromatics Amount: 4.273473E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.266	8.266	8.266	170	.05	U
Toluene	11.374	11.374	11.374	58	.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.339	15.339	15.339	101	.05	U
o-Xylene	16.208	16.208	16.208	58	.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.187	2.5	2.43	97.19	70-130

SB8 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0019.RAW B20121111-008A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-008A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0019.RAW
Date & Time Acquired: 12/16/2020 9:53:39 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

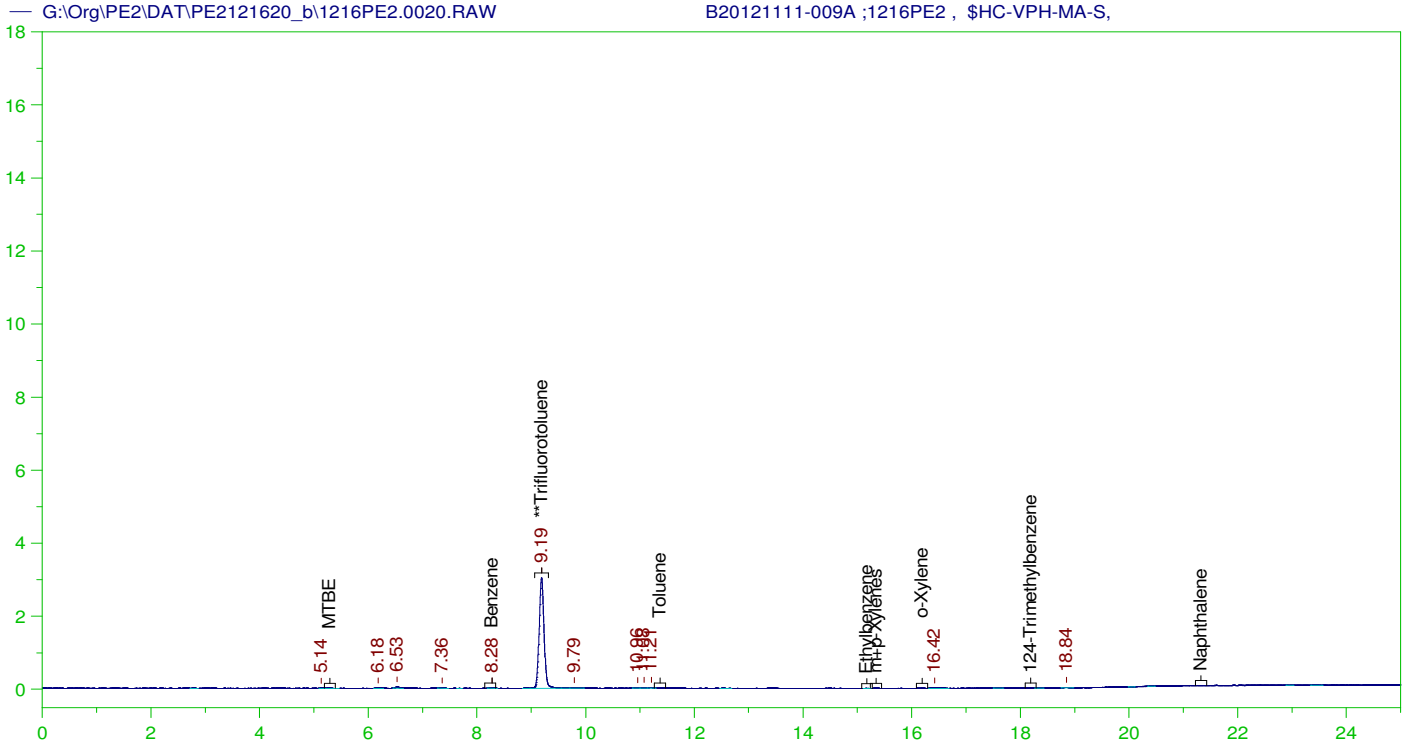
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.187	2.5	2.563	102.52	-

GRO Area:2890.256 GRO Amount: 0.1641224
TPH Area:3951.848 TPH Amount: 0.2244047

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2732.912 C5-C8 Amount: 0.169517
C9-C12 Area:890.4712 C9-C12 Amount: 0.058953

SB9 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0020.RAW B20121111-009A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-009A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0020.RAW
Date & Time Acquired: 12/16/2020 10:29:48 PM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

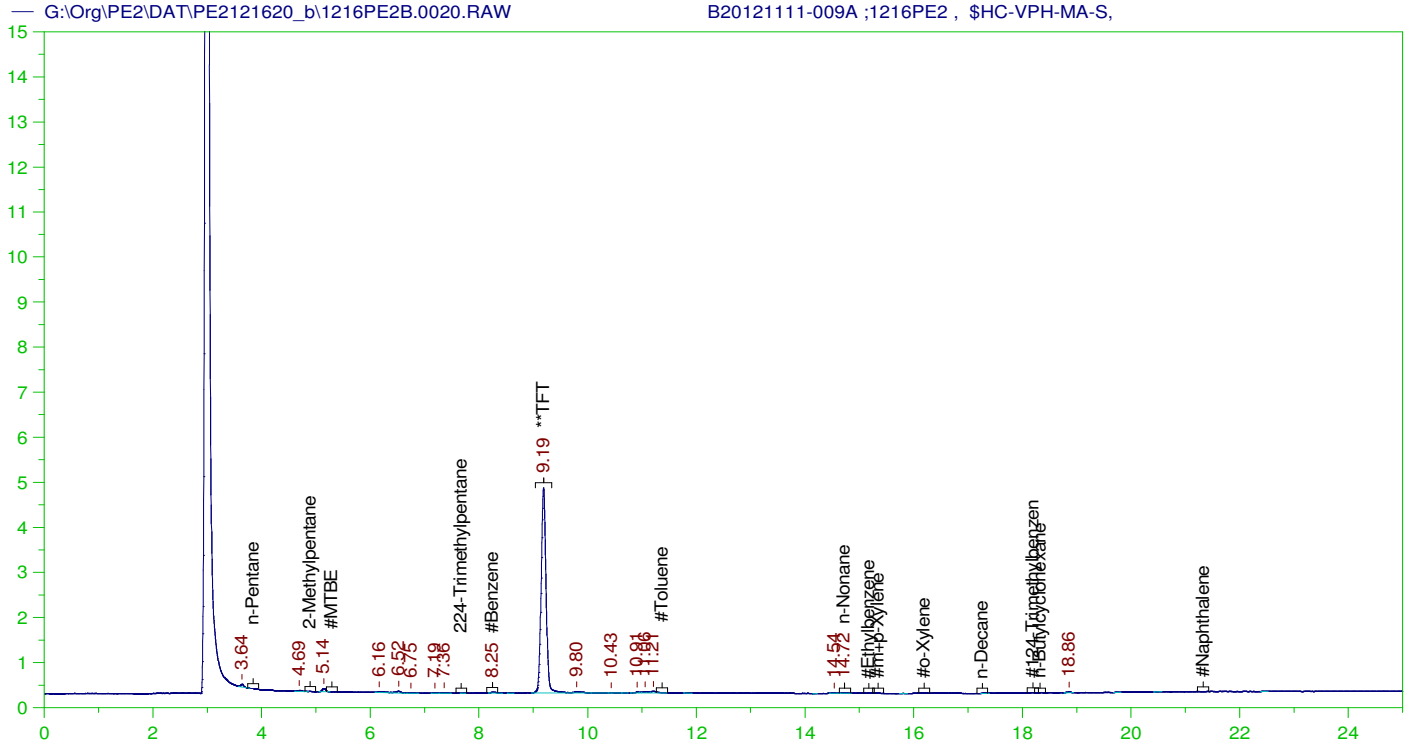
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:354.3333 C9-C10 Aromatics Amount: 1.502581E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.282	8.282	8.282	87	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.189	2.5	2.265	90.62	70-130

SB9 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0020.RAW B20121111-009A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-009A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0020.RAW
Date & Time Acquired: 12/16/2020 10:29:48 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

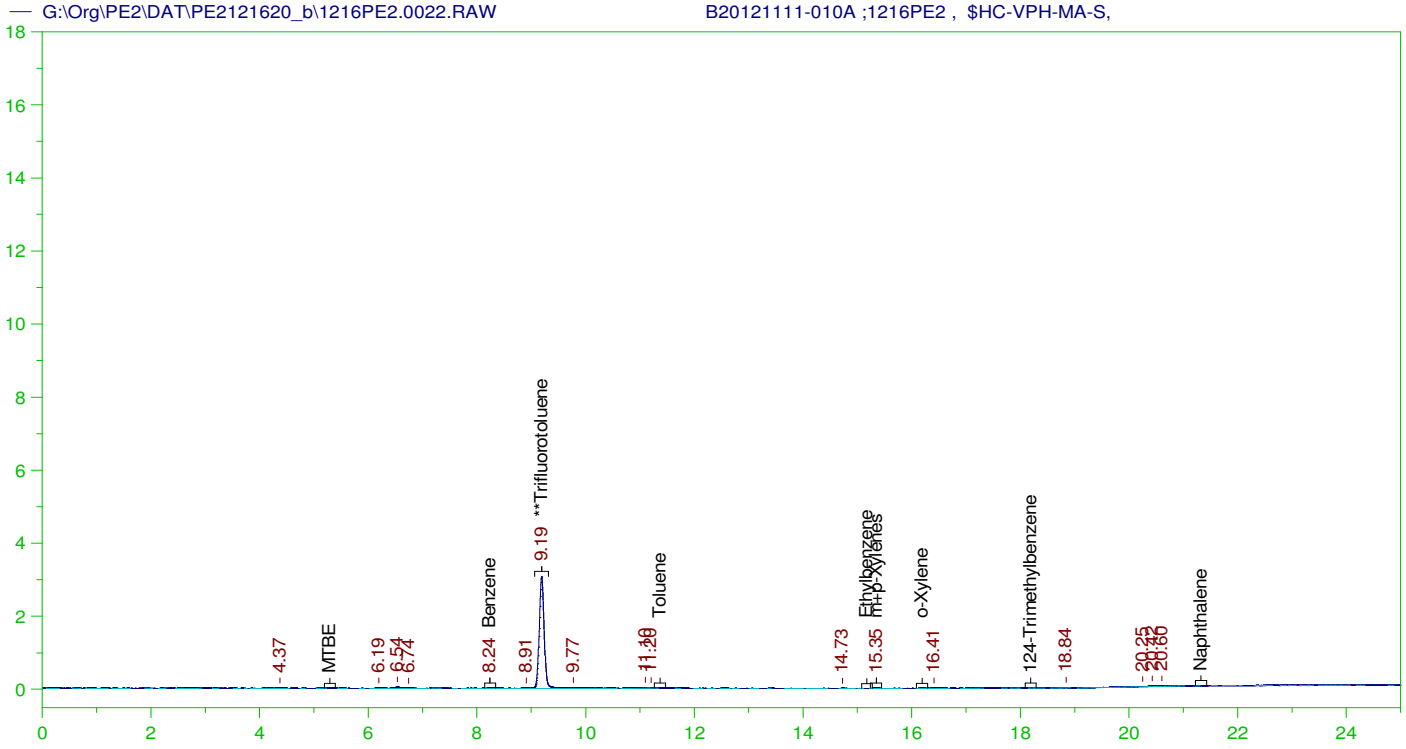
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.189	2.5	2.532	101.27	-

GRO Area:2349.73 GRO Amount: 0.1334288
TPH Area:2880.576 TPH Amount: 0.1635728

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2337.99 C5-C8 Amount: 0.1450208
C9-C12 Area:250.0074 C9-C12 Amount: 1.655156E-02

SB10 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0022.RAW B20121111-010A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-010A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0022.RAW
Date & Time Acquired: 12/16/2020 11:41:15 PM
Method File: G:\Org\PE2\Methods\201111V1111-10%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

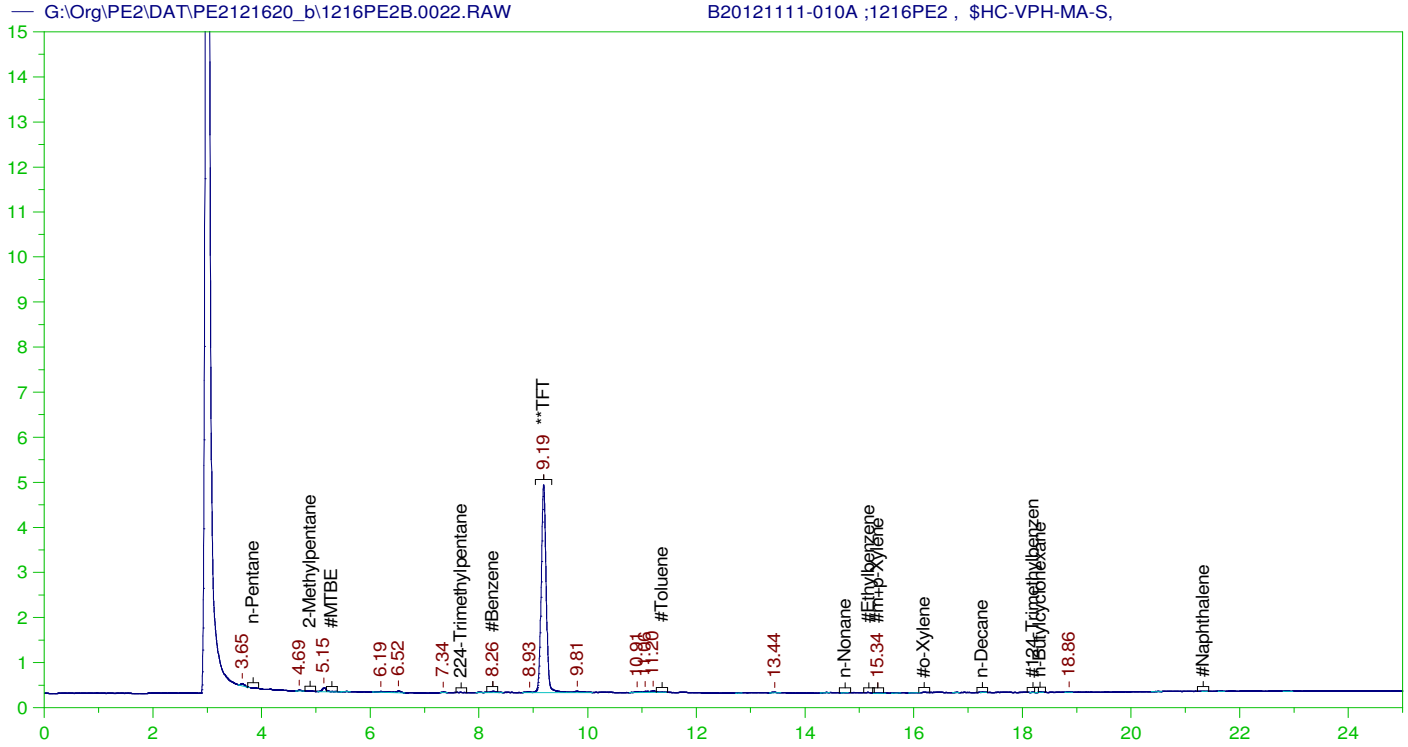
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:809.2992 C9-C10 Aromatics Amount: 3.431904E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.241	8.241	8.241	180	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.349	15.349	15.349	127	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.191	2.5	2.315	92.6	70-130

SB10 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0022.RAW B20121111-010A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-010A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0022.RAW
Date & Time Acquired: 12/16/2020 11:41:15 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

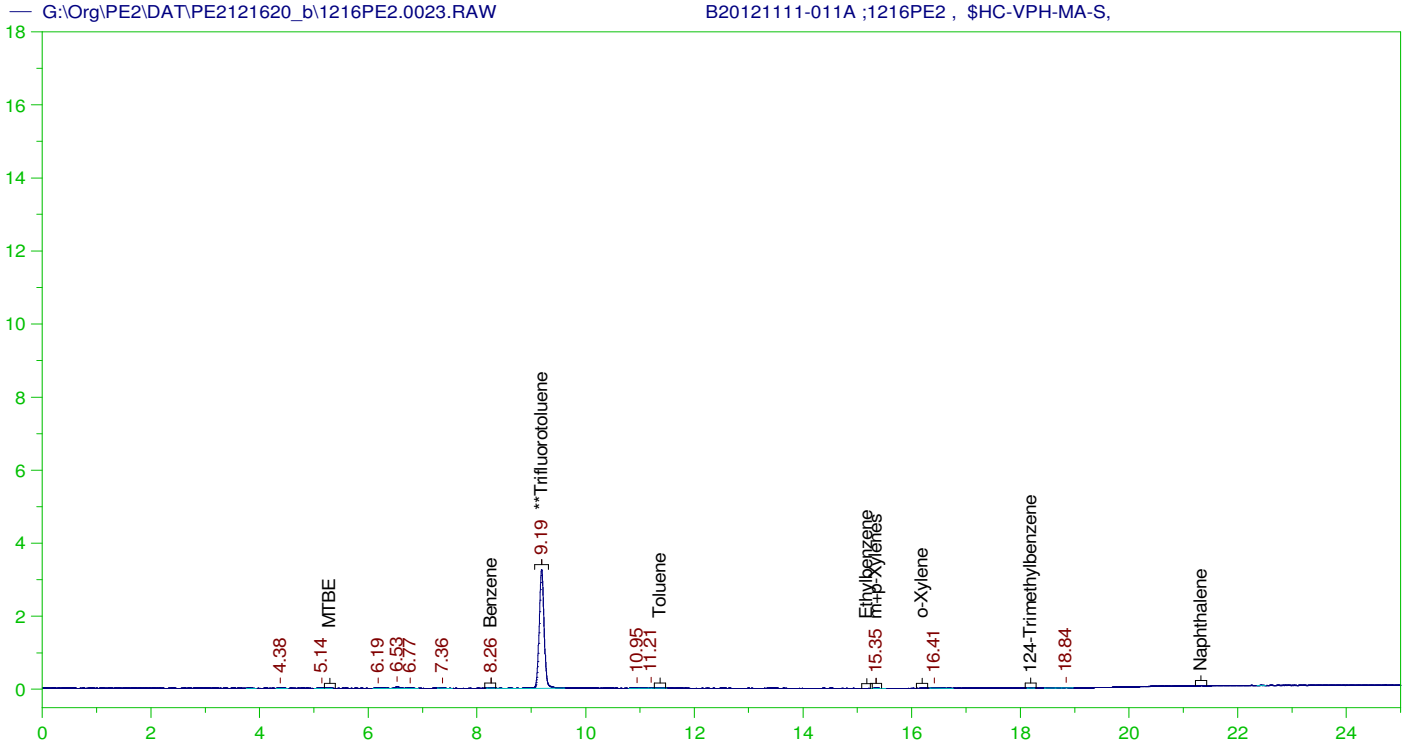
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**TFT	9.191	2.5	2.55	102.01 -

GRO Area:2397.213 GRO Amount: 0.1361251
TPH Area:2944.734 TPH Amount: 0.167216

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2259.314 C5-C8 Amount: 0.1401407
C9-C12 Area:368.2921 C9-C12 Amount: 2.438251E-02

SB11 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0023.RAW B20121111-011A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-011A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0023.RAW
Date & Time Acquired: 12/17/2020 12:16:59 AM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

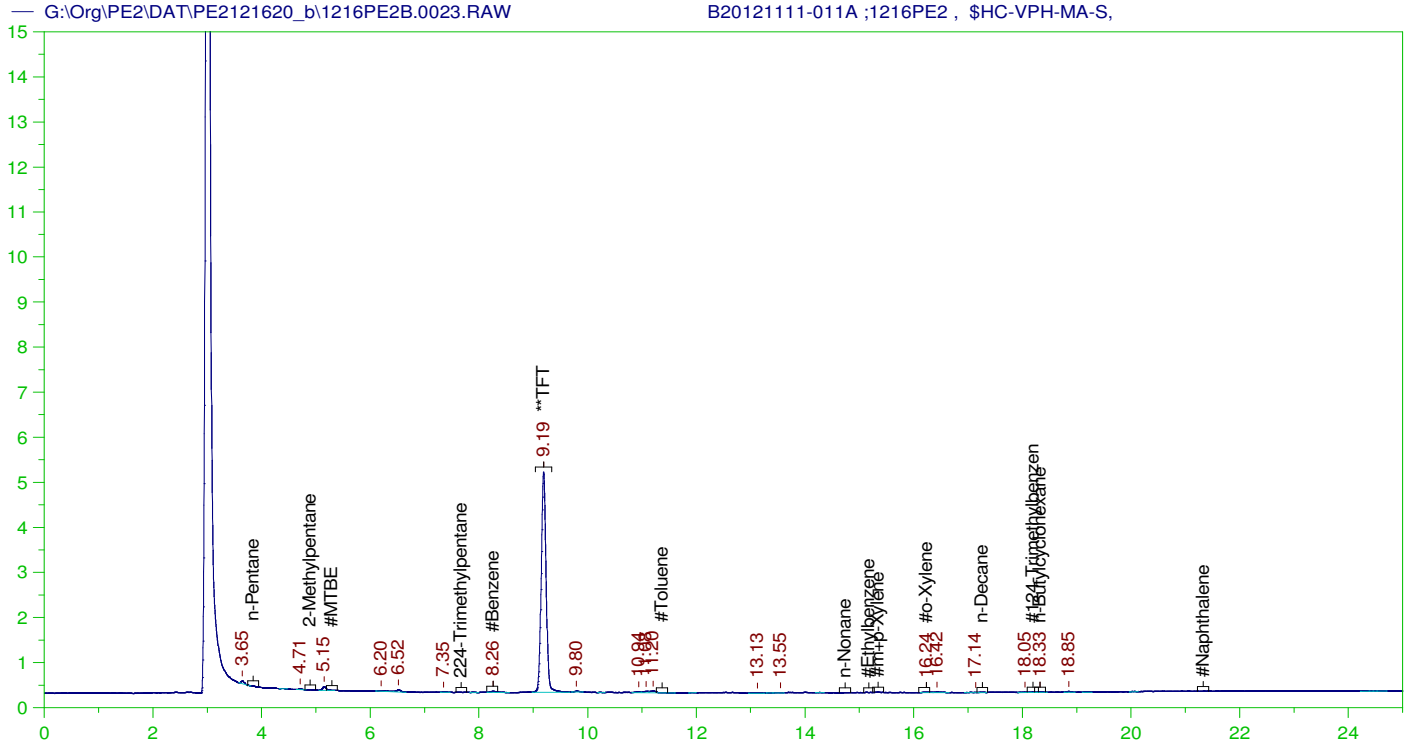
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:247.5213 C9-C10 Aromatics Amount: 1.049636E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.261	8.261	8.261	116	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.347	15.347	15.347	60	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.19	2.5	2.424	96.95	70-130

SB11 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0023.RAW B20121111-011A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-011A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0023.RAW
Date & Time Acquired: 12/17/2020 12:16:59 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

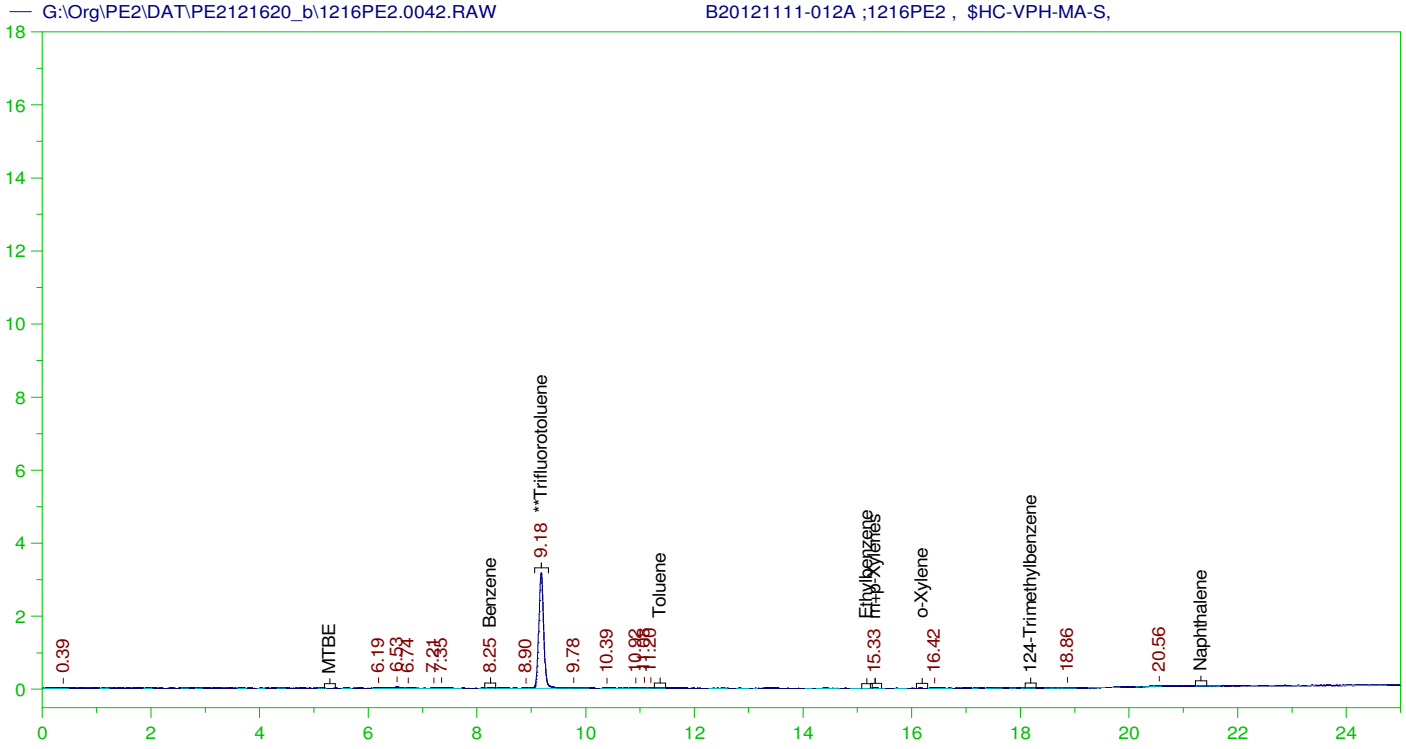
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.191	2.5	2.696	107.84	-

GRO Area:2359.164 GRO Amount: 0.1339645
TPH Area:3096.477 TPH Amount: 0.1758326

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2164.992 C5-C8 Amount: 0.1342901
C9-C12 Area:573.9782 C9-C12 Amount: 3.799981E-02

SB12 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0042.RAW B20121111-012A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-012A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0042.RAW
Date & Time Acquired: 12/17/2020 11:48:06 AM
Method File: G:\Org\PE2\Methods\201111V1111-12%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

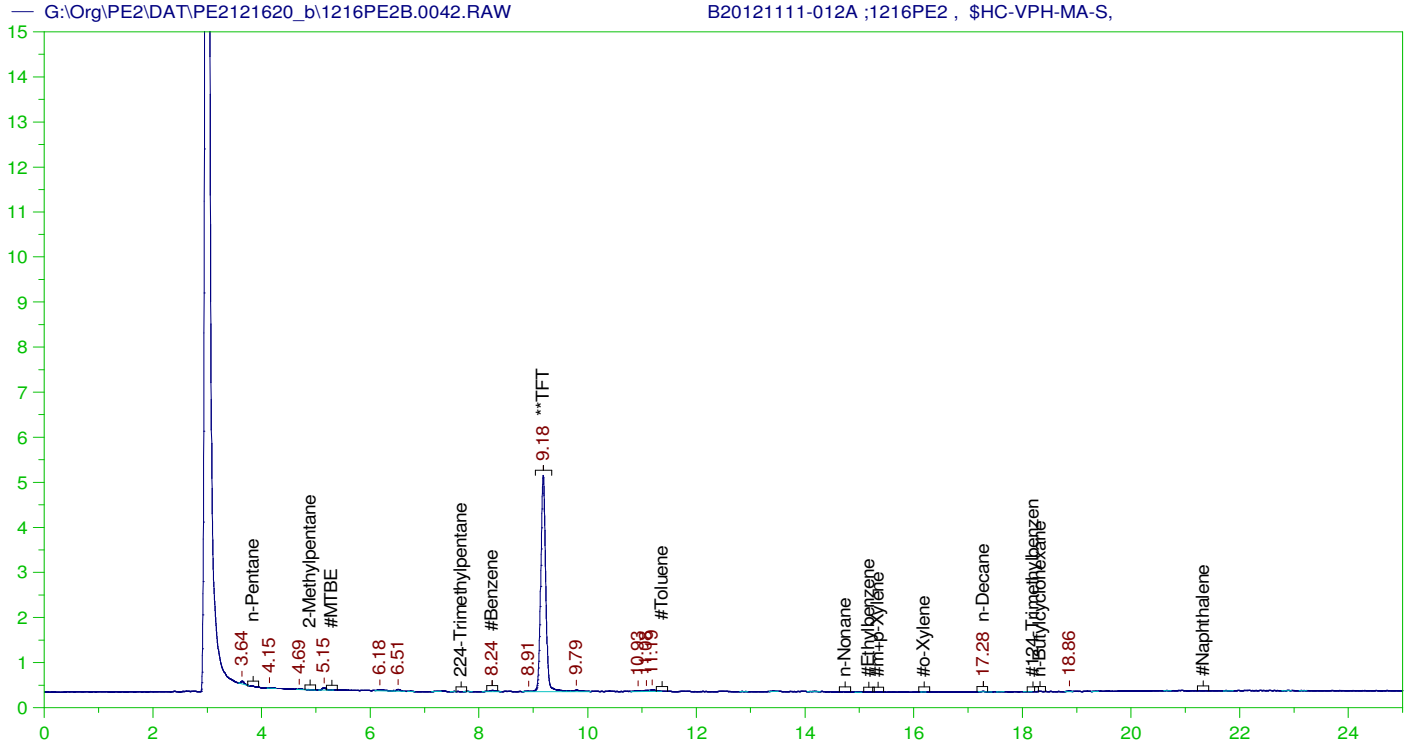
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:531.8365 C9-C10 Aromatics Amount: 0.022553

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.251	8.251	8.251	120	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.328	15.328	15.328	81	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.183	2.5	2.401	96.06	70-130

SB12 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0042.RAW B20121111-012A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-012A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0042.RAW
Date & Time Acquired: 12/17/2020 11:48:06 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

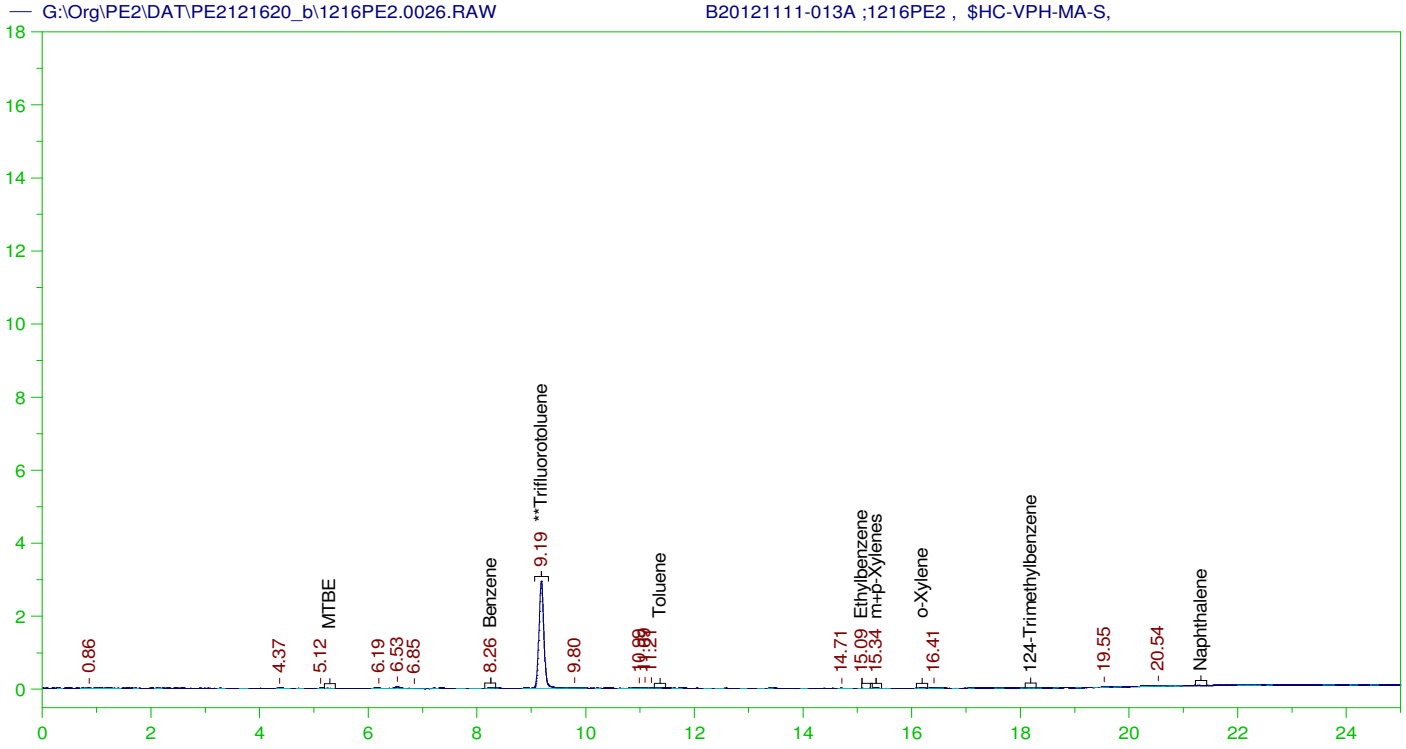
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.183	2.5	2.672	106.86	-

GRO Area:2109.205 GRO Amount: 0.1197707
TPH Area:2781.818 TPH Amount: 0.1579648

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2172.447 C5-C8 Amount: 0.1347525
C9-C12 Area:249.4714 C9-C12 Amount: 1.651607E-02

SB13 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0026.RAW B20121111-013A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-013A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0026.RAW
Date & Time Acquired: 12/17/2020 2:04:35 AM
Method File: G:\Org\PE2\Methods\201111V1111-13%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

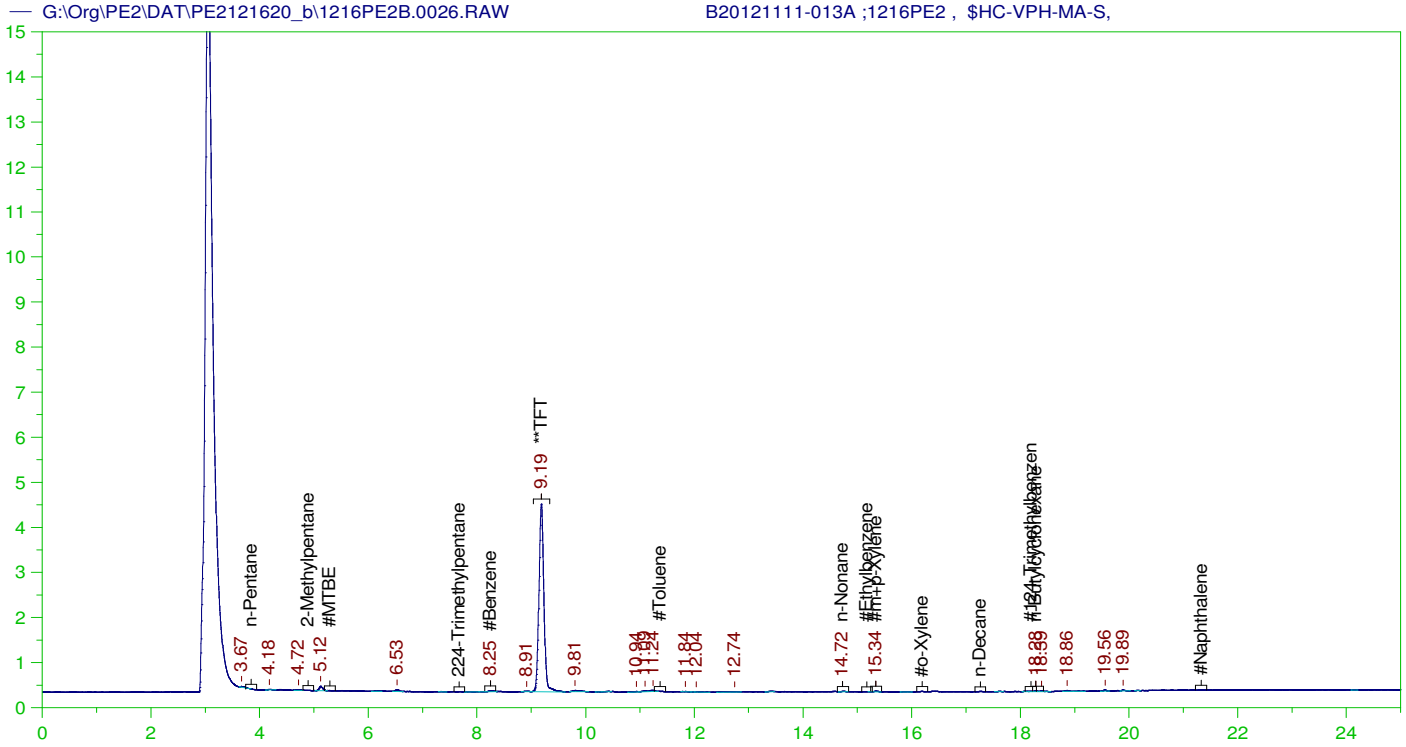
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:613.0123 C9-C10 Aromatics Amount: 2.599532E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.255	8.255	8.255	73	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	15.085	15.085	15.085	68	.05	U
m+p-Xylenes	15.342	15.342	15.342	98	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.186	2.5	2.216	88.63	70-130

