

APPENDIX A

USACE PRECONSTRUCTION NOTICE AND AQUATIC RESOURCE REPORT

U.S. Army Corps of Engineers South Pacific Division



Nationwide Permit Pre-Construction Notification (PCN)

This form integrates requirements of the U.S. Army Corps of Engineers (Corps) Nationwide Permit Program within the South Pacific Division (SPD). Boxes 1-10 must be completed to include all information required by General Condition 32. Box 11 (or other sufficient information to show compliance with all General Conditions) must be completed for activities in Arizona, California, Nevada, and Utah, and is recommended for activities in Colorado and New Mexico. If additional space is needed, please provide as a separate attachment. Please refer to the *Instructions for the South Pacific Division Nationwide Permit Pre-Construction Notification (PCN)* (Instructions) for instructions for completing the PCN, as well as additional information on the attachments and tables included with this PCN that may be used.

0. To be filled by the Corps

Application Number:	Date Received:	Date Complete:

1. Prospective Permittee and Agent Name and Addresses (see Instructions)

a. Prospective Permittee

First - Mr. Gabriel Middle - _____ Last - Herrera
Company - Chevron Environmental Management Co. Email Address - Gariel.Herrera@chevron.com
Address - 354 State Highway 38 City - Questa State - NM Zip - 87556
Phone (Residence/Mobile) - _____ Phone (Business) - (575) 586-7571

b. Agent (if applicable)

First - _____ Middle - _____ Last - _____
Company - _____ Email Address - _____
Address - _____ City - _____ State - _____ Zip - _____
Phone (Residence/Mobile) - _____ Phone (Business) - _____

c. Statement of Authorization: I hereby authorize _____, to act in my behalf as my agent for the proposed activity. (Optional, see instructions)

Signature of Applicant

Date

2. Name and Location of the Proposed Activity (see Instructions)

☐ The proposed work would involve multiple-single and complete projects. See attachment for the information required in Boxes 2 through 10, and 11, if applicable.

a. Project Name or Title:

Questa Tailings Pipeline Removal

b. County, State:

Taos County, New Mexico

c. Name of Waterbody: Upper Rio Grande Watershed, USGS 13020101 (see attached Table 1, Figures 1 - 8, and Appendices A & B)

d. Coordinates:

☐ Unknown (please provide other location descriptions below)

Latitude -

Longitude -

*See attached Table 1 for Lat/Long Coordinates

e. Other Location Description (optional, see instructions):

Location of the decommissioned tailings pipeline route is shown on attached Figures 1 through 9.

f. Driving Directions to the site (optional, see instructions):

Travel east of the Village of Questa, NM, along State Route 38, to Columbine campground (1st Red River Crossing at confluence with Columbine Creek). Continue west along State Route 38 to Thunder Bridge (2nd Red River Crossing), then west to just east of USFS Range Station (3rd Red River Crossing). Turn southwest onto Moly Mine Road, traveling to the Old Red River Road (Elevated Trestle Red River Crossing).

3. Specific NWP(s) you want to use to authorize the proposed activity (see Instructions)

NW12, Utility Line Activities

4. Description of the Proposed Activity (see Instructions)

a. Complete description of the Proposed Activity:

The proposed project entails demolition of a decommissioned mill tailings pipeline and ancillary structures associated with the Questa Mine. The tailings pipeline was constructed to transport mill tailings, as a slurry, from the mine to the Tailings Facility (see Figures 1 - 8). The tailings pipeline begins approximately 7 miles east of the Village of Questa, NM, at the Questa Mine, parallels Highway 38, down the Red River Canyon, through the Village of Questa, NM, terminating at the Tailings Facility. The majority of the tailings pipeline was constructed on property owned by Chevron (CEMC) and the USFS. A portion of the pipeline crosses private property. The pipeline crosses Red River, Columbine Creek (a tributary to the Red River), Embargo Ditch, and unnamed ditches (see Figures 2 through 8). Temporary impacts are expected at the four Red River crossings (see Table 1). Pipeline & structures will also be removed, including the Lower Dump Sump and support buildings, two of the three old bridges, and the elevated trestle. The bridge at Columbine Park will remain per USFS request. The pipeline and associated above ground structures will be removed from the Questa Mine to the Tailings Facility. Underground pipeline to be grouted in place. Therefore, there will be no impacts to ditches.

b. Purpose of the Proposed Activity:

Remove above ground and grout in place below ground decommissioned tailings pipeline, associated structures, and reclaim the pipelines route.

c. Direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands and other waters of the U.S. expected to result from the NWP(s) activity:

The environmental benefits are expected to far outweigh the potential of environmental impacts. Impacts to riverine and wetlands are expected to be minimal and temporary while removing the pipeline and associated structures (see Appendix A, Aquatic Resources Inventory). No wetlands are expected to be lost. No water of the U.S are expected to be lost as a result of pipeline removal and reclamation. Three of the four pipeline river crossings will require vehicle and foot traffic access to remove the pipeline installed under bridge structures and to remove any unused bridge structures not needed for other purposes. Temporary bridges may be installed across water bodies and wetlands when existing structures (roads, permanent bridges) are unavailable to provide foot and vehicle traffic access. Sediment will be disturbed briefly during vehicle and foot traffic access at the 2nd, and 3rd River Crossings and at the Elevated Trestle River Crossing. Regrading and reclamation at the Lower Dump Sump will preserve the existing irrigation ditch. The ditch and ephemeral stream crossings will not require access to wetlands to remove the pipeline. Wetlands associated with Embargo Ditch (aka North Ditch) will not be impacted because the below ground sections will be grouted in place.

d. Description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity:

Sediment release at the crossings will be minimized by using temporary matting or other temporary bridges installed to allow vehicle and foot traffic access to the piping and associated bridge structures. Sediment control best management practices (BMPs) will be implemented under EPA-required storm water pollution prevention plan (SWPPP).

e. Any other NWP(s), Regional/Programmatic General Permit(s) or Individual Permit(s) used or intended to be used to authorize any part of the proposed activity or any related activity:

The tailings pipeline requires decommissioning and removal under the following state and federal permits/actions 1) Mine Permit (TA001RE) issued by NM-MMD under the New Mexico Mining Act, 2) Discharge permit (DP933) issued by NMED, and 3) Removal AOC (Docket No. 06-09-12) issued by EPA under CERCLA.

f. Have sketches been provided containing sufficient detail to provide an illustrative description of the proposed activity?

☒ Yes, Attached ☐ No *(See attached Figures 1 through 8 and photographs in Appendix B)

☐ N/A; The activity is located in the Los Angeles District boundaries of Arizona and California, See Attachment 1

☐ N/A, The activity is located in the San Francisco District boundaries of California, See Attachment 2

☐ N/A, The activity is located in the Sacramento District boundaries of California, Nevada, or Utah, See Attachment 3

5. Aquatic Resource Delineation (see Instructions)

a. Has a delineation of aquatic resources been conducted in accordance with the current method required by the Corps? ☒ Yes ☐ No *see Appendix A

If yes, please attach a copy of the delineation

Note: If no, your PCN is not complete. In accordance with General Condition 32, you may request the Corps delineate the special aquatic sites and other waters on the project site, but there may be a delay. In addition, the PCN will not be considered complete until the delineation has either been submitted to or completed by the Corps, as appropriate.

b. If a delineation has been submitted, would you like the Corps to conduct a jurisdictional determination (preliminary or approved)? ☐ Yes ☒ No

If yes, please complete, sign and return the attached *Appendix 1 – Request for Corps Jurisdictional Determination (JD)* sheet or provide a separate attachment with the information identified in Appendix 1.

6. Compensatory Mitigation (see Instructions)

a. Will the proposed activity result in the loss of greater than 1/10-acre of wetlands? ☒ Yes ☐ No

If yes, describe how you propose to compensate for the loss of each type of wetland: *see Appendix A

Impacts to 0.12 acres of riverine and 0.03 acres of wetlands is expected. Temporary impacts to aquatic resources will occur in areas where foot and vehicle traffic enter the wetland and/or stream. No compensatory mitigation will be needed.

Existing vegetation removal is expected to be minimal as most of the pipeline follows highway right-of-way (gravel shoulder) and existing Mine and USFS access roads. Reclaimed areas will be seeded with a native mix. All reclaimed areas will be regraded to match the surrounding topography and BMPs will be installed during construction and left in place until seeded vegetation is established. Stockpiling of fill material is expected to be minimal because graded areas were designed to achieve a cut/fill balance. All stockpiles will be bounded by BMPs. Temporary bridges will be installed at designated crossings of perennial and intermittent streams for foot and construction traffic.

Note: for the loss of less than 1/10 acre of wetlands, or if no compensatory mitigation is proposed, the Corps may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

b. Will the proposed activity result in the loss of streams or other open waters of the U.S.? ☐ Yes ☒ No

If yes, provide a description of any proposed compensatory mitigation for the loss of each type of stream or other open water:

Construction activities are not expected to result in the loss of streams or open waters. Reclaimed areas will be graded to match existing topography. The existing pipeline follows the highway right-of-way and Mine and USFS access roads. Temporary bridges will be installed at designated crossings of perennial and intermittent streams.

Note: if no compensatory mitigation is proposed, the Corps may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in no more than minimal adverse environmental effects.

7. Endangered Species Act (ESA) Compliance (see Instructions)

a. For non-Federal permittees (if Federal permittee, check N/A and skip to 7(d)): ☐ N/A

(1) Is there any Federally-listed endangered or threatened species or critical habitat that might be affected or is in the vicinity of the activity? ☒ Yes ☐ No

(2) Is the activity located in designated critical habitat for Federally-listed endangered or threatened species? ☐ Yes ☒ No

If yes to either (1) or (2), include the name(s) of those endangered or threatened species that might be affected by the proposed activity or might utilize the designated critical habitat that might be affected by the proposed activity:

- | | |
|---|---|
| 1. Canada lynx (<i>Lynx canadensis</i>) | 2. Southwestern Willow Flycatcher (<i>Empidonax traillii extim</i>) |
| 3. New Mexico meadow jumping mouse (<i>Zapus hudsonius</i>) | 4. Yellow-billed Cuckii (<i>Coccyzus americanus</i>) |
| 5. Mexican Spotted Owl (<i>Strix occidentalis lucida</i>) | 6. |

*see Appendix A for details

If no to both (1) and (2), proceed to Box 8.

Note: If yes to either (1) or (2), note per General Condition 18(c), you shall not begin work on the activity until notified by the Corps that the requirements of the ESA have been satisfied and that the activity is authorized.

b. Has information sufficient to initiate consultation with the U.S. Fish and Wildlife Service/National Marine Fisheries Service for compliance with Section 7 of the ESA been prepared? ☒ Yes ☐ No

* see Appendix A for details

If yes, please attach a copy of the information.

c. Additional information you wish to provide regarding compliance with the ESA, if applicable:

CEMC submitted Application for Transportation and Utility Systems and Facilities on Federal Lands to the USFS relating to the portion of the pipeline crossing USFS lands, including the 1st Red River Crossing, Columbine Creek Crossing, and the 3rd Red River Crossing. The USFWS has been contacted relating to that application and the other pipeline removal locations. Stakeholders meetings have been ongoing regarding the Questa Mine closure and pipeline removal activities.

d. For Federal permittees, you must provide documentation demonstrating compliance with ESA as a separate attachment.

8. Historic Properties (see Instructions)

a. For non-Federal permittees (if Federal permittee, check N/A and skip to 8(d)): ☐ N/A

(1) Is there a known historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places that the NWP may have the potential to affect? ☐ Yes ☒ No

If yes to (1), state which historic property may have the potential to be affected by the proposed activity:

- | | |
|----|----|
| 1. | 2. |
| 3. | 4. |
| 5. | 6. |

OR

☒ A vicinity map indicating the location of the historic property is enclosed *see Appendix C for details

(2) If no to (1), describe the potential for the proposed work to affect a previously unidentified historic property:

Impacts to previously unidentified historic property is expected to be minimal. Chevron contracted Arcadis to conduct cultural resources surveys in December 2017 and April and May 2018 (see Appendix C). If historic property is discovered during the project, the NM-HPD will be contacted.

Note: If yes to (1), note per General Condition 20(c), you shall not begin the activity until notified by the Corps that the activity has no potential to cause effects or that consultation under Section 106 of the National Historic Preservation Act (NHPA) has been completed.

b. Has information sufficient to initiate consultation with the State Historic Preservation Officer/Tribal Preservation Officer for compliance with Section 106 of the National Historic Preservation Act (NHPA) been prepared?

☒ Yes ☐ No *see Appendix C

If yes, please attach a copy of the information.

c. Additional information you wish to provide regarding compliance with the NHPA, if applicable:

The NM-HPD has been engaged as a stakeholder. Chevron contracted Arcadis to conduct cultural resources survey. These documents have been filed with the NM-HPD. See Appendix C.

d. For Federal permittees, you must provide documentation demonstrating compliance with NHPA in a separate attachment.

9. National Wild and Scenic Rivers (see Instructions)

a. Will the proposed activity(s) occur in a component of the National Wild and Scenic River System or a river officially designated by Congress as a “Study River” for possible inclusion in the system while the river is in an official study status?

☒ Yes, in a component of a National Wild and Scenic River System; ☐ Yes, in a “study” river ☒ No

If yes, identify the Wild and Scenic River or the “study river”

The Red River is a tributary to the Rio Grande. The Rio Grande and the lower reach of the Red River are designated as a wild and scenic river in NM, administered by the BLM/USFS. The proposed pipeline removal is approximately 2.5 miles upriver of the Red River Wild and Scenic River designation. The pipeline removal activities are not expected to impact the Wild and Scenic River area.

Note: per General Condition 16(b), you shall not begin the NWP activity until notified by the Corps that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status. If you have received written notification from the Federal agency, please attach the correspondence.

10. Section 408 Permissions (see Instructions)

a. Will the NWP also require permissions from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project? ☐ Yes ☒ No

If yes, have you received Section 408 permission to alter, occupy, or use the Corps project? ☐ Yes ☐ No

If yes, please attach the Section 408 permission

If yes, note per General Condition 31, an activity that requires Section 408 permission is not authorized by NWP until the Corps issues the Section 408 permission to alter, occupy, or use the Corps project, and the Corps issues a written NWP verification.

11. Compliance with NWP General Conditions (see Instructions)

Check	General Condition	Rationale for Compliance with General Condition
<input checked="" type="checkbox"/>	1. Navigation	The Red River and it's tributaries are mountain streams lacking boat traffic. The project will be completed quickly with only temporary access restrictions. This is true for each single and complete project within the total complete project.
<input checked="" type="checkbox"/>	2. Aquatic Life Movements	No or very minimal impacts are anticipated. The project will not result in any barriers to movement up and down the stream by fish or other aquatic species (see Appendix A).
<input checked="" type="checkbox"/>	3. Spawning Areas	No or very minimal impacts are anticipated. A number of game fish occur in the section of the Red River crossed by the pipeline including triploid (sterile) rainbow trout (<i>Oncorhynchus mykiss</i>) raised in a hatchery downstream of the project area and a wild, introduced brown trout (<i>Salmo trutta</i>) population. BMPs designed to control erosion would minimize sedimentation on any gravel beds used by spawning fish. No fish spawning areas were observed at the pipeline crossing of the Red River (see Appendix A).
<input checked="" type="checkbox"/>	4. Migratory Bird Breeding Areas	No or very minimal impacts are anticipated. Habitat for nesting birds is present along the pipeline route, especially in wooded areas. No trees will be removed during project activities, which will minimize direct impacts to breeding birds. Any occupied bird nests discovered in shrubs, on the ground, or on human made structures will be avoided during project activities. No raptor nests were observed in therea, during the aquatic resources survey. Two migratory bird nests were found, but, they were unoccupied. No direct impacts to breeding birds is expected (see Appendix A).
<input checked="" type="checkbox"/>	5. Shellfish Beds	No or very minimal impacts are anticipated. BMPs designed to control erosion would minimize sedimentation and any adverse effects on shellfish. The Sangre de Cristo peaclam, a New Mexico Game and Fish threatened species, is only found in Middle Fork Lake in Taos County, which is over 7 miles to the south of the project area near Taos Ski Valley (BISON-M 2017).
<input checked="" type="checkbox"/>	6. Suitable Material	The project is a pipeline removal/grout-in-place and restoration project. The project is designed to have a zero cut/fill balance. The project is being completed under EPA- and MMN-approval of stage-specific work plans and engineering design drawings.

<input checked="" type="checkbox"/>	7. Water Supply Intakes	No impacts are anticipated.
<input checked="" type="checkbox"/>	8. Adverse Effects from Impoundments	Not applicable. Project will not result in any barriers or impoundments.
<input checked="" type="checkbox"/>	9. Management of Water Flows	No impacts are anticipated. Project will be completed when stream flow is low. Stream flows will not require management.
<input checked="" type="checkbox"/>	10. Fills Within 100-Year Floodplains	No impacts are anticipated. Minimal regrading will be performed during restoration. Regrading will not result in changes to 100-year floodplains.
<input checked="" type="checkbox"/>	11. Equipment	Excavator, flatbed trucks, end-dump trucks, backhoe, skid steer, jack-hammer (concrete demolition).
<input checked="" type="checkbox"/>	12. Soil Erosion and Sediment Controls	Project Stage-specific work plans are being submitted to the MMD and EPA for review. EPA-required storm water pollution prevention plans (SWPPP) will be prepared for the project. The SWPPPs will describe the BMPs to be used for erosion and sediment controls during the project.

<input checked="" type="checkbox"/>	13. Removal of Temporary Fills	No anticipated impacts. Temporary fills are not expected to be used during the project.
<input checked="" type="checkbox"/>	14. Proper Maintenance	No anticipated impacts. Regraded areas will be reseeded with EPA- and MMD-approved seed mix. Reseeded areas will be maintained following BMPs in accordance with stage-specific EPA- and MMD-approved work plans.
<input checked="" type="checkbox"/>	15. Single and Complete Project	The project is a single completed project.
<input checked="" type="checkbox"/>	16. Wild and Scenic Rivers	The project is upriver of the Wild and Scenic Rivers designation on the lower reach of the Red River and the Rio Grande River (see Table 1. Removing the pipeline will provide environmental benefits.
<input checked="" type="checkbox"/>	17. Tribal Rights	Will not be affected by the project.
<input checked="" type="checkbox"/>	18. Endangered Species	See Box 7 above. *see Appendix A
<input checked="" type="checkbox"/>	19. Migratory Bird and Bald and Golden Eagle Permits	No impacts anticipated. Bald eagles may roost and/or nest in trees along the red river. Any activities that may disturb eagles would be restricted within approximately 0.5 miles (USFWS recommended buffer) of nests or roosts during the appropriate seasons (generally February 1 to August 15 for nesting and November 1 to April 1 for winter roosts). See Appendix.

<input checked="" type="checkbox"/>	20. Historic Properties	See Box 8 above. *See Appendix C.
<input checked="" type="checkbox"/>	21. Discovery of Previously Unknown Remains and Artifacts	Discovery of previously unknown remains and artifacts will result in a stop-work in the area and immediate inspection of site by archaeologist.
<input checked="" type="checkbox"/>	22. Designated Critical Resource Waters	No anticipated impacts.
<input checked="" type="checkbox"/>	23. Mitigation	See Boxes 4(d) and 6 above.
<input checked="" type="checkbox"/>	24. Safety of Impoundment Structures	The project will include Stage-specific health and safety plans, prepared before field work begins. No impoundment structures will be constructed or affected during this project.
<input checked="" type="checkbox"/>	25. Water Quality, including status of Section 401 Water Quality Certification	No anticipated impacts
<input checked="" type="checkbox"/>	26. Coastal Zone Management, including status of CZM Consistency Certification from the State of California (for projects in or affecting the Coastal Zone)	This project is not related to coastal waters.

<input checked="" type="checkbox"/>	27. Regional and Case-by-Case Conditions	Not applicable.
<input checked="" type="checkbox"/>	28. Use of Multiple Nationwide Permits	The project will not use multiple NW permits.
<input checked="" type="checkbox"/>	29. Transfer of Nationwide Permit Verifications	The project will not involve the transfer of NW permit verifications.
<input checked="" type="checkbox"/>	30. Compliance Certification	A certification of completion report will be submitted to USACE in accordance with the permit conditions.
<input checked="" type="checkbox"/>	31. Activities Affecting Structures or Works Built by the United States	See Box 10 above. Not applicable.
<input checked="" type="checkbox"/>	32. Pre-Construction Notification	This document constitutes the PCN.

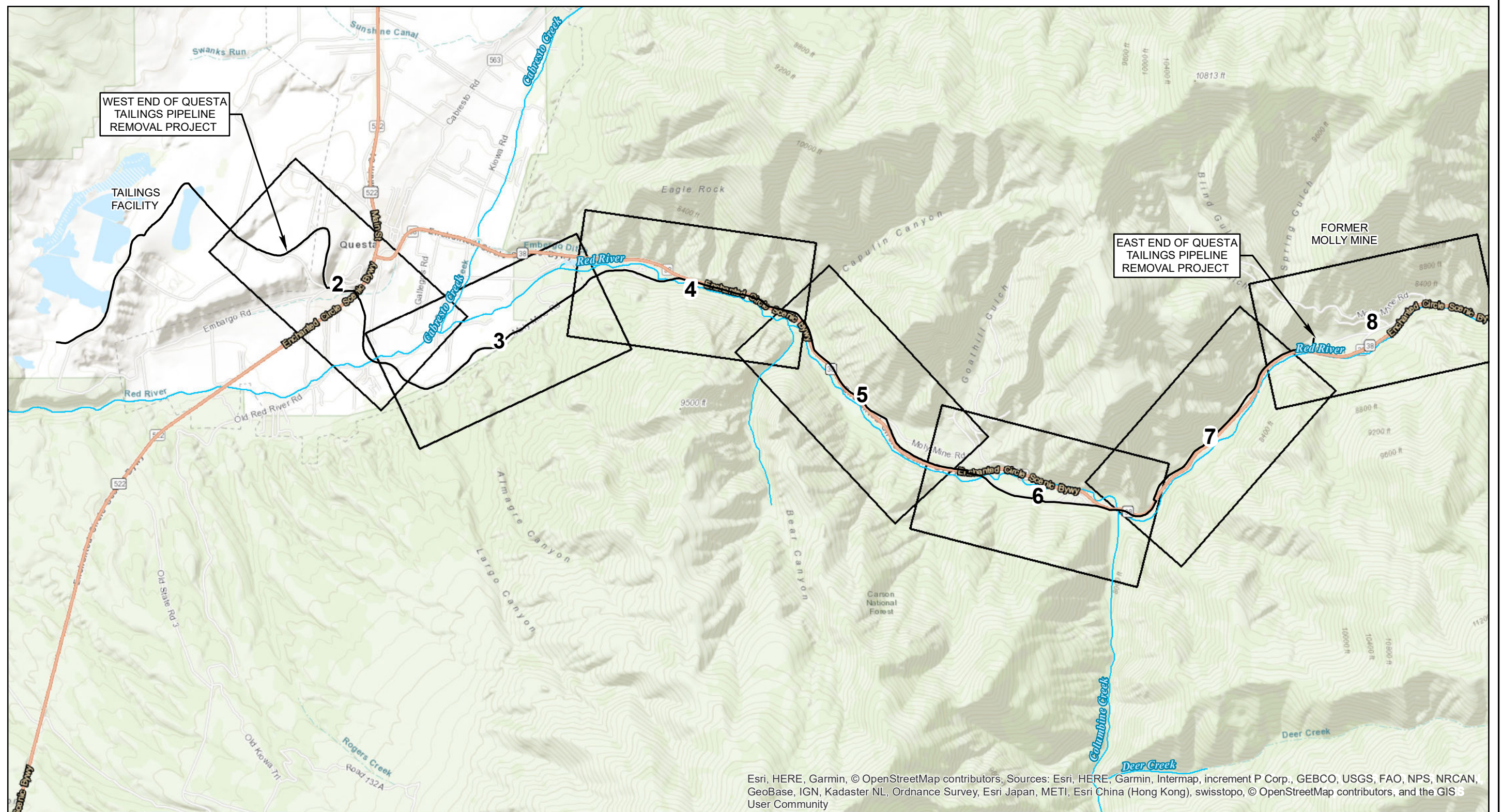
TABLE

**TABLE 1. U.S. CORP OF ENGINEERS PRECONSTRUCTION NOTIFICATION
QUESTA TAILINGS PIPELINE REMOVAL
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY, QUESTA MINE
JUNE 2018**

Pipeline Section Name (From Mill Area to Tailings Facility)	Description	Watershed	USGS Watershed Code	Waterbody Name at Crossing	Downstream Tributary	Latitude	Longitude	Expected Wetlands Impacts	Expected Wetlands Loss	Figure No.	Photo No.
1st Red River Crossing (By Columbine Park)	Red River at confluence with Columbine Creek (tributary)	Upper Rio Grande	13020101	Red River	Red River	36°40'53.33"N	105°30'53.97"W	Temporary Riverine Vehicle and Foot Traffic	None	7	22
2nd Red River Crossing (Thunder Bridge Crossing)	Red River crossing	Upper Rio Grande	13020101	Red River	Rio Grande	36°41'4.29"N	105°31'47.83"W	Temporary Riverine Vehicle and Foot Traffic	None	7	21
3rd Red River Crossing (East of Ranger Station)	Red River crossing	Upper Rio Grande	13020101	Red River	Rio Grande	36°42'6.96"N	105°33'47.96"W	Temporary Wetlands & Riverine Vehicle and Foot Traffic	None	5	20
Elevated Trestle Red River Crossing	Red River crossing	Upper Rio Grande	13020101	Red River	Rio Grande	36°41'41.97"N	105°35'45.20"W	Temporary Riverine Vehicle and Foot Traffic	None	3	10

FIGURES

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EXPLANATION

- PIPELINE
- MAP INDEX

NOTES:

1. WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

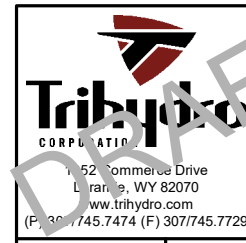
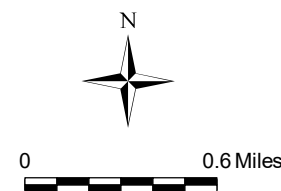


FIGURE 1

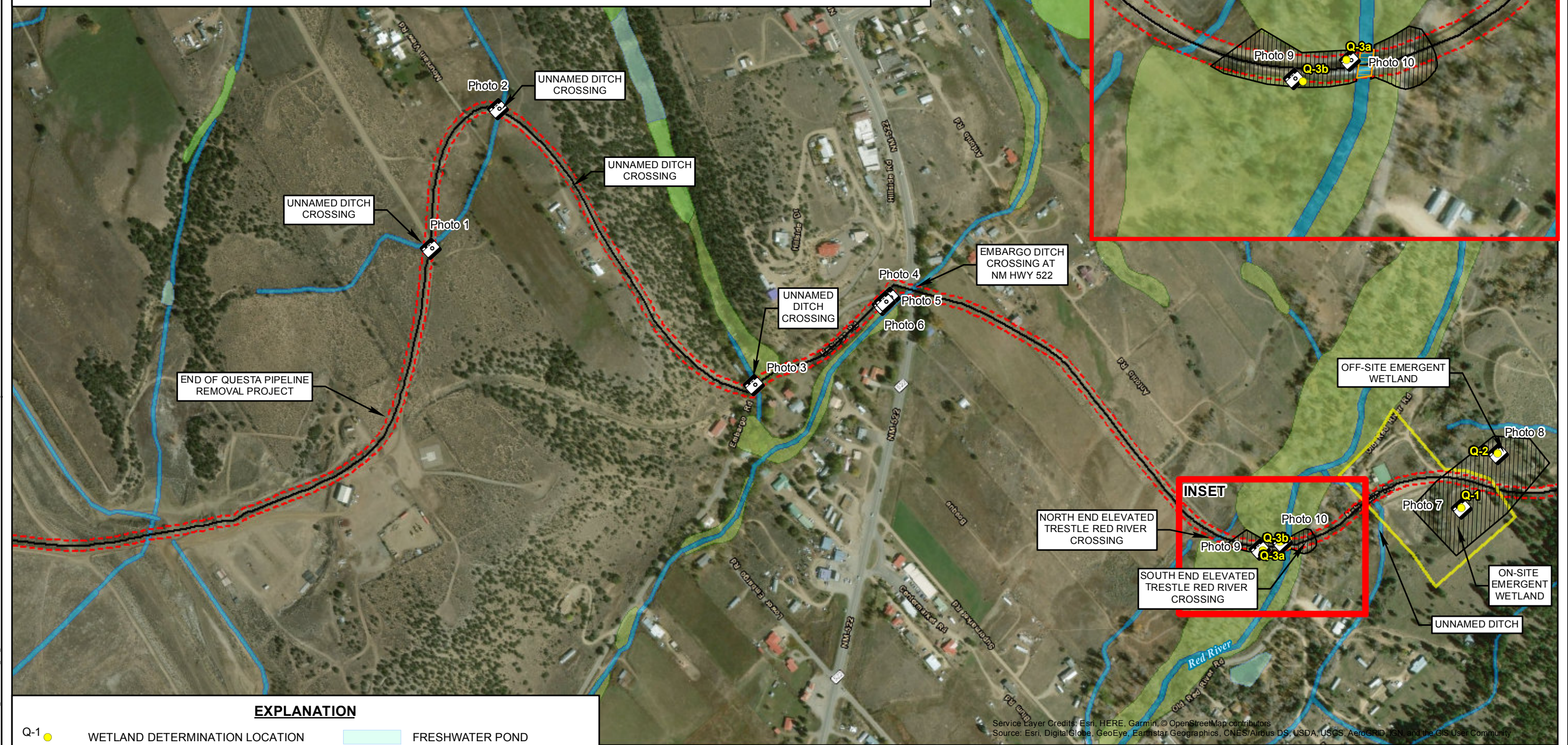
NWI WETLANDS OVERVIEW

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH | Checked By: BH | Scale: 1" = 0.6 Miles | Date: 5/22/18 | File: Fig2_ARI_Overview.mxd

NOTES:

1. EXCEPT WHERE NOTED AS FIELD VERIFIED, WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
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EXPLANATION

- | | | |
|-----------------------------------|-----------------------------------|----------------------------|
| Q-1 | WETLAND DETERMINATION LOCATION | FRESHWATER POND |
| Photo Point Icon | PHOTO POINT | RIVERINE |
| Pipeline Line | PIPELINE | LOWER DUMP SUMP AREA |
| 50' Wetland Inventory Area | 50' WETLAND INVENTORY AREA | FIELD-VERIFIED NON-WETLAND |
| NWI Wetlands (2017 USFWS) | NWI WETLANDS (2017 USFWS) | FIELD-VERIFIED RIVERINE |
| Freshwater Emergent Wetland | FRESHWATER EMERGENT WETLAND | |
| Freshwater Forested/Shrub Wetland | FRESHWATER FORESTED/SHRUB WETLAND | |

MAP INDEX

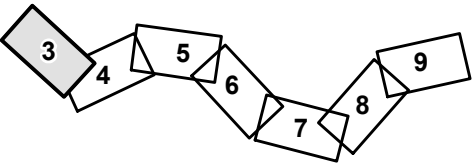


FIGURE 2

NWI AND FIELD VERIFIED WETLANDS

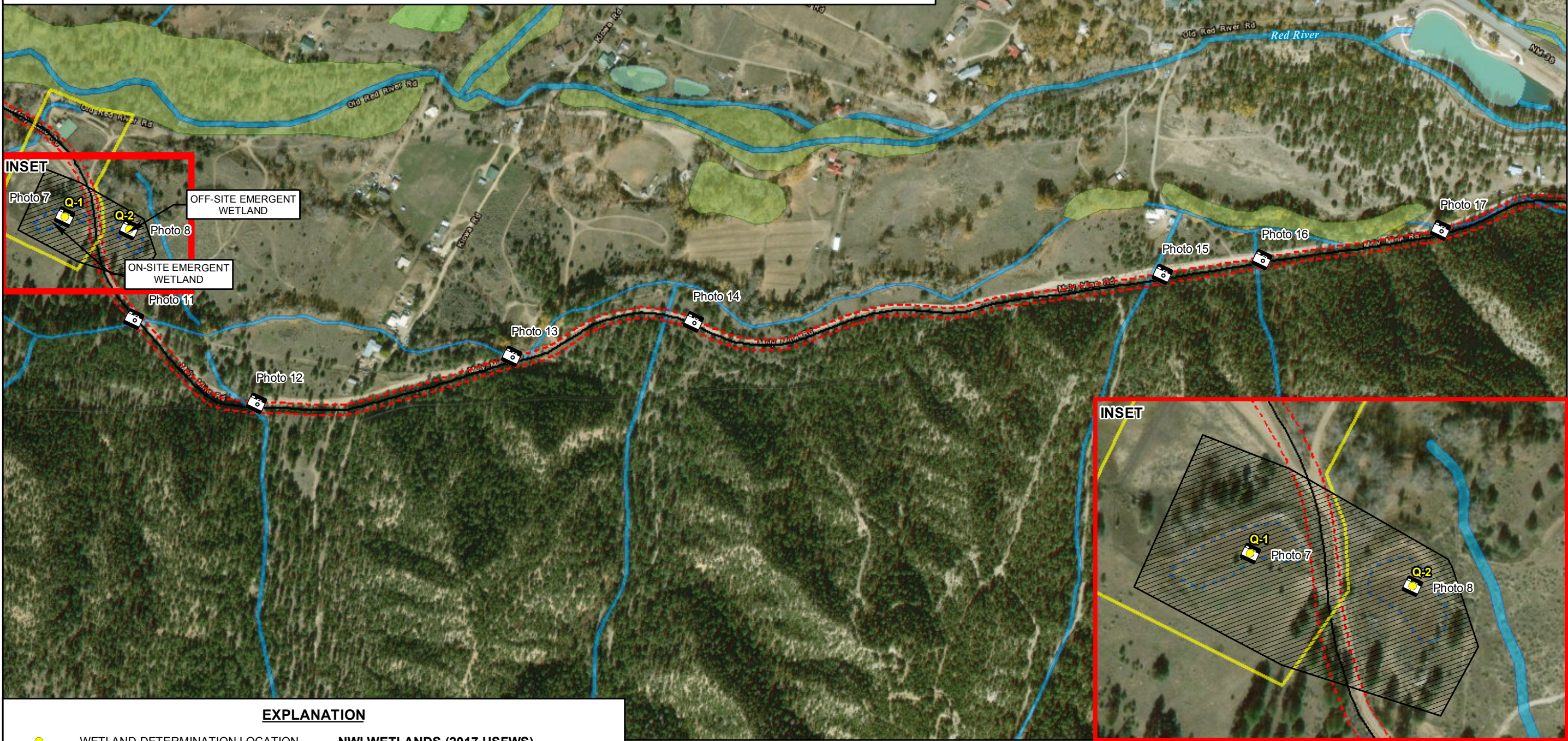
**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH | Checked By: BH | Scale: 1" = 500' | Date: 6/14/18 | File: Fig3_ARI_WetDelin.mxd

NOTES:

1. EXCEPT WHERE NOTED AS FIELD VERIFIED, WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



EXPLANATION

- | | |
|--|---|
| <ul style="list-style-type: none">● WETLAND DETERMINATION LOCATION📷 PHOTO POINT— PIPELINE- - - 50' WETLAND INVENTORY AREA▭ LOWER DUMP SUMP AREA▨ FIELD-VERIFIED NON-WETLAND | NWI WETLANDS (2017 USFWS) <ul style="list-style-type: none">■ FRESHWATER EMERGENT WETLAND■ FRESHWATER FORESTED/SHRUB WETLAND■ FRESHWATER POND■ RIVERINE- - - INTERMITTENT WATER LEVEL (FIELD VERIFIED NON-WETLAND) |
|--|---|

MAP INDEX

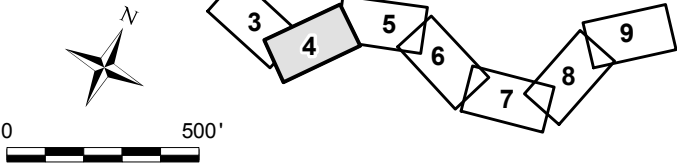


FIGURE 3

NWI AND FIELD VERIFIED WETLANDS

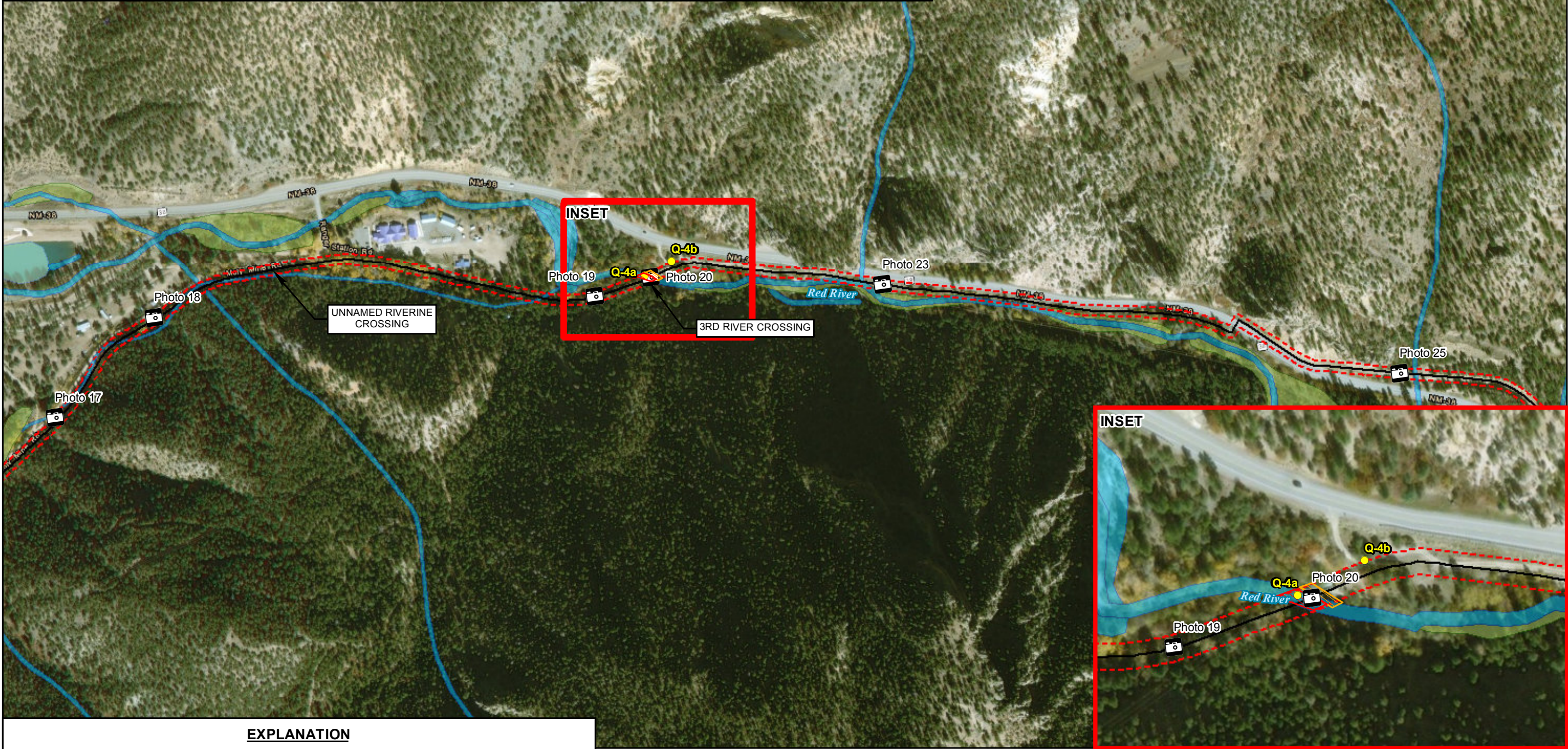
**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH | Checked By: BH | Scale: 1" = 500' | Date: 6/14/18 | File: Fig4_ARI_WetDelin.mxd

NOTES:

1. EXCEPT WHERE NOTED AS FIELD VERIFIED, WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



EXPLANATION

- | | |
|-----------------------------------|-----------------------------|
| WETLAND DETERMINATION LOCATION | FRESHWATER POND |
| PHOTO POINT | RIVERINE |
| PIPELINE | FIELD-VERIFIED RIVERINE |
| 50' WETLAND INVENTORY AREA | FIELD-VERIFIED NON-RIVERINE |
| NWI WETLANDS (2017 USFWS) | |
| FRESHWATER FORESTED/SHRUB WETLAND | |

MAP INDEX

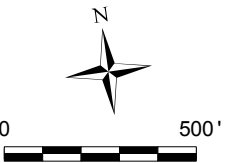
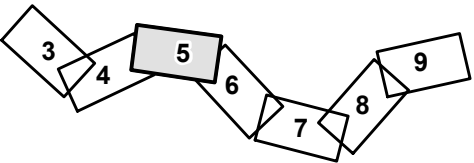


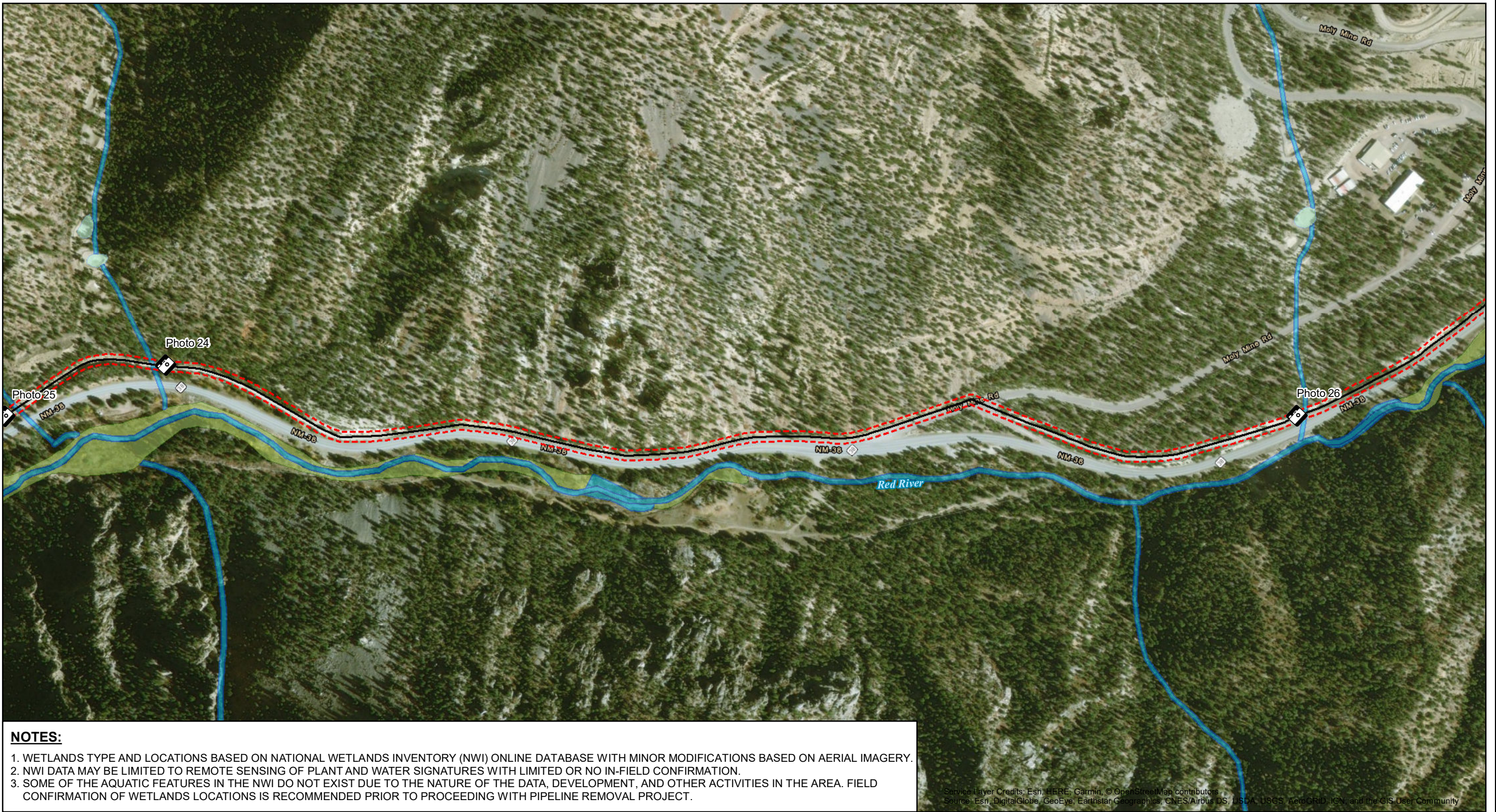
FIGURE 4

NWI AND FIELD VERIFIED WETLANDS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH Checked By: BH Scale: 1" = 500' Date: 6/14/18 File: Fig5_ARI_WetDelin.mxd

\\TRIHYRO.COM\CLIENTS\CHEVRON\CEMC_Mining\QUESTA MINE\PIPELINE\GIS\MAPPING\ARI_WETDELIN.MXD



NOTES:

1. WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

EXPLANATION

- PHOTO POINT
- PIPELINE
- 50' WETLAND INVENTORY AREA
- NWI WETLANDS (2017 USFWS)
 - FRESHWATER FORESTED/SHRUB WETLAND
 - FRESHWATER POND
- RIVERINE

MAP INDEX

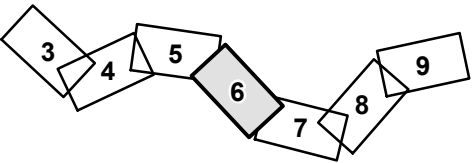


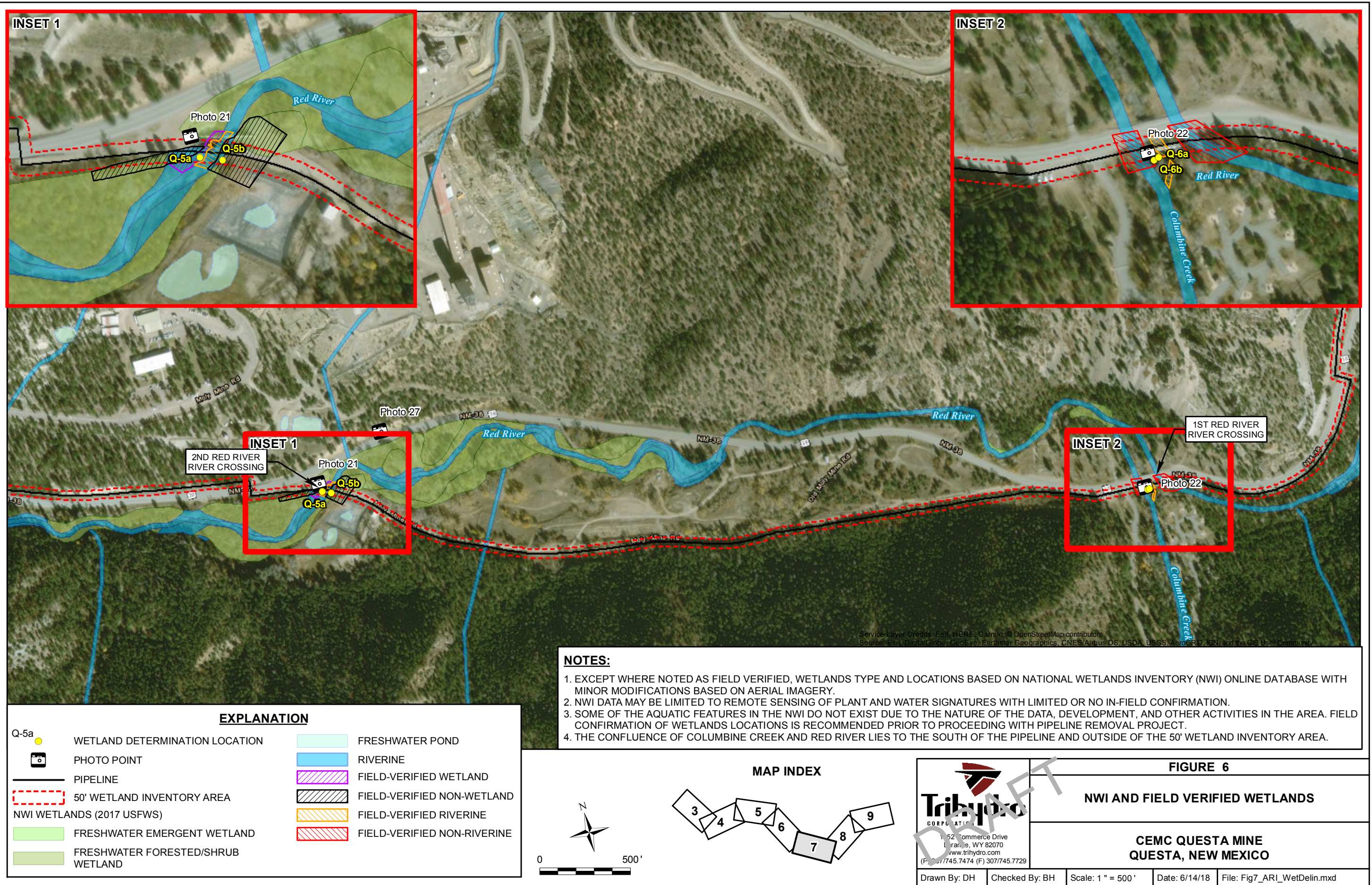
FIGURE 5

NWI WETLANDS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH | Checked By: BH | Scale: 1" = 500' | Date: 6/1/18 | File: Fig6_ARI_WetDelin.mxd

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M:\CHEVRON\CEMC_Mining\QUESTA\MINE\PIPELINE\GIS\MAPPING\ARI_REPORT\FIG8_ARI_WetDelin.mxd



EXPLANATION

- | | | | |
|-----|-----------------------------------|---|-----------------------------|
| ● | WETLAND DETERMINATION LOCATION | ■ | RIVERINE |
| 📷 | PHOTO POINT | ▨ | FIELD-VERIFIED RIVERINE |
| — | PIPELINE | ▨ | FIELD-VERIFIED NON-RIVERINE |
| --- | 50' WETLAND INVENTORY AREA | | |
| ■ | NWI WETLANDS (2017 USFWS) | | |
| ■ | FRESHWATER FORESTED/SHRUB WETLAND | | |



MAP INDEX

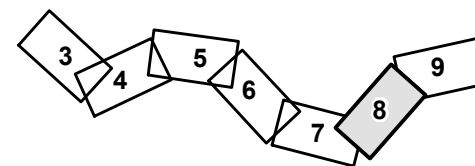


FIGURE 7

NWI AND VERIFIED WETLANDS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH	Checked By: BH	Scale: 1" = 500'	Date: 6/13/18	File: Fig8_ARI_WetDelin.mxd
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EXPLANATION

- PHOTO POINT
- PIPELINE
- 50' WETLAND INVENTORY AREA
- NWI WETLANDS (2017 USFWS)
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- RIVERINE



MAP INDEX

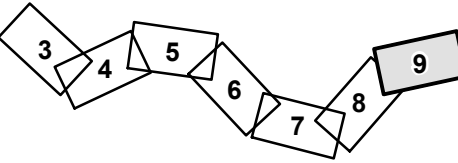


FIGURE 8

NWI WETLANDS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH | Checked By: BH | Scale: 1" = 500' | Date: 6/1/18 | File: Fig9_ARI_WetDelin.mxd

APPENDIX A

(PROVIDED IN FINAL DOCUMENT)

AQUATIC RESOURCES INVENTORY

APPENDIX B

PHOTO LOG

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 1.



Photo 2.



Photo 3.



Photo 4.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 5.



Photo 6. Flicker Nest



Photo 7.



Photo 8.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 9.



Photo 10. 4th Red River Crossing



Photo 11.



Photo 12.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 13.



Photo 14.



Photo 15.



Photo 16.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 17.



Photo 18.



Photo 19.



Photo 20a. 3rd Red River Crossing

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 20b. 3rd Red River Crossing



Photo 21. 2nd Red River Crossing (Thunder Bridge)



Photo 21a. 2nd Red River Crossing (Thunder Bridge)



Photo 21b. 2nd Red River Crossing (Thunder Bridge)

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 22a. 1st Red River Crossing



Photo 22b. 1st Red River Crossing



Photo 23a.



Photo 23b.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 24.



Photo 25.



Photo 26. Culvert Crossing – Bat Roost



Photo 27.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 28a. Culverts Under Road



Photo 28b.



Photo 29.



Photo Q-1.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-2



Photo Q-3a. Non-hydric Soil



Photo Q-3a.



Photo Q-3b. General Area

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-3b. Toward River



Photo Q-3b Under Trestle – Away From River



Photo Q-4. Non-hydric Soil (Chroma greater than 2)



Photo Q-4a

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-4b.



Photo Q-5a. Iron Deposits



Photo Q-5a. PSS Wetland



Photo Q-5a

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-5b. Non-hydric Soil (High Chroma)



Photo Q-5b.



Photo Q-6a.



Photo Q-6b

APPENDIX C

CULTURAL RESOURCES SURVEY SUMMARY

1.0 CULTURAL RESOURCES SURVEY SUMMARY

At the request of Chevron Environmental Management Company (CEMC), Arcadis surveyed ditches and other cultural resources along the Tailings Pipeline removal corridor in December 2017 and in April and May 2018. The survey results were submitted to the New Mexico Historic Preservation Office (SHPO) under New Mexico Cultural Resource Information System (NMCRIIS) numbers 139651 and 140384 (ARCADIS 2018a and 2018b). The cultural resources were surveyed in or near the pipeline removal stages shown in Attachment A. A finding of No Adverse Effect on Historic Properties was documented by Arcadis in both surveys.

This document summarizes the cultural survey results as they pertain to the Chevron Questa Mine Tailings Pipeline Removal Project. Excerpts from the Arcadis cultural surveys are attached to this summary, including the report cover letters, NMCRIIS Investigation Abstract Forms (NIAF), and select report figures. The following historic structures were found and evaluated for eligibility in the National Register of Historic Places (NRHP) during the cultural surveys.

NMCRIIS No.: 139651 (see attached Cover Letter, NIAF, and FIG-4)

South Ditch (aka: Questa Citizens South Ditch, South Side Ditch, HCPI 44457/LA83968)

Thunder Bridge (aka: Second River Crossing, HCPI 44458/CQTP-01)

NMCRIIS 140384 (see attached Cover Letter, NIAF, FIG-2, and FIG-3)

Elevated Trestle (aka: HCPI 44844)

Lower Dump Sump (aka: HCPI 44845)

North Ditch (aka: Embargo Ditch, Embargo Acequia, HCPI 44846)

Acequia Del Molina (aka: Molina Ditch, HCPI 44847)

Middle Ditch (aka: HCPI 44848)

Two of the historic structures found during the cultural surveys are considered eligible for inclusion in the NRHP. The two eligible structures are the South Ditch and the North Ditch (Embargo Ditch). All other historic structures found during the surveys are recommended as not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria.

The South Ditch has been previously documented and evaluated as eligible for inclusion in the National Register of Historic Places. The extent of the South Ditch on Chevron property was documented in December 2017 and the effects of the project upon it evaluated (ARCADIS 2018a). Only non-significant portions of the ditch were potentially to be impacted by the Tailings Pipeline Removal project. A finding of No Adverse Effect on a Historic Property received concurrence from the New Mexico SHPO. The Forest Service did not indicate any adverse effects to the portion of the South Ditch on their property in their report to you.

The North Ditch (Embargo Ditch) was evaluated by Arcadis in May 2018 and has not been formally documented or evaluated for NRHP eligibility by the New Mexico SHPO. The North Ditch is primarily located on private lands with short portions located on NM Department of Highways lands where it crosses NM State Highway 38 and NM State Highway 522 in Questa. A portion of the North Ditch is in the Tailings Pipeline Removal project Area of Potential Effect (APE) where it parallels Lower Embargo Road and crosses underneath State Highway 522. The North Ditch is recommended as eligible for the

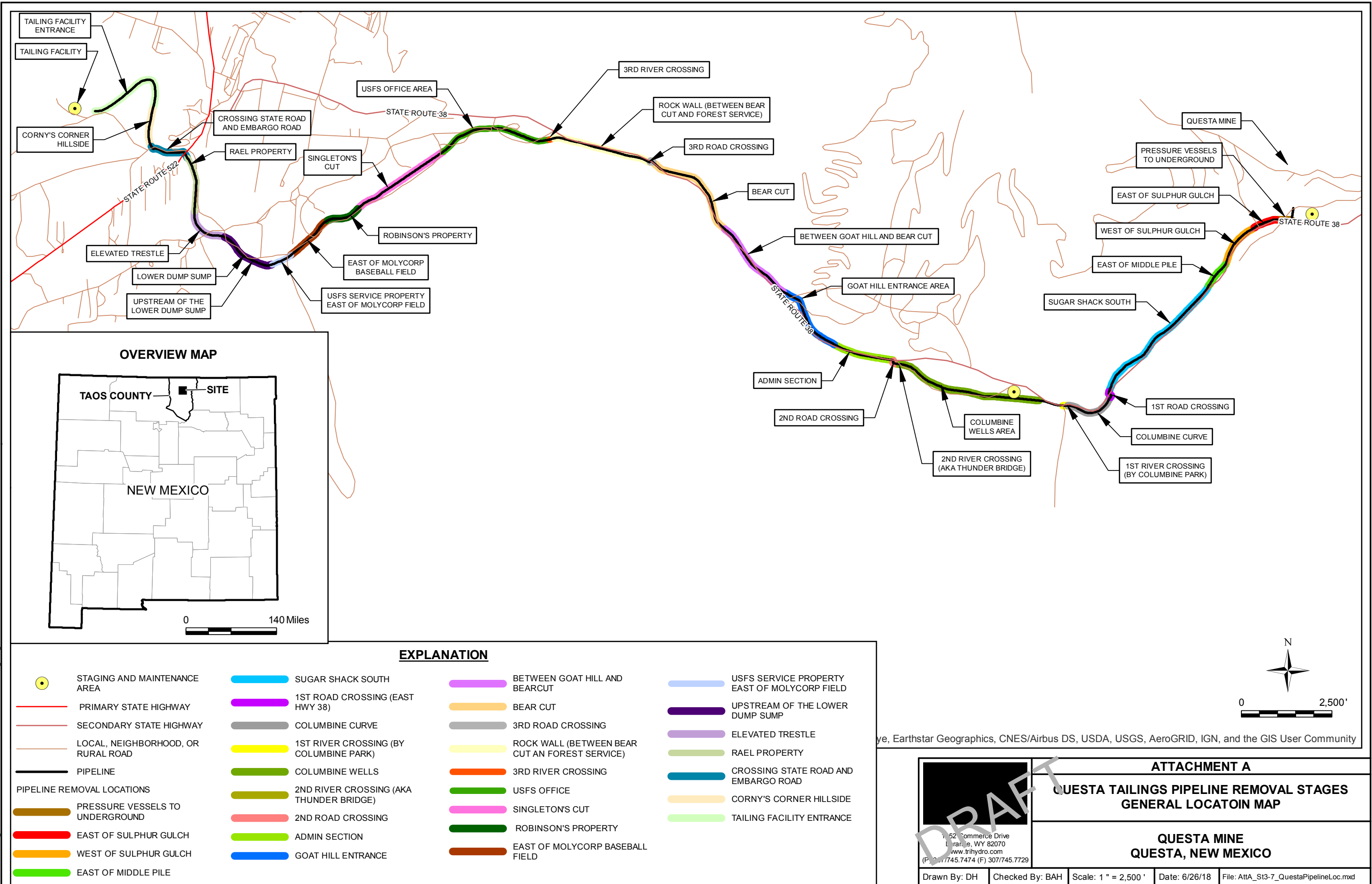
NRHP. The Chevron former tailing pipeline will be abandoned in place where it crosses the North Ditch. Therefore, the project will have No Adverse Effect on Historic Properties.

2.0 REFERENCES

ARCADIS. 2018a. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651). January 12, 2018.

ARCADIS. 2018b. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384). May 29, 2018.

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Mr. Clinton Chisler
Mining Act Reclamation Program
Mining and Minerals Division
Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject:

**Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources
Survey, Taos County, New Mexico (NMCRIS No. 139651)**

Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers four segments of Stage 2 that are located on CMI property (Above Lower Dump Sump, East of MolyCorp Baseball Field, Singleton's Cut and Columbine Wells Area) and one segment on private property (Robinson's Property). One previously recorded historic ditch (Questa Citizens South Ditch/HCP1 44457/LA83968) is located within the Area of Effect (APE) of the project crossing through the Above Lower Dump Sump, East of MolyCorp Baseball Field, Robinson Property, and Singleton's Cut segments. The Ditch has been determined to be eligible for the National Register of Historic Places (NRHP) by the New Mexico Historic Preservation Office (SHPO). Only non-contributing portions of the Ditch are located within the project APE and no further work is recommended. One newly recorded historic structure is located within the APE of the project segments. The Thunder Bridge (HCP1 44458) is located in Red River Canyon at the west end of the Columbine Wells Area segment. This structure has been evaluated as not eligible for inclusion in the NRHP as it meets none of the NRHP eligibility criteria. No further work is recommended. Nine historic isolated finds (IF #s 1-9) were also documented during this investigation, all of which are recommended as not eligible for the NRHP. The proposed project will therefore have No Adverse Effect on Historic Properties.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or

Environmental Business Consulting

Date:
January 12, 2018

Contact:
Dulaney Barclay

Phone:
720-344-3830

Email:
dulaney.barclay@arcadis.co
m

Our ref:
B0046795.0075

Mr. Clinton Chisler
January 12, 2018

concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, reading "Dulaney Barclay". The signature is written in a cursive style with a long horizontal flourish at the end.

Dulaney Barclay
Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM

NMCRIS No.: 139651

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 139651	2a. Lead Agency: NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead Agency Report No.:
4. Title of Report: Chevron Questa Tailings Pipeline Cultural Resources Inventory Stage 2 Sections B Thru D Author(s) Dulaney Barclay			5. Type of Report <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Positive
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Archaeological Survey/Inventory <input type="checkbox"/> Architectural Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Compliance Decision Based on Previous Inventory <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic Study <input type="checkbox"/> Site/Property Specific Visit <input type="checkbox"/> Historic Structures Report <input type="checkbox"/> Other			
7. Description of Undertaking (what does the project entail?): Project involves the removal of a slurry pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel			
[] Continuation			
8. Dates of Investigation: from: 12-Dec-2017 to: 13-Dec-2017		9. Report Date: 12-Jan-2018	
10. Performing Agency/Consultant: ARCADIS Principal Investigator: Dulaney Barclay Field Supervisor: Dulaney Barclay Field Personnel Names: Historian / Other:			
11. Performing Agency/Consultant Report No.:			
12. Applicable Cultural Resource Permit No(s):			

NMCRIS No.: 139651

13. Client/Customer (project proponent):

NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals D

Contact:

Address:

Phone:

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	Acres Surveyed	Acres in APE
Private Corporation (see records for company name)	24.80	24.80
TOTALS	24.80	24.80

16. Records Search(es):

Date(s) of HPD/ARMS File Review: November 30, 2017	Name of Reviewer(s): Dulaney Barclay	
Date(s) of Other Agency File Review:	Name of Reviewer(s):	Agency:

17. Survey Data:

a. Source Graphics ☐ NAD 27 ☒ NAD 83 Note: NAD 83 is the NMCRIS standard.

☒ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:

☒ GPS Unit Accuracy ☐ <1.0m ☒ 1-10m ☐ 10-100m ☐ >100m

☐ Aerial Photo(s)

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name

USGS Quad Code

Questa, NM

36105-F5

c. County(ies): TAOS

d. Nearest City or Town: Questa, NM

e. Legal Description:

Township (N/S)	Range (E/W)	Section
29N	12E	36
29N	13E	31
28N	13E	6
28N	13E	5

Projected legal description? ☐ Yes ☒ No ☐ Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

NMCRIS No.: 139651

18. Survey Field Methods:

Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☐ block survey units ☒ linear survey units (l x w):

☐ other survey units (specify):

Scope: ☒ non-selective (all sites/properties recorded) ☐ selective/thematic (selected sites/properties recorded)

Coverage Method: ☒ systematic pedestrian coverage

☐ other method (describe):

Survey Interval (m): 15 **Crew Size:** 1 **Fieldwork Dates:** from: 12-Dec-2017 to: 13-Dec-2017

Survey Person Hours: 8.00 **Recording Person Hours:** 4.00 **Total Hours:** 12.00

Additional Narrative:

[] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Elevations vary from approximately 7400 to 7600 feet AMSL. Vegetation consists of an overstory of pine and juniper trees with understory of low shrubs, mixed forbs, cactus, and grasses. Soils consist of gravelly sandy loams derived from alluvium and colluvium. Project area is located in the Red River Canyon and on the gentle slopes at the base of the Taos Mountains, an extension of the Sangre DeCristo Range.