SB13 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0026.RAW B20121111-013A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-013A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0026.RAW
Date & Time Acquired: 12/17/2020 2:04:35 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

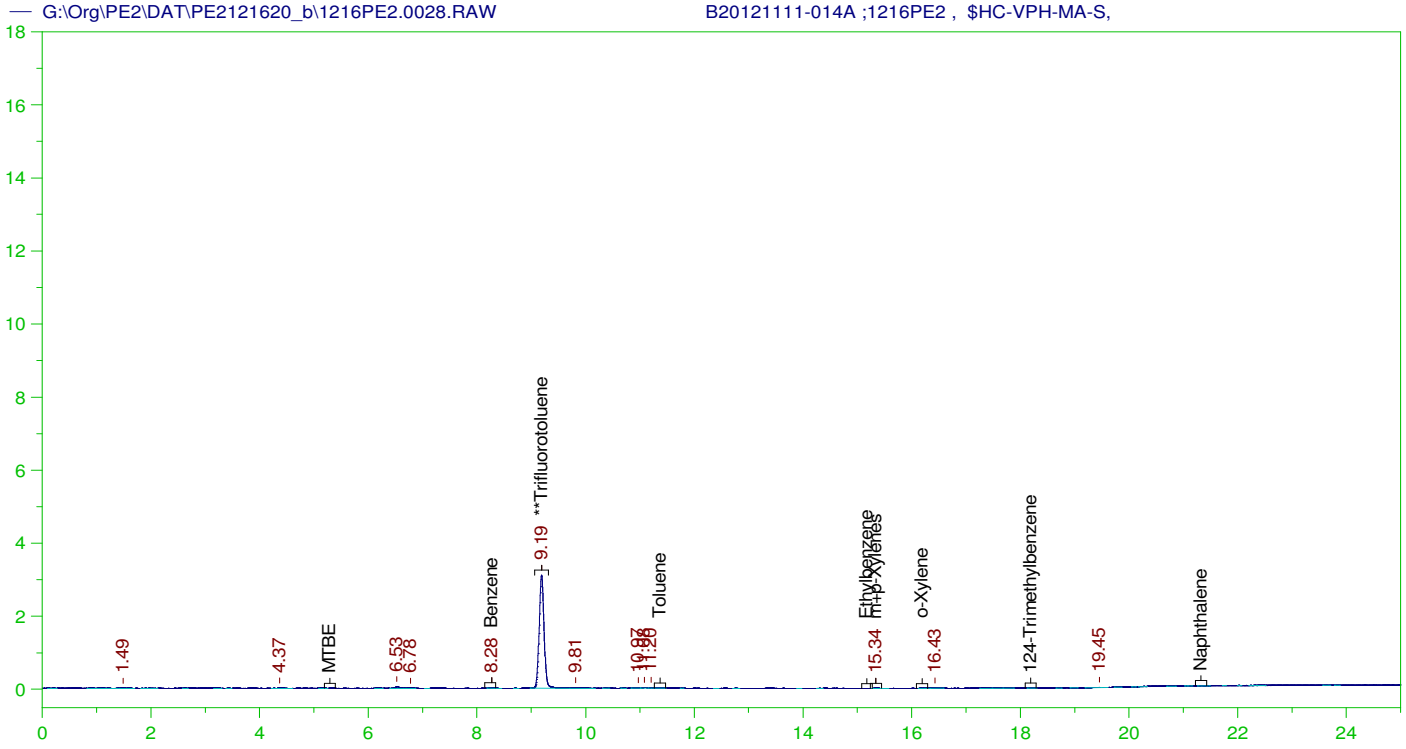
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.186	2.5	2.314	92.58	-

GRO Area:2094.441 GRO Amount: 0.1189323
TPH Area:2847.168 TPH Amount: 0.1616757

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2015.789 C5-C8 Amount: 0.1250353
C9-C12 Area:653.9307 C9-C12 Amount: 4.329301E-02

SB14 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0028.RAW B20121111-014A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-014A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0028.RAW
Date & Time Acquired: 12/17/2020 3:16:06 AM
Method File: G:\Org\PE2\Methods\201111V1111-14%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

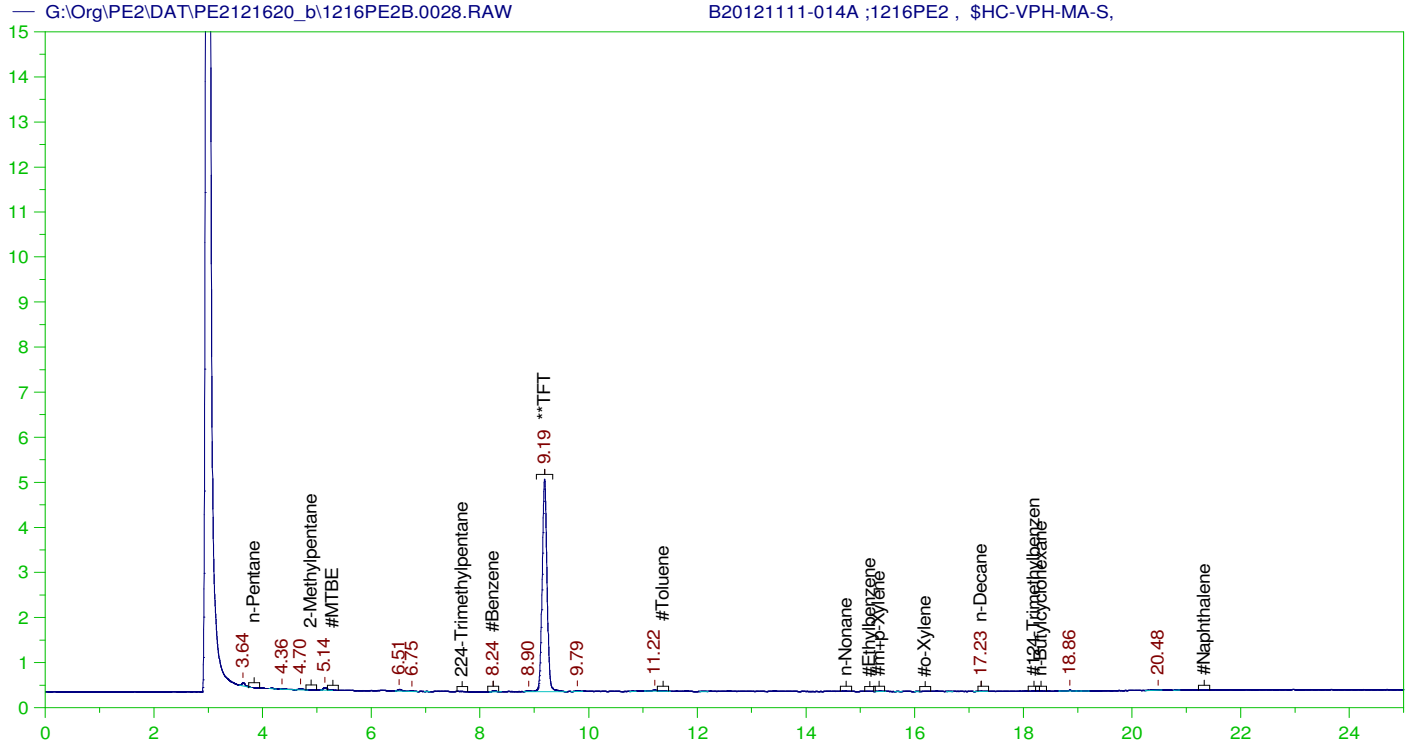
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:435.4575 C9-C10 Aromatics Amount: 1.846596E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.276	8.276	8.276	116	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.337	15.337	15.337	80	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.19	2.5	2.329	93.15	70-130

SB14 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0028.RAW B20121111-014A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-014A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0028.RAW
Date & Time Acquired: 12/17/2020 3:16:06 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

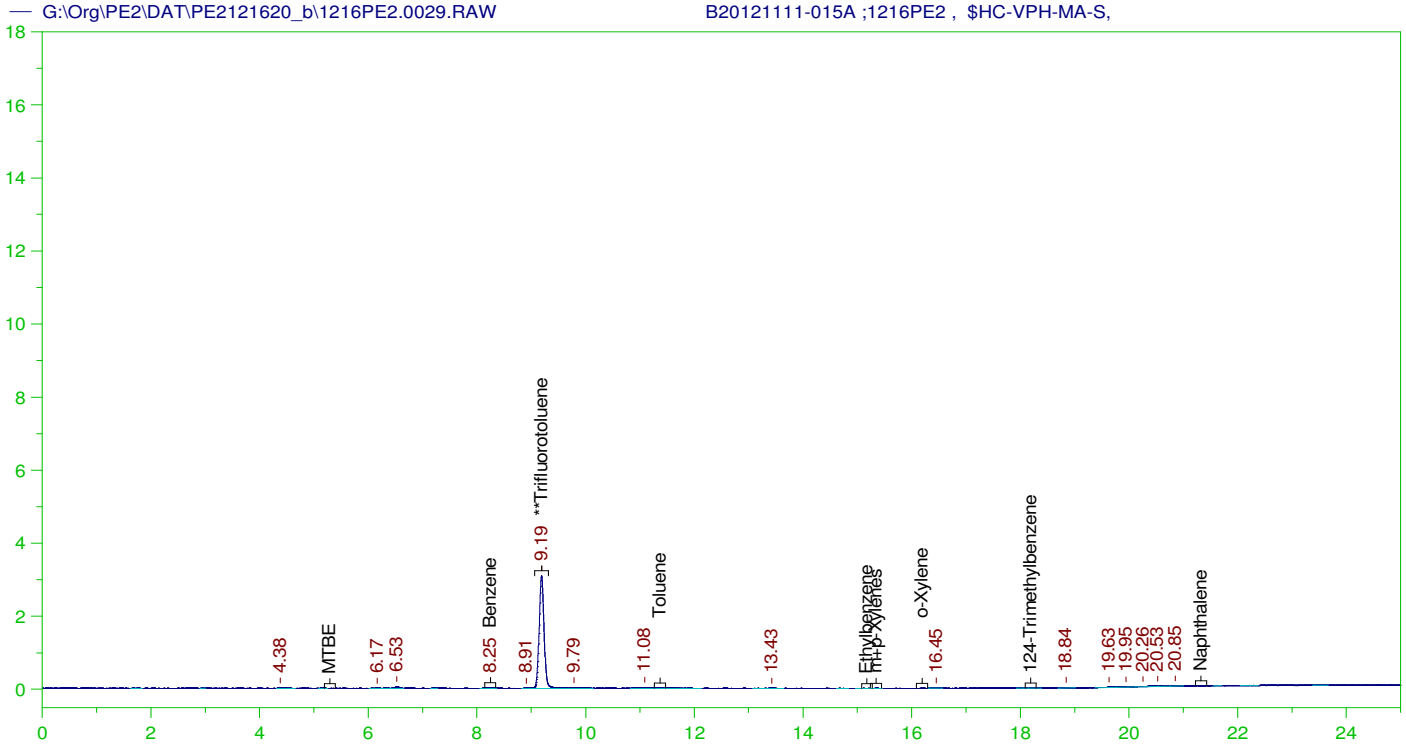
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.19	2.5	2.594	103.75	-

GRO Area:1355.967 GRO Amount: 7.699823E-02
TPH Area:2146.092 TPH Amount: 0.1218653

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1438.646 C5-C8 Amount: 8.923633E-02
C9-C12 Area:404.8388 C9-C12 Amount: 2.680206E-02

SB15 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0029.RAW B20121111-015A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-015A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0029.RAW
Date & Time Acquired: 12/17/2020 3:51:48 AM
Method File: G:\Org\PE2\Methods\201111V1111-15%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

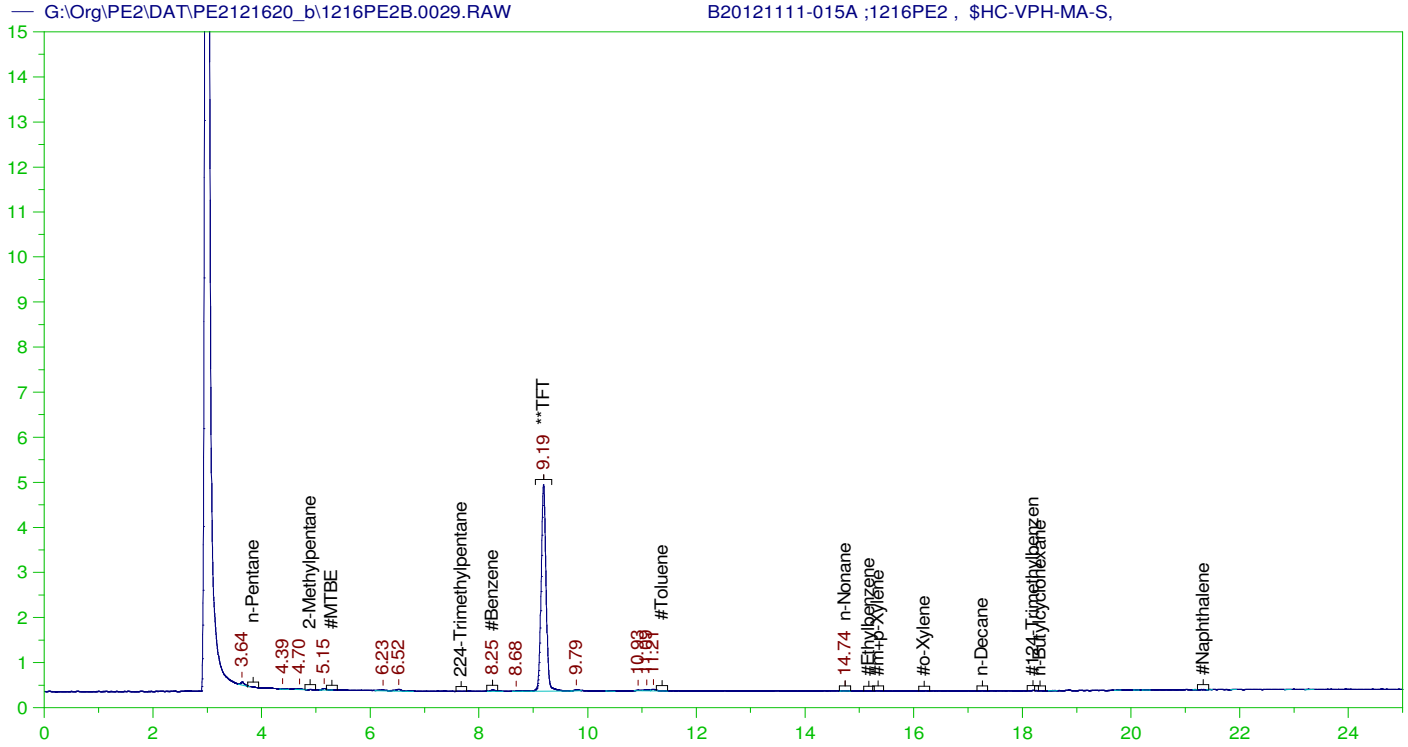
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:552.0867 C9-C10 Aromatics Amount: 2.341172E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.248	8.248	8.248	125	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.189	2.5	2.32	92.81	70-130

SB15 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0029.RAW B20121111-015A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-015A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0029.RAW
Date & Time Acquired: 12/17/2020 3:51:49 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

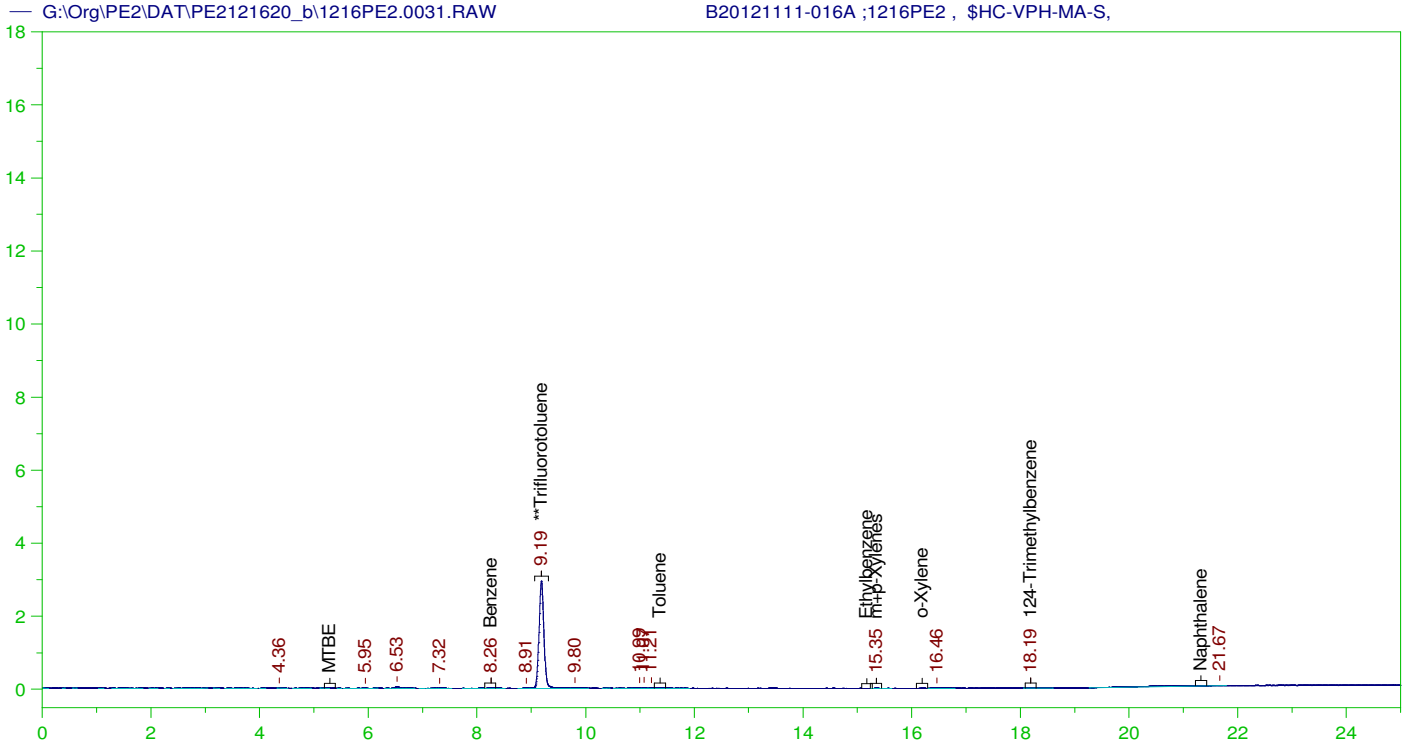
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.189	2.5	2.535	101.4	-

GRO Area:1495.238 GRO Amount: 8.490672E-02
TPH Area:2120.119 TPH Amount: 0.1203904

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1586.76 C5-C8 Amount: 9.842351E-02
C9-C12 Area:151.7368 C9-C12 Amount: 1.004562E-02

SB16 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0031.RAW B20121111-016A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-016A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0031.RAW
Date & Time Acquired: 12/17/2020 5:03:11 AM
Method File: G:\Org\PE2\Methods\201111V1111-16%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

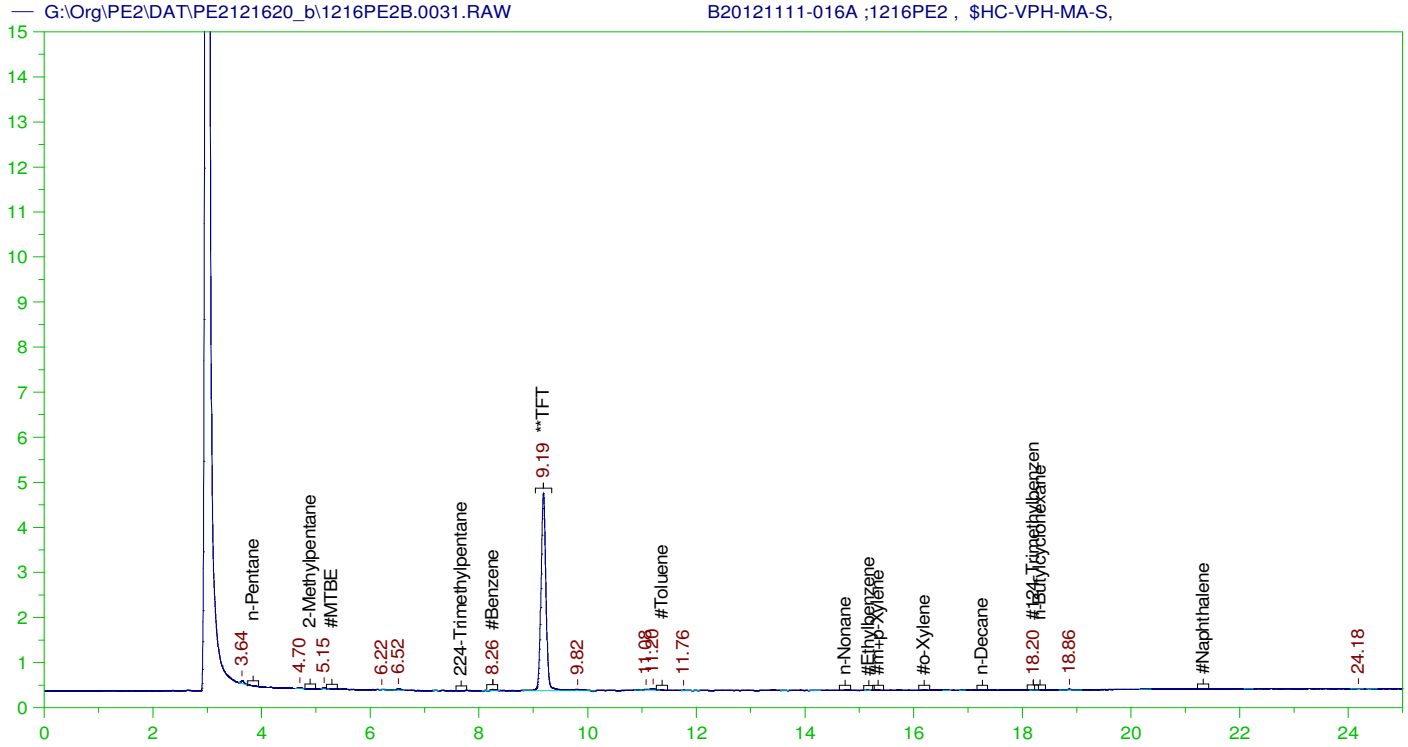
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:289.1317 C9-C10 Aromatics Amount: 1.226088E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.262	8.262	8.262	166	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	15.347	15.347	15.347	88	.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	18.194	18.194	18.194	106	.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.187	2.5	2.216	88.64	70-130

SB16 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0031.RAW B20121111-016A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-016A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0031.RAW
Date & Time Acquired: 12/17/2020 5:03:11 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

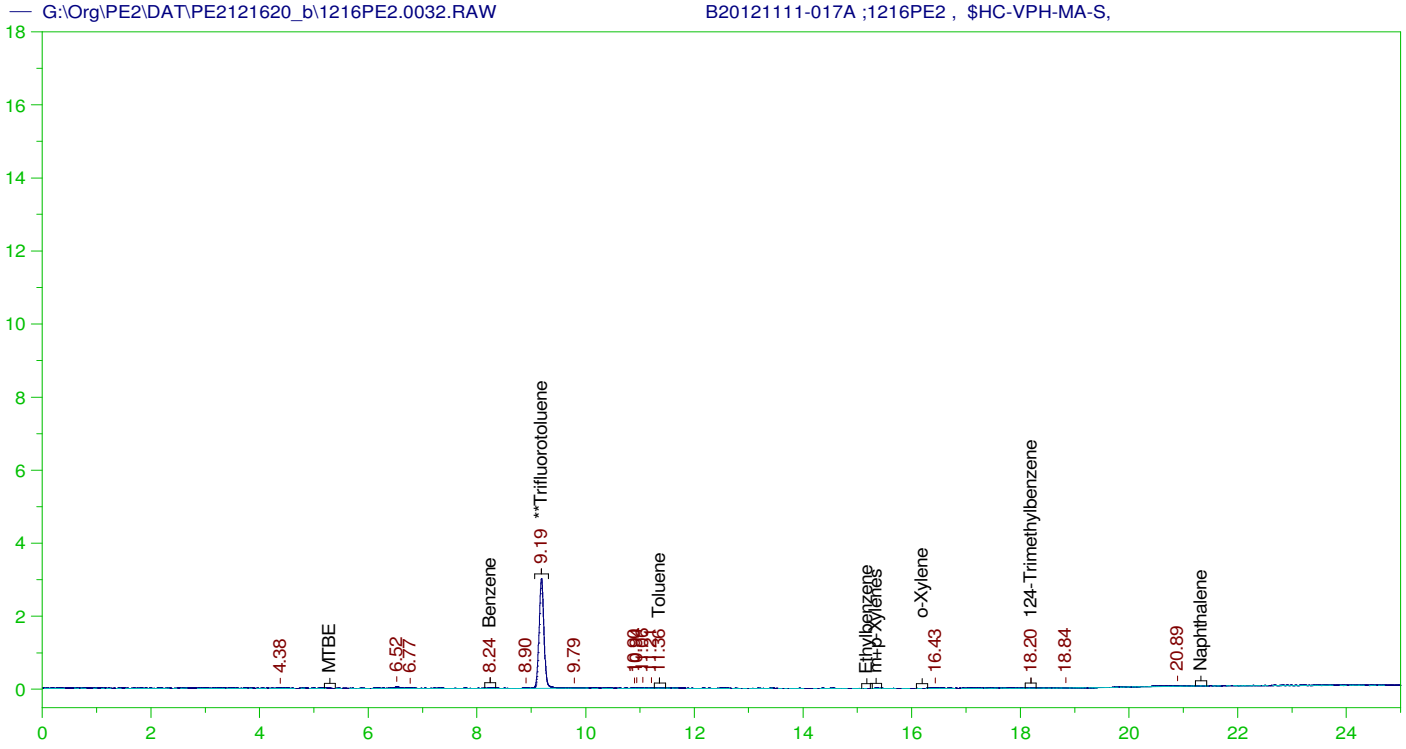
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC
**TFT	9.187	2.5	2.425	97. -

GRO Area:1608.129 GRO Amount: 9.131718E-02
TPH Area:2316.863 TPH Amount: 0.1315625

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1633.592 C5-C8 Amount: 0.1013284
C9-C12 Area:336.4045 C9-C12 Amount: 2.227142E-02

SB17 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0032.RAW B20121111-017A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-017A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0032.RAW
Date & Time Acquired: 12/17/2020 5:38:55 AM
Method File: G:\Org\PE2\Methods\201111V1111-17%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

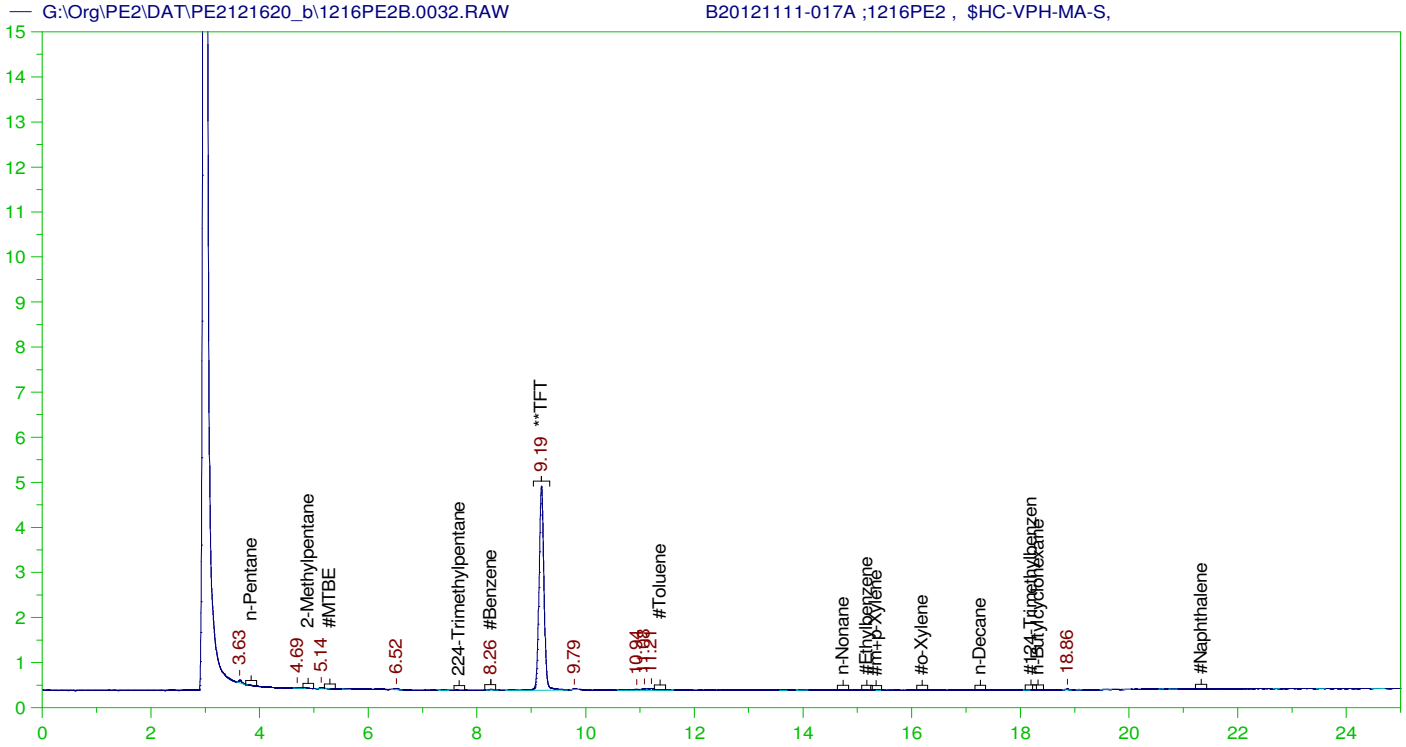
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:965.6653 C9-C10 Aromatics Amount: 4.094988E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.243	8.243	8.243	141	.05	U
Toluene	11.356	11.356	11.356	53	.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	18.198	18.198	18.198	53	.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.188	2.5	2.264	90.58	70-130

SB17 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0032.RAW B20121111-017A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-017A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0032.RAW
Date & Time Acquired: 12/17/2020 5:38:55 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

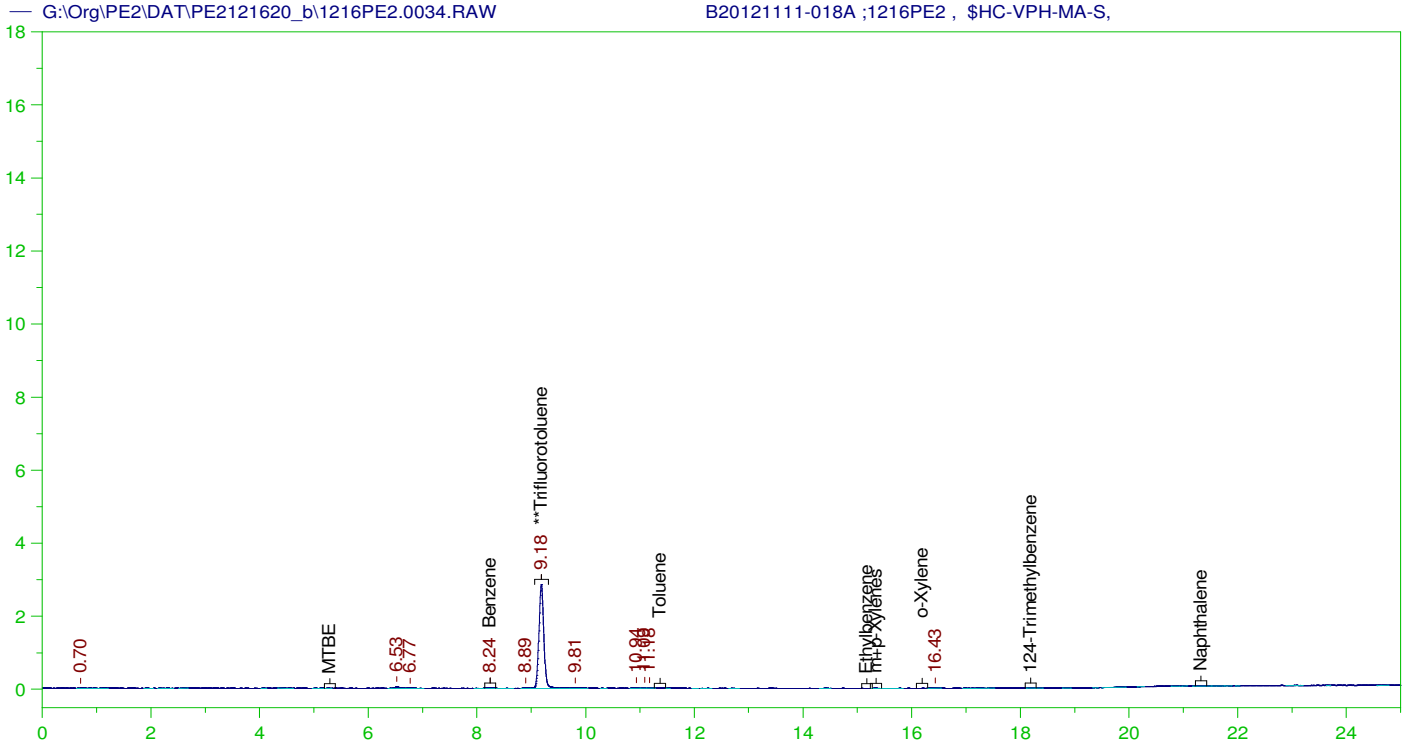
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.188	2.5	2.495	99.81	-

GRO Area:1558.822 GRO Amount: 8.851732E-02
TPH Area:2172.484 TPH Amount: 0.123364

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1635.967 C5-C8 Amount: 0.1014757
C9-C12 Area:216.8482 C9-C12 Amount: 1.435628E-02

SB18 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0034.RAW B20121111-018A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-018A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0034.RAW
Date & Time Acquired: 12/17/2020 6:50:52 AM
Method File: G:\Org\PE2\Methods\201111V1111-18%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

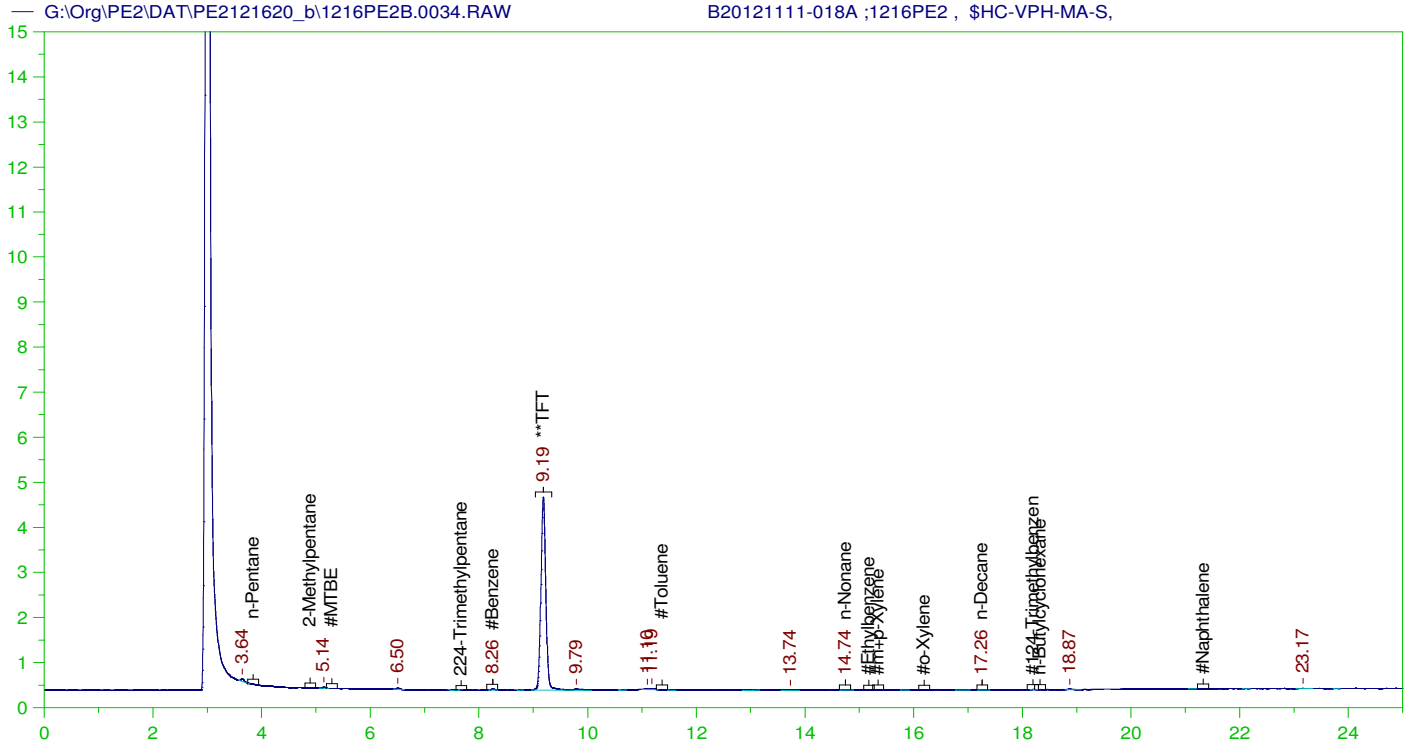
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:407.6978 C9-C10 Aromatics Amount: 1.728878E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.243	8.243	8.243	180	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.185	2.5	2.138	85.52	70-130

SB18 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0034.RAW B20121111-018A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-018A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0034.RAW
Date & Time Acquired: 12/17/2020 6:50:52 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

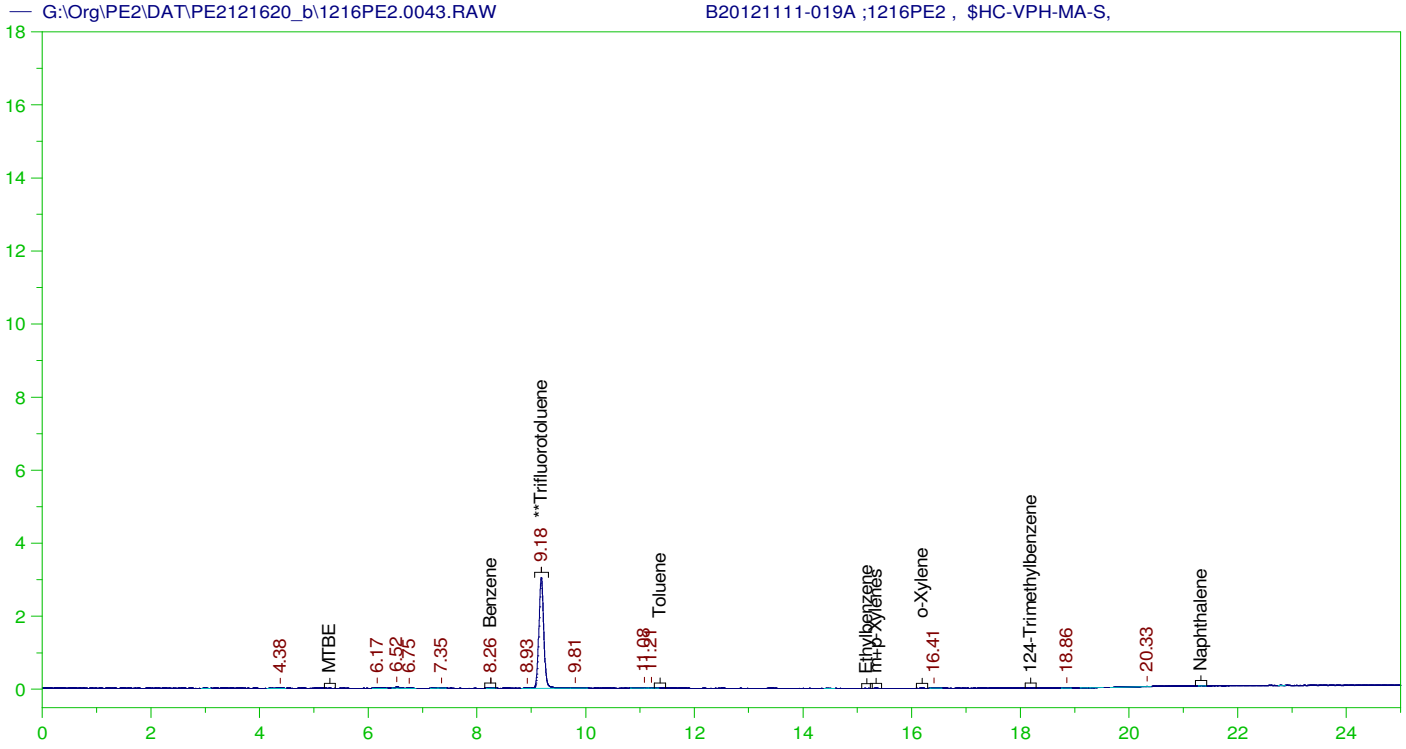
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.185	2.5	2.365	94.61	-

GRO Area:1345.877 GRO Amount: 7.642528E-02
TPH Area:1843.369 TPH Amount: 0.1046752

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1136.355 C5-C8 Amount: 7.048584E-02
C9-C12 Area:362.3702 C9-C12 Amount: 2.399046E-02

SB19 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0043.RAW B20121111-019A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-019A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0043.RAW
Date & Time Acquired: 12/17/2020 12:24:17 PM
Method File: G:\Org\PE2\Methods\201111VPH%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

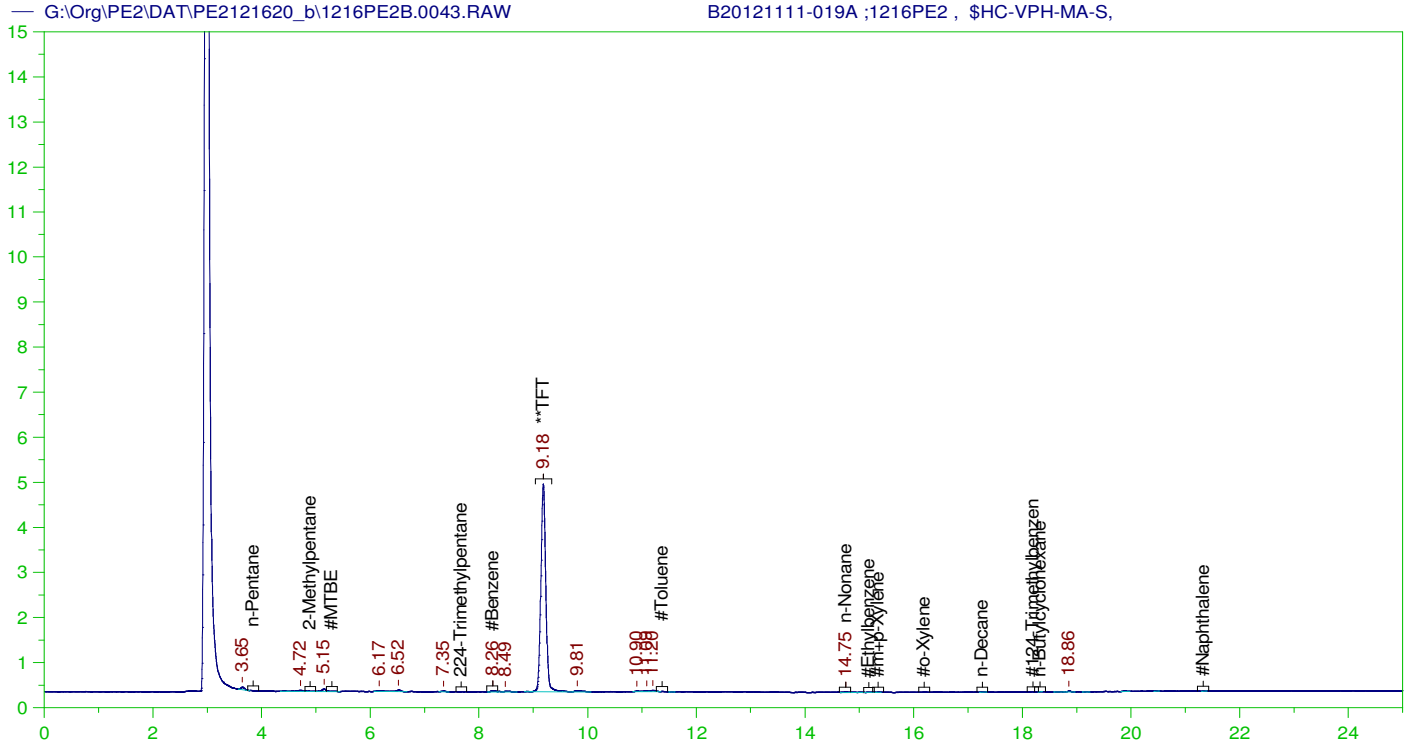
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:344.2312 C9-C10 Aromatics Amount: 1.459743E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.256	8.256	8.256	89	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.184	2.5	2.294	91.77	70-130

SB19 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0043.RAW B20121111-019A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-019A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0043.RAW
Date & Time Acquired: 12/17/2020 12:24:17 PM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

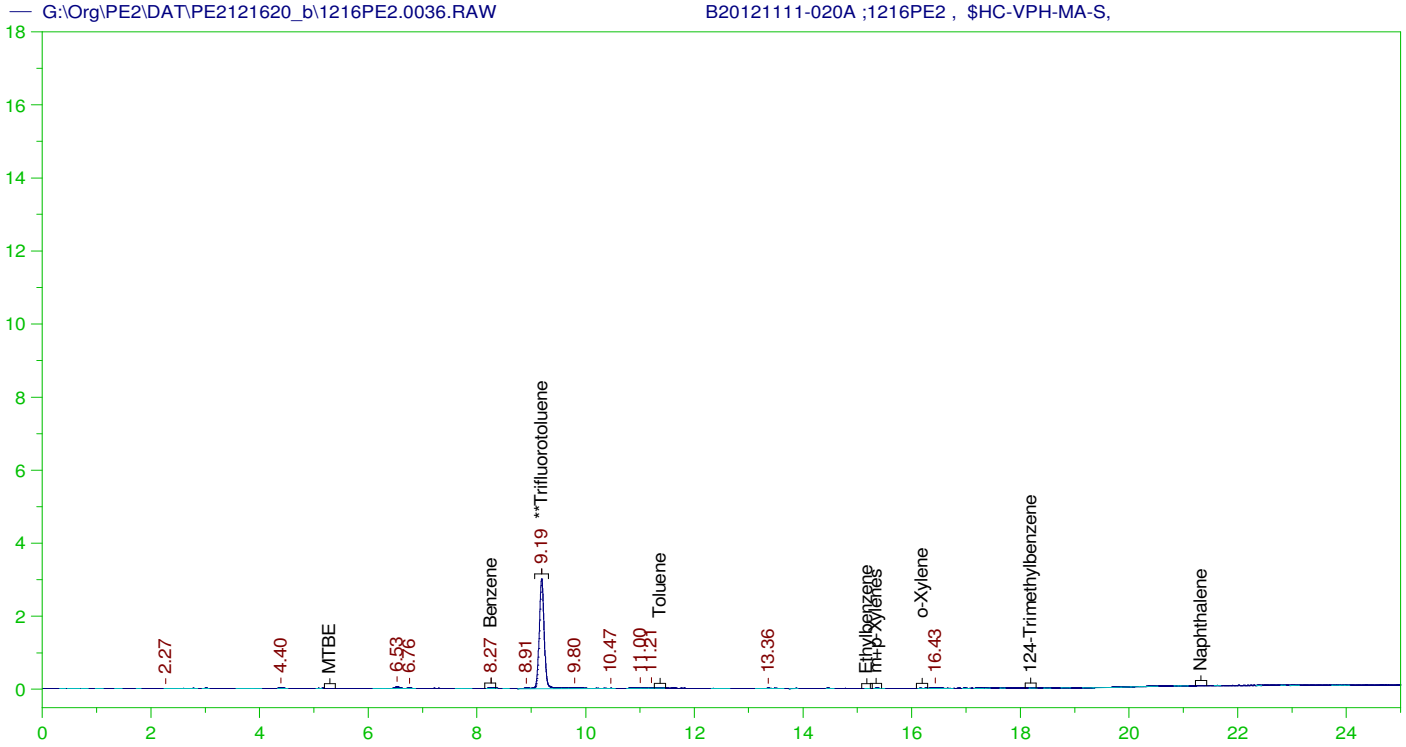
SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.184	2.5	2.546	101.86	-

GRO Area:1767.559 GRO Amount: 0.1003704
TPH Area:2495.014 TPH Amount: 0.1416787

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:1879.838 C5-C8 Amount: 0.1166026
C9-C12 Area:313.9207 C9-C12 Amount: 0.0207829

SB20 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2.0036.RAW B20121111-020A ;1216PE2 , $HC-VPH-MA-S,



VPH AROMATICS PHOTOIONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-020A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2.0036.RAW
Date & Time Acquired: 12/17/2020 8:13:13 AM
Method File: G:\Org\PE2\Methods\201111V1111-20%.MET
Calibration File: G:\Org\PE2\Cals\201111VPH.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

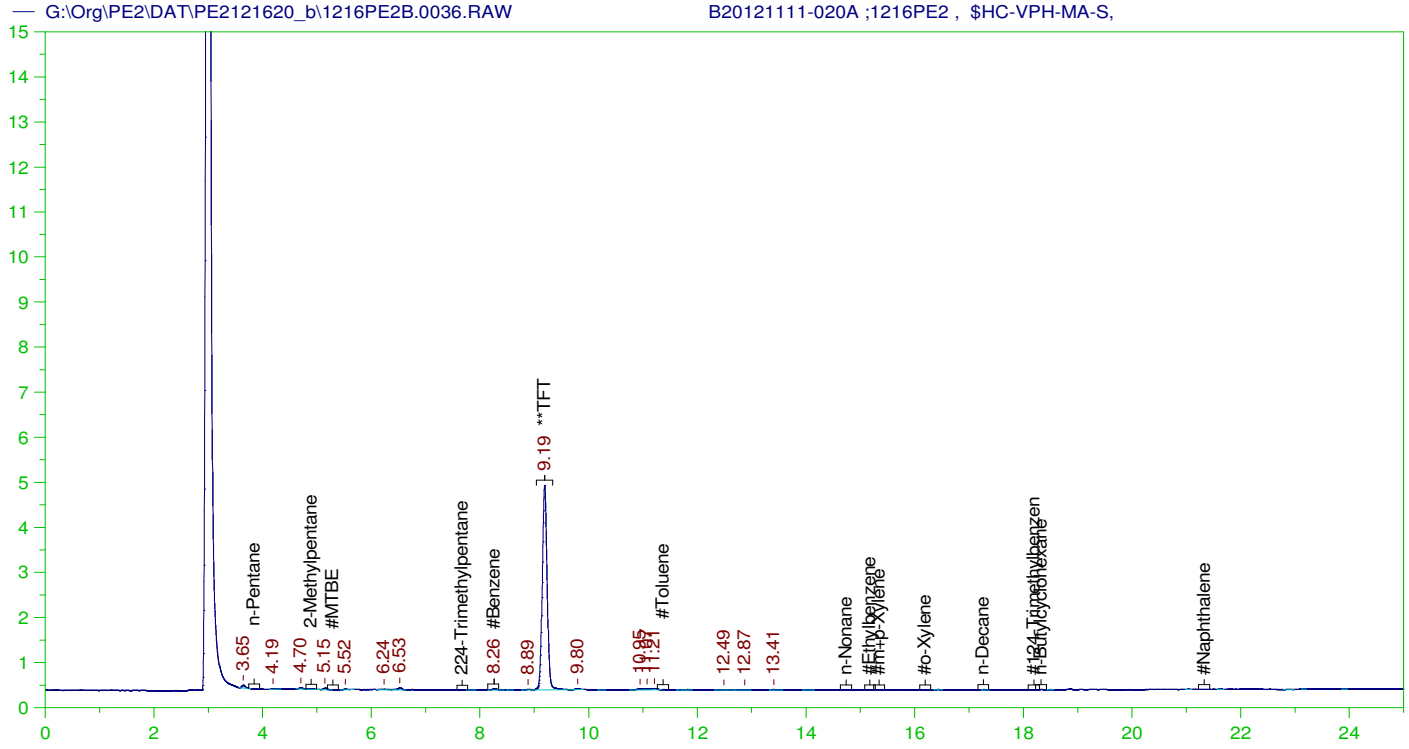
Mean RF for C9 to C10 Aromatic Hydrocarbons: 471.6328
Rt range for C9 to C10 Aromatics: 16.289 to 21.226
Aromatic Hydrocarbon Range Area and Quantitation:
C9-C10 Aromatics Area:556.8268 C9-C10 Aromatics Amount: 2.361273E-02

TARGET ANALYTES	RT	CAL RRT	RRT	AREA	AMOUNT	FLAG
MTBE	.	.	.		.1	U
Benzene	8.265	8.265	8.265	85	.05	U
Toluene	.	.	.		.05	U
Ethylbenzene	.	.	.		.05	U
m+p-Xylenes	.	.	.		.05	U
o-Xylene	.	.	.		.05	U
124-Trimethylbenzene	.	.	.		.05	U
Naphthalene	.	.	.		.1	U

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	QC LIMITS
**Trifluorotoluene	9.191	2.5	2.259	90.36	70-130

SB20 Batch ID: 151330

G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0036.RAW B20121111-020A ;1216PE2 , $HC-VPH-MA-S,



VPH ALIPHATICS FLAME IONIZATION DETECTOR CHROMATOGRAM REPORT

Sample Name: B20121111-020A ;1216PE2 , $HC-VPH-MA-S,
Raw File: G:\Org\PE2\DAT\PE2121620_b\1216PE2B.0036.RAW
Date & Time Acquired: 12/17/2020 8:13:13 AM
Method File: G:\Org\PE2\Methods\201111VPHB%.MET
Calibration File: G:\Org\PE2\Cals\201111VPHB.CAL
Sample Weight: 50 Dilution: 1 S.A.: 1

Mean RF for C5 to C8 Aliphatic Hydrocarbons: 322.4351
Mean RF for C9 to C12 Aliphatic Hydrocarbons: 302.0953
Mean RF for all calibrated compounds: 352.2073
Rt range for Gasoline Range Organics: 4.794165 to 17.36439
Rt range for C5 to C8 Aliphatic Hydrocarbons: 3.745536 to 14.63418
Rt range for C9 to C12 Aliphatic Hydrocarbons: 14.68418 to 21.22657

SURROGATE COMPOUND	RT	ACTUAL	MEASURED	%REC	
**TFT	9.192	2.5	2.512	100.49	-

GRO Area:2081.928 GRO Amount: 0.1182217
TPH Area:2757.008 TPH Amount: 0.156556

Aliphatic Hydrocarbon Areas and Quantitations uncorrected for Aromatics:
C5-C8 Area:2280.023 C5-C8 Amount: 0.1414253
C9-C12 Area:91.37585 C9-C12 Amount: 6.049473E-03

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: MT Dept of Transportation **Work Order:** B20121111 **Report Date:** 12/18/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW8015M										Batch: 151316
Lab ID: LCS-151316	2	Laboratory Control Sample				Run: GCFID-HP3-B_201214C				12/16/20 16:07
Total Extractable Hydrocarbons		179	mg/kg	10	84	60	140			
Surr: o-Terphenyl				0.067	81	40	140			
Lab ID: MB-151316	2	Method Blank				Run: GCFID-HP3-B_201214C				12/16/20 16:50
Total Extractable Hydrocarbons		ND	mg/kg	10						
Surr: o-Terphenyl				0.067	78	40	140			
Lab ID: B20121111-001AMS	2	Sample Matrix Spike				Run: GCFID-HP3-B_201214C				12/16/20 18:19
Total Extractable Hydrocarbons		232	mg/kg-dry	12	84	60	140			
Surr: o-Terphenyl				0.082	71	40	140			
Lab ID: B20121111-001AMSD	2	Sample Matrix Spike Duplicate				Run: GCFID-HP3-B_201214C				12/16/20 19:03
Total Extractable Hydrocarbons		228	mg/kg-dry	12	83	60	140	2.0	20	
Surr: o-Terphenyl				0.082	67	40	140			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: MT Dept of Transportation **Work Order:** B20121111 **Report Date:** 12/18/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **SW8015M**										Analytical Run: R353640
Lab ID: **CCV_1214HP370r-S**	15	Continuing Calibration Verification Standard								12/16/20 14:40
n-Nonane		6.79	mg/kg		102	75	125			
n-Decane		6.98	mg/kg		105	75	125			
n-Dodecane		6.74	mg/kg		101	75	125			
n-Tetradecane		6.66	mg/kg		100	75	125			
n-Hexadecane		6.67	mg/kg		100	75	125			
n-Octadecane		6.73	mg/kg		101	75	125			
n-Nonadecane		6.73	mg/kg		101	75	125			
n-Eicosane		6.70	mg/kg		100	75	125			
n-Docosane		6.70	mg/kg		101	75	125			
n-Tetracosane		6.73	mg/kg		101	75	125			
n-Hexacosane		6.75	mg/kg		101	75	125			
n-Octacosane		6.71	mg/kg		101	75	125			
n-Triacontane		6.74	mg/kg		101	75	125			
n-Hexatriacontane		6.52	mg/kg		98	75	125			
Surr: o-Terphenyl				0.067	95	75	125			
Lab ID: **CCV_1214HP385r-S**	15	Continuing Calibration Verification Standard								12/17/20 01:40
n-Nonane		6.63	mg/kg		99	75	125			
n-Decane		6.83	mg/kg		102	75	125			
n-Dodecane		6.44	mg/kg		97	75	125			
n-Tetradecane		6.38	mg/kg		96	75	125			
n-Hexadecane		6.39	mg/kg		96	75	125			
n-Octadecane		6.45	mg/kg		97	75	125			
n-Nonadecane		6.44	mg/kg		97	75	125			
n-Eicosane		6.41	mg/kg		96	75	125			
n-Docosane		6.41	mg/kg		96	75	125			
n-Tetracosane		6.43	mg/kg		96	75	125			
n-Hexacosane		6.45	mg/kg		97	75	125			
n-Octacosane		6.41	mg/kg		96	75	125			
n-Triacontane		6.43	mg/kg		96	75	125			
n-Hexatriacontane		6.22	mg/kg		93	75	125			
Surr: o-Terphenyl				0.067	91	75	125			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: MT Dept of Transportation **Work Order:** B20121111 **Report Date:** 12/18/20

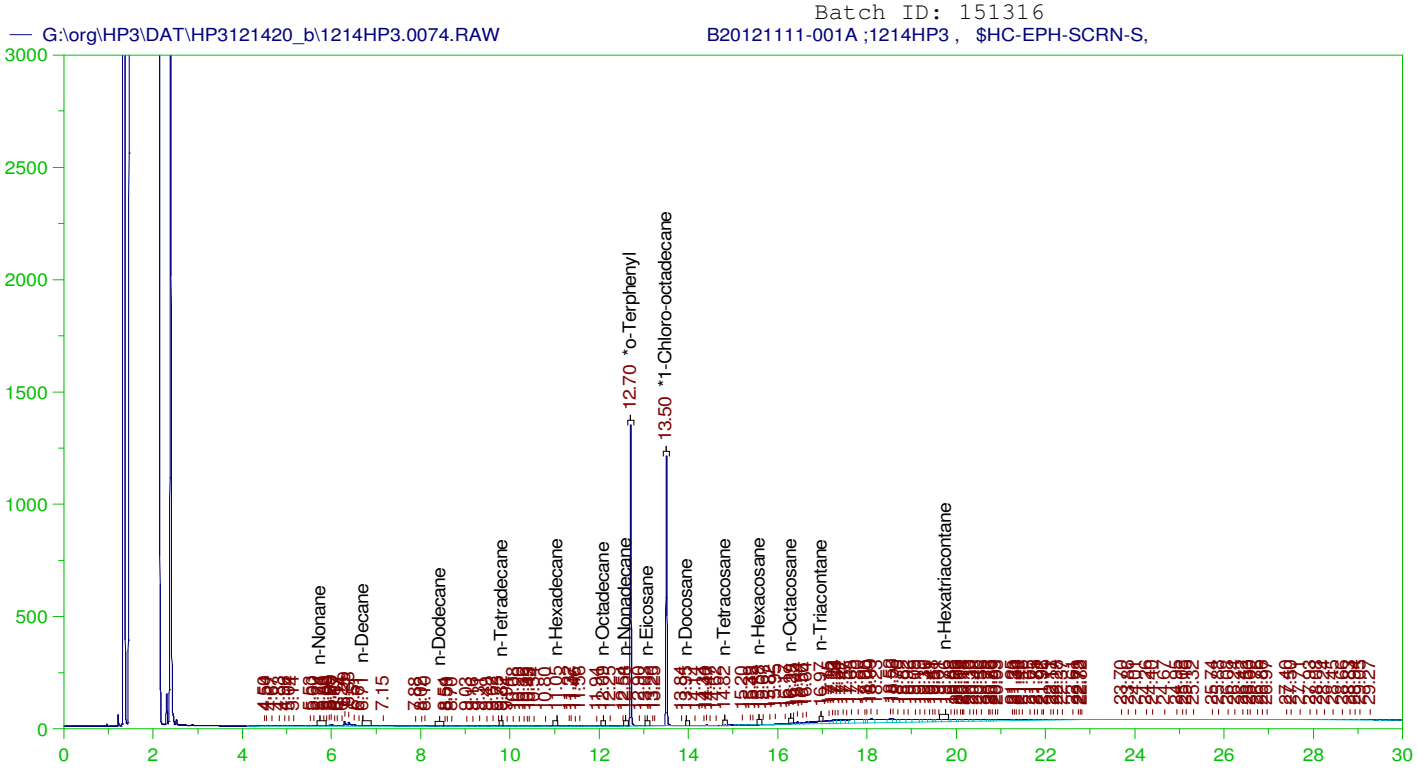
Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **SW8015M**										Analytical Run: R353652
Lab ID: **CCV_1217HP304r-S**	15	Continuing Calibration Verification Standard								12/17/20 12:39
n-Nonane		6.78	mg/kg		102	75	125			
n-Decane		7.06	mg/kg		106	75	125			
n-Dodecane		6.71	mg/kg		101	75	125			
n-Tetradecane		6.64	mg/kg		100	75	125			
n-Hexadecane		6.66	mg/kg		100	75	125			
n-Octadecane		6.73	mg/kg		101	75	125			
n-Nonadecane		6.72	mg/kg		101	75	125			
n-Eicosane		6.69	mg/kg		100	75	125			
n-Docosane		6.69	mg/kg		100	75	125			
n-Tetracosane		6.72	mg/kg		101	75	125			
n-Hexacosane		6.74	mg/kg		101	75	125			
n-Octacosane		6.70	mg/kg		100	75	125			
n-Triacontane		6.67	mg/kg		100	75	125			
n-Hexatriacontane		6.44	mg/kg		97	75	125			
Surr: o-Terphenyl				0.067	96	75	125			

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

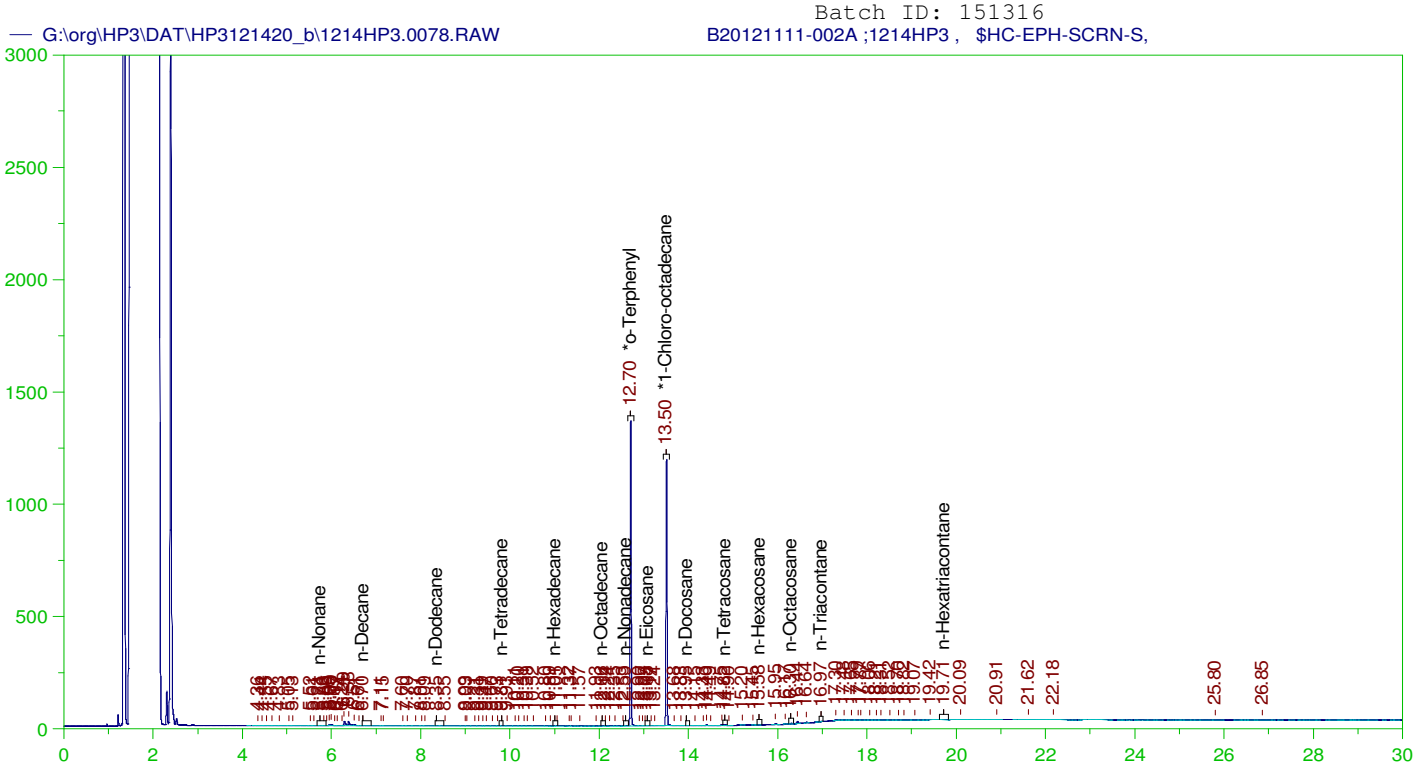
Sample Name: B20121111-001A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0074.RAW
Date & Time Acquired: 12/16/2020 5:34:58 PM
Method File: G:\Org\HP3\Methods\SR_SCN-121474-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.05 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	2239799	6.656	4.183	62.85	-
*1-Chloro-octadecane	13.503	2154188	6.656	5.182	77.85	-

DRO Area:571063 DRO Amount: 1.262565
TEH Area:4333516 TEH Amount: 9.58098
C9-C18 Area:292288.9 C9-C18 Amount: 0.6546513
C19-C36 Area:2928550 C19-C36 Amount: 6.392431

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

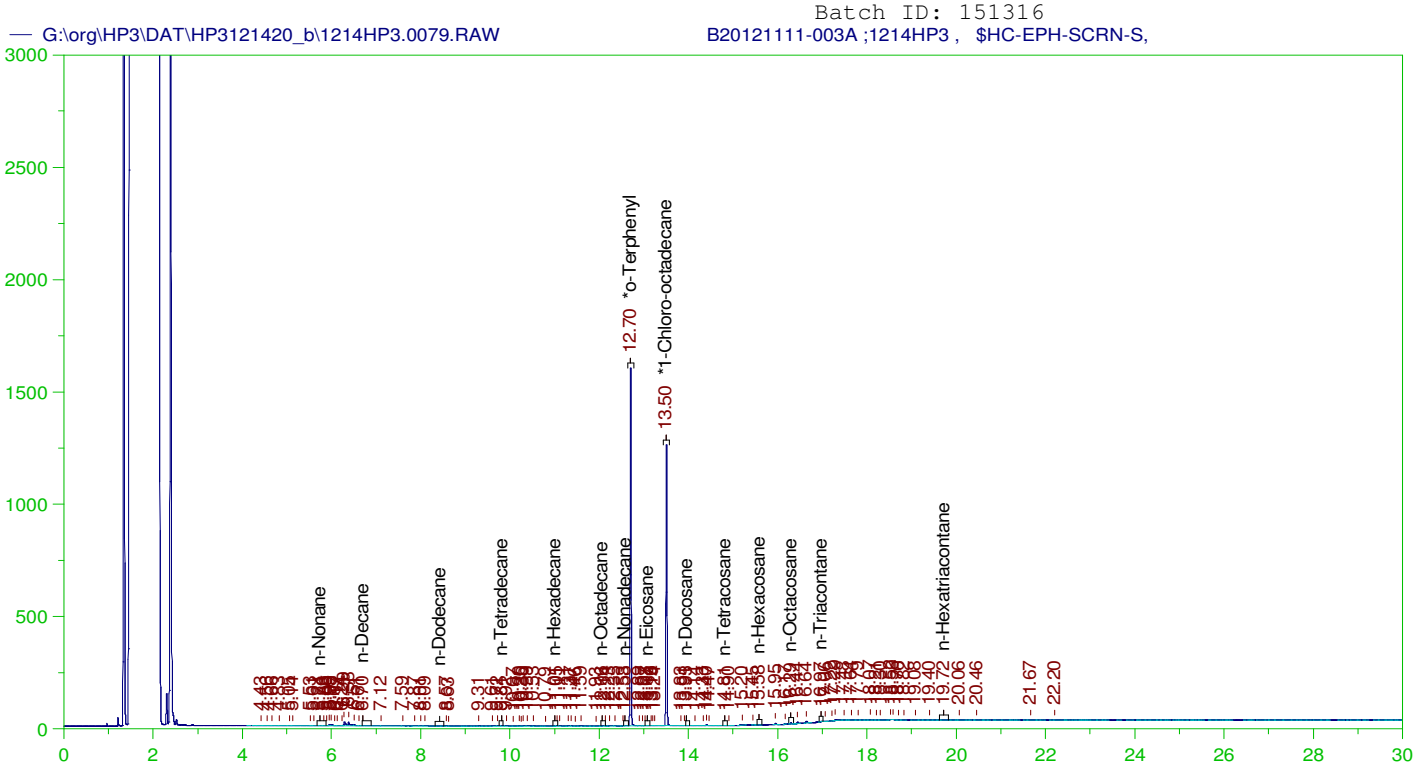
Sample Name: B20121111-002A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0078.RAW
Date & Time Acquired: 12/16/2020 8:31:42 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.01 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.704	2229375	6.664	4.169	62.56	-
*1-Chloro-octadecane	13.504	2123908	6.664	5.115	76.76	-

DRO Area:232341.8 DRO Amount: 0.5143696
TEH Area:540554.3 TEH Amount: 1.196706
C9-C18 Area:343629.8 C9-C18 Amount: 0.7706673
C19-C36 Area:112320.8 C19-C36 Amount: 0.2455002