[] Continuation

20.a. Percent Ground Visibility:

Ranges from 100 % on bladed road to 50% on slopes above pipeline; averages 70-80%.

b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

Survey corridor was primarily along a bladed access road that runs parallel to the pipeline on north side. Eroded along steep slopes on south side of pipeline. Pipeline parallels transmission line in places.

[] Continuation

21. CULTURAL RESOURCE FINDINGS

☒ Yes, see next report section

☐ No, discuss why:

[] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

[] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[X] Historic Cultural Property Inventory Forms, if applicable

[] List and Description of Isolates, if applicable

NMCRIS No.: 139651

☒ Photographs and Log

☐ Other Attachments (Describe):

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: Printed Name: Dulaney Barclay

Signature: Dulaney Barclay Date: 1/12/18 Title: Principal Investigator

25. Reviewing Agency

Reviewer's Name/Date:

Accepted ☐ Rejected ☐

26. SHPO

Reviewer's Name/Date:

HPD Log #:

Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 9

☐ Non-selective isolate recording?

HCPI properties discovered and registered: 2

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 2

MANAGEMENT SUMMARY: Questa Citizens South Ditch (HCPI 44457/LA83968) previously determined eligible for National Register.

Only non-contributing portions of the Questa Citizens South Ditch (HCPI 44457/LA83968) are within the Area of Potential Effect.

No adverse effects to Ditch from proposed project. No further work is necessary.

Thunder Bridge (HCPI 44458) is recommended not eligible for National Register. No further work is necessary.

☐ Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

NMCRIS No.: 139651

LA/HCPI No. Field/Agency No.

HCPI44457 LA83968

HCPI44458 CQTP-01

Eligible? (Y/N/U, applicable criteria)

Y under Criteria A, C, and D per SHPO

N

Previously recorded revisited sites/HCPI properties:

LA/HCPI No. Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

Previously recorded sites (site update form required):

LA No. Field/Agency No.

LA No. Field/Agency No.

Areas outside known nearby site boundaries monitored? ☐ Yes

☐ No, Explain why:

TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)



Legend

- Pipeline Features
- Questa Ditch (HCPI 44457)
- Questa Tailing Pipeline

Notes:
State Plane Coordinate Datum:
NAD83 State Plane NM Central Feet (ft)
Base Imagery provided by ESRI ArcGIS online Bing
Map Hybrid and Bing Maps Aerial 2012

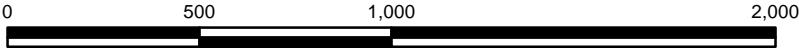


CHEVRON MINING INC. QUESTA MINE

Cultural Resource Location Map
Questa Ditch Segments



FIGURE
4



Mr. Clinton Chisler
Mining Act Reclamation Program
Mining and Minerals Division
Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject:

**Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources
Survey, Taos County, New Mexico (NMCRIS No. 140384)**

Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers Stage 2 Section A and portions of Stages 3 thru 8 that are located on CMI property. Five historic structures including the Elevated Trestle (HCPI 44844), Lower Dump Sump (HCPI 44845), Embargo Ditch (HCPI 44846), Acequia Del Molina (HCPI 44847) and Middle Ditch (HCPI 44848) were found within the Area of Potential Effect. The Embargo Ditch (HCPI 448446) is recommended as eligible for the National Register of Historic Places (NRHP) under Criterion C of the National Register Eligibility Criteria. The Embargo Ditch will not be adversely affected as the Tailings Pipeline will be abandoned in place where it crosses the Ditch. The other historic structures are all recommended as not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria. The proposed project will therefore have No Adverse Effect on Historic Properties.

A copy of this report will also be attached to a Pre-Construction Notification (PCN) for the US Army Corp of Engineers (USACE) to fulfill the conditions for use of Nationwide Permit (NWP) 12. A USACE permit is required as the pipeline crosses the Red River, a jurisdictional waterway, in four locations within the current inventory area. The Embargo Ditch, Acequia Del Molina Ditch, and Middle Ditch are also considered jurisdictional waterways of the United States as they draw water from, and return water to, the Red River. A USACE NWP 12 for utility line activities is required for them as well. The USACE will have 30 days to review the PCN and determine if it is complete.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New

Environmental Business Consulting

Date:
May 29, 2018

Contact:
Dulaney Barclay

Phone:
720-344-3830

Email:
dulaney.barclay@arcadis.co
m

Our ref:
B0046795.0075

Mr. Clinton Chisler
May 29, 2018

Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, reading "Dulaney Barclay". The signature is written in a cursive style with a long, sweeping underline.

Dulaney Barclay
Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM
US Army Corp of Engineers, Albuquerque District, Albuquerque, NM

NMCRIS No.: 140384

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 140384	2a. Lead Agency: NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead Agency Report No.:
4. Title of Report: Questa Tailings Pipeline Cultural Resources Inventory Stages 2 Thru 8, Taos County, New Mexico Author(s) Dulaney Barclay			5. Type of Report <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Positive
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Archaeological Survey/Inventory <input type="checkbox"/> Architectural Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Compliance Decision Based on Previous Inventory <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic Study <input type="checkbox"/> Site/Property Specific Visit <input type="checkbox"/> Historic Structures Report <input type="checkbox"/> Other			
7. Description of Undertaking (what does the project entail?): Arcadis U.S., Inc conducted an inventory of approximately 2.6 miles of the Questa Tailings Pipeline that extends between the Questa Molybdenum Mine and the Tailings Facility.			
[] Continuation			
8. Dates of Investigation: from: 05-Apr-2018 to: 16-May-2018		9. Report Date: 29-May-2018	
10. Performing Agency/Consultant: ARCADIS Principal Investigator: Dulaney Barclay Field Supervisor: Dulaney Barclay Field Personnel Names: Historian / Other:			
11. Performing Agency/Consultant Report No.:			
12. Applicable Cultural Resource Permit No(s):			

NMCRIS No.: 140384

13. Client/Customer (project proponent):

Chevron Mining Inc.

Contact: Gabriel Herrera

Address: PO Box 469, Questa, NM 87556

Phone: (575) 586-7571

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	Acres Surveyed	Acres in APE
Chevron Mining Inc.	32.90	32.90
TOTALS	32.90	32.90

16. Records Search(es):

Date(s) of HPD/ARMS File Review: 12/8/2017; 3/5/2018; 3/6/2018	Name of Reviewer(s): Dulaney Barclay	
Date(s) of Other Agency File Review:	Name of Reviewer(s):	Agency:

17. Survey Data:

a. Source Graphics [] NAD 27 [X] NAD 83 Note: NAD 83 is the NMCRIS standard.

☒ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:

☒ GPS Unit Accuracy ☒ <1.0m ☐ 1-10m ☐ 10-100m ☐ >100m

☐ Aerial Photo(s)

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name

USGS Quad Code

Questa, NM	36105-F5
Red River, NM	36105-F4

c. County(ies): TAOS

d. Nearest City or Town:

e. Legal Description:

Township (N/S)

Range (E/W)

Section

29N	13E	31
28N	13E	6

Projected legal description? [] Yes [X] No [] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

NMCRIS No.: 140384

Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☒ block survey units ☒ linear survey units (l x w):

☐ other survey units (specify):

Scope: ☒ non-selective (all sites/properties recorded) ☐ selective/thematic (selected sites/properties recorded)

Coverage Method: ☒ systematic pedestrian coverage

☐ other method (describe):

Survey Interval (m): 15 **Crew Size:** 2 **Fieldwork Dates:** from: 05-Apr-2018 to: 16-May-2018

Survey Person Hours: 16.00 **Recording Person Hours:** 16.00 **Total Hours:** 32.00

Additional Narrative:

[] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Project is situated in the Red River Valley of north-central New Mexico at elevation of 7400-7480 feet above mean sea level. It is located within a High Desert Shrub vegetative community and includes scrub pines, junipers, sagebrush, cactus, and scrub oak. Riparian areas along Red River have thick grasses, mixed forbs, cottonwood trees, and willows.

[] Continuation

20.a. Percent Ground Visibility:

b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

Visibility ranges from 30% in riparian areas to 80% in open areas. Project area has been impacted by grazing and development including mine and residential development.

[] Continuation

21. CULTURAL RESOURCE FINDINGS

☒ Yes, see next report section

☐ No, discuss why:

[] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

[] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[X] Historic Cultural Property Inventory Forms, if applicable

[] List and Description of Isolates, if applicable

[] List and Description of Collections, if applicable

NMCRIS No.: 140384

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: Printed Name: Dulaney Barclay

Signature: Dulaney Barclay Date: 5/29/18 Title: Principal Investigator

25. Reviewing Agency

Reviewer's Name/Date:

Accepted [] Rejected []

26. SHPO

Reviewer's Name/Date:

HPD Log #:

Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 0

☐ Non-selective isolate recording?

HCPI properties discovered and registered: 5

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 5

MANAGEMENT SUMMARY: Five historic structures within Area of Potential Effect consisting of two structures associated with the Tailings Pipeline and three historic ditches (acequias). Only one resources is evaluated as eligible for inclusion in the National Register. The Embargo Ditch (HCPI44846) is recommended eligible for the National Register under Criterion C as representative of middle to late 19th Century acequia in the Red River Valley. All other resources are recommended not eligible for the National Register.

[] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

NMCRIS No.: 140384

HCPI44844	N
HCPI44845	N
HCPI44846	Y, Criterion C
HCPI44847	N
HCPI44848	N

Previously recorded revisited sites/HCPI properties:

LA/HCPI No.	Field/Agency No.	Eligible? (Y/N/U, applicable criteria)
-------------	------------------	--

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

Previously recorded sites (site update form required):

LA No. Field/Agency No.

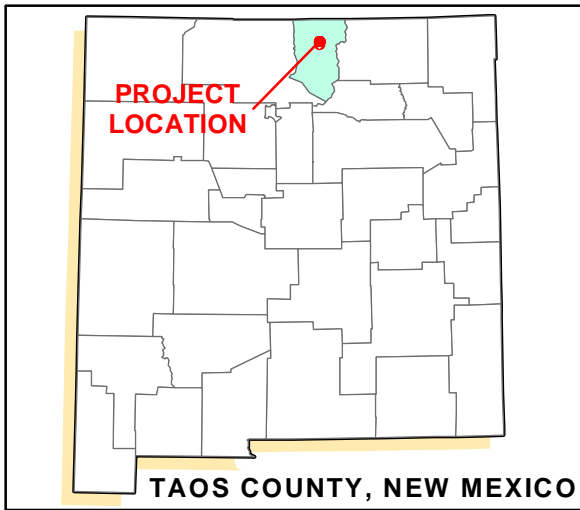
LA No. Field/Agency No.

Areas outside known nearby site boundaries monitored? ☐ Yes ☐ No, Explain why:

TESTING & EXCAVATION LA NUMBER LOG (site form required)

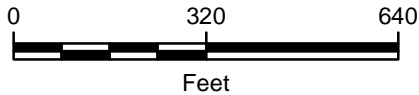
Tested LA number(s)

Excavated LA number(s)



Legend

- Headgate
- Headgate for Unnamed Ditch No. 2
- Headgate on Embargo Ditch
- West End of Segment
- East End of Segment
- Embargo Ditch
- Unnamed Ditch No. 1
- Unnamed Ditch No. 2



Questa Tailings Pipeline
Removal Project

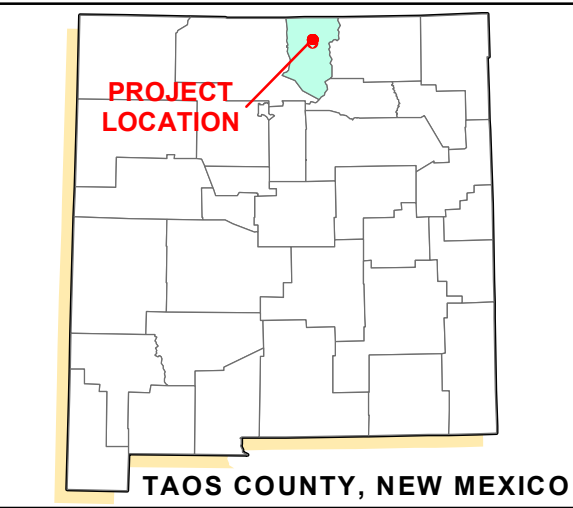
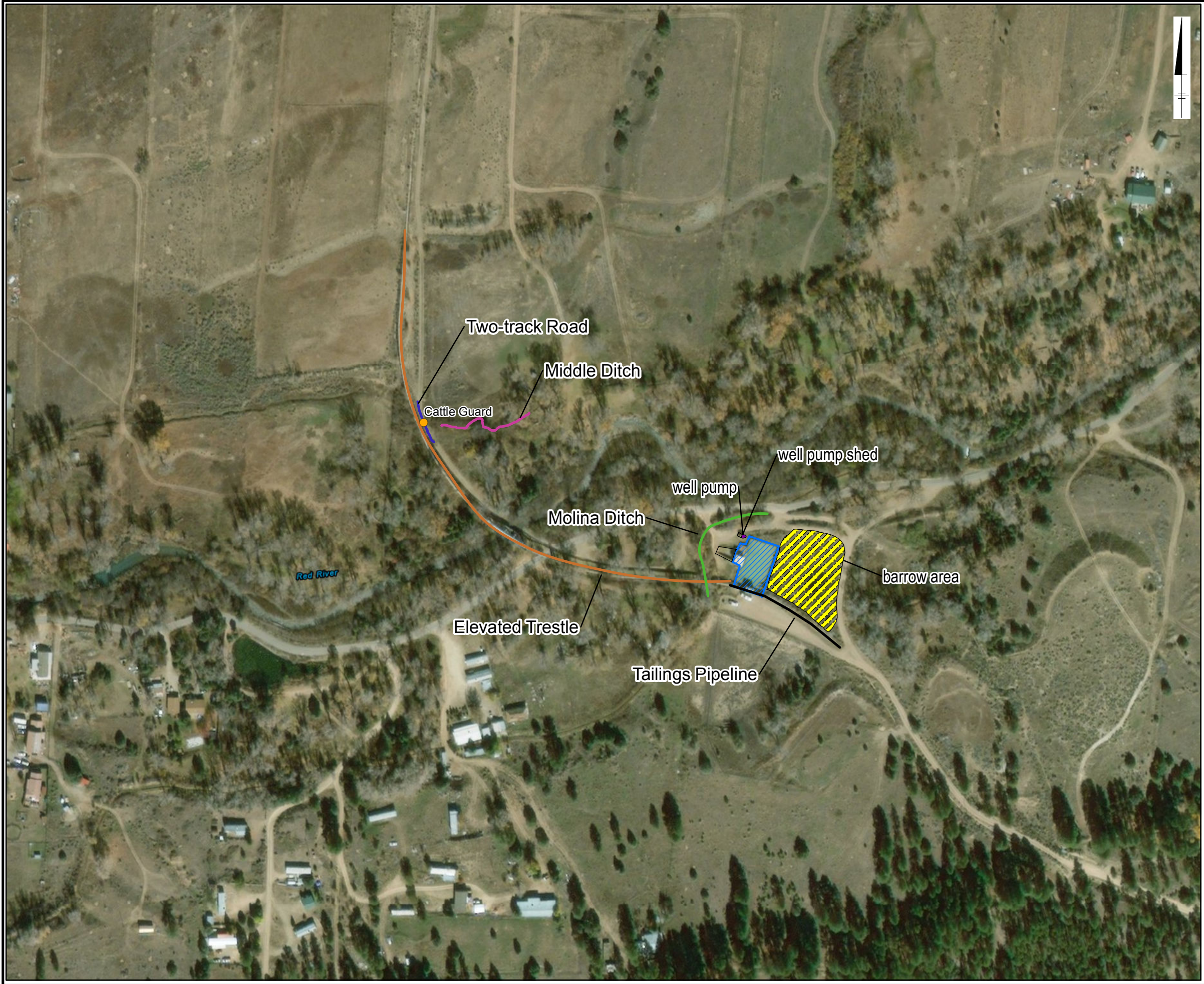
Cultural Resources Location Map



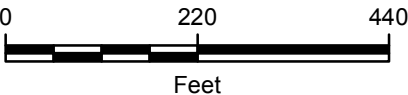
FIGURE

2

CITY:(DEN-TECH) DIV:(GROUP:(ENV/GIS) DB: KGPETERS LD: PIC: PM: TM:
PROJECT: PATH: Z:\GIS\Projects\ENV\Chevron_Questa\Map_MXD\2018\Fig3_QuestaTailings_CulturalResourcesLocationMap.mxd



- Legend**
- Cattle Guard
 - Elevated Trestle
 - Middle Ditch
 - Molina Ditch
 - Tailings Pipeline
 - Two-track Road
- Sump Dump Area**
- Barrow Area
 - Reservoir
 - Underground Access
 - Well Pump
 - Well Pump Shed



Questa Tailings Pipeline
Removal Project

Cultural Resources Location Map


 **ARCADIS**

FIGURE
3



DRAFT FOR REVIEW

**QUESTA TAILINGS PIPELINE REMOVAL PROJECT
AQUATIC RESOURCE INVENTORY REPORT
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
QUESTA, NM**

July 2, 2018

Project #: 476-027-003

SUBMITTED BY: Trihydro Corporation

1252 Commerce Drive, Laramie, WY 82070

ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

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1.0 INTRODUCTION

On behalf of Chevron Environmental Management Company (CEMC), Trihydro Corporation (Trihydro) hereby submits this aquatic resource inventory report for the Questa Tailings Pipeline Removal Project to the United States Army Corps of Engineers (Corps). The Questa Mine is a former underground and open pit molybdenum mine and milling operation owned by Chevron Mining Inc. (CMI). The mine and mill facilities are located approximately 7 miles east of the Village of Questa, New Mexico (Questa), in Taos County along New Mexico Highway 38 and the adjacent Red River. The Questa Mine's Tailing Facility is located approximately 9 miles west of the mine, near Questa, NM. The tailings pipeline was constructed to transport mill tailings, as a slurry, to the tailings facility. Conventional underground mining operations began in 1918 and continued until 1958. Underground mining resumed in 1982 and continued through approximately 2012. Open pit mining was conducted between 1965 and 1983. CMI announced the cessation of operations at the mine on June 2, 2014 and initiated closeout activities.

In the 1960's, the Questa Mine constructed a pipeline from the Mill Area of the mine approximately 9 miles west to the Tailings Facility. From east to west, the pipeline typically consists of two 14-inch outside diameter, rubber lined steel pipes that parallel Highway 38 down the Red River Canyon, through the Village of Questa, to the Tailings Facility on the west side of town (Figure 1). In some areas, additional sections of pipeline were constructed to provide a backup line where access was limited. The pipe transitioned to HDPE at the Tailings Facility Flow Monitoring Building.

The Questa Mine stopped using the pipeline to transfer tailings in April of 2012, but continued to pump mine collected waters from the Mine Site groundwater collection systems and the underground mine to the Tailings Facility. The collected water likely flushed any remaining tailings from the pipeline, but some of the collected water may remain in low areas of the pipeline upon cessation of its use. The currently active pipeline was flushed with fresh water prior to cessation.

The pipeline crosses CMI property, United States Forest Service (USFS) property, New Mexico Department of Transportation (NMDOT) right of way (ROW), along with four private landowners' property. The pipeline crosses over the Red River at four locations and under Highway 38 at four locations. Most of the pipeline is above ground, running along Highway 38 or on CMI or USFS property. Some sections of the pipeline are buried and may either be abandoned in place or excavated and removed, depending on depth of burial and/or ease of access. There are structures along the route including three small pressure vessels, the Upper Dump Sump, the Lower Dump Sump and support buildings, three old bridges, two elevated trestles, and the Tailings Facility Flow Monitoring Building. For this report, bridges are defined as structures crossing streams, and are capable of carrying foot or vehicular traffic as well as pipe and other utilities. A trestle is an above ground structure designed for carrying pipe or other utilities only.

1.1 PURPOSE

The purpose of the Tailings Pipeline Removal Project is to remove the entire tailing pipelines from the Mill Area to the Tailings Facility Catchment Pond, or abandon the buried tailing pipeline in place where necessary. The work scope also includes demolition and removal of the three small pressure vessels, the Lower Dump Sump and support buildings, non-utility bearing bridges, the trestle, and the flow monitoring building.

The primary purpose of this report is to present the results of an aquatic resource inventory conducted on May 9 and 10, 2018 which is included as an appendix to the preconstruction notification (PCN) submitted to the U.S. Army Corps of Engineers (USACE).

The tailings pipeline parallels the Red River for about half of the 8.5-mile pipeline length, crossing the Red River at four locations. The Red River is a jurisdictional water of the U.S., requiring permitting through the USACE prior to beginning the regulated activity. The pipeline also crosses the Embargo Ditch and other irrigation ditches located near the Tailings Facility. The Embargo Ditch draws water from the Red River and returns water downstream to the Red River. In the State of New Mexico, irrigation ditches that draw water from a waters of the U.S. and return water to waters of the U.S. remain waters of the U.S. Therefore, the Embargo Ditch (and possibly other irrigation ditches in the area) are considered jurisdictional waters of the U.S. Wetlands associated with jurisdictional waters are waters of the U.S. and are also jurisdictional.

1.2 REGULATORY AUTHORITY

USACE Nationwide Permit NWP-12 applies to utility line activities. USACE concurred that NWP-12 should be applicable to the tailings pipeline removal effort. NWP-12 limits loss of wetlands to ½-acres of waters of the U.S. for each completed Project. USACE has indicated that the tailings pipeline removal Project, including the Lower Dump Sump, is considered to be a single and complete Project. NWP-12 requires PCN submittal. Section 11 of the PCN requires confirmation that all 32 of the NWP general conditions have been adequately addressed by the prospective permittee, including aquatic resources inventory, aquatic life movement and breeding, migratory bird breeding, bat roosting sites, and cultural resources.

1.3 PROJECT AREA DESCRIPTION

The Project Area is located in northern New Mexico on the west slope of the Sangre de Cristo Mountain Range in the Southern Rocky Mountains. The Project Area crosses west to east through four distinct ecoregions including the Taos

Plateau, Foothill Woodlands and Shrublands, Volcanic Mid-Elevation Forests and Shrublands, and Crystalline Mid-Elevation Forests and Shrublands (Griffith et al. 2006).

The western extent of the Project Area and tailing ponds area is located in the Taos Plateau, an ecoregion that is characterized by rolling to level plateau, some volcanic cones and the deep Rio Grande River gorge. Most streams within the Taos Plateau are ephemeral and intermittent. The geology of the area comprises Quaternary Eolian deposits, colluvium, piedmont and fan alluvium, and primarily Pliocene basalt and volcanic rocks. Soils comprise Aridisols and Alfisols. Vegetation is dominated by big sagebrush shrub lands with other shrubs, some grasses, and occasional piñon and juniper.

Upslope from the Taos Plateau is the Foothill Woodland and Shrublands ecoregion that consists of hills, ridges, and footslopes with moderate to high gradient perennial, intermittent, and ephemeral streams. The geology of the area is varied and includes Quaternary colluvium and alluvium deposits, sedimentary rock, and various volcanic formations. Soils include Alfisols, Inceptisols, and Entisols. Vegetation in this ecoregion is typically dominated by a combination of piñon and juniper woodlands, sagebrush, mountain mahogany stands, and Gambel oak woodlands. Varied foothill-mountain grasslands are interspersed with blue grama, prairie junegrass, or western wheatgrass.

Volcanic Mid-Elevation Forests and Shrublands occur higher in elevation than Foothill Woodland and Shrublands and are characterized by low mountain ridges, slopes, and outwash fans with moderate to high gradient perennial streams. Geology is similar to the Foothills and Woodlands and soils consist of Alfisols, Mollisols, and Inceptisols. Ponderosa pine forests dominate with understory species that may include Gambel oak, mountain mahogany, and other shrubs and grasses. At the higher elevations in this ecoregion, Douglas and white fir forests and small aspen stands may occur.

The eastern extent of the Project Area is in the Crystalline Mid-Elevation Forests and Shrublands which consists of similar physiography to the Volcanic Mid-Elevation Forests and Shrublands and similar geology though with more granitic rock. Soils comprise Alfisols, Inceptisols, and Entisols. Vegetation is similar to that found in the Volcanic Mid-Elevation Forests and Shrublands and is dominated by ponderosa pine at the lower elevations with a greater amount of Douglas and white fir, limber pine, and small aspen stands found at higher elevations.

1.3.1 SOILS

Eleven soil map units are crossed by the Project (NRCS 2017) with the two most prevalent being Cumulic Haploborolls, nearly level (14%) and Rock outcrop-badland complex, very steep (12%). Cumulic Haploborolls, nearly level, are found in alluvial fans and valley sides. The parent material is alluvium derived from igneous and

metamorphic rock. Soil is generally considered well drained and comprises loam and sandy clay loam. Rock outcrop-bandland complex, very steep, are found on mountain slopes with a typical profile consisting of bedrock. All soil units occurring within the 50-foot buffer area are presented in Table 1 and Figure 1.

1.3.2 VEGETATION

Vegetation communities vary across the Project Area and generally transition from sagebrush shrub-steppe dominated communities at the western extent of the tailings pipeline to higher elevation conifer forests at the eastern extent of the tailing pipeline. The primarily vegetation communities within the Project Area include sagebrush-steppe, ponderosa pine forest, riparian, and disturbed.

Sagebrush (*Artemisia tridentata*) shrub-steppe communities are dominated by sagebrush and rabbitbrush (*Ericameria nauseosa*), with a sparse understory of grasses and forbs. These communities may also include piñon and juniper associations. Portions of the soil surface may be covered with cryptogamic crusts. This is the predominant vegetation community along the western extent of the tailing pipeline.

Ponderosa pine forest occurs at elevations from the Lower Dump Sump (7,300 feet) to the east extent of the tailings pipeline at 8,100 feet. This vegetation community is dominated by mature ponderosa pine in open stands with an understory of shrubs and herbaceous cover. Dominant understory species include smooth brome (*Bromus inermis*), Rocky Mountain juniper (*Juniperus scopularum*), big sagebrush, rabbitbrush, Gambel oak (*Quercus gambellii*), skunkbush (*Rhus aromatica*), and Wood's rose (*Rosa woodsii*). White fir (*Abies concolor*), Englemann spruce (*Picea engelmannii*), and quaking aspen (*Populus tremuloides*) increase with elevation from west to east up the Red River Canyon.

Riparian areas are present along the Red River where it is intersected by the tailings pipeline. Riparian areas in the Project Area are dominated by woody species. Narrowleaf cottonwood (*Populus angustifolia*) is the dominant tree species in riparian areas with small trees and shrubs consisting of speckled alder (*Alnus incana*), river birch (*Betula occidentalis*), narrowleaf willow (*Salix exigua*), and Wood's rose. Grasses and forbs along the Red River include reedtop (*Agrostis stolonifera*), smooth brome, and field horsetail (*Equisetum arvense*).

Disturbed areas are common along the pipeline route but primarily occur along the western extent of the tailings pipeline near the tailings ponds, at the lower dump sump, and generally along the roadsides. Vegetation comprises a variety of weedy plants with cheatgrass (*Bromus tectorum*), smooth brome, and Mexican fireweed (*Bassia scoparia*) common.

1.3.3 HYDROLOGY

The Project Area is located within Hydrologic Unit Code 13020101, the Upper Rio Grande Watershed, that begins at the Colorado/New Mexico border and drains an area of approximately 3,220 square miles (USGS 2010), including 94.79 percent of Taos County (USDA 2008). The Red River is the primary hydrologic feature in the Project Area. It is a perennial stream that originates in the Sangre de Cristo Mountains and forms a confluence with the Rio Grande River southwest of Questa. Numerous ephemeral streams designed as R4SBC (Riverine, intermittent, streambed, seasonally flooded) cross under the tailings pipeline and drain into the Red River. These ephemeral streams consist of steep, rocky drainages that flow during high precipitation events.

There are a number of man-made ditches that are crossed by the tailings pipeline including a drainage ditch that generally follows Moly Mine Rd from east to west and is designated as R5UBFx (Riverine, unknown perennial, unconsolidated bottom, semipermanently flooded, excavated). The Embargo Ditch, an Acequia, also crosses the tailings pipeline along the western portion of the Project. It is classified as R4SBCx (riverine, intermittent, streambed, seasonally flooded, excavated). The Embargo Ditch takes water from the Red River just west of the U.S. Forest Service building and apparently returns water approximately 1.5 miles downstream of Questa.

2.0 METHODS

2.1 DATA REVIEW

A review of available information relative to jurisdictional waters of the U.S. was performed in-house prior to visiting the Project Area. Potential wetlands were determined by overlaying the tailings pipeline (including a 50 foot-wide buffer) and all other areas of the Project over aerial photographs of the area, topographic maps, National Wetland Inventory (NWI) maps (USFWS 2017), and NRCS soil maps (NRCS 2017). In addition, previous environmental reports from the area were reviewed prior to conducting the onsite assessment.

2.2 AQUATIC RESOURCE DELINEATION METHODOLOGY

Trihydro conducted an onsite assessment of aquatic resources on May 9 and 10, 2018. Erik Schmude, a Trihydro biologist, led the onsite assessment. Methods used to delineate aquatic resources in the Project Area were based on a combination of desktop mapping using NWI data, photo documentation of all aquatic features crossed by the tailings pipeline, and onsite delineation of aquatic resources where Project impacts are expected (i.e. bridge crossings, Lower Dump Sump). These methods were discussed with the USACE prior to the onsite assessment.

According to NWI data, the Project Area intersects a number of aquatic resources including the Red River and adjacent wetlands, the Embargo Ditch, a number of unnamed ditches and ephemeral drainages classified as Intermittent Riverine, and isolated emergent wetlands associated with the Lower Dump Sump. Onsite determination of aquatic resource presence and boundaries were completed only in areas where impacts are expected at crossings of the Red River and at the Lower Dump Sump. However, every aquatic resource indicated in the NWI dataset was field checked and photographed.

For areas where impacts are expected, wetland determinations were completed using the Routine Determination protocol described in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987). Wetland determination field methods followed the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valley, and Coasts* (USACE 2010) based on location and vegetation in the area (primarily ponderosa pine forest). Determinations of wetlands included an evaluation of plant species and percent cover by vegetation strata, digging of a soil pit to observe soil characteristics and presence of hydric soil indicators, and observations of hydrological indicators at the soil pit location. Wetland determination data forms were completed for each wetland and a paired upland observation point. For locations where no wetlands were found, a single upland point was evaluated and documented. If aquatic resources and their boundaries matched NWI data, no field delineation was completed, only

verification of the presence of the aquatic resource. If NWI was found to be inaccurate, based on the field assessment, then the aquatic resource information and/or boundaries were updated for the segment of the pipeline (50 foot wide area) crossing the resource. Wetland determination points and any updated aquatic resource boundaries were recorded using a Trimble sub-meter accuracy global positioning system (GPS) and photographs were taken of each feature. A unique ID was given to each determination point. Photographs of additional aquatic resources, with no expected impacts, were also given unique IDs.

Wetlands were identified in the field as areas having positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation as indicated by greater than 50% OBL, FACW, or FAC species or less than or equal to 3.0 prevalence index. Aquatic resources were classified using the Cowardin system (Cowardin et al. 1979). Aquatic resources within the Project Area include Palustrine Emergent Wetlands (PEM), Palustrine Scrub-shrub (PSS), Palustrine Forested (PFO), and various River classifications streams, ditches, and other drainage features.

PEM wetlands are those aquatic features dominated by herbaceous emergent plants. Plant species commonly found in PEM wetlands in northern New Mexico include hydrophytic grasses, cattails (*Typha angustifolia*), sedges (*Carex* spp.), and rushes (*Juncus* spp.). PSS wetlands are those aquatic features dominated by shrubs under 20 feet tall or with trunks or stems less than 3 inches in diameter. Common PSS plant species found in this region include willow (*Salix* spp.), alder (*Alnus* spp.) and small cottonwoods (*Populus* spp.). PFO wetlands are dominated by trees greater than 20 feet high with stems greater than 3 inches in diameter. PFO wetland species composition commonly includes cottonwood, larger willows, and river birch (*Betula occidentalis*). Combinations of these communities may also be present in a wetland.

3.0 RESULTS

This section provides a discussion of the results of the onsite and desktop aquatic resource inventory including detailed information pertaining to each area where temporary impacts to aquatic resources are expected. Wildlife and cultural resource assessments required for the PCN are presented in section 3.1.2 and 3.2.

3.1 AQUATIC RESOURCE FINDINGS

Aquatic resources intersected by the Project Area include the Red River (4 crossings), 13 ephemeral streams, the Embargo ditch, 4 unnamed man-made ditches, 7 PSS wetlands, and 2 PFF wetlands, according to information gathered during the onsite assessment on May 9 and 10, 2018. The NWI data showed that Columbine Creek, an intermittent stream, was crossed by the Project. However, the onsite assessment indicated this stream intersects the Red River to the east of the NWI location and is not actually crossed by the Project. In addition, NWI data indicated the presence of two PEM wetlands in and adjacent to the Lower Dump Site; however, these areas were checked during the onsite delineation and no wetlands indicators were observed for each area.

A summary of aquatic resources intersected by the pipeline and 50 foot wide corridor are presented in Table 2 which includes a total of 0.31 acres of perennial riverine (R3RB1H, Red River), 0.33 acres of ephemeral streams (R4SBC), 0.41 acres of unnamed man-made ditches (R4SBAX and R5UBFx), 0.03 acres of the Embargo Ditch, 0.08 acres of PSS wetland, and 0.07 acres of PFO wetland. In total, this equates to 1.10 acres of riverine and 0.15 acres of wetlands present within the 50 pipeline corridor. These acreage calculations are based primarily on NWI data with slight modifications in areas of river crossings where onsite wetland assessments were completed on May 9 and 10, 2018. Figures 2 through 9 show all aquatic resources in the Project Area.

Temporary impacts to wetlands and waters will be limited to the 4 Red River bridge crossings and include temporary impacts to 0.12 acres of riverine areas and 0.03 acres of scrub-shrub wetland (Table 3). No impacts to the Embargo Ditch or any other irrigation ditches are expected to occur. Temporary impact acreage calculations are based on the onsite assessment and delineation of resource boundaries on May 9 and 10. No permanent impacts to wetlands or waters will occur. Figures 3, 4, 5 and 7 show areas where temporary impacts to aquatic resources area expected.

The results from each of the 10 field determination points are included in digital copies of Wetland Determination Data Forms in Appendix A. Photographs of each determination point as well as photographs of each of the ponds and streams, are provided in Appendix B. All aquatic resources including determination points, NWI data, field verified aquatic resource, and photo points are shown in Figures 3-9.

3.1.1 AQUATIC RESOURCES IMPACTED BY PROJECT

As described in Section 2.0, onsite delineation of aquatic resources was completed in areas where temporary impacts associated with removal of the tailings pipeline may occur. Temporary impacts will include disturbance to aquatic resources resulting from vehicle and foot traffic and removal of concrete supports during pipeline removal. Five distinct areas were assessed. These areas include the crossing of potential wetlands at the Lower Dump Sump (according to NWI data) and four pipeline/bridge crossings of the Red River. A summary of findings for each of these areas is presented below.

3.1.1.1 LOWER DUMP SUMP

According to NWI data, there are two PEM wetlands present at the Lower Dump Sump including one onsite and one offsite, where impacts may occur. Determination points (Q-1 and Q-2) were placed in each of the potential wetlands. No wetland indicators were observed at either location indicating that wetlands are absent from this area (Figure 4). Vegetation, soils, and hydrology were found to be highly disturbed at both locations. Both areas are within man-made, bermed depressions constructed to contain tailings materials. Vegetation in both areas was sparse and inhabited by weedy plant species common associated with disturbed areas including Mexican fireweed, cheatgrass, and hairy golden aster (*Heterotheca villosa*). Soils showed no sign of hydric indicators.

3.1.1.2 RED RIVER CROSSING (ELEVATED TRESTLE)

The tailings pipeline crosses the Red River, on an elevated trestle, from 36°41'41.97"N, 105°35'45.20"W to 36°41'45.07"N, 105°35'48.90"W. From the east, this is the 4th crossing of the Red River as shown in Figure 3. The pipeline is suspended above the river by an elevated steel trestle (Photo 9 and Photo 10 of Appendix B). The river is approximately 26 feet wide at the crossing. Pipeline removal would involve removal of concrete supports located at the east and west bank of the river, within the river channel. NWI data indicates that a small amount of PFO wetland occurs approximately 20 feet to the south of the pipeline on both the east and west side of the river.

Two determination points were assessed at this location including Q-3a placed 20 feet and Q-3b placed approximately 100 feet from the edge of the ordinary high-water mark (OHWM) of the river. No wetlands were documented within the 50-foot wide pipeline buffer based on a lack of two or more wetland indicators.

Hydrophytic vegetation was present at Q-3a (primarily water birch); however, no hydrology indicators were observed and hydric soil indicators were weak with no depleted matrix. No wetland indicators were observed at Q-3b; however, hydric soil indicators were lacking at both locations. As is indicated by the NWI data, wetlands are absent beneath the pipeline trestle. The NWI data does indicate that wetland is present just inside the 50-foot buffer, along the south end. However, no wetland was documented in this area based on conditions observed at the determination points and an

assessment of onsite conditions. Only riverine would be affected within the 50-foot buffer. The river boundary indicated by NWI was found to be accurate (Figure 3).

3.1.1.3 RED RIVER CROSSING (EAST OF RANGER STATION)

The tailings pipeline crosses the Red River at approximately 36°42'6.96"N, 105°34'47.96"W east of the ranger station. From the east, this is the 3rd crossing of the Red River as shown in Figure 5. The pipeline is suspended above the river by a steel bridge (Photo 20a and 20b of Appendix B). The river is approximately 21 feet wide at the crossing. Pipeline removal would involve removal of concrete supports located at the east and west bank of the river, outside of the river channel.

NWI data indicates that no wetlands occur on either side of the riverine area. Two determination points were assessed at this location including Q-4a placed on the west side of the river and Q-4b placed on the east side of the river. Q-4b was placed in an area just outside of the apparent riparian area. No wetland indicators were observed. Vegetation was dominated by Rocky Mountain juniper. Vegetation has been removed in the 50-foot buffer on the both banks, on the south side of the pipeline. In this area, the river bank consists of river rock and concrete.

Determination point Q-4a was placed within the riparian area, at a low spot along the west bank of the river. Hydrophytic vegetation was present with water birch the dominant woody plant. However, hydric soil and hydrology indicators were not met at this location. Some redoximorphic features were observed; however, the soil matrix was not depleted enough to be considered a wetland soil.

NWI was correct in that no wetlands are present, at this crossing. The exact location of the riverine area was found to be inaccurate by approximately 40 feet. The actual boundary of the riverine area was delineated and is shown on Figure 5.

3.1.1.4 RED RIVER CROSSING (THUNDER BRIDGE)

The tailings pipeline crosses the Red River at approximately 36°41'4.29"N, 105°31'47.83"W. From the east, this is the 2nd crossing of the Red River as shown in Figure 7. This is known as the Thunder Bridge crossing. The river is approximately 25 feet wide at the crossing. The pipeline is suspended above the river by a wide steel bridge with wooden planks on top (Photo 21, 21a, and 21b of Appendix B). Pipeline removal would involve removal of the concrete supports located at the east and west bank of the river.

NWI indicates that the 50-foot pipeline corridor intersects a small amount of palustrine forested wetland and palustrine scrub-shrub wetland to the east and north of the crossing and palustrine scrub-shrub wetland to the west and south of the crossing. Two determination points were assessed at this location, one on the west side of the crossing and one on

the east side of the crossing. The exact location of the riverine area was found to be inaccurate and was delineated in the field. The area to the east of the river sloped steeply into an upland area. No hydric soil or hydrology indicators were observed at point Q-5b. However, hydrophytic vegetation was observed as evidenced by 80 percent FAC and FACW species with narrowleaf cottonwood, speckled alder and Bebb's willow (*Salix bebbiana*) the dominant woody plants in the riparian zone.

All three wetland indicators were observed at point Q-5a, on the west side of the river. Hydric soil indicators observed include 30 percent redox concentrations in pore linings in a depleted matrix (10YR 4/2). In addition, hydrology indicators were observed including saturation (6" below ground surface), algal mat, iron deposits, water-stained leaves, and drainages patterns. All dominant plant species were FAC, FACW, or OBL species with water birch and willows dominating the shrub stratum. The boundary the PSS wetland as indicated by NWI data was found to be slightly inaccurate and was delineated in the field (Figure 7), within the 50-foot pipeline buffer. The NWI data was correct in classifying the wetland to the west of the river crossing as a PSS wetland.

3.1.1.5 1ST RED RIVER CROSSING (BY COLUMBINE PARK)

The tailings pipeline crosses the Red River at approximately 36°40'53.33"N, 105°30'53.97"W by Columbine Park. From the east, this is the 1st crossing of the Red River as shown in Figure 7. The pipeline is suspended above the river by a steel bridge (Photo 22a and 22b of Appendix B). The river is approximately 26 feet wide at the crossing. Pipeline removal would involve removal of concrete supports located at the east and west bank of the river. NWI data indicates that no wetlands occur on either side of the riverine area. Two determination points were assessed at this location including Q-6a placed 5 feet and Q-6b placed approximately 15 feet from the edge of the ordinary high water mark (OHWM) of the river. Hydrophytic vegetation was present at both locations; however, hydric soil indicators were lacking at both locations. Therefore, NWI was correct in that no wetland is present, adjacent to the Red River, at this crossing. The exact location of the riverine area was found to be inaccurate by approximately 75 feet. The actual boundary of the riverine area was delineated and is shown on Figure 7. Narrowleaf cottonwood is the dominant woody species along the riparian area with sparse shrubs, grasses, and forbs in the understory. Sphagnum moss was observed in an area within 5 or 6 feet of the riverine area.

3.1.2 TERRESTRIAL AND AQUATIC WILDLIFE

During the onsite aquatic resource assessment, a cursory wildlife survey was conducted to identify any potential terrestrial or wildlife issues for the Project. This included documentation of any raptor or migratory bird nests, bat roosts, endangered species, aquatic life movements, or fish spawning areas potentially impacted by the Project. In addition, potential presence of threatened or endangered (T&E) species was assessed for the Project Area.

An official species list was provided by the USFWS New Mexico Ecological Services Field Office and indicates a total of five T&E species may be present in the area of the Project (Appendix C). T&E species on the list include Canada lynx (*Lynx Canadensis*), New Mexico meadow jumping mouse (*Zapus hudsonius luteus*), Mexican spotted owl (*Strix occidentalis lucida*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and yellow-billed cuckoo (*Coccyzus americanus*). There are no Critical Habitats within the Project Area. The New Mexico meadow jumping mouse and southwestern willow flycatcher are also designated as endangered by NMGF. All federal T&E species are considered rare for Taos county and there are no documented occurrences in or near the Project Area. Although riparian and wetland habitat is available, the closest occurrence of New Mexico jumping mouse is an individual trapped at Taos Ski Valley in 1966 (BISON-M 2017). None of these species are expected to occupy habitats affected by the Project.

Wildlife species observed during the survey included a variety of mammals and birds. Mammals in the area included big horn sheep (*Ovis Canadensis*), Abert's squirrel (*Sciurus aberti*), cottontail (*Sylvilagus* sp.), sign of elk (*Cervus elaphus*) and mule deer (*Odocoileus hemionus*), and sign of roosting bats (*Vespertilionidae*). Birds observed included a northern goshawk (*Accipiter gentilis*), western meadowlarks (*Sturnella neglecta*), spotted towhees (*Pipilo maculatus*), northern flickers (*Colaptes auratus*), bushtits (*Psaltiriparus minimus*), barn swallows (*Hirundo rustica*), violet-green swallows (*Tachycineta thalassina*), Canada geese (*Branta canadensis*), mallard ducks (*Anas platyrhynchos*), a western tanager (*Piranga ludoviciana*), yellow-rumped warblers (*Setophaga coronate*), dark-eyed juncos (*Junco hyemalis*), house finches (*Haemorhous mexicanus*), American robins (*Turdus migratorius*), American crows (*Corvus brachyrhynchos*), and turkey vultures (*Cathartes aura*). No raptor nests were observed in the area. Two unoccupied migratory bird nests were observed; a northern flicker cavity nest near the Embargo Ditch, and a cup nest built by an unknown species, beneath the bridge at the river crossing east of the Ranger Station.

Bridge crossings were checked for potential bat roost sites. With the exception of Thunder Bridge (2nd Red River Crossing) no suitable roosting habitat was observed at the bridges. The Thunder Bridge has a number of microhabitat features which could be used by bats; however, no signs of bat use were observed. An acoustic bat monitor was used during the day to check for ultrasonic vocalizations beneath the bridge. No bat vocalizations were recorded. A bat night roost was observed inside a large concrete culvert adjacent to the tailings pipeline (Photo 26 of Appendix B). This culvert crosses below Highway 38. Bat droppings were prevalent in the culvert indicating this is a commonly used roost site during the summer months. Suitable day roost or hibernacula habitat was not observed at this site. The culvert will not be removed during pipeline removal.

A number of game fish occur in the section of the Red River crossed by the pipeline. These game fish include triploid (sterile) rainbow trout (*Oncorhynchus mykiss*), raised in a hatchery downstream of the Project Area, and an introduced, wild brown trout (*Salmo trutta*) population. Stream substrate at the river crossing consisted of primarily cobbles.

Spawning areas (i.e. gravel beds) were not observed in areas where concrete structures are to be removed from the stream.

3.1.3 OTHER WETLANDS ASSESSMENT

CEMC contracted with URS Corporation (URS) (URS 2013 and 2014) to assess wetlands in locations near the pipeline removal corridor shown on Figures 1 through 9 of this report. The areas delineated by URS were outside of the scope of this ARI report. Copies of the URS reports are presented in Appendix D. Wetlands were determined to be present outside of the pipeline removal corridor, between the west and east ends of the Questa Tailings Pipeline Removal Project (Figure 1). The pipeline removal project will not impact the wetlands delineated by URS.

3.2 CULTURAL RESOURCES

CEMC contracted with Arcadis to evaluate irrigation ditches within the pipeline removal corridor as potential historic resources and to evaluate if the pipeline removal activities will impact historic ditches. Arcadis submitted two reports (Arcadis 2018a and 2018b) to the New Mexico Minerals and Mining Division (MMD) and the New Mexico Historic Preservation Division (HPD). A summary of the findings as reported in personal communications is presented in Appendix E. Future work plans submitted to MMD and EPA will propose grouting pipeline segments in place if those areas determine to present high risk of impacts to historic irrigation ditches.

4.0 CONCLUSIONS

In total, aquatic resources intersected by the Project Area include the Red River (4 crossings), 13 ephemeral streams, the Embargo ditch (aka-North Ditch), 4 unnamed man-made ditches, 7 PSS wetlands, and 2 PFF wetlands. Total acres of aquatic resources in the Project Area include 0.31 acres of perennial riverine (R3RB1H, Red River), 0.33 acres of ephemeral streams (R4SBC), 0.41 acres of unnamed man-made ditches (R4SBAX and R5UBFX), 0.03 acres of the Embargo Ditch, 0.08 acres of PSS wetland, and 0.07 acres of PFO wetland. These acreage calculations are based primarily on NWI data with slight modifications in areas of river crossing where onsite wetland assessments were completed. In total, this equates to 1.10 acres of riverine and 0.15 acres of wetlands present within the 50-foot pipeline corridor.

Temporary impacts to wetlands and waters are limited to the 4 Red River bridge crossings and include temporary impacts to 0.12 acres of riverine areas and 0.03 acres of scrub-shrub wetland. No impacts to the Embargo Ditch or any other irrigation ditches are expected to occur. Temporary impact acreage calculations are based on the onsite assessment and delineation of resource boundaries on May 9 and 10, 2018. No permanent impacts to wetlands or waters will occur.

No raptor nests were observed in the area, during the onsite assessment. Two migratory bird nests were found; however, both were unoccupied. Therefore, no direct impacts to breeding birds are expected. An onsite assessment of the bridge crossings indicated that there are no roosting bats in these areas. A bat night roost was identified in a large concrete culvert at Photo Point 26 of Appendix B. This point is where a large number of bat droppings were observed. This culvert will not be removed and because pipeline removal will be short-lived and completed during the daytime. No significant impacts to bats are expected. No fish spawning areas were observed at the pipeline crossing of the Red River. No adverse impacts to aquatic species movements are anticipated during removal of the pipeline because the project will be short-lived. In addition, the stream will not be blocked during pipeline removal and aquatic species will be able to move up and down stream.

5.0 REFERENCES

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U.S. Department of the Interior Fish and Wildlife Service (FWS). 2017. National Wetlands Inventory. Wetlands Mapper. <http://wetlands.fws.gov/>.

TABLES

TABLE 1. SOIL MAP UNITS IN THE PROJECT AREA

Soil Code	Soil Map Unit Name	Square Feet	Acres
CUB	Cumulic Haplaquolls, nearly level	232,160.24	5.33
CYB	Cumulic Haploborolls, nearly level	629,025.73	14.44
FeC	Fernando clay loam, 3 to 5 percent slopes	75,972.85	1.74
FLB	Fluvents, nearly level	38,939.44	0.89
LoB	Loveland clay loam, 0 to 3 percent slopes	22,273.01	0.51
RdG	Rock outcrop-Badland complex, very steep	505,220.28	11.60
RUG	Rock outcrop-Ustorthents complex, very steep	279,100.10	6.41
SED	Sedillo-Silva association, strongly sloping	177,506.59	4.08
SmB	Silva loam, 0 to 2 percent slopes	65,450.85	1.50
TeB	Tenorio loam, 0 to 3 percent slopes	13,264.50	0.30
TeC	Tenorio loam, 1 to 5 percent slopes	202,163.02	4.64

This summary is for the 50' Wetland Inventory Area, ending at the west end of the pipeline removal project.

TABLE 2. AQUATIC RESOURCES WITHIN THE PROJECT AREA *

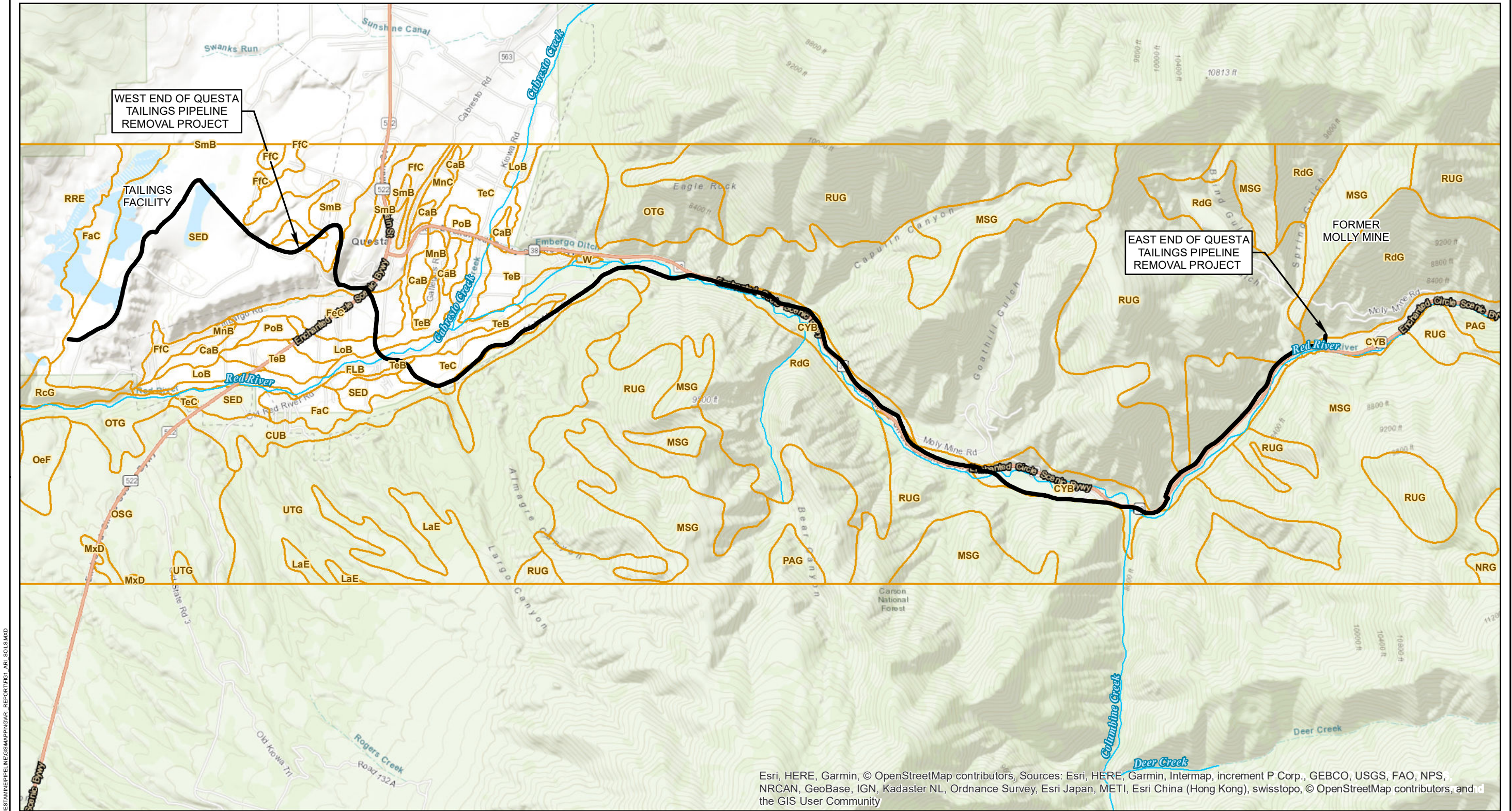
Cowardin Code	Number of Features	Wetland Type	Acres	Notes
PFO1A	2	Freshwater Forested Wetland	0.07	
PSS1C	7	Freshwater Scrub-shrub Wetland	0.08	
R3RB1H	6	Riverine - Upper Perennial Stream with Rock Bottom	0.31	Red River
R4SBAx	1	Riverine - Intermittent Stream with Streambed, Temporarily Flooded, Excavated	0.02	Ditch
R4SBC	14	Riverine - Intermittent Stream with Streambed, Seasonally Flooded	0.33	Primarily steep ephemeral streams
R4SBCx	1	Riverine - Intermittent Stream with Streambed, Temporarily Flooded, Excavated	0.03	Embargo Ditch
R4SBJ	1	Riverine - Intermittent Stream with Streambed, Intermittently Flooded	0.03	
R5UBFx	6	Riverine - Unknown Perennial, Unconsolidated Bottom, Excavated	0.39	

* Project Area = pipeline buffered by 50 feet

TABLE 3. AQUATIC RESOURCES IMPACTS SUMMARY

COWARDIN CODE	RESOURCE TYPE	ACRES	NOTES
R3RB1H	Riverine - Upper Perennial Stream with Rock Bottom	0.03	Red River crossing 1 (by Columbine Park)
R3RB1H	Riverine - Upper Perennial Stream with Rock Bottom	0.03	Red River crossing 2 (Thunder Bridge crossing)
R3RB1H	Riverine - Upper Perennial Stream with Rock Bottom	0.03	Red River Crossing 3 (east of ranger station)
R3RB1H	Riverine - Upper Perennial Stream with Rock Bottom	0.03	Red River Crossing 4 (elevated trestle bridge)
PSS1C	PSS1C - Freshwater Scrub-shrub Wetland	0.03	Red River Crossing 3 (east of ranger station)
TOTAL Riverine		0.12	
TOTAL Wetland		0.03	

FIGURES



Esri, HERE, Garmin, © OpenStreetMap contributors, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

EXPLANATION

- PIPELINE
- SOILS (NRCS 2018)

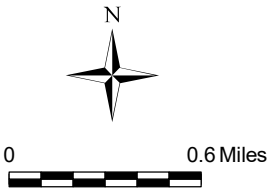


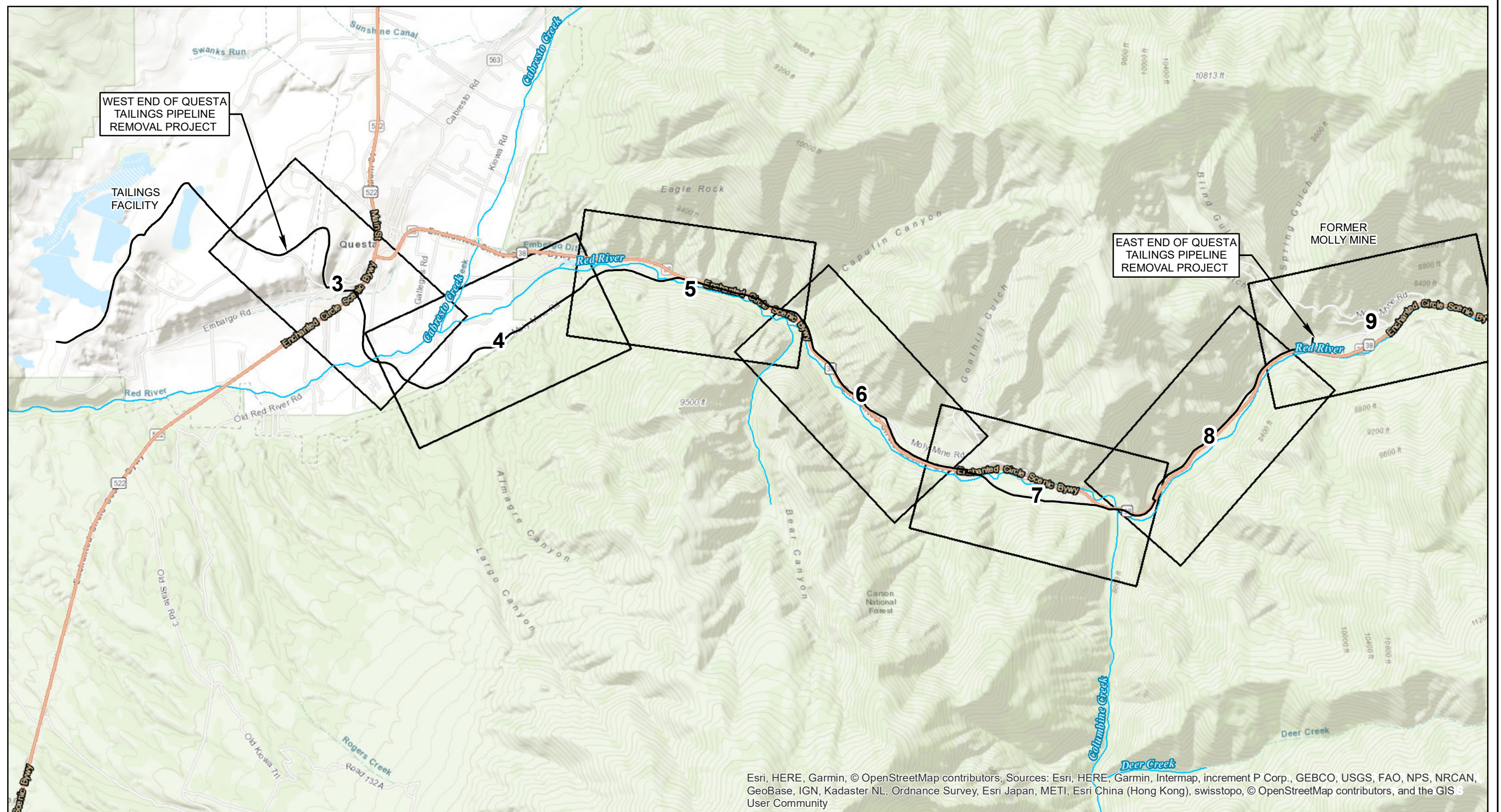
FIGURE 1

SOILS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

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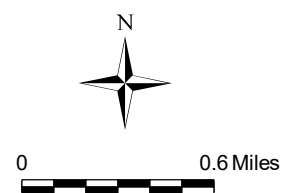
EXPLANATION

- PIPELINE
- MAP INDEX

NOTES:

1. WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

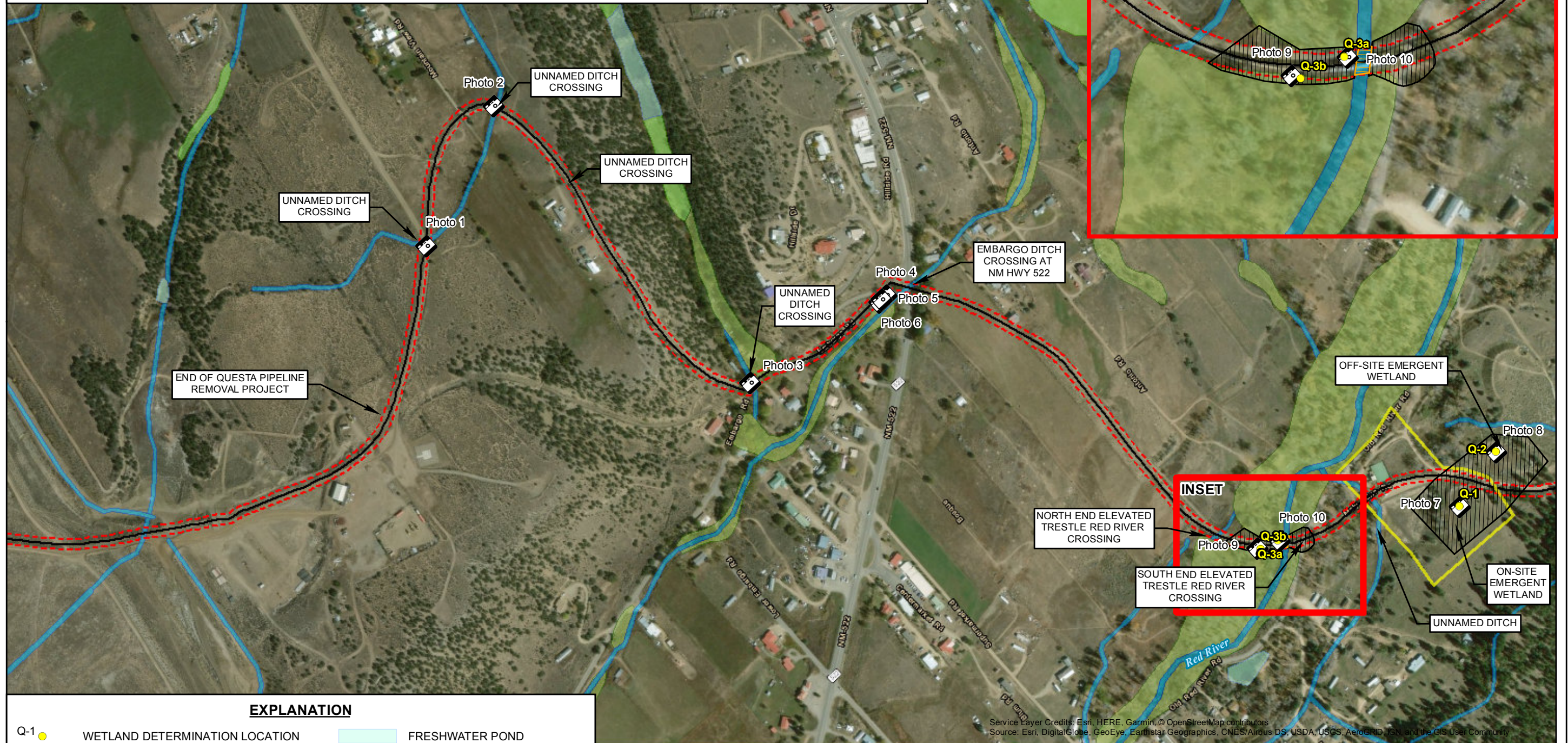
Esri, HERE, Garmin, © OpenStreetMap contributors, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community



 Tribhydro CORPORATION 52 Commerce Drive Laramie, WY 82070 www.tribhydro.com (P) 307.745.7474 (F) 307.745.7729	FIGURE 2			
	NWI WETLANDS OVERVIEW			
CEMC QUESTA MINE QUESTA, NEW MEXICO				
Drawn By: DH	Checked By: BH	Scale: 1" = 0.6 Miles	Date: 5/22/18	File: Fig2_ARI_Overview.mxd

NOTES:

1. EXCEPT WHERE NOTED AS FIELD VERIFIED, WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.



EXPLANATION

Q-1	WETLAND DETERMINATION LOCATION	FRESHWATER POND
PHOTO POINT		RIVERINE
PIPELINE		LOWER DUMP SUMP AREA
50' WETLAND INVENTORY AREA		FIELD-VERIFIED NON-WETLAND
NWI WETLANDS (2017 USFWS)		FIELD-VERIFIED RIVERINE
FRESHWATER EMERGENT WETLAND		
FRESHWATER FORESTED/SHRUB WETLAND		

MAP INDEX

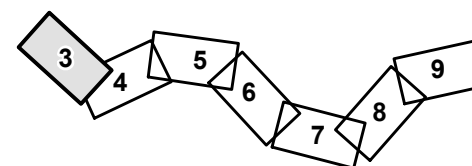


FIGURE 3

NWI AND FIELD VERIFIED WETLANDS

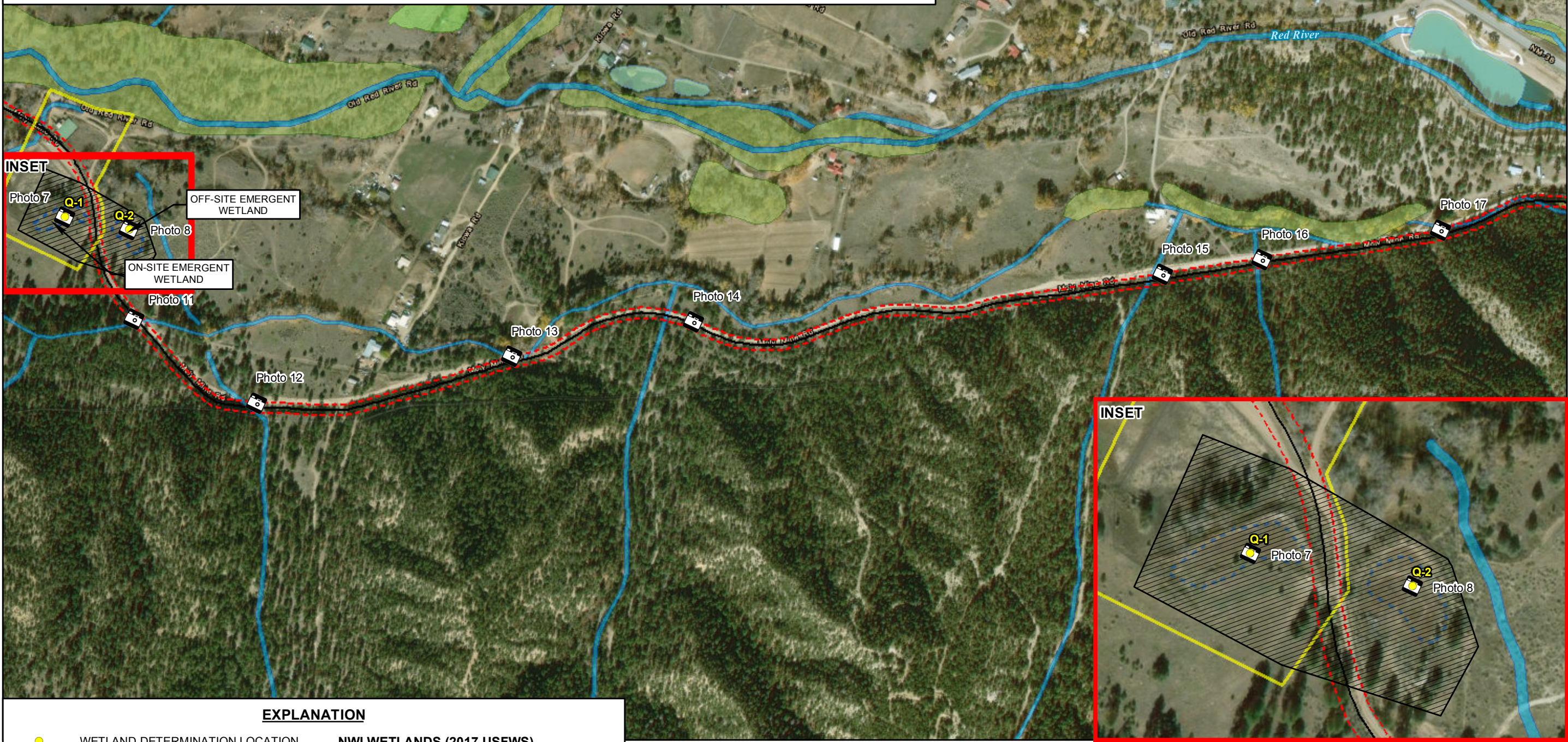
CEMC QUESTA MINE QUESTA, NEW MEXICO

Drawn By: DH | Checked By: BH | Scale: 1" = 500' | Date: 6/14/18 | File: Fig3_ARI_WetDelin.mxd

NOTES:

1. EXCEPT WHERE NOTED AS FIELD VERIFIED, WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



EXPLANATION

- | | |
|--|---|
| <ul style="list-style-type: none">● WETLAND DETERMINATION LOCATION📷 PHOTO POINT— PIPELINE- - - 50' WETLAND INVENTORY AREA■ LOWER DUMP SUMP AREA▨ FIELD-VERIFIED NON-WETLAND | NWI WETLANDS (2017 USFWS) <ul style="list-style-type: none">■ FRESHWATER EMERGENT WETLAND■ FRESHWATER FORESTED/SHRUB WETLAND■ FRESHWATER POND■ RIVERINE- - - INTERMITTENT WATER LEVEL (FIELD VERIFIED NON-WETLAND) |
|--|---|

MAP INDEX

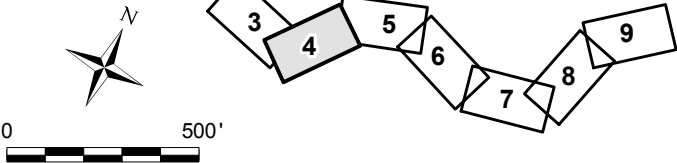


FIGURE 4

NWI AND FIELD VERIFIED WETLANDS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

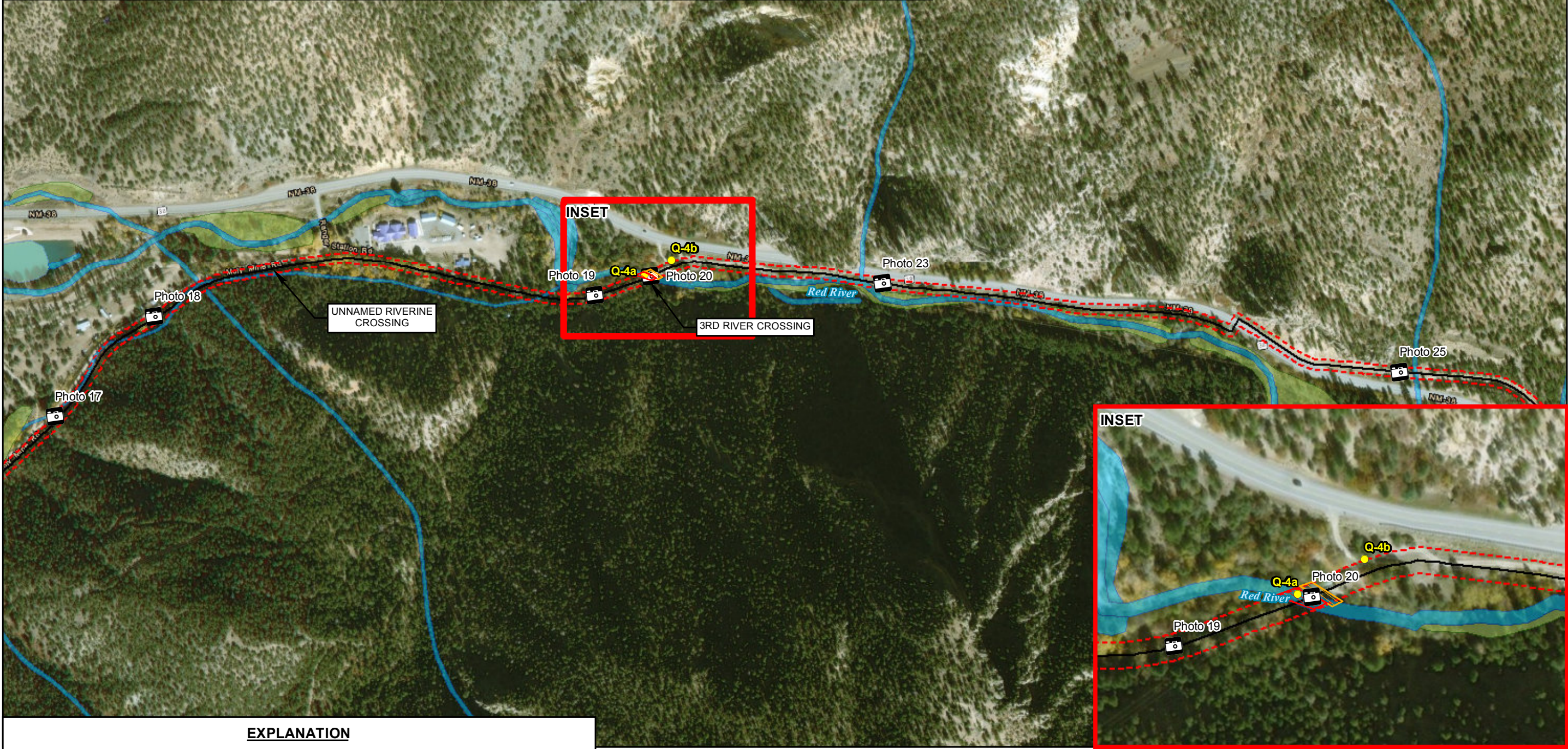
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M:\CHEVRON\CEMC_MINE\QUESTA\MINE\PIPELINE\GIS\MAPPING\ARI_REPORT\FIG4_ARI_WETDELIN.MXD

NOTES:

1. EXCEPT WHERE NOTED AS FIELD VERIFIED, WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



EXPLANATION

- | | |
|-----------------------------------|-----------------------------|
| WETLAND DETERMINATION LOCATION | FRESHWATER POND |
| PHOTO POINT | RIVERINE |
| PIPELINE | FIELD-VERIFIED RIVERINE |
| 50' WETLAND INVENTORY AREA | FIELD-VERIFIED NON-RIVERINE |
| NWI WETLANDS (2017 USFWS) | |
| FRESHWATER FORESTED/SHRUB WETLAND | |

MAP INDEX

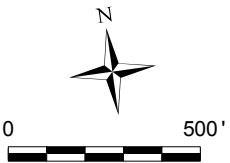
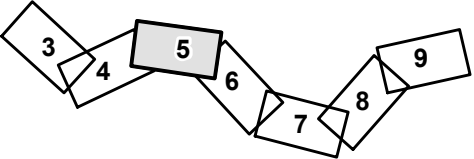


FIGURE 5

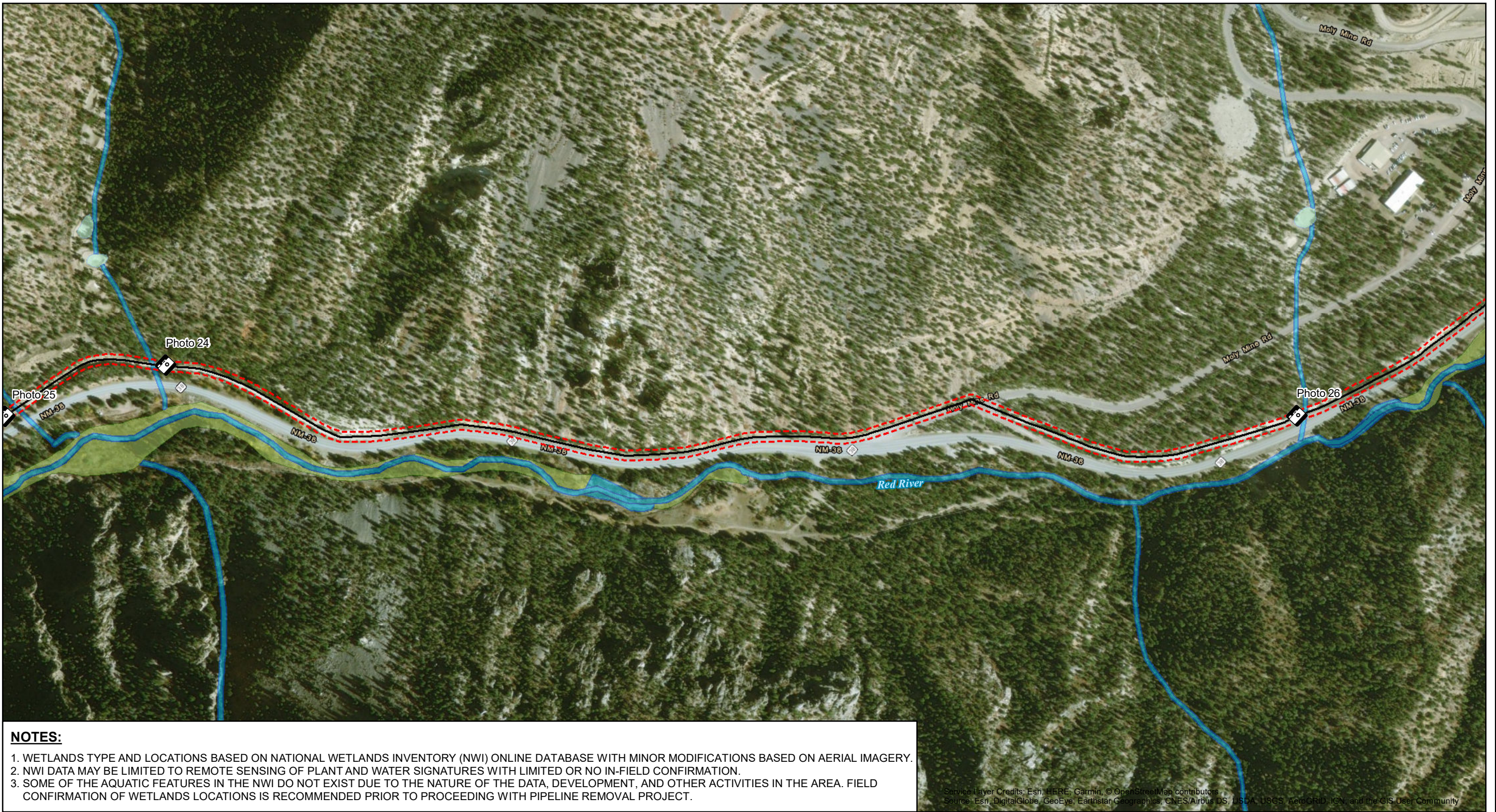
NWI AND FIELD VERIFIED WETLANDS

**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH Checked By: BH Scale: 1" = 500' Date: 6/14/18 File: Fig5_ARI_WetDelin.mxd

M:\CHEVRON\CEMC_MINE\QUESTA\MINE\PIPELINE\GIS\MAPPING\ARI_REPORT\FIG5_ARI_WETDELIN.MXD

\\TRHYDRO\COM\CLIENTS\CHEVRON\CEMC_Mining\QUESTA MINE\PIPELINE\GIS\MAPPING\ARI_WETDELIN.MXD



NOTES:

1. WETLANDS TYPE AND LOCATIONS BASED ON NATIONAL WETLANDS INVENTORY (NWI) ONLINE DATABASE WITH MINOR MODIFICATIONS BASED ON AERIAL IMAGERY.
2. NWI DATA MAY BE LIMITED TO REMOTE SENSING OF PLANT AND WATER SIGNATURES WITH LIMITED OR NO IN-FIELD CONFIRMATION.
3. SOME OF THE AQUATIC FEATURES IN THE NWI DO NOT EXIST DUE TO THE NATURE OF THE DATA, DEVELOPMENT, AND OTHER ACTIVITIES IN THE AREA. FIELD CONFIRMATION OF WETLANDS LOCATIONS IS RECOMMENDED PRIOR TO PROCEEDING WITH PIPELINE REMOVAL PROJECT.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

EXPLANATION

- PHOTO POINT
- PIPELINE
- 50' WETLAND INVENTORY AREA
- NWI WETLANDS (2017 USFWS)
- FRESHWATER FORESTED/SHRUB WETLAND
- FRESHWATER POND
- RIVERINE

MAP INDEX

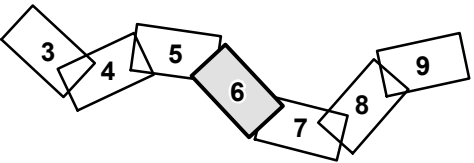


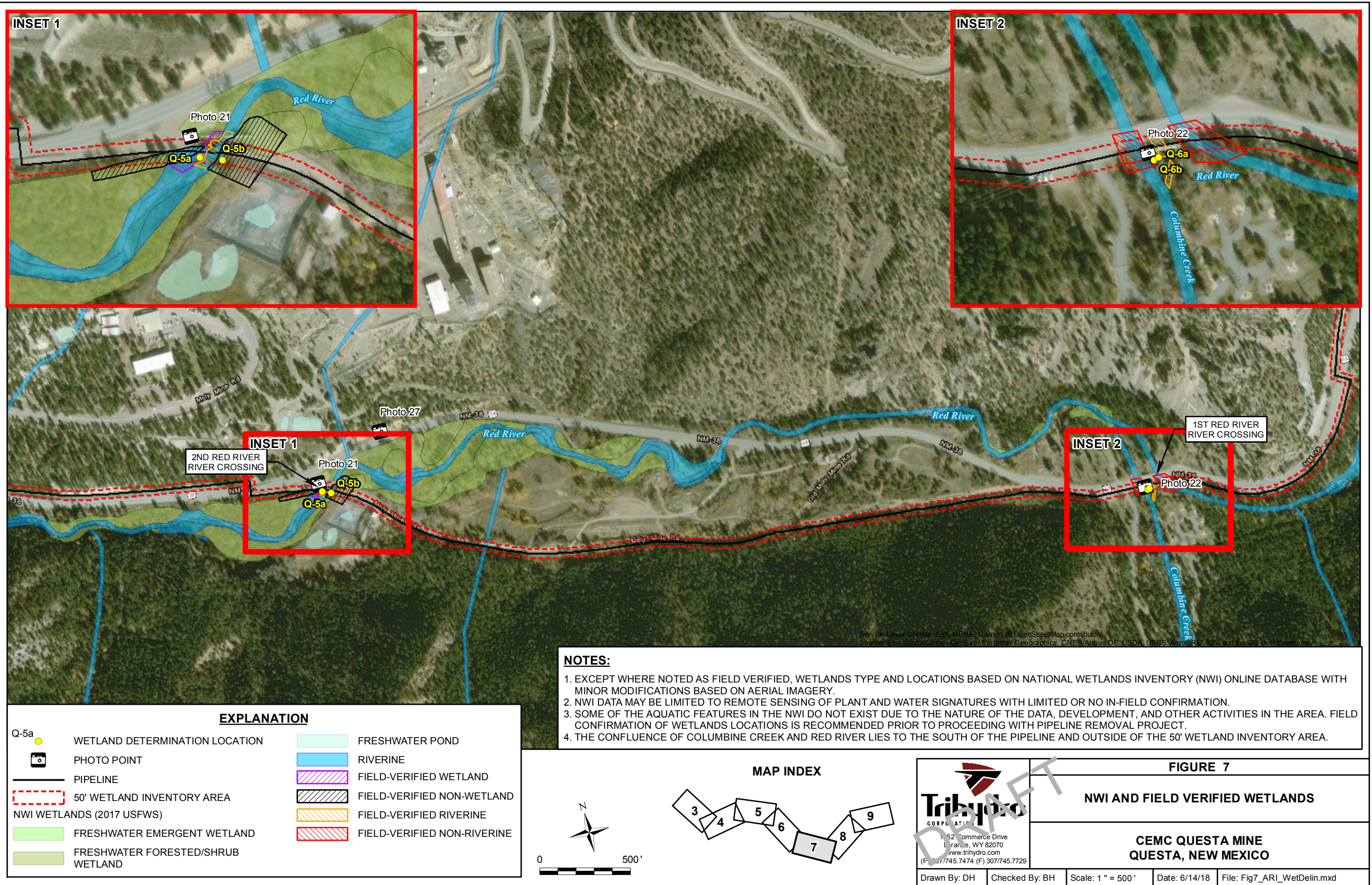
FIGURE 6

NWI WETLANDS

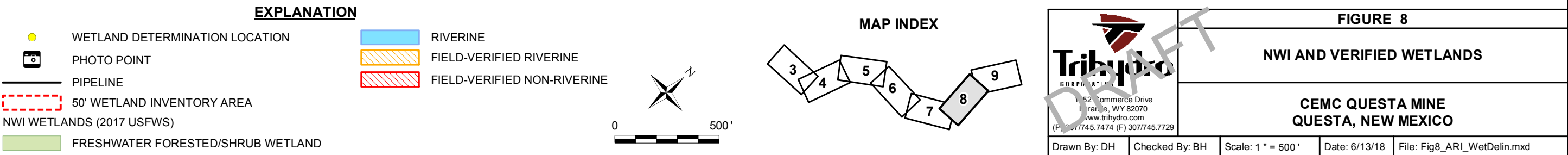
**CEMC QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH | Checked By: BH | Scale: 1" = 500' | Date: 6/1/18 | File: Fig6_ARI_WetDelin.mxd

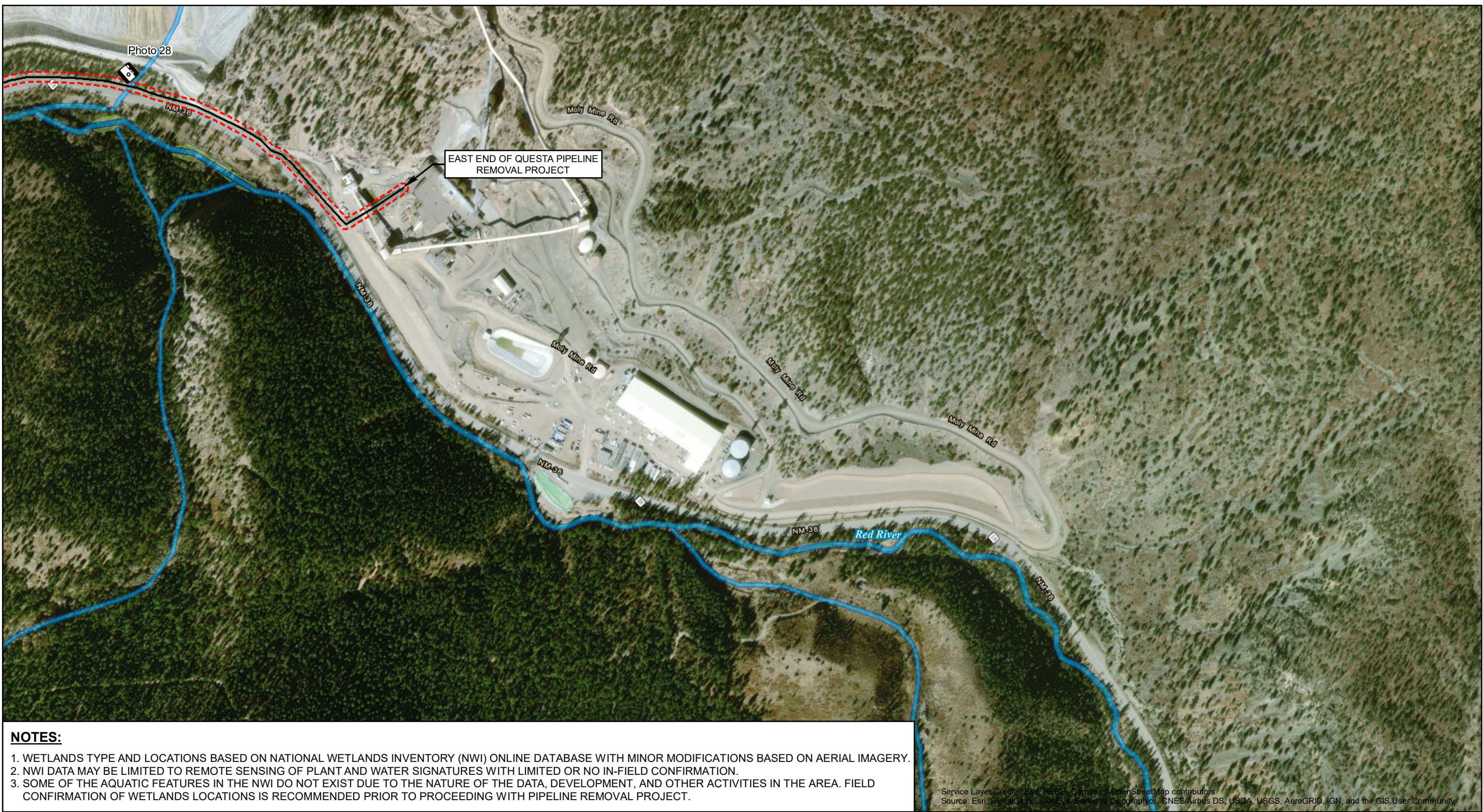
M:\CHEVRON\CEMC_Mining\QUESTA\MINE\PIPELINE\GIS\MAPPING\ARI_REPORT\FIG7_ARI_WetDelin.mxd



M:\CHEVRON\CEMC_Mining\QUESTA\MINE\PIPELINE\GIS\MAPPING\ARI_REPORT\Fig8_ARI_WetDelin.mxd



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EXPLANATION		MAP INDEX		FIGURE 9	
PHOTO POINT	RIVERINE			NWI WETLANDS	
50' WETLAND INVENTORY AREA				CEMC QUESTA MINE QUESTA, NEW MEXICO	
NWI WETLANDS (2017 USFWS)					
FRESHWATER FORESTED/SHRUB WETLAND				Drawn By: DH	
FRESHWATER POND				Checked By: BH	
				Scale: 1" = 500'	
				Date: 6/1/18	
				File: Fig9_ARI_WetDelin.mxd	

APPENDIX A

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/9/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-1
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): man-made depression Local relief (concave, convex, none): concave Slope (%): 0-1
 Subregion (LRR): LRRE Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Tenorio loam, 1 to 5 % slopes NWI classification: PEM1Ch

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation yes, Soil yes, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Disturbed area, previously created holding pond for tailings		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>1</u> x 3 = <u>3</u> FACU species <u>1</u> x 4 = <u>4</u> UPL species _____ x 5 = _____ Column Totals: <u>2</u> (A) <u>7</u> (B) Prevalence Index = B/A = <u>3.5</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	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) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Bromus tectorum</u>	<u>7</u>	<u>yes</u>	<u>NL</u>	
2. <u>Heterotheca villosa</u>	<u>8</u>	<u>yes</u>	<u>NL</u>	
3. <u>Bassia scoparia</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
4. <u>Crytantha cinera</u>	<u>1</u>	<u>no</u>	<u>NL</u>	
5. <u>Verbascum thaspus</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>81</u>				
Remarks:				

SOIL

Sampling Point: Q-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) | |
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

³Indicators 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:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except |
| <input type="checkbox"/> High Water Table (A2) | MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area has been constructed with berms around outside and is a depression. No evidence of water ponding on aerial imagery.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailing Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-2
 Investigator(s): Erik Schmude Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): man-made depression Local relief (concave, convex, none): concave Slope (%): 0-1
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Tenorio loam, 1 to 5% slopes NWI classification: PEM1Ch

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation yes, Soil yes, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Disturbed area, previously created holding pond for tailings		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>10</u> x 3 = <u>30</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>10</u> (A) <u>30</u> (B) Prevalence Index = B/A = <u>3.00</u>
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Polygonum ramosissimum</u> <u>10</u> <u>yes</u> <u>FAC</u> 2. <u>Bromus tectorum</u> <u>4</u> <u>yes</u> <u>NL</u> 3. <u>Heterotheca villosa</u> <u>5</u> <u>yes</u> <u>NL</u> 4. <u>Antennaria sp.</u> <u>1</u> <u>no</u> <u>NL</u> 5. <u>Descurainia pinnata</u> <u>1</u> <u>no</u> <u>NL</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>79</u>				
Remarks: Mostly non-listed species that are indicative of upland areas				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) ___ 5 - Wetland Non-Vascular Plants ¹ ___ 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 <input checked="" type="checkbox"/>

SOIL

Sampling Point: Q-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR 3/2	100					silty clay loam	
5-16	7.5YR 3/2	100					sandy clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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:

Disturbed soil mostly consistent throughout

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area has been constructed with berms around outside and is a depression. No evidence of water ponding on aerial imagery.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: _____ Sampling Point: Q-3a
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%):¹ _____
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Fluvents nearly level NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil yes, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: determination point placed below pipeline tressle, adjacent to river. Soil in this area has been disturbed and the ground surface has been elevated a couple feet above the river level and likely does not get inundated with water long enough to develop hydric soil.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Populus angustifolia</u>	<u>5</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Betula occidentalis</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	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 _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. <u>Betula occidentalis</u> <u>60</u> <u>yes</u> <u>FACW</u> 2. <u>Salix exigua</u> <u>20</u> <u>yes</u> <u>FACW</u> 3. <u>Alnus incana</u> <u>5</u> <u>no</u> <u>FACW</u> 4. _____ 5. _____				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Agrostis stolonifera</u> <u>30</u> <u>yes</u> <u>FAC</u> 2. <u>Poa pratensis</u> <u>10</u> <u>yes</u> <u>FAC</u> 3. <u>Equisetum arvense</u> <u>3</u> <u>no</u> <u>FAC</u> 4. <u>Teraxacum officianle</u> <u>2</u> <u>no</u> <u>NL</u> 5. <u>Carex praeagrailis</u> <u>10</u> <u>yes</u> <u>FACW</u> 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ % Bare Ground in Herb Stratum <u>45</u> _____ = Total Cover				
55 = Total Cover Remarks: vegetation is strongly hydrophytic, and typical riparian vegetation for the area				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 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) 5 - Wetland Non-Vascular Plants ¹ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: Q-3a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	48	10YR 5/8	2	C	M	loam	
0-6	10YR 4/4	48	10YR 5/8	2	C	M	sandy loam	
6-10	10YR 4/3	98	10YR 5/8	2	C	M	sandy	course sand
10-15	10YR 5/3	80	7.5YR 5/8	20	C	M	sandy	fine sand
15-18	10YR 5/3	80	7.5YR 5/8	20	C	M	sandy gavel	small river cobbles below 15"

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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:

Redoximorphic features weak above 6 inches, but strong below 6 inches. Soil did not show sign of reduction indicating hydric condition

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No sign of recent water flow over this area. No drift deposits or sediment.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: _____ Sampling Point: Q-3b
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave Slope (%): 3
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Fluvents nearly level NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation yes, Soil yes, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: determination point placed just west of pipeline tressle. Vegetation appears to have been maintained at some point.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus angustifolia</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Juniperus scoparium</u>	<u>20</u>	<u>yes</u>	<u>NL</u>	Total Number of Dominant Species Across All Strata: <u>8</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
4. _____	_____	_____	_____	
<u>15</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Prevalence Index worksheet:
1. <u>Ceanothus fendleri</u>	<u>20</u>	<u>yes</u>	<u>NL</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Rosa woodsii</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	OBL species _____ x 1 = _____
3. <u>Juniperus scoparium</u>	<u>10</u>	<u>yes</u>	<u>NL</u>	FACW species <u>10</u> x 2 = <u>20</u>
4. _____	_____	_____	_____	FAC species <u>10</u> x 3 = <u>30</u>
5. _____	_____	_____	_____	FACU species <u>34</u> x 4 = <u>136</u>
<u>85</u> = Total Cover				UPL species _____ x 5 = _____
Herb Stratum (Plot size: <u>5'</u>)				Column Totals: <u>54</u> (A) <u>186</u> (B)
1. <u>Agrostis stolonifera</u>	<u>8</u>	<u>yes</u>	<u>FAC</u>	Prevalence Index = B/A = <u>3.44</u>
2. <u>Bromus tectorum</u>	<u>4</u>	<u>yes</u>	<u>NL</u>	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) _____ 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. <u>Muhlenbergia wrightii</u>	<u>3</u>	<u>yes</u>	<u>FACU</u>	
4. <u>Helianthus annuus</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
5. <u>Rumex crispus</u>	<u>1</u>	<u>no</u>	<u>FAC</u>	
6. <u>Poa pratensis</u>	<u>1</u>	<u>no</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>55</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>45</u> = Total Cover				
% Bare Ground in Herb Stratum	<u>45</u>			
Remarks: vegetation is strongly hydrophytic, and typical riparian vegetation for the area				

SOIL

Sampling Point: Q-3b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	7.5YR 3/2	100					clay loam	some small gravel and sand
5-7	7.5YR 3/2	95	7.5YR 5/8	5	C	M	clay loam	some small gravel and sand
7-16	7.5YR 3/3	90	10YR 5/8	10	C	M	sandy loam	some gravel and small cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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:

Redox concentrations below 5", but soil matrix has not been depleted indicating upland soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-4a
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 1-3
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Rock outcrop-badland complex, very steep NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation yes, Soil yes, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
1. <u>Betula occidentalis</u>	<u>95</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>95</u> = Total Cover Sapling/Shrub Stratum (Plot size: <u>15'</u>)				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 _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Betula occidentalis</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Abies concolor</u>	<u>2</u>	<u>no</u>	<u>NL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
<u>42</u> = Total Cover Herb Stratum (Plot size: <u>5'</u>)				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) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Bromus inermis</u>	<u>25</u>	<u>yes</u>	<u>UPL</u>	
2. <u>Agrostis stolonifera</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
3. <u>Geum macrophyllum</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
4. <u>Equisetum arvense</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
5. <u>Maianthemum racemosum</u>	<u>2</u>	<u>no</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>33</u> = Total Cover Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
<u>67</u> = Total Cover % Bare Ground in Herb Stratum				
Remarks:				
Betula occidentalis dominated riparian area				

SOIL

Sampling Point: Q-4a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	7.5YR 4/3	92	7.5YR 5/8	8	C	M	sandy	
7-10	7.5YR 3/2	45	7.5YR 5/8	5	C	M	sandy loam	
7-10	7.5YR 4/3	45	7.5YR 5/8	10	C	M	sand	coarser than 0.7 layer
10-16	7.5YR 4/3	98	7.5YR 5/8	2	C	M	gravelly sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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:

Some redox is present, however, the matrix has no been sufficiently depleted to be considered hydric

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input checked="" type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes ☒ No _____ Depth (inches): 13
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

point is located near river and sign of water flowing and inundating this area is present.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-4b
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Convex Slope (%): 3³
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Rock outcrop-badland complex, very steep NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: point placed just to west of pipeline tressle. Area has been disturbed and appears vegetation has been maintained in past.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Juniperus scoparium</u>	<u>80</u>	<u>yes</u>	<u>NL</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	<u>80</u> = Total Cover	_____	_____	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 _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	_____	_____	_____	
1. <u>Atriplex canescens</u>	<u>10</u>	<u>yes</u>	<u>NL</u>	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) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>5'</u>)	<u>10</u> = Total Cover	_____	_____	
1. <u>Bromus inermis</u>	<u>80</u>	<u>yes</u>	<u>UPL</u>	
2. <u>Antennaria sp.</u>	<u>5</u>	<u>no</u>	<u>NL</u>	
3. <u>Bassia scoparia</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: <u>30'</u>)	<u>90</u> = Total Cover	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>10</u>	_____ = Total Cover	_____	_____	
Remarks: Upland species dominate area on hillslope				

SOIL

Sampling Point: Q-4b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/3	100					clay loam	many fibrous roots
3-16	2.5Y 5/3	100					clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present?	Yes _____ No _____	Depth (inches): _____
Water Table Present?	Yes _____ No _____	Depth (inches): _____
Saturation Present?	Yes _____ No _____	Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-5a
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%):¹ _____
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Cumulic haploborolls, nearly level NWI classification: R3USC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks: point placed in adjacent area to river, which is only slightly elevated from the river. Water clearly flows here, on occasion.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Betula occidentalis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Salix monticola</u>	<u>15</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Salix exigua</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 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) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Agrostis stolonifera</u>	<u>70</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Equisetum arvense</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
3. <u>Barbarea vulgaris</u>	<u>4</u>	<u>no</u>	<u>FAC</u>	
4. <u>Mentha arvensis</u>	<u>2</u>	<u>no</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
% Bare Ground in Herb Stratum <u>14</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks:				

SOIL

Sampling Point: Q-5a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 4/3	90	5YR 5/8	10	C	M/PL	sandy loam	
3-5	10YR 4/2	70	5YR 5/8	30	C	M/PL	silty clay loam	
5-6	10YR 4/2	70	5YR 5/8	30	C	PL	silty clay	
6-9	7.5YR 4/3	60	5YR 5/8	40	C	M/PL	loamy sand	small gravel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: River rock
Depth (inches): 9

Hydric Soil Present? Yes ☐ No ☐

Remarks:

Strong redox concentrations in the matrix and pore linings below 3 inches. 3' to 6" depleted matrix = hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input checked="" type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☒ No ☐ Depth (inches): 6
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

iron deposits/sheen observed in standing puddles near point. Many drainage patters in the area.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-5b
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 4-5
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Cumulic haploborolls, nearly level NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus angustifolia</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80</u> (A/B)
4. _____	<u>50</u>	_____	_____	Prevalence Index worksheet:
= Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				Total % Cover of: _____ Multiply by: _____
1. <u>Alnus incana</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>	OBL species _____ x 1 = _____
2. <u>Salix bebbiana</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	FACW species _____ x 2 = _____
3. <u>Rosa woodsii</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	<u>80</u>	_____	_____	UPL species _____ x 5 = _____
= Total Cover				Column Totals: _____ (A) _____ (B)
Herb Stratum (Plot size: <u>5'</u>)				Prevalence Index = B/A = _____
1. <u>Agrostis stolonifera</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 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) _____ 5 - Wetland Non-Vascular Plants ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Bromus inermis</u>	<u>40</u>	<u>yes</u>	<u>UPL</u>	
3. <u>Taraxacum officianale</u>	<u>5</u>	<u>no</u>	<u>NL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>15</u>				
Remarks:				

SOIL

Sampling Point: Q-5b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					clay loam	
4-6	10YR 7/6	100					loam	
6-16	10YR 4/3	99	10YR 5/6	1	C	M	sandy loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____

Water Table Present? Yes _____ No ☒ Depth (inches): _____

Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-6a
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): concave Slope (%): 1-2
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Cumulic haploborolls, nearly level NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation yes, Soil yes, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks: Point placed a few feet from river edge in area of fairly sparse vegetation, with sphagnum moss the dominant herbaceous species.		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus angustifolia</u>	<u>40</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
4. _____	<u>40</u>	= Total Cover		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 _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Salix amygdaloides</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Betula occidentalis</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
3. <u>Acer glabrum</u>	<u>2</u>	<u>no</u>	<u>FACU</u>	
4. <u>Quercus gambelii</u>	<u>2</u>	<u>no</u>	<u>NL</u>	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) ___ 5 - Wetland Non-Vascular Plants ¹ ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____	<u>24</u>	= Total Cover		
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Agrostis stolonifera</u>	<u>5</u>	<u>no</u>	<u>FAC</u>	
2. <u>Sphagnum spp.</u>	<u>40</u>	<u>yes</u>	<u>NL</u>	
3. <u>Trifolium repens</u>	<u>3</u>	<u>no</u>	<u>FAC</u>	
4. <u>Descuriana sp.</u>	<u>1</u>	<u>no</u>	<u>NL</u>	
5. <u>Achillea millefolium</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
6. <u>Bromus inermis</u>	<u>2</u>	<u>no</u>	<u>UPL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>48</u>	<u>52</u>	= Total Cover		
Remarks: moss spp. primary vegetation in the herbaceous layer				

SOIL

Sampling Point: Q-6a

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 6/4	85	7.5YR 6/8	15	C	PL	loamy sand	
3-5	10YR 3/2	85	7.5YR 6/8	15	C	PL	clay	some organics (dark leaves)
5-7	7.5YR 4/3	55	7.5YR 6/8	45	C	M	loamy sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: River rock
Depth (inches): 7

Hydric Soil Present? Yes ☐ No ☒

Remarks:

Redox features present, but no depletion on the matrix observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input checked="" type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):
Water Table Present? Yes ☐ No ☐ Depth (inches): unknown
Saturation Present? Yes ☐ No ☐ Depth (inches): unknown
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Could not dig below 7" due to river rock. This point appears to be occasionally inundated with flowing water from stream.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Questa Tailings Pipeline Removal Project City/County: Questa/Taos Sampling Date: 5/10/2018
 Applicant/Owner: Chevron State: NM Sampling Point: Q-6b
 Investigator(s): Erik Schmude, Tony Kupilik Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 4
 Subregion (LRR): LRR E Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Cumulic haploborolls, nearly level NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Point placed on terrace elevated slightly above river level, but in riparian vegetation		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus angustifolia</u>	<u>65</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Abies concolor</u>	<u>10</u>	<u>no</u>	<u>NL</u>	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. <u>Juniperus scoparium</u>	<u>5</u>	<u>no</u>	<u>NL</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
4. _____	<u>80</u>			
<u>80</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Abies concolor</u>	<u>2</u>	<u>no</u>	<u>NL</u>	
2. <u>Salix exigua</u>	<u>2</u>	<u>no</u>	<u>FACW</u>	OBL species _____ x 1 = _____
3. <u>Holodiscus discolor</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	FACW species <u>67</u> x 2 = <u>134</u>
4. <u>Acer glabrum</u>	<u>5</u>	<u>yes</u>	<u>FACU</u>	FAC species _____ x 3 = _____
5. <u>Rosa woodsii</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	FACU species <u>11</u> x 4 = <u>44</u>
<u>15</u> = Total Cover				UPL species <u>1</u> x 5 = <u>5</u>
				Column Totals: <u>79</u> (A) <u>183</u> (B)
				Prevalence Index = B/A = <u>2.32</u>
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Clematis occidentalis</u>	<u>5</u>	<u>yes</u>	<u>NL</u>	
2. <u>Bromus inermis</u>	<u>1</u>	<u>no</u>	<u>UPL</u>	2 - Dominance Test is >50%
3. <u>Acnatherum robustum</u>	<u>1</u>	<u>no</u>	<u>NL</u>	<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. _____				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____				5 - Wetland Non-Vascular Plants ¹
6. _____				Problematic Hydrophytic Vegetation ¹ (Explain)
7. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8. _____				
9. _____				
10. _____				
11. _____				
<u>7</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____				
2. _____				
<u>93</u> = Total Cover				
% Bare Ground in Herb Stratum <u>93</u>				
Remarks: Populus angustifolia dominated riparian area				

SOIL

Sampling Point: Q-6b

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/2	100					loam	mostly organic
2-12	10YR 4/2	98	7.5YR 6/8	2	C	M	sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: roots
Depth (inches): 12"

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (2 or more required)

- | |
|---|
| <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) |

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):
Water Table Present? Yes ☐ No ☒ Depth (inches):
Saturation Present? Yes ☐ No ☒ Depth (inches):
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

PHOTOGRAPH LOG

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 1.



Photo 2.



Photo 3.



Photo 4.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 5.



Photo 6. Flicker Nest



Photo 7.



Photo 8.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 9.



Photo 10. 4th Red River Crossing



Photo 11.



Photo 12.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 13.



Photo 14.



Photo 15.



Photo 16.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 17.



Photo 18.



Photo 19.



Photo 20a. 3rd Red River Crossing

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 20b. 3rd Red River Crossing



Photo 21. 2nd Red River Crossing (Thunder Bridge)



Photo 21a. 2nd Red River Crossing (Thunder Bridge)



Photo 21b. 2nd Red River Crossing (Thunder Bridge)

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 22a. 1st Red River Crossing



Photo 22b. 1st Red River Crossing



Photo 23a.



Photo 23b.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 24.



Photo 25.



Photo 26. Culvert Crossing – Bat Roost



Photo 27.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo 28a. Culverts Under Road



Photo 28b.



Photo 29.



Photo Q-1.

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-2



Photo Q-3a. Non-hydric Soil



Photo Q-3a.



Photo Q-3b. General Area

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-3b. Toward River



Photo Q-3b Under Trestle – Away From River



Photo Q-4. Non-hydric Soil (Chroma greater than 2)



Photo Q-4a

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-4b.



Photo Q-5a. Iron Deposits



Photo Q-5a. PSS Wetland



Photo Q-5a

PHOTO LOG – AQUATIC RESOURCES REPORT, QUESTA TAILINGS PIPELINE REMOVAL PROJECT



Photo Q-5b. Non-hydric Soil (High Chroma)



Photo Q-5b.



Photo Q-6a.



Photo Q-6b

APPENDIX C

USFWS OFFICIAL SPECIES LIST



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna Road Ne

Albuquerque, NM 87113-1001

Phone: (505) 346-2525 Fax: (505) 346-2542

<http://www.fws.gov/southwest/es/NewMexico/>

http://www.fws.gov/southwest/es/ES_Lists_Main2.html

In Reply Refer To:

April 06, 2018

Consultation Code: 02ENNM00-2018-SLI-0619

Event Code: 02ENNM00-2018-E-01355

Project Name: Questa Tailings Pipeline Removal

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design.

FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

If you determine that your proposed action may affect federally-listed species, consultation with the Service will be necessary. Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at www.fws.gov/endangered/esa-library/index.html#consultations.

The scope of federally listed species compliance not only includes direct effects, but also any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects that may occur in the action area. The action area includes all areas to be affected, not merely the immediate area involved in the action. Large projects may have effects outside the immediate area to species not listed here that should be addressed. If your action area has suitable habitat for any of the attached species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts.

Candidate Species and Other Sensitive Species

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico state agencies. These lists, along with species information, can be found at the following websites:

Biota Information System of New Mexico (BISON-M): www.bison-m.org

New Mexico State Forestry. The New Mexico Endangered Plant Program:
www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: nmrareplants.unm.edu

Natural Heritage New Mexico, online species database: nhnm.unm.edu

WETLANDS AND FLOODPLAINS

Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, www.fws.gov/wetlands/Data/Mapper.html integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

MIGRATORY BIRDS

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Bird Office. To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern at website www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction.

BALD AND GOLDEN EAGLES

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at www.fws.gov/midwest/eagle/guidelines/bgepa.html.

On our web site www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm, we have included conservation measures that can minimize impacts to federally listed and other sensitive species. These include measures for communication towers, power line safety for raptors, road and highway improvements, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

We also suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State fish, wildlife, and plants.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please call 505-346-2525 or email nmesfo@fws.gov and reference your Service Consultation Tracking Number.

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:

New Mexico Ecological Services Field Office
2105 Osuna Road Ne
Albuquerque, NM 87113-1001
(505) 346-2525

Project Summary

Consultation Code: 02ENNM00-2018-SLI-0619

Event Code: 02ENNM00-2018-E-01355

Project Name: Questa Tailings Pipeline Removal

Project Type: ** OTHER **

Project Description: The proposed project entails demolition of a decommissioned mill tailings pipeline and ancillary structures associated with the Questa Mine. The tailings pipeline was constructed to transport mill tailings, as a slurry, from the mine to the Tailings Facility. The tailings pipeline begins approximately 7 miles east of the Village of Questa, NM, at the Questa Mine, parallels Highway 38, down the Red River Canyon, through the Village of Questa, NM, terminating at the Tailings Facility. The majority of the tailings pipeline was constructed on property owned by Chevron (CEMC) and the USFS (see Figure 10). A portion of the pipeline crosses private property. The pipeline crosses Red River, Columbine Creek (a tributary to the Red River), Embargo Ditch, and unnamed ditches (see Table 1). Structures associated with the pipeline will also be removed, including the Lower Dump Sump and support buildings, three old bridges, and two elevated trestles. The pipeline and associated above ground structures will be removed from the Questa Mine to the Tailings Facility.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.69288813708551N105.49927318090664W>



Counties: Taos, NM

Endangered Species Act Species

There is a total of 5 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. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, 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.

Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3652	Threatened
New Mexico Meadow Jumping Mouse <i>Zapus hudsonius luteus</i> There is final critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions: <ul style="list-style-type: none">▪ If project affects dense herbaceous riparian vegetation along waterways (stream, seep, canal/ditch). Species profile: https://ecos.fws.gov/ecp/species/7965	Endangered

Birds

NAME	STATUS
Mexican Spotted Owl <i>Strix occidentalis lucida</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8196	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

APPENDIX D

URS QUESTA REMOVAL ACTION WETLAND ASSESSMENT REPORT

R E P O R T

QUESTA REMOVAL ACTION WETLAND ASSESSMENT REPORT

REVISION 1

Prepared for
Chevron Mining Inc.
Questa, New Mexico

June 28, 2013

URS

URS Corporation
8181 E. Tufts Avenue
Denver, CO 80237

Project No. 22242831

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ACRONYMS

APD	Approved Jurisdictional Determination
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMI	Chevron Mining, Inc.
CWA	Clean Water Act
EDC	Eastern Diversion Channel
E.O.	Executive Order
EPA	Environmental Protection Agency (United States)
ERL	Eagle Rock Lake
GPS	Global positioning system
HTS	Historic Tailing Spills
mg/kg	Milligram per kilogram
N	North
NRCS	Natural Resource Conservation Service
OW	Other water
PCB	Polychlorinated biphenyls
PEM	Palustrine Emergent
PFO	Palustrine Forested
PJD	Preliminary Jurisdictional Determination
PSS	Palustrine Scrub-shrub
R	Range
RA	Removal Action
RI/FS	Remedial Investigation/Feasibility Study
SOW	Statement of Work
T	Township
URS	URS Corporation
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
W	West
WUS	Waters of the United States

The Chevron Questa Mine, which is owned and operated by Chevron Mining Inc. (CMI), includes an active underground molybdenum mine, a milling facility, a historic open pit, and waste rock piles. The Questa Mine encompasses approximately three square miles of land located 3.5 miles east of the village of Questa, New Mexico. The Questa Mine property also includes tailing disposal impoundments (Tailing Facility) covering approximately 2 square miles of land located west of the village of Questa.

The Questa Mine site was the focus of the CMI Remedial Investigation/Feasibility Study (RI/FS) (URS 2009a, URS 2009b). The Removal Action (RA) was required by the United States Environmental Protection Agency (EPA) Administrative Settlement Agreement and Order on Consent for Removal Actions, CERCLA Docket No. 06-09-12 and its appended Statement of Work (SOW) (EPA 2012). The RA to be conducted includes:

- Installation of inlet storm water controls at Eagle Rock Lake, removal of sediment from the lake, and on-site disposal of excavated material
- Removal of polychlorinated biphenyl (PCB) –contaminated soil in the Mill Area and off-site disposal of the evacuated soil
- Installation of pipe to convey unused irrigation water in the Eastern Diversion Channel (EDC) to prevent infiltration through historic buried tailing
- Removal of historic tailing spill deposits along the Red River riparian area and on-site disposal at the Tailing Facility.

The RA work to be accomplished in compliance with the SOW has the potential to impact wetlands and surface water features. This Wetland Assessment Report discusses the regulatory framework, substantive requirements, methodology, and results of wetland delineations within areas subject to RA. The report does not include the analysis of impacts and mitigation strategies to avoid and minimize any impacts to wetlands, or to compensate for wetland impacts that cannot be minimized by other methods. Project Specific Technical Memorandum addressing impacts and mitigation will be submitted under separate cover. This report was prepared by URS Corporation (URS) on behalf of Chevron Environmental Management Company (CEMC).

1.1 REMOVAL ACTION

Three RA areas were considered in this report. These include the Historic Tailing Spills (HTS) Deposits (Tailing Spill Deposits), Eagle Rock Lake, and Eastern Diversion Channel. The RA areas are located near the Village of Questa, Taos County, New Mexico (Appendix A, Figure 1) and can be found on the Questa United States Geological Survey (USGS) 7.5-minute topographic quadrangle map (USGS 1963) within Township (T) 29 North (N), Range (R) 12 West (W), Sections 25 and 36 (Eastern Diversion Channel), and T 28 N, R 13 W (Eagle Rock Lake and HTS). Eagle Rock Lake is located along Highway 38, east of Questa. The Eastern Diversion Channel is located within the Questa Mine Tailing Facility, adjacent to the west of Questa.

The tailing spill deposit sites occur at various locations along the tailing pipeline between the mill and the Tailing Facility. The tailing pipeline is 9 miles long, but most of the sites are

located in the first 2.5 miles below the mill. The senior wetland delineator was part of the field team that initially identified the HTS sites in 2002, and subsequently re-visited the HTS sites in 2010, 2011, 2012, and 2013. Based on these previous field visits, only one of the HTS sites was considered to have a potential to be a wetland, Tailing Spill Deposit 1, and was included in the wetland delineation field work. All of the other sites are dominated by upland vegetation and have no evidence of wetland hydrology and were not re-visited for the wetland delineation.

Descriptions of activities related to the RA are provided in the respective RA work plans - Historic Tailing Spills RA Work Plan (URS 2012), Eagle Rock Lake RA Work Plan (Arcadis 2012), and Eastern Diversion Channel RA Work Plan (AECOM 2012). At this time, proposed remedial action activities within the Eastern Diversion Channel have not been approved by the EPA.

1.2 REGULATORY AUTHORITY

The following provides a summary of applicable regulatory requirements pertinent to wetlands.

1.2.1 Regulatory Requirements

Office of Solid Waste Management Response Directive 9280.0-02 (August 1985)

Under the Office of Solid Waste Management Response Directive 9280.0-02, the Environmental Protection Agency (EPA) must meet the substantive requirements of Executive Order (E.O.) 11988 (Floodplain Management Executive Order) and E.O. 11990 (Executive Order for the Protection of Wetlands). The EPA is directed to avoid the short- and long-term destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands when there is a practicable alternative within CERCLA sites.

Clean Water Act

Section 404 of the Clean Water Act (CWA), implemented by the U.S. Army Corps of Engineers (USACE) and EPA, regulates discharges of dredged or fill material into waters of the United States (WUS), including special aquatic sites such as wetlands. Federal regulations promulgated under Section 404 define wetlands as “areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” (33 Code of Federal Regulations [CFR] 328.3(b).) Section 404 also protects a variety of surface waters such as lakes, ponds, streams, and rivers.

In general, response actions selected under CERCLA that involve the discharge of dredge or fill material into waters of the United States or associated areas under CWA Section 404 jurisdiction must meet the substantive requirements of Section 404. RAs must seek to avoid or minimize impacts to WUS whenever practicable, as long as the alternative does not have other significant adverse environmental consequences. When unavoidable impacts to WUS occur, these impacts must be mitigated.

New Mexico State Regulations and Guidance

The State of New Mexico does not have state regulations equivalent to the Section 404 permit program operated by the USACE; however, the State reviews 404 projects under CWA Section 401 state certification provisions. An individual state Water Quality Certification is required for discharges to all intermittent, perennial, and wetland surface waters. This program is administered by the Surface Water Quality Bureau of the New Mexico Environment Department.

2.1 SITE DESCRIPTION

The Tailing Spill Deposit 1 and Eagle Rock Lake RA areas are located in the Volcanic Mid-Elevation Forests of New Mexico (Griffith et al. 2006). The Volcanic Mid-Elevation Forest ecoregion is a region of mostly Pliocene basaltic lavas with distinct cones of Pliocene composite volcanoes in an area of low mountain ridges, slopes, and outwash fans. Dominant vegetative communities in the region are ponderosa pine (*Pinus ponderosa*) forests with an understory of shrubs and a sparsely vegetated herbaceous stratum.

The Eastern Diversion Channel is located within the Taos Plateau ecoregion (Griffith et al. 2006) and is characterized by a rolling to level plateau with volcanic cones. A dominant feature of the Taos Plateau is the Rio Grande River Gorge and its steep side canyons. The geology of the area comprises Quaternary eolian deposits, colluvium, piedmont and fan alluvium, block-rubble colluvium, and Tertiary (mostly Pliocene) basalt and volcanic rocks. Big sagebrush (*Artemisia tridentata*) is the dominant vegetative community in the ecoregion.

2.1.1 Soils

Soils within the RA areas comprise two dominant types. Sedillo-Silva association, strongly sloping, are loamy-skeletal or fine, mixed, mesic Ustollic Haplargids, consisting of loams, with rooting depths of more than 60 inches. The parent material comprises alluvium derived from igneous and metamorphic rock and eolian material (NRCS 2012). These are the dominant soils within the Eastern Diversion Channel. Cumulic Haplaquolls, nearly level, are the taxonomic type whose parent material is alluvium derived from igneous and metamorphic rock. This soil is classified as predominantly hydric and is found around Eagle Rock Lake and Tailing Spill Deposit 1.

2.1.2 Vegetation

General vegetation communities in the study areas include ponderosa pine forest, mixed conifer/riparian forest, sagebrush shrub steppe, wetlands/riparian, and disturbed/barren.

Ponderosa pine forest vegetative community occurs at the elevation of Eagle Rock Lake and is dominated by mature ponderosa pine in open stands with an understory of shrubs and herbaceous cover. Typical shrub cover varies from 10 to 40 percent, with approximately 25 percent herbaceous cover. Dominant understory species include smooth brome (*Bromus inermis*), Apache plume (*Fallugia paradoxa*), Rocky Mountain juniper (*Juniperus scopularum*), silvery lupine (*Lupinus argenteus*), Gambel oak (*Quercus gambellii*), skunkbush (*Rhus aromatica*), and Wood's rose (*Rosa woodsii*).

Mixed conifer/riparian is the dominant vegetative community around Tailing Spill Deposit 1. Engelmann spruce (*Picea engelmannii*) and narrowleaf cottonwood (*Salix angustifolia*) comprise the dominant tree species. Understory shrub species include Rocky Mountain juniper, smooth brome, Wood's rose, mountain snowberry (*Symphoricarpos oreophilis*), Rocky Mountain maple (*Acer glabrum*), field sagewort (*Artemisia campestris*), fringed sage (*Artemisia frigida*), rubber rabbitbrush (*Ericameria nauseosus*), ninebark (*Physocarpus monogynus*), and intermediate wheatgrass (*Thinopyrum intermedium*). Approximately half of the soil cover comprises small rocks and litter.

Sagebrush (*Artemisia tridentata*) **shrub steppe** communities are dominated by sagebrush and rabbitbrush (*Ericameria nauseosa*), with a sparse understory of grasses and caespitose forbs. These communities may also include pinyon/juniper associations. Portions of the soil surface may be covered with cryptogamic crusts. This is the predominant vegetation community on the slopes of the EDC.

Wetland/riparian areas are found within all the RA areas. This vegetative community occurs as two distinct classifications: emergent or marsh dominated, and tree dominated. Emergent wetlands are dominated by sedges (*Carex* spp.), rushes (*Juncus* spp.) and other hydrophytic grasses and forbs. These areas may also support a small percentage of shrub cover. Tree dominated wetlands are dominated by woody species providing about 50 to 75 percent cover, primarily of narrowleaf cottonwood, speckled alder (*Alnus incana*), river birch (*Betula occidentalis*), and sandbar willow (*Salix exigua*). Wetland/riparian areas are discussed in more detail in Section 4, Results.

Barren/disturbed areas are the result of human-made disturbance and include two-track and paved roads, buildings, and other structures. These areas may support some weedy or landscape vegetation.

2.1.3 Hydrology

The RA areas are located within Hydrologic Unit Code 13020101, the Upper Rio Grande Watershed, that begins at the Colorado/New Mexico border and drains an area of approximately 3,220 square miles (USGS 2010), including 94.79 percent of Taos County (USDA 2008). The largest waterbody associated with the RA areas is the Red River, a perennial stream that originates in the Sangre de Cristo Mountains and forms a confluence with the Rio Grande River southwest of Questa.

2.1.4 Wildlife

Dominant life forms in the region include large and small mammals and birds. Wildlife or their signs observed within the RA areas included North American beaver (*Castor canadensis*), elk (*Cervus elaphus*), belted kingfisher (*Ceryle alcyon*), pocket gopher (*Geomys bursarius*), junco (*Junco hyemalis*), mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), and bushtit (*Psaltirparus minimus*).

Study areas were determined by overlaying the Project drawings over aerial photographs and applying a buffer. Buffer widths varied depending on topography. Field maps were created with ESRI® ArcGIS® software (1 inch equals 200 feet). Pre-field research included the review of National Wetland Inventory maps (USFWS 2012), topographic maps (USGS 1963), and previous environmental reports from the area.

URS ecologists Jeffrey Dawson and Susan Hall walked the RA areas between October 15 and 18, 2012, to delineate wetlands and surface water features. Ambient temperatures averaged between approximately 45 and 70 degrees Fahrenheit. Weather was sunny throughout the delineation period.

Wetland delineations were conducted using the Routine Determination protocol discussed in the *Corps of Engineers Wetland Delineation Manual Technical Report 4-87-1* (Environmental Laboratory 1987) and two supplemental delineation manuals. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts* (Environmental Laboratory 2010) was used within the ponderosa forest and mixed conifer/riparian upland vegetative communities. The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 2008) was used in the sagebrush shrub steppe upland vegetative community. Delineation field methods included evaluation of dominant plant species and percent cover, digging of a soil pit to observe soil characteristics, and observations of hydrological indicators in the soil pit and on the surface. Standard data sheets were completed for each wetland and a nearby paired upland observation point.

Wetlands were identified in the field as areas having positive evidence of three environmental parameters: hydric soils, wetland hydrology, and greater than five percent hydrophytic vegetation. Some wetlands can be difficult to identify because wetland indicators are missing due to natural processes or recent disturbances. The supplemental delineation manuals include procedures to follow for wetlands that naturally lack indicators and for atypical situations where indicators are absent due to disturbance. Wetland data were recorded on USACE approved individual wetland data forms. Features delineated but subsequently excluded as wetlands were also recorded on data forms.

During field surveys, wetland vegetation was classified using the Cowardin classification system (Cowardin, et al. 1979), a USACE accepted vegetation classification system. Wetlands within the RA areas were classified as Palustrine Emergent (PEM), Palustrine Scrub-shrub (PSS), or Palustrine Forested (PFO), or combinations of these classifications.

PEM wetlands are those aquatic features dominated by herbaceous emergent plants. Plant species commonly found in PEM wetlands in northern New Mexico include cattails (*Typha angustifolia*), sedges (*Carex* spp.), and rushes (*Juncus* spp.). PSS wetlands are those aquatic features dominated by shrubs under 20 feet tall or with trunks or stems less than 3 inches in diameter. Common PSS plant species found in this region include willow (*Salix* spp.), alder (*Alnus* spp.) and small cottonwoods (*Populus* spp.). PFO wetlands are dominated by trees greater than 20 feet high with stems greater than 3 inches in diameter. PFO wetland species composition commonly includes cottonwood, larger willows, and river birch (*Betula occidentalis*). Combinations of these communities may also be present in a wetland.

Surface water features (i.e., streams and ponds) were identified by the presence of a defined bed and bank, evidence of an ordinary high water or bankfull indicator, and less than 50 percent vegetative cover within the bed. Information recorded for each surface water feature included depth and width of the average ordinary high water mark, average bankfull depth, bank slope, substrate composition, source of hydrology, dominant vegetation, other vegetation, percent overstory, and any wildlife or their signs observed.

The boundaries of wetlands and surface water features were recorded using a Trimble® sub-meter hand-held global positioning system (GPS) and photographs were taken of each feature. Unique identifiers were assigned to each feature delineated based on location. For example, the first wetland identified within the Eastern Diversion Channel was assigned a unique identifier of EDC-1.

A total of eight aquatic features encompassing approximately 5.9 acres occur within the RA areas. Characteristics of wetland and surface water features are included in Tables 1 and 2 respectively, and are briefly discussed according to RA area below. RA area figures and associated photographs are included in Appendices A and B, respectively. Additional information regarding each wetland and surface water feature is included in the individual data forms in Appendix C.

Table 1
Delineated Wetlands in the Removal Action Areas

Type/ Classification	Wetland Identifier	Location (Latitude, Longitude)*	Size (acres)*	Proximity	Figure Number	Photograph Number
PEM wetland	HTS-2	36.5949/- 105.4958	0.04	Adjacent to Red River	1	2
PEM wetland	ERL-PEM	36.7032/- 105.5730	0.24	Abuts OW-ERL-1	2	4
PFO wetland	ERL-PFO	36.7035/- 105.5727	0.31	Abuts OW-ERL-3	2	6, 7, 8
PEM wetland	EDC-1/ EDC-2	36.7086/- 105.6096, 36.7077/- 105.6099	2.71	Isolated	3	13, 14, 15
PEM/PSS wetland	EDC-3	36.6993/- 105.6195	<0.01	Isolated	4	21
Total Wetlands			3.3			

* All measurements are approximate.