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

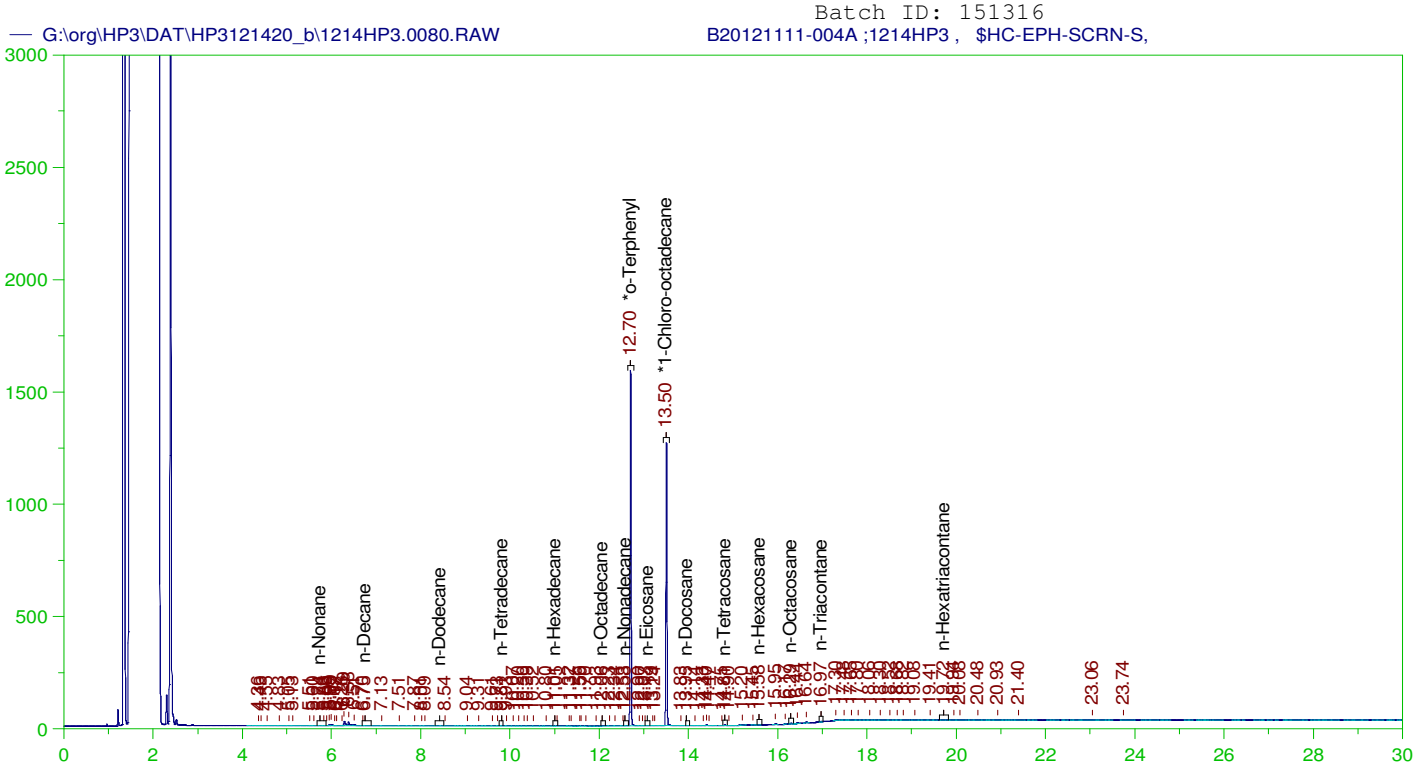
Sample Name: B20121111-003A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0079.RAW
Date & Time Acquired: 12/16/2020 9:15:53 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 29.99 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	2634829	6.669	4.931	73.94	-
*1-Chloro-octadecane	13.503	2211984	6.669	5.331	79.94	-

DRO Area:208481.8 DRO Amount: 0.461855
TEH Area:499532.3 TEH Amount: 1.106627
C9-C18 Area:277553.1 C9-C18 Amount: 0.6228907
C19-C36 Area:145929.3 C19-C36 Amount: 0.3191712

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

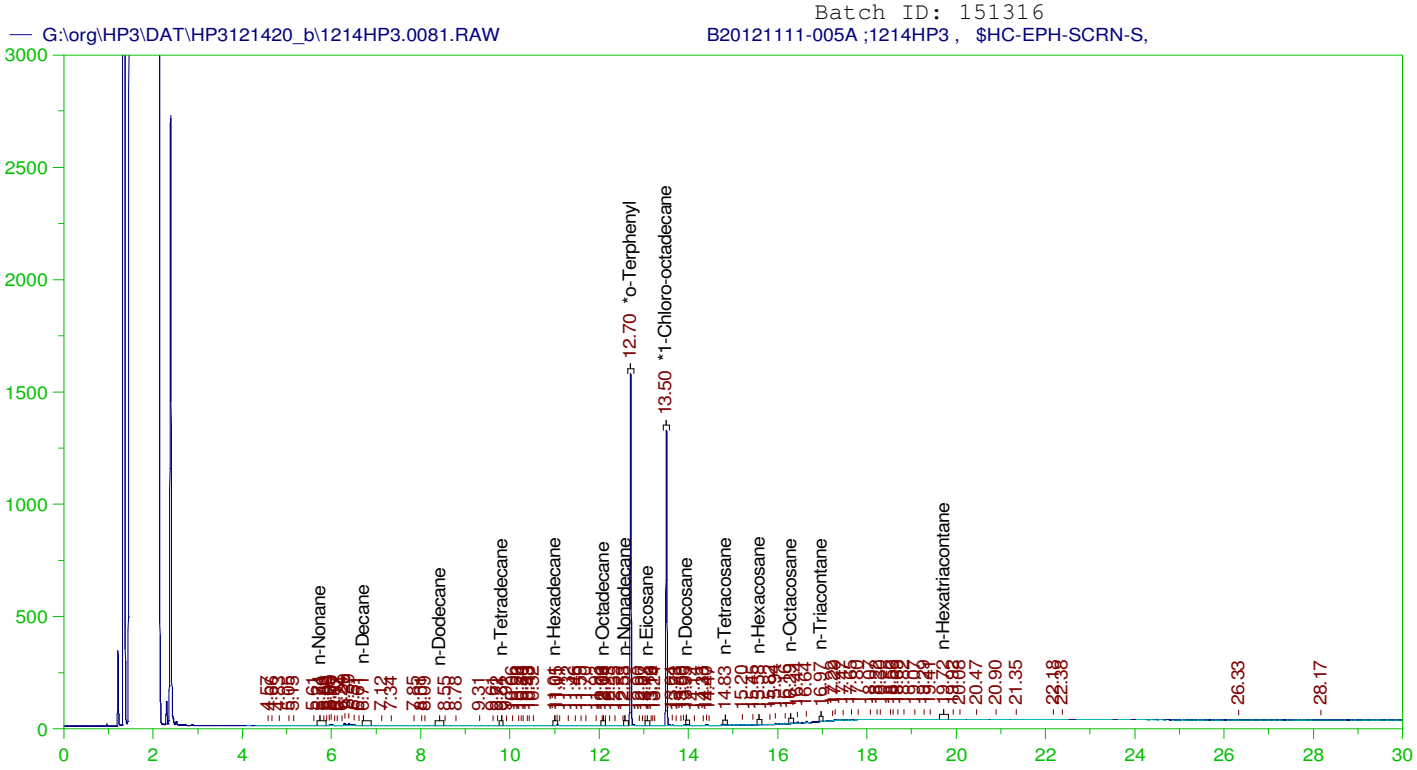
Sample Name: B20121111-004A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0080.RAW
Date & Time Acquired: 12/16/2020 9:59:59 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 29.99 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	2626421	6.669	4.915	73.7	-
*1-Chloro-octadecane	13.502	2238761	6.669	5.396	80.91	-

DRO Area:186428 DRO Amount: 0.4129987
TEH Area:472630.5 TEH Amount: 1.04703
C9-C18 Area:285935.4 C9-C18 Amount: 0.6417024
C19-C36 Area:105271.5 C19-C36 Amount: 0.2302461

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

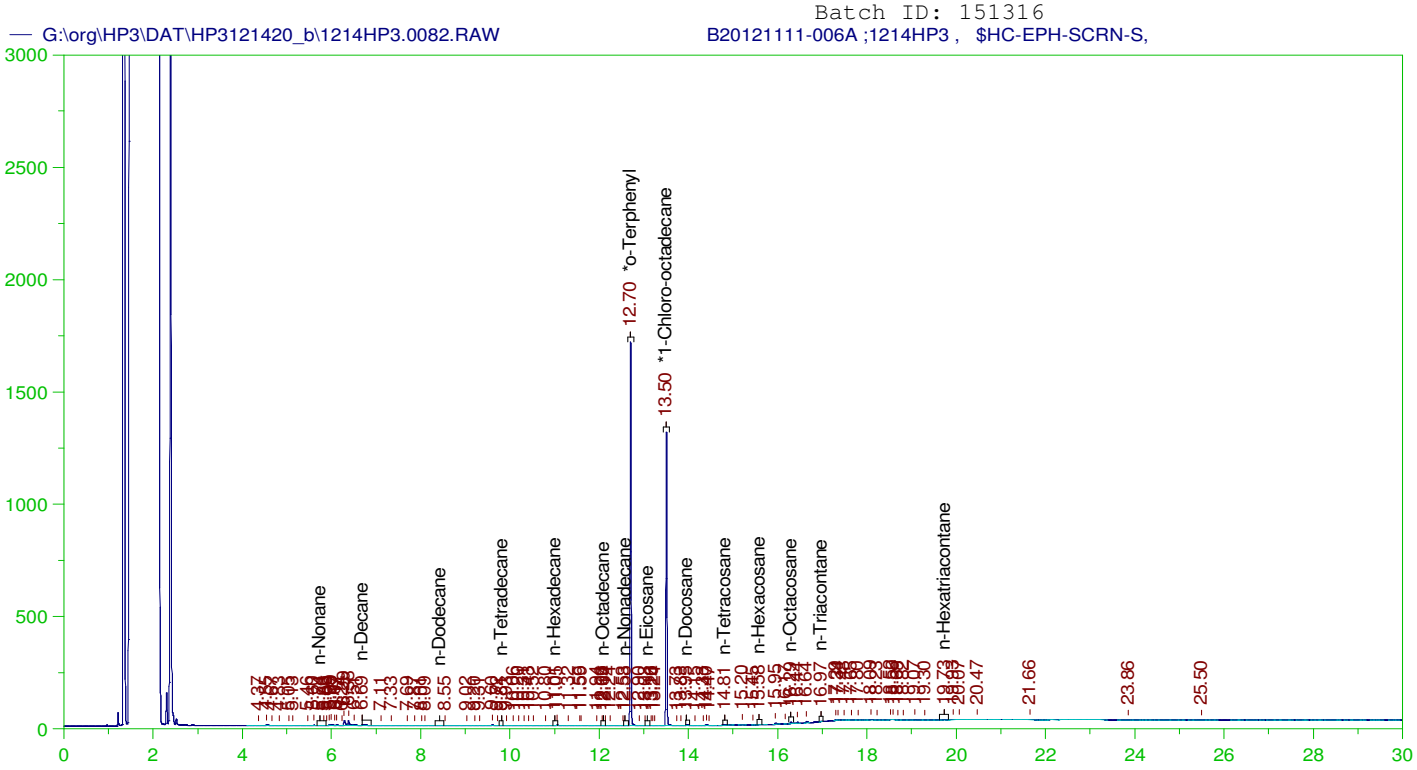
Sample Name: B20121111-005A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0081.RAW
Date & Time Acquired: 12/16/2020 10:44:09 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	2626567	6.667	4.914	73.7	-
*1-Chloro-octadecane	13.502	2279965	6.667	5.493	82.4	-

DRO Area:217500.5 DRO Amount: 0.4816738
TEH Area:457916 TEH Amount: 1.014095
C9-C18 Area:233306.8 C9-C18 Amount: 0.5234176
C19-C36 Area:150540.5 C19-C36 Amount: 0.3291471

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

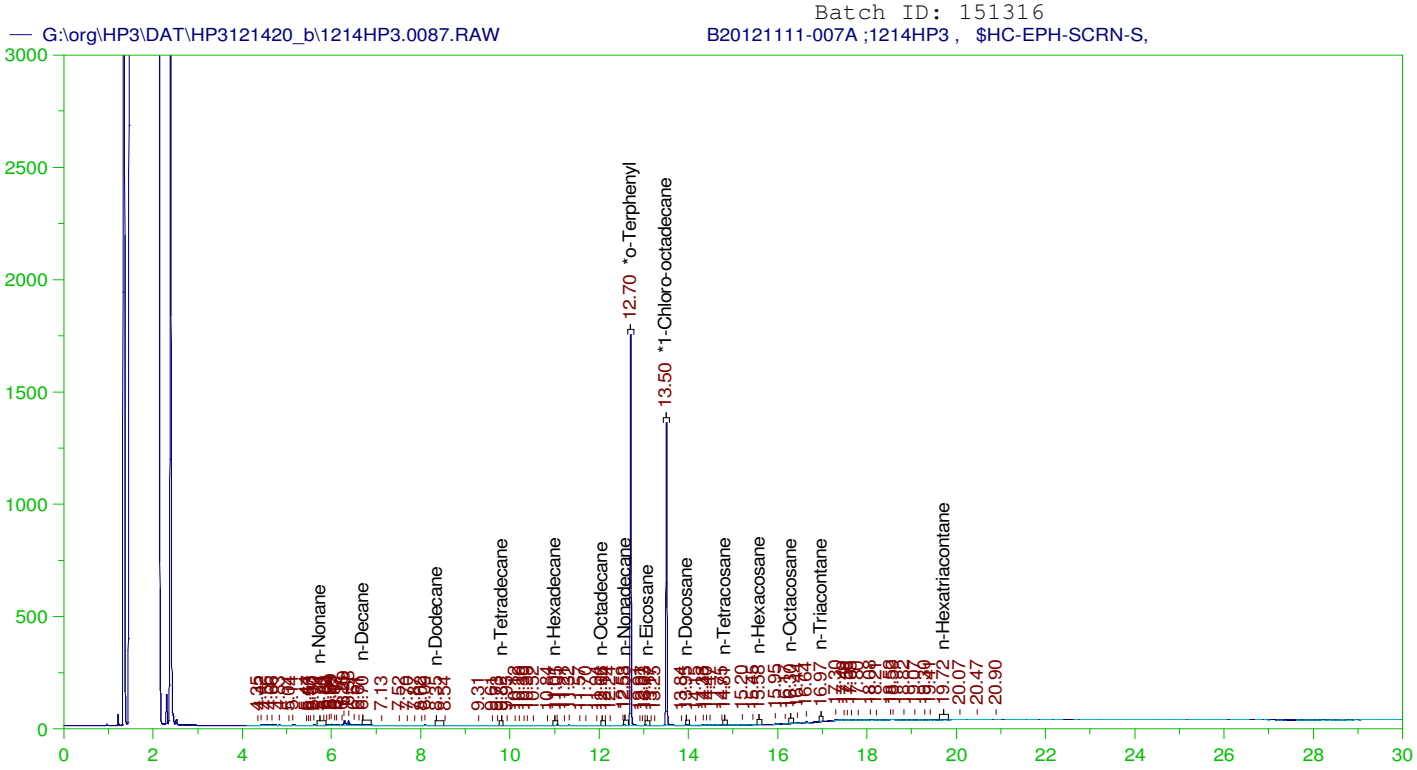
Sample Name: B20121111-006A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0082.RAW
Date & Time Acquired: 12/16/2020 11:28:21 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 29.97 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	2837489	6.673	5.313	79.62	-
*1-Chloro-octadecane	13.503	2322812	6.673	5.602	83.95	-

DRO Area:235461.5 DRO Amount: 0.521972
TEH Area:556030.5 TEH Amount: 1.232611
C9-C18 Area:336224 C9-C18 Amount: 0.7550645
C19-C36 Area:133656 C19-C36 Amount: 0.2925227

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

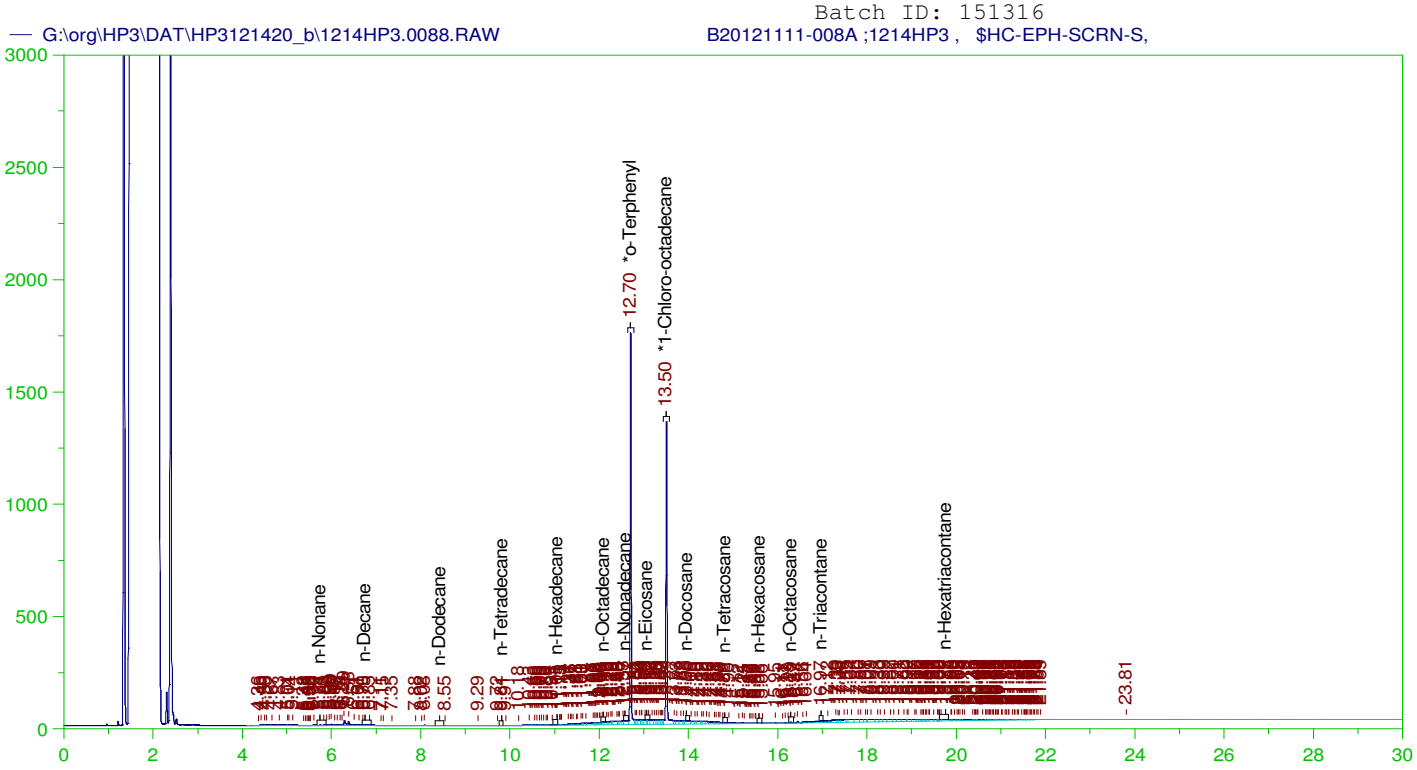
Sample Name: B20121111-007A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0087.RAW
Date & Time Acquired: 12/17/2020 3:08:38 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.03 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	2895005	6.66	5.41	81.24	-
*1-Chloro-octadecane	13.503	2382855	6.66	5.735	86.12	-

DRO Area:188930.3 DRO Amount: 0.4179845
TEH Area:509381.3 TEH Amount: 1.126942
C9-C18 Area:319138.4 C9-C18 Amount: 0.7152631
C19-C36 Area:103482.3 C19-C36 Amount: 0.2260312

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

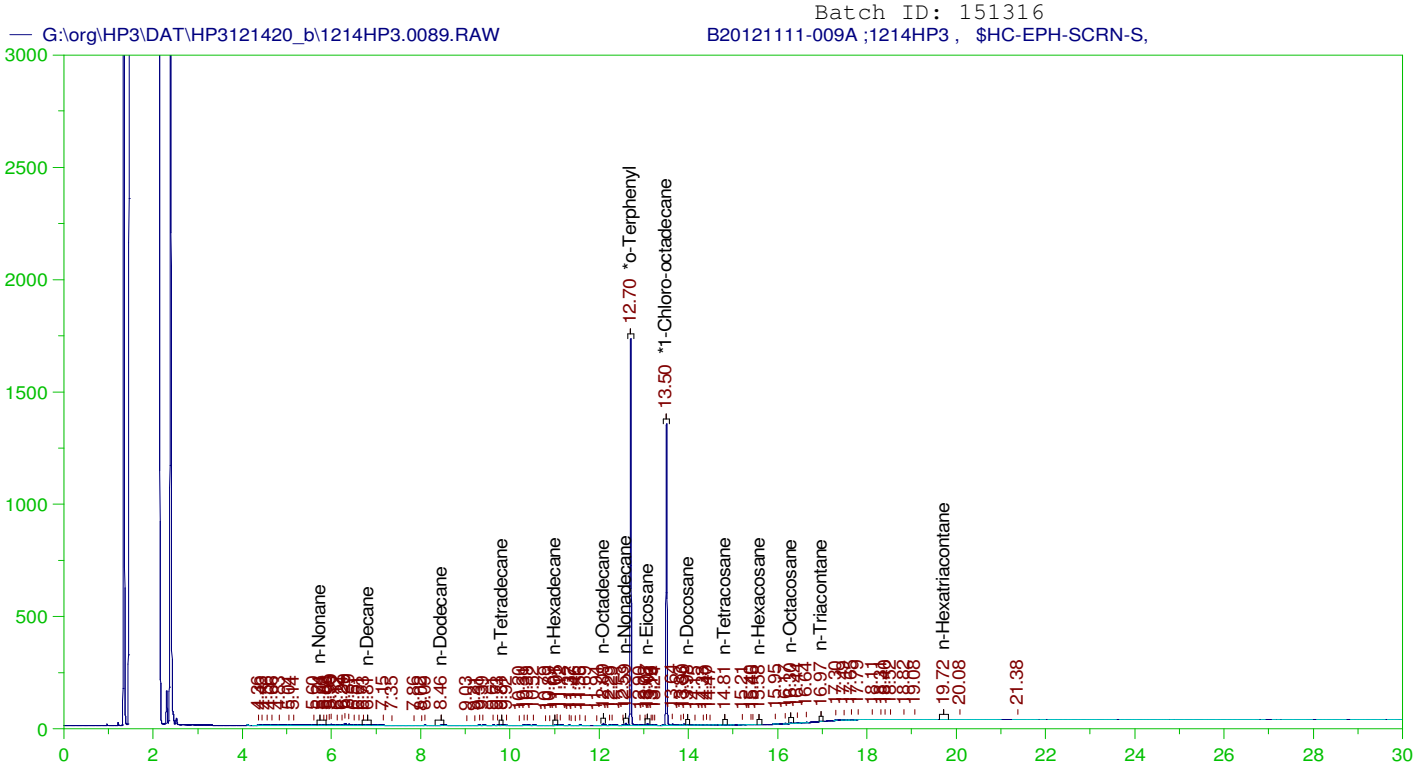
Sample Name: B20121111-008A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0088.RAW
Date & Time Acquired: 12/17/2020 3:52:36 AM
Method File: G:\Org\HP3\Methods\SR_SCN-121488-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 29.97 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	3014847	6.673	5.646	84.6	-
*1-Chloro-octadecane	13.503	2564688	6.673	6.185	92.69	-

DRO Area:2753132 DRO Amount: 6.103155
TEH Area:4946372 TEH Amount: 10.96514
C9-C18 Area:1147324 C9-C18 Amount: 2.576566
C19-C36 Area:3324717 C19-C36 Amount: 7.276556

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

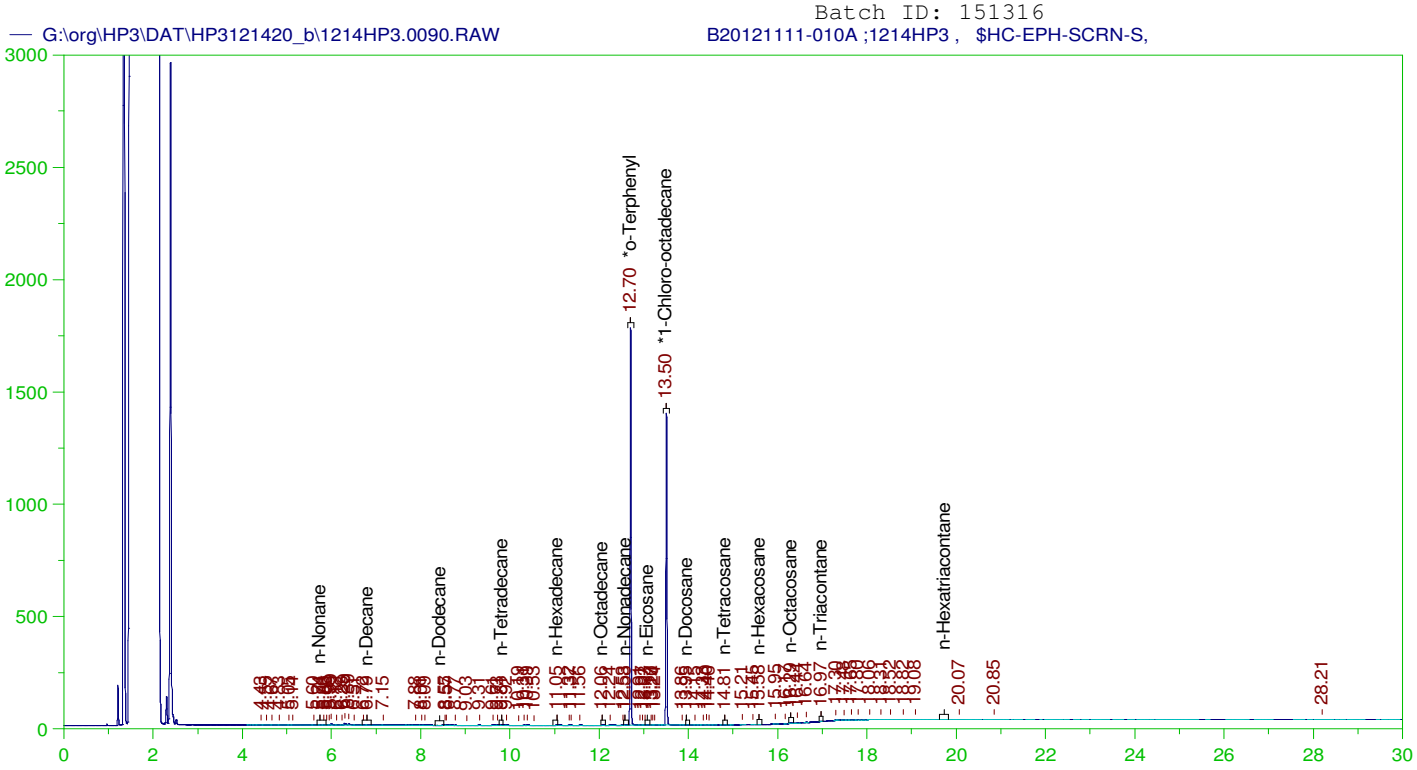
Sample Name: B20121111-009A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0089.RAW
Date & Time Acquired: 12/17/2020 4:36:36 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	2837785	6.667	5.309	79.63	-
*1-Chloro-octadecane	13.503	2359881	6.667	5.686	85.29	-

DRO Area:295061 DRO Amount: 0.6534383
TEH Area:507083 TEH Amount: 1.12298
C9-C18 Area:300670.4 C9-C18 Amount: 0.6745459
C19-C36 Area:132635 C19-C36 Amount: 0.2899978

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

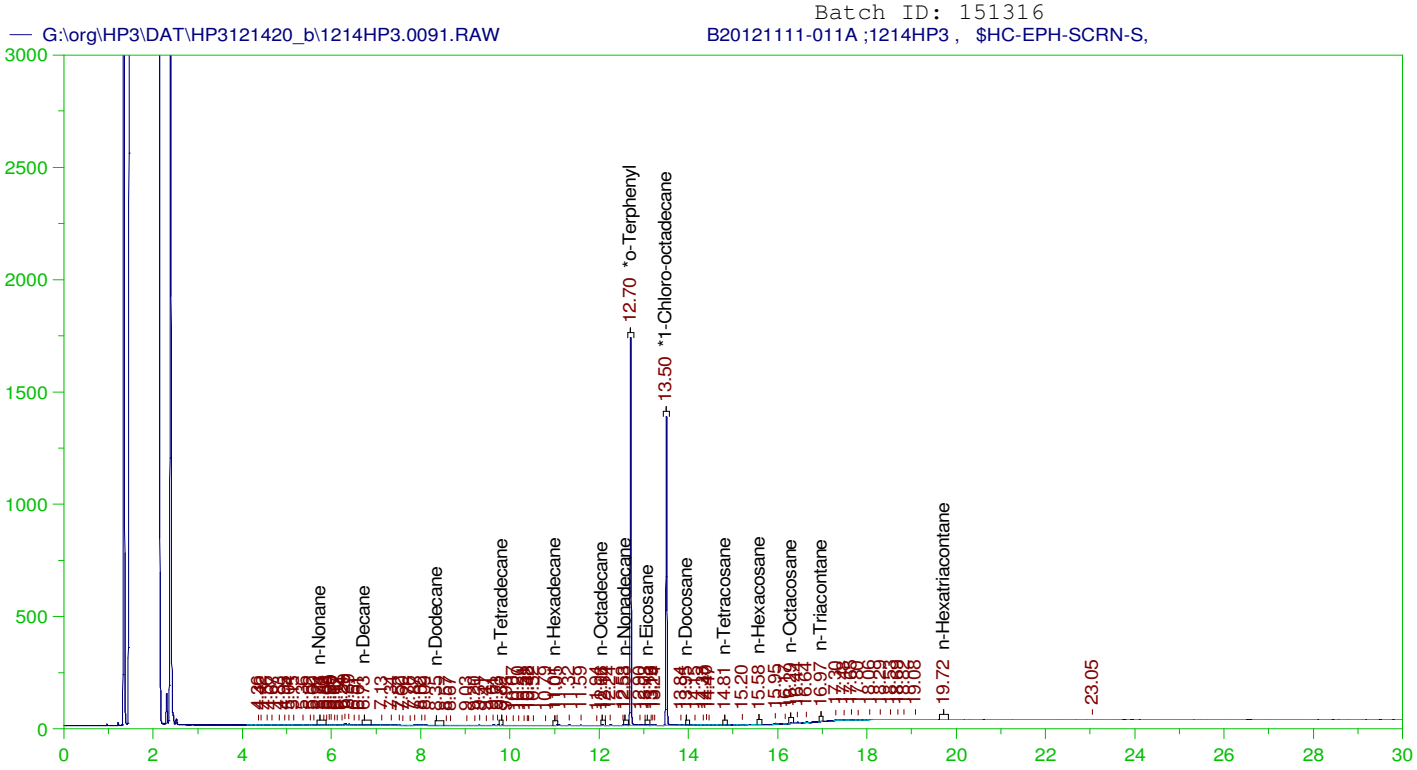
Sample Name: B20121111-010A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0090.RAW
Date & Time Acquired: 12/17/2020 5:20:43 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.02 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	2918952	6.662	5.457	81.91	-
*1-Chloro-octadecane	13.502	2460303	6.662	5.924	88.92	-

DRO Area:149046 DRO Amount: 0.3298554
TEH Area:363703 TEH Amount: 0.8049154
C9-C18 Area:210671.8 C9-C18 Amount: 0.4723216
C19-C36 Area:74413.5 C19-C36 Amount: 0.1625919

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

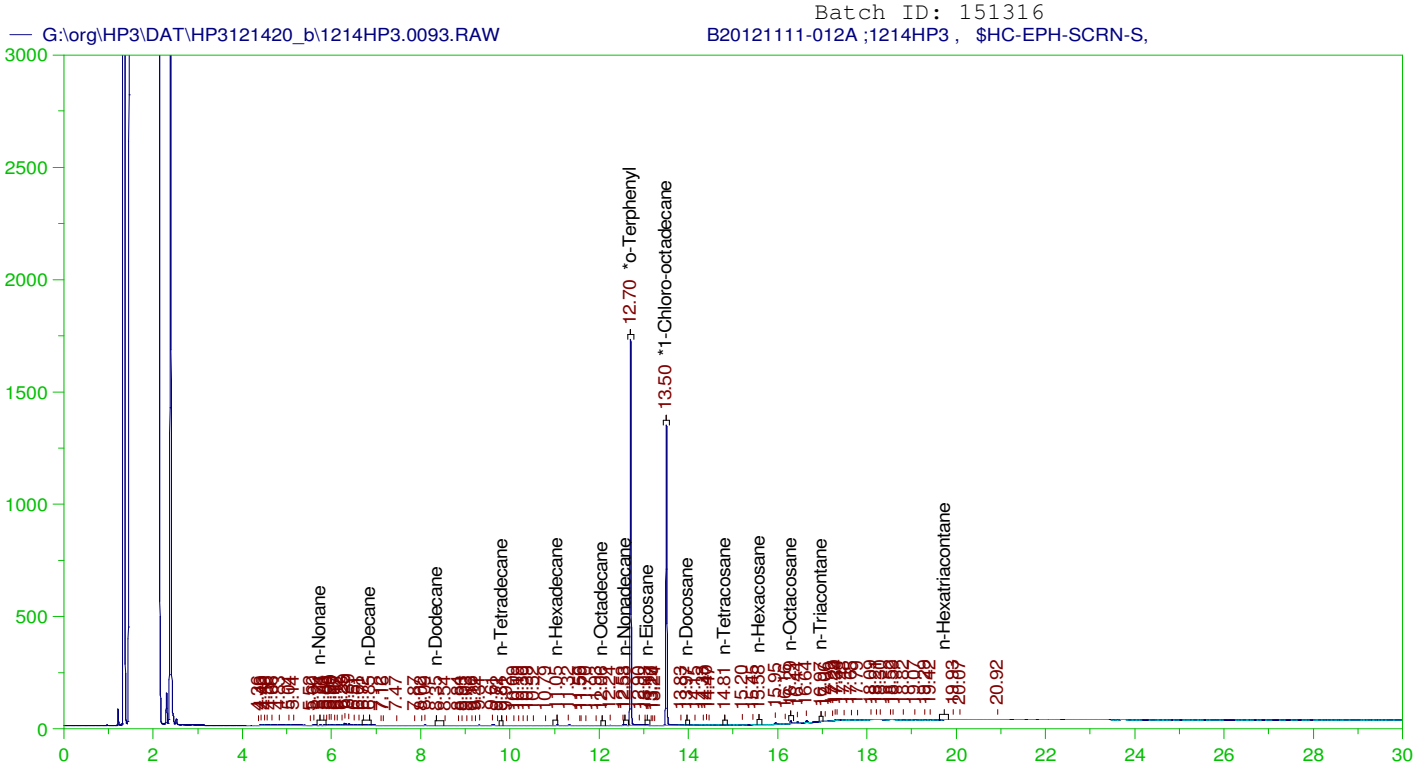
Sample Name: B20121111-011A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0091.RAW
Date & Time Acquired: 12/17/2020 6:04:46 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 29.98 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.703	2848579	6.671	5.332	79.93	-
*1-Chloro-octadecane	13.503	2418092	6.671	5.83	87.39	-

DRO Area:172493.3 DRO Amount: 0.3822562
TEH Area:376938.3 TEH Amount: 0.8353195
C9-C18 Area:209653 C9-C18 Amount: 0.4706647
C19-C36 Area:93526.75 C19-C36 Amount: 0.2046266

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

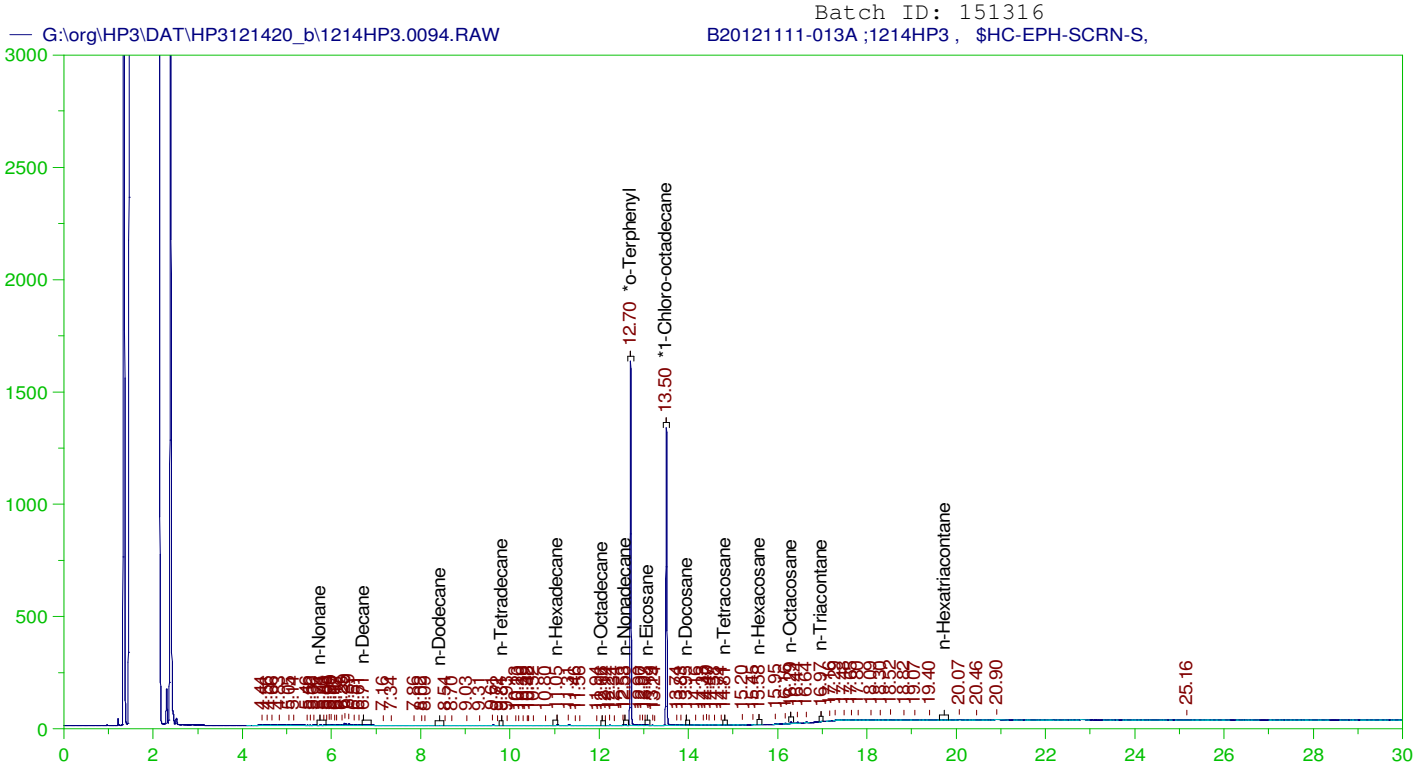
Sample Name: B20121111-012A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0093.RAW
Date & Time Acquired: 12/17/2020 7:32:32 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.01 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	2823309	6.664	5.28	79.22	-
*1-Chloro-octadecane	13.502	2358335	6.664	5.68	85.23	-

DRO Area:258663.8 DRO Amount: 0.5726426
TEH Area:507988.8 TEH Amount: 1.124611
C9-C18 Area:251099.5 C9-C18 Amount: 0.5631473
C19-C36 Area:173431.3 C19-C36 Amount: 0.3790698

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

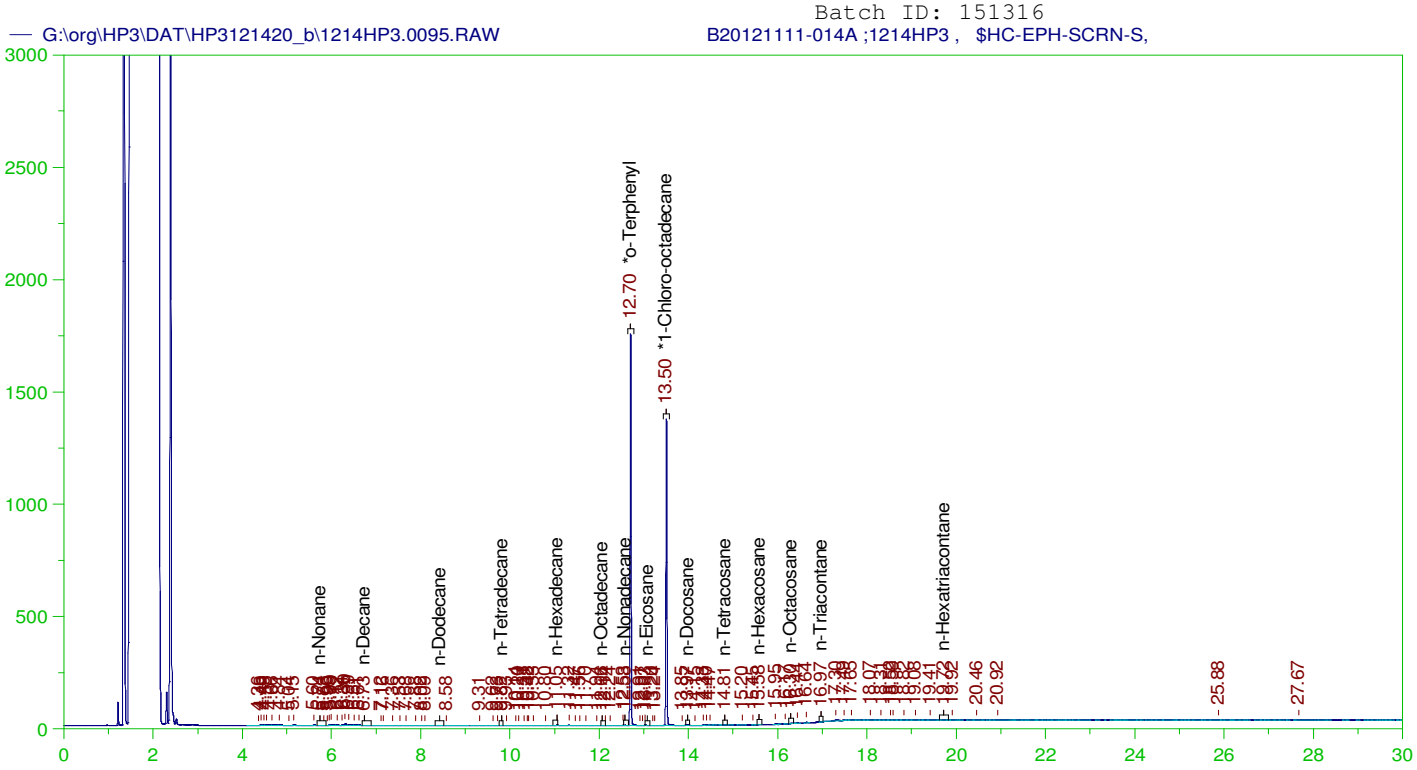
Sample Name: B20121111-013A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0094.RAW
Date & Time Acquired: 12/17/2020 8:16:37 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.03 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.701	2714507	6.66	5.073	76.17	-
*1-Chloro-octadecane	13.501	2328047	6.66	5.603	84.14	-

DRO Area:184985.3 DRO Amount: 0.4092567
TEH Area:414948.8 TEH Amount: 0.9180222
C9-C18 Area:223613.2 C9-C18 Amount: 0.501169
C19-C36 Area:109598.3 C19-C36 Amount: 0.2393901

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

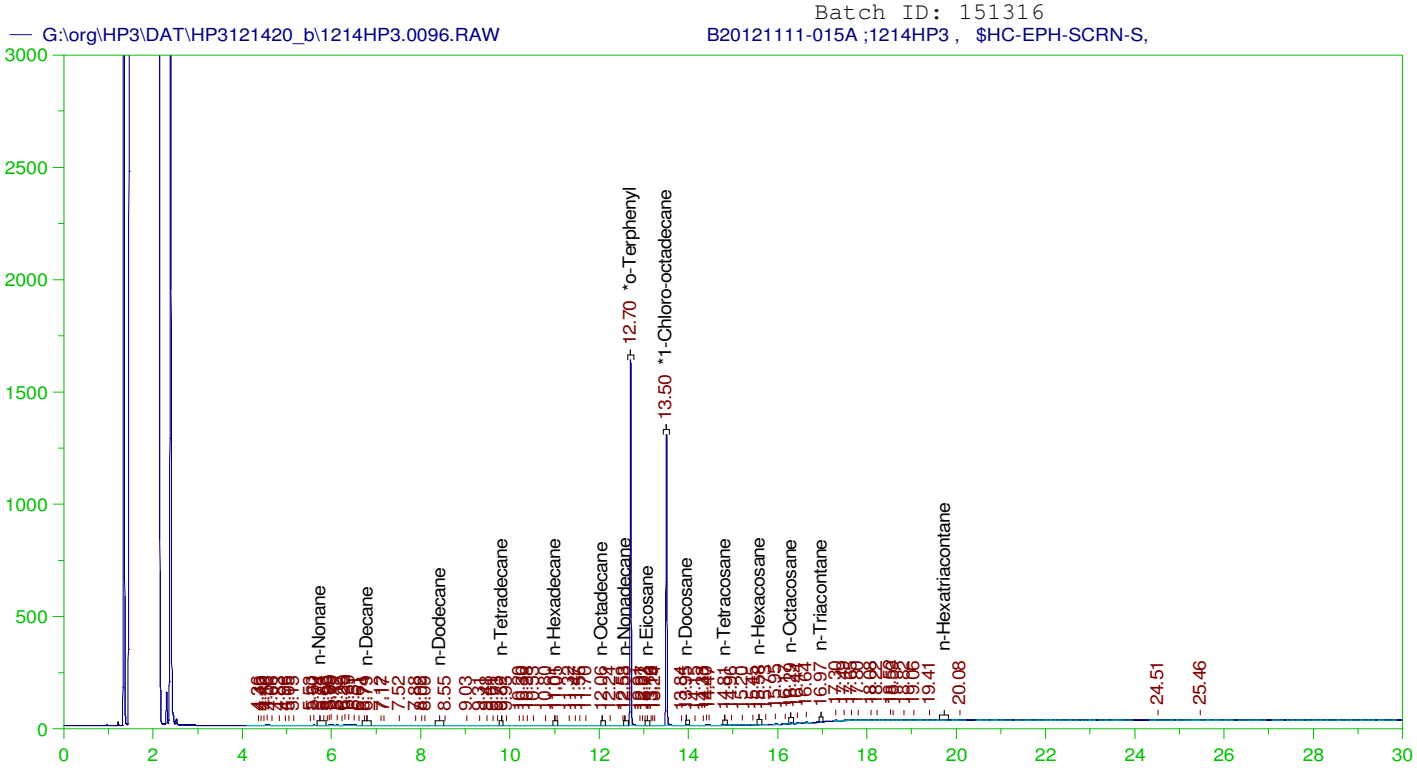
Sample Name: B20121111-014A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0095.RAW
Date & Time Acquired: 12/17/2020 9:00:20 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.01 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	2930638	6.664	5.481	82.24	-
*1-Chloro-octadecane	13.502	2437932	6.664	5.872	88.11	-

DRO Area:149401 DRO Amount: 0.3307513
TEH Area:375686.5 TEH Amount: 0.8317133
C9-C18 Area:188247.3 C9-C18 Amount: 0.4221871
C19-C36 Area:105378 C19-C36 Amount: 0.2303254

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

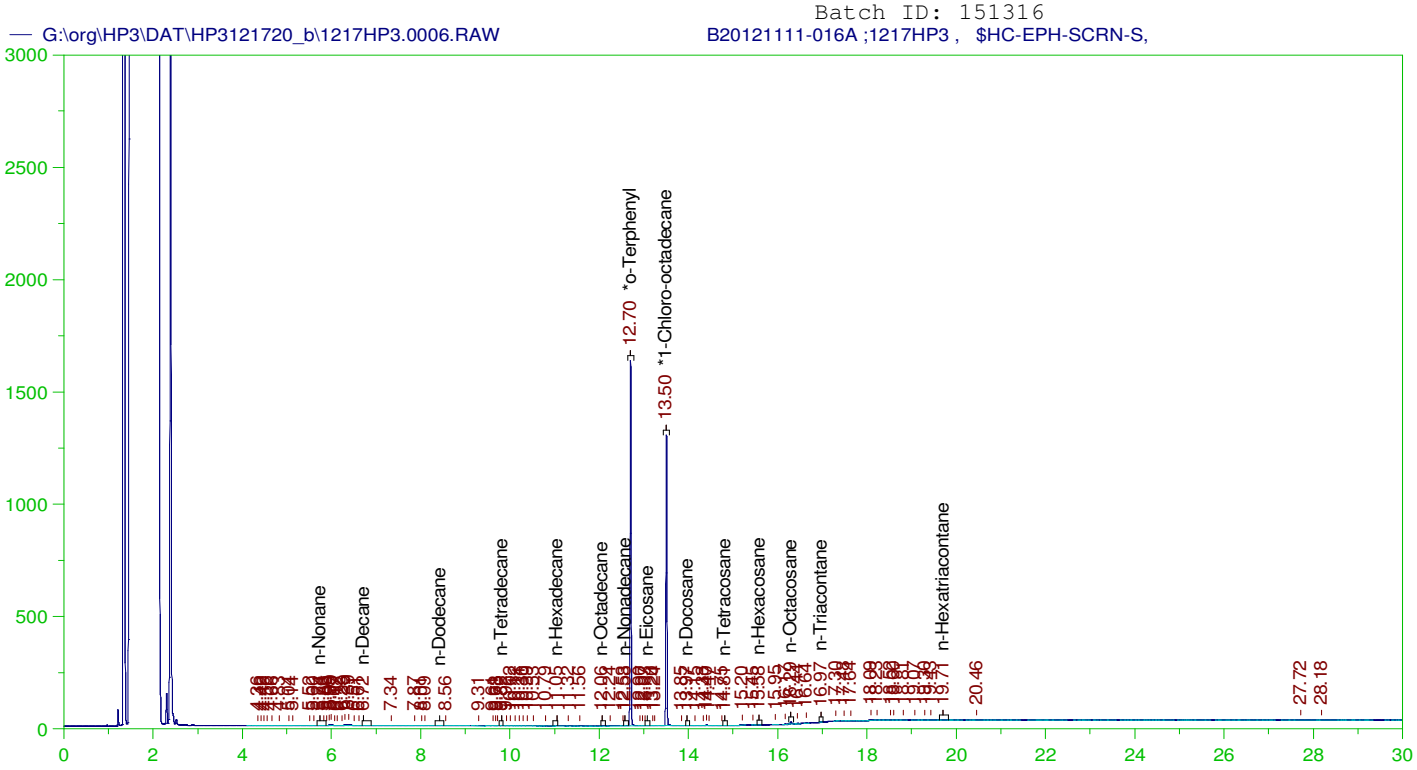
Sample Name: B20121111-015A ;1214HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121420_b\1214HP3.0096.RAW
Date & Time Acquired: 12/17/2020 9:44:13 AM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.04 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	2697952	6.658	5.04	75.71	-
*1-Chloro-octadecane	13.502	2285953	6.658	5.5	82.61	-

DRO Area:165255.8 DRO Amount: 0.365486
TEH Area:365941.3 TEH Amount: 0.8093297
C9-C18 Area:186633.2 C9-C18 Amount: 0.4181491
C19-C36 Area:106263.3 C19-C36 Amount: 0.2320283

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

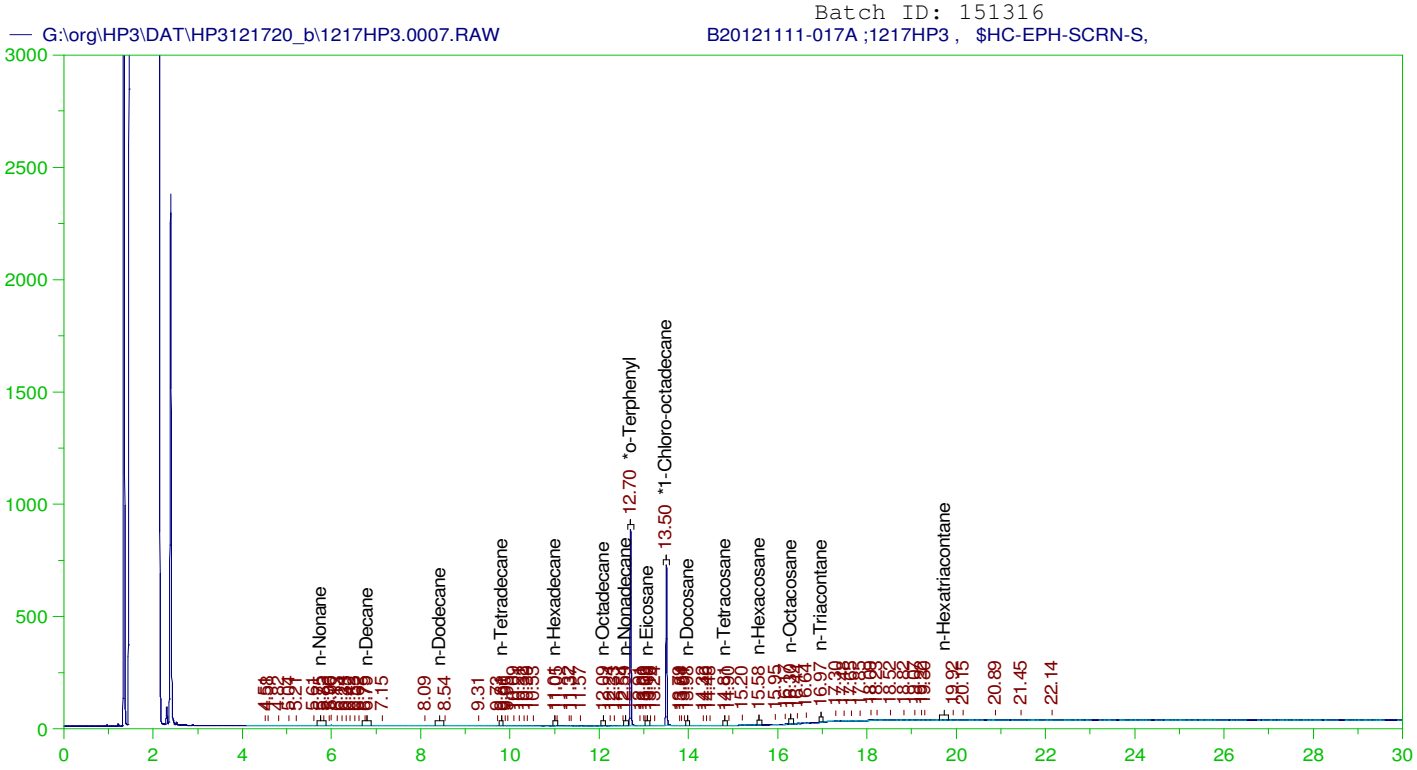
Sample Name: B20121111-016A ;1217HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121720_b\1217HP3.0006.RAW
Date & Time Acquired: 12/17/2020 2:06:53 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.04 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.701	2742356	6.658	5.123	76.95	-
*1-Chloro-octadecane	13.502	2318110	6.658	5.578	83.78	-

DRO Area:154205.3 DRO Amount: 0.3410462
TEH Area:358431.3 TEH Amount: 0.7927203
C9-C18 Area:182112.6 C9-C18 Amount: 0.4080207
C19-C36 Area:96042.25 C19-C36 Amount: 0.2097105

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

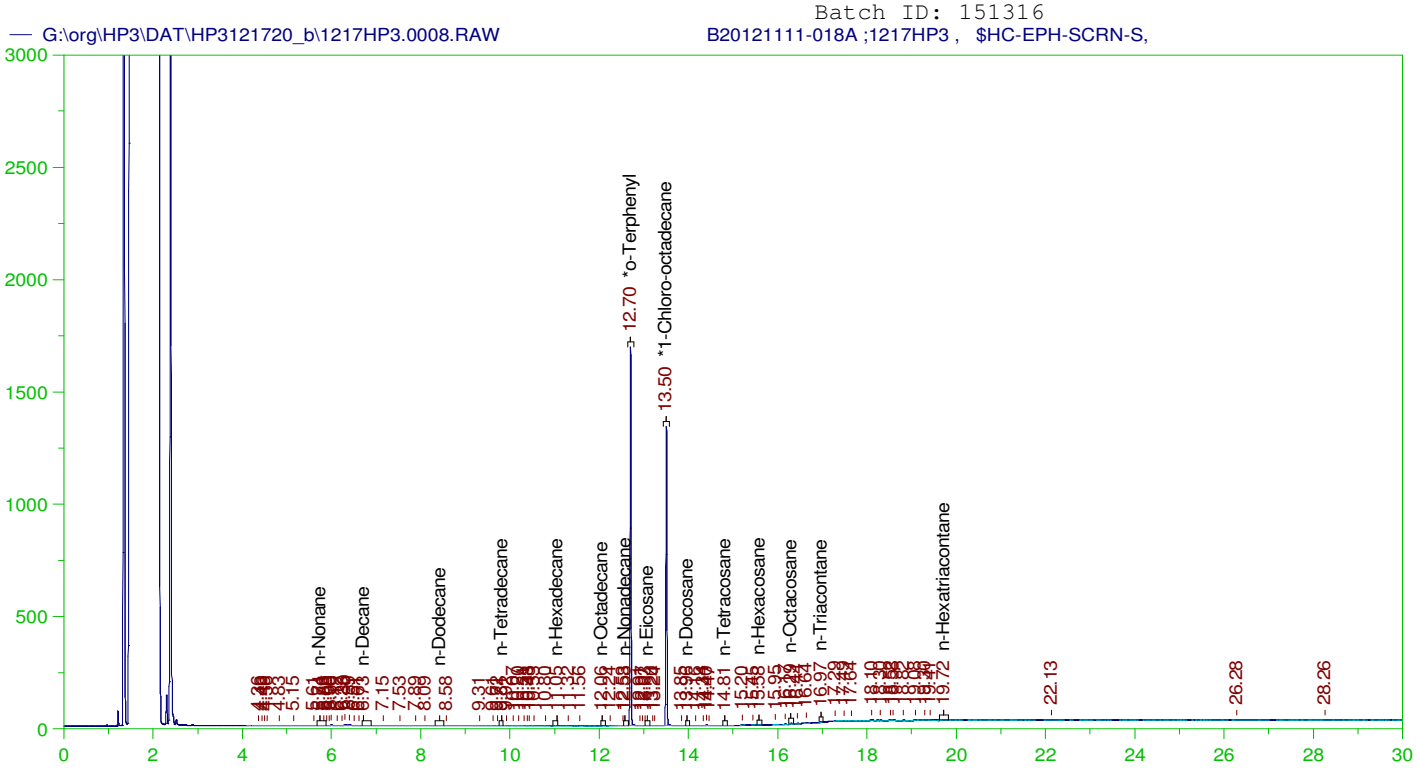
Sample Name: B20121111-017A ;1217HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121720_b\1217HP3.0007.RAW
Date & Time Acquired: 12/17/2020 2:50:31 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.01 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.702	1479799	6.664	2.767	41.52	-
*1-Chloro-octadecane	13.501	1277696	6.664	3.077	46.18	-

DRO Area:105051 DRO Amount: 0.2325671
TEH Area:221199 TEH Amount: 0.4897012
C9-C18 Area:89179.59 C9-C18 Amount: 0.2000054
C19-C36 Area:82466.25 C19-C36 Amount: 0.180247

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

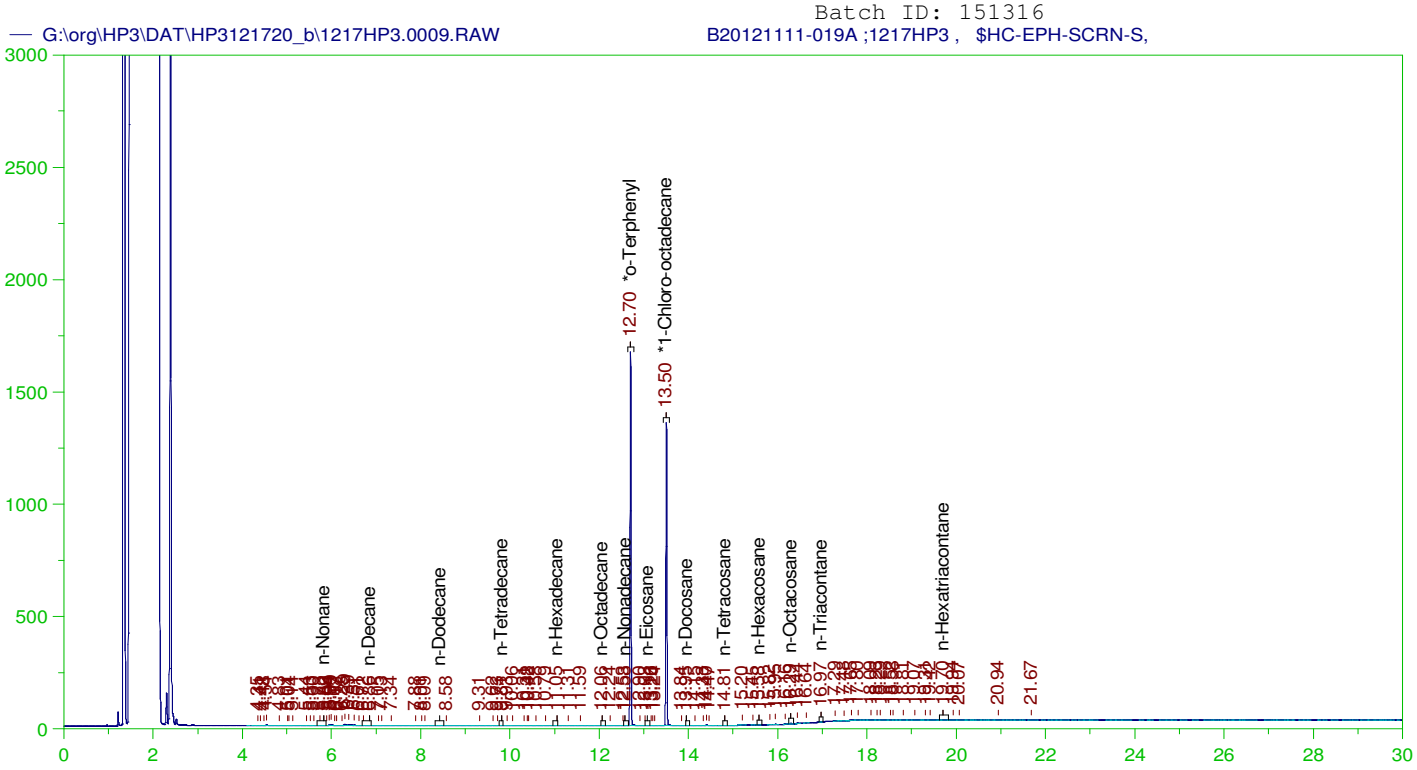
Sample Name: B20121111-018A ;1217HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121720_b\1217HP3.0008.RAW
Date & Time Acquired: 12/17/2020 3:34:09 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.04 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.701	2793721	6.658	5.219	78.39	-
*1-Chloro-octadecane	13.501	2388162	6.658	5.746	86.31	-

DRO Area:133896.8 DRO Amount: 0.2961312
TEH Area:310267.3 TEH Amount: 0.6861989
C9-C18 Area:154699.4 C9-C18 Amount: 0.3466018
C19-C36 Area:81234.75 C19-C36 Amount: 0.177378

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

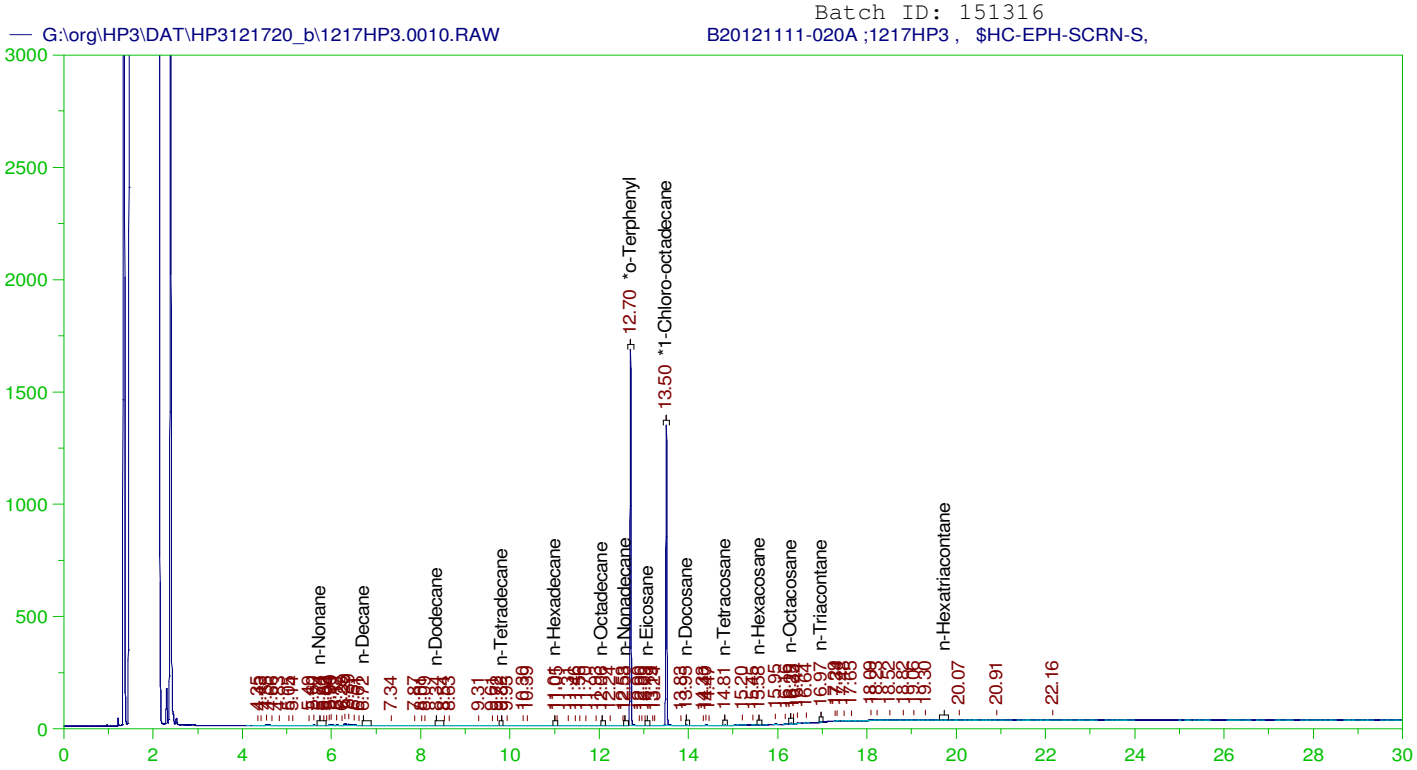
Sample Name: B20121111-019A ;1217HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121720_b\1217HP3.0009.RAW
Date & Time Acquired: 12/17/2020 4:17:47 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 29.96 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.7	2791313	6.676	5.229	78.33	-
*1-Chloro-octadecane	13.501	2413009	6.676	5.821	87.21	-

DRO Area:144585.5 DRO Amount: 0.3206247
TEH Area:365638.5 TEH Amount: 0.8108194
C9-C18 Area:191977.1 C9-C18 Amount: 0.4312706
C19-C36 Area:87889 C19-C36 Amount: 0.1924202

Batch ID: 151316



EXTRACTABLE PETROLEUM HYDROCARBONS (EPH) SCREENING ANALYSIS CHROMATOGRAM

Sample Name: B20121111-020A ;1217HP3 , $HC-EPH-SCRN-S,
Raw File: G:\org\HP3\DAT\HP3121720_b\1217HP3.0010.RAW
Date & Time Acquired: 12/17/2020 5:01:14 PM
Method File: G:\Org\HP3\Methods\SR_SCN-VY-L%.met
Calibration File: G:\Org\HP3\Cals\MA-EPH_SC200129VY.CAL
Sample Weight: 30.05 Dilution: 2 S.A.: 1

Mean RF for C9 to C18 Hydrocarbons: 29715.83
Mean RF for C19 to C36 Hydrocarbons: 30491.03
Mean RF for Total Extractable Hydrocarbons: 30103.43
Rt range for Diesel Range Organics: 6.69 to 17.02
Rt range for C9 to C18 Hydrocarbons: 5.68 to 12.635
Rt range for C19 to C36 Hydrocarbons: 12.67 to 19.83

SURROGATE COMPOUND	RT	AREA	ACTUAL	MEASURED	%REC	
*o-Terphenyl	12.7	2753749	6.656	5.143	77.27	-
*1-Chloro-octadecane	13.5	2365002	6.656	5.689	85.47	-

DRO Area:156096.8 DRO Amount: 0.3451147
TEH Area:385693.8 TEH Amount: 0.8527312
C9-C18 Area:208652.7 C9-C18 Amount: 0.4673279
C19-C36 Area:98181.25 C19-C36 Amount: 0.2143098

Work Order Receipt Checklist

MT Dept of Transportation

B20121111

Login completed by: Taylor K. Burris
Date Received: 12/11/2020
Reviewed by: BL2000\gmccartney
Received by: dac
Reviewed Date: 12/15/2020
Carrier name: Hand Del

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	4.0°C On Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

ENERGY LABORATORIES
Trust our People. Trust our Data.

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	Montana Department of Transportation
Contact	Doug Compton
Phone	(406) 202-3094
Mailing Address	2701 Prospect Ave
City, State, Zip	Helena MT 59620
Email	dcompton@mt.gov
Receive Invoice	☐Hard Copy ☒Email
Receive Report	☐Hard Copy ☒Email
Purchase Order	
Quote	
Bottle Order	147695

Report Information (if different than Account Information)

Company/Name	WCEC
Contact	Bryce Pewonka
Phone	406 252 3022
Mailing Address	455 Moore Ln # 2
City, State, Zip	Billings MT 59101
Email	bpewonka@wcec.com
Receive Report	☐Hard Copy ☒Email
Special Report/Formats	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other

Comments

Project Information

MDT Billings Bypass Project

Project Name, PWSID, Permit, etc.	I-90 / Johnson Ln Interchange
Sampler Name	B. Pewonka
Sampler Phone	406 252 3022
Sample Origin State	MT
EPA/State Compliance	☐ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ NOT Source or Byproduct Material
☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

All turnaround times are standard unless marked as RUSH
Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	EPH	VPH	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SB1	12/9/20	1215	2	S	X	X			B2012 1111
2	SB2		1330			X	X			
3	SB3		1400			X	X			
4	SB4		1435			X	X			
5	SB5		1505			X	X			
6	SB6		1527			X	X			
7	SB7	12/10/20	0950			X	X			
8	SB8		1035			X	X			
9	SB9		1117			X	X			
10	SB10		1140			X	X			

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	BRYCE PEWONKA	12/11/20 1451				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Taylor Chirnick	12/11/20 14:51	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check	Amount $	Receipt Number (cash/check only)

In certain circumstances, samples submitted to Energy Laboratories, Inc may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

ENERGY
Trust our People. Trust our Data

Chain of Custody & Analytical Request Record

www.energylab.com

Account Information (Billing information)

Company/Name	MT Department of Transportation
Contact	Doug Compton
Phone	(406) 202-3094
Mailing Address	2701 Prospect Ave
City, State, Zip	Helena MT 59620
Email	dcompton@mt.gov
Receive Invoice	☐ Hard Copy ☒ Email ✓
Receive Report	☐ Hard Copy ☒ Email
Purchase Order	
Quote	
Bottle Order	147695

Report Information (if different than Account Information)

Company/Name	WCEC
Contact	Bryce Pewonka
Phone	406 252 3022
Mailing Address	455 Moore Ln #2
City, State, Zip	Billings MT 59101
Email	bpewonka@wcec.com
Receive Report	☐ Hard Copy ☒ Email
Special Report/Formats	☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other

Comments

Project Information

MDT Billings Bypass Project

Project Name, PWSID, Permit, etc.	I-90 / Johnson Ln Interchange
Sampler Name	B. Pewonka
Sampler Phone	406 252-3022
Sample Origin State	MT
EPA/State Compliance	☐ Yes ☐ No

URANIUM MINING CLIENTS MUST indicate sample type.
☐ NOT Source or Byproduct Material
☐ Source/Processed Ore (Ground or Refined) **CALL BEFORE SENDING
☐ 11e.(2) Byproduct Material (Can ONLY be Submitted to ELI Casper Location)

Matrix Codes
A - Air
W - Water
S - Soils/Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

Analysis Requested

All turnaround times are standard unless marked as RUSH

Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page

	Sample Identification (Name, Location, Interval, etc.)	Collection Date	Collection Time	Number of Containers	Matrix (See Codes Above)	EPH	VPH	See Attached	RUSH TAT	ELI LAB ID (Laboratory Use Only)
1	SB11	12/10/20	1330	2	S	X	X			B20121111
2	SB12		1400			X	X			
3	SB13		1430			X	X			
4	SB14		1515			X	X			
5	SB15		1545			X	X			
6	SB16		1625			X	X			
7	SB17	12/11/20	1030			X	X			
8	SB18		1100			X	X			
9	SB19		1145			X	X			
10	SB20		1210			X	X			

TB 10/7/2020 BP MMS 07 RC RB 12/11/2020

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	BRYCE PEWONKA	12/11/20 1451				
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
				Ethan Christensen	12/11/20 14:51	

LABORATORY USE ONLY

Shipped By	Cooler ID(s)	Custody Seals Y N C B	Intact Y N	Receipt Temp °C	Temp Blank Y N	On Ice Y N	Payment Type CC Cash Check	Amount $	Receipt Number (cash/check only)

Page 90 of 90

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Montana DEQ - Waste Management and Remediation Division

Data Validation Summary Form (Version 1.3.0, Revised 1/26/18)

Please fill out the information below, using one form for each lab batch (one form can be used for multiple analytical methods). The form will grow and adjust, based on your responses. Please include a discussion regarding the sampling event in the report that is sent to DEQ with this form. For additional instructions, please click the Open Complete Instructions button.