EDC = Eastern Diversion Channel

ERL = Eagle Rock Lake

HTS = Historic Tailing Spills

OW = Other Water

PEM = Palustrine Emergent (Cowardin et al. 1979)

PSS = Palustrine Scrub-Shrub (Cowardin et al. 1979)

PFO = Palustrine Forested (Cowardin et al. 1979)

Table 2
Delineated Surface Water Features in the Removal Action Areas

Type/ Classification	Surface Water Identifier	Location (Latitude, Longitude)*	Size (lf / acres)*	Flow Frequency	Flows to	Figure Number	Photograph Number
Impoundment	OW-ERL-1	36.7034/- 105.5742	2.42	Perennial	Red River	2	3, 4, 5
Perennial Stream	OW-ERL-2	36.7030/- 105.5751	759 / 0.18	Perennial	Rio Grande	2	9, 10, 11, 12
Ditch	OW-ERL-3	36.7035/- 105.5725	468 / 0.04	Perennial	Eagle Rock Lake	2	7, 8
Total Surface Water Features			1,227 / 2.64				

* All measurements are approximate.

ERL = Eagle Rock Lake

lf = linear feet

OW = Other Water

4.1 TAILING SPILL DEPOSITS

One wetland, identified as HTS-2 and totaling 0.04 acre was delineated within Tailing Spill Deposit 1. Wetland HTS-2 is a perched depression that formed between Highway 38 and a two-track road within the Red River riparian buffer. Although much of the feature is barren, a fringe of PEM vegetation is present around the edges of the feature, and dominated by Arctic rush (*Juncus arcticus*).

A second area within Tailing Deposit 1 that supports hydrophytic vegetation was also investigated as a wetland; however, it was determined that this feature did not meet the USACE wetland criteria for hydric soils and lacked evidence of hydrology. The soil pit for this feature (HTS-1) is included on Appendix A, Figure 2 and described in an Individual Wetland Data Form included in Appendix C.

No surface water features were delineated within the Tailing Spill Deposits area. Native soils occurring within the Tailing Spill Deposits area are not listed as hydric by the Natural Resource Conservation Service (NRCS 2012).

4.2 EAGLE ROCK LAKE

Eagle Rock Lake was originally a borrow pit for aggregate during the 1950's, used for construction of New Mexico State Highway 38 (Arcadis 2012). Subsequently, the depression was filled with water and a small park was established. The lake is currently maintained by the U.S. Forest Service and is used for recreation including fishing. Water is supplied from the Red River and discharge of water back to the Red River is controlled by outlet culverts.

Two wetlands totaling 0.55 acre and three surface water features totaling approximately 2.64 acres occur within the Eagle Rock Lake RA area. Eagle Rock Lake (OW-ERL-1) and its diversion channel (OW-ERL-3) support both PEM and PFO wetlands in distinct communities. A PEM wetland (ERL-PEM) (0.24 acre), dominated by beaked sedge (*Carex utriculuta*) and aquatic sedge (*Carex aquatilis*) occurs at the eastern edge of the lake. A discontinuous PEM fringe abuts the remainder of the shoreline and comprises redtop (*Agrostis gigantea*), creeping bentgrass (*Agrostis stolonifera*), showy milkweed (*Asclepias speciosa*), Nebraska sedge (*Carex nebrascensis*), orchardgrass (*Dactylis glomerata*), quackgrass (*Elymus repens*), fringed willow-herb (*Epilobium ciliatum*), knotted rush (*Juncus nodosus*), bog orchis (*Limnorchis* sp.), and narrowleaf cattail (*Typha angustifolia*). Small populations of sandbar willow and park willow (*Salix monticola*) are scattered throughout the feature.

Mature PFO wetlands are generally uncommon in western states, but can be found in the mountains of New Mexico, where they abut perennial streams in the lower reaches of canyons. The PFO wetland ERL-PFO primarily occurs along the Eagle Rock Lake diversion channel (OW-ERL-3) and encompasses 0.31 acre within the Eagle Rock Lake RA area. The wetland is characterized by a mature stand of narrowleaf cottonwood and speckled alder and this mature overstory cover comprises approximately 35 percent of the canopy. Understory shrubs make up approximately 67 percent of cover, and are dominated by narrowleaf cottonwood, speckled alder, sandbar willow and river birch. The herbaceous understory is sparse, evident only in forest openings and edges. Herbaceous species observed include redtop, fringed willow-herb, wintercress (*Barbarea vulgaris*), and reed canarygrass (*Phalaris arundinacea*).

Surface water features delineated within the Eagle Rock Lake RA area include Eagle Rock Lake (OW-ERL-1), the Red River (OW-ERL-2), and the Eagle Rock Lake diversion channel (OW-ERL-3). Eagle Rock Lake is a 2.5 acre manmade pond that is almost completely sustained by a diversion of the Red River, returning flows to the river via a restricted outlet. Water clarity in the lake is poor due to dissolved solids. The lake is used primarily for recreation, although it provides wildlife habitat, including habitat for North American beaver, which maintain a lodge on the north side of the lake. Recent conversations with the USFS indicate that the beaver habitat is undesirable in its current location and has been detrimental to mature vegetation around the lake. The USFS plans to remove the beaver lodge during some planned future work in the Red River stream bed. The Eagle Rock Lake diversion channel (OW-ERL-3) is a straight reach supporting a mature riparian buffer for approximately half its length. Where the channel grade reaches lake elevation, the channel supports a large PFO wetland (ERL-PFO described earlier).

The Red River is a perennial tributary of the Red River. Outside the Eagle Rock Lake RA area, the river maintains a low gradient and slow flows, and supports a mature woody overstory along shallow banks. Riffle-pool-run complexes occur regularly within the river in these reaches. Within the RA area, channel banks are severely downcut with evidence of erosion, flow velocity increases, and the banks are predominantly mature open ponderosa pine with no riparian buffer until the river reaches the western end of the lake. The Red River is not anticipated to be impacted by RA activities.

Native soils occurring within Eagle Rock Lake are listed as hydric by the Natural Resource Conservation Service (NRCS 2012). Soils exhibited a typical matrix hue of 10YR and high oxidized redox concentrations were the most common sign of hydric conditions. Evidence of gleying was only observed in small concentrations.

4.3 EASTERN DIVERSION CHANNEL

The Eastern Diversion channel is part of the tailing facility and was constructed in 1975 (AECOM 2012). Modifications were made to the channel over the years; most notably the channel embankments were excavated and used as borrow material for dam raises, which resulted in widening of the channel bottom in certain areas. Historically, the diversion channel was dry except after substantial rainfall, and was observed to be dry during the Remedial Investigations (RI) (2002 - 2004) (URS, 2009a). Beginning in 2004, water began to accumulate in the channel due to flood irrigation practices in the fields east of the tailing facility, and from discharge of unused irrigation water from the Cabresto Creek Ditch Lateral No. 4. The channel typically begins to fill with water in May and water has been observed in the channel throughout the year.

The largest wetland occurs within the Eastern Diversion Channel (EDC-1/EDC-2), totaling 2.71 acres. EDC-1 and EDC-2 were initially separated based on the presence of water and density of vegetation, but were subsequently determined to be part of the same feature. Data were collected to record changes in vegetation composition and other indicators. The wetland covers most of the channel bed. Dominant vegetation includes foxtail barley (*Hordeum jubatum*), narrowleaf cattail, and willow dock (*Rumex salicifolius*), with sandbar willow lining the edges of the channel bed. This feature supports three species of freshwater snail including disk gyro (*Gyraulus circumstriatus*), marsh pond snail (*Lymnaea elodes*), and pygmy fossaria (*Lymnaea parva*). Wetland vegetation is also present within the Eastern Diversion Channel upstream of the delineated area and within a side channel that is separated by a berm.

Inundation, which occurs from the ponding of surface runoff and shallower grades, was observed in EDC-1 but was absent in EDC-2 at the time of the survey. It is likely that EDC-2 is inundated less frequently and/or for shorter periods than EDC-1.

The area immediately down-channel from EDC-1 and EDC-2 was investigated for wetland characteristics. This area is physically separated by a mine road and culverts, which are perched on the upslope side and partially filled with sediment. Although hydrology was observed in two of the five years for which aerial photography is available, this area did not meet the criteria to be delineated as a wetland. The soil pit for this feature (EDC-6) is included on Appendix A, Figure 5 and described in an Individual Wetland Data Form included in Appendix C.

To the south of EDC-6, the bottom of the EDC is much narrower and has little apparent gradient until it drops off steeply. Small to medium sized cottonwoods are common along the bottom of the channel in the level areas but no wetlands or stream channels are present. The steep portion of the channel is mostly rock.

A PEM/PSS wetland (EDC-3) totaling less than 0.01 acre was delineated near the southern end of the Eastern Diversion Channel, on a slope above the lower part the steep portion of the channel. EDC-3 is supported by a small spring that outflows to the Eastern Diversion Channel and wets a small portion of the channel bottom. The channel does not have an ordinary high water mark and the wetland is isolated. Two additional spring-supported wetlands were also observed along the slope of this area outside of the Study Area (Appendix A, Figure 6). The three spring-supported wetlands are located within a grove of cottonwoods and other woody plants.

Hydric soils were not observed in any soil pits within the Eastern Diversion Channel.

4.4 WETLAND FUNCTIONAL ASSESSMENT

A wetland functional assessment was not conducted because the areas delineated were either not natural wetlands or did not meet the size requirements of the New Mexico Rapid Assessment Method (Muldavin et al. 2011).

4.5 JURISDICTION

The decision in *Rapanos v. United States*, [547 U.S. 715](#) (2006), and the post-*Rapanos* guidance issued by the USACE and the EPA (2007), addressed the geographic extent of USACE jurisdiction. Under the guidance, traditional navigable waters, perennial or relatively permanent surface water features forming a confluence with a WUS, or features formed as a result of diversions from WUS and returning to WUS would also be considered jurisdictional by the USACE, as would wetlands abutting jurisdictional waterways. Under *Rapanos*, intermittent or ephemeral waterways, their abutting or adjacent wetlands, or wetlands adjacent to WUS are subject to additional review to determine if the feature has a “significant nexus” to a WUS.

As stated previously, CERCLA actions must meet the substantive requirements of other federal environmental laws. As such, Eagle Rock Lake (OW-ERL-1), the Red River (OW-ERL-2), the Eagle Rock Lake diversion channel (OW-ERL-3), and their abutting wetlands (ERL-PEM and ERL-PFO) would be considered USACE jurisdictional aquatic features. Conversely, upland ditches that are excavated wholly in and draining only uplands and without relatively permanent flow are excluded from jurisdiction under the *Rapanos* decision and guidance. Wetland

EDC-1/EDC-2 falls under this category and would not be considered jurisdictional by the USACE. Determining the jurisdiction of wetland HTS-2 based on the USACE criteria is not conclusive; while it is located adjacent to the Red River it is perched above it and has no surface connection to the river.

The USACE defines isolated waters as those that are not traditionally navigable or interstate, including their tributaries, and abutting and adjacent wetlands. Isolated wetlands and surface water features were removed from USACE jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision (*SWANCC v. USACE*, 531 U.S. 159 [2001]). Therefore, wetland EDC-3 would be excluded from USACE jurisdiction.

Please refer to the Project Specific Technical Memorandum prepared to address the impact analysis for each individual removal action project and submitted under separate cover.

Please refer to the Project Specific Technical Memorandum prepared to address mitigation for each individual removal action project and submitted under separate cover.

Five wetlands and three surface water features totaling approximately 3.3 acres were identified and delineated within the RA areas. Of these, approximately 2.99 acres comprise PEM wetland, with approximately 0.31 acre of PFO wetlands present. A total of approximately 2.6 acres, or 1,227 linear feet of surface water features occur within the Eagle Rock Lake RA area. Surface water features include Eagle Rock Lake, the Red River, and the Eagle Rock Lake diversion channel.

CERCLA actions must meet the substantive requirements of other federal environmental laws, including Section 404 regulations. The determination of jurisdiction is a required element of the Section 404 program. Of the aquatic features, Eagle Rock Lake, the Red River, the Eagle Rock Lake diversion channel, and their abutting wetlands would be considered USACE jurisdictional aquatic features. Conversely, wetland EDC-1/EDC-2 would not be considered jurisdictional by the USACE due to its landscape position, construction, and lack of connectivity. EDC-3 would not be considered jurisdictional because it is an isolated feature. Determining the jurisdiction of wetland HTS-2 based on the USACE criteria is not conclusive.

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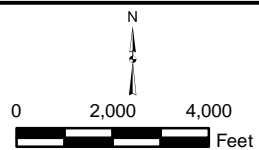
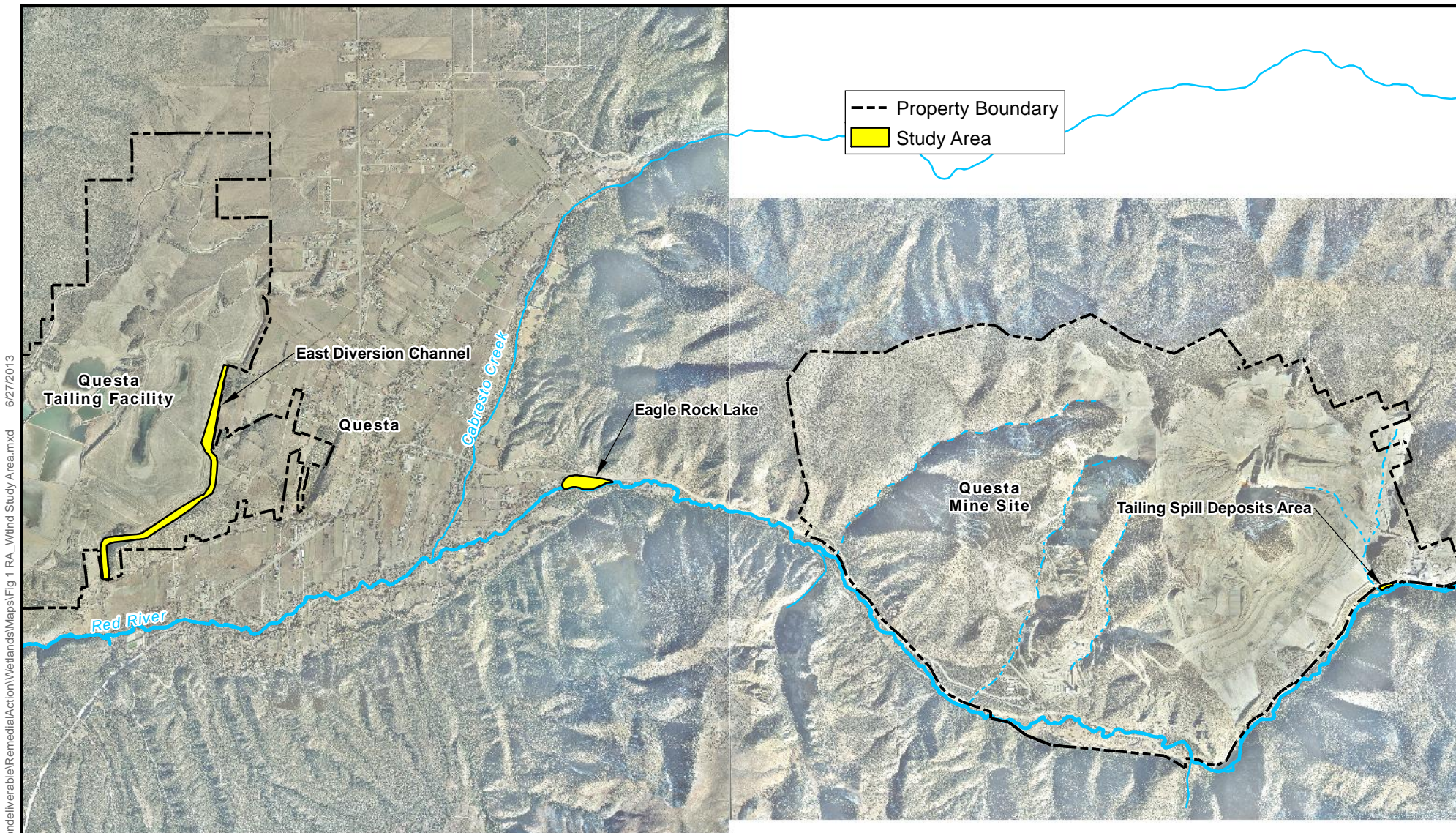
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Appendix A

Figures



NOTES

1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2007).

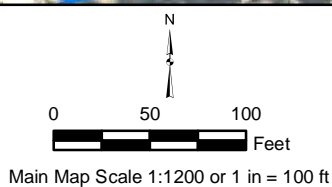
Job No. : 22242831

Prepared By : Denver/GIS

Date : 12/18/2012

FIGURE 1 OF 6
STUDY AREAS

Removal Action - Wetland Assessment



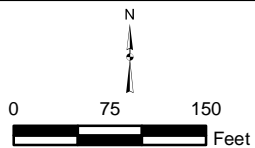
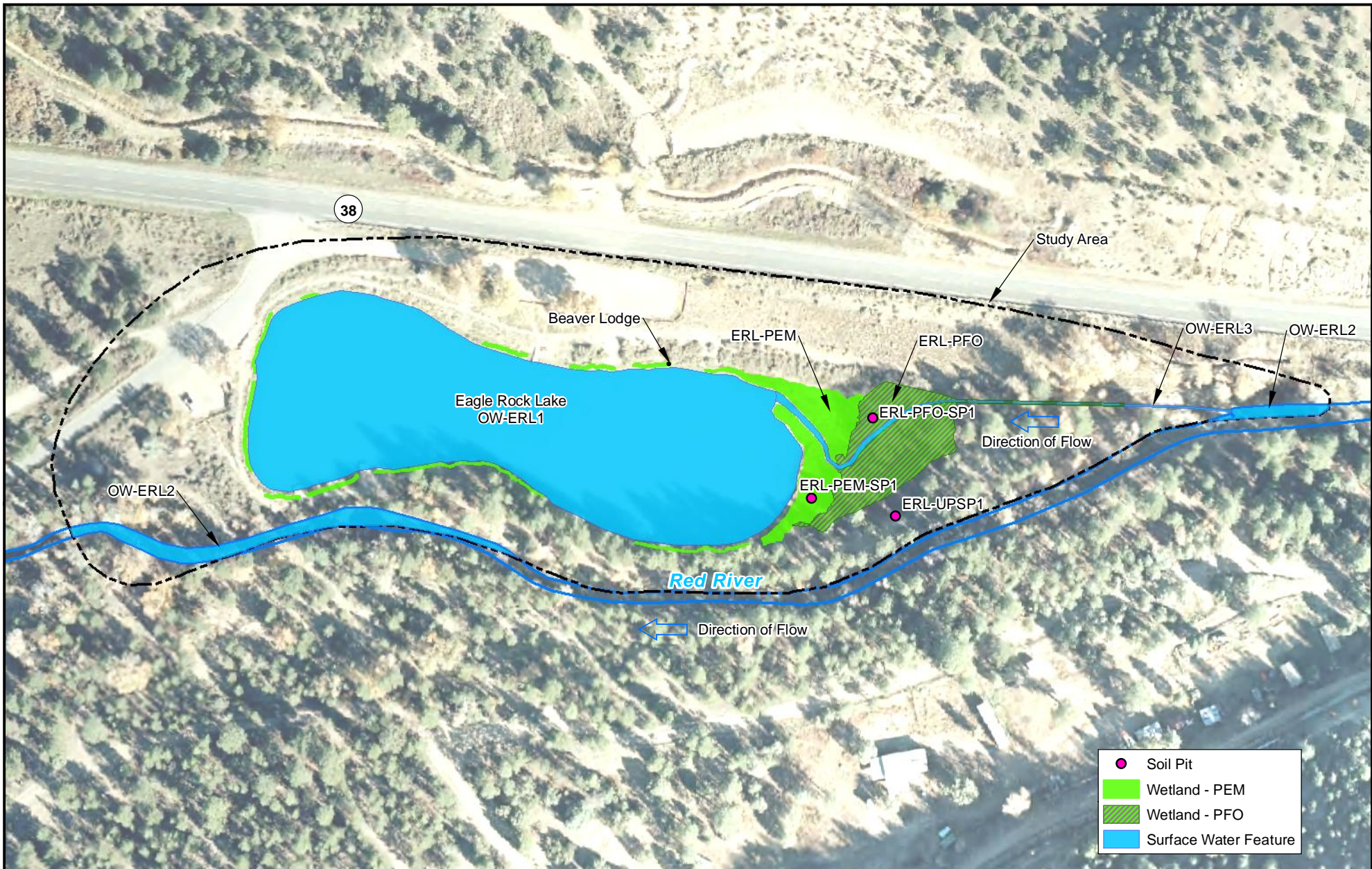
NOTES
1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2007).

PEM-Palustrine Emergent Wetland

Job No. :	22242831
Prepared By :	Denver/GIS
Date :	12/18/2012

FIGURE 2 OF 6
TAILING SPILL DEPOSITS AREA

Removal Action - Wetland Assessment



Main Map Scale 1:1800 or 1 in = 150 ft

NOTES
1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2007).

PEM-Palustrine Emergent Wetland
PFO-Palustrine Forested Wetland

Job No. :	22242831
Prepared By :	Denver/GIS
Date :	12/18/2012

FIGURE 3 OF 6 EAGLE ROCK LAKE AREA

Removal Action - Wetland Assessment

N

0300600

Feet

Main Map Scale 1:7200 or 1 in = 600 ft

■ Non-Delineated Wetland

■ Wetland - PEM

■ Wetland - PEM/PSS

PEM-Palustrine Emergent Wetland

PSS-Palustrine System Scrub-Shrub Wetland Class

NOTES

1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2007).

EDC-1/EDC-2

EDC-6

Eastern Diversion Channel

Study Area

EDC-5

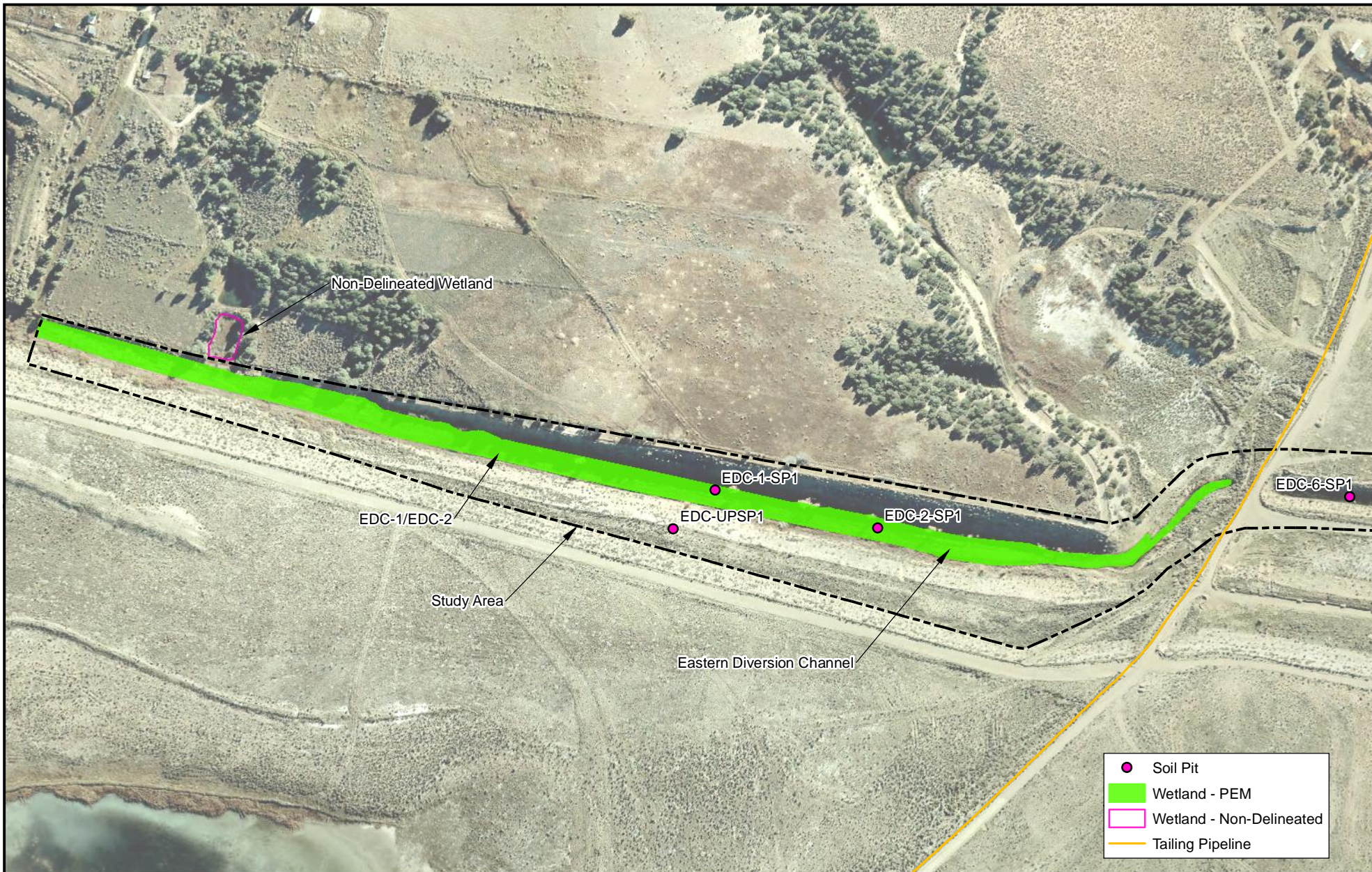
EDC-4

EDC-3

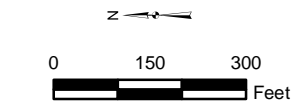
Job No. :	22242831
Prepared By :	Denver/GIS
Date :	12/18/2012

FIGURE 4 OF 6
EASTERN DIVERSION CHANNEL

Removal Action - Wetland Assessment



- Soil Pit
- Wetland - PEM
- Wetland - Non-Delineated
- Tailing Pipeline



Main Map Scale 1:3600 or 1 in = 300 ft

NOTES
1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2007).

PEM-Palustrine Emergent Wetland

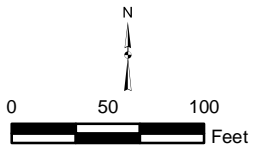
Job No. : 22242831

Prepared By : Denver/GIS

Date : 12/18/2012

FIGURE 5 OF 6 EASTERN DIVERSION CHANNEL

Removal Action - Wetland Assessment



Main Map Scale 1:1800 or 1 in = 100 ft

NOTES

1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2007).

PEM-Palustrine Emergent Wetland
PSS-Palustrine System Scrub-Shrub Wetland Class

Job No. : 22242831

Prepared By : Denver/GIS

Date : 12/18/2012

FIGURE 6 OF 6 EASTERN DIVERSION CHANNEL

Removal Action - Wetland Assessment

Appendix B

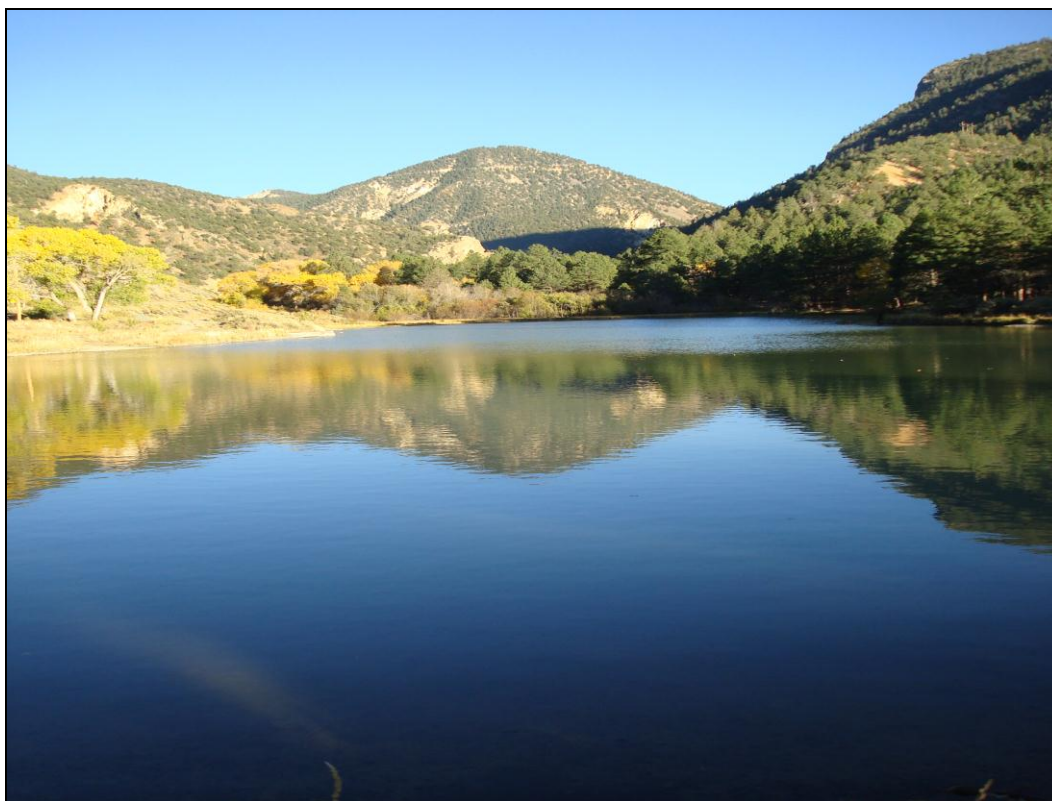
Photographs



Photograph 1. To Southwest. View of feature HTS-1. This area did not meet the three substantive criteria for wetlands.



Photograph 2. To East. View of wetland HTS-2.



Photograph 3. To East. View of Eagle Rock Lake (OW-ERL1).



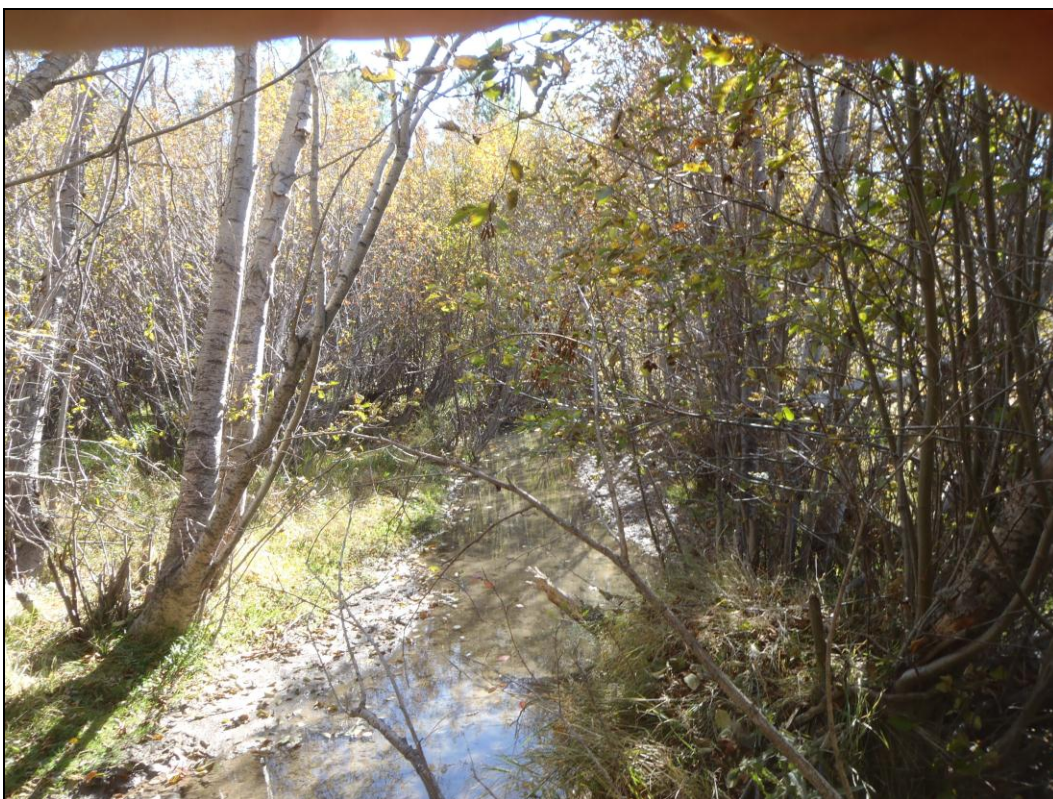
Photograph 4. To Southeast. View of wetland ERL-PEM at the mouth of the diversion ditch (OW-ERL3). Wetland ERL-PFO can be seen behind the feature. Eagle Rock Lake (OW-ERL1) in foreground.



Photograph 5. To West. Beaver lodge on the north shore of Eagle Rock Lake (OW-ERL1).



Photograph 6. To Northeast. View of wetland ERL-PFO. Wetland ERL-PEM occurs in photograph foreground.



Photograph 7. To West. View of wetland ERL-PFO and Eagle Rock Lake diversion channel (OW-ERL3) near Eagle Rock Lake.



Photograph 8. To West. View of diversion channel OW-ERL3 upstream of wetland ERL-PFO.



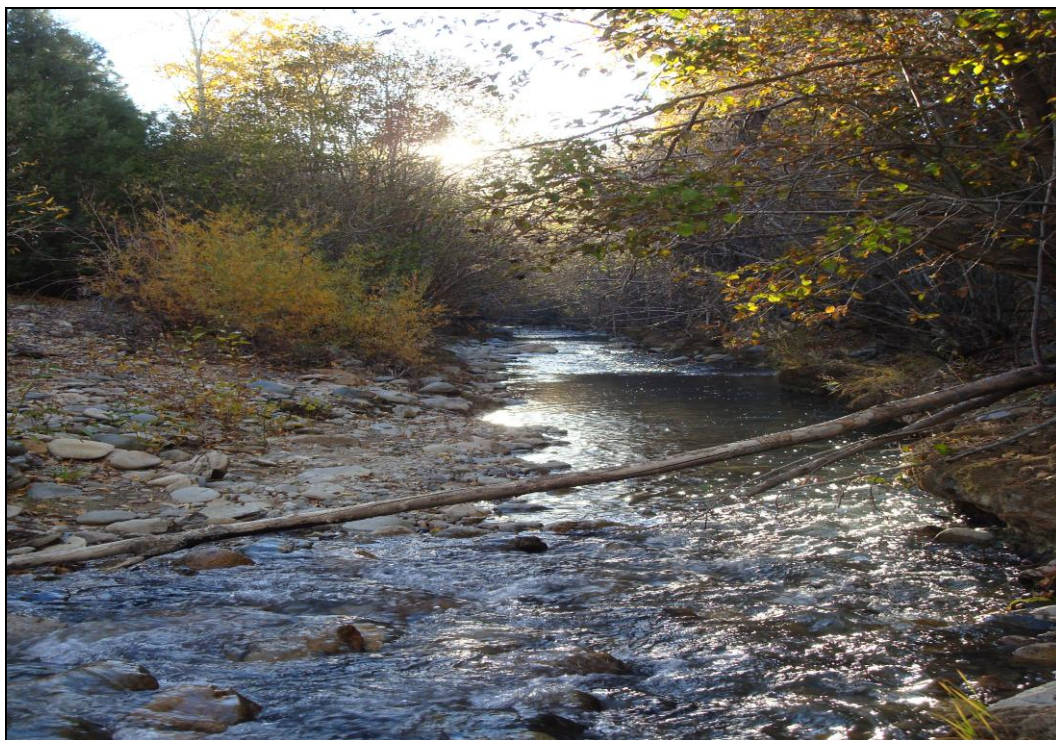
Photograph 9. To East. View upstream of Red River (OW-ERL2) at the headgate of the diversion channel (OW-ERL3).



Photograph 10. To South. View of a reach of the Red River (OW-ERL2) adjacent to Eagle Rock Lake (OW-ERL1).



Photograph 11. To South. View of beaver dam within Red River (OW-ERL2) at the western end of the Eagle Rock Lake remediation area.



Photograph 12. To West. View of the Red River (OW-ERL2) downstream of the Eagle Rock Lake remediation area.



Photograph 13. To South. Overview of wetland EDC-1/EDC-2 within the Eastern Diversion Channel remediation area.



Photograph 14. To North. View of wetland EDC-1 within the Eastern Diversion Channel.



Photograph 15. To North. View of EDC-2.



Photograph 16. To East. View of upland above Eastern Diversion Channel EDC-1/EDC-2.



Photograph 17. To North. View of feature EDC-6 within the Eastern Diversion Channel. This area did not meet the three substantive criteria for wetlands.



Photograph 18. To East. Overview of the Eastern Diversion Channel and surrounding upland south of feature EDC-6.



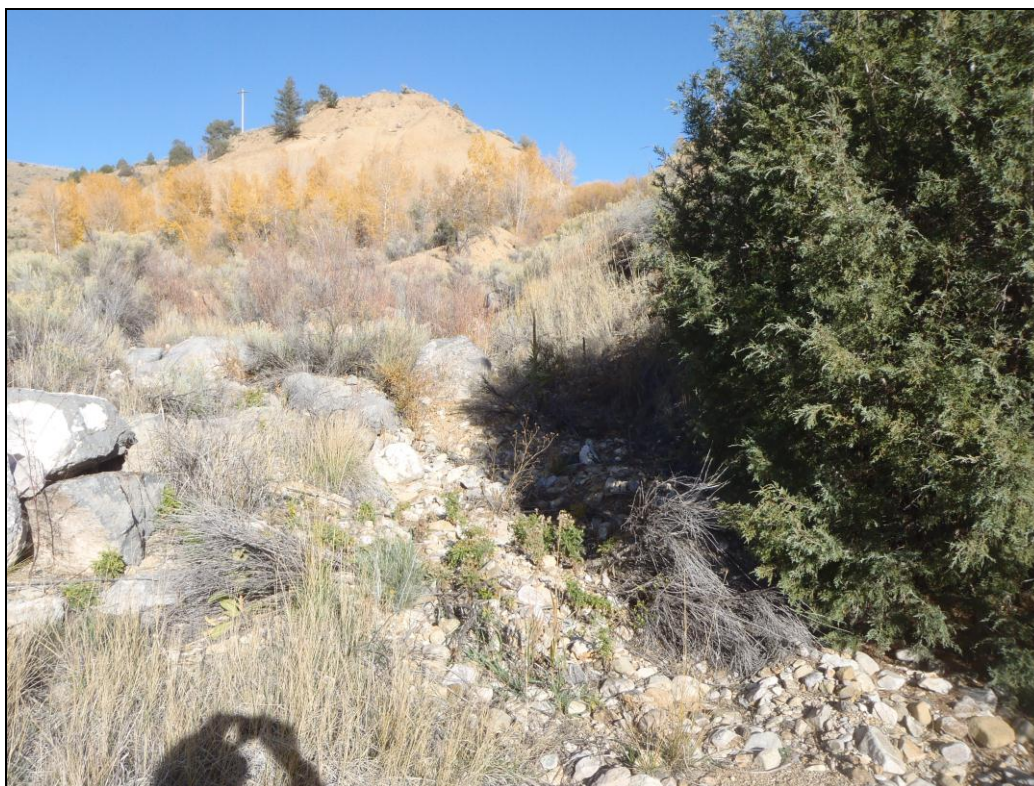
Photograph 19. To Southwest. View within the Eastern Diversion Channel below EDC-6.



Photograph 20. To Northeast. View of Eastern Diversion Channel along the channel's lower reach.



Photograph 21. To North. View of wetland EDC-3.



Photograph 22. To Northeast. View of the upland near EDC-3. A portion of the Eastern Diversion lower channel appears in the photograph center.

Appendix C
Individual Wetland Data Forms

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-15-12
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: HTS-1
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T28N
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 1:1
 Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: 36.694758 Long: -105.496439 Datum: NAD83
 Soil Map Unit Name: Cumulic Haploborolls, nearly level NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks: Feature lies between Hy. 38 and the Red River. Feature may have established under conditions that no longer exist. PEM/PSS vegetation present; no evidence of hydric soils or hydrology. Feature perched and receives runoff from road. PSS portion almost barren understory. Soil sample yielded 1 potential concentration, likely oxidized tailings.					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size: <u>30 x 30</u>	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus angustifolia</u>		5	Yes	FACW
2. _____				
3. _____				
4. _____				
		5	= Total Cover	
Sapling/Shrub Stratum	Plot size: <u>30 x 30</u>			
1. <u>Salix monticola</u>		10	Yes	OBL
2. <u>Salix exigua</u>		5	No	FACW
3. <u>Salix lucida</u>		5	No	FAC
4. <u>Betula occidentalis</u>		5	No	FACW
5. <u>Cornus sericea</u>		4	No	FACW
		29	= Total Cover	
Herb Stratum	Plot size <u>30 x 30</u>			
1. <u>Bromus inermis</u>		40	Yes	FACU
2. <u>Juncus arcticus</u>		14	Yes	FACW
3. <u>Agrostis stolonifera</u>		1	No	FACW
4. <u>Artemisia frigida</u>		1	No	Not Listed
5. <u>Carex nebrascensis</u>		2	No	OBL
6. <u>Achnatherum perplexum</u>		1	No	Not Listed
7. <u>Thinopyrum intermedium</u>		1	No	Not Listed
8. _____				
9. _____				
10. _____				
		60	= Total Cover	
Woody Vine Stratum	Plot size: _____			
1. _____				
2. _____				
			= Total Cover	
% Bare Ground in Herb Stratum <u>40 %</u>				
Remarks: Distinct Salix/ Juncus communities. Salix roots in the top six inches. Minors include Elymus lanceolatus, Rosa woodsii, Verbascum thapsus, Vicia americana, Poa sp. Two pair of juncos observed.				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>12</u>	x 1 =	<u>12</u>
FACW species <u>29</u>	x 2 =	<u>58</u>
FAC species <u>5</u>	x 3 =	<u>15</u>
FACU species <u>40</u>	x 4 =	<u>160</u>
UPL species <u>3</u>	x 5 =	<u>15</u>
Column Totals: <u>89</u> (A)		<u>260</u> (B)
Prevalence Index = B/A =		<u>2.92</u>

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: HTS-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
SP1/0 - 5	10YR 5/2	99	7.5YR 5/8	1	C	M	Sa	Some organic streaking
5 - 14	10YR 6.5/1	100	-	-			Ash sand	Tailings
SP2/0 - 1	10YR 3/2	50	-	-			Sa	Some organic streaking
SP2/0 - 1	10YR 6.5/1	50	-	-			Sa	
1 - 14	10YR 6.5/1	100	-	-			Ash sand	Tailings

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: Low chroma results from color of tailings, not reduction. Vegetation at pit: SP1 - barren. SP2 - Juncus arcticus. Reduction not consistently present throughout the wetland. One potential redox feature found in first soil pit. Likely oxidized tailings. Additional soil pits dug in area with results similar to SP2. Ash sand is a pulverized material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:Surface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None.

Remarks: Concrete runoff conveyance from roadway slopes to the site. Site is perched above Red River and restricted by a two-track road. Surveyors have never seen water in the feature.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-16-12
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: HTS-1-UP
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T28N R13E
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Hillslope Slope (%): 25
 Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: 36.694872 Long: -105.495723 Datum: NAD 83
 Soil Map Unit Name: Cumulic Haploborolls, nearly level NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks: <u>Upland soil pit for HTS-1 and HTS-2. Pit located on south side slope of HTS-2.</u>					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Picea engelmannii</i>	<u>30 x 30</u>	<u>2</u>	<u>Yes</u>	<u>FAC</u>
2. <i>Populus deltoides</i>		<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. <i>Juniperus scopularum</i>		<u>1</u>	<u>No</u>	<u>Not Listed</u>
4. _____				
		<u>8</u>	<u>= Total Cover</u>	
Sapling/Shrub Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Symphoricarpos oreophilis</i>	<u>30 x 30</u>	<u>5</u>	<u>Yes</u>	<u>Not Listed</u>
2. <i>Acer glabrum</i>		<u>3</u>	<u>Yes</u>	<u>FACU</u>
3. <i>Ericameria nauseosus</i>		<u>1</u>	<u>No</u>	<u>Not Listed</u>
4. <i>Physocarpus monogynus</i>		<u>1</u>	<u>No</u>	<u>UPL</u>
5. <i>Rosa woodsii</i>		<u>1</u>	<u>No</u>	<u>FACU</u>
		<u>11</u>	<u>= Total Cover</u>	
Herb Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Artemisia campestris</i>	<u>30 x 30</u>	<u>25</u>	<u>Yes</u>	<u>Not Listed</u>
2. <i>Bromus inermis</i>		<u>15</u>	<u>Yes</u>	<u>FACU</u>
3. <i>Thinopyrum intermedium</i>		<u>13</u>	<u>No</u>	<u>Not Listed</u>
4. <i>Artemisia frigida</i>		<u>1</u>	<u>No</u>	<u>Not Listed</u>
5. <i>Antennaria sp.</i>		<u>1</u>	<u>No</u>	<u>Not Listed</u>
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
		<u>55</u>	<u>= Total Cover</u>	
Woody Vine Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1. _____				
2. _____				
			<u>= Total Cover</u>	
% Bare Ground in Herb Stratum <u>45 %</u>				
Remarks: <u>Plot located on a terrace within the riparian buffer of the Red River. Tree strata occurs within obvious upland areas. Bare ground comprised of little and small rocks.</u>				

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: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	<u>0</u>
FACW species	x 2 =	<u>0</u>
FAC species	x 3 =	<u>30</u>
FACU species	x 4 =	<u>76</u>
UPL species	x 5 =	<u>205</u>
Column Totals:		<u>70</u> (A) <u>311</u> (B)
Prevalence Index = B/A =		<u>4.44</u>

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

Yes ☐ No ☒

SOIL

Sampling Point: HTS-1-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 6	10YR 3/4	100	-	-			Si	Many roots, organic mottles
6 - 14	10YR 5/3	100	-	-			GrSi	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: No soil indicators. Soil pit 3 feet up from floor of HTS-2.

Soils may be native or fill material from road construction. Vegetation at pit: Rosa woodsii, Bromus inermis, Artemisia campestris.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:Surface Water Present? Yes ☐ No ☒

Depth (inches): _____

Water Table Present? Yes ☐ No ☒

Depth (inches): _____

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None.

Remarks: No hydrologic indicators.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-16-12
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: HTS-2
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T28N R13E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 1:1
 Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: 36.694878 Long: -105.495816 Datum: NAD83
 Soil Map Unit Name: Cumulic Haploborolls, nearly level NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: Barren depression with herbaceous/woody fringe near HTS-1. Feature lies between road and Red River in historic tailings spill area. Feature perched above Red River and disturbed by berm and two-track road with fill on three sides. Two track road likely older than 50 years. Some tailings in barren portion of the feature.					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size: <u>30 x 30</u>	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)																								
1. <u>Populus angustifolia</u>		<u>5</u>	<u>Yes</u>	<u>FACW</u>																									
2. _____																													
3. _____																													
4. _____																													
Sapling/Shrub Stratum Plot size: _____		<u>5</u> = Total Cover			Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>x 1 =</td> <td><u>0</u></td> </tr> <tr> <td>FACW species</td> <td>x 2 =</td> <td><u>44</u></td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> <td><u>0</u></td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>22</u> (A)</td> <td><u>44</u> (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A = <u>2.00</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:		OBL species	x 1 =	<u>0</u>	FACW species	x 2 =	<u>44</u>	FAC species	x 3 =	<u>0</u>	FACU species	x 4 =	<u>0</u>	UPL species	x 5 =	<u>0</u>	Column Totals:	<u>22</u> (A)	<u>44</u> (B)	Prevalence Index = B/A = <u>2.00</u>		
Total % Cover of:	Multiply by:																												
OBL species	x 1 =	<u>0</u>																											
FACW species	x 2 =	<u>44</u>																											
FAC species	x 3 =	<u>0</u>																											
FACU species	x 4 =	<u>0</u>																											
UPL species	x 5 =	<u>0</u>																											
Column Totals:	<u>22</u> (A)	<u>44</u> (B)																											
Prevalence Index = B/A = <u>2.00</u>																													
1. _____																													
2. _____																													
3. _____																													
4. _____																													
5. _____																													
Herb Stratum Plot size <u>30 x 30</u>					Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
1. <u>Juncus arcticus</u>		<u>18</u>	<u>Yes</u>	<u>FACW</u>																									
2. <u>Agrostis stolonifera</u>		<u>4</u>	<u>No</u>	<u>FACW</u>																									
3. _____																													
4. _____																													
5. _____																													
6. _____																													
7. _____																													
8. _____																													
9. _____																													
10. _____																													
Woody Vine Stratum Plot size: _____		<u>22</u> = Total Cover			Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																								
1. _____																													
2. _____																													
% Bare Ground in Herb Stratum <u>78 %</u>																													

Remarks: A substantial portion of the wetland is a sparsely vegetated depression. Wetland vegetation nearest to barren area is dead/blackened.
 Minors include Artemesia campestris, Betula occidentalis, Rosa woodsii, Salix exigua, Salix monticola.
 Deer tracks and scat observed.

SOIL

Sampling Point: HTS-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
SP1/0 - 6	5Y 8/3	70	7.5YR 6/8	30	C	M	Si	Tailings
	-	-	10YR 5/3	2	RM	M	Cl	One area
SP1/6 - 18	10YR 5.5/3.5	55	7.5YR 5/8	5	C	M	Cobbly GrLo	High sand content, native soil
			7.5YR 5/6	40	C	M	-	
SP2/0 - 6	10YR 5/3	100	-	-			SiLo	
SP2/6 - 9	-	-	-	-			Cobbles	
SP2/9 - 16	10YR 5/3	100	-	-			GrLo	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: Patchy clay loam surface in spots. Mottles in tailings were also observed at soil surface.
 SP3 - 0-4: Matrix -10YR 6/2 75%; Redox 7.5YR 5/8. 25%; RC, C; PL, M. Tailings, root matter. Restrictive layer of cobble at 4 inches. Atypical soils - may be fill. Only SP3 was hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): -Water Table Present? Yes ☐ No ☒ Depth (inches): -Saturation Present? Yes ☐ No ☒ Depth (inches): -
(includes capillary fringe)**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None.

Remarks: Observed saturated mud at surface. Rain occurred 3 days prior. Area appears to collect water due to topographic position.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-16-12
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: ERL-PEM
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R13W S32
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: 36.703224 Long: -105.572951 Datum: NAD83
 Soil Map Unit Name: Cumulic Haplaquolls, nearly level NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: PEM wetland fringe abutting Eagle Rock Lake. Largest part of wetland occurs at mouth of diversion channel with discontinuous wetland fringe of approximately 2 feet wide occurring around the lake perimeter. Beaver lodge observed on north side of lake.					

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	0.25 acre		
1. <i>Carex aquatilis</i>		25	Yes	FACW
2. <i>Agrostis gigantea</i>		10	No	FAC
3. <i>Carex utriculata</i>		50	Yes	OBL
4. <i>Agrostis stolonifera</i>		3	No	FACW
5. <i>Asclepias speciosa</i>		1	No	FAC
6. <i>Carex nebrascensis</i>		3	No	FACW
7. <i>Eleocharis palustris</i>		3	No	OBL
8. <i>Phleum pratense</i>		5	No	FAC
9.				
10.				
		100	= Total Cover	
Woody Vine Stratum	Plot size:			
1.				
2.				
			= Total Cover	
% Bare Ground in Herb Stratum		%		
Remarks: Minors include <i>Dactylis glomerata</i> , <i>Elymus repens</i> , <i>Epilobium ciliatum</i> , <i>Juncus effusus</i> , <i>Juncus nodosus</i> , <i>Limnorchis</i> sp., <i>Salix exigua</i> , <i>Salix monticola</i> , <i>Typha angustifolia</i> , <i>Trifolium pratense</i> . Beaver lodge and trails through wetland, raccoon tracks.				

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: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	53	x 1 = 53
FACW species	31	x 2 = 62
FAC species	16	x 3 = 48
FACU species		x 4 = 0
UPL species		x 5 = 0
Column Totals:	100	(A) 163 (B)

Prevalence Index = B/A = 1.63

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹(Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

SOIL

Sampling Point: ERL-PEM**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0 - 3	10YR 4/2	88	2.5/5B	2	RM	M	Cl	
0-3	-	-	7.5YR 4/6	10	C	M	Cl	
3 - 4	10YR 7/6	60	10YR 5/8	40	C	M	Cl	
4 - 7	10YR 4/2	60	7.5 YR 5/4	40	C	M	Cl	
7 - 15	5Y 7/3	40	10YR 5/6	30	C	M	Cl	Many tiny roots
7 - 15	-	-	10YR 7/6	30	C	M	ClSi	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: Vegetation at pit - Carex utriculata.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☒ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:Surface Water Present? Yes ☐ No ☒

Depth (inches): -

Water Table Present? Yes ☐ No ☒

Depth (inches): -

Saturation Present? Yes ☒ No ☐
(includes capillary fringe)

Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photographs.

Remarks: Source of hydrology is Eagle Rock Lake and some groundwater from the diversion channel (OW-ERL3).

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-16-12
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: ERL-PFO
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R13W S32
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: 36.703471 Long: -105.572715 Datum: NAD83
 Soil Map Unit Name: Cumulic Haplaquolls, nearly level NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: PSS/PFO wetland at and around the Eagle Rock Lake diversion channel (see surface water feature data sheet for OW-ERL3). Land rises to east; wetland characteristics drop out midway between the lake and the diversion channel headgate. Hydric soils not present; area appears to drop sediment.					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Populus angustifolia</i>	30 x 30	25	Yes	FACW
2. <i>Alnus incana</i>		10	Yes	FACW
3.				
4.				
		35	= Total Cover	
Sapling/Shrub Stratum	Plot size:			
1. <i>Populus angustifolia</i>	30 x 30	30	Yes	FACW
2. <i>Alnus incana</i>		15	Yes	FACW
3. <i>Salix exigua</i>		15	Yes	FACW
4. <i>Betula occidentalis</i>		5	No	FACW
5. <i>Prunus virginiana</i>		2	No	FACU
		67	= Total Cover	
Herb Stratum	Plot size:			
1. <i>Phalaris arundinacea</i>	30 x 30	2	No	FACW
2. <i>Agrostis gigantea</i>		1	No	FAC
3. <i>Arctium minus</i>		1	No	UPL
4. <i>Epilobium ciliatum</i>		1	No	FACW
5. <i>Barbarea vulgaris</i>		1	No	FAC
6.				
7.				
8.				
9.				
10.				
		6	= 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-): 5 (A)
 Total Number of Dominant Species Across All Strata: 5 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	156
FAC species	x 3 =	6
FACU species	x 4 =	8
UPL species	x 5 =	5
Column Totals:		83 (A) 175 (B)

 Prevalence Index = B/A = 2.11

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹(Provide supporting data in Remarks or on a separate sheet)
☐ 5 - Wetland Non-Vascular Plants¹
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: Minors include *Heracleum maximum*, *Equisetum arvense*, *Cardamine cordifolia*, *Cirsium arvense*, *Leucanthemum vulgare*, *Maianthemum stellatum*, *Ratibida* sp., *Rumex altissimus*, *Saxifrage odontoloma*, *Urtica dioica*, *Viola* sp.
 Kingfisher, junco, bushtit observed. Beaver cut alders.

SOIL

Sampling Point: ERL-PFO

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 2	10YR 3/2	100	-	-			SaLo	Roots
2 - 7	10YR 4/4	100	-	-			LoSa	Coarse sand - alluvium
7 - 15	10YR 6/4	30	7.5 YR 5/8	40	C	M	ClSi	
-	10YR 4/3	30	-					

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: PL=Pore Lining, M=Matrix**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: Alternating layers of coarse gravel and clay.
 Vegetation at pit: Alnus incana, Barbarea vulgaris.
 Problematic hydric soil - vegetated sand and gravel bar.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (LRR A)
☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)**Wetland Hydrology Present?** Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

NHD shows diversion channel.

Remarks: Dry season delineation. Lower areas in the wetland are saturated.

Also see OW-ERL-3.

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-16-12
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: ERL-UP
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R13W S32
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Hillslope Slope (%): 45
 Subregion (LRR): MLRA 39 - Arizona and New Mexico Mts. Lat: 36.703167 Long: -105.57263 Datum: NAD83
 Soil Map Unit Name: Cumulic Haplaquolls, nearly level NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks: <u>Upland soil pit for ERL-PEM and ERL-PFO. Point taken on side slope south of wetland and diversion channel.</u>					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Pinus ponderosa</i>		10	Yes	FACU
2. <i>Populus angustifolia</i>		1	No	FACW
3. <i>Juniperus scopularum</i>		2	No	Not Listed
4.				
		13	= Total Cover	
Sapling/Shrub Stratum	Plot size:			
1. <i>Fallugia paradoxa</i>		35	Yes	Not Listed
2. <i>Rhus aromatica</i>		1	No	UPL
3. <i>Quercus gambellii</i>		1	No	Not Listed
4. <i>Pinus edulis</i>		1	No	Not Listed
5. <i>Rosa woodsii</i>		2	No	FACU
		40	= Total Cover	
Herb Stratum	Plot size:			
1. <i>Bromus inermis</i>		15	Yes	FACU
2. <i>Chrysopsis villosa</i>		1	No	Not Listed
3. <i>Thinopyrum intermedium</i>		1	No	Not Listed
4. <i>Lupinus argenteus</i>		5	No	Not Listed
5. <i>Carex sp.</i>		1	No	
6. <i>Cirsium sp.</i>		1	No	
7.				
8.				
9.				
10.				
		24	= Total Cover	
Woody Vine Stratum	Plot size:			
1.				
2.				
			= Total Cover	
% Bare Ground in Herb Stratum <u>76 %</u>				

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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	2
FAC species	x 3 =	0
FACU species	x 4 =	72
UPL species	x 5 =	45
Column Totals:		119 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: Minors include Antennaria sp. Evidence of beaver damage. Bare ground is rock and litter.

SOIL

Sampling Point: ERL-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | | | |
|--------------------------|-----------------------------------|--------------------------|--|
| <input type="checkbox"/> | Histosol (A1) | <input type="checkbox"/> | Sandy Redox (S5) |
| <input type="checkbox"/> | Histic Epipedon (A2) | <input type="checkbox"/> | Stripped Matrix (S6) |
| <input type="checkbox"/> | Black Histic (A3) | <input type="checkbox"/> | Loamy Mucky Mineral (F1) (except MLRA1) |
| <input type="checkbox"/> | Hydrogen Sulfide (A4) | <input type="checkbox"/> | Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> | Depleted Below Dark Surface (A11) | <input type="checkbox"/> | Depleted Matrix (F3) |
| <input type="checkbox"/> | Thick Dark Surface (A12) | <input type="checkbox"/> | Redox Dark Surface (F6) |
| <input type="checkbox"/> | Sandy Mucky Mineral (S1) | <input type="checkbox"/> | Depleted Dark Surface (F7) |
| <input type="checkbox"/> | Sandy Gleyed Matrix (S4) | <input type="checkbox"/> | Redox Depressions (F8) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: Barren at pit.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b) |
| <input type="checkbox"/> High Water Table (A2) | |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | |

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Water Table Present? Yes ☐ No ☒

Saturation Present? (includes capillary fringe) Yes ☐ No ☒

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photographs.

Remarks: No hydrologic indicator. Pit located approximately 10 feet vertically above ERL-PFO.

Surface Waters Features Data Sheet	
Project -	Questa Mine Remediation Removal Action
Date -	Tuesday, October 16, 2012
Investigators -	J. Dawson/ S. Hall
Area ID -	OW-ERL1 (Eagle Rock Lake)
Centerpoint coordinates -	36.7034/-105.5742
HUC -	13020101
Land Use -	Recreation
Physical	
Type of feature (pond or stream)-	Pond
Source-	Red River
Connectivity -	Red River
Water Clarity (clear, murky, turbid)-	Cloudy
Water Color (if obvious)-	Turquoise
For Streams Only	
Average Width of OHWM (bankfull)-	N/A
Average observed width-	N/A
Bankfull depth-	N/A
Observed Depth-	N/A
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	N/A
Evidence of undercutting or excessive erosion-	N/A
Occurance of riffle-pool-run complexes (Natural hydro only)-	N/A
Channelized or meandering (Natural hydro only)-	
Bed substrate composition-	N/A
Velocity (slow, moderate, fast)-	N/A
Flow Direction (to)-	N/A
For Ponds Only	
Inlet/Outlet present?	Yes, inlet is diversion channel from Red River.
Restricted outlet?	Yes, outlets to Red River through culvert.
Biological	
Percent estimated bank cover-	80, discontinuous fringe around feature
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	See wetland data sheet WL-ERL-PEM
Aquatic vegetation present (Y/N, list species if known)-	No
Percent overstory (amount hanging over the channel, streams only)-	0
Evidence of rafted/submerged large woody debris-	No
Evidence of other rafting (smaller debris, etc.)-	No
Aquatic or terrestrial wildlife present (list species)-	Kingfisher, beaver lodge
Notes: Outlet plugged by beaver activity.	

Surface Waters Features Data Sheet	
Project -	Questa Mine Remediation Removal Action
Date -	Tuesday, October 16, 2012
Investigators -	J. Dawson/ S. Hall
Area ID -	OW-ERL2 (Red River)
Centerpoint coordinates -	36.7030/-105.5751
HUC -	13020101
Land Use -	Recreation
Physical	
Type of feature (pond or stream)-	Stream
Source-	Confluence of several high altitude Sangre de Christo streams
Connectivity -	Rio Grande
Water Clarity (clear, murky, turbid)-	Slightly cloudy
Water Color (if obvious)-	N/A
For Streams Only	
Average Width of OHWM (bankfull)-	18', widens to 20' at southern end of Study Area
Average observed width-	15'
Bankfull depth-	18 to 24"
Observed Depth-	6-18"
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	1:8
Evidence of undercutting or excessive erosion-	In places. More evident upstream near diversion.
Occurance of riffle-pool-run complexes (Natural hydro only)-	some human made obstructions, and a beaver dam. More pronounced downstream of Study Area.
Channelized or meandering (Natural hydro only)-	Slight meandering.
Bed substrate composition-	Cobble
Velocity (slow, moderate, fast)-	Moderate flow adjacent to lake, slows below beaver dam.
Flow Direction (to)-	West
For Ponds Only	
Inlet/Outlet present?	N/A
Restricted outlet?	N/A
Biological	
Percent estimated bank cover-	70
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	<i>Alnus</i> sp., <i>Bromus inermis</i> , <i>Populus angustifolia</i>
Aquatic vegetation present (Y/N, list species if known)-	No
Percent overstory (amount hanging over the channel, streams only)-	10, predominantly south of beaver dam
Evidence of rafted/submerged large woody debris-	Yes
Evidence of other rafting (smaller debris, etc.)-	Yes
Aquatic or terrestrial wildlife present (list species)-	Kingfisher, beaver dam
Notes: It appears that the channel may have been diverted when Eagle Rock Lake was constructed. This reach is distinctly different from the channel above the lake and again below the bridge. Flows are higher and the channel sides appear to be cut deep into the substrate.	

Surface Waters Features Data Sheet	
Project -	Questa Mine Remediation Removal Action
Date -	Tuesday, October 16, 2012
Investigators -	J. Dawson/ S. Hall
Area ID -	OW-ERL3 (Eagle Rock Lake Diversion Ditch)
Centerpoint coordinates -	36.7035/-105.5725
HUC -	13020101
Land Use -	Recreation
Physical	
Type of feature (pond or stream)-	Stream
Source-	Red River
Connectivity -	Eagle Rock Lake
Water Clarity (clear, murky, turbid)-	Milky (dissolved aluminum)
Water Color (if obvious)-	None
For Streams Only	
Average Width of OHWM (bankfull)-	2 feet
Average observed width-	2 feet, widens to 6 feet at inlet to lake
Bankfull depth-	18 inches
Observed Depth-	12 inches
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	1:1 sloping to level at confluence
Evidence of undercutting or excessive erosion-	No
Occurance of riffle-pool-run complexes (Natural hydro only)-	N/A
Channelized or meandering (Natural hydro only)-	N/A
Bed substrate composition-	Unconsolidated
Velocity (slow, moderate, fast)-	Slow
Flow Direction (to)-	West
For Ponds Only	
Inlet/Outlet present?	
Restricted outlet?	
Biological	
Percent estimated bank cover-	100
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	<i>Alnus</i> sp., also see wetland data sheet WL-ERL-PFO
Aquatic vegetation present (Y/N, list species if known)-	No
Percent overstory (amount hanging over the channel, streams only)-	100
Evidence of rafted/submerged large woody debris-	No
Evidence of other rafting (smaller debris, etc.)-	No
Aquatic or terrestrial wildlife present (list species)-	None
Notes: Wetland vegetation emerges when banks reach lake elevation.	