Open Complete Instructions

Basic Questions View example (Note: example optimized for viewing in Chrome browser)

1. Site/Facility name	Billings Bypass Project I-90/Johnson Lane Interchange
2. Site code or facility ID (if applicable)	
3. Release ID (if applicable)	
4. Sample delivery group	B20121111
5. Name of DEQ-approved sampling plan	
6. Date DEQ approved the sampling plan	M/D/YY
7. Name of data validator	Bryce Pewonka
8. Phone	406.252.3022
9. Date validated	1/5/2021 M/D/YY

Field Collection Questions View example (Note: example optimized for viewing in Chrome browser)

10. Sample matrix	☒ Soil ☐ Sediment ☐ Surface water ☐ Groundwater ☐ Tap water ☐ Air (including soil gas) ☐ Other
11. Sample collection start date	12/9/2020 M/D/YY
12. Sample collection end date	12/11/2020 M/D/YY

13. Analytical methods used

Use Add Method button to list multiple methods. Enter any other methods in the field manually.

Add Method	Analytical Method(s)
Delete Method	Method MT-EPH: Extractable Petroleum Hydrocarbons
Delete Method	Method MT-VPH: Volatile Petorleum Hydrocarbons

Laboratory-related Questions View example (Note: example optimized for viewing in Chrome browser)

14. Laboratory name and location	Energy Laboratories, Inc. - Billings, Montana
15. Laboratory project ID	MDT Billings Bypass Project I-90/Johnson Ln Interc

16. Were samples received in good condition and at appropriate temperature, chain-of-custody forms complete, and all samples analyzed within holding times?	Yes ◉	No ○	See Below ○	Comments
17. Were all laboratory quality control procedures complied with and is data validated without qualifiers?	Yes ○	No ○	See Below ◉	Comments

Please explain

J = estimated value, analyte was present but less than the reporting limits

	Yes	No	Comments
17a. Were all calibration verification results within acceptable limits?	●	○	
17b. Were laboratory (method) blank samples free of contamination?	●	○	
17c. Are the percent recoveries and relative percent differences of matrix spike and matrix spike duplicates within quality control limits?	●	○	
17d. Are the laboratory control samples the same matrix as the samples and prepared the same as associated samples?	●	○	
17e. Were laboratory control samples and laboratory control sample duplicate percent recoveries and relative percent differences within laboratory contro limits?	●	○	
17f. Were surrogate recoveries within laboratory quality control limits?	●	○	
17g. Were the laboratory duplicate relative percent differences within data validation quality control limits?	●	○	
18. Were the total number of lab method blanks at least 5% of the total number of samples, or as required by the method?	●	○	
19. Were the total number of lab matrix spike samples prepared at least 5% of the total number of samples, or as required by the method?	●	○	

20. Please list any project samples used for matrix spike/matrix spike duplicates.

Add Sample	Lab ID	Field Sample ID	Comments
Delete Sample			

	Yes	No	Comments
21. Is the total number of laboratory control samples at least 5% of the total number of samples?	●	○	

Consultant/Validator Questions View example (Note: example optimized for viewing in Chrome browser)

	Yes	No	Comments
22. Are the detection limits appropriate for the project (i.e. at or below screening levels)?	●	○	
23. Are the reported units appropriate for the sample matrix (i.e. water results in ug/L, not mg/kg)?	●	○	
24. Do the analytical methods comply with project requirements (e.g. in the SAP, work plan, or QAPP)?	●	○	

25. Do the laboratory reports include all constituents requested to be analyzed on the chain-of-custody or under the sampling plan or other applicable document?	Yes (●)	No ( )		Comments
26. Is the number of sample blanks (e.g. equipment, trip, or field blanks) equal to at least 10% of the total number of samples, or as otherwise required?	Yes (●)	No ( )		Comments
27. Are field blanks free from contamination, duplicates collected as required, and field duplicate percent differences within data validation quality control limits?	Yes (●)	No ( )	See Below ( )	Comments

28. Please provide an Excel or CSV file to the DEQ project manager (via e-mail or CD) that lists all samples evaluated in this summary and lists any qualified data.
Please use the following format:

Lab ID	Field Sample ID	Qualifiers	Comments (indicate whether the issue biases the results high or low)
Example 48310-2.31E	Example GW-1	R	Sample dropped in lab and unrecoverable
Example 48310-2.32D	Example GW-2		

Please use the following format for qualifiers. See EPA's National Functional Guidelines for more information on qualifiers for unique samples such as dioxins.

Qualifier	Explanation
C	Pesticide and Arochlor results confirmed with GC/MS
J-	Estimated value, may be biased low
J	Analyte identified, but concentration is estimated
J+	Estimated value, may be biased high
NJ	Tentatively identified compound
R	Sample result rejected
U	Analyte analyzed for, but not detected above quantitation limit
UJ	Analyte not detected above CRQL, but CRQL may be inaccurate
X	Pesticide and Arochlor results attempted using GC/MS, but unsuccessful

If you wish to manually enter qualified sample results, please use the table below.

Add Sample	Lab ID	Field Sample ID	Qualifiers	Comments (indicate whether the issue biases the results high or low)
Delete Sample				

29. What is the percent completeness (samples planned versus valid samples collected)?	100		Comments
30. Was the completeness goal met?	Yes (●)	No ( )	Comments
31. Does all data conform to analytical methods and data quality objectives specified for this project?	Yes (●)	No ( )	Comments

32. Other general comments or observations?

Split Samples

33. Did DEQ collect split samples?	Yes	No	Comments
	◯	◯	

Print Form | Save As | Open Instructions | Hide Instructions

Montana Department of Environmental Quality
Data Validation Guidelines for Evaluating Analytical Data
(updated January 26, 2018)

This document was assembled by the Montana Department of Environmental Quality Contaminated Site Cleanup Bureau (DEQ) to formalize technical direction for conducting data validation. Data validation is a standardized review process for judging the analytical quality and usefulness of a discrete set of chemical data and is necessary to ensure that data of known and documented quality are used in making environmental decisions.

While these guidelines are generally used by DEQ, there may be circumstances that warrant a higher level of data validation review and DEQ reserves the right to require additional validation. For investigations where x-ray fluorescence (XRF) or other field screening equipment is used, provide an evaluation including the comparison and correlation of field screening data to laboratory confirmation data in the data validation discussion (please see DEQ's frequently asked questions at http://deq.mt.gov/Land/StateSuperfund/FrequentlyAskedQuestions for specifics associated with the use of XRF equipment and data collection/evaluation).

Please complete a separate data validation report for each sample batch as determined by the laboratory (Note: large data collection events may result in multiple batches). A brief summary of this validation report and the acceptability and usability of the data should be included in the text of the project report with the validation report included as an appendix. The data validation should include an assessment of data using the precision, accuracy, representativeness, comparability, and completeness (PARCC) parameters:

Precision: The degree of mutual agreement between individual measurements of the same property under similar conditions.

Combined field and laboratory precision is evaluated by collecting and analyzing field duplicates and then calculating the variance between the samples, typically as a relative percent difference (RPD). Laboratory analytical precision is evaluated by analyzing matrix spike/matrix spike duplicate (MS/MSD) samples and using the results to calculate an RPD.

Accuracy: The degree of agreement between an analytical measurement and a reference accepted as a true value.

The accuracy of a measurement system can be affected by errors introduced by field contamination, sample preservation, sample handling, sample preparation, and analytical techniques. Analysis of matrix spike/matrix spike duplicate (MS/MSD) samples, laboratory control spikes (LCS) or blank spikes, surrogate standards, and method blanks are typically used to calculate the percent recovery (%R) for evaluating accuracy.

Please note that some methods, such as EPH and VPH, require calibration data. For such methods, please provide and verify the calibration data.

Representativeness: The degree to which sample data accurately and precisely represent the characteristics of a population, variations in a parameter at a sampling point, or an environmental condition that they are intended to represent.

Typically, representative data will be obtained through careful selection of sampling locations and analytical parameters; proper collection and handling of samples; and through use and consistent application of established field and laboratory procedures. Evaluation of field and laboratory blank samples for presence of contaminants can be useful in evaluating representativeness of sample results.

Completeness: A measure of the percentage of project-specific data that is valid.

Valid data are obtained when samples are collected and analyzed in accordance with quality control (QC) procedures outlined in the sampling and analysis plan (SAP), and when none of the QC criteria that affect data usability are exceeded. Once data validation is complete, the number of usable sample results is divided by the total number of sample results planned for the investigation to determine the percent completeness. A completeness goal should be developed for each project (i.e., 100% completeness for residential samples to ensure that all properties requiring sampling are sampled). A discussion of completeness must also examine the number of samples called for in the SAP compared to the number of samples actually collected. Variance between the planned and collected sample numbers should be explained.

Comparability: Expression of the confidence with which one data set can be compared with another.

Comparability of data is achieved by consistently following standard field and laboratory procedures and by using standard measurement units in reporting analytical data.

For complete information regarding data validation, please see the EPA National Functional Guidelines at http://www2.epa.gov/clp/contract-laboratory-program-national-functional-guidelines-data-review

Determination of Data Usability Qualifiers

Step 1: Review QC Parameter and Document Finding	Step 2: Determine Which Samples to Qualify	Step 3: Determine Which Results to Qualify	Step 4: Apply Qualifier and Bias Code
Lab Receipt of Samples			
Preservative (including sample temperature) outside of specifications.	Affected samples and professional judgment	Detected Results Non-detected Results	J- UJ or R
Samples not accounted for on Chain-of-Custody	Affected samples	All samples	R
Samples analyzed outside of method specified or technical holding time.	Affected samples	Detected Results Non-detected Results	J- R (UJ for SVOC, pesticides, aroclors)
Samples analyzed grossly outside of method specified or technical holding time.	Affected samples	Detected Results Non-detected Results	J- R
Lab Quality Control			
Calibration verification results outside of acceptable limits.	Samples associated with initial and/or continuing calibration verification	Detected Results Non-detected Results	J UJ
Analyte detected in Method Blank (MB) at concentration less than Contract Required Quantitation Limit (CRQL)[1] (i.e. , J-flag)	Samples in preparation batch	Detected Results <=CRQL Detected Results >CRQL	U J (use professional judgment)
Analyte detected in Method Blank (MB) at concentration greater than or equal to CRQL	Samples in preparation batch	Detected Results < Blank Concentration Detected Results >= Blank Concentration	U Use professional judgment
Matrix Spike:			
%Recovery above specifications	Sample and professional judgment for samples in preparation batch from same matrix.	Detected Results Non-detected Results	J+ No qualifier

Step 1: Review QC Parameter and Document Finding	Step 2: Determine Which Samples to Qualify	Step 3: Determine Which Results to Qualify	Step 4: Apply Qualifier and Bias Code
%Recovery below specifications and greater than 20% (30% for inorganics)	Sample and professional judgment for samples in preparation batch from same matrix.	Detected Results Non-detected Results	J- UJ
%Recovery below 20% (30% for inorganics)	Sample and professional judgment for samples in preparation batch from same matrix.	Detected Results Non-detected Results	J- R
Note: If the spiking amount is less than four times the result in the unspiked parent sample, the MS/MSD data may not represent the matrix effect. Professional judgment should be use in evaluating and qualifying the data.			
Laboratory Control Sample:			
%Recovery above specifications	Samples in preparation batch.	Detected Results Non-detected Results	J+ No qualifier
%Recovery below specifications and greater than 20% (40% for inorganics; see NFG for pesticides and Aroclors; 10% for dioxins)	Samples in preparation batch.	Detected Results Non-detected Results	J- UJ
%Recovery below 20% (40% for inorganics; see NFG for pesticides and Aroclors; 10% for dioxins)	Samples in preparation batch.	Detected Results Non-detected Results	J- R
Laboratory Duplicate Samples (including LCSD and MSD):			
Relative Percent Difference outside specifications	Samples in preparation batch.	Detected Results	J
Surrogate Recoveries:			
Surrogate Recovery greater than Upper Acceptance Limit	Target analytes in sample	Detected Results Non-detected Results	J+ No qualification (UJ for dioxins)
Surrogate Recovery less than Lower Acceptance Limit and greater than 10%	Target analytes in sample	Detected Results Non-detected Results	J- UJ
Surrogate Recovery less than 10%	Target analytes in sample	Detected Results Non-detected Results	J- R (see NFG for dioxins)
Field QC Samples			
Blanks			
Analyte detected in Field Blank, Equipment Blank, and/or Trip Blank at concentration less than Contract Required Quantitation Limit (CRQL)1 (i.e. , J-flag)	Associated samples	Detected Results <CRQL Detected Results >=CRQL	U Use professional judgment
Analyte detected in Field Blank, Equipment Blank, and/or Trip Blank at concentration greater than or equal to CRQL	Associated samples	Detected Results < Blank Concentration Detected Results >= Blank Concentration	U Use professional judgment
Duplicates			

Step 1: Review QC Parameter and Document Finding	Step 2: Determine Which Samples to Qualify	Step 3: Determine Which Results to Qualify	Step 4: Apply Qualifier and Bias Code
Field Duplicate Relative Percent Difference outside specifications and analyte concentration >=5x CRQL	Associated samples	Detected Results	J
Field Duplicate Relative Percent Difference outside specifications and analyte concentrations <5x CRQL with absolute difference between sample and duplicate > CRQL	Associated samples	Detected Results Non-detected Results	J UJ
Field Duplicate Relative Percent Difference outside specifications and analyte concentrations <5x CRQL with absolute difference between sample and duplicate <= CRQL	Associated samples	Detected Results Non-detected Results	No qualification No qualification
Consultant/Validator Questions			
Reported Units not appropriate for sample matrix	Affected samples	All results	Inquire, document, and use professional judgment
Analytical methods do not comply with project requirements. And/Or Detection Limits not appropriate for the project.	Affected samples	Detected Results Non-detected Results	Use professional judgment Use professional judgment, if Reporting Limits > Screening Levels; results may not be usable
QC Sample Frequency			
Method Blanks analyzed less than 5% of total samples	Use professional judgment	Use professional judgment	Inquire, document, and use professional judgment
Matrix Spike samples analyzed less than 5% of total samples	Use professional judgment	Use professional judgment	Inquire, document, and use professional judgment
Laboratory Control Samples analyzed less than 5% of total samples	Use professional judgment	Use professional judgment	Inquire, document, and use professional judgment
Field, equipment, or trip blanks analyzed less than required	Use professional judgment	Use professional judgment	Inquire, document, and use professional judgment

Notes:

1. See the National Functional Guidelines (NFG) for contract required quantitation limit (CRQL) or blank results of common laboratory contaminants, including: methylene chloride, acetone, and 2-butanone.

2. Screening Levels (SLs) is a generic term which may include Risk Based Screening Levels, Regional Screening Levels, and/or site specific screening levels.

Attachment 6: Johnson Lane Interchange Asbestos Survey Report

NORTHERN
INDUSTRIAL HYGIENE, INC.
Billings, MT ♦ Helena, MT

201 South 30th Street
Billings, Montana 59101
Phone: 406/245-7766
FAX: 406/254-1428

February 12, 2021

Ms. Emily Peterson
Environmental Manager
Dowl
1300 Cedar Street
Helena, MT 59601

RE: Asbestos Survey of Johnson Lane Interchange Bridges
Interstate I-90 Eastbound and Westbound, Billings, Montana
Northern Project Number 999-4161

Dear Ms. Peterson:

This letter report provides the summarized results of the asbestos survey conducted by Greg Brownell (MTA-5502, expires 04/10/2021) of Northern Industrial Hygiene, Inc. (Northern) on January 28, 2021 of the above referenced bridges. The survey was conducted to identify potential hazardous materials (asbestos) that may be present in the bridge building materials prior to the demolition of the eastbound and westbound bridges.

Overview of Facility

The bridges identified as the Johnson Lane Interchange Bridges are located on Interstate-90 between mile-markers 455 westbound and eastbound. The bridges feature concrete pilings and trusses, concrete decking, steel guard rails fastened to road deck over elastomeric pads, asphalt paving, tar, and silver paint.

Asbestos Overview

Asbestos is a trade name for a group of fibrous naturally occurring minerals that were used widely in building materials because of its ability to bind, resist chemicals, insulate, and fireproof. Exposure to elevated levels of asbestos fibers has been documented to cause a variety of diseases including asbestosis and cancer. Consequently, the application, removal, and disposal of asbestos-containing materials are regulated by several agencies.

Asbestos in most building materials poses little threat to human health as long as the asbestos fibers are securely bound within the building material. However, as the materials deteriorate because of time or exposure, or are disturbed because of human or other activities, the potential increases for the fibers to become airborne. When this occurs, the risk to human health increases significantly when the fibers are inhaled.

Occupational Safety and Health Administration (OSHA) regulations, (29 CFR Parts 1910 and 1926) define an asbestos-containing material as:

- Any material that contains more than one percent asbestos and also defines certain high-risk materials, which are presumed to contain asbestos, as Presumed Asbestos-containing Materials (PACM). The PACM designation applies to thermal system insulation, sprayed-on or troweled on surfacing material and debris where such material is present. The PACM terminology was added to ensure compliance with the hazard communication provisions of the laws and specifically for buildings constructed prior to 1980.

The National Emissions Standards for Hazardous Air Pollutants (NESHAP), (40 CFR, Part 61, Subpart M) defines regulated asbestos containing material (RACM) as follows:

- Friable asbestos-containing material containing more than one percent asbestos, which has been applied on ceilings, walls, structural members, piping, duct work, or any other part of a building, which when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. The term includes non-friable asbestos-containing materials after it becomes damaged, by any means, such that when dry, it may be crumbled, pulverized, or reduced to powder by hand-pressure.

Asbestos Survey Procedures

Sampling Procedures

The asbestos survey was conducted using the applicable portions of the currently recognized standard protocol developed for schools under AHERA, as promulgated in Title 40, Code of Federal Regulations (40 CFR), Part 763 and as amended in the Federal Register and as established in the Administrative Rules of Montana (ARM 17.74.354). Since the primary concern for this investigation was to identify potential asbestos hazards in each of the two bridges, Northern's representative visually inspected existing conditions in those bridges considering each construction, addition, or renovation date as separate, unique facilities, if applicable.

Laboratory Analysis of Bulk Asbestos Samples

Bulk samples collected during the inspection were assigned bulk sample numbers and entered on sample summary/chain-of-custody forms. The samples were submitted to the laboratory by overnight courier under standard chain-of-custody procedures. The analysis was conducted in accordance with EPA Method 600/R-93/116, which employs polarized light microscopic techniques with dispersion staining for identification of mineral forms of asbestos. The quantification of asbestos in the sample is intended to be an estimate only and the limit of detection for this method is approximately 1% by volume.

Asbestos Survey Findings

A total of five (5) building materials suspected to contain asbestos were identified in the east and westbound bridges. The materials were sampled following sample collection requirements outlined under EPA, AHERA legislation and State of Montana regulations.

Laboratory results indicated that **none** of the sampled materials contain asbestos.

For additional information regarding each bridge refer to the four attached laboratory reports.

Conclusions and Recommendations

Asbestos was **not detected** in any of the suspect materials sampled and analyzed. Therefore, Northern offers no recommendations.

Limitations

This asbestos survey report was prepared based on information obtained during our on-site observations and interpretation of the laboratory analysis of bulk samples of building materials collected during the survey.

The conclusions of this report are professional opinions based solely upon our visual site observations and interpretations of laboratory analyses and field data as described in our report.

This report has been prepared to provide information concerning the various types and estimated quantities of asbestos-containing materials present at this site. It includes only those materials that were visible and accessible at the time of our inspection. We did not remove any permanent building enclosures or disassemble any equipment.

This report is intended to identify asbestos-containing materials. It is not intended to be used for the purpose of obtaining bids for its removal by abatement contractors. The scope of services provided by Northern may not be appropriate to satisfy the needs of other users, and any use or re-use of this document, or the findings presented herein, is at the sole risk of the user.

Our opinions are intended exclusively for use by the Montana Department of Transportation. The opinions presented herein apply to the site conditions existing at the time of our investigation. Therefore, our opinions and recommendations may not apply to future conditions that may exist at the site that we have not had the opportunity to evaluate.

We trust this summary report provides sufficient information for planning purposes. We appreciate the opportunity to assist you and look forward to continuing to work with you.

Please contact us if you have any questions or require additional information.

Respectfully submitted,

NORTHERN INDUSTRIAL HYGIENE, INC.

Greg Brownell
EPA/Montana Accredited Asbestos Inspector

Attachments: Laboratory Analysis Reports
Inspector Credentials
Invoice

EMSL Analytical, Inc.

3356 West Catalina Drive Phoenix, AZ 85017
Tel/Fax: (602) 276-4344 / (602) 276-4053
http://www.EMSL.com / phoenixlab@emsl.com

EMSL Order: 122100505
Customer ID: NIHI62
Customer PO:
Project ID:

Attention: Greg Brownell
Northern Industrial Hygiene, Inc.
201 South 30th Street
Billings, MT 59101

Phone: (406) 245-7766
Fax: (406) 254-1428
Received Date: 02/01/2021 9:45 AM
Analysis Date: 02/06/2021 - 02/08/2021
Collected Date:

Project: 999-4161 / Johnson Lane Interchange

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
M14.1A *122100505-0001*	Concrete	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M14.1B *122100505-0002*	Concrete	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M14.1C *122100505-0003*	Concrete	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M14.2A *122100505-0004*	Asphalt	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M14.2B *122100505-0005*	Asphalt	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M14.2C *122100505-0006*	Asphalt	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M20.1A *122100505-0007*	Expansion Joint Sealant (Tar)	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M20.1B *122100505-0008*	Expansion Joint Sealant (Tar)	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M20.1C *122100505-0009*	Expansion Joint Sealant (Tar)	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
M20.2A *122100505-0010*	Elastomeric Pad	Black Fibrous Homogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
M20.2B *122100505-0011*	Elastomeric Pad	Black Fibrous Homogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
M20.2C *122100505-0012*	Elastomeric Pad	Black Fibrous Homogeneous	5% Synthetic	95% Non-fibrous (Other)	None Detected
M20.3A *122100505-0013*	Silver Paint	Brown/Silver Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
M20.3B *122100505-0014*	Silver Paint	Brown/Silver Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
M20.3C *122100505-0015*	Silver Paint	Brown/Silver Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected

Initial report from: 02/08/2021 10:33:48

EMSL Analytical, Inc.
3356 West Catalina Drive Phoenix, AZ 85017
Tel/Fax: (602) 276-4344 / (602) 276-4053
http://www.EMSL.com / phoenixlab@emsl.com

EMSL Order:	122100505
Customer ID:	NIHI62
Customer PO:	
Project ID:	

Analyst(s)

Jillian Chesson (5)
Ky Nguyen (10)

Michelle Wilson

Michelle Wilson, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Phoenix, AZ NVLAP Lab Code 200811-0, AZ0937, CO AL-19027

Initial report from: 02/08/2021 10:33:48

OrderID: 122100505

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(lab use only)*:

 # 122100505

EMSL Analytical, Inc.
3356 West Catalina Drive
Phoenix, AZ 85017
Phone (602) 276-4344
Fax (602) 276-4053

Company Name : Northern Industrial Hygiene		**EMSL Customer ID:**	
Street: 201 South 30th Street		**City:** Billings	**State or Province:** MT
Zip/Postal Code: 59101	**Country:** US	**Telephone #:** (406)245-7766	**Fax #:**
Report To (Name): Greg Brownell		**Please Provide Results via:** ☐ Fax ☒ Email	
email Address: gbrownell@northernih.com		**Purchase Order Number:**	
Client Project ID: 999-4161/Johnson Lane Interchange		**EMSL Project ID** *(internal use only)*:	
State or Province Collected: MT		**CT only** ☐ **Commercial/Taxable** ☐ **Residential/Tax Exempt**	

EMSL-Bill to: ☐ Same ☑ Different - *If bill to is different note instructions in comment. Third party billing requires written authorization from third party*

Turnaround Time (TAT) Options Please Check

☐ 3 Hour	☐ 6 Hour	☐ 24 Hour	☐ 32 Hour*	☐ 48 Hour	☐ 72 Hour	☐ 96 Hour	☒ 1 Week	☐ 2 Week

*32 Hour TAT available for select tests only; samples must be submitted by 11:30am.
Please call ahead for large projects and/or turnaround times 6 hours or less.

PLM - Bulk (reporting limit)	TEM – Bulk
■ PLM EPA 600/R-93/116 (<1%)	☐ TEM EPA NOB – EPA 600/R-93/116 Section 2.5.5.1
☐ PLM EPA NOB (<1%)	☐ NY ELAP Method 198.4 non-friable - NY
Point Count ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ Chatfield Protocol (semi-quantitative)
Point Count w/Gravimetric ☐ 400 (<0.25%) ☐ 1000 (<0.1%)	☐ TEM % by Mass – EPA 600/R-93/116 Section 2.5.5.2
☐ NIOSH 9002 (<1%)	☐ TEM Qualitative via Filtration Prep Technique
☐ NY ELAP Method 198.1- friable - NY	☐ TEM Qualitative via Drop Mount Prep Technique
☐ NY ELAP Method 198.6 NOB- non-friable - NY	**Other tests (please specify)**
☐ NY ELAP Method 198.8- Vermiculite Surfacing Material	
☐ OSHA ID-191 Modified	☐
☐ EMSL Standard Addition Method	

■ **Positive Stop – Clearly Identify Homogenous Areas (HA)** **Date Sampled:** 1/28/21

Sampler's Name: Greg Brownell **Sampler's Signature:** Greg Brownell

Sample #	HA #	Sample Location	Material Description
M14.1A		East End Eastbound Bridge	Concrete
M14.1B		West End Eastbound Bridge	〃
M14.1C		West End Westbound Bridge	〃
M14.2A		West End Eastbound Bridge	Asphalt
M14.2B		West End Westbound Bridge	〃
M14.2C		East End Westbound Bridge	〃

Client Sample # (s): M14.1A - M20.3C **Total # of Samples:** 15

Relinquished by (Client): Greg Brownell **Date:** 1/29/21 **Time:** 5:00pm

Received by (Lab): CS **Date:** 4/1/21 **Time:** 0945

Comments/Special Instructions:
BillTo: Tasha Neil, 201 South 30th Steet, Billings, MT, 59101, US
Attention: Tasha Neil Phone: (406)245-7766 Email: Tneil@northernih.com Purchase Order:

7960 5879 2084

Page 1 of 2

Controlled Document – COC-01 Asbestos Bulk – R4 – 09/10/2019

EMSL Analytical, Inc.'s (DBA: LA Testing) Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical Inc. constitutes acceptance and acknowledgment of all terms and conditions.

EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Bulk Building Material Chain of Custody

EMSL Order Number *(lab use only)*:

#122100505

EMSL Analytical, Inc.
3356 West Catalina Drive

Phoenix, AZ 85017
Phone (602) 276-4344
Fax (602) 276-4053

Additional pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
M20.1A		East End Eastbound Bridge	Expansion Joint Sealant (TAR)
M20.1B		West End Eastbound Bridge	〃
M20.1C		West End Westbound Bridge	〃
M20.2A		East End Eastbound Bridge	Elastomeric Pad
M20.2B		West End Eastbound Bridge	〃
M20.2C		West End Westbound Bridge	〃
M20.3A		East End Eastbound Bridge	Silver Paint
M20.3B		West End Eastbound Bridge	〃
M20.3C		West End Westbound Bridge	〃

***Comments/Special Instructions:**
BillTo: Tasha Neil, 201 South 30th Steet, Billings, MT, 59101, US
Attention: Tasha Neil Phone: (406)245-7766 Email: Tneil@northernih.com Purchase Order:

Controlled Document – COC-01 Asbestos Bulk – R4 – 09/10/2019

EMSL Analytical, Inc.'s (DBA: LA Testing) Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical Inc. constitutes acceptance and acknowledgment of all terms and conditions.

GREG BROWNELL

has met the requirements of Montana Administrative Rule 17.74.362 and/or 17.74.363 for accreditation in the following asbestos occupation(s) through the specified expiration date(s).

MTA-5502

Asbestos Inspector	04/10/2021
Project Contractor/Supervisor	01/14/2022

MT DEQ Asbestos Control Program

Intentional Blank Page.

APPENDIX C

PUBLIC COMMENTS AND RESPONSES

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
11/4/2021	Billings Bypass	Douglas Trigas		Called to inquire about public meeting details	Provided him with date, time, and location for in-person and virtual meetings.	11/4/2021					
11/8/2021	Billings Bypass	Kathy Aragon		Doug, what is the schedule for the public meetings - I could not find them on line. Thank you, Kathy Aragon	Hi Kathy, The times are posted on the website. https://www.mdt.mt.gov/pubinvolve/billingsbypass/ Virtual Meeting is Nov 9, 2021 2:00PM In-person Open House Nov 9, 2021 5:30PM-7:30PM Montana Pavilion Let us know if you need more information.	11/8/2021					
10/1/2020	Billings Bypass	Anna Altice	Apple Maps	Good Morning, My name is Anna Altice and I work with the Apple Maps team in Austin, Texas. Apple Maps is working towards having proactive edits in the map so that the ramps and interchanges are available to the public as soon as they are open in real time. I was wondering if you could provide updates on a few of the major details and construction dates surrounding the Billings Bypass project. I have been referencing https://www.mdt.mt.gov/pubinvolve/billingsbypass/. What is the current status of the Five Mile Road segment of the project? Our sources indicate that there is a roundabout being constructed off of US Old Highway 312. Is this roundabout currently open to traffic? When is the substrate connecting US Old Highway 312 to Dover Rd expected to be open to the public? When is Yellowstone River Bridge expected to begin? Thank you for your time, I look forward to hearing back from you. Anna Altice Apple | Austin, TX	Hi, Anna, Thanks for reaching out. The Five Mile Road project is open to the public. The team is finishing up landscaping/revegetation currently, but for your purposes, it's functional. That includes the roundabout on Old Highway 312. From that roundabout, Five Mile Road now connects to Dover Road. The existing section between Dover Road and Mary Street was also improved. The Yellowstone River Bridge project is beginning construction now (survey, dirt work this fall) and will be under construction through the end of 2021. That roadway won't be open to the public until the Railroad Overpass and Johnson Lane Interchange – Railroad Overpassphases of the project are completed in (anticipated) 2023 and 2024 respectively. I can add you to the database to receive project updates as they're available, if you would wish. Did I get all of your questions answered? Thanks!	10/1/2020					
5/30/2019	Billings Bypass	Brad Zink		What is the status on the road?	Hi Brad- Thanks for your inquiry. Here's an update on the various segments of the Billings Bypass project: Five Mile Road Letting date: 2019 Construction on the Five Mile Road section is scheduled to begin in the fall of 2019. Bids will be opened November 14, 2019, so some preliminary activities may occur in 2019 and the majority of construction will take place in the spring/summer of 2020. Yellowstone River Bridge Letting date: 2020 The Yellowstone River Bridge designs are progressing on schedule. Features of the bridge include two vehicular travel lanes in each direction and a 10-foot multi-use path on the west side of the bridge. The project is scheduled to begin in 2020 and a two-year construction duration is planned. Johnson Interchange Letting date: ±2022 The Johnson Lane Interchange was moved up in the overall schedule based on public need. The interchange will be Montana's first diverging diamond interchange, an intersection style that offers many safety benefits. Railroad Crossing Letting date: ±2023* Coulson Road Letting date: ±2024* Mary Street Letting date: ±2025* *Dates subject to change The project team will also be at the Fall Home Improvement Show to discuss the project and answer any questions.	5/30/2019				Zink\Brad Zink Email - RE status.msg	
9/28/2017	Billings Bypass	Clayton Fiscus		Billings By-Pass Complaint The Billings By-Pass Plan is a Fake, Dangerous, Useless, Deceptive Road Plan with Environmental and Use Issues. It uses the words "By- Pass" when it bypasses nothing 1. FAKE- It goes through a peaceful, wildlife, scenic John Dover Memorial walking park and brings traffic noise and issues - Not a Bypass. 2. DANGEROUS -it goes through a peaceful R-7000 city approved and zoned residential, only, area – Not a Bypass. 3. USELESS-The -FAKE BY-PASS connects and funnels 2 interstate highways (I 90 & I 94) on to busy Main Street where there is currently 300 plus businesses and over 3,000 people working every day - It By-Passes nothing. 4. DECEPTIVE-placing a roadway -through a park - residential neighborhoods and on to the busiest street in Montana is not a BY-PASS, 5. MALFUNCTION JUNCTION - Environmental at the Roundup, Main Street, Bench connection - ittakes allthe surface wateratthe intersection and drains it down Mary Street -Into the Holland drain system. 6. It is not a Bypass and will do nothing to improve traffic conditions and concerns on Main					09282017 Open House Comments\Stults_Open House Comments_100217.msg	Public Meetings 9/27 &28/2017
11/6/2018	Billings Bypass	Deborah Panik	Jacaruso Enterprises	Good Morning, I am with the Red Lion Hotel and I was hoping to find who the contractors are that are responsible for the Bypass Project? We would like to offer them a discounted rate for the duration of their stay.						Panik\Panik_Billings Bypass_Contractors_110618.msg	
10/15/2019	Billings Bypass	Dennis Cook	Crown Realty	I was wondering if you could give me an update on the North By-pass project. Last Spring at our Billings Association Forum we were told that construction on the Five Mile section would be started this Fall (September) but I haven't seen any activity around this area. Do they still plan to begin with some preliminary construction this year? Also I would like to get additional information on the 27th Street overlay project. This Spring and Summer Cop Construction replaced water lines all along 27th in trying to get ahead of the overlay. I think I read somewhere that they were waiting on some special lighting that was going to be installed when they did the overlay. The lighting was held up by the Mfg. of the lighting was my understanding. Will this project become a Spring project instead of completing this Fall. If you could direct this to whomever oversees that project I would appreciate it. Also the Hwy 212 Highway expansion was reported to have run out of funding. Is that true? What is being done to secure funding for this project? Last but not least the First Avenue stretch through the center of Billings was going to get an overlay. Is that still scheduled to be done? Any updates on all projects would be appreciated quarterly if available. I am on the Board of Directors of the Billings Association of Realtors and also sit on the Yellowstone County Planning Board. Thanks for your time and I look forward to hearing about any updates that you may be able to provide on a regular basis. Best regards, Dennis Cook	Hi Dennis- Thanks for reaching out. Of the projects you've inquired about, the Billings Bypass is the only one I represent – I work for a consultant engineering firm, not MDT. I will provide you with the appropriate contact for projects I can't address. •Five Mile Road: You're correct – Five Mile Road is scheduled to begin construction this fall. The project will be let (meaning a contractor will be hired) this November. You may see some preliminary work (preliminary earthwork and irrigation relocation) this fall/winter, but most of the construction will likely happen this coming spring/summer. •27th Street Overlay: More information/contact information can be found here: https://www.mdt.mt.gov/pubinvolve/27thstreetimprovements/ •Hwy 212: More information/contact information can be found here: https://www.mdt.mt.gov/pubinvolve/roberts/#utm_source=google&utm_medium=search&utm_campaign=roberts •1st Avenue: More information/contact information can be found here: https://www.mdt.mt.gov/pubinvolve/1stAveNorth/ I will add you to the Billings Bypass mailing list so you receive updates when they're available. Information on the Billings Bypass project is always available at the website as well: https://www.mdt.mt.gov/pubinvolve/billingsbypass/ Thanks very much, Lisa Olmsted	Thanks Lisa! I appreciate the information. Best regards, Dennis Cook	10/16/2019 - LO	Cook\Cook - RE North By-Pass Information.msg	

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
7/5/2020	Billings Bypass	Diane Fischer		Good Evening, We were unable to attend the virtual public meeting on July 2. Is it possible to get an update on the bypass project? Either a map or brief write up regarding the progress and anticipated final result. Thank you very much for your time. Diane Fischer 406-855-2817 td2fischer@gmail.com 4395 US Highway 87 North Billings, Montana 59105 Sent from my iPhone	Hi, Diana, Thanks for reaching out - I'm sorry you weren't able to make it. Updated project information is available on the project website: https://www.mdt.mt.gov/pubinvolve/billingsbypass/ The meetings were also recorded. We're doing some quick clean-up editing on the video today and will have it posted to the project website in the next couple days. I'll also send that link as soon as it's posted. Don't hesitate to let me know if you have any follow-up questions. Thank you, Lisa Olmsted	7/6/2020					
8/24/2020	Billings Bypass	Diane Foreman		Diane called to provide updated mailing address.	Updated mailing address on file and emailed her the link to the virtual public meeting.	8/24/2020		Hi, Diane, Thanks for reaching out today – I'm appreciative of the opportunity to get your contact information updated. As promised, here's the link to the recordings of the virtual public meeting on July 2. There were two different meetings times, so you'll see two videos – the content is generally the same with the exception of the handful of Q&As at the end of each. I see that you own a property nearby the Johnson Lane Interchange project segment. That phase of the project is in final design stages, but at this point it looks like no right-of-way will be required from you – only a construction permit because we'll be working along your property line. Construction is anticipated to happen on that project segment in 2022. If you have any additional questions, please don't hesitate to call or email me. Have a nice day! Lisa Olmsted			
9/28/2017	Billings Bypass	Don Dalke		Would like info about his property mailed to him.	Responded by PPD.					09282017 Open House Comments\Stults_Open House Comments_100217.msg	Public Meetings 9/27 &28/2017
2/17/2021	Billings Bypass	Douglas Modrow		Please include bike lanes in the new interstate interchange being considered in Billings MT	Hi, Mr. Modrow, Thank you for taking the time to submit a comment regarding the Billings Bypass project. To answer your question, bike and pedestrian facilities are being considered in the design both in the interchange, which you referenced specifically, as well as the entire project. There a graphic illustrating pedestrian and bicycle facilities through the new Johnson Lane Interchange in a presentation from a public meeting on the website (page 18 of the pdf document). In the following graphic, the orange illustrates bike and pedestrian facilities. Thank you,	2/26/2021 (Comment forwarded from Fred Bente on 2/26/2021)	Thank you for the information. I bicycle ride out that way so I was interested in what was included.				
12/7/2020	Billings Bypass	Gary Kirby		Gary called to ask about mural opportunities on the project.	Added Gary to physical and email mailing lists.	12/7/2020					
5/3/2021	Billings Bypass	Jami Bond	Roadwatch	Hi Lisa! I called and left you a message this afternoon. My name is Jami Bond. I do Roadwatch which is traffic reports for a couple of local radio stations in Billings. My job is to inform the public and provide updates on construction projects in and around the Billings area. I am wondering if there are any updates you can provide me on the Billings Bypass project? Is there a text message service available for this project? You can reach me by email at jami.bond@yahoo.com or by phone at 406-855-6581. Thanks for your help!	Called Jami back; Discussed the project and the various communication strategies for the divverent phases. Added her to project mailing list.	5/3/2021					
8/26/2020	Billings Bypass	Jay		Lisa, I received a message from Jay and I think it is regarding the Billings Bypass? I couldn't exactly understand the area he was referring to. Could you reach out to him at the number below? Thanks, Matt https://www.mdt.mt.gov/pubinvolve/billingsbypass/ Thanks, Matt https://www.mdt.mt.gov/pubinvolve/billingsbypass/ -----Original Message----- From: AvayaVoiceMail@mt.gov <AvayaVoiceMail@mt.gov> Sent: Wednesday, August 26, 2020 10:46 AM To: Maze, Matt <mmaze@mt.gov> Subject: Voice Message from 14062572075 / "Ross Kim" Voice message notification Caller: 14062572075 Duration: 01:19 To hear the voice message, call your Messaging mailbox		8/26/2020 Left message; 8/27/2020 left message - no response					
9/28/2017	Billings Bypass	Jen Shokey		Of most importance to us, to do whatever you can to keep noise to a minimum.						09282017 Open House Comments\Stults_Open House Comments_100217.msg	Public Meetings 9/27 &28/2017
9/28/2017	Billings Bypass	Jerry Ellis	Yellowstone Valley Electric Cooperative	Glad to see some clarity of the alignment at intersections. Our co-op is concerned with our overhead distribution and transmission facilities in clnflict with the project. Particularly at I-90 Johnson Lane Interchange, Coulson Road and MRL Overpass, HWY 87/Old Highway 312 intersection, Old Highway 87 roundabout. Would like to be invited for a more indepth discussion of the conflicts we see. Thanks						09282017 Open House Comments\Stults_Open House Comments_100217.msg	Public Meetings 9/27 &28/2017
9/28/2017	Billings Bypass	Jim Scoles	Morrison Maierle	On the bridges: •I heard two folks mention they would like to see a nice looking bridge. One person mentioned coloring etc to blend with the natural environment •Two or three folks were glad to see the pedestrian path was added to the Yellowstone River Bridge •Folks that were concerned with noise – I sent them to other groups That's all I have. Thanks, Jim						09282017 Open House Comments\Scoles_PIM comments_101717.msg	Public Meetings 9/27 &28/2017
9/28/2017	Billings Bypass	John Shoff	DOWL	Hey Jolene. The issue that I heard numerous times from folks along Mary and folks adjacent to Five-Mile is the noise issue. It would be a good one for a FAQ sheet if we do one. That was by far the most common question. Other comments had to do with why this alternative was selected. Tougher for a FAQ but may be worth a general statement and then refer to the environmental document. There were some other "one-off" type questions that had to do with specific situations (springs, groundwater, deer crossings) but I don't think those are worthy of a FAQ. Oh, one other, we were frequently telling people that the centerline of the new bypass roadway would be about 150 ft. north of Mary Street. Possibly worthy of some space on a FAQ sheet. Thanks Jolene. John S.						09282017 Open House Comments\Shoff_PIM Comments_100817.msg	Public Meetings 9/27 &28/2017
7/19/2019	Billings Bypass	Mike Spence		Mike called to inquire about the project.	Called Mike, spoke to him about the satus of the project and added his email address to the mailing list.	7/19/2019					
11/24/2020	Billings Bypass	Pamela Hormer		Hi Lisa, I have a couple questions about this project. I'm looking at buying property passed the heights on Mcgirl and I work and own businesses on west end Billings. It's a 30 minute drive going through the heights to lockwood exit to access I90. Am i reading the map correctly that it might be another 5 years before I have an alternate route? Pam	Hi, Pamela, Thanks for reaching out for clarification. Your interpretation is essentially correct. From McGirl Road, you could access the future Yellowstone River crossing from the newly constructed Five Mile Road, but the segments of the project that will connect Yellowstone River Bridge to Johnson Lane Interchange on the Lockwood side of the river won't be constructed until 2023 and 2024 (tentative construction dates).	11/24/2020					

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
11/25/2020	Billings Bypass	Reatha Montoya	Magic City Real Estate	Can you tell me if the Billings Bypass will be near the Shepherd Acton Road near HWY 87 N.	Hi, Ms. Montoya, The Billings Bypass will connect to Highway 87 at the Main Street/Old Highway 312 intersection. A map of the project is available on the project website: https://www.mdt.mt.gov/pubinvolve/billingsbypass – this should offer a better visual of how the new roadway will connect and a timeline of when to expect the various project segments to be completed. Thanks very much for reaching out.	11/29/2020	Thank you so much. I found out later that I was supposed to be asking about a bypass ri	Ms. Montoya, I believe that you're still referring to the Billings Bypass. If one were to drive south from Roundup, the Billings Bypass will provide a more direct route to I-90 from Highway 87 to the Johnson Lane Interchange (at Lockwood) via a new roadway and bridge across the Yellowstone River. If you haven't already, see the map linked below for further detail. If you want to explore other MDT projects they're listed here: https://www.mdt.mt.gov/pubinvolve/active_projects.shtml. Roundup falls within the "Billings District". Thank you.	11/30/2020		
3/2/2018	Billings Bypass	Sue Anderson		What will be the speed limit(s) for the various segments of the Billings Bypass roadways?	The Billings Bypass project is being designed with a 45-mph design speed. While the posted speed for the project has not yet been set, it would likely be 45-mph or less, to correspond to the design speed. Todd G. Cormier, P.E., PTOE	3/8/2018					Response provided to Fred Bente to respond to "Ask MDT a Question"
9/28/2017	Billings Bypass	Teri Swenson	DOWL	Jolene, The key things I was asked were: 1.The schedule 2.Why is the first project 5-mile 3.Noise I didn't get asked about this, but it might be helpful to add a link on the project site to MDT's brochure Questions and Answers on Buying Property for Montana Highways. http://www.mdt.mt.gov/other/webdata/external/ROW/brochures/property_purchase.pdf Teal L. Swenson, P.E.						09282017 Open House Comments\Swensen_PIM_comments_101017.msg	Public Meetings 9/27 &28/2017
2/28/2018	Billings Bypass	Thomas A. Robertson		The question I have is, wouldn't it be better to just extend I-25 from Billings to Great Falls. I-25 ends in Buffalo, Wyoming. From Buffalo to Billings the road would become I-90 and I-25.. This would mean a continuous route from Canada to Mexico. I-15 connects Alberta to Mexico. Truckers and tourists would be able have a straight shot on an Interstate highway from Great Falls to either Tijuana or El Paso. It would divert the traffic from US 87 which would make the roads safer. Which ever route you took Billings-Roundup-Lewistown-Great Falls or Billings-Judith Gap-Great Falls. The Interstate Highway system has not been completed, just the original plan. The active proposals include but not a complete list: I-3 Savanna, Georgia to Knoxville, Tennessee (funded) I-7 or 9 Wheeler Ridge, California to Sacramento, California (funded) I-11 from the Mexico Arizona border to Spokane and on to Canada (under construction) I-42 Garner, North Carolina to Morehead City, North Carolina (funded) I-86 New York- Pennsylvania to New York-Connecticut state lines (under construction) I-99 Lindley, New York to Bedford, Pennsylvania (under construction) There are many more proposals just waiting. There is no need to list all of them. The point I am trying to make is that, wouldn't the State of Montana, and the cities of Billings and Great Falls save money in extending I-25 to Great Falls. We have always received over 90% funding for interstates. It would help the congestion on Main Street in Billings, as well as help the congestion on Tenth Avenue South in Great Falls. The distance is only 222 miles mostly across prairie and other undeveloped land which would limit the cost. There would be financial benefits to all the cities along the interstate as well as the jobs that would be created for construction workers. The Billings Bypass is a good idea, but I believe the greater good would served by extending I-25. Thomas A. Robertson 801 First Street East Roundup, Montana 59072	Mr. Robertson, Thank you for taking the time to provide us your comments regarding the Billings Bypass project. My apologies for not responding quicker... I have been out of the office with a cold. The Billings Bypass arterial project will construct a new arterial roadway within the existing Billings area transportation system with the purpose of improving mobility, connectivity, operations, and safety for the eastern portion of Billings. The road has a design speed of 45 mph, and will be constructed as a 2-lane facility with turn lanes and at-grade intersections. While there certainly will be opportunities for inter-state trucking to use this new road to access the interstate corridor, trucking is not the primary purpose for the road's development, nor will the road be developed to an interstate freeway standard. Rather, the road is intended to address the continued growth and development of Billings' eastern urban area. You have addressed some compelling points relative to an interstate freeway connection from Buffalo WY to Great Falls MT. I would suggest contacting the Montana Department of Transportation through their main Helena phone (406-444-6200), or leaving your suggestion on their website (http://www.mdt.mt.gov/mdt/comment_form.shtml). I will also forward your comments to the Billings District Administrator for the Montana Department of Transportation. Thank you, and if I can help address any other questions you may have regarding the arterial, please do not hesitate to contact me directly or through the project email billingsbypass@dowl.com. Todd G. Cormier, P.E., PTOE Senior Transportation Manager	3/2/2018				Robertson	
9/28/2017	Billings Bypass	Todd Cormier	DOWL	Date: September 28, 2017 Location: Lockwood School Project: Billings Bypass, 4024.20946.01 Meeting Notes •Discussed project phasing and some traffic movements with several individuals. Many individuals were concerned about Johnson Lane Interchange. •Talk with Yellowstone River Park Association representative, told him that we are working with the board and there is going to be trail under the Yellowstone River Bridge, pedestrian trail on the bridge, and some pedestrian crossing/s under or over the roadway. We also discussed that there is not going to be a trail along the project only on the Yellowstone River Bridge. •We discussed issues with the owner of Ace Hardware. He was concerned about the intersection of Old Hardin Road and Johnson Lane. •Groundwater concerns were discussed on the south side of Mary from a one of landowners. They are concerned about if the project is going to increase groundwater. We told them that our project is going to place fill on existing ground and drainage will be evaluated to make sure the groundwater is not increase by fill of our roadway. •Discuss a ground water spring with and individual next the big drain ditch on Five Mile Road. This spring is a nuisance and was wondering if our project can fix this issue. I told him it is a tough balance from drain groundwater to reduce basement flooding to draining backwater to the point well dry up. He indicated that the ditch sometime is flowing nothing and other times flowing a lot of water. The project isn't going to help his issue. •Talk to some individuals that are downstream of our project along Coulson Ditch. These individuals own project where the ditch goes through and have never seen water flowing in it for a long time (5+ years). They indicated when they bought the property, the water rights were not transferred to them.						09282017 Open House Comments\Cormier_PIM_Notes_101717.msg	
9/27/2017	Billings Bypass	Todd Cormier	DOWL	Date: September 27, 2017 Location: Independent Middle School Project: Billings Bypass, 4024.20946.01 Meeting Notes •Discussed project phasing with several individuals •Talked with Ray Halsey with Johnson Lane Materials. Ray runs the gravel pit located at the southern edge of Yellowstone River Bridge. He informed us that the current aerial image is out of-date and that the gravel pit has expanded further south. The southern border is now near the side channel and adjacent farm field. Ray informed us that they will continue to mine to the southeast to approximately Sta. 120+00. The gravel pit operation will not impact the side channel of the Yellowstone River. The western quarter of the gravel pit has been reclaimed with topsoil and is now a pond that they pump groundwater into. They have already removed parts of the topsoil berm that is located on the gravel pit perimeter. We talked about having a meeting in the future and he recommended Justin Peterson, General Manager of CMG and himself should be in the meeting. Ultimately they are own my buyers of CMG, Oroco Capital and Mitch Goldsteen is the main representative. •James Reno (Westate Machinery Company) requested to have an approach off five mile road to access his shop near Highway 312. He also talked about relocation or piping the drainage ditch so he could expand his yard. •Bob and Darlene Broderson (3927 US HWY 312) said they don't need the irrigation siphon crossing Hwy 312 to be perpetuated. They don't have water rights. He said he is fine with pumping from the drain ditch up to his garden and yard. •James and Anne Guzman (neighbors of Broderson to North) said they don't have water rights. Bob Broderson waters their lawn for them. They are interested in purchasing water rights from Jim Reno. Agreed that Siphon does not need to be perpetuated. •Jerry Ellis controls water that passes through Siphon under Hwy 312 that feeds Broderson/Reno. He also said he would be just fine with removing the siphon and draining water elsewhere. •Travis Heggum (east side of Five Mile Road) expressed concern about increasing flood potential/groundwater at his house. Recent large storm events nearly flooded his basement. I told him that there will be no impacts to his lot and that drainage features are sized to convey the 10-yr event. •Groundwater concerns were discussed on the south side of Mary from a couple of landowners. They are concerned about if the project is going to increase groundwater. We told them that our project is going to place fill on existing ground and						09282017 Open House Comments\Cormier_PIM_Notes_101717.msg	
11/20/2019	Billings Bypass	Will Schiffner	A Concrete	Curious about the status of the project, and whether contractors had been hired. He had heard that Missoula had gotten the funding.	I explained the current Build Grant news that he had read, and that the BBP project is still moving forward, despite the grant loss. We went over the various segments, and whether contractors had been hired for each. He mentioned that he had a concrete company and shop in Lockwood, and would be willing to assist any contractors with staging area, if needed. Emailed him the segment graphic and website address, and added him the the mailing list.				11/22/2019 (t+113ried calling 11/20/19 - no answer and vm full) -	Schiffner\Schiffner - Billings Bypass Segment Map.msg	

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
10/5/2017	Billings Bypass	Zach Hassler	Lockwood Pedestrian Safety District board member Yellowstone County Bike and Pedestrian Advisory Committee board member	To whom it may concern: I serve as a board member on the Lockwood Pedestrian Safety District (LPSD) and Yellowstone County's Bike and Pedestrian Advisory Committee (BPAC). I'd like to share two comments regarding the Billings Bypass project 4199001: 1). If what I've heard is true, I applaud the preliminary plans of a 10-foot wide walkway on the bridge over the Yellowstone River. This width would allow for relatively comfortable pedestrian traffic across the bridge. 2). I was unable to attend the public meeting and look at the preliminary alternatives for the Johnson Ln. interchange, but on behalf of the LPSD I'd like to stress how critical this part of the design will be for pedestrians and bicyclists in Lockwood. I understand the importance of moving vehicular traffic efficiently in and out of the interchange, but I'd also urge you to consider a design that makes non-vehicular traffic safe and comfortable. The interchange lies at a junction of important bike-ped projects in Lockwood, including the planned trail at the TEDD to the north, the new Becraft sidewalk TA project (an MDT project), and planned sidewalk improvements along Old Hardin. The challenges for pedestrians in Lockwood who want to bike or walk to and from Billings will always be getting across the interstate and getting across the river. With a 10-foot walkway, we will have half of those challenges solved. Please consider this a unique opportunity to solve the other half. Respectfully, Zach Hassler Lockwood Pedestrian Safety District board member Yellowstone County Bike and Pedestrian Advisory Committee board member	Thank you Zac for taking the time to reach out to us. It is good to hear from you! Yes, the Yellowstone River bridge structure will include a 10-ft separated bike/pedestrian facility, which will be physically separated from traffic via a barrier. The sidewalk will be located on the western side of the structure, so it can connect with a trail being planned though the TEDD south of the structure and can connect to a trail being developed by YRPA north of the structure. We are also working with BSEDA and KLJ, who are developing an infrastructure master plan for the TEDD, including addressing the trail component you mentioned in your email. As an aside, BSEDA and KLJ will be conducting a public meeting regarding the TEDD next Tuesday at 6:00PM, located at the Lockwood Middle School commons. With respect to the Johnson Lane interchange, the Bypass project is still working through the traffic operational analyses of the 3 preferred alternatives. As such, we do not have a specific alignment and grade for the interchange at this time. However, whichever alternative is advanced to design will be developed with urban conditions in mind and will include features to accommodate the movement of non-motorized users safely through the interchange and across Interstate 90. If you have any additional questions, or if you would like additional information regarding the questions asked, please call me or Teri and we would be happy to assist. Todd G. Cormier, P.E., PTOE Senior Transportation Manager				10/5/2017		
9/28/2017	Billings Bypass			The information supplied was very complete. Engineering person was very informative. All pelple were very helpful.						09282017 Open House Comments\Stults_Open House Comments_100217.msg	Public Meetings 9/27 &28/2017
11/9/2021	Johnson Lane Interchange	Melinda Oedekoven	Asphalt Plus, Inc.	Hi Lisa, It was nice meeting you tonight. Thank you for spending time with me and explaining things. You wanted me to drop you an Email because I had a question about how far down Johnson Lane will the Sidewalk go. I thought the plans had it on the East side of Johnson Lane, which is where our house is. Would you please confirm that as well? Thank you, Melinda Oedekoven	Hi, Melinda, It was great to meet you last night and I enjoyed visiting with you. I've checked in with the project team, and the current design doesn't extend beyond the Fly In Lube and Wash, so your property at 425 Johnson Lane shouldn't be impacted directly by construction at all. In addition to the Johnson Lane Interchange, improvements will also be made to the intersection at Old Hardin Road, so after construction, traffic in your neighborhood should flow through there smoother. Thanks very much for coming last night to learn about the project. Please feel free to reach out anytime.	11/10/2021	Hi Lisa, Great. Thank you very much for the information. ☺ Thank you, Melinda Oedekoven				
11/3/2021	Johnson Lane Interchange	David Knoop		Returned call regarding ROE. Requested more information.	Doug called back to answer questions.	11/3/2021		Hi David, Thanks for reaching out to our team about the Johnson Lane Interchange segment of the Billings Bypass project. As requested, I am including an exhibit of the proposed intersection configuration of Cole Street and Becraft Lane. Your property is labeled as Parcel 147, which is an internal numbering system. As you can see we have proposed a connection of your driveway to the potential new alignment. We will be showing a similar exhibit at the public meeting next week. Let us know if you have any questions or comments about the proposed design.		\\BIL-FS\BIL-projects\241\20946-01\50Design\0101\Public Correspondence\Knoop	
6/25/2020	Johnson Lane Interchange	Alan Vogt	Lockwood Strip Mall Group LLC		Spoke with Alan, emailed invitation and project info	6/25/2020					Related to July 2, 2020 Virtual Public Meeting
4/12/2021	Johnson Lane Interchange	Barry Bain	On Behalf of Meridian Restaurants Unlimited, LC A Burger King franchisee	Hello Lisa, Our client operates the Burger King at 2813 Old Harding Road, Lockwood, MT. We adamantly object to the proposed installation of the median on Old Harding Road east of Johnson Lane. The installation of this median will material impact the ingress/egress of our customers to/from our restaurant, and would be detrimental to the operation of the restaurant. We have been told it is warranted based on the traffic on Old Harding Road at the intersection of Johnson Road. Per our sources and information we've obtained a median is not warranted based on the amount of traffic in this area. Again, we object to the install of this median. Please contact me asap to discuss a change to this proposed median. Thank you, Barry Bain On Behalf of Meridian Restaurants Unlimited, LC	Hi, Mr. Bain, Thanks very much for reaching out about the Johnson Lane Interchange – I've received both your email and the message you send via the MDT comment form. I'm coordinating with the project team regarding your concerns and will be back in touch soon. Have a nice evening, Lisa Olmsted Public Involvement Manager	4/13/2021					
7/23/2018	Johnson Lane Interchange	Ben Hammer		A DDI at Johnson lane is a terrible idea. Just because MT doesn't have one doesn't mean that there should be one in the state. Especially in Billings. Driers in Billings still don't know how to use the round abouts							
6/25/2020	Johnson Lane Interchange	Brandon Wittman	Yellowstone Valley Electric Cooperative		Spoke with Brandon, he forwarded postcard to engineering department who plan to attend meeting. Mentioned ROW acquisition and prospect of future conversations. Emailed invitation						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Bryce Glen		will the medians in the DDI have truck apron or be able to be driven on to make corners of longer truck trailer traffic? Like the truck apron on a traffic circle?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Bryce Glen		Thank you for your presentation							Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Bryce Glen		What kind of erosion control BMP are you looking at specifiying trough out this project?	live answered						Related to July 2, 2020 Virtual Public Meeting
6/25/2020	Johnson Lane Interchange	Carrie Mitchell	First Interstate Bank		Called to invite to public meeting, left voicemail.						Related to July 2, 2020 Virtual Public Meeting
7/24/2020	Johnson Lane Interchange	Casey Adragna, AIA		Good morning Lisa, I am the architect for the building addition project at 1265 Sannon Boulevard that Neil has mentioned below. The property is currently under contract and scheduled to close to my client hopefully sometime in August. I would be happy to get you my client's contact info. In the meantime I have a few question below: 1.As it relates to 1265 Sannon there are really two pieces associated with the bypass project that will affect this property; 1) The new intersection of Sannon Blvd. and the new bypass road that will be located approximately at the north tip of our site. 2) The reconstruction and realignment of Sannon Blvd. Does this sound current to you? 2.With the reconstruction and realignment of Sannon what will the new ROW be for this road? It is currently 30' but I'm assuming that will be increased with this project? 3.As you mentioned below that Sannon currently cuts through the southwest corner of our site; there is also an overhead powerline that cuts through the southwest corner of our site; will these overhead power lines be reconstructed as well to fall within the new Sannon Blvd. ROW? 4.Do you have any preliminary detailed drawings for both the intersection project and Sannon project that you would be able to share with our team so that we can have a general idea of what is coming, and can potential plan around it with our current addition project? 5.Do you know how much additional ROW will be needed from 1265 Sannon for these projects? 6.What is the anticipated timing for this work? This Bypass project seems like a very exciting project for the Billings area; and we just want to make sure that we can do the best we can coordinate our work with an future plans. Thanks, Casey Adragna, AIA Principal Architect Cell 719.351.4918 cadragna@adragnaarch.com	Hi, Casey, Thanks for the email. I'm trying to track down as much information for you as possible. I'll circle back around with you tomorrow, hopefully. Lisa Olmsted Public Involvement Manager	7/27/2020	Sounds good, thanks a lot Lisa! Casey Adragna, AIA	Hi, Casey, Thanks for reaching out. We're glad to have lines of communication open and I appreciate your offer to connect us with the pending property owners. The project designs are still too preliminary to offer definitive answers to many of your questions, but the following notes offer what information we do know at this point: 1.You are correct. Two different segments of the Billings Bypass project will affect the 1265 Sannon property. a.Sannon Boulevard will be reconstructed as a part of the Johnson Lane Interchange segment of the project (illustrated in brown on the project map). b.Coulson Road will be reconstructed as a part of the Johnson Lane Interchange-Railroad Overpass segment of the project (illustrated in light blue on the project map). 2.The minimum ROW width for this type of road is 60'. Given the grading in this area we would expect a ROW width of 60' to 120'. 3.The overhead power and other utilities will be relocated only if they conflict with the new roadway alignment; otherwise existing utilities will remain in place. 4.Detail drawing aren't finalized enough to share. Right-of-way conversations are planned to begin this fall so I anticipate we'll have a lot more detail to offer in the coming weeks. 5.As I told Neil previously, the designs of Sannon Boulevard are still preliminary so we don't know an exact amount yet. The right-of-way needed from this parcel will be small. It's also possible that right-of-way may need to be purchased on the north end of the parcel for the Johnson Lane Interchange-Railroad Overpass segment of the project. We will coordinate the	7/27/2020		

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
12/7/2020	Johnson Lane Interchange	Catherine Dove		Hello Lisa, Several neighbors have approached me with questions about the interchange and what is happening. I have heard nothing although I do see plenty of marker posts. This is a concern to me of course as you had expressed that I would likely be contacted concerning some bit of my property to the north. Which I don't really know how you would use since there are massive electrical poles between me and the current roadway. I am at the moment more interested in my property border to the west. I'm certain that you know that we have a barn and it is on the part of the property that borders town pump's property to the south. Years ago the neighbors sold their property along the roadway to town pump. Everyone along the road on that edge did,but us. We have had more than one person come along wanting to tell us that they own that portion only to be surprised to find that we retain it. What is the impact to me along that edge? Does it remain at zero? The neighbor to the west tells me he is being told that he will be set back because of it. I am still very concerned about this. Still wonder about the north edge of the property, and still very unhappy with the proposal to force me several miles out of my way to access my property when this is all done. I would appreciate an update from you very much. Thank you. Sincerely, Catherine Dove	Hi, Catherine, I appreciate you reaching out. The roadway design in your area is still undergoing some design review/modifications, so there aren't any definitive answers to offer you yet regarding impact. I understand that this possible impact to your property is a priority to you, and I'm committed to getting information to you as soon as it's available. I'm going to reach out to MDT again, to see if they have a more accurate estimate of a timeline so you know what to expect. I'll let you know as soon as I learn anything more. The stakes you've noticed are possibly survey markers from a property line exploration, but I just spoke with our survey manager, and our team hasn't been in your neighborhood recently. I also see exactly what you're talking about regarding both the Town Pump property and the power pole. Thank you very much,	12/8/2020	Thank you Lisa , for getting back to me quickly on this. I'm not sure exactly when the survey stakes were set but it is within the last two weeks. So that may be a different team. Yes, this is both frustrating and worrying. I have people depending on me keeping on top of this. I do feel like I am shouting in to a wind tunnel. The swirl of questions and gossip is not at all helpful ,lol so I come to you for the accurate report. I know there are a lot of moving parts but the longer I wait the more I am going to need ahead to prepare animals, fences, renters ,etc . So I will just keep in touch and hope it becomes clear soon. Thank you again, Catherine Dove	Hi, Catherine, I just spoke with a MDT project team member. They understand your concerns and agreed to my request to set up a meeting with you to discuss the potential impacts to your property to aid in your planning. Would you be open to a conversation sometime in the next few weeks? We could either meet in-person or virtually, depending on your preference and availability. Like I mentioned before, the design is still in-process, but they can offer some insight on what to expect as things move forward. Thanks very much,			Note from Michael Fabricius: Regarding Catherine Dove, our relocation agent, Curt Dallas, was able to have a phone meeting with her last week so she should be taken care of. I apologize for not touching base with you last week, but Catherine should be taken care of as Curt not only let her know about the relocation process but did also let her know an appraiser will be contacting her soon.
10/9/2020	Johnson Lane Interchange	Catherine Dove		Hello Lisa, Thank you for getting back to me . It's true that this project has moved at a ,shall we call it deliberate,pace. It is certainly a lot of moving pieces to keep organized. I appreciate you keeping me abreast of how it is progressing. As winter is around the corner I am sure it will assert its own set of timeline issues on the project. I wish you a lovely weekend and will expect to hear from you when next changes occur. Thank you,	Thank you, Catherine. Yes, I'll definitely keep you in the loop as more information is available. You're always welcome to reach out to me as well with any questions – that's what I'm here for. 😊 Lisa Olmsted	10/9/2020					
9/17/2020	Johnson Lane Interchange	Catherine Dove		Hello Lisa, thanks for getting back to me so quickly. I am quite concerned about the multiple impacts on my property while other near me have been bought in anticipation of total use. I do not want to be surprised by sudden changes in the impact on my property. I cannot imagine that any of the potential configurations would not involve wanting some of this property, I have myself and two renters to be concerned about so I would like to know what is going on. At this point I am frankly baffled as to how the state could not know down to the foot and inch, where the road will go. Thank you for your prompt response. Catherine Dove	Hi, Catherine, Thanks for reaching out; I hope you're well. I'll touch base with our design team and MDT regarding your property specifically and get back to you with more information in the next week or so. The two segments of the project that are adjacent to your property are anticipated to begin construction in 2022 (Johnson Lane Interchange will impact Johnson Lane on the west side of your property) and 2024 (Johnson Lane Interchange – Railroad Overpass will impact Coulson Road on the north side of your property). The details on those project segments are still in design; there are many complex issues involved in the designs, so it takes time. I'll see what I can learn for you. Thank you, Lisa Olmsted Public Involvement Manager	10/9/2020		Hi, Catherine, I just got an email back from MDT regarding my inquiry on your behalf. The details regarding the design adjacent to your property are still being finalized. They agree that some property will likely need to be purchased from you. MDT is preparing to move forward with the appraisal process; this will help them have solid answers for you when they communicate with you directly. The Right-of-Way Supervisor told me that their team (Curt Dallas, specifically) will be in touch directly with you in the coming weeks. I know this seems like a slow process and understand your concerns – the State is incredibly careful and intentional in how they move forward, which takes time. Your concerns will continue to be on my radar, too. If learn anything more, I'll continue to be in touch. Have a nice day, Lisa Olmsted			
9/17/2020	Johnson Lane Interchange	Catherine Dove		Hello Lisa, I have yet to hear more on what the plan is for my property. Time is running out for all of us before winter begins to set in. I am concerned about what is going on with this project. I hope to hear from you soon. Thank you, Catherine Dove	Hi, Catherine, Thanks for reaching out; I hope you're well. I'll touch base with our design team and MDT regarding your property specifically and get back to you with more information in the next week or so. The two segments of the project that are adjacent to your property are anticipated to begin construction in 2022 (Johnson Lane Interchange will impact Johnson Lane on the west side of your property) and 2024 (Johnson Lane Interchange – Railroad Overpass will impact Coulson Road on the north side of your property). The details on those project segments are still in design; there are many complex issues involved in the designs, so it takes time. I'll see what I can learn for you. Thank you,						
7/2/2020	Johnson Lane Interchange	Catherine Dove		what will be happening to Firth street?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Catherine Dove		why not connect at the join up to the realignment of north frontage?	Thank you for your question, Catherine. The question that you have brought up deserves a thoughtful and detailed response from MDT that is beyond the capabilities of this electronic format. MDT will get back to you shortly with our response outside of this venue. Your question/issue/comment and MDT's response will be included in the project's documentation as part of the official record for this project. Once again, thank you for your time and attention to MDT's Billings Bypass project.			Hi, Catherine, Thanks for reaching out. I'll look into how the proposed alignment relates to your property and get back in touch with you next week. I hope you have a nice holiday weekend!	7/3/2020		Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Catherine Dove		Hello Lisa, My name is Catherine Dove. I'm at 1156 Firth St, Billings, MT 59101. I'm curious about what will be happening at that site. I cannot see from the views afforded what will be absorbed by the project. Since my property is at the very northwest of firth I am concerned about encroachment . I would love to hear from you about that . Please feel free to email or to call at your convenience. My number is 406-670-2902. Thank you so much, Catherine Dove	Hi, Catherine, Thanks for reaching out. I'll look into how the proposed alignment relates to your property and get back in touch with you next week. I hope you have a nice holiday weekend! Lisa Olmsted Public Involvement Manager			Hi, Catherine, I wanted to get back in touch with you regarding your inquire from the Billings Bypass public meeting. The roadway design for the corner by your property has a handful of variables that are still in process, so I don't have detail for you right now. I have your email flagged and will follow up with you when we have enough information to answer your question. I certainly understand your interest as an adjacent property owner; I anticipate having more detail to discuss with you in the next few weeks. In the meantime, please feel free to reach out to me with any other questions or concerns. Have a nice afternoon.	7/10/2020		Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Cheryl & Jim		Thank you for the updates							Related to July 2, 2020 Virtual Public Meeting
6/25/2020	Johnson Lane Interchange	Christopher Bakwin	2860 Old Hardin Road, LLC		Called three times, no answer, no vm option						Related to July 2, 2020 Virtual Public Meeting
7/3/2020	Johnson Lane Interchange	Dan Alexander	Casey's Corner Exxon	Curious about medians around his convenience store.	Lisa and Doug met with Dan on 7/8/2020.					Alexander - Casey's Corner	Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Dan Carter		How far south on Johnson Lane will sidewalks be constructed?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Dan Carter		Thank you for sharing this information. Very helpful!							Related to July 2, 2020 Virtual Public Meeting
2/21/2019	Johnson Lane Interchange	Dan Sampson, Arnold Oswald	Town Pump	Stephanie scheduled the meeting with the Town Pump representatives to discuss progress on the Johnson Lane Interchange segment (4199007) of the Billings Bypass project. The meeting was held at the MDT Planning offices in Helena. The attached memorandum was sent to Town Pump personnel about a week prior to the meeting highlighting project progress since the last meeting with Town Pump representatives in September 2017.						Town Pump\20190221 TownPump Meeting.pdf	
4/16/2021	Johnson Lane Interchange	Diane Foreman		Diane own the property north of Town Pump on Johnson Lane. She called to inquire whether her approach would be impacted by the Johnson Lane Interchange. Her ailing brother currently lives on the property. After he's moved to an assisted living facility (soonish, but somewhat up in the air), she is considering converting the property to storage units, which may change her approach. While she doesn't want to rush the transition, she's feeling some pressure to decide/coordinate with the upcoming construction.	Hi, Diane, I'm providing your contact information to the team who will be doing the access and right-of-way discussions with property owners for the Johnson Lane Interchange (the company's name is Tierra). They'll be able to help you with the driveway approach inquiry we spoke about and should be in touch with you soon. Have a nice day, Lisa Olmsted	4/30/2021					
1/21/2021	Johnson Lane Interchange	Diane Foreman		Diane called to inquire about mail and garbage coordination during Johnson Lane construction. Her brother uses the property, and is wondering about adding a gate along the railroad easement.	I told her that details like that are on the project team's radar and that we'll be coorindating with property owners regarding specific details as construction gets closer. We also discussed that the adjacent railroad crossing construction will be part of the Johnson Lane Interchange - Railroad Overpass project segment and that her property will be adjacent to two different construction phases. Emailed her the project website link in order to see	1/21/2021					
7/10/2020	Johnson Lane Interchange	Diane Foreman		Called to inquire about project; had formerly been told the the project would be close but wouldn't inpact her property.	Confirmed that we'll likely need a construciton permit for work adjacent to her property, but that proposed plans aren't anticipated to impact her property directly.				7/10/2020		Related to July 2, 2020 Virtual Public Meeting