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-17-2012
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: EDC-1
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R12W S25, 36
 Landform (hillslope, terrace, etc.): Constructed channel Local relief (concave, convex, none): None Slope (%): <1
 Subregion (LRR): D - Interior Deserts Lat: 36.708668 Long: -105.609575 Datum: NAD83
 Soil Map Unit Name: FfC, SED, SmB NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: PEM wetland within a constructed channel. <i>Salix exigua</i> occurs as a minor distinct community along channel edges. Portions of the ditch were inundated and evidence of inundation is present during the growing season through plant remnants, shells, and previous aerial photos. Hydric soils not present within this feature.					

VEGETATION - Use scientific names of plants.

Tree Stratum Plot size: <u>N/A</u> 1. _____ 2. _____ 3. _____ 4. _____ _____ = Total Cover Sapling/Shrub Stratum Plot size: _____ 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover Herb Stratum Plot size: <u>100 x 60</u> 1. <i>Hordeum jubatum</i> 35 Yes FAC 2. <i>Typha angustifolia</i> 25 Yes OBL 3. <i>Rumex salicifolius</i> 12 No FACW 4. <i>Rorippa curvipes</i> 4 No OBL 5. <i>Carex nebrascensis</i> 2 No OBL 6. <i>Eleocharis palustris</i> 1 No OBL 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover Woody Vine Stratum Plot size: <u>N/A</u> 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>21 %</u> % Cover of Biotic Crust _____ %	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B) Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th></th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>32</td> <td>x 1 =</td> <td>32</td> </tr> <tr> <td>FACW species</td> <td>12</td> <td>x 2 =</td> <td>24</td> </tr> <tr> <td>FAC species</td> <td>35</td> <td>x 3 =</td> <td>105</td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 =</td> <td>0</td> </tr> <tr> <td>UPL species</td> <td></td> <td>x 5 =</td> <td>0</td> </tr> <tr> <td>Column Totals:</td> <td>79</td> <td>(A)</td> <td>161 (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.04</u>	Total % Cover of:		Multiply by:		OBL species	32	x 1 =	32	FACW species	12	x 2 =	24	FAC species	35	x 3 =	105	FACU species		x 4 =	0	UPL species		x 5 =	0	Column Totals:	79	(A)	161 (B)
Total % Cover of:		Multiply by:																											
OBL species	32	x 1 =	32																										
FACW species	12	x 2 =	24																										
FAC species	35	x 3 =	105																										
FACU species		x 4 =	0																										
UPL species		x 5 =	0																										
Column Totals:	79	(A)	161 (B)																										
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present. Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																													

Remarks: *Salix exigua* and scattered *Populus* spp. occurs up both slopes into non-wetland areas. Willows on east edge of channel are clearly out of the wetland. Willows on west side occur approx. 1 foot into the wetland. PEM vegetation is dominant. Minors include *Beckmannia syzigachne*, *Conyza canadensis*, *Epilobium ciliatum*, *Heliathus annuus*, *Mentha arvensis*, *Polygonum ramosissimum*.

SOIL

Sampling Point: EDC-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 0.5	10YR 3/2	100	-	-			Gravels	Organic, fibrous, shells
0.5 - 3	7.5 YR 5/3	100	-	-			GrSaCl	
3 - 14	7.5 YR 5/3	96	7.5 YR 4/6	2	C	M	GrSaCl	
			5YR 4/6	2	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils:³

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Marginal hydric soils. Vegetation at pit: *Hordeum jubatum*
 Problematic soil - recently developed/seasonally flooded (based on historic photos).

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (any one indicator is sufficient)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input checked="" type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☒ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☒ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No ☐
 Water Table Present? Yes ☒ No ☐
 Saturation Present? Yes ☒ No ☐
 (includes capillary fringe)

Depth (inches): 1.5
 Depth (inches): 11
 Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photographs.

Remarks: Three species of gastropod present in surface layer.

Flat sided construction channel approx. 60' wide. No evidence of directional flow. West side - 3-4' wide vegetated ditch inundated to 6" with standing water. ditch appears slightly elevated. Approx. 35 percent standing water 1-2" deep near soil pit. More inundation on the eastern side of the channel then on the west. Previous aerial photographs show this feature to be completely inundated in previous years.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-17-2012
 Applicant/Owner: Chevron Mining, INC. State: NM Sampling Point: EDC-1-UP
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R12W S36
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): _____
 Subregion (LRR): D - Interior Deserts Lat: 36.708926 Long: -105.609871 Datum: NAD83
 Soil Map Unit Name: Ffc, Sep, SmB NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks: Upland soil pit for EDC-1. Terrace on east side of tailings facility at about same elevation as the opposite top of bank of the Eastern Diversion Channel. Greater than 1:1 slope to channel bottom.					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0</u> % (A/B)																					
1.																										
2.																										
3.																										
4.																										
Sapling/Shrub Stratum Plot size: <u>25 x 25</u>			= Total Cover		Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>x 1 =</td> <td><u>0</u></td> </tr> <tr> <td>FACW species</td> <td>x 2 =</td> <td><u>0</u></td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> <td><u>0</u></td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td>(A)</td> <td><u>0</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:		OBL species	x 1 =	<u>0</u>	FACW species	x 2 =	<u>0</u>	FAC species	x 3 =	<u>0</u>	FACU species	x 4 =	<u>0</u>	UPL species	x 5 =	<u>0</u>	Column Totals:	(A)	<u>0</u> (B)
Total % Cover of:	Multiply by:																									
OBL species	x 1 =	<u>0</u>																								
FACW species	x 2 =	<u>0</u>																								
FAC species	x 3 =	<u>0</u>																								
FACU species	x 4 =	<u>0</u>																								
UPL species	x 5 =	<u>0</u>																								
Column Totals:	(A)	<u>0</u> (B)																								
1. <i>Artemisia tridentata</i>		<u>28</u>	Yes	Not Listed																						
2. <i>Ericameria nauseosus</i>		<u>5</u>	No	Not Listed																						
3.																										
4.																										
5.																										
		<u>33</u>	= Total Cover																							
Herb Stratum Plot size: _____					Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.																					
1.																										
2.																										
3.																										
4.																										
5.																										
6.																										
7.																										
8.																										
9.																										
10.																										
Woody Vine Stratum Plot size: _____			= Total Cover		Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>																					
1.																										
2.																										
			= Total Cover																							
% Bare Ground in Herb Stratum <u>96</u> %		% Cover of Biotic Crust <u>1</u> %																								
Remarks: Artemisia tridentata to 4 feet tall. Minors include Achnatherum hymenoides, Agropyron cristatum, Elymus elymoides, Juniperus monosperma, Heterotheca villosa, Medicago sativa, Sporobolus cryptandrus, Thinopyrum intermedium. One cryptogamic crust community.																										

SOIL

Sampling Point: EDC-1-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 14	7.5 YR 5/3	100	-	-			GrSi	Alluvium - cobbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: No indicators. Numerous cobbles in soil pit.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

None.

Remarks: No hydrologic indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-17-2012
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: EDC-2
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R12W S36
 Landform (hillslope, terrace, etc.): Constructed channel Local relief (concave, convex, none): None Slope (%): <1
 Subregion (LRR): D - Interior Deserts Lat: 36.707669 Long: -105.609874 Datum: NAD 83
 Soil Map Unit Name: Sedillo-Silva association, strongly sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: Continuation of EDC-1. Willow community extends along edges of channel with salt deposits, algal mats and shells on channel floor. Aerial photographs show area to be inundated or regularly ponded. Severe extended drought in region, but recent precipitation may explain inundation. Soils have not fully developed hydric characteristics.					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)																												
1.																																	
2.																																	
3.																																	
4.																																	
Sapling/Shrub Stratum Plot size:		<u>8</u> = Total Cover			Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th></th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>3</u></td> <td>x 1 =</td> <td><u>3</u></td> </tr> <tr> <td>FACW species</td> <td><u>24</u></td> <td>x 2 =</td> <td><u>48</u></td> </tr> <tr> <td>FAC species</td> <td><u>37</u></td> <td>x 3 =</td> <td><u>111</u></td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td><u>1</u></td> <td>x 5 =</td> <td><u>5</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>65</u></td> <td>(A)</td> <td><u>167</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.57</u>	Total % Cover of:		Multiply by:		OBL species	<u>3</u>	x 1 =	<u>3</u>	FACW species	<u>24</u>	x 2 =	<u>48</u>	FAC species	<u>37</u>	x 3 =	<u>111</u>	FACU species		x 4 =	<u>0</u>	UPL species	<u>1</u>	x 5 =	<u>5</u>	Column Totals:	<u>65</u>	(A)	<u>167</u> (B)
Total % Cover of:		Multiply by:																															
OBL species	<u>3</u>	x 1 =	<u>3</u>																														
FACW species	<u>24</u>	x 2 =	<u>48</u>																														
FAC species	<u>37</u>	x 3 =	<u>111</u>																														
FACU species		x 4 =	<u>0</u>																														
UPL species	<u>1</u>	x 5 =	<u>5</u>																														
Column Totals:	<u>65</u>	(A)	<u>167</u> (B)																														
1. <i>Salix exigua</i>		<u>8</u>	Yes	FACW																													
2.																																	
3.																																	
4.																																	
5.																																	
Herb Stratum Plot size: <u>60 x 100</u>		<u>8</u> = Total Cover			Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.																												
1. <i>Hordeum jubatum</i>		<u>35</u>	Yes	FAC																													
2. <i>Rorippa curvipes</i>		<u>15</u>	Yes	FACW																													
3. <i>Rumex triangularis</i>		<u>1</u>	No	FACW																													
4. <i>Polygonum ramosissimum</i>		<u>2</u>	No	FAC																													
5. <i>Koeleria macrantha</i>		<u>1</u>	No	Not Listed																													
6. <i>Typha angustifolia</i>		<u>1</u>	No	OBL																													
7. <i>Eleocharis obtusa</i>		<u>2</u>	No	OBL																													
8.																																	
9.																																	
10.																																	
Woody Vine Stratum Plot size: <u>N/A</u>		<u>57</u> = Total Cover			Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																												
1.																																	
2.																																	
% Bare Ground in Herb Stratum <u>45 %</u>		% Cover of Biotic Crust <u></u> %																															
Remarks: Relatively sparsely vegetated area. Biotic crust was dry, later determined to be an <i>Eleocharis obtusa</i> . Minors include <i>Beckmannia syzigachne</i> , <i>Chenopodium glaucum</i> .																																	

SOIL

Sampling Point: EDC-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0 - 1	10YR 8/2	100	-	-		Si	
1 - 14	7.5YR 5/6	100	-	-		See Remarks	Cobbly gravelly silt

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils:³

- ☐ 1 cm Muck (A9) (**LRR C**)
☐ 2 cm Muck (A10) (**LRR B**)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks: Vegetation at pit: *Hordeum jubatum*, *Chenopodium glaucum*.
 Problematic soils - recently developed/seasonally flooded (based on aerial photos).

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (**Nonriverine**)
☐ Sediment Deposits (B2) (**Nonriverine**)
☐ Drift Deposits (B3) (**Nonriverine**)
☐ Surface Soil Cracks (B6)
☒ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

- ☒ Salt Crust (B11)
☐ Biotic Crust (B12)
☒ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Plowed Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
☐ Sediment Deposits (B2) (**Riverine**)
☐ Drift Deposits (B3) (**Riverine**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Aerial photos show inundation in dry pond.

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-17-2012
 Applicant/Owner: Chevron Mining, INC. State: NM Sampling Point: EDC-3
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R12W S36
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Terrace Slope (%): 45
 Subregion (LRR): D - Interior Deserts Lat: 36.708668 Long: -105.609575 Datum: NAD83
 Soil Map Unit Name: Sedillo-Silva association, strongly sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="radio"/>	No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Wetland Hydrology Present?	Yes <input checked="" type="radio"/>	No <input type="radio"/>			
Remarks: PEM/PSS wetland formed from a hillside spring. Spring outflows to Eastern Diversion Channel. No distinct channel. Three additional spring wetlands occur north of this feature.					

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)																					
1.																										
2.																										
3.																										
4.																										
Sapling/Shrub Stratum Plot size: <u>30 x 20</u>		<u>17</u> = Total Cover			Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species <u>2</u></td> <td>x 1 =</td> <td><u>2</u></td> </tr> <tr> <td>FACW species <u>95</u></td> <td>x 2 =</td> <td><u>190</u></td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> <td><u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 =</td> <td><u>40</u></td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals: <u>107</u></td> <td>(A)</td> <td><u>232</u> (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = <u>2.17</u>	Total % Cover of:	Multiply by:		OBL species <u>2</u>	x 1 =	<u>2</u>	FACW species <u>95</u>	x 2 =	<u>190</u>	FAC species	x 3 =	<u>0</u>	FACU species <u>10</u>	x 4 =	<u>40</u>	UPL species	x 5 =	<u>0</u>	Column Totals: <u>107</u>	(A)	<u>232</u> (B)
Total % Cover of:	Multiply by:																									
OBL species <u>2</u>	x 1 =	<u>2</u>																								
FACW species <u>95</u>	x 2 =	<u>190</u>																								
FAC species	x 3 =	<u>0</u>																								
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UPL species	x 5 =	<u>0</u>																								
Column Totals: <u>107</u>	(A)	<u>232</u> (B)																								
1. <u>Salix exigua</u>		<u>10</u>	Yes	FACW																						
2. <u>Populus angustifolia</u>		<u>5</u>	Yes	FACW																						
3. <u>Eleagnus angustifolia</u>		<u>2</u>	No	OBL																						
4.																										
5.																										
Herb Stratum Plot size: <u>30 x 20</u>		<u>17</u> = Total Cover			Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present.																					
1. <u>Agrostis stolonifera</u>		<u>80</u>	Yes	FACW																						
2. <u>Bromus inermis</u>		<u>10</u>	No	FACU																						
3.																										
4.																										
5.																										
6.																										
7.																										
8.																										
9.																										
10.																										
Woody Vine Stratum Plot size:		<u>90</u> = Total Cover			Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																					
1.																										
2.																										
% Bare Ground in Herb Stratum <u>10 %</u>		% Cover of Biotic Crust <u> </u> %																								
Remarks: Predominantly PEM around spring with single stems of Salix exigua. Populus angustifolia and Eleagnus angustifolia line the perimeter of the feature.																										

SOIL

Sampling Point: EDC-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 5	10YR 4/2	100	-	-			Cl	Organic streaking
5 - 14	2.5YR 6/3	80	10YR 6/8	20	C	M	Cl	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils:³

- ☐ 1 cm Muck (A9) (LRR C)
☐ 2 cm Muck (A10) (LRR B)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☒ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Vegetation at pit: Agrostis stolonifera.
Problematic soil - recently developed wetland.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (any one indicator is sufficient)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (Riverine)
☐ Sediment Deposits (B2) (Riverine)
☐ Drift Deposits (B3) (Riverine)
☐ Drainage Patterns (B10)
☒ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:Surface Water Present? Yes ☒ No ☐Water Table Present? Yes ☒ No ☐Saturation Present? (includes capillary fringe) Yes ☒ No ☐

Depth (inches): 1

Depth (inches): 10

Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Flow is retained in a depression between a human-made berm and the hillslope. Spring outflows to the Eastern Diversion Channel, but no evidence of flow down slope of the confluence was observed. Three other seeps and springs were observed on this hillslope; this is the smallest, but closest to the remediation area.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-18-2012
 Applicant/Owner: Chevron Mining, INC. State: NM Sampling Point: EDC-3-UP
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R12W S36
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Terrace Slope (%):
 Subregion (LRR): D - Interior Deserts Lat: 36.699571 Long: -105.619925 Datum: NAD83
 Soil Map Unit Name: Sedillo-Silva association, strongly sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input type="radio"/>	No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks: Upland soil pit for EDC-3.					

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: <u>20 x 20</u>				
1. <i>Artemisia tridentata</i>		54	Yes	Not Listed
2. <i>Ericameria nauseosus</i>		10	No	Not Listed
3. <i>Juniperus monosperma</i>		3	No	Not Listed
4.				
5.				
		67	= Total Cover	
Herb Stratum Plot size: <u>20 x 20</u>				
1. <i>Agropyron cristatum</i>		25	Yes	Not Listed
2. <i>Thinopyrum intermedium</i>		12	Yes	Not Listed
3. <i>Heterotheca villosa</i>		2	No	Not Listed
4. <i>Bahia absinthifolia</i>		1	No	Not Listed
5.				
6.				
7.				
8.				
9.				
10.				
		40	= Total Cover	
Woody Vine Stratum Plot size: <u></u>				
1.				
2.				
			= Total Cover	
% Bare Ground in Herb Stratum	<u>60 %</u>	% Cover of Biotic Crust	<u></u> %	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	<u>0</u>
FACW species	x 2 =	<u>0</u>
FAC species	x 3 =	<u>0</u>
FACU species	x 4 =	<u>0</u>
UPL species	x 5 =	<u>200</u>
Column Totals:	<u>40</u> (A)	<u>200</u> (B)
Prevalence Index = B/A =		<u>5.00</u>

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: *Artemisia tridentata* heights to 6 feet. Bare ground includes up to 14 percent moss.

SOIL

Sampling Point: EDC-3-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | | | |
|--------------------------|---|--------------------------|----------------------------|
| <input type="checkbox"/> | Histosol (A1) | <input type="checkbox"/> | Sandy Redox (S5) |
| <input type="checkbox"/> | Histic Epipedon (A2) | <input type="checkbox"/> | Stripped Matrix (S6) |
| <input type="checkbox"/> | Black Histic (A3) | <input type="checkbox"/> | Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> | Hydrogen Sulfide (A4) | <input type="checkbox"/> | Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> | Stratified Layers (A5) (LRR C) | <input type="checkbox"/> | Depleted Matrix (F3) |
| <input type="checkbox"/> | 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> | Redox Dark Surface (F6) |
| <input type="checkbox"/> | Depleted Below Dark Surface (A11) | <input type="checkbox"/> | Depleted Dark Surface (F7) |
| <input type="checkbox"/> | Thick Dark Surface (A12) | <input type="checkbox"/> | Redox Depressions (F8) |
| <input type="checkbox"/> | Sandy Mucky Mineral (S1) | <input type="checkbox"/> | Vernal Pools (F9) |
| <input type="checkbox"/> | Sandy Gleyed Matrix (S4) | | |

Indicators for Problematic Hydric Soils:³

- ☐ 1 cm Muck (A9) (**LRR C**)
☐ 2 cm Muck (A10) (**LRR B**)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: No indicators. Vegetation at pit: *Thinopyrum intermedium*.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Water Table Present? Yes ☐ No ☒

Saturation Present? Yes ☐ No ☒
(includes capillary fringe)

Depth (inches):

Depth (inches):

Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrologic indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Questa Mine Remediation Removal Action City/County: Questa/Taos Sampling Date: 10-18-2012
 Applicant/Owner: Chevron Mining, Inc. State: NM Sampling Point: EDC-6
 Investigator(s): J. Dawson/ S. Hall Section, Township, Range: T29N R12W S36
 Landform (hillslope, terrace, etc.): Constructed channel Local relief (concave, convex, none): None Slope (%): <1
 Subregion (LRR): D - Interior Deserts Lat: 36.704765 Long: -105.609659 Datum: NAD83
 Soil Map Unit Name: Sedillo-Silva association, strongly sloping NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/>	No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/>	No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>			
Remarks: Continuation of EDC-1 and EDC-2 downstream of mine road. This feature lacks the wetland integrity present in EDC-1 and EDC-2. Marginal wetland vegetation: lack of hydric soils. Previous aerial photography shows inundation three of the six years aerials are available, but no other hydrologic indicators are present.					

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: 60 x 100			
1. <i>Heleanthus annuus</i>		22	Yes	FACU
2. <i>Polygonum aviculare</i>		30	Yes	FACW
3. <i>Persicaria penslyvanica</i>		5	No	FACW
4. <i>Hordeum jubatum</i>		3	No	FAC
5. <i>Polygonum ramosissimum</i>		3	No	FAC
6. <i>Conyza canadensis</i>		2	No	FACU
7. <i>Rumex triangularis</i>		2	No	FACW
8. <i>Bromus japonicus</i>		1	No	Not Listed
9. <i>Thinopyrum intermedium</i>		2	No	Not Listed
10.				
		70	= Total Cover	
Woody Vine Stratum	Plot size:			
1.				
2.				
			= Total Cover	
% Bare Ground in Herb Stratum <u>30 %</u>		% Cover of Biotic Crust <u> </u> %		
Remarks: Minors include <i>Grindelia squarrosa</i> . Gopher mounds present.				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	74
FAC species	x 3 =	18
FACU species	x 4 =	96
UPL species	x 5 =	15
Column Totals:		203 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

☒ Dominance Test is >50%

☒ Prevalence Index is ≤3.0¹

☐ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

SOIL

Sampling Point: EDC-6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 9	10YR 5/3	100					SiCL	Dry
9 - 14	10YR 5/3	100					SiCL	Mixed with tailings

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix. ²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (**LRR C**)
☐ 2 cm Muck (A10) (**LRR B**)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: Between 9 and 14 inches, soil mixed with oxidized rock, no real reduction or concentrations observed. Part of this area has a cracked clay surface, part has surface tailings visible with many gopher mounds. Soil indicators consistent with the marginal hydric indicators within the entirety of the EDC.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1) (**Nonriverine**)
☐ Sediment Deposits (B2) (**Nonriverine**)
☐ Drift Deposits (B3) (**Nonriverine**)
☒ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)

- ☐ Salt Crust (B11)
☐ Biotic Crust (B12)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres along Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Plowed Soils (C6)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
☐ Sediment Deposits (B2) (**Riverine**)
☐ Drift Deposits (B3) (**Riverine**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒
 Water Table Present? Yes ☐ No ☒
 Saturation Present? (includes capillary fringe) Yes ☐ No ☒
 Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Three of six photos available show inundation.

Remarks: Aerial taken in summers of 2004, 2009 and 2010 show this feature to be flooded. Currently, no evidence of an OHWM, channeling, or drainage patterns observed within the feature. Soil cracking consistent with dry soil observations in this area, does not resemble cracks from ponding.

FINAL

HISTORIC TAILING SPILLS REMOVAL ACTION COMPLETION REPORT CHEVRON QUESTA MINE SUPERFUND SITE

Revision 1

Prepared for
Chevron Mining Inc.
Questa, New Mexico

September 26, 2014

URS

URS Corporation
8181 E. Tufts Avenue
Denver, CO 80237

Project No. 22242874

Appendix C

Lower Dump Sump Wetland Delineation

DRAFT

LOWER DUMP SUMP WETLAND DELINEATION REPORT CHEVRON QUESTA MINE SUPERFUND SITE

Revision 0

Prepared for
Chevron Mining Inc.
Questa, New Mexico

February 5, 2014

URS

URS Corporation
8181 E. Tufts Avenue
Denver, CO 80237

Project No. 22242874

1.0 INTRODUCTION

URS conducted a wetland delineation on July 24, 2013 to support removal of the historic tailing spill at the Lower Dump Sump (LDS). Wetland delineation is the evaluation process used to determine whether wetlands meeting the Section 404 definition are present or absent in an area, as described in *the Overall Site Plan for Removal Actions, Chevron Questa Mine Superfund Site* (URS 2012).

Tailing was removed at the LDS site in 2013 under the United States Environmental Protection Agency (EPA) Administrative Settlement Agreement and Order on Consent for Removal Actions, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Docket No. 06-09-12 and its appended Statement of Work (EPA 2012). During the EPA final inspection of the removal at the LDS, EPA requested an exploratory trench down-gradient and west of the LDS to evaluate whether tailing was present in that area. Because the area was observed to contain potential wetland vegetation, EPA requested wetland delineation be conducted prior to excavation of the exploratory trench.

No wetlands were identified. A map of the study is provided in Attachment A.

2.0 SITE DESCRIPTION

The study area for the delineation included about 2 acres of land west of the LDS, including about 300 feet of the Gallegos Ditch, wooded and shrubby areas along the ditch and in the Red River riparian area, and meadows. The study area boundary is shown on Figure 1, along with the location of soil pit locations and the exploratory trench. The study area extended about 250 feet west from the edge of the LDS to the edge of the property and included a minimum of 100 feet along the southwestern and western edge of the LDS. It was designed to include potential areas that could be affected by excavation of an exploratory trench and a minimum 50 foot buffer. Photographs of the study area are provided in Attachment B.

Soils

Three soil map units are present within the study area, according to soils maps included in the Soil Survey of Taos County and Parts of Arriba and Mora Counties [Natural Resource Conservation Service (NRCS) 2013]. Tenorio loam, 0 to 3 percent slopes and 1 to 5 percent slopes, are soils of valley sides. They are deep, well-drained non-saline soils that are formed in alluvium derived from igneous and metamorphic rock. They are classified as farmland of statewide importance. Based on the NRCS 1:24,000 scale mapping, they occupy most of the study area. A small portion of the study area on the north edge is mapped as Fluvents, nearly level. These are deep, well-drained, non-saline soils comprised of gravelly sand, with a water table at 0 to 24 inches below ground surface. They occur on floodplains. About 20 percent of the Fluvents map unit has a loam or clay loam subsoil.

Vegetation

Vegetation types present in the study area include riparian woodland and shrub, mesic meadow, wet meadow, disturbed, and upland shrub. All of the vegetation types have been strongly affected by past human activities or result from human activity.

Riparian Woodland and Shrub occupies most of the northern third of the study area and is part of a large area of riparian woodland (bosque) associated with the Red River at Questa. Common species in these areas are listed below in Table 1. The common grass species are non-native, while the shrubs and trees are all native. The wetland status of the common species ranges from upland (UPL) to facultative wetland species (FACW).

Table 1
Common Species in Riparian Woodland and Shrub

Name	Species	Wetland Indicator ¹
Grasses and Grass-like Plants		
Creeping wildrye	<i>Elymus repens</i>	FAC
Kentucky bluegrass	<i>Poa pratensis</i>	FAC
Shrubs and Trees		
Deciduous traveller's joy	<i>Clematis ligusticifolia</i>	FAC
Narrow-leaf cottonwood	<i>Populus angustifolia</i>	FACW
Chokecherry	<i>Prunus virginiana</i>	FACU
Woods' rose	<i>Rosa woodsii</i>	FACU
Narrow-leaf willow	<i>Salix exigua</i>	OBL
Round-leaf snowberry	<i>Symphoricarpos rotundifolius</i>	UPL

¹Lichvar 2013.

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%)

Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)

Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

Mesic meadow vegetation occupies most of the study area. Mesic meadow vegetation occurs on relatively level areas on both sides of the Gallegos Ditch. The vegetation is a mixture of grasses and forbs, and of native and non-native species. Forbs provide a larger portion of the cover than grasses. Thickets of the shrub Wood's rose (*Rosa woodsii*) occur in two areas.

Most of the common species are facultative (FAC) indicators, meaning they occur equally in wetland and non-wetland areas, but indicator status ranges from UPL to FACW. The majority of vegetation cover is comprised of wetland indicator species (FAC and FACW). Several of the common species are non-native including smooth brome (*Bromus inermis*), creeping wildrye (*Elymus repens*), Kentucky bluegrass (*Poa pratensis*), and Mexican fireweed (*Kochia scoparia*). Common species are listed in Table 2.

Table 2
Common Species in Mesic Meadow

Name	Species	Wetland Indicator ¹
Grasses and Grass-like Plants		
Sleepygrass	<i>Acnatherum robustum</i>	UPL
Smooth brome	<i>Bromus inermis</i>	FAC
Creeping wildrye (quackgrass)	<i>Elymus repens</i>	FAC
Smooth scouring rush	<i>Equisetum laevigatum</i>	FACW
Kentucky bluegrass	<i>Poa pratensis</i>	FAC
Forbs		
Tarragon	<i>Artemisia dracunculus</i>	UPL
Mexican fireweed	<i>Bassia scoparia</i>	FAC
Shrubs		
Woods' rose	<i>Rosa woodsii</i>	FACU

¹Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%)

Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)

Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

Wet meadow vegetation occurs in limited and narrow areas within and along the banks of the Gallegos Ditch. Common species in these areas are listed in the Table 3. Most of the vegetation in these areas was comprised of FAC and obligate (OBL) wetland indicators, and therefore these areas were evaluated in the wetland delineation, as described in Section 4.0 Results. Several of the common species are non-native, including spreading bent, common timothy and Kentucky bluegrass. Other portions of the Gallegos Ditch banks were dominated by non-wetland vegetation.

Table 3
Common Species in Wet Meadow

Name	Species	Wetland Indicator ¹
Grasses and Grass-like Plants		
Spreading bent	<i>Agrostis stolonifera</i>	FAC
Water sedge	<i>Carex aquatilis</i>	OBL
Nebraska sedge	<i>Carex nebrascensis</i>	OBL

Table 3
Common Species in Wet Meadow

Name	Species	Wetland Indicator ¹
Common timothy	<i>Phleum pretense</i>	FAC
Kentucky bluegrass	<i>Poa pratensis</i>	FAC
Shrubs		
Wood's rose	<i>Rosa woodsii</i>	FACU

¹Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%)

Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)

Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

Disturbed occurs at the edge of the northern portion of the study area and west of the Gallegos Ditch at the former Reddell residence. It occurs around the former residence, a shed, former canal, and driveway. Vegetation is patchy with nearly 50 percent bare ground. A large number of species are present but most occur in limited amounts. The vegetation includes both native and introduced species, but the most common species are weedy. Wetland indicator status ranges from FAC to UPL. All of the common species are non-native with the exception of narrow-leaf willow (*Salix exigua*) and mealy goosefoot (*Chenopodium incanum*). Common species are shown in Table 4.

Table 4
Common Species in Disturbed

Name	Species	Wetland Indicator ¹
Grasses and Grass-like Plants		
Quackgrass, creeping wild-rye	<i>Elymus repens</i>	FAC
Forbs		
Mexican fireweed	<i>Bassia scoparia</i>	FAC
Mealy goosefoot	<i>Chenopodium incanum</i>	UPL
Tall hedge-mustard	<i>Sisymbrium altissimum</i>	FACU
Shrubs		
Narrow-leaf willow	<i>Salix exigua</i>	FACW

¹Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%)

Lower Dump Sump Wetland Delineation Report

Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)

Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

Upland shrub occurs on slopes at the south end of the study area. The only wetland indicator species are weedy FAC species, including Mexican fireweed and Russian olive. Scattered Russian olive (*Elaeagnus angustifolia*) and Rocky Mountain juniper (*Juniperus scopulorum*) trees are present. Most of the species are native. Common species are listed in Table 5.

Table 5
Common Species in Upland

Species	Name	Wetland Indicator ¹
Grasses and Grass-like Plants		
Blue grama	<i>Bouteloua gracilis</i>	UPL
Forbs		
Tarragon	<i>Artemisia dracunculus</i>	UPL
Mexican fireweed	<i>Bassia scoparia</i>	FAC
Shrubs and Trees		
Fringed sage	<i>Artemisia frigida</i>	UPL
Rubber rabbitbrush	<i>Ericameria nauseosa</i>	UPL
Russian olive	<i>Elaeagnus angustifolia</i>	FAC
Rocky Mountain juniper	<i>Juniperus scopulorum</i>	UPL
Twisted spine prickly pear	<i>Opuntia macrorhiza</i>	UPL

¹Lichvar 2013

Wetland indicator categories:

Obligate (OBL) – occurs almost always in wetlands under natural conditions (estimated probability >99%)

Facultative wetland (FACW) – usually occurs in wetlands (estimated probability 67-99%)

Facultative (FAC) – equally likely to occur in wetlands or non-wetlands (estimated probability 34-66%)

Facultative upland (FACU) – usually occurs in non-wetlands but occasionally found in wetlands (estimated probability 1-33%)

Obligate upland (UPL) – Almost always occurs in uplands in the region (estimated probability >99% in non-wetlands).

Hydrology

The study area is located in the Upper Rio Grande Watershed (HUC 13020101) and is a short distance from the Red River. The only feature mapped by the National Wetlands Inventory (NWI) (USFWS 2010) in the study area is Gallegos Ditch. Gallegos Ditch is mapped as R4SBC – riverine, intermittent, streambed, seasonally flooded, which is consistent with observations

made during the delineation. The NWI map unit includes two small drainages that are intercepted by the Gallegos Ditch outside of the study area. The Gallegos Ditch originates from the Red River just east of the LDS, and terminates in uplands just east of Four Hill Road, west of the study area. Its' total length is about 2, 900 feet, of which about 300 feet are located within the study area.

Wildlife

American elk (*Cervus elaphi*) droppings were common in the study area. A number of bird species were observed, including black-billed magpie (*Pica pica*), American kestrel (*Falco sparverius*), house wren (*Troglodytes aedon*), and violet-green swallow (*Tachycineta thalassina*).

3.0 METHODS

The study area was determined in the field by including potential areas that could be affected by excavation of an exploratory trench and a minimum 50 foot buffer. Field maps were created with ESRI® ArcGIS® software (1 inch equals 50 feet). Pre-field research included review of NWI maps, detailed air photos, topographic maps (USGS 1995), and previous environmental reports from the area.

The wetland delineation was conducted on July 24, 2013, by Jeffrey Dawson and Eric Bunnell. Wetland delineations were conducted using the Routine Determination protocol discussed in the *Corps of Engineers Wetland Delineation Manual Technical Report 4-87-1* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts* (Environmental Laboratory 2010). Wetlands are identified in the field as areas having positive evidence of three environmental parameters: hydric soils, wetland hydrology, and greater than five percent hydrophytic vegetation. Data for potential wetlands (Attachment C) were recorded on wetland data forms provided in the regional supplement.

Surface water features (i.e., streams and ponds) were identified by the presence of a defined bed and bank, evidence of an ordinary high water or bankfull indicator, and less than 50 percent vegetative cover within the bed. Field information recorded for surface water features included depth and width of the average ordinary high water mark, average bankfull depth, bank slope, substrate composition, source of hydrology, dominant vegetation, other vegetation, percent overstory, and any wildlife or their signs observed.

Locations of soil pits and other GPS data were recorded using a Trimble® sub-meter hand-held global positioning system (GPS). Photographs were taken of each feature. Unique identifiers were assigned to each feature delineated based on location. For example, the first potential wetland was assigned a unique identifier of WL-1.

Plant species were identified using Allred and Ivey (2012) and other botanical sources. Plant names follow Lichvar (2013) for wetland indicator species, and Allred (2003) for common names of upland species.

4.0 RESULTS

No wetlands were delineated in the study area and one surface water feature (Gallegos Ditch) was delineated. Based on an initial reconnaissance, two potential wetlands were identified – an

herbaceous area (WL-1) along a portion of the Gallegos Ditch and a scrub-shrub area (WL-2) below a section of the ditch. During the field assessment, these areas did not meet the requirements to be considered wetlands under the applicable Corps Manuals because they lacked indicators for soils and hydrology.

The potential herbaceous wetland area is identified as WL-1 in the data sheets and is shown in Photos 1 and 2 in Attachment B. This was an area about 75 feet long and about 2 to 3 feet wide on each side of the Gallegos Ditch in the central part of the study area. The area of potential wetland was bounded by the open water of the ditch and by raised berms of soil and sediment excavated from the ditch, which are visible on the aerial photo. The vegetation was dominated by hydrophytic sedges and grasses, with all 3 dominant species having wetland indicators, Nebraska sedge, Kentucky bluegrass and timothy. Three soil pits were dug and no hydric soil indicators were found. No water or saturation was found in the soil pits, and no evidence of hydrology was found in vegetated areas immediately adjacent to Gallegos Ditch. The irrigation channel was flowing at the time of the survey, but did not provide wetland hydrology to adjoining soils.

The potential scrub-shrub wetland area (WL-2 in the data sheets) consisted of a dense thicket of narrow-leaf willow located on a slope the east side of Gallegos Ditch and extending to the terrace below the ditch (Attachment B Photos 4 and 5). The vegetation was hydrophytic, with 3 of 4 species having wetland indicators, including narrow-leaf willow, deciduous traveller's joy (*Clematis ligusticifolia*), and Kentucky bluegrass. One soil pit was dug, located at the bottom of the slope about 5 feet vertically below Gallegos Ditch. No soil or hydrology indicators were observed. There was no observed evidence of overflow, leaks, or seepage from the ditch.

Water flowing in Gallegos Ditch was about 4 feet wide, about 8 inches deep, and flowing slowly at the time of the survey. The ditch is mostly elevated above the surrounding terrace in the study area. More information is provided on the surface water features data sheet in Attachment C. There were no irrigation turnouts or places that appeared to regularly receive irrigation in the study area. According to the US Geological Survey (USGS) map (USGS 1995) and air photos, Gallegos Ditch ends in an upland area. The downstream portions of the ditch were not observed during this field survey.

In addition to WL-1 and WL-2, the meadows and riparian forest in the study area were also dominated by plant species that are considered hydrophytic, including several meadow grasses, a common annual weed (Mexican fireweed), and the dominant tree species in the Red River riparian area (narrowleaf cottonwood, *Populus angustifolia*). These areas were not addressed in data sheets because they had no FACW or OBL species with the exception of narrowleaf cottonwood; there was no evidence of wetland hydrology with the exception of yellow sediment discussed below; and soils were non-hydric.

Thin deposits of yellow sediment were found on vegetation and surface soils along the ditch and in the meadow north of the ditch (Attachment B, Photo 10). The sediment deposits appear to have resulted from a recent storm event that sent excess water down the ditch from the Red River and overtopped the edges of the ditch. There was no apparent relationship between areas of sediment deposition and presence of wetland plant species. The sediment deposits and presumed overtopping were interpreted as an uncommon event that does not result in wetland hydrology.

5.0 CONCLUSION

No wetlands were delineated in the study area. Gallegos Ditch was delineated as an “other water” feature, and may be under the jurisdiction of the Clean Water Act.

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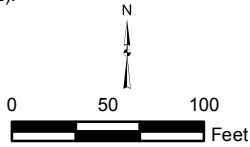
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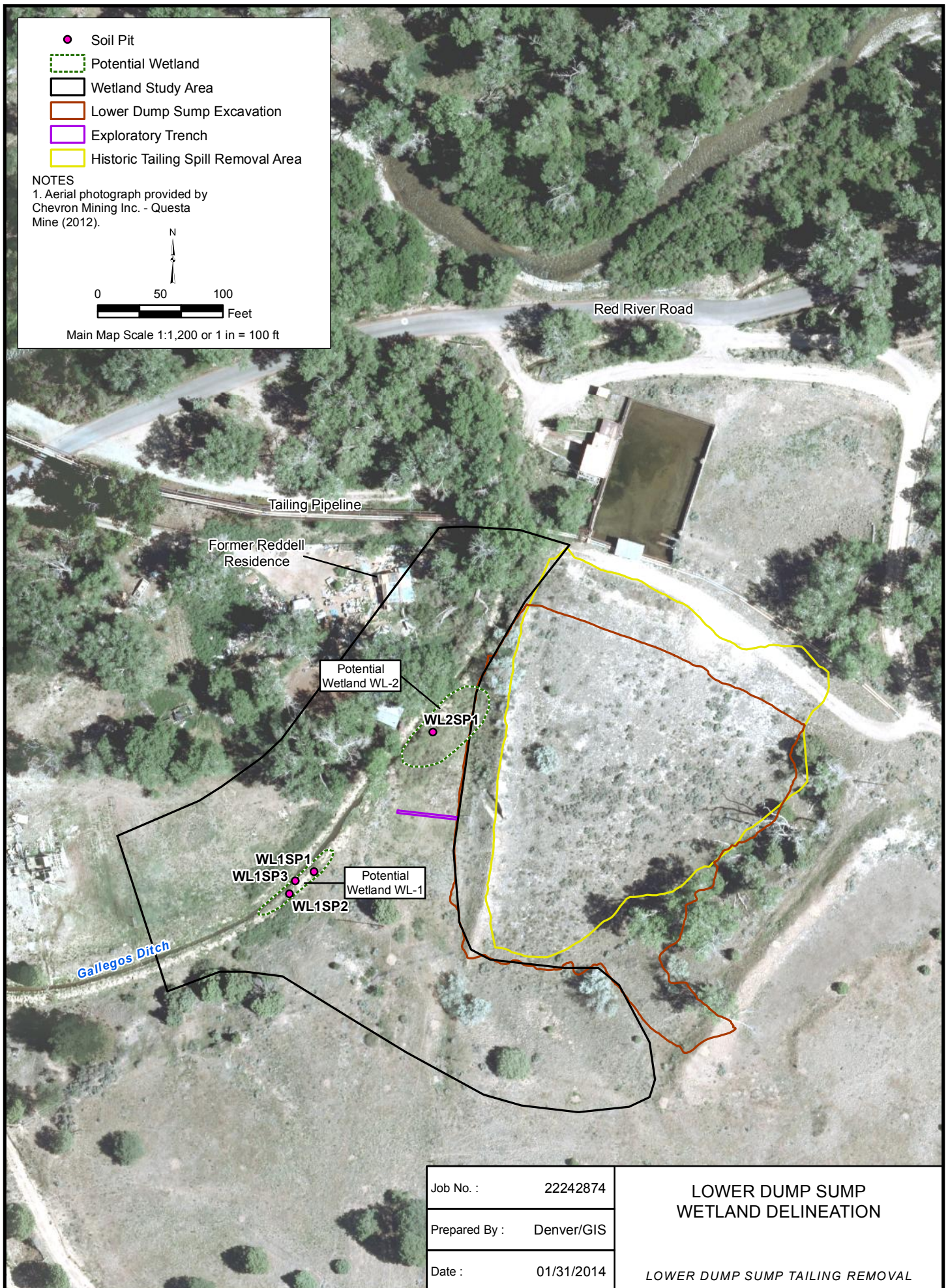
- Soil Pit
- ▭ Potential Wetland
- ▭ Wetland Study Area
- ▭ Lower Dump Sump Excavation
- ▭ Exploratory Trench
- ▭ Historic Tailing Spill Removal Area

NOTES

1. Aerial photograph provided by Chevron Mining Inc. - Questa Mine (2012).



Main Map Scale 1:1,200 or 1 in = 100 ft



Job No. :	22242874
Prepared By :	Denver/GIS
Date :	01/31/2014

LOWER DUMP SUMP WETLAND DELINEATION

LOWER DUMP SUMP TAILING REMOVAL



Photo 1. WL-1, looking west along Gallegos Ditch. Shrub on right is Wood's rose.



Photo 2. WL-1, looking east along Gallegos Ditch.



Photo 3. Upland shrub on slope south of WL-1.



Photo 4. WL-2, looking west.



Photo 5. WL-2 (on left), looking north. LDS excavation is on right.



Photo 6. Weedy area and shed at former Reddell Residence, looking southeast. Gallegos Ditch is behind shed.



Photo 7. Riparian woodland and shrub, Gallegos Ditch and back of shed, looking south.



Photo 8. Riparian woodland east of former Reddell residence, looking northwest. Elevated tailing pipeline is in right background.



Photo 9. Meadow north of Gallegos Ditch, looking west.



Photo 10. Recent sediment deposits in meadow.



Photo 11. Meadow north of Gallegos Ditch, looking east.



Photo 12. Meadow adjacent to LDS, looking south.

Surface Waters Features Data Sheet	
Project -	HTS Project
Date -	Wednesday, July 24, 2013
Investigators -	Jeff Dawson
Area ID -	Gallegos Ditch
Centerpoint coordinates -	
HUC -	13020101 (Upper Rio Grande)
Land Use -	Dispersed residential
Physical	
Type of feature (pond or stream)-	irrigation ditch
Source-	Red River
Connectivity -	unknown, appears to end in upland
Water Clarity (clear, murky, turbid)-	cloudy
Water Color (if obvious)-	whitish
For Streams Only	
Average Width of OHWM (bankfull)-	4 feet
Average observed width-	4 feet
Bankfull depth-	14 inches
Observed Depth-	8 inches
Bank Slope (X:X) (on each side if different - use N/S or E/W)-	vertical
Evidence of undercutting or excessive erosion-	No
Occurance of riffle-pool-run complexes (Natural hydro only)-	NA
Channelized or meandering (Natural hydro only)-	NA
Bed substrate composition-	clayey silt
Velocity (slow, moderate, fast)-	slow
Flow Direction (to)-	west
For Ponds Only	
Inlet/Outlet present?	
Restricted outlet?	
Biological	
Percent estimated bank cover-	100
Bank vegetation (dominant species/if associated with wetland refer to data sheet)-	sedges and grasses
Aquatic vegetation present (Y/N, list species if known)-	none
Percent overstory (amount hanging over the channel, streams only)-	10
Evidence of rafted/submerged large woody debris-	NA
Evidence of other rafting (smaller debris, etc.)-	NA
Aquatic or terrestrial wildlife present (list species)-	magpie, kestrel, house wren, violet-green swallow
Notes:	

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: HTS Project/Lower Dump Sump City/County: Questa, Taos County Sampling Date: 7/24/13
 Applicant/Owner: Chevron State: NM Sampling Point: WL-1
 Investigator(s): Jeff Dawson, Eric Bunnell Section, Township, Range: Section 6, T28N, R13E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): E - Rocky Mountain Forests and Rangeland Lat: 36.69401 Long: -105.5292 Datum: NAD 1983
 Soil Map Unit Name: Tenorio loam, 1-3% slope NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?	Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>		
Remarks: Potential wetland along a portion of Gallegos Ditch with some FACW and OBL vegetation. The ditch at the pit and to the west is at the base of a 4:1 slope to the south. To the east, the ditch is elevated above the Lower Dump Sump and Red River Valley. To the north is a mesic meadow about 5 feet lower than ditch			

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0 %</u> (A/B)																										
1.																															
2.																															
3.																															
4.																															
= Total Cover					Prevalence Index worksheet: <table border="1"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> <th></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>31</td> <td>x 1 = 31</td> </tr> <tr> <td>FACW species</td> <td>4</td> <td>x 2 = 8</td> </tr> <tr> <td>FAC species</td> <td>69</td> <td>x 3 = 207</td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 = 0</td> </tr> <tr> <td>UPL species</td> <td></td> <td>x 5 = 0</td> </tr> <tr> <td>Column Totals:</td> <td>104</td> <td>(A)</td> <td>246 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> <td colspan="2">2.37</td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:		OBL species	31	x 1 = 31	FACW species	4	x 2 = 8	FAC species	69	x 3 = 207	FACU species		x 4 = 0	UPL species		x 5 = 0	Column Totals:	104	(A)	246 (B)	Prevalence Index = B/A =		2.37	
Total % Cover of:	Multiply by:																														
OBL species	31	x 1 = 31																													
FACW species	4	x 2 = 8																													
FAC species	69	x 3 = 207																													
FACU species		x 4 = 0																													
UPL species		x 5 = 0																													
Column Totals:	104	(A)	246 (B)																												
Prevalence Index = B/A =		2.37																													
Sapling/Shrub Stratum Plot size: _____																															
1.																															
2.																															
3.																															
4.																															
5.																															
= Total Cover																															
Herb Stratum Plot size <u>10 x 2 m</u>																															
1. <i>Carex aquatilis</i>		6	No	OBL																											
2. <i>Poa pratensis</i>		30	Yes	FAC																											
3. <i>Geum macrophyllum</i>		2	No	FAC																											
4. <i>Epilobium ciliatum</i>		4	No	FACW																											
5. <i>Rumex crispus</i>		4	No	FAC																											
6. <i>Agrostis stolonifera</i>		5	No	FAC																											
7. <i>Bromus inermis</i>		3	No	FAC																											
8. <i>Carex nebrascensis</i>		25	Yes	OBL																											
9. <i>Phleum pratense</i>		25	Yes	FAC																											
10.																															
104 = Total Cover																															
Woody Vine Stratum Plot size: _____																															
1.																															
2.																															
= Total Cover																															
Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																															
Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>																															

SOIL

Sampling Point: WL-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0-14	10YR4/4	95				silty clay loam	mixed matrix
	10YR2/1	3				silty clay loam	
	10YR7/4	2				silty clay loam	
14-18	10YR4/3	95				silty clay loam	mixed matrix
	7.5YR6/6	5				silty clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)		

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 <input type="radio"/> No <input checked="" type="radio"/>
--	---

Remarks: No hydric indicators. Soils may be modified by ditch maintenance, although spoil from most recent ditch cleaning is deposited outside area of potential wetland. Yellowish material appears to be lenses of fine sand. Soil pits 2 and 3 were similar. All soil pits within 2 to 3 feet of edge of open water in ditch.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4a, and 4b)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reductions in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations: Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>
---	--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators. There is no evidence of regular overflow, leaks or seepage from the ditch, which was flowing at

WETLAND DETERMINATION DATA FORM - Western Mountains, Valleys, and Coast

Project/Site: HTS Project/Lower Dump Sump City/County: Questa, Taos County Sampling Date: 7/24/13
 Applicant/Owner: Chevron State: NM Sampling Point: WL-2
 Investigator(s): Jeff Dawson, Eric Bunnell Section, Township, Range: Section 6, T28N, R13E
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): E - Rocky Mountain Forests and Rangeland Lat: 36.69432 Long: -105.5949 Datum: NAD 1983
 Soil Map Unit Name: Tenorio loam, 1-3% slope NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ 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 <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks:		

VEGETATION - Use scientific names of plants.

Tree Stratum	Plot size:	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
Sapling/Shrub Stratum Plot size: <u>10 x 5 m</u>		= Total Cover		
1. <i>Salix exigua</i>		100	Yes	FACW
2. <i>Clematis ligustifolia</i>		25	Yes	FAC
3.				
4.				
5.				
Herb Stratum Plot size: <u>10 x 5 m</u>		= Total Cover		
1. <i>Cynoglossum officinale</i>		6	Yes	FACU
2. <i>Poa pratensis</i>		6	Yes	FAC
3. <i>Cirsium arvense</i>		2	No	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Woody Vine Stratum Plot size:		14	= Total Cover	
1.				
2.				
			= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	200
FAC species	x 3 =	99
FACU species	x 4 =	24
UPL species	x 5 =	0
Column Totals:		139 (A) 323 (B)
Prevalence Index = B/A =		2.32

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☒ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ 5 - Wetland Non-Vascular Plants¹

☐ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: WL-2**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR4/4	100					Loam	slightly moist, crumb structure

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains²Location: 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)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ Sandy Gleyed Matrix (S4)

- ☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1) (**except MLRA1**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10)
☐ 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: No hydric 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)
☐ Surface Soil Cracks (B6)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reductions in Tilled Soils (C6)
☐ Stunted or Stressed Plants (D1) (**LRR A**)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4a, and 4b**)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ Shallow Aquitard (D3)
☐ FAC-Neutral Test (D5)
☐ Raised Ant Mounds (D6) (**LRR A**)
☐ Frost-Heave Hummocks (D7) (**LRR F**)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☐ No ☒ Depth (inches): _____
 Saturation Present? Yes ☐ No ☒ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators. Soil pit is at bottom of steep slope, directly below Gallegos Ditch, which was flowing at the time

APPENDIX E

CHEVRON QUESTA MINE TAILINGS PIPELINE REMOVAL PROJECT CULTURAL RESOURCES SURVEY

1.0 CULTURAL RESOURCES SURVEY SUMMARY

At the request of Chevron Environmental Management Company (CEMC), Arcadis surveyed ditches and other cultural resources along the Tailings Pipeline removal corridor in December 2017 and in April and May 2018. The survey results were submitted to the New Mexico Historic Preservation Office (SHPO) under New Mexico Cultural Resource Information System (NMCRIS) numbers 139651 and 140384 (ARCADIS 2018a and 2018b). The cultural resources were surveyed in or near the pipeline removal stages shown in Attachment A. A finding of No Adverse Effect on Historic Properties was documented by Arcadis in both surveys.

This document summarizes the cultural survey results as they pertain to the Chevron Questa Mine Tailings Pipeline Removal Project. Excerpts from the Arcadis cultural surveys are attached to this summary, including the report cover letters, NMCRIS Investigation Abstract Forms (NIAF), and select report figures. The following historic structures were found and evaluated for eligibility in the National Register of Historic Places (NRHP) during the cultural surveys.

NMCRIS No.: 139651 (see attached Cover Letter, NIAF, and FIG-4)

South Ditch (aka: Questa Citizens South Ditch, South Side Ditch, HCPI 44457/LA83968)

Thunder Bridge (aka: Second River Crossing, HCPI 44458/CQTP-01)

NMCRIS 140384 (see attached Cover Letter, NIAF, FIG-2, and FIG-3)

Elevated Trestle (aka: HCPI 44844)

Lower Dump Sump (aka: HCPI 44845)

North Ditch (aka: Embargo Ditch, Embargo Acequia, HCPI 44846)

Acequia Del Molina (aka: Molina Ditch, HCPI 44847)

Middle Ditch (aka: HCPI 44848)

Two of the historic structures found during the cultural surveys are considered eligible for inclusion in the NRHP. The two eligible structures are the South Ditch and the North Ditch (Embargo Ditch). All other historic structures found during the surveys are recommended as not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria.

The South Ditch has been previously documented and evaluated as eligible for inclusion in the National Register of Historic Places. The extent of the South Ditch on Chevron property was documented in December 2017 and the effects of the project upon it evaluated (ARCADIS 2018a). Only non-significant portions of the ditch were potentially to be impacted by the Tailings Pipeline Removal project. A finding of No Adverse Effect on a Historic Property received concurrence from the New Mexico SHPO. The Forest Service did not indicate any adverse effects to the portion of the South Ditch on their property in their report to you.

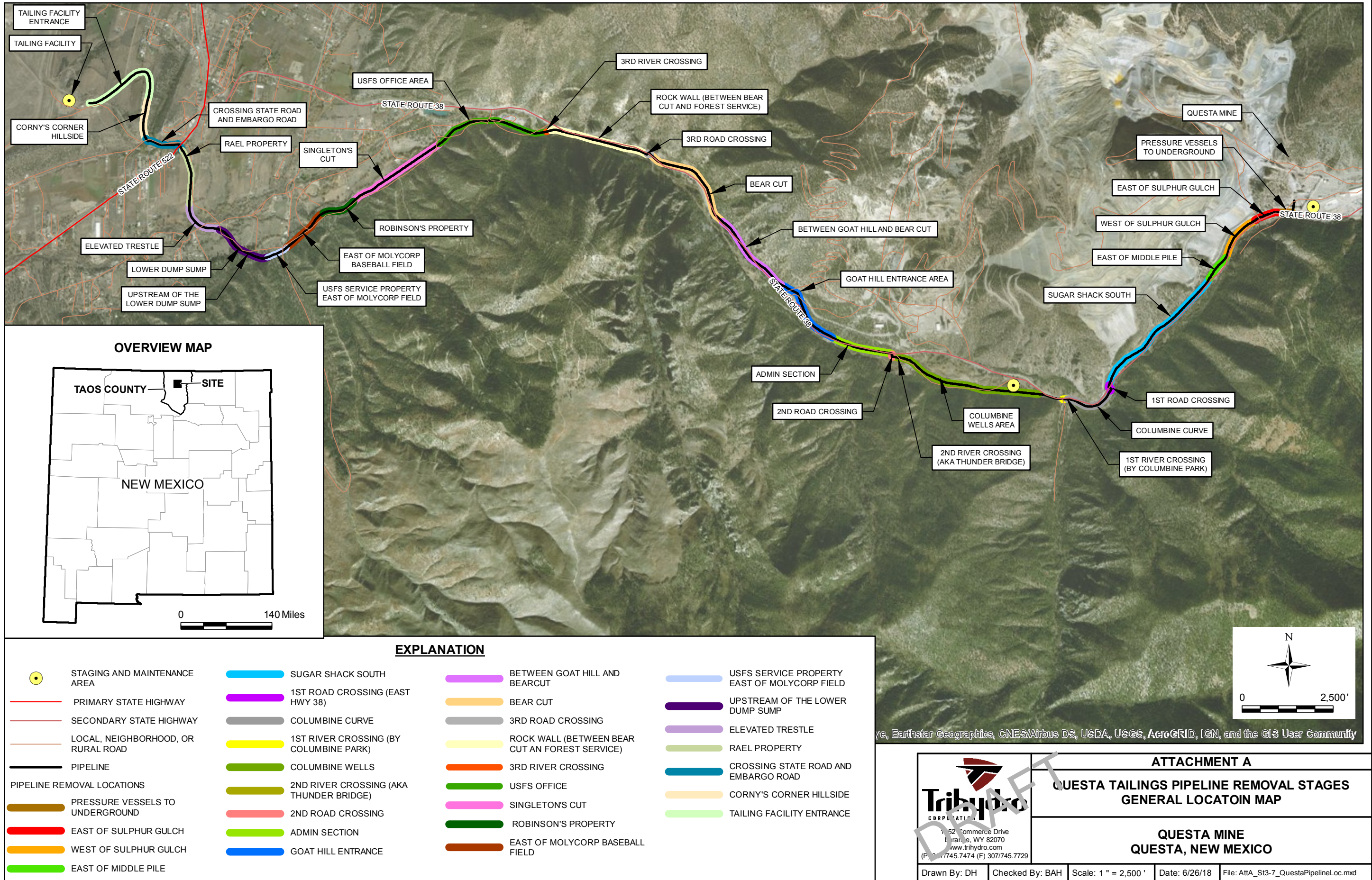
The North Ditch (Embargo Ditch) was evaluated by Arcadis in May 2018 and has not been formally documented or evaluated for NRHP eligibility by the New Mexico SHPO. The North Ditch is primarily located on private lands with short portions located on NM Department of Highways lands where it crosses NM State Highway 38 and NM State Highway 522 in Questa. A portion of the North Ditch is in the Tailings Pipeline Removal project Area of Potential Effect (APE) where it parallels Lower Embargo Road and crosses underneath State Highway 522. The North Ditch is recommended as eligible for the NRHP. The Chevron former tailing pipeline will be abandoned in place where it crosses the North Ditch. Therefore, the project will have No Adverse Effect on Historic Properties.

2.0 REFERENCES

ARCADIS. 2018a. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 139651). January 12, 2018.

ARCADIS. 2018b. Chevron Questa Mine Tailings Pipeline Removal Project, Cultural Resources Survey, Taos County, New Mexico (NMCRIS No. 140384). May 29, 2018.

M:\CHEVRON\CMC_MINING\QUESTA\TAIING PIPELINE\GIS\MAPS\APPENDIX\BATT_1\ST3_7_QUESTA PIPELINE LOC.MXD



Mr. Clinton Chisler
Mining Act Reclamation Program
Mining and Minerals Division
Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject:

**Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources
Survey, Taos County, New Mexico (NMCRIS No. 139651)**

Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers four segments of Stage 2 that are located on CMI property (Above Lower Dump Sump, East of MolyCorp Baseball Field, Singleton's Cut and Columbine Wells Area) and one segment on private property (Robinson's Property). One previously recorded historic ditch (Questa Citizens South Ditch/HCP1 44457/LA83968) is located within the Area of Effect (APE) of the project crossing through the Above Lower Dump Sump, East of MolyCorp Baseball Field, Robinson Property, and Singleton's Cut segments. The Ditch has been determined to be eligible for the National Register of Historic Places (NRHP) by the New Mexico Historic Preservation Office (SHPO). Only non-contributing portions of the Ditch are located within the project APE and no further work is recommended. One newly recorded historic structure is located within the APE of the project segments. The Thunder Bridge (HCP1 44458) is located in Red River Canyon at the west end of the Columbine Wells Area segment. This structure has been evaluated as not eligible for inclusion in the NRHP as it meets none of the NRHP eligibility criteria. No further work is recommended. Nine historic isolated finds (IF #s 1-9) were also documented during this investigation, all of which are recommended as not eligible for the NRHP. The proposed project will therefore have No Adverse Effect on Historic Properties.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or

Environmental Business Consulting

Date:
January 12, 2018

Contact:
Dulaney Barclay

Phone:
720-344-3830

Email:
dulaney.barclay@arcadis.co
m

Our ref:
B0046795.0075

Mr. Clinton Chisler
January 12, 2018

concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, reading "Dulaney Barclay". The signature is written in a cursive, flowing style with a long horizontal stroke at the end.

Dulaney Barclay
Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM

NMCRIS No.: 139651

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 139651	2a. Lead Agency: NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead Agency Report No.:
4. Title of Report: Chevron Questa Tailings Pipeline Cultural Resources Inventory Stage 2 Sections B Thru D Author(s) Dulaney Barclay			5. Type of Report <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Positive
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Archaeological Survey/Inventory <input type="checkbox"/> Architectural Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Compliance Decision Based on Previous Inventory <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic Study <input type="checkbox"/> Site/Property Specific Visit <input type="checkbox"/> Historic Structures Report <input type="checkbox"/> Other			
7. Description of Undertaking (what does the project entail?): Project involves the removal of a slurry pipeline that extends between the Questa Mine and the Tailings Facility. The current investigation focused on inventory of the portion of the pipeline on Chevron property and one private parcel			
[] Continuation			
8. Dates of Investigation: from: 12-Dec-2017 to: 13-Dec-2017		9. Report Date: 12-Jan-2018	
10. Performing Agency/Consultant: ARCADIS Principal Investigator: Dulaney Barclay Field Supervisor: Dulaney Barclay Field Personnel Names: Historian / Other:			
11. Performing Agency/Consultant Report No.:			
12. Applicable Cultural Resource Permit No(s):			

NMCRIS No.: 139651

13. Client/Customer (project proponent):

NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals D

Contact:

Address:

Phone:

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	Acres Surveyed	Acres in APE
Private Corporation (see records for company name)	24.80	24.80
TOTALS	24.80	24.80

16. Records Search(es):

Date(s) of HPD/ARMS File Review: November 30, 2017	Name of Reviewer(s): Dulaney Barclay	
Date(s) of Other Agency File Review:	Name of Reviewer(s):	Agency:

17. Survey Data:

a. Source Graphics ☐ NAD 27 ☒ NAD 83 Note: NAD 83 is the NMCRIS standard.

☒ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:

☒ GPS Unit Accuracy ☐ <1.0m ☒ 1-10m ☐ 10-100m ☐ >100m

☐ Aerial Photo(s)

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name

USGS Quad Code

Questa, NM

36105-F5

c. County(ies): TAOS

d. Nearest City or Town: Questa, NM

e. Legal Description:

Township (N/S)	Range (E/W)	Section
29N	12E	36
29N	13E	31
28N	13E	6
28N	13E	5

Projected legal description? ☐ Yes ☒ No ☐ Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

NMCRIS No.: 139651

18. Survey Field Methods:

Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☐ block survey units ☒ linear survey units (l x w):

☐ other survey units (specify):

Scope: ☒ non-selective (all sites/properties recorded) ☐ selective/thematic (selected sites/properties recorded)

Coverage Method: ☒ systematic pedestrian coverage

☐ other method (describe):

Survey Interval (m): 15 **Crew Size:** 1 **Fieldwork Dates:** from: 12-Dec-2017 to: 13-Dec-2017

Survey Person Hours: 8.00 **Recording Person Hours:** 4.00 **Total Hours:** 12.00

Additional Narrative:

[] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Elevations vary from approximately 7400 to 7600 feet AMSL. Vegetation consists of an overstory of pine and juniper trees with understory of low shrubs, mixed forbs, cactus, and grasses. Soils consist of gravelly sandy loams derived from alluvium and colluvium. Project area is located in the Red River Canyon and on the gentle slopes at the base of the Taos Mountains, an extension of the Sangre DeCristo Range.

[] Continuation

20.a. Percent Ground Visibility:

Ranges from 100 % on bladed road to 50% on slopes above pipeline; averages 70-80%.

b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

Survey corridor was primarily along a bladed access road that runs parallel to the pipeline on north side. Eroded along steep slopes on south side of pipeline. Pipeline parallels transmission line in places.

[] Continuation

21. CULTURAL RESOURCE FINDINGS

☒ Yes, see next report section

☐ No, discuss why:

[] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

[] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[X] Historic Cultural Property Inventory Forms, if applicable

[] List and Description of Isolates, if applicable

NMCRIS No.: 139651

☒ Photographs and Log

☐ Other Attachments (Describe):

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: Printed Name: Dulaney Barclay

Signature: Dulaney Barclay Date: 1/12/18 Title: Principal Investigator

25. Reviewing Agency

Reviewer's Name/Date:

Accepted ☐ Rejected ☐

26. SHPO

Reviewer's Name/Date:

HPD Log #:

Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 9

☐ Non-selective isolate recording?

HCPI properties discovered and registered: 2

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 2

MANAGEMENT SUMMARY: Questa Citizens South Ditch (HCPI 44457/LA83968) previously determined eligible for National Register.

Only non-contributing portions of the Questa Citizens South Ditch (HCPI 44457/LA83968) are within the Area of Potential Effect.

No adverse effects to Ditch from proposed project. No further work is necessary.

Thunder Bridge (HCPI 44458) is recommended not eligible for National Register. No further work is necessary.

☐ Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

NMCRIS No.: 139651

LA/HCPI No. Field/Agency No.

HCPI44457 LA83968

HCPI44458 CQTP-01

Eligible? (Y/N/U, applicable criteria)

Y under Criteria A, C, and D per SHPO

N

Previously recorded revisited sites/HCPI properties:

LA/HCPI No. Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

Previously recorded sites (site update form required):

LA No. Field/Agency No.

LA No. Field/Agency No.

Areas outside known nearby site boundaries monitored? ☐ Yes

☐ No, Explain why:

TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)



Legend

- Pipeline Features
- Questa Ditch (HCPI 44457)
- Questa Tailing Pipeline

Notes:
State Plane Coordinate Datum:
NAD83 State Plane NM Central Feet (ft)
Base Imagery provided by ESRI ArcGIS online Bing
Map Hybrid and Bing Maps Aerial 2012

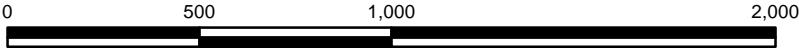


CHEVRON MINING INC. QUESTA MINE

Cultural Resource Location Map
Questa Ditch Segments



FIGURE
4



Mr. Clinton Chisler
Mining Act Reclamation Program
Mining and Minerals Division
Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Subject:

**Chevron Questa Mine Tailings Pipeline Removal Project Cultural Resources
Survey, Taos County, New Mexico (NMCRIS No. 140384)**

Dear Mr. Chisler:

Enclosed please find our cultural resources inventory report for the Chevron Mining, Inc. (CMI) Questa Tailings Pipeline Removal Project in Taos County, New Mexico. The enclosed report covers Stage 2 Section A and portions of Stages 3 thru 8 that are located on CMI property. Five historic structures including the Elevated Trestle (HCPI 44844), Lower Dump Sump (HCPI 44845), Embargo Ditch (HCPI 44846), Acequia Del Molina (HCPI 44847) and Middle Ditch (HCPI 44848) were found within the Area of Potential Effect. The Embargo Ditch (HCPI 44846) is recommended as eligible for the National Register of Historic Places (NRHP) under Criterion C of the National Register Eligibility Criteria. The Embargo Ditch will not be adversely affected as the Tailings Pipeline will be abandoned in place where it crosses the Ditch. The other historic structures are all recommended as not eligible for inclusion in the NRHP as they fail to meet any of the Eligibility Criteria. The proposed project will therefore have No Adverse Effect on Historic Properties.

A copy of this report will also be attached to a Pre-Construction Notification (PCN) for the US Army Corp of Engineers (USACE) to fulfill the conditions for use of Nationwide Permit (NWP) 12. A USACE permit is required as the pipeline crosses the Red River, a jurisdictional waterway, in four locations within the current inventory area. The Embargo Ditch, Acequia Del Molina Ditch, and Middle Ditch are also considered jurisdictional waterways of the United States as they draw water from, and return water to, the Red River. A USACE NWP 12 for utility line activities is required for them as well. The USACE will have 30 days to review the PCN and determine if it is complete.

The report has been filed electronically with the New Mexico SHPO through the New Mexico Cultural Resources Information System (NMCRIS). A hard copy of this report has also been forwarded to Bob Estes, Staff Archaeologist at the New

Environmental Business Consulting

Date:
May 29, 2018

Contact:
Dulaney Barclay

Phone:
720-344-3830

Email:
dulaney.barclay@arcadis.co
m

Our ref:
B0046795.0075

Mr. Clinton Chisler
May 29, 2018

Mexico Historic Preservation Division, for concurrence with the recommendations of eligibility and effect. The SHPO will have up to 30 days to comment and/or concur with these findings. Please feel free to contact me if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, reading "Dulaney Barclay". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Dulaney Barclay
Senior Archaeologist

Arcadis U.S., Inc.

Copies:

Bob Estes, New Mexico Historic Preservation Division, Santa Fe, NM
US Army Corp of Engineers, Albuquerque District, Albuquerque, NM

NMCRIS No.: 140384

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.: 140384	2a. Lead Agency: NM Energy, Minerals & Natl. Res. Dept. Mining and Minerals Division	2b. Other Agency(ies):	3. Lead Agency Report No.:
4. Title of Report: Questa Tailings Pipeline Cultural Resources Inventory Stages 2 Thru 8, Taos County, New Mexico Author(s) Dulaney Barclay			5. Type of Report <input type="checkbox"/> Negative <input checked="" type="checkbox"/> Positive
6. Investigation Type <input type="checkbox"/> Research Design <input checked="" type="checkbox"/> Archaeological Survey/Inventory <input type="checkbox"/> Architectural Survey/Inventory <input type="checkbox"/> Test Excavation <input type="checkbox"/> Excavation <input type="checkbox"/> Collections/Non-Field Study <input type="checkbox"/> Compliance Decision Based on Previous Inventory <input type="checkbox"/> Overview/Lit Review <input type="checkbox"/> Monitoring <input type="checkbox"/> Ethnographic Study <input type="checkbox"/> Site/Property Specific Visit <input type="checkbox"/> Historic Structures Report <input type="checkbox"/> Other			
7. Description of Undertaking (what does the project entail?): Arcadis U.S., Inc conducted an inventory of approximately 2.6 miles of the Questa Tailings Pipeline that extends between the Questa Molybdenum Mine and the Tailings Facility.			
[] Continuation			
8. Dates of Investigation: from: 05-Apr-2018 to: 16-May-2018		9. Report Date: 29-May-2018	
10. Performing Agency/Consultant: ARCADIS Principal Investigator: Dulaney Barclay Field Supervisor: Dulaney Barclay Field Personnel Names: Historian / Other:			
11. Performing Agency/Consultant Report No.:			
12. Applicable Cultural Resource Permit No(s):			

NMCRIS No.: 140384

13. Client/Customer (project proponent):

Chevron Mining Inc.

Contact: Gabriel Herrera

Address: PO Box 469, Questa, NM 87556

Phone: (575) 586-7571

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	Acres Surveyed	Acres in APE
Chevron Mining Inc.	32.90	32.90
TOTALS	32.90	32.90

16. Records Search(es):

Date(s) of HPD/ARMS File Review: 12/8/2017; 3/5/2018; 3/6/2018	Name of Reviewer(s): Dulaney Barclay	
Date(s) of Other Agency File Review:	Name of Reviewer(s):	Agency:

17. Survey Data:

a. Source Graphics [] NAD 27 [X] NAD 83 Note: NAD 83 is the NMCRIS standard.

☒ USGS 7.5' (1:24,000) topo map ☐ Other topo map, Scale:

☒ GPS Unit Accuracy ☒ <1.0m ☐ 1-10m ☐ 10-100m ☐ >100m

☐ Aerial Photo(s)

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name

USGS Quad Code

Questa, NM	36105-F5
Red River, NM	36105-F4

c. County(ies): TAOS

d. Nearest City or Town:

e. Legal Description:

Township (N/S)

Range (E/W)

Section

29N	13E	31
28N	13E	6

Projected legal description? [] Yes [X] No [] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

NMCRIS No.: 140384

Intensity: ☒ 100% coverage ☐ <100% coverage

Configuration: ☒ block survey units ☒ linear survey units (l x w):

☐ other survey units (specify):

Scope: ☒ non-selective (all sites/properties recorded) ☐ selective/thematic (selected sites/properties recorded)

Coverage Method: ☒ systematic pedestrian coverage

☐ other method (describe):

Survey Interval (m): 15 **Crew Size:** 2 **Fieldwork Dates:** from: 05-Apr-2018 to: 16-May-2018

Survey Person Hours: 16.00 **Recording Person Hours:** 16.00 **Total Hours:** 32.00

Additional Narrative:

[] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

Project is situated in the Red River Valley of north-central New Mexico at elevation of 7400-7480 feet above mean sea level. It is located within a High Desert Shrub vegetative community and includes scrub pines, junipers, sagebrush, cactus, and scrub oak. Riparian areas along Red River have thick grasses, mixed forbs, cottonwood trees, and willows.

[] Continuation

20.a. Percent Ground Visibility:

b. Condition of Survey Area (grazed, bladed, undistributed, etc.):

Visibility ranges from 30% in riparian areas to 80% in open areas. Project area has been impacted by grazing and development including mine and residential development.

[] Continuation

21. CULTURAL RESOURCE FINDINGS

☒ Yes, see next report section

☐ No, discuss why:

[] Continuation

22. Attachments (check all appropriate boxes):

[X] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[X] Copy of NMCRIS Map Check (required)

[] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[X] Historic Cultural Property Inventory Forms, if applicable

[] List and Description of Isolates, if applicable

[] List and Description of Collections, if applicable

NMCRIS No.: 140384

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: Printed Name: Dulaney Barclay

Signature: Dulaney Barclay Date: 5/29/18 Title: Principal Investigator

25. Reviewing Agency	26. SHPO
Reviewer's Name/Date:	Reviewer's Name/Date:
Accepted [] Rejected []	HPD Log #:
	Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 0

☐ Non-selective isolate recording?

HCPI properties discovered and registered: 5

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 5

MANAGEMENT SUMMARY: Five historic structures within Area of Potential Effect consisting of two structures associated with the Tailings Pipeline and three historic ditches (acequias). Only one resources is evaluated as eligible for inclusion in the National Register. The Embargo Ditch (HCPI44846) is recommended eligible for the National Register under Criterion C as representative of middle to late 19th Century acequia in the Red River Valley. All other resources are recommended not eligible for the National Register.

[] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

NMCRIS No.: 140384

HCPI44844	N
HCPI44845	N
HCPI44846	Y, Criterion C
HCPI44847	N
HCPI44848	N

Previously recorded revisited sites/HCPI properties:

LA/HCPI No.	Field/Agency No.	Eligible? (Y/N/U, applicable criteria)
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MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

Previously recorded sites (site update form required):

LA No. Field/Agency No.

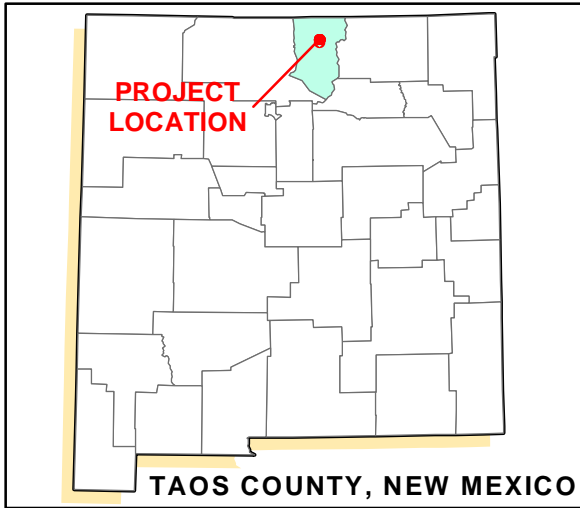
LA No. Field/Agency No.

Areas outside known nearby site boundaries monitored? ☐ Yes ☐ No, Explain why:

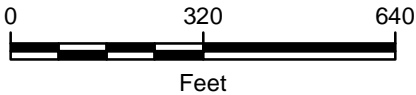
TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)



- Legend**
- Headgate
 - Headgate for Unnamed Ditch No. 2
 - Headgate on Embargo Ditch
 - West End of Segment
 - East End of Segment
 - Embargo Ditch
 - Unnamed Ditch No. 1
 - Unnamed Ditch No. 2



Questa Tailings Pipeline
Removal Project

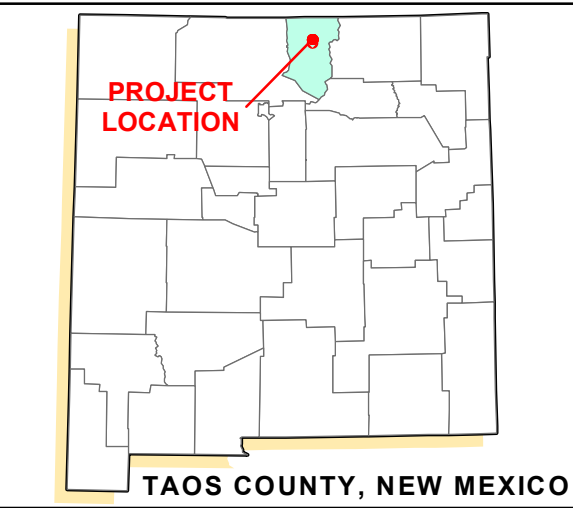
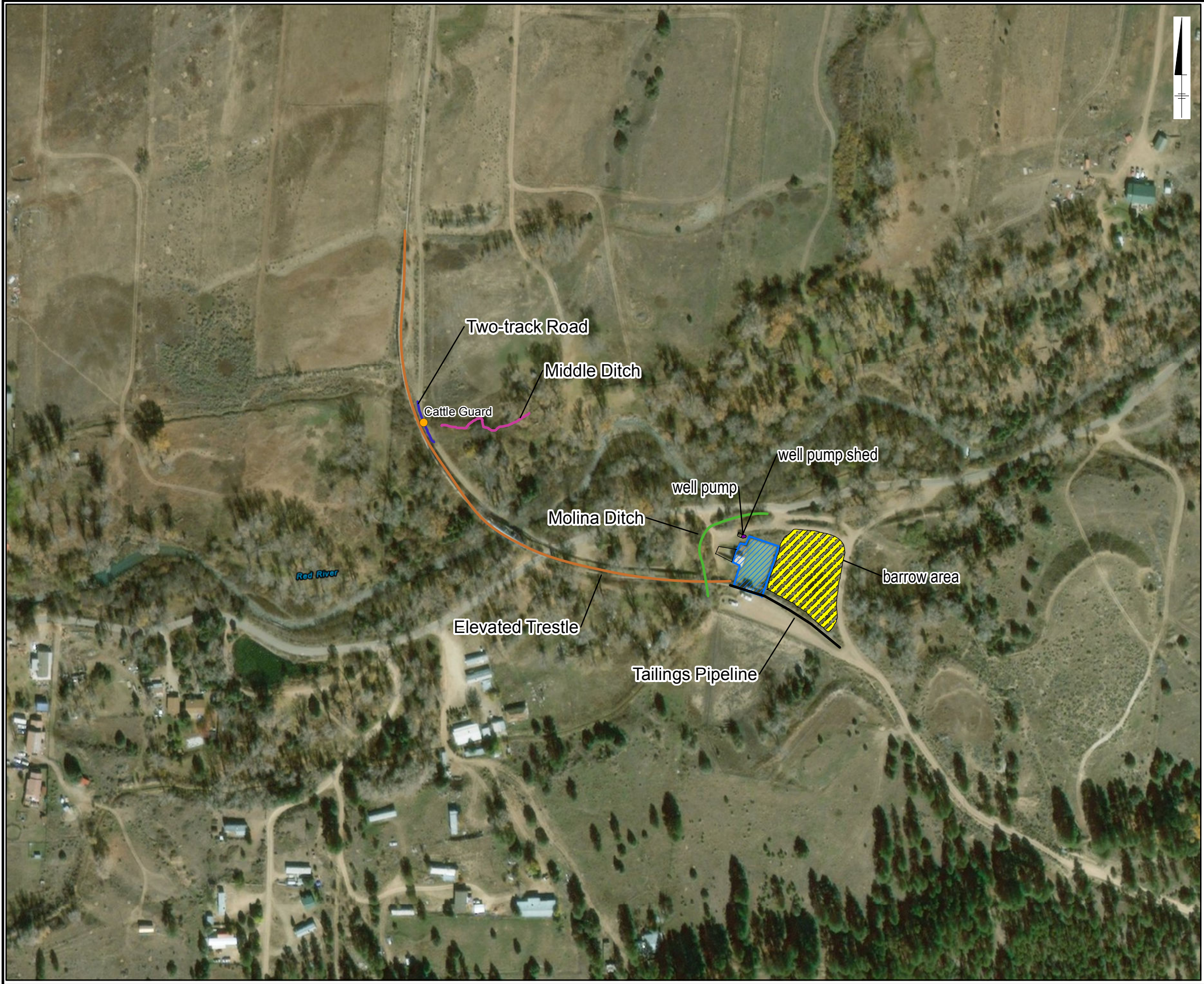
Cultural Resources Location Map



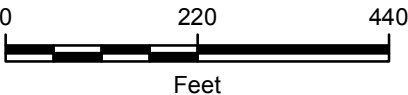
FIGURE

2

CITY:(DEN-TECH) DIV:(GROUP:(ENV/GIS) DB: KGPETERS LD: PIC: PM: TM:
PROJECT: PATH: Z:\GIS\Projects\ENV\Chevron_Questa\Map_MXD\2018\Fig3_QuestaTailings_CulturalResourcesLocationMap.mxd



- Legend**
- Cattle Guard
 - Elevated Trestle
 - Middle Ditch
 - Molina Ditch
 - Tailings Pipeline
 - Two-track Road
- Sump Dump Area**
- Barrow Area
 - Reservoir
 - Underground Access
 - Well Pump
 - Well Pump Shed



Questa Tailings Pipeline
Removal Project

Cultural Resources Location Map

ARCADIS

FIGURE
3

APPENDIX B

SITE PHOTOGRAPHS

APPENDIX B. PHOTO LOG – LOWER DUMP SUMP



Photo 1. Lower Dump Sump, Viewed from East, Within Stage 8 Boundary



Photo 2. Southwest Support Building and Electrical Transformers,
Viewed from South of Sump, Within Site Boundary

APPENDIX B. PHOTO LOG – LOWER DUMP SUMP



Photo 3. Southern Support Building, Viewed from West, Within Site Boundary



Photo 4. Ramped Access, Viewed from West, Within Site Boundary

APPENDIX C

PCB SAMPLING MEMORANDUM



memorandum

To: Chevron Mining, Inc.
From: Mr. Loren Eldridge-Looker, Trihydro Corporation
Date: September 25, 2018
Re: Questa Mine Lower Dump Sump
Transformer PCB Soil Sampling

In accordance with Trihydro Corporation's (Trihydro) *Historic Tailing Spills Removal Action Work Plan and Stage 8 Pipeline Removal Work Plan* (Work Plan), dated August 10, 2018, four soil samples were collected at the Questa Mine Lower Dump Sump. These samples were collected on September 5, 2018 and analyzed for nine Aroclor Polychlorinated Biphenyls (PCBs) using EPA SW-846 Method 8082A. The sample locations are shown in Figure 4-1 of the Work Plan and were collected from the 0- to 12-inch soil interval. Figure 4-1 with sample identification callouts is included with this memorandum.

Prior to conducting sampling activities, the sampling protocol from the Work Plan was reviewed. The four samples correlated with the four electrical transformers at the Lower Dump Sump, and are summarized in Table 1 below:

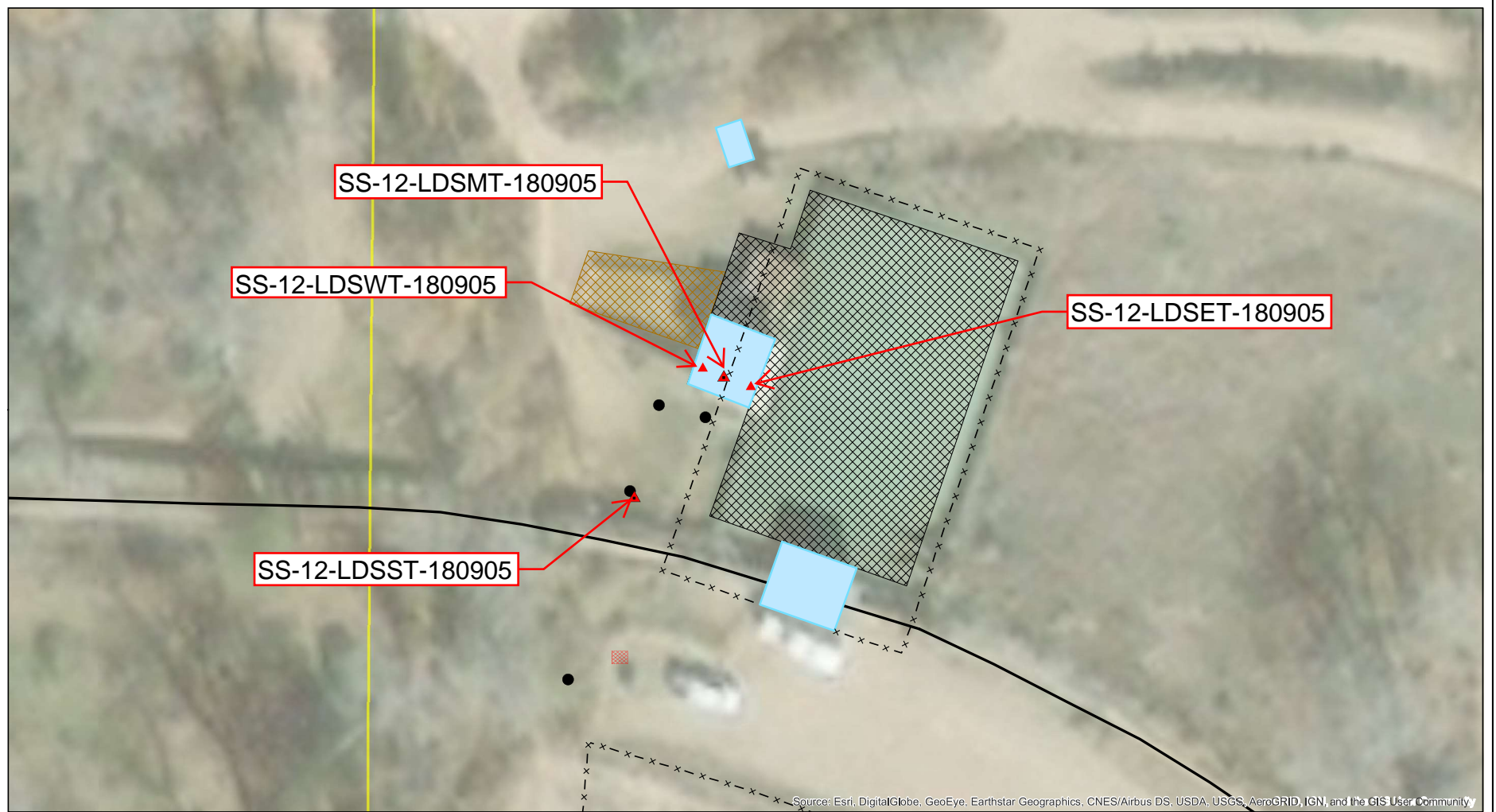
Table 1. Lower Dump Sump PCB Sample Summary

Sample Identification	Location Description	Sample Depth (in.)	Collection Date	Collection Time	Lab Analysis Result
SS-12-LDSWT-180905	Westernmost pad-mounted transformer	0-12	9/5/2018	8:30	No Detection
SS-12-LDSMT-180905	Middle pad-mounted transformer	0-12	9/5/2018	8:45	No Detection
SS-12-LDSET-180905	Easternmost pad-mounted transformer	0-12	9/5/2018	9:00	No Detection
SS-12-LDSST-180905	Southern pole-mounted transformer	0-12	9/5/2018	9:20	No Detection

A stainless-steel hand trowel was used to fill the 4-ounce amber glass jar required for each sample. In between each sample location, the trowel was decontaminated with an Alconox scrub and wash and two rinses of deionized water. Once filled, the jars were sealed, labeled, and placed in the sample cooler with ice. A Chain of Custody (COC) form was completed and added to the cooler once all samples were collected.

The sample cooler was hand delivered to TestAmerica Laboratories, Inc. (TestAmerica) in Arvada, CO on the morning of September 6, 2018. All four samples were prepared for analysis by TestAmerica on September 7, 2018 and analyzed on September 15, 2018. TestAmerica provided their Analytical Report to Trihydro on September 18, 2018 and listed "No Detections" for PCBs at all four sample locations. A copy of the Analytical Report is attached to this memorandum.

476-027-002



EXPLANATION

- | | | | |
|--|---|--|----------------------|
| | ELECTRICAL BOX | | FENCE |
| | POWER POLE | | ACCESS RAMP |
| | ELECTRICAL TRANSFORMER | | CONCRETE SUMP |
| | SOIL SAMPLE LOCATION ADJACENT TO ELECTRICAL TRANSFORMER | | SUPPORT BUILDING |
| | | | LOWER DUMP SUMP AREA |

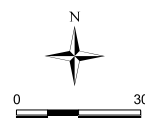


FIGURE 4-1

SOIL SAMPLE LOCATIONS

**QUESTA MINE
QUESTA, NEW MEXICO**

Drawn By: DH	Checked By: BAH	Scale: 1" = 30'	Date: 3/28/18	File: Fig4-1_St8_SoilSampleLocs.mxd
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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-113987-1

Client Project/Site: Questa Pipeline

For:

Trihydro Corporation

15000 West 6th Ave.

Service Road Unit 100

Golden, Colorado 80401

Attn: Mr. Shaun Harshman



Authorized for release by:

9/18/2018 6:59:39 PM

Donna Rydberg, Senior Project Manager

(303)736-0192

donna.rydberg@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Job ID: 280-113987-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Trihydro Corporation

Project: Questa Pipeline

Report Number: 280-113987-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 9/6/2018 at 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.3° C.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples SS-12-LDSWT-180905 (280-113987-1), SS-12-LDSMT-180905 (280-113987-2), SS-12-LDSET-180905 (280-113987-3) and SS-12-LDSST-180905 (280-113987-4) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The samples were prepared on 09/07/2018 and analyzed on 09/15/2018.

PCB-1016 failed the recovery criteria high for the MS of sample SS-12-LDSST-180905MS (280-113987-4) in batch 280-429668. PCB-1016 also exceeded the RPD limit. The associated LCS was in control and provides evidence that operating procedures were in control.

The following samples required a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: SS-12-LDSWT-180905 (280-113987-1), SS-12-LDSMT-180905 (280-113987-2), SS-12-LDSET-180905 (280-113987-3), SS-12-LDSST-180905 (280-113987-4), (LCS 280-428823/2-A), (MB 280-428823/1-A), (280-113987-A-4-B MS) and (280-113987-A-4-C MSD). Sulfuric acid lot # 186983 for prep batch 428823.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Client Sample ID: SS-12-LDSWT-180905

Lab Sample ID: 280-113987-1

☐ No Detections.

Client Sample ID: SS-12-LDSMT-180905

Lab Sample ID: 280-113987-2

☐ No Detections.

Client Sample ID: SS-12-LDSET-180905

Lab Sample ID: 280-113987-3

☐ No Detections.

Client Sample ID: SS-12-LDSST-180905

Lab Sample ID: 280-113987-4

☐ No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Method Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Method	Method Description	Protocol	Laboratory
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
3546	Microwave Extraction	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-113987-1	SS-12-LDSWT-180905	Solid	09/05/18 08:30	09/06/18 09:15
280-113987-2	SS-12-LDSMT-180905	Solid	09/05/18 08:45	09/06/18 09:15
280-113987-3	SS-12-LDSET-180905	Solid	09/05/18 09:00	09/06/18 09:15
280-113987-4	SS-12-LDSST-180905	Solid	09/05/18 09:20	09/06/18 09:15

Client Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: SS-12-LDSWT-180905

Date Collected: 09/05/18 08:30

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-1

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		91	30	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1016	ND		64	9.9	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1232	ND		64	9.9	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1242	ND		64	18	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1248	ND		64	11	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1254	ND		64	11	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1260	ND		64	5.1	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1262	ND		64	22	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
PCB-1268	ND		64	7.6	ug/Kg		09/07/18 06:48	09/15/18 00:24	1
Polychlorinated biphenyls, Total	ND		64	5.1	ug/Kg		09/07/18 06:48	09/15/18 00:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	64		53 - 128	09/07/18 06:48	09/15/18 00:24	1
DCB Decachlorobiphenyl	86		59 - 130	09/07/18 06:48	09/15/18 00:24	1

Client Sample ID: SS-12-LDSMT-180905

Date Collected: 09/05/18 08:45

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-2

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		91	30	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1016	ND		64	9.9	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1232	ND		64	9.9	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1242	ND		64	18	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1248	ND		64	11	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1254	ND		64	11	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1260	ND		64	5.1	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1262	ND		64	22	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
PCB-1268	ND		64	7.6	ug/Kg		09/07/18 06:48	09/15/18 00:46	1
Polychlorinated biphenyls, Total	ND		64	5.1	ug/Kg		09/07/18 06:48	09/15/18 00:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		53 - 128	09/07/18 06:48	09/15/18 00:46	1
DCB Decachlorobiphenyl	87		59 - 130	09/07/18 06:48	09/15/18 00:46	1

Client Sample ID: SS-12-LDSET-180905

Date Collected: 09/05/18 09:00

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-3

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		93	31	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1016	ND		65	10	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1232	ND		65	10	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1242	ND		65	18	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1248	ND		65	11	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1254	ND		65	11	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1260	ND		65	5.2	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1262	ND		65	23	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
PCB-1268	ND		65	7.8	ug/Kg		09/07/18 06:48	09/15/18 01:08	1
Polychlorinated biphenyls, Total	ND		65	5.2	ug/Kg		09/07/18 06:48	09/15/18 01:08	1

TestAmerica Denver

Client Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	88		53 - 128	09/07/18 06:48	09/15/18 01:08	1
DCB Decachlorobiphenyl	90		59 - 130	09/07/18 06:48	09/15/18 01:08	1

Client Sample ID: SS-12-LDSST-180905

Date Collected: 09/05/18 09:20

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-4

Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		92	31	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1016	ND	F2 F1	65	10	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1232	ND		65	10	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1242	ND		65	18	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1248	ND		65	11	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1254	ND		65	11	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1260	ND		65	5.2	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1262	ND		65	23	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
PCB-1268	ND		65	7.7	ug/Kg		09/07/18 06:48	09/15/18 01:29	1
Polychlorinated biphenyls, Total	ND		65	5.2	ug/Kg		09/07/18 06:48	09/15/18 01:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	95		53 - 128	09/07/18 06:48	09/15/18 01:29	1
DCB Decachlorobiphenyl	77		59 - 130	09/07/18 06:48	09/15/18 01:29	1

TestAmerica Denver

QC Association Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

GC Semi VOA

Prep Batch: 428823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-113987-1	SS-12-LDSWT-180905	Total/NA	Solid	3546	
280-113987-2	SS-12-LDSMT-180905	Total/NA	Solid	3546	
280-113987-3	SS-12-LDSET-180905	Total/NA	Solid	3546	
280-113987-4	SS-12-LDSST-180905	Total/NA	Solid	3546	
MB 280-428823/1-A	Method Blank	Total/NA	Solid	3546	
LCS 280-428823/2-A	Lab Control Sample	Total/NA	Solid	3546	
280-113987-4 MS	SS-12-LDSST-180905	Total/NA	Solid	3546	
280-113987-4 MSD	SS-12-LDSST-180905	Total/NA	Solid	3546	

Analysis Batch: 429668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-113987-1	SS-12-LDSWT-180905	Total/NA	Solid	8082A	428823
280-113987-2	SS-12-LDSMT-180905	Total/NA	Solid	8082A	428823
280-113987-3	SS-12-LDSET-180905	Total/NA	Solid	8082A	428823
280-113987-4	SS-12-LDSST-180905	Total/NA	Solid	8082A	428823
MB 280-428823/1-A	Method Blank	Total/NA	Solid	8082A	428823
LCS 280-428823/2-A	Lab Control Sample	Total/NA	Solid	8082A	428823
280-113987-4 MS	SS-12-LDSST-180905	Total/NA	Solid	8082A	428823
280-113987-4 MSD	SS-12-LDSST-180905	Total/NA	Solid	8082A	428823

QC Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 280-428823/1-A

Matrix: Solid

Analysis Batch: 429668

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 428823

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		88	29	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1016	ND		61	9.5	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1232	ND		61	9.5	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1242	ND		61	17	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1248	ND		61	10	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1254	ND		61	10	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1260	ND		61	4.9	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1262	ND		61	22	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
PCB-1268	ND		61	7.4	ug/Kg		09/07/18 06:48	09/14/18 23:40	1
Polychlorinated biphenyls, Total	ND		61	4.9	ug/Kg		09/07/18 06:48	09/14/18 23:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	103		53 - 128	09/07/18 06:48	09/14/18 23:40	1
DCB Decachlorobiphenyl	102		59 - 130	09/07/18 06:48	09/14/18 23:40	1

Lab Sample ID: LCS 280-428823/2-A

Matrix: Solid

Analysis Batch: 429668

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 428823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	128	150		ug/Kg		117	54 - 132
PCB-1260	128	127		ug/Kg		99	62 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	110		53 - 128
DCB Decachlorobiphenyl	106		59 - 130

Lab Sample ID: 280-113987-4 MS

Matrix: Solid

Analysis Batch: 429668

Client Sample ID: SS-12-LDSST-180905

Prep Type: Total/NA

Prep Batch: 428823

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
PCB-1016	ND	F2 F1	123	212	F1	ug/Kg		171	54 - 132
PCB-1260	ND		123	99.5		ug/Kg		81	62 - 129

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	98		53 - 128
DCB Decachlorobiphenyl	94		59 - 130

Lab Sample ID: 280-113987-4 MSD

Matrix: Solid

Analysis Batch: 429668

Client Sample ID: SS-12-LDSST-180905

Prep Type: Total/NA

Prep Batch: 428823

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	ND	F2 F1	130	134	F2	ug/Kg		103	54 - 132	45	36
PCB-1260	ND		130	93.3		ug/Kg		72	62 - 129	6	44

TestAmerica Denver

QC Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: 280-113987-4 MSD

Matrix: Solid

Analysis Batch: 429668

Client Sample ID: SS-12-LDSST-180905

Prep Type: Total/NA

Prep Batch: 428823

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene	87		53 - 128
DCB Decachlorobiphenyl	81		59 - 130

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Questa Pipeline

TestAmerica Job ID: 280-113987-1

Client Sample ID: SS-12-LDSWT-180905

Date Collected: 09/05/18 08:30

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.5 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 00:24	TDJ	TAL DEN

Client Sample ID: SS-12-LDSMT-180905

Date Collected: 09/05/18 08:45

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.5 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 00:46	TDJ	TAL DEN

Client Sample ID: SS-12-LDSET-180905

Date Collected: 09/05/18 09:00

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.2 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 01:08	TDJ	TAL DEN

Client Sample ID: SS-12-LDSST-180905

Date Collected: 09/05/18 09:20

Date Received: 09/06/18 09:15

Lab Sample ID: 280-113987-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.3 g	10 mL	428823	09/07/18 06:48	JT	TAL DEN
Total/NA	Analysis	8082A		1			429668	09/15/18 01:29	TDJ	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Chain of Custody Record

Client Information Client Contact: Shaun Harshman Company: Trihydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: (307) 745-7474 Email: sharshmann@trihydro.com Project Name: Questa Pipeline - PCBs Site: LOWER DUMP SUMP		Sampler: LOREN ELDRIDGE-LOOKER Lab PM: Rydberg, Donna R Phone: (307) 851-7753 E-Mail: donna.rydberg@testamericainc.com		Carrier Tracking No(s): COC No: 280-78789-25785.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): STANDARD PO #: Purchase Order not required WO #: 17-252WO-L Project #: 28017197 SSOW#:		Analysis Requested			
Sample Identification SS-12-LPSWT-180905 SS-12-LDSMT-180905 SS-12-LDSET-180905 SS-12-LDSST-180905		Sample Date 9-5-18 9-5-18 9-5-18 9-5-18		Sample Time 08:30 08:45 09:00 09:20	
Sample Type (C=Comp, G=grab) G G G G		Matrix (W=water, S=solid, O=ore, etc.) Solid SOLID SOLID SOLID		Field Filtered Sample (Yes or No) N N N N	
Perform MS/MSD (Yes or No) N N N N		8082A - Standard 8082A list N N N N		Total Number of Containers 1 1 1 1	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)		Special Instructions/Note: 280-113987 Chain of Custody	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					
Deliverable Requested: I, II, III, IV, Other (specify)					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Special Instructions/QC Requirements:					
Relinquished by: LOREN ELDRIDGE-LOOKER Relinquished by:		Date: 9-5-18 09:45 Date:		Company: TRIHYDRO Company:	
Relinquished by:		Date:		Company:	
Relinquished by:		Date:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 4.8 to 5.5 tubes JLE	

Login Sample Receipt Checklist

Client: Trihydro Corporation

Job Number: 280-113987-1

Login Number: 113987

List Number: 1

Creator: Quint, Jessica A

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

ACM AND LBP ANALYTICAL RESULTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

4955 Yarrow Street

Arvada, CO 80002

Tel: (303)736-0100

TestAmerica Job ID: 280-100940-1

Client Project/Site: Questa Pipeline - Lead and Asbestos

For:

Trihydro Corporation

1252 Commerce Drive

Laramie, Wyoming 82070

Attn: Tony Kupilik



Authorized for release by:

9/21/2017 4:43:36 PM

Michelle Johnston, Project Manager II

(303)736-0110

michelle.johnston@testamericainc.com

Designee for

Donna Rydberg, Senior Project Manager

(303)736-0192

donna.rydberg@testamericainc.com

LINKS

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results through

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Have a Question?



Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Job ID: 280-100940-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Trihydro Corporation

Project: Questa Pipeline - Lead and Asbestos

Report Number: 280-100940-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 09/07/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 22.2 C.

TestAmerica Denver subcontracted the Asbestos analyses to EMLab P&K. A copy of their report has been included.

TOTAL METALS (ICP)

Samples L182817 (280-100940-8), L282817 (280-100940-9), L382817 (280-100940-10), L482817 (280-100940-11), L582817 (280-100940-12), L682817 (280-100940-13), L782817 (280-100940-14), L182917 (280-100940-33), L282917 (280-100940-34), L382917 (280-100940-35), L482917 (280-100940-36), L582917 (280-100940-37), L682917 (280-100940-38), L782917 (280-100940-39), L882917 (280-100940-40), L982917 (280-100940-41), L1082917 (280-100940-42), L1182917 (280-100940-43), L183017 (280-100940-57), L283017 (280-100940-58), BL183017 (280-100940-59), BL283017 (280-100940-60), BL383017 (280-100940-61), BL483017 (280-100940-62), BL583017 (280-100940-63) and BL683017 (280-100940-64) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 09/11/2017 and analyzed on 09/12/2017 and 09/13/2017.

A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: There was insufficient volume to weigh out the SOP specified 1.0-1.5g for the following samples: L1182917 (280-100940-43), BL183017 (280-100940-59), BL283017 (280-100940-60), BL383017 (280-100940-61), BL483017 (280-100940-62), BL583017 (280-100940-63) and BL683017 (280-100940-64).

Samples L582817 (280-100940-12)[5X], L682817 (280-100940-13)[2X], L382917 (280-100940-35)[2X], L782917 (280-100940-39)[5X], L283017 (280-100940-58)[5X], BL183017 (280-100940-59)[10X], BL283017 (280-100940-60)[10X], BL383017 (280-100940-61)[5X], BL483017 (280-100940-62)[20X], BL583017 (280-100940-63)[5X] and BL683017 (280-100940-64)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-387084. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 280-387083. Method precision and accuracy have been verified by the acceptable LCS/LCSD analyses data.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: A182817

Lab Sample ID: 280-100940-1

No Detections.

Client Sample ID: A282817

Lab Sample ID: 280-100940-2

No Detections.

Client Sample ID: A382817

Lab Sample ID: 280-100940-3

No Detections.

Client Sample ID: A482817

Lab Sample ID: 280-100940-4

No Detections.

Client Sample ID: A582817

Lab Sample ID: 280-100940-5

No Detections.

Client Sample ID: A682817

Lab Sample ID: 280-100940-6

No Detections.

Client Sample ID: A782817

Lab Sample ID: 280-100940-7

No Detections.

Client Sample ID: L182817

Lab Sample ID: 280-100940-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	540		0.77	0.27	mg/Kg	1		6010C	Total/NA

Client Sample ID: L282817

Lab Sample ID: 280-100940-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	590		0.66	0.23	mg/Kg	1		6010C	Total/NA

Client Sample ID: L382817

Lab Sample ID: 280-100940-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	590		0.75	0.26	mg/Kg	1		6010C	Total/NA

Client Sample ID: L482817

Lab Sample ID: 280-100940-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	570		0.82	0.28	mg/Kg	1		6010C	Total/NA

Client Sample ID: L582817

Lab Sample ID: 280-100940-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	230		4.1	1.4	mg/Kg	5		6010C	Total/NA

Client Sample ID: L682817

Lab Sample ID: 280-100940-13

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: L682817 (Continued)

Lab Sample ID: 280-100940-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	29		1.2	0.42	mg/Kg	2		6010C	Total/NA

Client Sample ID: L782817

Lab Sample ID: 280-100940-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	550		0.83	0.29	mg/Kg	1		6010C	Total/NA

Client Sample ID: INS182817

Lab Sample ID: 280-100940-15

No Detections.

Client Sample ID: INS282817

Lab Sample ID: 280-100940-16

No Detections.

Client Sample ID: PL182817

Lab Sample ID: 280-100940-17

No Detections.

Client Sample ID: G182817

Lab Sample ID: 280-100940-18

No Detections.

Client Sample ID: G282817

Lab Sample ID: 280-100940-19

No Detections.

Client Sample ID: G382817

Lab Sample ID: 280-100940-20

No Detections.

Client Sample ID: G482817

Lab Sample ID: 280-100940-21

No Detections.

Client Sample ID: A182917

Lab Sample ID: 280-100940-22

No Detections.

Client Sample ID: A282917

Lab Sample ID: 280-100940-23

No Detections.

Client Sample ID: A382917

Lab Sample ID: 280-100940-24

No Detections.

Client Sample ID: A482917

Lab Sample ID: 280-100940-25

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: A582917

Lab Sample ID: 280-100940-26

No Detections.

Client Sample ID: A682917

Lab Sample ID: 280-100940-27

No Detections.

Client Sample ID: A782917

Lab Sample ID: 280-100940-28

No Detections.

Client Sample ID: A882917

Lab Sample ID: 280-100940-29

No Detections.

Client Sample ID: A982917

Lab Sample ID: 280-100940-30

No Detections.

Client Sample ID: A1082917

Lab Sample ID: 280-100940-31

No Detections.

Client Sample ID: A1182917

Lab Sample ID: 280-100940-32

No Detections.

Client Sample ID: L182917

Lab Sample ID: 280-100940-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	670		0.73	0.25	mg/Kg	1		6010C	Total/NA

Client Sample ID: L282917

Lab Sample ID: 280-100940-34

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	500		0.87	0.30	mg/Kg	1		6010C	Total/NA

Client Sample ID: L382917

Lab Sample ID: 280-100940-35

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	480		1.5	0.53	mg/Kg	2		6010C	Total/NA

Client Sample ID: L482917

Lab Sample ID: 280-100940-36

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	450		0.73	0.25	mg/Kg	1		6010C	Total/NA

Client Sample ID: L582917

Lab Sample ID: 280-100940-37

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	280		0.79	0.27	mg/Kg	1		6010C	Total/NA

Client Sample ID: L682917

Lab Sample ID: 280-100940-38

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: L682917 (Continued)

Lab Sample ID: 280-100940-38

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	120		0.77	0.27	mg/Kg	1		6010C	Total/NA

Client Sample ID: L782917

Lab Sample ID: 280-100940-39

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	810		4.3	1.5	mg/Kg	5		6010C	Total/NA

Client Sample ID: L882917

Lab Sample ID: 280-100940-40

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	32		0.86	0.30	mg/Kg	1		6010C	Total/NA

Client Sample ID: L982917

Lab Sample ID: 280-100940-41

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	430		0.78	0.27	mg/Kg	1		6010C	Total/NA

Client Sample ID: L1082917

Lab Sample ID: 280-100940-42

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	460		0.72	0.25	mg/Kg	1		6010C	Total/NA

Client Sample ID: L1182917

Lab Sample ID: 280-100940-43

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	290		1.1	0.38	mg/Kg	1		6010C	Total/NA

Client Sample ID: G182917

Lab Sample ID: 280-100940-44

No Detections.

Client Sample ID: G282917

Lab Sample ID: 280-100940-45

No Detections.

Client Sample ID: G382917

Lab Sample ID: 280-100940-46

No Detections.

Client Sample ID: G482917

Lab Sample ID: 280-100940-47

No Detections.

Client Sample ID: PL182917

Lab Sample ID: 280-100940-48

No Detections.

Client Sample ID: A183017

Lab Sample ID: 280-100940-49

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: A283017

Lab Sample ID: 280-100940-50

No Detections.

Client Sample ID: BA183017

Lab Sample ID: 280-100940-51

No Detections.

Client Sample ID: BA283017

Lab Sample ID: 280-100940-52

No Detections.

Client Sample ID: BA383017

Lab Sample ID: 280-100940-53

No Detections.

Client Sample ID: BA483017

Lab Sample ID: 280-100940-54

No Detections.

Client Sample ID: BA583017

Lab Sample ID: 280-100940-55

No Detections.

Client Sample ID: BA683017

Lab Sample ID: 280-100940-56

No Detections.

Client Sample ID: L183017

Lab Sample ID: 280-100940-57

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	330		0.99	0.34	mg/Kg	1		6010C	Total/NA

Client Sample ID: L283017

Lab Sample ID: 280-100940-58

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	380		5.0	1.7	mg/Kg	5		6010C	Total/NA

Client Sample ID: BL183017

Lab Sample ID: 280-100940-59

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	390		9.3	3.2	mg/Kg	10		6010C	Total/NA

Client Sample ID: BL283017

Lab Sample ID: 280-100940-60

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	340		8.3	2.9	mg/Kg	10		6010C	Total/NA

Client Sample ID: BL383017

Lab Sample ID: 280-100940-61

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	250		4.3	1.5	mg/Kg	5		6010C	Total/NA

Client Sample ID: BL483017

Lab Sample ID: 280-100940-62

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Detection Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: BL483017 (Continued)

Lab Sample ID: 280-100940-62

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	630		15	5.3	mg/Kg	20		6010C	Total/NA

Client Sample ID: BL583017

Lab Sample ID: 280-100940-63

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	240		5.5	1.9	mg/Kg	5		6010C	Total/NA

Client Sample ID: BL683017

Lab Sample ID: 280-100940-64

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	5600		5.6	1.9	mg/Kg	5		6010C	Total/NA

Client Sample ID: INS183017

Lab Sample ID: 280-100940-65

No Detections.

Client Sample ID: INS283017

Lab Sample ID: 280-100940-66

No Detections.

Client Sample ID: VG183017

Lab Sample ID: 280-100940-67

No Detections.

Client Sample ID: VG283017

Lab Sample ID: 280-100940-68

No Detections.

Client Sample ID: VG383017

Lab Sample ID: 280-100940-69

No Detections.

Client Sample ID: PW183017

Lab Sample ID: 280-100940-70

No Detections.

Client Sample ID: PW283017

Lab Sample ID: 280-100940-71

No Detections.

Client Sample ID: PW383017

Lab Sample ID: 280-100940-72

No Detections.

Client Sample ID: PW483017

Lab Sample ID: 280-100940-73

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Method Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
Asbestos - PLM by EPA 600/R-93/116 (pric	General Sub Contract Method	NONE	

Protocol References:

NONE = NONE

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

= EMLab P&K - Denver, 4955 Yarrow Street, Arvada, CO 80002

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-100940-1	A182817	Solid	08/28/17 13:15	09/07/17 09:15
280-100940-2	A282817	Solid	08/28/17 13:54	09/07/17 09:15
280-100940-3	A382817	Solid	08/28/17 14:20	09/07/17 09:15
280-100940-4	A482817	Solid	08/28/17 14:40	09/07/17 09:15
280-100940-5	A582817	Solid	08/28/17 15:10	09/07/17 09:15
280-100940-6	A682817	Solid	08/28/17 15:35	09/07/17 09:15
280-100940-7	A782817	Solid	08/28/17 16:15	09/07/17 09:15
280-100940-8	L182817	Solid	08/28/17 13:15	09/07/17 09:15
280-100940-9	L282817	Solid	08/28/17 13:54	09/07/17 09:15
280-100940-10	L382817	Solid	08/28/17 14:20	09/07/17 09:15
280-100940-11	L482817	Solid	08/28/17 14:40	09/07/17 09:15
280-100940-12	L582817	Solid	08/28/17 14:50	09/07/17 09:15
280-100940-13	L682817	Solid	08/28/17 15:35	09/07/17 09:15
280-100940-14	L782817	Solid	08/28/17 16:15	09/07/17 09:15
280-100940-15	INS182817	Solid	08/28/17 15:55	09/07/17 09:15
280-100940-16	INS282817	Solid	08/28/17 15:55	09/07/17 09:15
280-100940-17	PL182817	Solid	08/28/17 15:55	09/07/17 09:15
280-100940-18	G182817	Solid	08/28/17 14:50	09/07/17 09:15
280-100940-19	G282817	Solid	08/28/17 14:50	09/07/17 09:15
280-100940-20	G382817	Solid	08/28/17 16:40	09/07/17 09:15
280-100940-21	G482817	Solid	08/28/17 16:40	09/07/17 09:15
280-100940-22	A182917	Solid	08/29/17 08:35	09/07/17 09:15
280-100940-23	A282917	Solid	08/29/17 09:10	09/07/17 09:15
280-100940-24	A382917	Solid	08/29/17 09:45	09/07/17 09:15
280-100940-25	A482917	Solid	08/29/17 10:05	09/07/17 09:15
280-100940-26	A582917	Solid	08/29/17 10:25	09/07/17 09:15
280-100940-27	A682917	Solid	08/29/17 11:05	09/07/17 09:15
280-100940-28	A782917	Solid	08/29/17 11:40	09/07/17 09:15
280-100940-29	A882917	Solid	08/29/17 11:55	09/07/17 09:15
280-100940-30	A982917	Solid	08/29/17 12:30	09/07/17 09:15
280-100940-31	A1082917	Solid	08/29/17 15:10	09/07/17 09:15
280-100940-32	A1182917	Solid	08/29/17 16:40	09/07/17 09:15
280-100940-33	L182917	Solid	08/29/17 08:35	09/07/17 09:15
280-100940-34	L282917	Solid	08/29/17 09:10	09/07/17 09:15
280-100940-35	L382917	Solid	08/29/17 09:45	09/07/17 09:15
280-100940-36	L482917	Solid	08/29/17 10:05	09/07/17 09:15
280-100940-37	L582917	Solid	08/29/17 10:25	09/07/17 09:15
280-100940-38	L682917	Solid	08/29/17 11:05	09/07/17 09:15
280-100940-39	L782917	Solid	08/29/17 11:40	09/07/17 09:15
280-100940-40	L882917	Solid	08/29/17 11:55	09/07/17 09:15
280-100940-41	L982917	Solid	08/29/17 12:30	09/07/17 09:15
280-100940-42	L1082917	Solid	08/29/17 15:10	09/07/17 09:15
280-100940-43	L1182917	Solid	08/29/17 16:40	09/07/17 09:15
280-100940-44	G182917	Solid	08/29/17 09:20	09/07/17 09:15
280-100940-45	G282917	Solid	08/29/17 09:25	09/07/17 09:15
280-100940-46	G382917	Solid	08/29/17 10:20	09/07/17 09:15
280-100940-47	G482917	Solid	08/29/17 10:25	09/07/17 09:15
280-100940-48	PL182917	Solid	08/29/17 10:30	09/07/17 09:15
280-100940-49	A183017	Solid	08/30/17 09:40	09/07/17 09:15
280-100940-50	A283017	Solid	08/30/17 11:10	09/07/17 09:15
280-100940-51	BA183017	Solid	08/30/17 11:15	09/07/17 09:15
280-100940-52	BA283017	Solid	08/30/17 11:20	09/07/17 09:15
280-100940-53	BA383017	Solid	08/30/17 11:25	09/07/17 09:15

TestAmerica Denver

Sample Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-100940-54	BA483017	Solid	08/30/17 11:30	09/07/17 09:15
280-100940-55	BA583017	Solid	08/30/17 11:40	09/07/17 09:15
280-100940-56	BA683017	Solid	08/30/17 11:50	09/07/17 09:15
280-100940-57	L183017	Solid	08/30/17 09:40	09/07/17 09:15
280-100940-58	L283017	Solid	08/30/17 11:10	09/07/17 09:15
280-100940-59	BL183017	Solid	08/30/17 11:15	09/07/17 09:15
280-100940-60	BL283017	Solid	08/30/17 11:20	09/07/17 09:15
280-100940-61	BL383017	Solid	08/30/17 11:25	09/07/17 09:15
280-100940-62	BL483017	Solid	08/30/17 11:30	09/07/17 09:15
280-100940-63	BL583017	Solid	08/30/17 11:40	09/07/17 09:15
280-100940-64	BL683017	Solid	08/30/17 11:50	09/07/17 09:15
280-100940-65	INS183017	Solid	08/30/17 09:10	09/07/17 09:15
280-100940-66	INS283017	Solid	08/30/17 09:15	09/07/17 09:15
280-100940-67	VG183017	Solid	08/30/17 09:20	09/07/17 09:15
280-100940-68	VG283017	Solid	08/30/17 09:30	09/07/17 09:15
280-100940-69	VG383017	Solid	08/30/17 09:40	09/07/17 09:15
280-100940-70	PW183017	Solid	08/30/17 15:10	09/07/17 09:15
280-100940-71	PW283017	Solid	08/30/17 15:20	09/07/17 09:15
280-100940-72	PW383017	Solid	08/30/17 15:30	09/07/17 09:15
280-100940-73	PW483017	Solid	08/30/17 15:40	09/07/17 09:15

Client Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method: 6010C - Metals (ICP)

Client Sample ID: L182817
Date Collected: 08/28/17 13:15
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-8
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	540		0.77	0.27	mg/Kg	-	09/11/17 13:30	09/12/17 02:35	1

Client Sample ID: L282817
Date Collected: 08/28/17 13:54
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-9
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	590		0.66	0.23	mg/Kg	-	09/11/17 13:30	09/12/17 02:37	1

Client Sample ID: L382817
Date Collected: 08/28/17 14:20
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-10
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	590		0.75	0.26	mg/Kg	-	09/11/17 13:30	09/12/17 02:40	1

Client Sample ID: L482817
Date Collected: 08/28/17 14:40
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-11
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	570		0.82	0.28	mg/Kg	-	09/11/17 13:30	09/12/17 02:42	1

Client Sample ID: L582817
Date Collected: 08/28/17 14:50
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-12
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	230		4.1	1.4	mg/Kg	-	09/11/17 13:30	09/13/17 07:21	5

Client Sample ID: L682817
Date Collected: 08/28/17 15:35
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-13
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	29		1.2	0.42	mg/Kg	-	09/11/17 13:30	09/13/17 07:24	2

Client Sample ID: L782817
Date Collected: 08/28/17 16:15
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-14
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	550		0.83	0.29	mg/Kg	-	09/11/17 13:30	09/12/17 03:00	1

Client Sample ID: L182917
Date Collected: 08/29/17 08:35
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-33
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	670		0.73	0.25	mg/Kg	-	09/11/17 13:30	09/12/17 03:03	1

Client Sample ID: L282917
Date Collected: 08/29/17 09:10
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-34
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	500		0.87	0.30	mg/Kg	-	09/11/17 13:30	09/12/17 03:05	1

TestAmerica Denver

Client Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method: 6010C - Metals (ICP)

Client Sample ID: L382917
Date Collected: 08/29/17 09:45
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-35
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	480		1.5	0.53	mg/Kg	-	09/11/17 13:30	09/13/17 07:44	2

Client Sample ID: L482917
Date Collected: 08/29/17 10:05
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-36
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	450		0.73	0.25	mg/Kg	-	09/11/17 13:30	09/12/17 03:10	1

Client Sample ID: L582917
Date Collected: 08/29/17 10:25
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-37
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	280		0.79	0.27	mg/Kg	-	09/11/17 13:30	09/12/17 03:12	1

Client Sample ID: L682917
Date Collected: 08/29/17 11:05
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-38
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	120		0.77	0.27	mg/Kg	-	09/11/17 13:30	09/12/17 03:15	1

Client Sample ID: L782917
Date Collected: 08/29/17 11:40
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-39
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	810		4.3	1.5	mg/Kg	-	09/11/17 13:30	09/13/17 14:37	5

Client Sample ID: L882917
Date Collected: 08/29/17 11:55
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-40
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	32		0.86	0.30	mg/Kg	-	09/11/17 13:30	09/12/17 03:43	1

Client Sample ID: L982917
Date Collected: 08/29/17 12:30
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-41
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	430		0.78	0.27	mg/Kg	-	09/11/17 13:30	09/12/17 03:45	1

Client Sample ID: L1082917
Date Collected: 08/29/17 15:10
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-42
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	460		0.72	0.25	mg/Kg	-	09/11/17 13:30	09/12/17 03:48	1

Client Sample ID: L1182917
Date Collected: 08/29/17 16:40
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-43
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	290		1.1	0.38	mg/Kg	-	09/11/17 13:30	09/12/17 03:50	1

TestAmerica Denver

Client Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method: 6010C - Metals (ICP)

Client Sample ID: L183017
Date Collected: 08/30/17 09:40
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-57
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	330		0.99	0.34	mg/Kg	-	09/11/17 13:30	09/12/17 03:53	1

Client Sample ID: L283017
Date Collected: 08/30/17 11:10
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-58
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	380		5.0	1.7	mg/Kg	-	09/11/17 13:30	09/13/17 06:16	5

Client Sample ID: BL183017
Date Collected: 08/30/17 11:15
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-59
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	390		9.3	3.2	mg/Kg	-	09/11/17 13:30	09/13/17 06:28	10

Client Sample ID: BL283017
Date Collected: 08/30/17 11:20
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-60
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	340		8.3	2.9	mg/Kg	-	09/11/17 13:30	09/13/17 06:31	10

Client Sample ID: BL383017
Date Collected: 08/30/17 11:25
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-61
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	250		4.3	1.5	mg/Kg	-	09/11/17 13:30	09/13/17 06:33	5

Client Sample ID: BL483017
Date Collected: 08/30/17 11:30
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-62
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	630		15	5.3	mg/Kg	-	09/11/17 13:30	09/13/17 08:09	20

Client Sample ID: BL583017
Date Collected: 08/30/17 11:40
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-63
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	240		5.5	1.9	mg/Kg	-	09/11/17 13:30	09/13/17 06:38	5

Client Sample ID: BL683017
Date Collected: 08/30/17 11:50
Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-64
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5600		5.6	1.9	mg/Kg	-	09/11/17 13:30	09/13/17 06:46	5

QC Association Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Metals

Prep Batch: 387083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-39	L782917	Total/NA	Solid	3050B	
280-100940-40	L882917	Total/NA	Solid	3050B	
280-100940-41	L982917	Total/NA	Solid	3050B	
280-100940-42	L1082917	Total/NA	Solid	3050B	
280-100940-43	L1182917	Total/NA	Solid	3050B	
280-100940-57	L183017	Total/NA	Solid	3050B	
280-100940-58	L283017	Total/NA	Solid	3050B	
280-100940-59	BL183017	Total/NA	Solid	3050B	
280-100940-60	BL283017	Total/NA	Solid	3050B	
280-100940-61	BL383017	Total/NA	Solid	3050B	
280-100940-62	BL483017	Total/NA	Solid	3050B	
280-100940-63	BL583017	Total/NA	Solid	3050B	
280-100940-64	BL683017	Total/NA	Solid	3050B	
MB 280-387083/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 280-387083/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 280-387083/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Prep Batch: 387084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-8	L182817	Total/NA	Solid	3050B	
280-100940-9	L282817	Total/NA	Solid	3050B	
280-100940-10	L382817	Total/NA	Solid	3050B	
280-100940-11	L482817	Total/NA	Solid	3050B	
280-100940-12	L582817	Total/NA	Solid	3050B	
280-100940-13	L682817	Total/NA	Solid	3050B	
280-100940-14	L782817	Total/NA	Solid	3050B	
280-100940-33	L182917	Total/NA	Solid	3050B	
280-100940-34	L282917	Total/NA	Solid	3050B	
280-100940-35	L382917	Total/NA	Solid	3050B	
280-100940-36	L482917	Total/NA	Solid	3050B	
280-100940-37	L582917	Total/NA	Solid	3050B	
280-100940-38	L682917	Total/NA	Solid	3050B	
MB 280-387084/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 280-387084/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 280-387084/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	

Analysis Batch: 387317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-8	L182817	Total/NA	Solid	6010C	387084
280-100940-9	L282817	Total/NA	Solid	6010C	387084
280-100940-10	L382817	Total/NA	Solid	6010C	387084
280-100940-11	L482817	Total/NA	Solid	6010C	387084
280-100940-14	L782817	Total/NA	Solid	6010C	387084
280-100940-33	L182917	Total/NA	Solid	6010C	387084
280-100940-34	L282917	Total/NA	Solid	6010C	387084
280-100940-36	L482917	Total/NA	Solid	6010C	387084
280-100940-37	L582917	Total/NA	Solid	6010C	387084
280-100940-38	L682917	Total/NA	Solid	6010C	387084
280-100940-40	L882917	Total/NA	Solid	6010C	387083
280-100940-41	L982917	Total/NA	Solid	6010C	387083
280-100940-42	L1082917	Total/NA	Solid	6010C	387083

TestAmerica Denver

QC Association Summary

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Metals (Continued)

Analysis Batch: 387317 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-43	L1182917	Total/NA	Solid	6010C	387083
280-100940-57	L183017	Total/NA	Solid	6010C	387083
MB 280-387083/1-A	Method Blank	Total/NA	Solid	6010C	387083
MB 280-387084/1-A	Method Blank	Total/NA	Solid	6010C	387084
LCS 280-387083/2-A	Lab Control Sample	Total/NA	Solid	6010C	387083
LCS 280-387084/2-A	Lab Control Sample	Total/NA	Solid	6010C	387084
LCSD 280-387083/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	387083
LCSD 280-387084/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	387084

Analysis Batch: 387473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-12	L582817	Total/NA	Solid	6010C	387084
280-100940-13	L682817	Total/NA	Solid	6010C	387084
280-100940-35	L382917	Total/NA	Solid	6010C	387084
280-100940-58	L283017	Total/NA	Solid	6010C	387083
280-100940-59	BL183017	Total/NA	Solid	6010C	387083
280-100940-60	BL283017	Total/NA	Solid	6010C	387083
280-100940-61	BL383017	Total/NA	Solid	6010C	387083
280-100940-62	BL483017	Total/NA	Solid	6010C	387083
280-100940-63	BL583017	Total/NA	Solid	6010C	387083
280-100940-64	BL683017	Total/NA	Solid	6010C	387083

Analysis Batch: 387616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-100940-39	L782917	Total/NA	Solid	6010C	387083

QC Sample Results

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-387083/1-A
Matrix: Solid
Analysis Batch: 387317

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 387083

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.90	0.31	mg/Kg		09/11/17 13:30	09/12/17 03:33	1

Lab Sample ID: LCS 280-387083/2-A
Matrix: Solid
Analysis Batch: 387317

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 387083

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	50.2		mg/Kg		100	86 - 110

Lab Sample ID: LCSD 280-387083/3-A
Matrix: Solid
Analysis Batch: 387317

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 387083

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	50.0	50.4		mg/Kg		101	86 - 110	0	20

Lab Sample ID: MB 280-387084/1-A
Matrix: Solid
Analysis Batch: 387317

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 387084

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.90	0.31	mg/Kg		09/11/17 13:30	09/12/17 02:25	1

Lab Sample ID: LCS 280-387084/2-A
Matrix: Solid
Analysis Batch: 387317

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 387084

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	50.7		mg/Kg		101	86 - 110

Lab Sample ID: LCSD 280-387084/3-A
Matrix: Solid
Analysis Batch: 387317

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 387084

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	50.0	49.9		mg/Kg		100	86 - 110	1	20

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: L182817

Date Collected: 08/28/17 13:15

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-8

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.165 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 02:35	CML	TAL DEN

Client Sample ID: L282817

Date Collected: 08/28/17 13:54

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.371 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 02:37	CML	TAL DEN

Client Sample ID: L382817

Date Collected: 08/28/17 14:20

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-10

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.193 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 02:40	CML	TAL DEN

Client Sample ID: L482817

Date Collected: 08/28/17 14:40

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.101 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 02:42	CML	TAL DEN

Client Sample ID: L582817

Date Collected: 08/28/17 14:50

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.096 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 07:21	CRR	TAL DEN

Client Sample ID: L682817

Date Collected: 08/28/17 15:35

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-13

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.491 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		2			387473	09/13/17 07:24	CRR	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: L782817

Date Collected: 08/28/17 16:15

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-14

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.078 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:00	CML	TAL DEN

Client Sample ID: L182917

Date Collected: 08/29/17 08:35

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-33

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.226 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:03	CML	TAL DEN

Client Sample ID: L282917

Date Collected: 08/29/17 09:10

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-34

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.033 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:05	CML	TAL DEN

Client Sample ID: L382917

Date Collected: 08/29/17 09:45

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-35

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.171 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		2			387473	09/13/17 07:44	CRR	TAL DEN

Client Sample ID: L482917

Date Collected: 08/29/17 10:05

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-36

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.227 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:10	CML	TAL DEN

Client Sample ID: L582917

Date Collected: 08/29/17 10:25

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-37

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.134 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:12	CML	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: L682917

Date Collected: 08/29/17 11:05

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-38

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.164 g	100 mL	387084	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:15	CML	TAL DEN

Client Sample ID: L782917

Date Collected: 08/29/17 11:40

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-39

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.049 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387616	09/13/17 14:37	CML	TAL DEN

Client Sample ID: L882917

Date Collected: 08/29/17 11:55

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-40

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.044 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:43	CML	TAL DEN

Client Sample ID: L982917

Date Collected: 08/29/17 12:30

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-41

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.160 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:45	CML	TAL DEN

Client Sample ID: L1082917

Date Collected: 08/29/17 15:10

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-42

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.257 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:48	CML	TAL DEN

Client Sample ID: L1182917

Date Collected: 08/29/17 16:40

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-43

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.825 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:50	CML	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: L183017

Date Collected: 08/30/17 09:40

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-57

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.905 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		1			387317	09/12/17 03:53	CML	TAL DEN

Client Sample ID: L283017

Date Collected: 08/30/17 11:10

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-58

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.901 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 06:16	CRR	TAL DEN

Client Sample ID: BL183017

Date Collected: 08/30/17 11:15

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-59

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.482 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		10			387473	09/13/17 06:28	CRR	TAL DEN

Client Sample ID: BL283017

Date Collected: 08/30/17 11:20

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-60

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.541 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		10			387473	09/13/17 06:31	CRR	TAL DEN

Client Sample ID: BL383017

Date Collected: 08/30/17 11:25

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-61

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.526 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 06:33	CRR	TAL DEN

Client Sample ID: BL483017

Date Collected: 08/30/17 11:30

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-62

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.588 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		20			387473	09/13/17 08:09	CRR	TAL DEN

TestAmerica Denver

Lab Chronicle

Client: Trihydro Corporation
Project/Site: Questa Pipeline - Lead and Asbestos

TestAmerica Job ID: 280-100940-1

Client Sample ID: BL583017

Date Collected: 08/30/17 11:40

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-63

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.814 g	100 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 06:38	CRR	TAL DEN

Client Sample ID: BL683017

Date Collected: 08/30/17 11:50

Date Received: 09/07/17 09:15

Lab Sample ID: 280-100940-64

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			0.402 g	50 mL	387083	09/11/17 13:30	SEJ	TAL DEN
Total/NA	Analysis	6010C		5			387473	09/13/17 06:46	CRR	TAL DEN

Laboratory References:

= EMLab P&K - Denver, 4955 Yarrow Street, Arvada, CO 80002

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



Report for:

Donna Rydberg
TestAmerica-Denver
4955 Yarrow Street
Arvada, CO 80002

Regarding: Project: 280-100940-1; Questa Pipeline- Lead and Asbestos
EML ID: 1790994

Approved by:

Dates of Analysis:
Asbestos PLM: 09-19-2017

Approved Signatory
Noah Lazarte

Service SOPs: Asbestos PLM (EPA Methods 600/R-93/116 & 600/M4-82-020, SOP EM-AS-S-1267)

All samples were received in acceptable condition unless noted in the Report Comments portion in the body of the report. The results relate only to the items tested. The results include an inherent uncertainty of measurement associated with estimating percentages by polarized light microscopy. Measurement uncertainty data for sample results with >1% asbestos concentration can be provided when requested.