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
12/3/2020	Johnson Lane Interchange	Donna Harakal	Glacier Bank (Western Security Bank)		Hi, Donna, I just spoke with Jocelyn at your bank, but am following-up with an email directly to you as well. I'm reaching out today to give you a heads-up that a subconsultant of ours (Scott of Ethnoscience) will be in your neighborhood tomorrow and/or Saturday doing a cultural assessment for the Billings Bypass project. He won't be on your property, but will likely be taking photos of the properties/parking lots/ditches around your property in an effort to identify anything of historic/cultural significance. I wanted to be sure you and your staff had a heads-up to mitigate any security concerns that might come up. Please don't hesitate to reach out if you have any follow-up questions. Thanks very much, Lisa Olmsted	12/3/2020					
6/25/2020	Johnson Lane Interchange	Donna Harakal	Glacier Bank (Western Security Bank)		Had a long conversation about the project with Donna. She's very nice, would not like full closure of the interchange. Emailed invitation.						Related to July 2, 2020 Virtual Public Meeting
6/26/2020	Johnson Lane Interchange	Dustin Bretz	Bretz RV	Calling Lisa back, interested in impact to business access; had poor experience with business access on another recent project. Discussed potential need for ROW.	Emailed Dustin the public meeting postcard to share with his partners.						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Frosty Erben		How do you plan to detour traffic during construction. The people who normally exit using Becraft, and Old Hardin to the interchange	live answered						Related to July 2, 2020 Virtual Public Meeting
4/22/2021	Johnson Lane Interchange	Geri Fuller on behalf of Jefry Rosmarin	Peekamoose LLC	Sent on Behalf of Jefry Rosmarin, Property Owner, 2813 Old Hardin Rd., Billings, MT 59102 TO: Ms. Lisa Olmsted, lolmsted@DOWL.com RE: Billings Bypass Project – 4199-055-007 Parcel 7-10 Dear Ms. Olmsted – the attached letter is being sent to your attention via this email and via Certified Mail RRR. We will look forward to hearing from you. Thank you. Sincerely, Jefry Rosmarin Geri Fuller Assistant to Jefry Rosmarin 10 Mount Misery Road, Huntington, NY 11743	Ms. Fuller, Mr. Rosmarin, and Mr. Bain, Thank you for the follow-up letter. I've received it and shared it with the project team. The team met yesterday to discuss options related to your concerns and have directed the project engineers to conduct an in-depth review of possible options and their related impacts to traffic safety and flow. I'll certainly be in touch to update you on their findings in the coming weeks. Thank you, Lisa Olmsted Public Involvement Manager	4/23/2021				Peekamoose LLS Rosmarin	
6/25/2020	Johnson Lane Interchange	Jackie	Billings Lockwood Lodging Inc		Called to invite to public meeting, left voicemail.						Related to July 2, 2020 Virtual Public Meeting
8/7/2020	Johnson Lane Interchange	Jeff Harris		Hello Lisa, I currently live in the Philippines but own and manage a gravel pit in Emerald Hills. We have provided gravel for several contracts including DOT projects between Billings and Harden. I'm reaching out to you to see if you can provide me with information on any contractors involved in the Johnson Lane enterchange project. My 92 year old father owns the gravel pit. I have power of attorney and manage business opportunities for him. Are there any updates, contractor bids that have been awarded, other contacts, or any information that you may have that would be useful to me? Being retired in the Philippines during COVID has made it difficult to travel to Billings. It's been frustrating to say the least. So if you can help with any information I would surely appreciate it. Thank you, Jeff Harris Tabalong Dauis Purok 7, Panglao Bohol Philippines 6340 Cell 63-998-154-4773 jeffnharris57@gmail.com	Hi, Jeff, Contractors have been selected for three different phases of the Billings Bypass. •Riverside Contracting Inc. is nearly finished with the Five Mile Road segment of the project, so that's likely irrelevant for you at this point. •The Yellowstone River Bridge segment was recently awarded to Wadsworth Brothers Construction. •Granite Construction/LHC (joint venture) will be the construction manager/general contractor for the Johnson Lane Interchange project segment. Beyond that, the following link will take you to the plan holders list where you can sign up or register as a sub. https://www.mdt.mt.gov/applications/planholderslists/login.aspx You might also take a look at the MDT Q&A Forum (https://www.mdt.mt.gov/business/contracting/qacurrent.shtml) to see who's asking questions and pursue primes from there. I imagine that you've already perused the project website (https://www.mdt.mt.gov/pubinvolve/billingsbypass/). The site is updated regularly, so always a good source of information as well.	8/10/2020					
4/14/2021	Johnson Lane Interchange	Jefry Rosmarin	Peekamoose LLC	Thank you for the prompt response .. I manage Peekamoose LLC the owner of the referenced property. I want to reiterate the points made by Mr Bain and communicate the owners objection to the proposed installation of the median on Old Hardin Rd. I have reviewed the traffic counts on the Mt. St. Trans. web site as well as the 2040 traffic volumes map sent by Ms Mills on 3/16/21 . I cannot see how the traffic volumes indicated would justify the need for the median. Sent from AOL Desktop Jefry Rosmarin 10 Mt Misery Rd Huntington New York 11743 631 629 4775 (w	Hi, Mr. Rosmarin, I'll add your comment to the team's conversation. Thanks for reaching out directly. Lisa Olmsted Public Involvement Manager	4/14/2021					
7/2/2020	Johnson Lane Interchange	Jim Hilleboe		Great presentation! Thanks!							Related to July 2, 2020 Virtual Public Meeting
7/1/2020	Johnson Lane Interchange	Jodi Vandeville	Montana Peterbilt	Send attachement oh behalf of Terry Seiffert.	Thanks, Jodi. I'll file Mr. Seiffert's letter with the public meeting documents. Lisa Olmsted Public Involvement Manager				7/1/2020		Related to July 2, 2020 Virtual Public Meeting
6/26/2020	Johnson Lane Interchange	Jodi Vandeville	Montana Peterbilt	Called to inquire how to submit comments related to public meeting.	Disucssed options to submit comment - comment in-meeting, email, phone, or physical mail prior or after meeting						Related to July 2, 2020 Virtual Public Meeting
	Johnson Lane Interchange	KELLY STROBEL	Lamar	Good afternoon Rod and Lisa, after sitting in on the meeting last week, I have a couple of concerns, if there is any discussion about moving the frontage road on the Northeast side to the north at all, can we please have it adjusted to where it will not affect any of our signs that are in the area. I have attached a photo of the area I am talking about. There may not be an issue, but it's a concern and wanted to be out in front of it as much as I could. Thank you in advanced for your time and attention it is very much appreciated. Have a Great Afternoon, Kelly -- KELLY STROBEL LEASE MANAGER - LAMAR OUTDOOR PLANT 237 7505 ENTRY WAY DRIVE BILLINGS, MONTANA 59101 OFFICE: 406-252-7181 FAX: 406-252-7099	Hi, Kelly, Thanks for reaching out. I'm going to look into the specifics regarding your sign locations with the designers tomorrow. I'll follow up with you directly in the next day. Have a nice evening, Lisa Olmsted Public Involvement Manager		Hi, Kelly, I wanted to touch base with you again, regarding your inquiry. The designs for this segment of the project aren't finalized yet, so I don't have details to share with you. I have your contact information and a record of your inquiry and will circle back when we have specifics. Thanks very much, Lisa Olmsted Public Involvement Manager			
7/2/2020	Johnson Lane Interchange	Ken Tolliver		Lisa, Can't log in to register or attend. Is there a phone connection available for this afternoon, Zoom, or can you help me register and attend. Best Regards, Ken Tolliver	Hi, Ken, Here's the link to register for the 5:30 pm public meeting: https://mt-gov.zoom.us/webinar/register/WN_sTiQTYi9T7K1RU8YV2kQWQ. Once you sign-up, you'll receive both the login and call in information both on your screen and via email from Zoom. I'm at my desk now, so feel free to call if you need any additional assistance. Thanks very much for your interest. Lisa Olmsted		Thanks I am registered now. Hopefully, I can Zoom in at 5:30. Best Regards, Ken Tolliver	7/2/2020		Related to July 2, 2020 Virtual Public Meeting

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
6/26/2020	Johnson Lane Interchange	Ken Tolliver (emailed by Jodi Vendeville)	SRI Companies	Dear Kevin, I hope to attend the meeting and speak. If I cannot attend I would like you to mention that the SRI companies located a facility from Detroit to Billings which uses the frontage road. I lobbied to locate the facility here, and succeeded. We would have had an opportunity to double the size of this facility and more than double the jobs provided to Billings, had the design of the road not posed a threat to the existing facility and rendered a high volume expansion to the facility wholly impractical. Because of the road design problems, SRI's new affiliate's distribution center was located in Orlando, rather than Billings. Many jobs were lost to Billings, including a number of high paid tech jobs, as the new affiliate uses the internet to market directly to consumers. The new company is much larger than the company now located on the frontage road and has higher employment rates per million dollars in sales revenue. I should add this is all "import/export" revenue to Billings. That is every local job imported will be funded by revenue generated by out of state sales. The normal multiplier is 6 local jobs for every local import revenue funded job. Using this metric, I estimate Billings lost well over 150 jobs because of this problem. The design proposed will "freeze" a substantial land area from future development. Blight will result, in my view. I urge consideration of trying to save the existing businesses on frontage road rather than forcing them to wither on the vine. There is no sound reason for not providing access to the frontage road. A better design means more one time cost today (costs that will add a small percentage to the cost of the total project), but prevents much larger costs over the long term. The long term costs will be born on the shoulders of local people who own property served by the existing frontage road. Hardly fair.	Thank you, Jodi. I've filed this message. Lisa Olmsted Public Involvement Manager				6/26/2020		Related to July 2, 2020 Virtual Public Meeting
6/26/2020	Johnson Lane Interchange	Ken Tolliver via Jodi Vandeville	Montana Peterbilt	Dear Kevin, I hope to attend the meeting and speak. If I cannot attend I would like you to mention that the SRI companies located a facility from Detroit to Billings which uses the frontage road. I lobbied to locate the facility here, and succeeded. We would have had an opportunity to double the size of this facility and more than double the jobs provided to Billings, had the design of the road not posed a threat to the existing facility and rendered a high volume expansion to the facility wholly impractical. Because of the road design problems, SRI's new affiliate's distribution center was located in Orlando, rather than Billings. Many jobs were lost to Billings, including a number of high paid tech jobs, as the new affiliate uses the internet to market directly to consumers. The new company is much larger than the company now located on the frontage road and has higher employment rates per million dollars in sales revenue. I should add this is all "import/export" revenue to Billings. That is every local job imported will be funded by revenue generated by out of state sales. The normal multiplier is 6 local jobs for every local import revenue funded job. Using this metric, I estimate Billings lost well over 150 jobs because of this problem. The design proposed will "freeze" a substantial land area from future development. Blight will result, in my view. I urge consideration of trying to save the existing businesses on frontage road rather than forcing them to wither on the vine. There is no sound reason for not providing access to the frontage road. A better design means more one time cost today (costs that will add a small percentage to the cost of the total project), but prevents much larger costs over the long term. The long term costs will be born on the shoulders of local people who own property served by the existing frontage road. Hardly fair.	Thank you, Jodi. I've filed this message. Lisa Olmsted Public Involvement Manager				6/26/2020	Tolliver\Tolliver, Vendeville_EXT_ FW_ bypass.msg	Sent on behalf of Ken Tolliver; Related to July 2 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Kevin Gustainis		This Kevin Gustainis. Has your proposal taken into consideration the Lockwood TEDD 2019 Strategic plan submitted to the Big Sky Economic Development Authority by KLJ for the future potential extention of North Frontage Road to the east?	Hi, Kevin. Thank you for your question. The question that you have brought up deserves a thoughtful and detailed response from MDT that is beyond the capabilities of this electronic format. MDT will get back to you shortly with our response outside of this venue. Your question/issue/comment and MDT's response will be included in the project's documentation as part of the official record for this project. Once again, thank you for your time and attention to MDT's Billings Bypass project. We'll follow-up with you directly.						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Kevin Gustainis		Thank you.	Thank you. We appreciate your participation.						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Kevin Gustainis		I've submitted a letter via the link provided. For the record I want to state in the strongest terms possible my opposition to the current design of the Johnson Lane interchange as it would have a devastation impact on my business and the value of my properties as well as the properties of my neighbors. Please also refer to letters submitted by Mr. Ken Tolliver, Mr. Terry Seiffert and Mr. Woody Woods from the Lockwood TEDD Advisory Board echoing my opposition. My business relies on easy on/off access to the interstate and your current design eliminates that.	Thank you, Kevin. We've filed your letters as a part of the meeting record. Your involvement is appreciated, and we'll be in touch with your and your neighbors.						Related to July 2, 2020 Virtual Public Meeting
6/26/2020	Johnson Lane Interchange	Kevin Gustainis	Montana Peterbilt	To: The Montana Department of Transportation Dowl Engineering I am the owner of Montana Peterbilt located at 3255 North Frontage Road in Billings. We are one of the primary establishments in the Lockwood Targeted Economic Development District (TEDD). We have been operating from this location since the completion of our new building in May of 2013. We've invested over $7 Million dollars in property, building and equipment on this site and are very proud of our state of the art facility. We relocated here specifically because of the excellent visibility of, and easy on and off access to the interstate via the Johnson Lane exit as well as the proximity to the adjacent truck stops. Montana Peterbilt is a heavy truck dealership that relies on over the road truckers for truck sales and more importantly parts and service sales. Many of these trucks and trailers are in excess of 100' long and are very difficult to maneuver. The current proposed design of the Johnson Lane interchange effectively eliminates convenient and easy access to the interstate and would make it incredibly difficult for our customers to find their way to our facility, much less maneuver a 110' sleeper tractor pulling triple trailers to do so. Truckers who have a hard time navigating to our facility would then go to our competition as they would be easier to access. In addition to truckers, large wreckers bringing rigs and trailers in on the hook for repair can exceed 165' in length. They would also decline to try and navigate a difficult entrance and egress given the incredible length of their loads and we would lose that business as well. In addition to the economic impact to mine and other existing businesses on North Frontage Road including The Truck Shop, Higgins Diesel, Winkler Trucking and SRI Companies, the current design would also impact many potential future businesses and hundreds of jobs because it would eliminate the potential extension of North Frontage Road which was identified as a priority project by KLJ in their 2019 Strategic Plan submitted to the Big Sky Economic Development Authority. This project would provide access to many acres of land that could be developed in the Lockwood TEDD but would be severely hampered if the current proposed design were implemented. As per the letter submitted to you by Mr. Ken Tolliver of SRI companies, job losses have already been incurred because of	Thank you for your comments, Kevin. I've documented them in relation to the public meeting and general project public involvement feedback. Have a nice weekend, Lisa Olmsted Pubic Involvement Manager				6/26/2020		Related to July 2, 2020 Virtual Public Meeting
8/28/2018	Johnson Lane Interchange	Kevin Gustainis	Montana Peterbilt	Good Afternoon, I own Montana Peterbilt at 3255 North Frontage Road and have concerns after seeing the simulation of the "diamond exchange" for the bypass at Johnson Lane. The simulation shows that access to my place of business (and several other businesses) would be eliminated by closing off any further access to the northeast on North Frontage Road at Johnson Lane. Can you please contact me? My cell number is below and I would appreciate some clarification. Thank you. Kevin Gustainis Dealer Principal Montana Peterbilt Cell 406-690-6137						Gustainis\Gustainis_Peterbilt_082218.msg	
5/3/2021	Johnson Lane Interchange	Kirby Hubbs		Leases a property on Firth - calling to inquire about R/W.	Provided Micheal Fabricius' contact information.	5/3/2021					

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
3/16/2018	Johnson Lane Interchange	Kristi Drake	Billings Trailnet		Good morning, Kristi. I wanted to follow up on my phone call this morning. Stefan Streeter let me know that you were looking for some higher-resolution images that you could use for your newsletter, and thought that Rod Nelson may have already a few to use. If you need anything additional, please let me know. Stefan also thought you would want some images depicting what a diverging diamond interchange (DDI) looks like. The following link will take you to a report developed by Federal Highways (FHWA)... it is a big report, so I grabbed a few images from it that you might find useful... https://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14067_ddi_infoguide.pdf https://divergingdiamond.com/ The advantage of a DDI is that it reduces the pedestrian conflict points (points that pedestrians can encounter vehicles) from a total of 12 down to 8, and reduces free-flowing or accelerating conflicts from 4 down to 2. For pedestrians, DDI's are inherently safer. Overall, a DDI with a center walkway (as is being proposed at Johnson Lane) minimizes the overall number of conflict points while providing full access of pedestrians. For on-street bicycle users, the design is expected to include clearly marked on-street bicycle lanes. Experiences users can choose to use the on-street lanes, while inexperienced users can choose to use the pedestrian walks. From a vehicle safety standpoint, a convention diamond interchange (like what is currently at Johnson Lane) has 26 conflict points (vehicle to vehicle conflicts). A DDI reduces the total number of conflicts to 14. Todd G. Cormier, P.E., PTOE Senior Transportation Manager	3/16/2018				Drake - Trailnet	
7/2/2020	Johnson Lane Interchange	Mark Rush		I am excited to see a DDI to eliminate the lefts crossing oncoming. Are the medians simple concrete to avoid maintenance of landscaping?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Mary Bogar		Has 5.3 acres along I-90 - interested in an update.	Helped Mary get signed up for public meeting and offered to email a link to the video when it's posted online.	7/2/2020		Hi, Mary, When we spoke previously, I promised to send you the link to the public meeting videos. I know you did attend virtually, bit am sending you the link now that they're uploaded, just in case you wish to reference back to them. 😊 Here's the link: https://www.mdt.mt.gov/pubinvolve/billingsbypass/virtual-public-meeting.shtml Have a great weekend! Lisa Olmsted			Related to July 2, 2020 Virtual Public Meeting
2/9/2021	Johnson Lane Interchange	Mary Jo Devener	Western Security Bank	I am the Operations Manager for Western Security Bank. One of our branches is located on the northwest corner of Cole Lana and Old Hardin Road. We have not been contacted yet concerning acquisition of property, but I can see that there is several feet on the front of the property that will be needed. However, my concern isn't the property acquisition. After seeing the plans, I'm concerned about the traffic flow in and out of the businesses on the eastern side of Johnson Lane and Old Hardin Road. There will be a lot of people doing u-turns at the corner of Cole and Old Hardin Road. This is gong to cause traffic congestion and could impact the business revenue. I would like to know if a round-about or rotary has been considered for that intersection? I know it would require quite a bit more space, but the traffic flow would improve considerably. Thank you and please feel free to contact me at either my email address or cell phone listed below. Mary Jo Devener Western Security Bank 406-855-8575	Hello, Ms. Devener, Thanks very much for reaching out for information about the Billings Bypass/Johnson Lane Interchange. To answer your initial question directly – yes, a roundabout was considered for the Johnson Lane Interchange. The EIS document (page 97) provides a description of the five different options that were considered early in project planning. Regarding access to the Western Security Bank on the corner of Old Hardin Road and Cole Street; customers traveling from the east will be able to access the bank directly from Old Hardin Road or from Cole Street. Customers coming from the west will have access from Cole Street, which will correspond with the way your drive-through lanes are configured. When leaving, drivers could exit west directly onto Old Hardin Road or exit east using the intersection at Cole Street that will have a new stoplight installed. Cole Street is planned to be extended south to connect with Becraft Lane. Here's an illustration of the current design immediately adjacent to your business. (Orange indicates sidewalk, yellow is roadway striping.) We have had meetings with some of your neighbors to discuss the design and answer questions. We would certainly be happy to visit with you (either virtually or in-person) as well, if that would help. I have also had some communication with Branch Manager Donna Harakal at the Lockwood branch.	2/9/2021	Lisa, Thank you for responding to my questions. The drawing you supplied alleviates many of my concerns. Another concern I have is the frontage. How much of the front of our lot is absorbed in this project? I'm concerned about the signage as well as the redesign of our parking lot to accommodate customer parking if necessary. Thank you again and I'll look forward to hearing from you. Mary Jo Devener | SVP of Operations	Ms. Devener, You'll be hearing from a right of way agent in the next couple months who will be able to speak to these specifics. I believe that MDT is currently in the process of completing appraisals to aid in those conversations. I'm cc'ing MDT District Right of Way Supervisor Michael Fabricius so he has your contact information for those conversations. Thank you, Lisa Olmsted Public Involvement Manager	2/10/2021		
5/26/2021	Johnson Lane Interchange	Conner Lehman		You removing old overpasses and old off and on ramps	Hi, Conner, Yes, we'll be removing both old overpasses and thew one and off ramps will be replace as well. Here's a map of where the new ramps will be located: Billings ByPass Project Map July 2020 (mt.gov) Have a nice day! Lisa Olmsted	5/27/2021					
9/22/2021	Johnson Lane Interchange	Jefry Rosmarin		I do not believe I receive any follow up to my 7/9 inquiry and consistent with your 7/12 response .. Would you please review with the project team and provide me with an update. Thanks Sent from AOL Desktop Jefry Rosmarin 10 Mt Misery Rd Huntington New York 11743 631 629 4375 w 516 987 8680 c	Mr. Rosmarin, Thanks for checking in. I haven't been in touch because we don't quite have definitive answers for you yet. In the meantime, as a status update: the design team has been doing a thorough review of the various details associated with your request. They anticipate having a list of consideration points ready for MDT within the next couple of days. There are a handful of departments at MDT that will need to provide input before a decision can be made. I'm continuing to track this topic and will be in touch when more information is available. You're also certainly welcome to check-in for updates. Have a nice evening, Lisa Olmsted Public Involvement Manager	9/22/2021		Mr. Rosmarin, The Billings Bypass project team has carefully reviewed your request. The team decided to remove the median in front of your property and install a two-way left-turn lane along Old Hardin Road from Becraft Lane to Cole Street so that traffic has unrestricted access to your business and the neighboring businesses. Thank you,	10/22/2021	Peekamoose LLS Rosmarin	
1/4/2018	Johnson Lane Interchange	Mr. Grosskopf			At the request of Stefan Streeter, I contacted Mr. Grosskopf to discuss questions he had regarding property he owns along Firth Street in the northeast quadrant of the Johnson Lane Interchange. Mr. Grosskopf owns Lots 13, 14, and 15 of the Borgan Subdivision, S19, T01 N, R27 E, and he would like to develop the lots. • I explained that the project is currently looking at 3 general concepts for the interchange; a single-point concept, a diverging diamond concept, and a partial cloverleaf concept. At this time, a concept has not been selected to advance through design. However, a workshop is scheduled with MDT in early February which will identify a concept to carry forward. • I explained that the central issue with any redevelopment of the interchange are the four (4) closely spaced intersections along Johnson Lane of the North Frontage Road, the westbound ramps, the eastbound ramps, and Old Hardin Road. Increasing the separation of these intersections or reducing the number of intersections is necessary to improve long-term operations at the interchange. • Mr. Grosskopf noted that the lots north of his (Lot 11 and 12) are owned by a church and are currently under construction to install a building. • Mr. Grosskopf asked the possible range of scenarios which could affect his property. I reiterated that a preferred alternative has not yet been developed, including the possible geometry, so I could not provide him with a direct answer. However, possibilities would likely range from a total impact to no impact. I offered to contact him again in late February when a selection has been made. • The likely schedule of the Bypass was discussed. I noted that the schedule is dependent on funding and need, and pointed to the development of the TEDD as an outside force that could modify the schedule. • Mr. Grosskopf thanked me for the information and my time, and noted his excitement	1/4/2018				Grosskopf	

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
7/24/2020	Johnson Lane Interchange	Neil R. Kiner		Hi Lisa, I'm currently engaged on a project at the above address for planning and designing a sizeable expansion of the existing warehouse. During our due diligence in the property, we have noted that Sannon Boulevard is slated for expansion and redesign as part of the Billings Bypass project. This is how I got your contact information. I have some fairly specific questions regarding the planned improvements adjacent to the parcel I'm currently working on. Can you direct me to the individual who may be of assistance? Thank you, Neil R. Kiner Landscape Architect	Hi, Neil, Thanks for reaching out. I can help get answers to your questions; what are in interested in knowing about the proposed Sannon Blvd. plans? Lisa Olmsted Public Involvement Manager	7/22/2020	Hi Lisa, Thank you for getting back to me so quickly. Currently, Sannon Blvd is partly constructed on private property (parcel C11835), and the ROW does not extend to North Frontage Road. How will the new road alignment be configured to accommodate this situation? Will additional land be purchased on either parcel C11835 or D06424? Has the design been advanced enough to share the general alignment? This information will be helpful to me in planning a landscape design that will not be immediately removed due to the road construction. Thank you, Neil R. Kiner	Neil, The designs of Sannon Boulevard are still preliminary, but it is anticipated that a small amount of right-of-way will need to be purchased from parcel C11835 along the northwest boundary of the property. The majority of the right-of-way will be acquired from D06424. The roadway that currently crosses your client's property on the southwest corner is expected to be removed. Let me know if I can help with anything else. By the way, because of future right-of-way conversations, would it be possible to get contact information for your client (Mr. Eisele, I assume)? I would also like to be sure he's receiving project-related communications. Thanks, Lisa Olmsted	7/24/2020		
7/2/2020	Johnson Lane Interchange	Peter Freivalds		Is there any pedestrian or bike paths to get from one side of the interstate to the other?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Peter Freivalds		thanks	Thank you for your question!						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Peter Freivalds		The picture is showing a bike path\sidewalk, will there be one the entire length of the projhect?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Peter Freivalds		thanks again, good presentation.	We appreciate your involvement, Peter.						Related to July 2, 2020 Virtual Public Meeting
	Johnson Lane Interchange	Sandra L Wulff			Called three times, no answer, no vm option						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Sue Vinton		How will drainage be controlled in the newly lowered area under the interchange on Johnson Lane?	live answered						Related to July 2, 2020 Virtual Public Meeting
7/2/2020	Johnson Lane Interchange	Sue Vinton		Is this powerpoint available on line?	live answered			Hi, Sue, I'm writing now to follow-up on your inquiry during the virtual public meeting about the presentation being posted online. Both the videos and the presentation are online now. Here's the direct link: https://www.mdt.mt.gov/pubinvolve/billingsbypass/virtual-public-meeting.shtml	7/17/2020		Related to July 2, 2020 Virtual Public Meeting
6/29/2020	Johnson Lane Interchange	Terry Seiffert		Dear Sir: This letter is in opposition to the current proposed connection of the North Frontage Road East of Johnson Lane. The current connection of the North Frontage Road is a direct connection for the road East and West of Johnson Lane. The proposed connection diverts the East portion North Frontage Road to Sannon Lane to connect to the bypass and then to the North Frontage Road West of Johnson Lane .. The Seiffert Trust owns 50 acres at the end of the North Frontage Road and is within the Targeted Economic Development District (TEDD) The property is contiguous to the Interstate and would be suitable for businesses that would want visibility from the interstate and have easy access from the interstate. Furthermore, many businesses will want direct route to down town area .. The proposed connection of the North Frontage Road will substantially hinder the marketability of the property and seriously injure the local economy. In addition on December 1 7, 2019, the Yellowstone County Commissioners adopted the Lockwood TEDD Strategic Plan 2019, This plan, in part, provides that a priority project is the construction of a road from the North Frontage Road East to the Coulson/Dickie Road, This expansion of the N011h Frontage Road will open up additional 125 acres for development. With such potential development and connection to the Coulson/Dickie Roads, there will be a substantial increase in traffic on the North Frontage Road. The proposed plan will route this additional traffic onto the bypass which will already have an enormous amount of traffic. A direct connection would alleviate a large amount of traffic on the bypass by allow vehicles going to town to just to continue West on the North Frontage Road. Many of the landowners who are opposed to the Sannon Road connection have met with the State and the Engineers relating to this connection. It is our understanding that this connection was proposed to avoid going through a subdivision if there was a direct connection of the North Frontage Road. We have met or been in contact with all of the landowners on Firth Street who would be affected by a direct connection. None of these landowners were ever contacted relating to this issue prior to our contact with them. The vast majority of these landowners were willing to sell at a fair marker value. There was only one landowner who had issues but was willing to discuss a sale with some land swaps with other landowners and the state which could be accomplished. It would appear that it would be prudent to investigate this direct connection which is more logical than the proposed plan.						Seiffert\Seiffert MDT LETTER20200629_12002566.pdf	Related to July 2, 2020 Virtual Public Meeting
8/20/2018	Johnson Lane Interchange	Terry Seiffert		I recently attended a presentation on the Billings Bypass and the diverging diamond interchange on Johnson Lane. It is my understanding that the current plan is for individuals who are on the North Frontage Road east of Johnson Lane to connect to the bypass by going onto what is now Sanon Road. It is also my understanding that there will be only a stop sigh at the bypass. It would appear that there should be a traffic light for those coming from the North Frontage Road onto the Bypass. At the present time, if you are East of Johnson Lane on the North Frontage Road and are traveling West, it is impossible to cross Johnson Lane to either continue West on the Frontage Road or to connect to the interstate due to the traffic. This situation will only get worse once the bypass is in. There needs to be a light rather than just stop signs.						Seiffert\Seiffert_NFrontageRd_082018.msg	
3/27/2019	Johnson Lane Interchange	Terry Seiffert Kevin Gustainis Darrel Bonner Ken Tolliver Russ Fagg John Gustainis*	Johnson Lane Property Owners		Russ thanked DOWL and MDT for organizing the meeting and began the conversation by saying that the business owners are concerned about the ingress/egress to their business and the safety of their customers posed by the proposed Johnson Lane Interchange project. The business owners are concerned about the realignment of the N Frontage Road on the east side of Johnson Lane. The current plan is to realign the N Frontage Road with Sannon Blvd to connect with the bypass arterial and not directly connect to Johnson Lane similarly to how it does now. The meeting attendees represent or own/manage businesses along the N Frontage Road. As another quick introduction, Doug gave a brief overview of the anticipated construction schedule of the various project segments, referencing a graphic that has been shared at public meeting and was recently sent to Russ. 2022 is the expected letting year for the diverging diamond interchange. It will be a CM/GC (construction manager/general contractor) project, DOWL being the construction manager. The dynamic is like an arranged marriage between the engineer and the contractor. Russ asked about business access from the interchange. Doug replied that the road will be an urban arterial, and traffic flow will resemble Rimrock Road or Grand Avenue between 24th St. West and 32nd St. West. The design team is currently working on access management plans and Kittleson and Associates, Inc. is studying the traffic operations and traffic congestion. The Johnson Lane access point is the primary concern for this group. The intersection map was displayed on the screen. Different options were discussed: 1.Right turn. Russ asked whether a right turn (east) could be put onto Frontage Road. Doug said that the traffic flow would need to be assessed, and that there are operations and safety concerns that need consideration. Kevin said that Montana Peterbilt needs access to be easy for customers who are often long trucks who aren't familiar with the area. 2.Signalized intersection. Rod asked wither a signalized intersection would solve the group's concerns, but Kevin didn't feel that it provided enough visibility.	3/27/2019				Frontage Road Property Owners\20190327_Frontage Road Property Owners Meeting.docx	
9/8/2019	Johnson Lane Interchange	Victor Wherlyn		Put a roundabout instead of light at Cole St. and Old Hardin Rd.	No response needed; added to mailing list.						Received at Home Improvement Show; Home Improvement Show\2019 Fall Home Improvement Show\Comments received.pdf
7/2/2020	Johnson Lane Interchange	Woody Woods	TEDD Advisory Committee	Gentlemen, Please accept this letter from the TEDD Advisory Committee, expressing our concerns regarding the proposed North Frontage road realignment as presented during the Billings Bypass Virtual Presentation today. Thank you, Woody Woods Chairperson	Thank you for your feedback, Woody. We've received your letter and have added it in the public meeting record. We appreciate your involvement in the project. Lisa Olmsted Public Involvement Manager	7/2/2020		Lisa, Thank you for responding. Woody		Lockwood TEDD - Woods\Woods MT Bypass.pdf	Related to July 2, 2020 Virtual Public Meeting

Date Comment Received	Topic	Name	Company	Comment	Response	Response Date	Comment 2	Response 2	Response 2 Date	Related Links	Notes
3/15/2018	Johnson Lane Interchange	Zach Hassler	Lockwood Pedestrian Safety District and Yellowstone County's Bike and Pedestrian Advisory Committee	> Good morning, Billings Bypass team. > > As a member of the Lockwood Pedestrian Safety District and Yellowstone County's Bike and Pedestrian Advisory Committee, I'm writing to express my support for your recent decision on a diverging diamond interchange at Johnson Ln. The concept appears to minimize crossing distances and support the movement of non-vehicular traffic across the interstate. > > Thank you for considering non-vehicular traffic in your decision. > > Sincerely, > Zach Hassler > 3045 Tampico Dr.	Zach, Thank you for taking the time to reach out to us and for your group's support for the DDI at the Johnson Interchange. If you or your group has any additional questions or would like more information regarding the DDI or the Bypass project, please be sure to let me know. You can reach me via the project email, at tcormier@dowl.com, or by calling me directly at 869-6338. Todd Cormier, PE, PTOE Project Manager DOWL	3/25/2018					
6/25/2020	Johnson Lane Interchange		Big Sky Progress		Called to invite to public meeting, left voicemail.						Related to July 2, 2020 Virtual Public Meeting
								Your initial question was regarding the possibility of a grass fire because of truck traffic, whereby a truck dragging a chain or other metal object might cause sparks to ignite a road-side fire along Mary Street.			
								While I am not aware of the specific news article you are referencing, one important distinction between much of US Hwy 87 towards Roundup and the Billings Bypass arterial is that most of US Hwy 87 is bounded by natural grasses that become dry by mid-summer. In contrast, much of the area around the new arterial roadway is irrigated farmland or irrigated residential lawns. Of the parcels that are currently undeveloped, many are in the process of being developed, or have development plans associated with them.			
								The arterial roadway that will be constructed adjacent to Mary will consist of two 12-ft lanes and 8-ft shoulders on each side. The asphalt surfacing will taper to the road gravel over an additional 4 ½ feet. Overall, there will be 12 ½ feet of pavement between the outside edge of the driving lane and the outside limit of the pavement surfacing providing some level of protection. The outside edge of the new arterial roadway will be located approximately 100-ft north from the existing northern edge of Mary Street. Within the area between the arterial and Mary Street is an irrigation ditch. This area will be the responsibility of both the Montana Department of Transportation and the City of Billings to mow and maintain. Overall, there will be approximately 125-ft of separation from the arterial to the irrigated front lawns of the homes along the south side of Mary Street.			
								The area north of the arterial roadway along Mary Street is either irrigated farmland, undeveloped residential lots, or residences that irrigate natural grasses or sod grass. As for the area south of the arterial roadway, the area immediately adjacent to the north side will be mowed and maintained by the Montana Department of Transportation.			
								In the unlikely event that a grass fire could be started through a spark from the roadway, the proximity of the road to fire stations or rural fire services would allow for the quick reaction by these agencies. Currently, the City of Billings is reporting an average response time of 5 minutes, and the Shepherd Volunteer Fire Department is located only 2 miles away.			
								In response to your question regarding sound barriers, the information that was presented to you at the public open house is correct; sound walls or sound barriers will not be constructed as part of the arterial project. Noise was extensively studied as part of the Environmental Impact Statement, which is detailed in Section 4.3.8 of the EIS document. This analysis determined that the use of noise walls did not meet MDT's and FHWA's eligibility requirements. If you would like additional information from MDT on this question, please contact Fred Bente, MDT Consultant Design, at 406-444-7634.			
								I hope that my responses have answered your questions. I would be happy to make myself available to discuss them further, or to answer any additional questions you may have. You can reach me directly at 869-6338 or via email at tcormier@dowl.com.			

Intentional Blank Page.