EMLab P&K ("the Company") shall have no liability to the client or the client's customer with respect to decisions or recommendations made, actions taken or courses of conduct implemented by either the client or the client's customer as a result of or based upon the Test Results. In no event shall the Company be liable to the client with respect to the Test Results except for the Company's own willful misconduct or gross negligence nor shall the Company be liable for incidental or consequential damages or lost profits or revenues to the fullest extent such liability may be disclaimed by law, even if the Company has been advised of the possibility of such damages, lost profits or lost revenues. In no event shall the Company's liability with respect to the Test Results exceed the amount paid to the Company by the client therefor.

Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and
 Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116

Total Samples Submitted: 47

Total Samples Analyzed: 47

Total Samples with Layer Asbestos Content > 1%: 4

Location: 280-100940-1, A182817

Lab ID-Version‡: 8373424-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity: Good	

Location: 280-100940-2, A282817

Lab ID-Version‡: 8373425-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity: Good	

Location: 280-100940-3, A382817

Lab ID-Version‡: 8373426-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity: Good	

Location: 280-100940-4, A482817

Lab ID-Version‡: 8373427-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity: Good	

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and
 Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-5, A582817**

Lab ID-Version‡: 8373428-1

Sample Layers	Asbestos Content
Red Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-6, A682817

Lab ID-Version‡: 8373429-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-7, A782817

Lab ID-Version‡: 8373430-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-15, INS182817

Lab ID-Version‡: 8373431-1

Sample Layers	Asbestos Content
Yellow Insulation	ND
Composite Non-Asbestos Content:	90% Glass Fibers 7% Cellulose
Sample Composite Homogeneity:	Good

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‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-16, INS282817**

Lab ID-Version‡: 8373432-1

Sample Layers	Asbestos Content
Yellow Insulation	ND
Composite Non-Asbestos Content:	95% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 280-100940-17, PL182817

Lab ID-Version‡: 8373433-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-18, G182817

Lab ID-Version‡: 8373434-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-19, G282817

Lab ID-Version‡: 8373435-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and
 Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-20, G382817**

Lab ID-Version‡: 8373436-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-21, G482817

Lab ID-Version‡: 8373437-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-22, A182817

Lab ID-Version‡: 8373438-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-23, A282817

Lab ID-Version‡: 8373439-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-24, A382817**

Lab ID-Version‡: 8373440-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-25, A482817

Lab ID-Version‡: 8373441-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-26, A582817

Lab ID-Version‡: 8373442-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-27, A682817

Lab ID-Version‡: 8373443-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

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Inhomogeneous samples are separated into homogeneous subsamples and analyzed individually. ND means no fibers were detected. When detected, the minimum detection and reporting limit is less than 1% unless point counting is performed. Floor tile samples may contain large amounts of interference material and it is recommended that the sample be analyzed by gravimetric point count analysis to lower the detection limit and to aid in asbestos identification.

‡ A "Version" indicated by "-x" after the Lab ID# with a value greater than 1 indicates a sample with amended data. The revision number is reflected by the value of "x".

Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-28, A782817**

Lab ID-Version‡: 8373444-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-29, A882817

Lab ID-Version‡: 8373445-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-30, A982817

Lab ID-Version‡: 8373446-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-31, A1082817

Lab ID-Version‡: 8373447-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

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Client: TestAmerica-Denver
 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and
 Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-32, A1182817**

Lab ID-Version‡: 8373448-1

Sample Layers	Asbestos Content
Brown Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-44, G182917

Lab ID-Version‡: 8373449-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-45, G282917

Lab ID-Version‡: 8373450-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-46, G382917

Lab ID-Version‡: 8373451-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-47, G482917**

Lab ID-Version‡: 8373452-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-48, PL182917

Lab ID-Version‡: 8373453-1

Sample Layers	Asbestos Content
Brown Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-49, A183017

Lab ID-Version‡: 8373454-1

Sample Layers	Asbestos Content
Gray Compound	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-50, A283017

Lab ID-Version‡: 8373455-1

Sample Layers	Asbestos Content
Red Non-Fibrous Material	ND
Sample Composite Homogeneity:	Good

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 C/O: Donna Rydberg
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 Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
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ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-51, BA183017**

Lab ID-Version‡: 8373456-1

Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-52, BA283017

Lab ID-Version‡: 8373457-1

Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-53, BA383017

Lab ID-Version‡: 8373458-1

Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-54, BA483017

Lab ID-Version‡: 8373459-1

Sample Layers	Asbestos Content
Brown/Black Non-Fibrous Material with Paint	ND
Sample Composite Homogeneity:	Good

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 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and
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Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-55, BA583017**

Lab ID-Version‡: 8373460-1

Sample Layers	Asbestos Content
Yellow Coating	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-56, BA683017

Lab ID-Version‡: 8373461-1

Sample Layers	Asbestos Content
Yellow Coating	ND
Sample Composite Homogeneity:	Good

Location: 280-100940-65, INS183017

Lab ID-Version‡: 8373462-1

Sample Layers	Asbestos Content
Multicolored Insulation	ND
Composite Non-Asbestos Content:	95% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 280-100940-66, INS283017

Lab ID-Version‡: 8373463-1

Sample Layers	Asbestos Content
Yellow Insulation	ND
Composite Non-Asbestos Content:	95% Glass Fibers
Sample Composite Homogeneity:	Good

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 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and Asbestos

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ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-67, VG183017**

Lab ID-Version‡: 8373464-1

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Composite Non-Asbestos Content:	3% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 280-100940-68, VG283017

Lab ID-Version‡: 8373465-1

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Composite Non-Asbestos Content:	3% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 280-100940-69, VG383017

Lab ID-Version‡: 8373466-1

Sample Layers	Asbestos Content
Black Non-Fibrous Material	ND
Composite Non-Asbestos Content:	3% Glass Fibers
Sample Composite Homogeneity:	Good

Location: 280-100940-70, PW183017

Lab ID-Version‡: 8373467-1

Sample Layers	Asbestos Content
Gray Felt	40% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Moderate

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 C/O: Donna Rydberg
 Re: 280-100940-1; Questa Pipeline- Lead and
 Asbestos

Date of Sampling: 08-28-2017
 Date of Receipt: 09-08-2017
 Date of Report: 09-19-2017

ASBESTOS PLM REPORT: EPA-600/M4-82-020 & EPA METHOD 600/R-93-116**Location: 280-100940-71, PW283017**

Lab ID-Version‡: 8373468-1

Sample Layers	Asbestos Content
Gray Felt	50% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 280-100940-72, PW383017

Lab ID-Version‡: 8373469-1

Sample Layers	Asbestos Content
Gray Felt	40% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	20% Cellulose
Sample Composite Homogeneity:	Moderate

Location: 280-100940-73, PW483017

Lab ID-Version‡: 8373470-1

Sample Layers	Asbestos Content
Gray Felt	50% Chrysotile
Black Tar	ND
Composite Non-Asbestos Content:	15% Cellulose
Sample Composite Homogeneity:	Moderate

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4955 Yarrow Street
Arvada, CO 80002
Phone (903) 736-0100 Fax (303) 431-7171

Chain of Custody Record



Client Information (Sub Contract Lab)		Sample:		Lab Pk:		Carrier Tracking Number:		COC No:																																																																																																																																																																												
Client Contact:		Phone:		E-Mail:		State of Origin:		Page: 1 of 6																																																																																																																																																																												
Shipping/Receiving:		Company:		Address:		Job #:		280-100940-1																																																																																																																																																																												
Company:		E-Mail Pk:		Due Date Requested:		Analysis Requested:		Preparation Codes:																																																																																																																																																																												
Arvada		4955 Yarrow Street,		9/19/2017		TAT Requested (approx):		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaOH F - NaOH G - Ammonia H - Acetic Acid I - Is J - DI Water K - EDTA L - BDA M - Nitrate N - Nitrite O - Asbestos P - NiCOAS Q - NiCOAS R - NiCOAS S - H2SO4 T - TSP Desiccant U - Acetone V - MCA W - pH 4.5 Z - other (specify):																																																																																																																																																																												
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A1882817 (280-100940-18)	8/28/17	21:45	Mountain	Solid																																																																																																																																																																																
<p>Special Instructions/Notes:</p> <p>None. Spill laboratory accreditation are subject to change. TestAmerica Laboratory, Inc. places the ownership of material, analysis & accreditation compliance when all subcontracted laboratories. The sample shipment is forwarded under changed custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis, the sample must be shipped back to the TestAmerica Laboratory or other institution will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratory, Inc. attention immediately. If all required accreditations are current to date, return the signed Chain of Custody following to paid compliance to TestAmerica Laboratory, Inc.</p>																																																																																																																																																																																				
<p>Possible Hazard Identification</p> <p>Unconfirmed</p> <p>Deliverable Requested: I, II, III, IV, Other (Specify):</p> <p>Primary Deliverable Rank: 2</p> <p>Special Instructions/QC Requirements:</p> <p>Sample Disposal (A too may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return To Client <input type="checkbox"/> Dispose By Lab <input type="checkbox"/> Archive For</p> <p>Months</p>																																																																																																																																																																																				
<p>Empty Kit Relinquished by:</p> <p>Date/Time:</p> <p>Company:</p> <p>Received by:</p> <p>Date/Time:</p> <p>Company:</p>																																																																																																																																																																																				
<p>Relinquished by:</p> <p>Date/Time:</p> <p>Company:</p> <p>Received by:</p> <p>Date/Time:</p> <p>Company:</p>																																																																																																																																																																																				
<p>Relinquished by:</p> <p>Date/Time:</p> <p>Company:</p> <p>Received by:</p> <p>Date/Time:</p> <p>Company:</p>																																																																																																																																																																																				
<p>Custody Seal Intact:</p> <p>Custody Seal No.:</p> <p>Cooler Temperature(s) °C and Other Remarks:</p>																																																																																																																																																																																				

Phone (303) 736-0100 Fax (303) 431-7171

TestAmerica

2. FACTS IN DISPOSITIONAL TRINITY

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TestAmerica
THE LEADER IN EMPLOYMENT TESTING

THE LEADER IN ENVIRONMENTAL TESTING

Arvada, CO 80002

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Chain of Custody Record

Client Information (Sub Contract Lab)		Sample ID: BA8B3017 (280-100940-55)		Lab P/N: Rydberg, Donna R.		Current Testing Note:		GC# 280-411362.5																																																																							
Client Contact: Donna Rydberg		Phone: 303.736.0100		Email: donna.rydberg@testamerica.com		State & Zip: Colorado		Page: 5 of 6																																																																							
Shipping/Receiving		Company: TestAmerica		Accreditations Required (See note): NECAP - Oregon		Lab #:		Page: 5 of 6																																																																							
Address: 4955 Yarrow Street, Arvada, CO 80002		Due Date Requested: 9/19/2017		YAT Requested (day):		Analysis Requested		GC# 280-100940-1																																																																							
City: Arvada		State: CO		Zip: 80002		PO #:		Preservation Codes:																																																																							
Phone: 303.736.0100		Fax: 303.431.7171		Email: donna.rydberg@testamerica.com		Project Name: Questa Pipeline - Lead and Asbestos		A - HCL B - NiOH C - Zn Acetate D - NiOH E - NiOH F - NiOH G - Ascorbic Acid H - Ascorbic Acid I - Ascorbic Acid J - DI Water K - EDTA L - EDTA M - Hgano N - NiOH O - Ascorbic Acid P - NiOH Q - NiOH R - NiOH S - H2SO4 T - TSP Dithionite U - Ascorbic Acid V - NiOH W - pH 4.0 X - other (Specify)																																																																							
Project Name: Questa Pipeline - Lead and Asbestos		Project #:		Project #:		Project #:		Project #:																																																																							
Site: SSCWA		Project #:		Project #:		Project #:		Project #:																																																																							
<p>Sample Identification - Client ID (Lab ID)</p> <table border="1"> <thead> <tr> <th>Sample ID</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type</th> <th>Matrix</th> <th>Analysis Requested</th> <th>GC#</th> </tr> </thead> <tbody> <tr> <td>BA8B3017 (280-100940-55)</td> <td>8/30/17</td> <td>11:50</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>BA8B3017 (280-100940-56)</td> <td>8/30/17</td> <td>11:50</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>INS183017 (280-100940-65)</td> <td>8/30/17</td> <td>09:10</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>INS223017 (280-100940-66)</td> <td>8/30/17</td> <td>09:15</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>VG183017 (280-100940-67)</td> <td>8/30/17</td> <td>09:20</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>VG283017 (280-100940-68)</td> <td>8/30/17</td> <td>09:30</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>VG383017 (280-100940-69)</td> <td>8/30/17</td> <td>09:40</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>PW183017 (280-100940-70)</td> <td>8/30/17</td> <td>13:10</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> <tr> <td>PW283017 (280-100940-71)</td> <td>8/30/17</td> <td>13:20</td> <td>Solid</td> <td>Solid</td> <td>X</td> <td></td> </tr> </tbody> </table>										Sample ID	Sample Date	Sample Time	Sample Type	Matrix	Analysis Requested	GC#	BA8B3017 (280-100940-55)	8/30/17	11:50	Solid	Solid	X		BA8B3017 (280-100940-56)	8/30/17	11:50	Solid	Solid	X		INS183017 (280-100940-65)	8/30/17	09:10	Solid	Solid	X		INS223017 (280-100940-66)	8/30/17	09:15	Solid	Solid	X		VG183017 (280-100940-67)	8/30/17	09:20	Solid	Solid	X		VG283017 (280-100940-68)	8/30/17	09:30	Solid	Solid	X		VG383017 (280-100940-69)	8/30/17	09:40	Solid	Solid	X		PW183017 (280-100940-70)	8/30/17	13:10	Solid	Solid	X		PW283017 (280-100940-71)	8/30/17	13:20	Solid	Solid	X	
Sample ID	Sample Date	Sample Time	Sample Type	Matrix	Analysis Requested	GC#																																																																									
BA8B3017 (280-100940-55)	8/30/17	11:50	Solid	Solid	X																																																																										
BA8B3017 (280-100940-56)	8/30/17	11:50	Solid	Solid	X																																																																										
INS183017 (280-100940-65)	8/30/17	09:10	Solid	Solid	X																																																																										
INS223017 (280-100940-66)	8/30/17	09:15	Solid	Solid	X																																																																										
VG183017 (280-100940-67)	8/30/17	09:20	Solid	Solid	X																																																																										
VG283017 (280-100940-68)	8/30/17	09:30	Solid	Solid	X																																																																										
VG383017 (280-100940-69)	8/30/17	09:40	Solid	Solid	X																																																																										
PW183017 (280-100940-70)	8/30/17	13:10	Solid	Solid	X																																																																										
PW283017 (280-100940-71)	8/30/17	13:20	Solid	Solid	X																																																																										
<p>Possible Hazard Identification</p> <p>Unconfirmed</p> <p>Deliverable Requested: I, II, III, IV, Other (specify): Primary Deliverable Rank: 2</p> <p>Empty Kit Requisitioned by: Donna Rydberg</p> <p>Requisitioned by: Donna Rydberg</p> <p>Requisitioned by: Donna Rydberg</p> <p>Custody Seal Intact: Yes</p> <p>Custody Seal No.: Yes</p>																																																																															
<p>Special Instructions/Notes:</p> <p>GC# 280-411362.5</p> <p>Page: 5 of 6</p> <p>Lab #:</p> <p>GC# 280-100940-1</p> <p>Preservation Codes:</p> <p>A - HCL B - NiOH C - Zn Acetate D - NiOH E - NiOH F - NiOH G - Ascorbic Acid H - Ascorbic Acid I - Ascorbic Acid J - DI Water K - EDTA L - EDTA M - Hgano N - NiOH O - Ascorbic Acid P - NiOH Q - NiOH R - NiOH S - H2SO4 T - TSP Dithionite U - Ascorbic Acid V - NiOH W - pH 4.0 X - other (Specify)</p>																																																																															

Chain of Custody Record

THE LEADERS IN ENVIRONMENTAL TESTING

[illegible]

Chain of Custody Record



Client Information		Lab PM.		Carrier Tracking No(s)	
Company: Kupilik		Ryberg, Donna R		280-67249-22759.1 /	
Client Contact:		E-Mail:		Page:	
Tony Kupilik		donna.ryberg@testamericainc.com		Page 1 of 1	
Address:		Job #:			
1252 Commerce Drive					
City:					
Laramie					
State, Zip:					
WY, 82070					
Phone:					
Email:					
tkupilik@trihydro.com					
Project Name:					
Questia Pipeline - Lead and Asbestos					
Site:					
Due Date Requested:		Analysis Requested		Preservation Codes:	
TAT Requested (days):				A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice J - DI Water U - Acetone K - EDTA V - MCAA L - EDA W - pH 4-5 Z - other (specify) Other:	
PO #:				Total Number of containers	
Purchase Order Requested					
WO #:					
17-252W0-L					
Project #:					
28017197					
SSOW#:					
Sample Identification		Sample Date		Sample Time	
A182817	8/28/17	1315	G	S	
A282817	8/28/17	1354	G	S	
A382817	8/28/17	1420	G	S	
A482817	8/28/17	1440	G	S	
A582817	8/28/17	1510	G	S	
A682817	8/28/17	1535	G	S	
A782817	8/28/17	1615	G	S	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input checked="" type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months	
Deliverable Requested: I, II, III, IV, Other (specify) LEVEL 11				Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by:		Date/Time:		Received by:	
T. KUPILIK		9/6/17 @ 1500		THC	
Relinquished by:		Date/Time:		Recalled by:	
Relinquished by:		Date/Time:		Received by:	
Custody Seals Intact: A Yes A No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 22.140.1 FTX transferred by RT 9/7/17	

Chain of Custody Record

Client Information Client Contact: Tony Kupilik Company: Trihydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: Email: tkupilik@trihydro.com Project Name: Questa Pipeline - Lead and Asbestos Site:		Sampler: KUPILIK Lab PM: Rydberg, Donna R Phone: (307) 745-7474 E-Mail: donna.rydberg@testamericainc.com Carrier Tracking No(s): Job #:		COC No: 280-67249-22759.1 Page: 1 of 1 Page 1 of 1					
Due Date Requested: TAT Requested (days): 10 DAYS PO #: 17-252 WO-L Purchase Order Requested WO #: 17-252 WO-L Project #: 28017197 SSOW#:		Analysis Requested							
Sample Identification		Sample Date	Sample Time	Sample Type (G=Comp, G=grab)	Matrix (W=Water, S=Soil, O=Other)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
L182817	8/28/17	1315	G	S		X			
L282817	8/28/17	1354	G	S		X			
L382817	8/28/17	1420	G	S		X			
L482817	8/28/17	1440	G	S		X			
L582817	8/28/17	1450	G	S		X			
L682817	8/28/17	1535	G	S		X			
L782817	8/28/17	1615	G	S		X			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:							
Empty Kit Relinquished by:		Date:		Method of Shipment:					
Relinquished by: T. KUPILIK		Date/Time: 9/6/17 @ 1500		Company: TAD					
Relinquished by:		Date/Time:		Company:					
Relinquished by:		Date/Time:		Company:					
Custody Seals Intact:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					

Chain of Custody Record

Client Information Client Contact: Tony Kuplik Company: Trihydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: Email: tkuplik@trihydro.com Project Name: Questa Pipeline - Lead and Asbestos Site:		Sampler: Kuplik Lab PM: Rydberg, Donna R Phone: (307) 745-7474 E-Mail: donna.rydberg@testamericainc.com	Carrier Tracking No(s): COC No: 285-67249-227593 Page: 1 of 1 Job #:
Due Date Requested: TAT Requested (days): 10 DAY PO #: 17-252VNO-L WO #: 28017197 Project #: SSOW#:		Analysis Requested	
Sample Identification INS182817 INS282817 PL182817 G182817 G282817 G382817 G482817		Sample Date: 8/28/17 Sample Time: 1555 Sample Type (C=Comp, G=grab): G Matrix (Weigher, Sealer, Ovenshell, BT-Tissue, AirAir): S	Perform MS/MSD (Yes or No): Field Filtered Sample (Yes or No): Total Number of Containers:
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input checked="" type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months	
Empty Kit Relinquished by: T. KUPLIK Relinquished by: 9/6/17 @ 1500 Relinquished by:		Special Instructions/QC Requirements: Method of Shipment:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Received by: J. J. Date/Time: 9/7/17 0910 Company: FAD Received by: Date/Time: Company: Received by: Date/Time: Company: Cooler Temperature(s) °C and Other Remarks:	

Chain of Custody Record

Client Information Client Contact: Tony Kuplik Company: Trihydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: (307) 745-7474 Email: tkuplik@trihydro.com Project Name: Questa Pipeline - Lead and Asbestos Site:		Sampler: Kuplik Lab PM: Rydberg, Donna R E-Mail: donna.rydberg@testamericainc.com Carrier Tracking No(s):		COC No: 4 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): 10 DAY PO #: 17252W0-L WO #: 28017197 Project #: 28017197 SSOW#:		Analysis Requested			
Sample Identification A182917 A282917 A382917 A482917 A582917 A682917 A782917 A882917 A982917 A1082917 A1182917		Sample Date 8/29/17	Sample Time 0835	Sample Type G-Grab	Matrix (Wet, Dry, Solid, On-site, Off-site)
Preservation Code:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:			
Field Filtered Sample (Yes or No)		Total Number of Containers			
Perform MS/MSD (Yes or No)		Special Instructions/Note:			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Empty Kit Relinquished by:			
Relinquished by: T. Kuplik Relinquished by:		Date: 9/6/17 @ 1500 Company: THC			
Relinquished by:		Date/Time: 9/17/17 0910 Company: TAD			
Relinquished by:		Date/Time:			
Relinquished by:		Date/Time:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:			

Chain of Custody Record

Client Information Client Contact: Tony Kuplik Company: Trihydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: Email: tkuplik@trihydro.com Project Name: Questa Pipeline - Lead and Asbestos Site:		Sampler: KUPLIK Lab PM: Rydberg, Donna R E-Mail: donna.rydberg@testamerica.com Carrier Tracking No(s): COC No: 5 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): 10 DAY PO #: WO #: Project #: SSOW#:		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Sample Identification Sample ID Sample Date Sample Time Sample Type (C=comp, G=grab) Matrix (W=water, S=solid, O=other) Preservation Code:		Total Number of containers Special Instructions/Note:	
L102917 L282917 L382917 L482917 L582917 L682917 L782917 L882917 L982917 L1082917 L1182917		8/29/17 0835 0910 0945 1005 1025 1105 1140 1155 1230 1510 1640 G S LEAD A	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) L EVEL 11			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months			
Special Instructions/QC Requirements:			
Empty Kit Relinquished by: T. KUPLIK Relinquished by: Relinquished by:		Date: 9/16/17 @ 1500 Date: 9/17/17 0910 Date:	
Relinquished by: Relinquished by:		Date: 9/17/17 0910 Date:	
Relinquished by:		Date:	
Custody Seals Intact Yes No		Cooler Temperature(s) °C and Other Remarks:	

Chain of Custody Record

Client Information Client Contact: Tony Kupilik Company: Trihydro Corporation		Lab PM: Rydberg, Donna R E-Mail: donna.rydberg@lestamercinc.com		Carrier Tracking No(s): 6 Page: Page 1 of 1 Job #:			
Due Date Requested: TAT Requested (days): 10 DAY PO #: 17-252W0-L WO #: 28017197 Project #: SSOW#: Site:				Analysis Requested			
Sample Identification G182917 G282917 G382917 G482917 PL182917				Sample Date 8/29/17 0925 1020 1025 1030		Sample Type (C=Comp, G=grab) G S S S S	
Matrix (W=water, S=solid, O=oil, A=air) S S S S S				Field Filtered Sample (Yes or No) X X X X X			
Perform MS/MSD (Yes or No) X X X X X				Special Instructions/Note: ASBESTOS ASBESTOS ASBESTOS ASBESTOS ASBESTOS			
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:				Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months				Special Instructions/QC Requirements:			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological				Deliverable Requested: I, II, III, IV, Other (specify) LEVEL 11			
Empty Kit Relinquished by:				Method of Shipment:			
Relinquished by: T. KUPILIK				Received by: [Signature]			
Date/Time: 9/6/17 @ 1500				Date/Time: 9/7/17 0915			
Relinquished by:				Received by:			
Date/Time:				Date/Time:			
Relinquished by:				Received by:			
Date/Time:				Date/Time:			
Custody Seals Intact: A Yes A No				Cooler Temperature(s) °C and Other Remarks:			

Chain of Custody Record

Client Information Client Contact: Tony Kupilik Company: Trifhydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: Email: tkupilik@trifhydro.com Project Name: Questa Pipeline - Lead and Asbestos Site:		Sampler: KUPILIK Lab PM: Ryberg, Donna R Phone: (307) 745-7474 E-Mail: donna.ryberg@testamericainc.com		Carrier Tracking No(s): Page: Page 1 of 1 Job #:		COC No: 7				
Due Date Requested: TAT Requested (days): 10 DAY PO #: 17-252W0-L WO #: 28017197 Project #: 28017197 SSOW#:		Analysis Requested								
Sample Identification A183017 A283017 B183017 B283017 B383017 B483017 B583017 B683017		Sample Date 8/30/17	Sample Time 0940	Sample Type G=grab	Matrix (W=water, S=solid, O=other)	Preservation Code: G	Field Filtered Sample (Yes or No) X	Perform MS/MSD (Yes or No) X	Total Number of Containers X	Special Instructions/Note: ASBESTOS
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) LEVSL 11		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months								
Empty Kit Relinquished by: Relinquished by: T. KUPILIK Relinquished by: Relinquished by:		Date: 9/6/17 @ 1500		Date: 9/7/17 0915		Method of Shipment:				
Relinquished by: Relinquished by: Relinquished by:		Date/Time: 9/6/17 @ 1500		Date/Time: 9/7/17 0915		Company: THC Company: TAD Company:				
Relinquished by: Relinquished by:		Date/Time: Relinquished by:		Date/Time: Relinquished by:		Cooler Temperature(s) °C and Other Remarks:				
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:								

Chain of Custody Record

Client Information Client Contact: Tony Kupilik Company: Trihydro Corporation Address: 1252 Commerce Drive City: Laramie State, Zip: WY, 82070 Phone: Email: tkupilik@trihydro.com Project Name: Questa Pipeline - Lead and Asbestos Site:		Sampler: KUPILIK Lab PM: Rydberg, Donna R E-Mail: donna.rydberg@testamericainc.com Carrier Tracking No(s): GOC No: 8 Page: Page 1 of 1 Job #:
Due Date Requested: TAT Requested (days): 10 DAY PO #: 17-252W0-L WO #: 28017197 Project #: 28017197 SSOW#:		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)
Sample Identification L1B3017 L2B3017 B3L1B3017 B3L2B3017 B3L3B3017 B3L4B3017 B3L5B3017 B3L6B3017	Sample Date 8/30/17 1110 1115 1120 1125 1130 1140 1150	Sample Type (C=comp, G=grab) G G G G G G G G
Matrix (W=water, S=solid, O=other) S S S S S S S S	Field Filtered Sample (Yes or No) X X X X X X X X	Perform MS/MSD (Yes or No) X X X X X X X X
Total Number of containers Special Instructions/Note:		LEAD X X X X X X X X
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		
Empty Kit Relinquished by: T. KUPILIK Relinquished by: 9/6/17 @ 1500 Relinquished by: 9/6/17 @ 1500 Relinquished by: 9/6/17 @ 1500		
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months		
Special Instructions/QC Requirements: Method of Shipment:		
Date/Time: 9/6/17 @ 1500 Date/Time: 9/6/17 @ 1500 Date/Time: 9/6/17 @ 1500		
Company: THC Company: THC Company: THC		
Cooler Temperature(s) °C and Other Remarks:		
Custody Seal No.: Δ Yes Δ No		

Chain of Custody Record

Client Information Client Contact: Tony Kupalik Company: Trihydro Corporation		Lab PM: Rydberg, Donna R E-Mail: donna.rydberg@lestamerica.com		Carrier Tracking No(s): Page: 9 Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): PO #: 10 DAY WO #: 17-252W0-L Project #: 28017197 SSOW#:		Analysis Requested			
Address: 1252 Commerce Drive City: Laramie State: WY 82070 Phone:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecalhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)			
Email: tkupalik@trihydro.com Project Name: Questia Pipeline - Lead and Asbestos Site:		Total Number of Containers:			
Sample Identification		Special Instructions/Note:			
INS183017	8/30/17	0910	G	S	X
INS283017		0915			X
VG183017		0920			X
VG283017		0930			X
VG383017		0940			X
PW183017		1510			X
PW283017		1520			X
PW383017		1530			X
PW483017		1540			X
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input checked="" type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months			
Deliverable Requested: I, II, III, IV, Other (specify) LEVEL II		Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Method of Shipment:			
Relinquished by: T. KUPALIK Date/Time: 9/10/17 @ 1500		Received by: [Signature] Date/Time: 9/17/17 0910			
Relinquished by:		Received by:			
Relinquished by:		Received by:			
Relinquished by:		Received by:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks:			

Age Group	Percentage
1	100%
2	100%
3	100%
4	100%
5	100%
6	100%
7	100%
8	100%
9	100%
10	100%
11	100%
12	100%
13	100%
14	100%

Login Sample Receipt Checklist

Client: Trihydro Corporation

Job Number: 280-100940-1

Login Number: 100940

List Source: TestAmerica Denver

List Number: 1

Creator: True, Joshua A

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX E

ARCADIS GROUNDWATER MONITORING MEMO

MEMO

To:
Cynthia Gulde, CEMC

Copies:
File

Arcadis U.S., Inc.
630 Plaza Drive
Suite 100
Highlands Ranch
Colorado 80129
Tel 720 344 3500
Fax 720 344 3535

From:
Tim Cox
Joe Gilbert

Date:
April 16, 2018

Arcadis Project No.:
B0046795.0073

Subject:
Evaluation of Groundwater Monitoring at the Lower Dump Sump
Chevron Mining, Inc.
Questa, New Mexico

At the request of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. has prepared this technical memorandum that evaluates current and proposed future groundwater monitoring at the Chevron Mining Inc. (CMI) Lower Dump Sump (LDS). The LDS is in the southern portion of the Village of Questa, immediately south of the Red River (Figure 1). The LDS is scheduled to be decommissioned as part of the tailing pipeline removal. A small amount of tailing material remains in the LDS area, and CEMC proposes that the remnant tailing be left in place. Three alluvial groundwater monitoring wells (LS-1, LS-2, and LS-3) are located near the LDS and have been sampled since 1991. Private wells PR3, PR4, and PR5 and the Hunt's Pond well are also in the LDS area and were sampled in 2004 and 2005 during the Remedial Investigation. Constituent concentrations in samples from all wells have been and are currently below state and federal groundwater standards. Although the historical sample data indicate that the LDS and remnant tailing have not impacted groundwater quality, additional groundwater monitoring has been requested if the tailing are left in place.

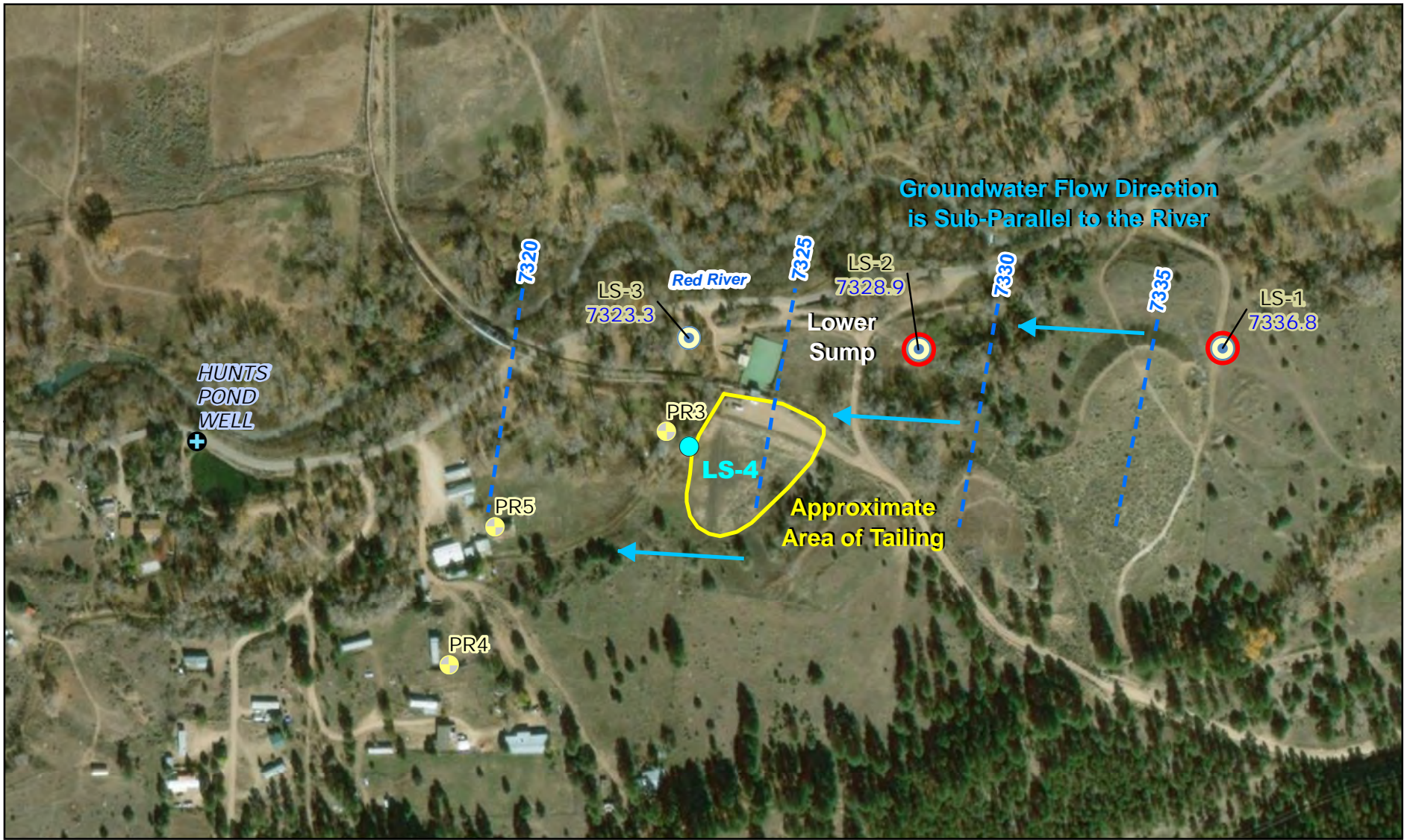
Alluvial groundwater is present at approximately 6 feet below ground surface (bgs) at LS-3, increasing to approximately 40 feet bgs at LS-1 as the topography rises in elevation to the south. Groundwater elevations from October 2017 are shown on Figure 1, with interpreted groundwater elevation contours through the LDS area. The groundwater flow direction is east to west and is sub-parallel to the Red River. Based on this groundwater flow direction, monitoring well LS-3 is downgradient of the LDS structure, whereas LS-1 and LS-2 are upgradient. Because the wells are upgradient of the LDS and tailing to be left in place, LS-1 and LS-2 are proposed to be abandoned in accordance with the New Mexico Office of the State Engineer Rules and Regulations Governing Well Driller Licensing, Construction, Repair, and Plugging of Wells (19.27.4 New Mexico Administrative Code [NMAC]).

Private wells PR3 and PR4 are downgradient of the area of tailing to be left in place. Sampling of these wells requires permission by the property owners. Therefore, a new monitoring well (LS-4) is proposed to be installed on CMI property at the northern boundary of the remnant tailing, which is shown on Figure 1. A monitoring well at this location would be downgradient of the tailing and would monitor potential impacts to groundwater. The new monitoring well would be approximately 25 feet deep with a screened interval from approximately 5 to 25 feet, thereby intersecting the water table. The well will be installed in accordance with the New Mexico Office of the State Engineer Rules and Regulations Governing Well Driller Licensing, Construction, Repair, and Plugging of Wells (19.27.4 NMAC).

The new monitoring well (LS-4) will be included in the Tailing Facility Performance Monitoring Plan and sampled at the same frequency and for the same constituents as LS-3. Existing monitoring wells LS-1 and LS-2 will be removed from the Tailing Facility Performance Monitoring Plan after they have been abandoned.

FIGURE

Figure 1 Existing Wells and Proposed Monitoring Well Near the Lower Dump Sump



Legend

- Hunts Pond Well (Abandoned)
- PR Wells (Private Resident Well)
- LS Wells (Lower Sump Monitoring Well)
- Proposed New Alluvial Monitoring Well
- Monitoring Well Proposed to be Abandoned
- Approximate Groundwater Elevation Contour (feet)
- Approximate Area of Tailings
- 7323.3 Groundwater Elevation in Monitoring Well (feet, October 2017)
- Groundwater Flow Direction



0 150 300 600 Feet

State Plane Coordinate Datum:
NAD83 State Plane NM Central Feet (ft)



CHEVRON MINING INC. QUESTA MINE

Existing Wells and Proposed Monitoring
Well Near the Lower Dump Sump



ARCADIS

FIGURE
1

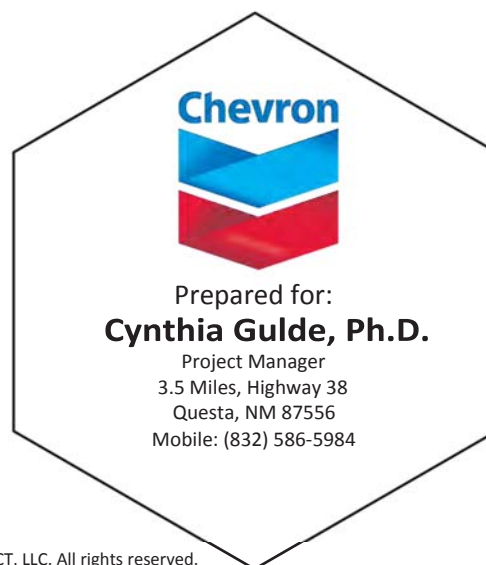
APPENDIX F

BORROW AREA INFORMATION



Sampling Documentation Report

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY — QUESTA SPECIALTY PROJECT XQ006-18 Lower Dump Sump – Borrow Area Sampling Report QUESTA, NEW MEXICO



Prepared for:
Cynthia Gulde, Ph.D.
Project Manager
3.5 Miles, Highway 38
Questa, NM 87556
Mobile: (832) 586-5984

October 1, 2018



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- 2.2. Sample Collection
- 2.3. Sample Survey
- 2.4. Sample Results

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- 2.2. Lower Dump Sump

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Appendix A: Sample Location Maps

Appendix B: Laboratory Analytical Reports





KEY TERMS

Acronyms

BGS: Below Ground Surface

LDS: Lower Dump Sump

MBS: Mill Basin Swale



SECTION 1

Project Summary



2.1 Background

ENTACT was contracted to conduct composite soil sampling at locations that were anticipated to be used as borrow material to backfill excavations at the site. The areas identified as potential source material include:

- Mill Basin Stockpile
- Lower Dump Sump Berm & Borrow Areas

The scope of work included the collection of three representative soil samples from each of the areas.

2.2 Sample Collection

Prior to sample collection, the areas were cleared for utilities. At the Mill Basin stockpile, a hand shovel was utilized to remove the top 0-1 ft of soil to expose soil for sampling.

At the Lower Dump Sump, a 329 excavator was used to complete an excavation down to between 4 to 6 ft bgs. A bucket of material, representative of the soil encountered, was removed and placed to the side for sampling at each location, prior to backfilling the excavation.

Once the soil was excavated, a clean, metal hand trowel was used to scoop a representative sample of the soil into a 1-gallon plastic ziplock bag provided by the laboratory. The trowel was decontaminated between samples using Simple Green and distilled water.

The containers of soil were labeled and packaged into a cooler for transport. The samples were shipped via UPS to Energy Laboratories in Billings, Montana for analysis.

The table below summarizes the information for the samples.

No.	Sample ID	Date	Time	Depth (ft)	Excavation Method
Mill Basin Swale					
1	MBS-01	9/4/18	11:50	1-2	Hand Shovel
2	MBS-02	9/4/18	11:55	1-2	
3	MBS-03	9/4/18	12:00	1-2	
Lower Dump Sump					
1	LDS-TP-01	9/4/18	14:00	0-5.5	329 Excavator
2	LDS-TP-02	9/4/18	13:45	0-6	
3	LDS-TP-03	9/4/18	13:30	0-4	

The list of requested analyses is included in the table below.

Analyte	Method
Aluminum	E6010.20
Boron	E6010.20
Cadmium	E6010.20
Calcium, saturated paste	E6010.20
Calcium Carbonate	USDA23c
Conductivity, saturated paste	ASA10-3
Copper	E6010.20
Iron	E6010.20
Magnesium, saturated paste	E6010.20
Manganese	E6010.20
Molybdenum	E6010.20
Nitrate as N, KCL Extract	ASA33-8
pH, saturated paste	ASA10-3
Phosphorus, Olsen	ASA24-5
Potassium	E6010.20
Sodium Adsorption Ratio (SAR)	Calculation
Sodium, saturated paste	E6010.20
Sulphur	Sobek Modified
Total Organic Matter	Walkley-Black
Zinc	E6010.20
Moisture Content	D2974
Coarse Fragments	ASA15-3
Particle Size	ASA15-5

2.3 Sample Survey

Survey data was collected for each of the sample locations. For Lower Dump Sump, where excavations were conducted, survey points were collected for the surface and bottom of excavation elevations. The survey data for the soil sample locations can be found in the table below.

Survey Data Point ID	Northing	Easting	Elevation	Comments
Mill Basin Swale				
MBS-TP 01	22911.257	61871.174	8135.963	Stock Pile
MBS-TP 02	22966.62	61852.545	8138.72	Stock Pile
MBS-TP 03	22955.439	61814.45	8137.244	Stock Pile
Lower Dump Sump				
LDS-TP 01-SURF	22502.518	32972.035	7363.478	AUX PIT Surface
LDS-TP 01-EXC	22500.706	32970.457	7358.926	AUX PIT Excavation Depth
LDS-TP 02-SURF	22296.875	32899.257	7389.015	SITE 5 Surface
LDS-TP 02-EXC	22298.299	32898.315	7384.866	SITE 5 Excavation Depth
LDS-TP 03-SURF	22013.863	32546.618	7378.461	SITE 3 Surface
LDS-TP 03-EXC	22012.766	32547.888	7374.129	SITE 3 Excavation Depth

The survey data are presented on figures included in **Appendix A – Sample Location Maps**.



2.4 Sample Results

The analytical results were provided by the laboratory on September 20, 2018. One laboratory package was provided per area. The samples in the Lower Dump Sump set was qualified as “D” due to an increase in the reporting limit (RL) due to sample matrix interference. The RL on these samples was 0.2 mg/kg as compared to the 0.1 mg/kg RL on the Mill Basin Swale samples. In addition, the sample spike matrix for Molybdenum in both sets was qualified as “A” due to analyte levels greater than four times the spike level.

The laboratory analytical packages can be found in **Appendix B – Laboratory Analytical Results**.



SECTION 2

Photographs

2.1 Mill Basin Swale



Figure 1 – MBS - 01 Location on the southeastern side of stockpile



Figure 2– MBS-02 Location on the northern side of stockpile



Figure 3 – MBS-03 Location on the western side of stockpile

2.2 Lower Dump Sump



Figure 4 – LDS-TP-01 Location in the Auxiliary Borrow Area



Figure 5– LDS-TP-02 Location in the Site 5 Area



Figure 6 –View of LDS-TP-02 excavation



Figure 7 – LDS-TP-03 Location in the Site 3 Berm Area



ENTACT

Questa Specialty Project – Borrow Area Sampling | Questa, New Mexico

APPENDICES

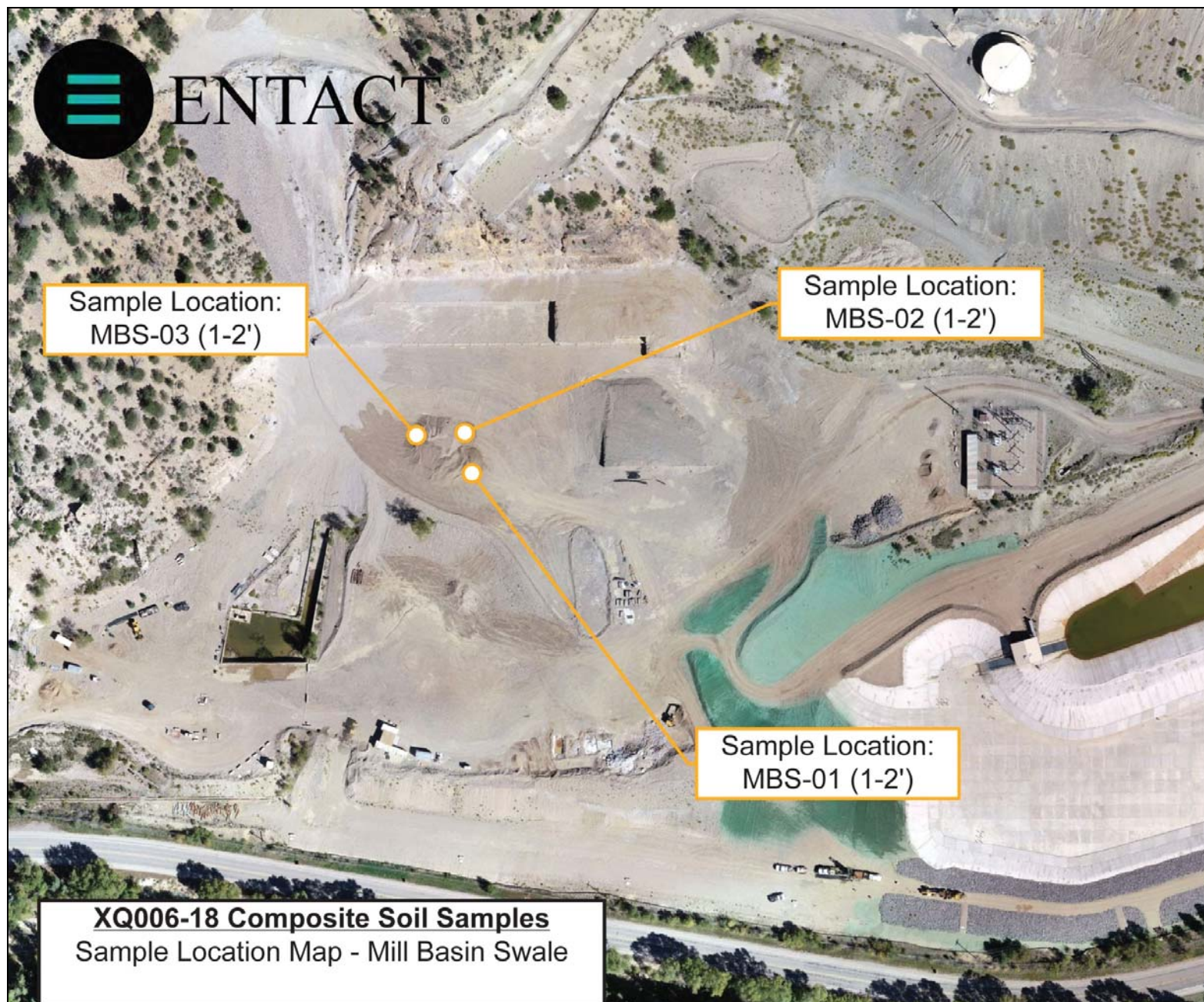


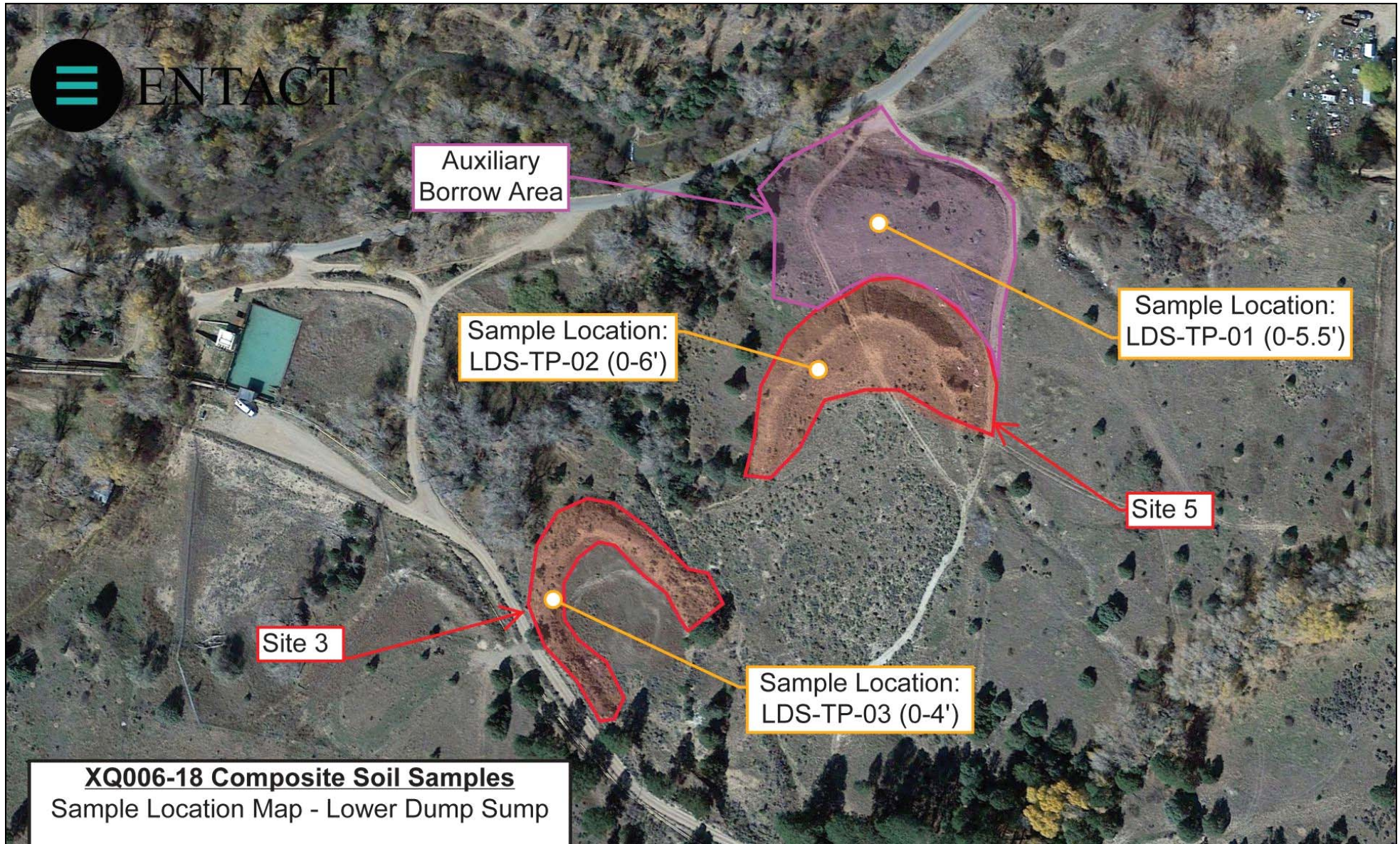
ENTACT

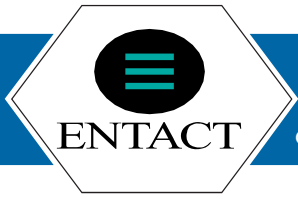
Questa Specialty Project – Borrow Area Sampling | Questa, New Mexico

APPENDIX A

Sample Location Maps







APPENDIX B

Laboratory Analytical Results



ANALYTICAL SUMMARY REPORT

September 20, 2018

Entact LLC

1 E Oakhill Dr Ste 102
Westmont, IL 60559-5540

Work Order: B18090552 Quote ID: B4681 - Chevron

Project Name: Mill Basin Swale Borrow Area

Energy Laboratories Inc Billings MT received the following 3 samples for Entact LLC on 9/7/2018 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B18090552-001	MBS-01	09/04/18 11:50	09/07/18	Soil	Metals, CACL2 Extractable DTPA Extractable Metals Metals, NH4OAC Extractable Metals, Ammonium Oxalate Extractable Metals, Saturated Paste Coarse Fragments Conductivity, Saturated Paste Extract Lime as CaCO3, % Moisture Nitrate as N, KCL Extract Organic Carbon/Matter Walkley- Black pH, Saturated Paste Phosphorus-Olsen CaCl2 Hot Water Soil Extraction ASA25-9 DTPA extraction for metals ASA19- 3.3 Ammonium Acetate Extraction ASA13-3 Ammonium Oxalate Soil Extraction ASA74-2 Saturated Paste Extraction ASA Particle Size Analysis / Texture Sodium Adsorption Ratio Saturation Percentage Sulfur Forms
B18090552-002	MBS-02	09/04/18 11:55	09/07/18	Soil	Same As Above
B18090552-003	MBS-03	09/04/18 12:00	09/07/18	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.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area
Lab ID: B18090552-001
Client Sample ID: MBS-01

Report Date: 09/20/18
Collection Date: 09/04/18 11:50
Date Received: 09/07/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	6.9	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	42	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	68	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	23	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	9	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste	7.5	s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	3.7	mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	24.3	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	34.2	meq/L		0.05		SW6010B	09/18/18 21:05 / rlh
Magnesium, sat. paste	4.24	meq/L		0.08		SW6010B	09/18/18 21:05 / rlh
Sodium, sat. paste	10.9	meq/L		0.04		SW6010B	09/18/18 21:05 / rlh
Sodium Adsorption Ratio (SAR)	2.48	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.24	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	1.9	%		0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO ₃	3.4	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	9	mg/kg		1		ASA24-5	09/13/18 11:36 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:40 / srm
METALS, AMMONIUM OXALATE EXTRACTABLE							
Molybdenum	110	mg/kg		1.0		SW6020	09/17/18 13:55 / by
CACL₂ EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 21:52 / rjh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	108	mg/kg		1		SW6010B	09/13/18 22:58 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	0.2	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Cadmium	0.1	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Copper	3.2	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Iron	15	mg/kg		1		SW6010B	09/17/18 16:58 / rlh
Manganese	2.8	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh
Zinc	4.0	mg/kg		0.1		SW6010B	09/17/18 16:58 / rlh

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area
Lab ID: B18090552-002
Client Sample ID: MBS-02

Report Date: 09/20/18
Collection Date: 09/04/18 11:55
Date Received: 09/07/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	8.1	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	45	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	64	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	26	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	10	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste	7.3	s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	3.8	mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	24.6	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	33.8	meq/L		0.05		SW6010B	09/18/18 21:12 / rlh
Magnesium, sat. paste	4.21	meq/L		0.08		SW6010B	09/18/18 21:12 / rlh
Sodium, sat. paste	12.1	meq/L		0.04		SW6010B	09/18/18 21:12 / rlh
Sodium Adsorption Ratio (SAR)	2.77	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.16	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	1.8	%		0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO ₃	3.2	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	11	mg/kg		1		ASA24-5	09/13/18 11:38 / srm
Nitrate as N, KCL Extract	5	mg/kg		1		ASA33-8	09/17/18 11:41 / srm
METALS, AMMONIUM OXALATE EXTRACTABLE							
Molybdenum	68	mg/kg		1.0		SW6020	09/17/18 14:06 / by
CACL₂ EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:07 / rjh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	107	mg/kg		1		SW6010B	09/13/18 23:06 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	ND	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Copper	2.7	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Iron	17	mg/kg		1		SW6010B	09/17/18 17:06 / rlh
Manganese	2.2	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh
Zinc	3.1	mg/kg		0.1		SW6010B	09/17/18 17:06 / rlh

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area
Lab ID: B18090552-003
Client Sample ID: MBS-03

Report Date: 09/20/18
Collection Date: 09/04/18 12:00
Date Received: 09/07/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	6.4	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	46	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	60	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	30	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	10	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste	7.3	s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	4.8	mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	24.6	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	36.4	meq/L		0.05		SW6010B	09/18/18 21:20 / rlh
Magnesium, sat. paste	4.64	meq/L		0.08		SW6010B	09/18/18 21:20 / rlh
Sodium, sat. paste	20.1	meq/L		0.04		SW6010B	09/18/18 21:20 / rlh
Sodium Adsorption Ratio (SAR)	4.44	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.14	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	1.9	%		0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO ₃	3.3	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	11	mg/kg		1		ASA24-5	09/13/18 11:39 / srm
Nitrate as N, KCL Extract	9	mg/kg		1		ASA33-8	09/17/18 11:42 / srm
METALS, AMMONIUM OXALATE EXTRACTABLE							
Molybdenum	71	mg/kg		1.0		SW6020	09/17/18 14:09 / by
CACL₂ EXTRACTABLE METALS							
Boron	0.1	mg/kg		0.1		SW6010B	09/13/18 22:15 / rjh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	104	mg/kg		1		SW6010B	09/13/18 23:13 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	0.1	mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Copper	2.7	mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Iron	16	mg/kg		1		SW6010B	09/17/18 17:14 / rlh
Manganese	2.1	mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh
Zinc	3.2	mg/kg		0.1		SW6010B	09/17/18 17:14 / rlh

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA10-3									Batch: 125587
Lab ID: B18090552-001A DUP	Sample Duplicate					Run: MISC-SOIL_180918B			09/18/18 17:16
Conductivity, sat. paste	3.67	mmhos/cm	0.10				0.8	30	
Lab ID: LCS-1809181716	Laboratory Control Sample					Run: MISC-SOIL_180918B			09/18/18 17:16
Conductivity, sat. paste	4.07	mmhos/cm	0.10	99	70	130			
Lab ID: B18090552-001A DUP	Sample Duplicate					Run: MISC-SOIL_180918B			09/18/18 17:16
pH, sat. paste	7.50	s.u.	0.10				0.0	10	
Lab ID: LCS-1809181716	Laboratory Control Sample					Run: MISC-SOIL_180918B			09/18/18 17:16
pH, sat. paste	7.10	s.u.	0.10	95	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA15-5							Batch: R307356		
Lab ID: B18090558-003A DUP	Sample Duplicate		Run: MISC-SOIL_180914A				09/14/18 11:46		
Sand	61.0	%	1.0				1.7	30	
Silt	26.0	%	1.0				7.4	30	
Clay	13.0	%	1.0				8.0	30	
Lab ID: LCS-1809141146	Laboratory Control Sample		Run: MISC-SOIL_180914A				09/14/18 11:46		
Sand	21.0	%	1.0	88	70	130			
Silt	58.0	%	1.0	107	70	130			
Clay	21.0	%	1.0	95	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA24-5					Batch: OM_9-13-2018_11-19-16AMA				
Lab ID: LCS	Laboratory Control Sample				Run: FIA205-B_180913A		09/13/18 11:20		
Phosphorus, Olsen	48	mg/kg	1.0	108	70	130			
Lab ID: B18090560-002ADUP	Sample Duplicate				Run: FIA205-B_180913A		09/13/18 11:53		
Phosphorus, Olsen	4.8	mg/kg	1.0				7.1	30	
Lab ID: B18090560-002AMS	Sample Matrix Spike				Run: FIA205-B_180913A		09/13/18 11:55		
Phosphorus, Olsen	17	mg/kg	1.0	117	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA29-3							Batch: R307406		
Lab ID: B18090552-001A DUP	Sample Duplicate		Run: MISC-SOIL_180916A				09/16/18 13:32		
Organic Matter	1.87	%	0.17				0.9	30	
Lab ID: LCS-1809161332	Laboratory Control Sample		Run: MISC-SOIL_180916A				09/16/18 13:32		
Organic Matter	4.58	%	0.17	117	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA33-8					Batch: OM_9-17-2018_11-28-59AM				
Lab ID: LCS	Laboratory Control Sample				Run: FIA205-B_180917A		09/17/18 11:30		
Nitrate as N, KCL Extract	10.8	mg/kg	1.0	100	70	130			
Lab ID: B18090560-003ADUP	Sample Duplicate				Run: FIA205-B_180917A		09/17/18 11:50		
Nitrate as N, KCL Extract	0.655	mg/kg	1.0				30		
Lab ID: B18090560-003AMS	Sample Matrix Spike				Run: FIA205-B_180917A		09/17/18 11:51		
Nitrate as N, KCL Extract	5.30	mg/kg	1.0	84	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Calculation							Batch: R307623		
Lab ID: B18090552-001A DUP	Sample Duplicate				Run: MISC-SOIL_180919A		09/19/18 14:42		
Sodium Adsorption Ratio (SAR)	2.53	unitless	0.010				2.0	30	
Lab ID: LCS-1809191442	Laboratory Control Sample				Run: MISC-SOIL_180919A		09/19/18 14:42		
Sodium Adsorption Ratio (SAR)	8.44	unitless	0.010	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Sobek Modified							Batch: R307623		
Lab ID: B18090552-001ADUP	Sample Duplicate				Run: MISC-SOIL_180919A		09/19/18 12:54		
Sulfur, Total	0.220	%	0.010				6.6	50	
Lab ID: LCS-R307623	Laboratory Control Sample				Run: MISC-SOIL_180919A		09/19/18 13:03		
Sulfur, Total	0.220	%	0.010	105	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte		Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method:	SW6010B									Batch: 125412
Lab ID:	LCS-125412	Laboratory Control Sample					Run: ICP203-B_180913A			09/13/18 21:48
Boron		0.420	mg/kg	0.10	117	70	130			
Lab ID:	B18090552-001ADUP	Sample Duplicate					Run: ICP203-B_180913A			09/13/18 21:56
Boron		0.0738	mg/kg	0.10					30	
Lab ID:	B18090552-002AMS2	Sample Matrix Spike					Run: ICP203-B_180913A			09/13/18 22:11
Boron		9.72	mg/kg	0.10	96	70	130			
Method:	SW6010B									Batch: 125413
Lab ID:	LCS-125413	Laboratory Control Sample					Run: ICP203-B_180913A			09/13/18 22:54
Potassium		400	mg/kg	1.4	104	70	130			
Lab ID:	B18090552-001ADUP	Sample Duplicate					Run: ICP203-B_180913A			09/13/18 23:02
Potassium		102	mg/kg	1.4				6.1	30	
Lab ID:	B18090552-002AMS2	Sample Matrix Spike					Run: ICP203-B_180913A			09/13/18 23:10
Potassium		4540	mg/kg	1.5	89	70	130			
Method:	SW6010B									Batch: 125485
Lab ID:	LCS-125485	Laboratory Control Sample					Run: ICP203-B_180917A			09/17/18 16:29
Cadmium		0.103	mg/kg	0.10	103	70	130			
Copper		2.86	mg/kg	0.10	86	70	130			
Iron		11.0	mg/kg	1.0	71	70	130			
Manganese		8.13	mg/kg	0.10	87	70	130			
Zinc		3.46	mg/kg	0.10	82	70	130			
Lab ID:	B18090691-001AMS2	Sample Matrix Spike					Run: ICP203-B_180917A			09/17/18 16:45
Aluminum		8.19	mg/kg	0.10	77	50	150			
Lab ID:	B18090552-001A DUP	Sample Duplicate					Run: ICP203-B_180917A			09/17/18 17:02
Aluminum		ND	mg/kg	0.10					30	
Cadmium		0.105	mg/kg	0.10				3.8	30	
Copper		3.28	mg/kg	0.10				1.4	30	
Iron		14.6	mg/kg	1.0				2.8	30	
Manganese		2.67	mg/kg	0.10				4.1	30	
Zinc		3.93	mg/kg	0.10				1.6	30	
Lab ID:	B18090552-002AMS2	Sample Matrix Spike					Run: ICP203-B_180917A			09/17/18 17:10
Cadmium		0.781	mg/kg	0.10	71	50	150			
Copper		4.50	mg/kg	0.10	90	50	150			
Iron		24.5	mg/kg	1.0	76	50	150			
Manganese		9.80	mg/kg	0.10	76	50	150			
Zinc		4.62	mg/kg	0.10	74	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B							Batch: 125587		
Lab ID: LCS-125587	Laboratory Control Sample			Run: ICP204-B_180918A			09/18/18 21:01		
Calcium, sat. paste	14.2	meq/L	0.050	122	70	130			
Magnesium, sat. paste	8.16	meq/L	0.082	112	70	130			
Sodium, sat. paste	28.2	meq/L	0.043	97	70	130			
Lab ID: B18090552-001A DUP	Sample Duplicate			Run: ICP204-B_180918A			09/18/18 21:08		
Calcium, sat. paste	33.8	meq/L	0.050				1.2	30	
Magnesium, sat. paste	4.27	meq/L	0.082				0.8	30	
Sodium, sat. paste	11.1	meq/L	0.043				1.5	30	
Lab ID: B18090552-002AMS2	Sample Matrix Spike			Run: ICP204-B_180918A			09/18/18 21:16		
Calcium, sat. paste	44.0	meq/L	0.050	82	70	130			
Magnesium, sat. paste	24.0	meq/L	0.082	96	70	130			
Sodium, sat. paste	22.1	meq/L	0.043	92	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Batch: 125484
Lab ID: LCS-125484	Laboratory Control Sample								Run: ICPMS202-B_180917A 09/17/18 13:50
Molybdenum	4.1	mg/kg	1.0	83	30	130			
Lab ID: B18090552-001AMS	Sample Matrix Spike								Run: ICPMS202-B_180917A 09/17/18 13:58
Molybdenum	11	mg/kg	1.0		70	130			A
Lab ID: B18090552-001A DUP	Sample Duplicate								Run: ICPMS202-B_180917A 09/17/18 14:03
Molybdenum	100	mg/kg	1.0				5.3	30	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: USDA23c							Batch: R307636		
Lab ID: B18090552-001A DUP	Sample Duplicate				Run: MISC-SOIL_180919B		09/19/18 16:38		
Lime as CaCO3	3.20	%	0.10				6.1	30	
Lab ID: LCS-1809191638	Laboratory Control Sample				Run: MISC-SOIL_180919B		09/19/18 16:38		
Lime as CaCO3	12.0	%	0.10	112	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Mill Basin Swale Borrow Area

Report Date: 09/20/18
Work Order: B18090552

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: USDA27a							Batch: R307623		
Lab ID: B18090552-001A DUP	Sample Duplicate				Run: MISC-SOIL_180919A		09/19/18 14:42		
Saturation	24.0	%	0.10				1.2	30	
Lab ID: LCS-1809191442	Laboratory Control Sample				Run: MISC-SOIL_180919A		09/19/18 14:42		
Saturation	37.5	%	0.10	99	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Work Order Receipt Checklist

Entact LLC

B18090552

Login completed by: Tabitha Edwards

Date Received: 9/7/2018

Reviewed by: BL2000\raschim

Received by: bgs

Reviewed Date: 9/17/2018

Carrier name: Return-UPS NDA

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	°C No Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

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.

Contact and Corrective Action Comments:

The temperature of the sample(s) for shipping container 1 was 20.6°C, shipping container 2 was 20.8°C and shipping container 3 was 17.6°C.

The sample container for MBS-02 was received torn. Placed sample container into another ziploc and proceeded with analysis per phone call with Sarah Miller.

Turnaround time changed to 10 days per Shari Endy, Energy Laboratories Project Manager.



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Page 1 of 1

Report Information (if different than Account Information)

Company Name _____
 Contact _____
 Phone _____
 Mailing Address _____
 City, State, Zip _____
 Email _____
 Receive Report ☐ Hard Copy ☐ Email
 Special Report Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other _____

Matrix Codes

Matrix Codes	Analysis Requested						
A - Air							<p>All turnaround times are standard unless marked as RUSH.</p> <p>Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling – See Instructions Page</p>
W- Water							
S - Solids/ Solids							
V - Vegetation							
B - Bioassay							
O - Other							
DW - Drinking Water							

Analysis Requested

[illegible]

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		Number of Containers	Matrix (See Codes Across)	See A	RUSH TAT	ELI LAB ID (Laboratory Use Only)
Date	Time							
1 MBS-01	9/4/18	1150	1	S	X	7	018090552 - 001	
2 MBS-02	9/4/18	1155	1	S	X	7	002	
3 MBS-03	9/4/18	1200	1	S	X	7	003	
4								
5								
6								
7								
8								
9								
10								

Custody Record MUST be signed	Relinquished by (print)	Signature	Date/Time	Relinquished by (print)	Signature	Date/Time	Signature
	Relinquished by (print)	Signature	Date/Time	Relinquished by (print)	Signature	Date/Time	Signature
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 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.

Requested Analyses for Borrow Area Soil Samples submitted by ENTACT

Analyte	Method
Aluminum	E6010.20
Boron	E6010.20
Cadmium	E6010.20
Calcium, saturated paste	E6010.20
Calcium Carbonate	USDA23c
Conductivity, saturated paste	ASA10-3
Copper	E6010.20
Iron	E6010.20
Magnesium, saturated paste	E6010.20
Manganese	E6010.20
Molybdenum	E6010.20
Nitrate as N, KCL Extract	ASA33-8
pH, saturated paste	ASA10-3
Phosphorus, Olsen	ASA24-5
Potassium	E6010.20
Sodium Adsorption Ratio (SAR)	Calculation
Sodium, saturated paste	E6010.20
Sulphur	Sobek Modified
Total Organic Matter	Walkley-Black
Zinc	E6010.20
Moisture Content	D2974
Coarse Fragments	ASA15-3
Particle Size	ASA15-5



ANALYTICAL SUMMARY REPORT

September 20, 2018

Entact LLC

1 E Oakhill Dr Ste 102
Westmont, IL 60559-5540

Work Order: B18090560 Quote ID: B4681 - Chevron

Project Name: Lower Dump Sump Borrow Area

Energy Laboratories Inc Billings MT received the following 3 samples for Entact LLC on 9/7/2018 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B18090560-001	LDS-TP-03	09/04/18 13:30	09/07/18	Soil	Metals, CACL2 Extractable DTPA Extractable Metals Metals, NH4OAC Extractable Metals, Ammonium Oxalate Extractable Metals, Saturated Paste Coarse Fragments Conductivity, Saturated Paste Extract Lime as CaCO3, % Moisture Nitrate as N, KCL Extract Organic Carbon/Matter Walkley- Black pH, Saturated Paste Phosphorus-Olsen CaCl2 Hot Water Soil Extraction ASA25-9 DTPA extraction for metals ASA19- 3.3 Ammonium Acetate Extraction ASA13-3 Ammonium Oxalate Soil Extraction ASA74-2 Saturated Paste Extraction ASA Particle Size Analysis / Texture Sodium Adsorption Ratio Saturation Percentage Sulfur Forms
B18090560-002	LDS-TP-02	09/04/18 13:45	09/07/18	Soil	Same As Above
B18090560-003	LDS-TP-01	09/04/18 14:00	09/07/18	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.

The results as reported relate only to the item(s) submitted for testing.

If you have any questions regarding these test results, please call.

Report Approved By:



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area
Lab ID: B18090560-001
Client Sample ID: LDS-TP-03

Report Date: 09/20/18
Collection Date: 09/04/18 13:30
Date Received: 09/07/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	10.5	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	24	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	66	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	25	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	9	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste	7.1	s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	0.4	mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	19.5	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	2.36	meq/L		0.05		SW6010B	09/18/18 21:43 / rlh
Magnesium, sat. paste	0.81	meq/L		0.08		SW6010B	09/18/18 21:43 / rlh
Sodium, sat. paste	0.49	meq/L		0.04		SW6010B	09/18/18 21:43 / rlh
Sodium Adsorption Ratio (SAR)	0.39	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	ND	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	1.4	%		0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO ₃	1.1	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	5	mg/kg		1		ASA24-5	09/13/18 11:50 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:45 / srm
METALS, AMMONIUM OXALATE EXTRACTABLE							
Molybdenum	1.3	mg/kg		1.0		SW6020	09/17/18 14:31 / by
CACL₂ EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:30 / rjh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	72	mg/kg		1		SW6010B	09/13/18 23:29 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	0.1	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Copper	0.3	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Iron	4	mg/kg		1		SW6010B	09/17/18 17:38 / rlh
Manganese	1.6	mg/kg		0.1		SW6010B	09/17/18 17:38 / rlh
Zinc	1.0	mg/kg	D	0.2		SW6010B	09/17/18 17:38 / rlh

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area
Lab ID: B18090560-002
Client Sample ID: LDS-TP-02

Report Date: 09/20/18
Collection Date: 09/04/18 13:45
DateReceived: 09/07/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	9.1	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	31	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	66	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	22	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	12	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste	6.4	s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	2.5	mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	23.5	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	28.5	meq/L		0.05		SW6010B	09/18/18 21:47 / rlh
Magnesium, sat. paste	8.06	meq/L		0.08		SW6010B	09/18/18 21:47 / rlh
Sodium, sat. paste	0.96	meq/L		0.04		SW6010B	09/18/18 21:47 / rlh
Sodium Adsorption Ratio (SAR)	0.22	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	0.10	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	0.7	%		0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO ₃	1.1	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	5	mg/kg		1		ASA24-5	09/13/18 11:52 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:46 / srm
METALS, AMMONIUM OXALATE EXTRACTABLE							
Molybdenum	10	mg/kg		1.0		SW6020	09/17/18 14:33 / by
CACL₂ EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:34 / rjh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	81	mg/kg		1		SW6010B	09/14/18 00:08 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	ND	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Copper	1.1	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Iron	6	mg/kg		1		SW6010B	09/17/18 17:42 / rlh
Manganese	2.4	mg/kg		0.1		SW6010B	09/17/18 17:42 / rlh
Zinc	2.1	mg/kg	D	0.2		SW6010B	09/17/18 17:42 / rlh

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area
Lab ID: B18090560-003
Client Sample ID: LDS-TP-01

Report Date: 09/20/18
Collection Date: 09/04/18 14:00
Date Received: 09/07/18
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture (As Received)	7.0	wt%		0.2		D2974	09/12/18 08:53 / srm
Coarse Fragments	32	%		2		ASA15-3	09/13/18 15:08 / srm
PHYSICAL CHARACTERISTICS							
Sand	74	%		1		ASA15-5	09/14/18 11:46 / srm
Silt	19	%		1		ASA15-5	09/14/18 11:46 / srm
Clay	7	%		1		ASA15-5	09/14/18 11:46 / srm
Texture	SL			1		ASA15-5	09/14/18 11:46 / srm
- C = Clay, S = Sand(y), Si = Silt(y), L = Loam(y)							
SATURATED PASTE EXTRACT							
pH, sat. paste	7.3	s.u.		0.1		ASA10-3	09/18/18 17:16 / srm
Conductivity, sat. paste	0.3	mmhos/cm		0.1		ASA10-3	09/18/18 17:16 / srm
Saturation	19.2	%		0.1		USDA27a	09/19/18 14:42 / srm
Calcium, sat. paste	2.41	meq/L		0.05		SW6010B	09/18/18 21:50 / rlh
Magnesium, sat. paste	0.59	meq/L		0.08		SW6010B	09/18/18 21:50 / rlh
Sodium, sat. paste	0.28	meq/L		0.04		SW6010B	09/18/18 21:50 / rlh
Sodium Adsorption Ratio (SAR)	0.23	unitless		0.01		Calculation	09/19/18 14:42 / srm
ACID-BASE ACCOUNTING							
Sulfur, Total	ND	%		0.01		Sobek Modifie	09/19/18 12:52 / srm
CHEMICAL CHARACTERISTICS							
Organic Matter	0.9	%		0.2		ASA29-3	09/16/18 13:32 / srm
Lime as CaCO ₃	1.4	%		0.1		USDA23c	09/19/18 16:38 / srm
Phosphorus, Olsen	3	mg/kg		1		ASA24-5	09/13/18 11:57 / srm
Nitrate as N, KCL Extract	ND	mg/kg		1		ASA33-8	09/17/18 11:49 / srm
METALS, AMMONIUM OXALATE EXTRACTABLE							
Molybdenum	ND	mg/kg		1.0		SW6020	09/17/18 14:36 / by
CACL₂ EXTRACTABLE METALS							
Boron	ND	mg/kg		0.1		SW6010B	09/13/18 22:38 / rjh
METALS, AMMONIUM ACETATE EXTRACTABLE							
Potassium	87	mg/kg		1		SW6010B	09/14/18 00:12 / rjh
METALS, DTPA EXTRACTABLE							
Aluminum	ND	mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Cadmium	ND	mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Copper	0.3	mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Iron	4	mg/kg		1		SW6010B	09/17/18 17:46 / rlh
Manganese	1.7	mg/kg		0.1		SW6010B	09/17/18 17:46 / rlh
Zinc	2.2	mg/kg	D	0.2		SW6010B	09/17/18 17:46 / rlh

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
D - RL increased due to sample matrix.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA10-3									Batch: 125587
Lab ID: B18090552-001A DUP	Sample Duplicate					Run: MISC-SOIL_180918B			09/18/18 17:16
Conductivity, sat. paste	3.67	mmhos/cm	0.10				0.8	30	
Lab ID: LCS-1809181716	Laboratory Control Sample					Run: MISC-SOIL_180918B			09/18/18 17:16
Conductivity, sat. paste	4.07	mmhos/cm	0.10	99	70	130			
Lab ID: B18090552-001A DUP	Sample Duplicate					Run: MISC-SOIL_180918B			09/18/18 17:16
pH, sat. paste	7.50	s.u.	0.10				0.0	10	
Lab ID: LCS-1809181716	Laboratory Control Sample					Run: MISC-SOIL_180918B			09/18/18 17:16
pH, sat. paste	7.10	s.u.	0.10	95	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA15-5							Batch: R307356		
Lab ID: B18090558-003A DUP	Sample Duplicate		Run: MISC-SOIL_180914A				09/14/18 11:46		
Sand	61.0	%	1.0				1.7	30	
Silt	26.0	%	1.0				7.4	30	
Clay	13.0	%	1.0				8.0	30	
Lab ID: LCS-1809141146	Laboratory Control Sample		Run: MISC-SOIL_180914A				09/14/18 11:46		
Sand	21.0	%	1.0	88	70	130			
Silt	58.0	%	1.0	107	70	130			
Clay	21.0	%	1.0	95	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA24-5					Batch: OM_9-13-2018_11-19-16AMA				
Lab ID: LCS	Laboratory Control Sample				Run: FIA205-B_180913A		09/13/18 11:20		
Phosphorus, Olsen	48	mg/kg	1.0	108	70	130			
Lab ID: B18090560-002ADUP	Sample Duplicate				Run: FIA205-B_180913A		09/13/18 11:53		
Phosphorus, Olsen	4.8	mg/kg	1.0				7.1	30	
Lab ID: B18090560-002AMS	Sample Matrix Spike				Run: FIA205-B_180913A		09/13/18 11:55		
Phosphorus, Olsen	17	mg/kg	1.0	117	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA29-3							Batch: R307406		
Lab ID: B18090552-001A DUP	Sample Duplicate				Run: MISC-SOIL_180916A		09/16/18 13:32		
Organic Matter	1.87	%	0.17				0.9	30	
Lab ID: LCS-1809161332	Laboratory Control Sample				Run: MISC-SOIL_180916A		09/16/18 13:32		
Organic Matter	4.58	%	0.17	117	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA33-8					Batch: OM_9-17-2018_11-28-59AM				
Lab ID: LCS	Laboratory Control Sample				Run: FIA205-B_180917A		09/17/18 11:30		
Nitrate as N, KCL Extract	10.8	mg/kg	1.0	100	70	130			
Lab ID: B18090560-003ADUP	Sample Duplicate				Run: FIA205-B_180917A		09/17/18 11:50		
Nitrate as N, KCL Extract	0.655	mg/kg	1.0					30	
Lab ID: B18090560-003AMS	Sample Matrix Spike				Run: FIA205-B_180917A		09/17/18 11:51		
Nitrate as N, KCL Extract	5.30	mg/kg	1.0	84	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Calculation									Batch: R307623
Lab ID: B18090552-001A DUP	Sample Duplicate					Run: MISC-SOIL_180919A			09/19/18 14:42
Sodium Adsorption Ratio (SAR)	2.53	unitless	0.010				2.0	30	
Lab ID: LCS-1809191442	Laboratory Control Sample					Run: MISC-SOIL_180919A			09/19/18 14:42
Sodium Adsorption Ratio (SAR)	8.44	unitless	0.010	90	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: Sobek Modified							Batch: R307623		
Lab ID: B18090552-001ADUP	Sample Duplicate				Run: MISC-SOIL_180919A		09/19/18 12:54		
Sulfur, Total	0.220	%	0.010				6.6	50	
Lab ID: LCS-R307623	Laboratory Control Sample				Run: MISC-SOIL_180919A		09/19/18 13:03		
Sulfur, Total	0.220	%	0.010	105	50	150			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B									Batch: 125412
Lab ID: LCS-125412	Laboratory Control Sample				Run: ICP203-B_180913A				09/13/18 21:48
Boron	0.420	mg/kg	0.10	117	70	130			
Lab ID: B18090552-001ADUP	Sample Duplicate				Run: ICP203-B_180913A				09/13/18 21:56
Boron	0.0738	mg/kg	0.10						30
Lab ID: B18090552-002AMS2	Sample Matrix Spike				Run: ICP203-B_180913A				09/13/18 22:11
Boron	9.72	mg/kg	0.10	96	70	130			
Method: SW6010B									Batch: 125413
Lab ID: LCS-125413	Laboratory Control Sample				Run: ICP203-B_180913A				09/13/18 22:54
Potassium	400	mg/kg	1.4	104	70	130			
Lab ID: B18090552-001ADUP	Sample Duplicate				Run: ICP203-B_180913A				09/13/18 23:02
Potassium	102	mg/kg	1.4				6.1		30
Lab ID: B18090552-002AMS2	Sample Matrix Spike				Run: ICP203-B_180913A				09/13/18 23:10
Potassium	4540	mg/kg	1.5	89	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B									Batch: 125485
Lab ID: LCS-125485	Laboratory Control Sample								Run: ICP203-B_180917A 09/17/18 16:29
Aluminum	ND	mg/kg	0.10		70	130			
Cadmium	0.103	mg/kg	0.10	103	70	130			
Copper	2.86	mg/kg	0.10	86	70	130			
Iron	11.0	mg/kg	1.0	71	70	130			
Manganese	8.13	mg/kg	0.10	87	70	130			
Zinc	3.46	mg/kg	0.10	82	70	130			
Lab ID: B18090691-001AMS2	Sample Matrix Spike								Run: ICP203-B_180917A 09/17/18 16:45
Aluminum	8.19	mg/kg	0.10	77	50	150			
Lab ID: B18090552-001A DUP	Sample Duplicate								Run: ICP203-B_180917A 09/17/18 17:02
Aluminum	ND	mg/kg	0.10						30
Cadmium	0.105	mg/kg	0.10				3.8		30
Copper	3.28	mg/kg	0.10				1.4		30
Iron	14.6	mg/kg	1.0				2.8		30
Manganese	2.67	mg/kg	0.10				4.1		30
Zinc	3.93	mg/kg	0.10				1.6		30
Lab ID: B18090552-002AMS2	Sample Matrix Spike								Run: ICP203-B_180917A 09/17/18 17:10
Cadmium	0.781	mg/kg	0.10	71	50	150			
Copper	4.50	mg/kg	0.10	90	50	150			
Iron	24.5	mg/kg	1.0	76	50	150			
Manganese	9.80	mg/kg	0.10	76	50	150			
Zinc	4.62	mg/kg	0.10	74	50	150			
Method: SW6010B									Batch: 125587
Lab ID: LCS-125587	Laboratory Control Sample								Run: ICP204-B_180918A 09/18/18 21:01
Calcium, sat. paste	14.2	meq/L	0.050	122	70	130			
Magnesium, sat. paste	8.16	meq/L	0.082	112	70	130			
Sodium, sat. paste	28.2	meq/L	0.043	97	70	130			
Lab ID: B18090552-001A DUP	Sample Duplicate								Run: ICP204-B_180918A 09/18/18 21:08
Calcium, sat. paste	33.8	meq/L	0.050				1.2		30
Magnesium, sat. paste	4.27	meq/L	0.082				0.8		30
Sodium, sat. paste	11.1	meq/L	0.043				1.5		30
Lab ID: B18090552-002AMS2	Sample Matrix Spike								Run: ICP204-B_180918A 09/18/18 21:16
Calcium, sat. paste	44.0	meq/L	0.050	82	70	130			
Magnesium, sat. paste	24.0	meq/L	0.082	96	70	130			
Sodium, sat. paste	22.1	meq/L	0.043	92	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Batch: 125484
Lab ID: LCS-125484	Laboratory Control Sample								Run: ICPMS202-B_180917A 09/17/18 13:50
Molybdenum	4.1	mg/kg	1.0	83	30	130			
Lab ID: B18090552-001AMS	Sample Matrix Spike								Run: ICPMS202-B_180917A 09/17/18 13:58
Molybdenum	11	mg/kg	1.0		70	130			A
Lab ID: B18090552-001A DUP	Sample Duplicate								Run: ICPMS202-B_180917A 09/17/18 14:03
Molybdenum	100	mg/kg	1.0				5.3	30	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: USDA23c							Batch: R307636		
Lab ID: B18090552-001A DUP	Sample Duplicate				Run: MISC-SOIL_180919B		09/19/18 16:38		
Lime as CaCO ₃	3.20	%	0.10				6.1	30	
Lab ID: LCS-1809191638	Laboratory Control Sample				Run: MISC-SOIL_180919B		09/19/18 16:38		
Lime as CaCO ₃	12.0	%	0.10	112	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Entact LLC
Project: Lower Dump Sump Borrow Area

Report Date: 09/20/18
Work Order: B18090560

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: USDA27a							Batch: R307623		
Lab ID: B18090552-001A DUP	Sample Duplicate		Run: MISC-SOIL_180919A				09/19/18 14:42		
Saturation	24.0	%	0.10				1.2	30	
Lab ID: LCS-1809191442	Laboratory Control Sample		Run: MISC-SOIL_180919A				09/19/18 14:42		
Saturation	37.5	%	0.10	99	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.



Work Order Receipt Checklist

Entact LLC

B18090560

Login completed by: Tabitha Edwards

Date Received: 9/7/2018

Reviewed by: BL2000\raschim

Received by: bgs

Reviewed Date: 9/17/2018

Carrier name: Return-UPS NDA N/C

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	°C No Ice		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input checked="" type="checkbox"/>

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.

Contact and Corrective Action Comments:

The temperature of the sample(s) for shipping container 1 was 20.6°C, shipping container 2 was 20.8°C and shipping container 3 was 17.6°C.

The sample container for LDS-TP-03 was received torn. Placed sample container into another ziploc and proceeded with analysis per phone call with Sarah Miller.

Turnaround time changed to 10 days per Shari Endy, Energy Laboratories Project Manager.

The sample identification indicated on the container label for sample LDS-TP-01 is LDS-TP-03 and on the Chain of Custody it is LDS-TP-01 however the collection date/time matched from the container label to the Chain of Custody. Proceeded with the sample identification as indicated on the Chain of Custody.



www.energylab.com

Page 1 of 1**Report Information** (if different than Account Information)

Account Information *(Billing information)*

Company/Name	Enfact		
Contact	Sarah Miller		
Phone			
Mailing Address	1 E. Oak Hill Dr, Suite 102		
City, State, Zip	Westmont, IL 60559		
Email	smiller@enfact.com		
Receive Invoice	<input type="checkbox"/> Hard Copy	<input checked="" type="checkbox"/> Email	
Receive Report	<input type="checkbox"/> Hard Copy	<input checked="" type="checkbox"/> Email	
Purchase Order	Quote		Bottle Order
800006-18-503	B4488 modified		1260016

Company/Name _____
Contact _____
Phone _____
Mailing Address _____
City, State, Zip _____
Email _____
Receive Report ☐ Hard Copy ☐ Email
Special Report/Formats:
☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (contact laboratory) ☐ Other _____

Comments

Commence

TAT 7 days per quote

Project Information

Project Name, PWSID, Permit, etc. <u>Lower Dump Samp Barrow Area</u>	
Sampler Name <u>S. Miller</u>	Sampler Phone <u>302-388-3040</u>
Sample Origin State <u>NM</u>	EPA/State Compliance <input type="checkbox"/> Yes <input type="checkbox"/> No

MINING CLIENTS, please indicate sample type.

*If ore has been processed or refined, call before sending.

☐ Byproduct 11 (e2 material) ☐ Unprocessed ore (NOT ground or refined)*

All turnaround times are standard unless marked as RUSH.

Analysis Requested

Matrix Codes

A - Air
W - Water
S - Soils/ Solids
V - Vegetation
B - Bioassay
O - Other
DW - Drinking Water

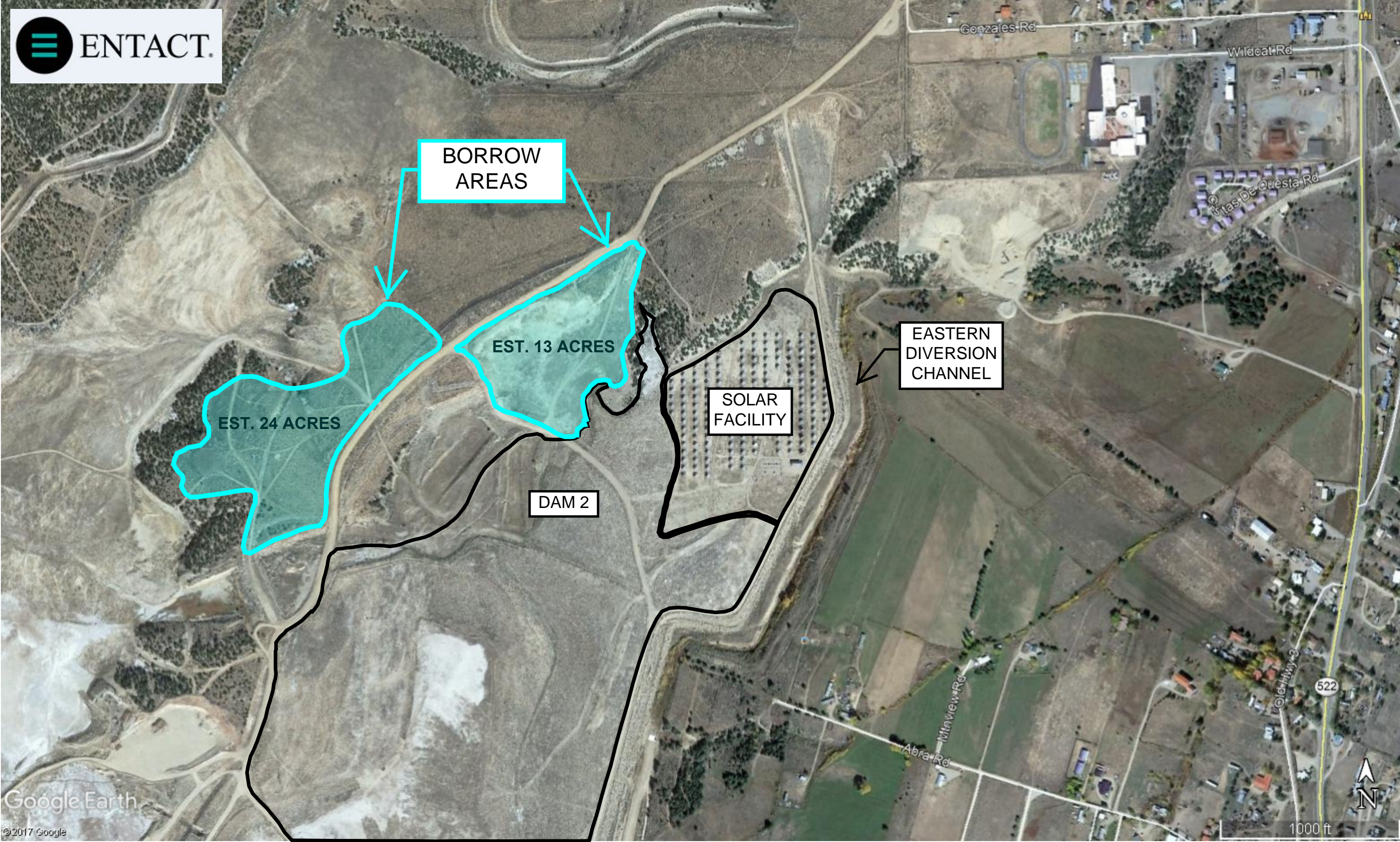
Sample Identification (Name, Location, Interval, etc.)	Collection		Number of Containers	Matrix (See Codes Above)	See RUSH TAT	ELI LAB ID Laboratory Use Only
	Date	Time				
1 LDS - TP - Q3	9/4/18	1330	1	S	X	618090560 - 001
2 LDS - TP - Q2	9/4/18	1345	1	S	X	002
3 LDS - TP - Q1	9/4/18	1400	1	S	X	003
4						
5						
6						
7						
8						
9						
10						

Custody Record MUST be signed	Relinquished by (print)	Date/Time	Signature	Received by (print)	Date/Time	Signature
	Relinquished by (print)	Date/Time	Signature	Received by Laboratory (print)	Date/Time	Signature
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
					Amount \$	Receipt Number (cash/check only)

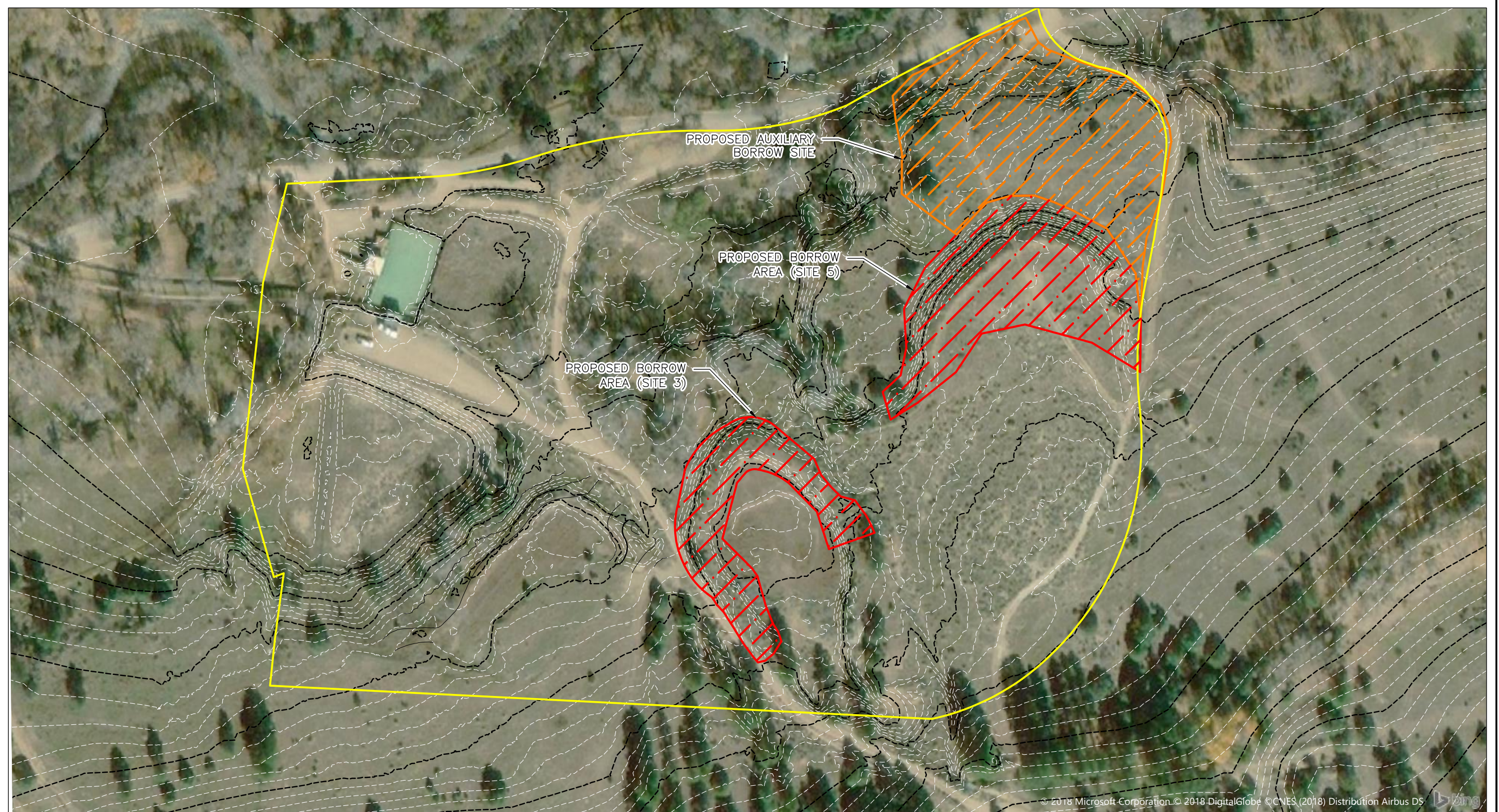
In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This service as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

Requested Analyses for Borrow Area Soil Samples submitted by ENTACT

Analyte	Method
Aluminum	E6010.20
Boron	E6010.20
Cadmium	E6010.20
Calcium, saturated paste	E6010.20
Calcium Carbonate	USDA23c
Conductivity, saturated paste	ASA10-3
Copper	E6010.20
Iron	E6010.20
Magnesium, saturated paste	E6010.20
Manganese	E6010.20
Molybdenum	E6010.20
Nitrate as N, KCL Extract	ASA33-8
pH, saturated paste	ASA10-3
Phosphorus, Olsen	ASA24-5
Potassium	E6010.20
Sodium Adsorption Ratio (SAR)	Calculation
Sodium, saturated paste	E6010.20
Sulphur	Sobek Modified
Total Organic Matter	Walkley-Black
Zinc	E6010.20
Moisture Content	D2974
Coarse Fragments	ASA15-3
Particle Size	ASA15-5

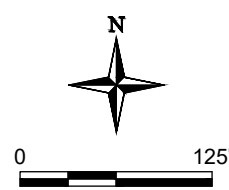


\\TRIHYRO.COM\CLIENTS\CHEVRON\CEMC_MINING\QUESTAMINE\PIPELINE\CADD\WORKING\INTRANET-LOWERDUMPSUMP\FIGURES\20181014_SHEET-TAILINGS



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EXPLANATION	
	LOWER DUMP SUMP AREA
	EXISTING GROUND (2-FT INTERVAL, 10-FT INDEX)
	PROPOSED BORROW AREAS
	PROPOSED AUXILIARY BORROW SITE



 1252 Commerce Drive Laramie, Wyoming 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.7729	FIGURE B-2			
	LOWER DUMP SUMP PROPOSED BORROW LOCATIONS			
	QUESTA MINE CHEVRON MINING QUESTA, NEW MEXICO			
Drawn By: KCW	Checked By: SL	Scale: AS SHOWN	Date: 11/5/18	File: 20181014_SHEET-TAILINGS

APPENDIX G

HEALTH AND SAFETY FORMS

Pre-Fieldwork Safety-Readiness Review Form

For all field projects



Business unit name: _____
 Client name: _____
 Project name and number: _____
 Date review performed: _____
 Scheduled project-start date: _____
 Scheduled project-end date: _____

Names and initials of required participants:

1. BUL, BUM, or TL: _____
2. Project Director: _____
3. Project Manager: _____
4. Field Supervisor: _____
5. Safety Officer/Lead: _____

Names and initials of other participants:

1. Project-team members: _____
2. Contractor(s): _____
3. Subcontractor(s): _____

Work-Scope Tasks	Work-Related Hazards (refer to the 3x5 Hazard-Assessment Triangle)	Anticipated Hazard-Mitigation Measures

Pre-Fieldwork Safety-Readiness Review Checklist		Yes	No	N/A	CAN
1	Has the project team secured the necessary safety and other work permits required to complete the proposed work?				
2	Has a project-specific or site-specific HASP been prepared and/or updated, and have all project-team members reviewed the HASP?				
3	If a contractor(s) will be used on this project, have they prepared and/or updated their HASP and JSA forms?				
4	Has the project team been reminded that JSAs need to be prepared by the project's subject-matter experts, reviewed by all members of the project team, and marked up where appropriate before starting and during work each day?				
5	If this project involves one or more lone workers, is a plan to manage lone worker safety in place and communicated with the project team?				
6	Do we know if the project site has reliable cell-phone coverage? <i>[If not, request a phone booster from Autumn Bainer.]</i>				
7	Has a hand-safety evaluation been completed for this project?				
8	Has each work space been evaluated (and documented) for the possible presence of confined-space work conditions?				
9	Have team members—including contractors and subcontractors—reviewed and understand the project-site hazards and requirements?				
10	Do all project-team members—including contractors and subcontractors—understand Stop Work Authority and the "Slow Down" approach?				
11	Have all applicable PPE (e.g., PID, FID, H2S detector, etc.) and emergency-response equipment been secured and checked for this project?				
12	Have suitable vehicles been secured and are team members familiar with the vehicle types and operation?				
13	If a client site-specific orientation is required, have all team members completed the required training?				
14	Have SSE mentors been assigned and provided with instructions for overseeing each SSE team member?				
15	Is a plan in-place and assignments made to provide oversight of "low-use" or special contractor/subcontractor team members?				
16	Have topics been developed and assignments made for the daily project-safety meetings, including discussing potential daily- and task-specific hazards?				
17	Has the plan for performing and reporting observations, near misses, and incidents been communicated?				
18	Has the project team been reminded that journey-management plans (JMPs) should be used during the project where appropriate?				
19	Is a traffic-management plan needed for this project and has it been completed and communicated to the project team?				
20	Have procedures for work in or near hazardous areas (e.g., trenches, confined spaces, active units) been communicated?				
21	Have procedures for work in or around equipment (e.g., lockout / tag out, swinging, rotating, backing) been communicated?				
22	Has the Trihydro Excavation, Drilling, and Utility-Locating Checklist been completed for each drilling/excavation project?				
23	Have all employees expecting to oversee or perform drilling/excavation work completed the Trihydro "Subsurface Utility Location and Excavation Safety Best Practices" training session?				
24	Have utility locates been assigned and/or performed in accordance with Trihydro and client procedures?				
25	Is a plan in place for communicating, managing, and reporting changed conditions (e.g., hazards, weather, team roles)?				
26	Is a plan in place for transitioning and training changes in personnel on this project?				
27	Has the project team assessed potential task- or site-specific hazards and developed a plan(s) to eliminate or mitigate the hazards?				
28	Is a BUL, BUM, TL, or Senior Manager scheduled to be on site for the onboarding, kickoff, and initial stages of each major field project (e.g., projects involving subcontractors, complex or different work types, > one week duration, etc.)? If so, please indicate the name of the BUL, BUM, TL, or Senior Manager and the date she or he is scheduled to be on site in the "Review / Non-CAN Item Comments" box below.				
29	Have all contractors/subcontractors been evaluated, qualified, selected, and approved by the BUL based on Trihydro and/or client-specific requirements?				
30	Is a safety audit with a Senior Manager planned for the early stages of all major field projects? If so, please indicate the Senior Manager's name and the date he or she plans to perform the safety audit in the "Review / Non-CAN Item Comments" box below.				

Findings / Corrective-Action Needed (CAN) Summary

CAN Item No. (i.e., 1 through 30 from the checklist above)	Description of CAN Item	Responsible Person	Target Date	Completed Date	Initials

Review / Non-CAN Item Comments:

Pre-Fieldwork Safety-Readiness Review Form

For all field projects

Instructions:

1. While using this form, attempts should be made to address or correct the items warranting Corrective Action Needed (CAN) at the time of the evaluation. If this is not practical, each CAN item / finding should be documented above, including assignment of an individual responsible for addressing the CAN item and a target completion date. Once all of the CAN items have been completed, the Project Manager should review them with the responsible TL, BUM, or BUL and secure sign-off initials that each CAN item has been addressed satisfactorily.

2. Copies of this form should be retained by the responsible TL, BUM, and/or BUL and submitted to the Trihydro H&S Team via e-mail HealthSafety@Trihydro.com or fax (307) 755-4959. Please contact the Trihydro H&S Team for help conducting pre-fieldwork safety-readiness reviews, or if you have questions, suggestions, or comments about the forms.

JOB SAFETY ANALYSIS



JSA Version Date: February 29, 2012

Job Description: Driving

Project: Questa

Site Location: Site wide

Development Team

Please include the team members employer and email if not employed by Trihydro Corporation:

Position/Title:

Primary Contact

1. Pat Henricks

Geologist

(307) 760-9447

2.

3.

Reviewed By

Please include the reviewers employer and email if not employed by Trihydro Corporation:

Position

**Review Date
(MM/DD/YYYY)**

1. Todd Forry

Health and Safety Manager

10/25/2012

2. Torrey Fox

Geologist

6/10/11

3.

Personal Protective Equipment (PPE) Needed:

Eye and Face Protection

☐ Safety Glasses

☐ Face Shield

☐ Chemical Goggles

Head Protection

☐ Hard Hat

Hearing Protection

☐ Ear Plugs

☐ Ear Muffs

Hand Protection

☐ Industrial Work Gloves

☐ Chemical Resistant Gloves

☐ Laceration Resistant Gloves

Foot Protection

☐ Leather Boots

☐ Steel-Toed Boots

☐ Chemical Resistant Boots

Water Safety

☐ Personal Flotation Device

☐ Waders

☒ **Other:** Fire extinguisher

☒ **Other:** First aid/vehicle kit

Body Protection

☐ Fire Retardant Coveralls

☐ Poly-coated Tyvek Coveralls

☐ Chemical Resistant Coveralls

☐ Chemical Resistant Apron

☐ Reflective Safety Vest

☐ Cooling Vest

☐ Long sleeved shirt

Biological Protection

☐ Snake Gaiters

☐ Sunscreen

☐ Insect Repellent

Hazardous Atmosphere Protection

☐ Air Monitoring Equipment

☐ Ventilation Fan

☐ Level C

☐ Level B (contact H&S dept.)

☐ Level A (contact H&S dept.)

Decontamination Materials

☐ Equipment Decontamination

☐ Personnel Decontamination

☒ **Other:** GOAL cones

Fall Protection

☐ Barriers/Guard Rails

☐ Safety Net

☐ Personal Fall Arrest System

Respiratory Protection

☐ Half-Face Air Purifying Respirator

☐ Full-Face Air Purifying Respirator

☐ Chemical Cartridge

☐ Particulate Filter

☐ Cartridge/Filter Combo

☐ Ammonia Cartridge

☐ H2S Escape Cartridge

☐ Asbestos Filter (P-100)























☐ Powered Air Purifying Respirator (PAPR) (contact H&S dept.)









☐ Supplied Air Respirator (SAR) (contact H&S dept.)









☐ Self-Contained Breathing Apparatus (SCBA) (contact H&S dept.)



☐ **Other:**

☐ **Other:**

Job Steps	Hazard(s)				Potential Hazard(s)	Critical Action(s)	Responsible Person
Routine or non-routine journey management plan (JMP) – check (all drivers)				x	A. Personal Injury (Gravity) B. Property damage or physical injury (Motion)	A. Check the JMP before proceeding to the vehicle. B. Assess if journey is needed due to weather conditions (e.g., snow, ice, rain, wind). Check before each vehicle trip around the site since work areas can be changed throughout the day.	
							
							
		x					
							
Perform vehicle inspection (all drivers)				x	A. Vehicle failure; Accident or injury (Gravity) (Motion)	A. Fill out vehicle inspection form for any vehicles used for the day. DO NOT use vehicle until issues are addressed. • Clean mirrors and windows. Inspect the interior of the vehicle; including seat belts and gauges. • Remove any clutter or items that may affect your driving, visibility or pedal control. • Follow appropriate maintenance schedule for your vehicle. • Verify insurance card, registration, and inspection. • Refer to the owner/operator manual generally kept in the glove box. • Verify presence of spill kit, first aid kit, and fire extinguisher within inspection period	
							
							
		x					
							
4. Pre vehicle entry				x	A. Personal Injury or accident;	A. GOAL: before entering your	

Job Steps	Hazard(s)				Potential Hazard(s)	Critical Action(s)	Responsible Person
				x			
Configure seating and controls and lock doors (all drivers)				x	A. Personal Injury Visibility; poor driver ergonomics and/or poor driver control (Motion)	A. Adjust seating to a comfortable position and so that you can easily reach the pedals and steering wheel. <ul style="list-style-type: none"> • Adjust all mirrors. • Wear seat belt. • If you haven't operated this vehicle before, become familiar with all the controls and where everything is located in the vehicle. • Look for blind spots in your viewing area. • Refer to the owner's manual if necessary. 	
Starting vehicle (all drivers)				x	A. Unexpected vehicle movement; engine damage or failure (Motion)	A. Before starting, ensure that the vehicle is in park and the parking brake is applied. <ul style="list-style-type: none"> • After starting, check all gauges for proper temperatures, pressures, etc. 	
Pulling away from parked area (all drivers)		x		x	A. Collision with other vehicles, objects or persons (Gravity) (Motion)	A. Check mirrors and over the shoulder before pulling away. <ul style="list-style-type: none"> • Vehicle should be situated so the first movement is forward, however if backing, either use a spotter or blow horn to warn others. • Proceed cautiously. 	
Driving (all drivers)		x		x	A. Vehicle strikes; vehicle accidents; equipment damage (Gravity) (Motion) B. Collision with wildlife (Biological)	A. Follow JMP applicable to your journey. Review driving JSA. Plan your route, review maps before leaving. <ul style="list-style-type: none"> • Obey all laws of the land as well as site procedures. 	

Job Steps	Hazard(s)				Potential Hazard(s)	Critical Action(s)	Responsible Person
						<p>Follow posted speed limit.</p> <ul style="list-style-type: none"> • Be prepared to 'expect the unexpected'. You never know what someone else (or animals) might do. • NEVER drive under the influence of drugs or alcohol. • Follow posted signs at other locations. • Never operate the vehicle if you are abnormally tired. • Cell phone usage is prohibited while driving a vehicle, including hands free devices such as headset and speaker phones. • Implement 'first move forward' by backing into locations upon arrival. • Be observant of pedestrians (main field office area) and other traffic around you. • Engage parking brake once vehicle is parked. Do not place equipment/supplies above mirror line of sight (i.e., inside cab and or truck bed). • Pull off the road if necessary during bad weather. <p>B. Scan the area for wildlife including dogs, cats, deer, cows, horses, elk, coyotes, fox's, badgers, and prairie dogs while traveling on site. Watch road sides for movement and pull vehicle to side of road if animal observed. Be particularly aware of animals present in roadway during dusk and morning.</p>	
Parking (all drivers)	   			   	<p>A. Pedestrian collision / Property damage(Gravity)(Motion)</p>	<p>A. Use pull through parking spots when available</p> <ul style="list-style-type: none"> • Use signals before pulling from curb and during any change of lane or turn 	

Job Steps	Hazard(s)				Potential Hazard(s)	Critical Action(s)	Responsible Person
						<ul style="list-style-type: none"> • Back into parking space when possible and safe • Maintain a cushion of safety from fixed objects when parking • Set parking brake if on incline; chock wheels if working on steep slopes 	
Post drive (all drivers)		<div>x</div>		<div>x</div>	A. Personal Injury / Property damage (Gravity)(Motion)	A. Report vehicle problems to company representative or rental car agency.	



As the Supervisor my signature below indicates that the requirements, conditions, and procedures listed above are in place and have been verified and reviewed with the affected personnel prior to the start of work.

Supervisor Name (print):

Signature

Date

Prior to work, I have read and understand the PPE, safety tools/equipment/instruments, and associated permits needed for this task. I also understand the job steps, potential hazards, and critical actions identified for employee task and hazard awareness. I agree to have this JSA on site and identify daily variances and understand I can make pen and ink changes to meet those variances. JSAs used at the task site that contain pen-and-ink changes ("dirtying up") are to be kept in the project folder for record.

Name (print):

Signature

Date

END OF DAY

REVISIONS TO JSA
(Any tasks that were “dirtied up”)

Date	Job Step #	REVISION	Does JSA need to be updated permanently?		Responsible Person
			Yes	No	

DAILY TAILGATE SAFETY MEETING



NOTE: A new tailgate meeting must be conducted if conditions, location, or personnel change.

Date: _____ Time: _____ ☐ a.m. ☐ p.m. Location: _____ (city, state)

Project Name: _____ Client: _____

Current Objective/Description: _____

Commitment to Safety

1. I will protect myself for me, my family, Trihydro, clients, and contractors by watching for and mitigating risky behaviors, exercising stop-work authority to prevent incidents and injuries and by complying with Trihydro and client policies, procedures, and JSAs/JLAs
2. I understand that safety is my personal responsibility and that working safely is a key component in providing quality work.
3. I will set an example for my fellow employees, contractors, clients, and family by working safely.
4. I will drive defensively and "Safely for My Family," abiding by Trihydro and client policies and applicable laws and regulations.
5. I will "slow down" appropriately to work at a pace that will allow me and others to complete each task efficiently and safely.
6. I will hold myself accountable for my safety and the safety of those around me. I will think about the safety of me, my coworkers, contractors, and our clients before I conduct each task.



** Stop Work Authority (SWA) – "Everyone has the authority and obligation to immediately stop all unsafe work."*

Identify High-Hazard Work:

- | | | | |
|---|---|---|---|
| <input type="checkbox"/> Hot Work | <input type="checkbox"/> Elevated/overhead work | <input type="checkbox"/> Boat / over-water operations | <input type="checkbox"/> Work involving equipment within 15' of active overhead electrical line or pole supporting an electric line |
| <input type="checkbox"/> LOTO | <input type="checkbox"/> Excavations - any | <input type="checkbox"/> Demolition, removal of pipelines and buried structures | |
| <input type="checkbox"/> Confined Space Entry | <input type="checkbox"/> Drilling - any | | |

Associated and Identified Hazards:

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> Abrasions, cuts, scrapes | <input type="checkbox"/> Earthquake | <input type="checkbox"/> High-pressure processes | <input type="checkbox"/> Pinch points |
| <input type="checkbox"/> Allergies (self & co-workers) | <input type="checkbox"/> Electrical | <input type="checkbox"/> High-temperature processes | <input type="checkbox"/> Power tools |
| <input type="checkbox"/> Asbestos | <input type="checkbox"/> Equipment failure | <input type="checkbox"/> High wind | <input type="checkbox"/> Pulled into |
| <input type="checkbox"/> Biological | <input type="checkbox"/> Ergonomic | <input type="checkbox"/> Laceration | <input type="checkbox"/> Radiation/X-ray |
| <input type="checkbox"/> Buried utilities | <input type="checkbox"/> Excavations in area? | <input type="checkbox"/> Lightning | <input type="checkbox"/> Security |
| <input type="checkbox"/> Burn hazards | <input type="checkbox"/> Falling | <input type="checkbox"/> Loud noise | <input type="checkbox"/> Severe weather |
| <input type="checkbox"/> Chemical exposure | <input type="checkbox"/> Fire/explosion | <input type="checkbox"/> Machine guarding | <input type="checkbox"/> Scaffolds |
| <input type="checkbox"/> Cold stress | <input type="checkbox"/> H ₂ S | <input type="checkbox"/> Motor vehicle crash | <input type="checkbox"/> Slips, trips, falls |
| <input type="checkbox"/> Compressed gases | <input type="checkbox"/> Hand injury | <input type="checkbox"/> No locking/fixed blades | <input type="checkbox"/> Subsurface utilities |
| <input type="checkbox"/> Crane or lifting equipment | <input type="checkbox"/> Heat stress | <input type="checkbox"/> Overexertion | <input type="checkbox"/> Traffic |
| <input type="checkbox"/> Drilling in area? | <input type="checkbox"/> Heavy equipment | <input type="checkbox"/> Overhead utilities | <input type="checkbox"/> Water |
| | | <input type="checkbox"/> Pedestrian | <input type="checkbox"/> Other: _____ |

See it! Identify Current Objective Hazards:

Assess Trihydro's 3 Most Serious Risks

- | | |
|--|--|
| | <input type="checkbox"/> Traffic/Heavy Equipment |
| | <input type="checkbox"/> Hazardous Atmosphere |
| | <input type="checkbox"/> Utility Contact |

Assess Trihydro's 5 Most Frequent Risks

- | | |
|--|--|
| | <input type="checkbox"/> Hand Injuries |
| | <input type="checkbox"/> Lifting |
| | <input type="checkbox"/> Biological Hazards |
| | <input type="checkbox"/> Chemical Exposure |
| | <input type="checkbox"/> Slips, trips, falls |

Other Hazards

- | | |
|--|---|
| | <input type="checkbox"/> Weather |
| | <input type="checkbox"/> Working at Heights |

Personal Protective Equipment (PPE):

<input type="checkbox"/> Hard hat	<input type="checkbox"/> Arm sleeves	<input type="checkbox"/> Dust mask	Other special equipment: <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> Safety glasses	<input type="checkbox"/> High visibility vest	<input type="checkbox"/> Respirator	
<input type="checkbox"/> Safety toed boots	<input type="checkbox"/> Rain gear	Cartridges/filters: <input type="checkbox"/> VOC/H ₂ S escape	
<input type="checkbox"/> Ear plugs (as needed)	<input type="checkbox"/> Rubber boots	<input type="checkbox"/> H ₂ S monitor	
<input type="checkbox"/> Face shield	<input type="checkbox"/> SCBA	<input type="checkbox"/> Bump test	
<input type="checkbox"/> Fall protection	<input type="checkbox"/> Snake chaps	<input type="checkbox"/> FRCs/Nomex	
<input type="checkbox"/> Gloves (as needed)	<input type="checkbox"/> Sunscreen (as needed)	<input type="checkbox"/> Tyvek®	
		<input type="checkbox"/> Insect repellent	

Do not apply DEET to FRCs

Before Beginning Work:

<input type="checkbox"/> Sign in and out of process unit <input type="checkbox"/> N/A	<input type="checkbox"/> Review the JSA and "dirty up" if necessary
<input type="checkbox"/> HASP reviewed & acknowledged	<input type="checkbox"/> Weather forecast: <input type="checkbox"/> Hot <input type="checkbox"/> Cold <input type="checkbox"/> Inclement
<input type="checkbox"/> Locate the nearest evacuation point and a secondary location	Wind Direction: _____
<input type="checkbox"/> Identify the nearest fire extinguisher, eyewash station, first aid kit, and Material Safety Data Sheets (MSDS)	<input type="checkbox"/> Employee(s) are wearing proper PPE
<input type="checkbox"/> Identify CPR/AED/first aid certified employees	<input type="checkbox"/> Perform a "self check" on each personal H ₂ S monitor
<input type="checkbox"/> If lone worker, implement lone worker procedures <input type="checkbox"/> N/A	<input type="checkbox"/> Perform a Work-Site Self Assessment (WSSA)
<input type="checkbox"/> Identify SSE, visitor(s), or guest(s) <input type="checkbox"/> N/A	<input type="checkbox"/> Review the dashboard emergency flyer for the specific site; place in a visible location inside vehicle
<input type="checkbox"/> Determine and acquire necessary permits <input type="checkbox"/> N/A	<input type="checkbox"/> Barricade work zone (as needed)
Permit required: _____	<input type="checkbox"/> Review WorkCare Injury Accident Program card
	<input type="checkbox"/> PPE Action Levels (PID: 10ppm)

Safe Vehicle Use:

<input type="checkbox"/> Pre-inspection complete	<input type="checkbox"/> Mileage sheet filled out	<input type="checkbox"/> GOAL sticker in window
<input type="checkbox"/> Seat belt	<input type="checkbox"/> No cell phones used while driving	<input type="checkbox"/> Spotter used (if available)
<input type="checkbox"/> Follow all speed and traffic rules	<input type="checkbox"/> Parked in a safe location	<input type="checkbox"/> First move forward, backed in
<input type="checkbox"/> Emergency brake used	<input type="checkbox"/> Orange cone used	<input type="checkbox"/> Load secured in vehicle
<input type="checkbox"/> Keys left in vehicle	<input type="checkbox"/> Chock tires (if needed)	<input type="checkbox"/> 3D-Driving (every 2 years)
<input type="checkbox"/> Trailer Safety Inspection form	<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____

Site-Specific Comments: _____**Positive Reinforcement (R+):** _____**Signatures:**

Meeting Conducted By: _____ (designated project on-site safety responder) Company: _____

Printed Name	Signature	Company	Attended Mid-Day Safety Focus	Is this worker new on-site?
1.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
3.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
4.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
5.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
6.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
7.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
8.			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

JOURNEY MANAGEMENT PLAN



Date: _____ Project Number: _____ Driver: _____

Destination: _____ Driver Cell Number: _____

Departure Time: _____ Anticipated Arrival Time: _____

Total Hours (not to exceed 16 hours): _____ = Work Hrs _____ + Driving Hrs _____

Plan the journey and notify personnel at destination of your plans. Notify arrival contact if you will not arrive at scheduled time. Keep a copy of this plan with you. Trihydro's main phone number is 307-745-7474. Normal business hours are 8am-5pm, M-F.

In case of an emergency or incident, contact the Health & Safety Response Team at (307) 755-4888.

Purpose of Trip

Hazards

Pre-Trip Questions

Is this trip necessary? ☐ Yes ☐ No

Is there an alternative that does not involve driving? ☐ Yes ☐ No

If yes, by what means: _____

Is someone else already going to the same destination? ☐ Yes ☐ No

Do I have a map to my destination? ☐ Yes ☐ No

Has the proper vehicle been selected? ☐ Yes ☐ No

Is the vehicle equipped with emergency supplies? ☐ Yes ☐ No

Do I have current driver training for this trip? ☐ Yes ☐ No

Am I well rested and alert for the journey? ☐ Yes ☐ No

Do I have effective means of communications during my journey? ☐ Yes ☐ No

Has a pre-trip vehicle inspection been completed and documented? ☐ Yes ☐ No

Have road condition reports been reviewed prior to the journey? ☐ Yes ☐ No

Weather: ☐ Dry ☐ Windy ☐ Rain ☐ Snow ☐ Icy ☐ Fog ☐ Dust

Road Conditions: ☐ Dirt Road ☐ Construction ☐ Paved Road ☐ Mixed Conditions

Night Driving: ☐ Yes ☐ No Is it essential? ☐ Yes ☐ No

Vehicle: ☐ Fleet Vehicle ☐ Rental Vehicle ☐ Personal Vehicle

Make*: _____ Model*: _____ Year*: _____ Color*: _____

VIN* or Fleet Number: _____ License Plate State/Number*: _____

Condition: ☐ Satisfactory

Vehicle Inspection Form Completed? ☐ Yes ☐ No

Vehicle preventive maintenance up to date? ☐ Yes ☐ No

When traveling to the site, contact your supervisor/project manager to confirm your safe arrival.

On return journey, contact your supervisor/project manager when you depart from site and upon arrival back to start point to confirm your safe travels.

**For rental or personal vehicle, if available.*

For Overnight Stays	Hotel Name: _____	Telephone: _____
	City: _____	State: _____
Route Planned	(Auto route, train information, and/or flight information): <input type="checkbox"/> Route/Information Attached Separately <input type="checkbox"/> Map Attached Separately	
Unconventional Travel		
<input type="checkbox"/> Helicopter	Verify the following: <ul style="list-style-type: none">Name is on the aircraft manifestPilot performs safety briefing prior to takeoffHats are not worn on flight lineDo not approach aircraft from the rear; approach from front quadrant or sideStay clear of tail rotor	
<input type="checkbox"/> Private Aircraft	Verify the following: <ul style="list-style-type: none">Name is on the aircraft manifestPilot performs safety briefing prior to takeoffHats are not worn on flight lineDo not approach aircraft from the rear; approach from front quadrant or side	
<input type="checkbox"/> Watercraft	Verify the following: <ul style="list-style-type: none">Registration number is on the watercraft manifestCaptain performs safety briefing prior to launchPersonal flotation devices are available/wornNotify supervisor of vessel number	
<input type="checkbox"/> Other:		

Supervisor/PM Approval: _____ Date: _____

Employee site arrival: _____ Date: _____ Time: _____

Employee site departure: _____ Date: _____ Time: _____

Employee home arrival: _____ Date: _____ Time: _____

EXAMPLE FIELD DIRECT OBSERVATION FORM

Observer

Date

11/21/2012 15

Contract Day

Temperature







Work Day

Sky

Work Start

Wind







Work Stop

B I U      

Font

Paragraph







Health and Safety

B I U      

Font

Paragraph





Remarks

B I U      

Font

Paragraph

Work Observation

Personnel	Role
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/> 
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/> 
<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/> 
 Add	

Equipment	Count
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="button" value="+ Add"/>	

Bid Number	Bid Item	Unit	Estimate Quantity	DAILY WORK PERFORMED
J-1	Mobilization/Demobilization	LS	1	<input type="text"/>
J-2	Partnering	Day	1	<input type="text"/>
K-1	Motor Grader w/Ripper	Hour	30	<input type="text"/>
K-2	Track Dozer w/Ripper	Hour	100	<input type="text"/>
K-3	Scraper	Hour	120	<input type="text"/>
K-4	End Dump Truck	Hour	30	<input type="text"/>
K-5	Tracked Excavator w/Hydraulic Thumb	Hour	120	<input type="text"/>
K-6	Track Excavator w/9500 Ft-lbs Hydraulic Hammer	Hour	100	<input type="text"/>
K-7	Excavation	CY	900,500	<input type="text"/>
K-8	Basement Backfill	LS	1	<input type="text"/>
K-9	Finish Grading	Acre	57.0	<input type="text"/>
K-10	Topsoil/Coversoil	CY	29,000	<input type="text"/>
L-1	Dewatering	Million Gallons	28	<input type="text"/>
M-1	Erosion Control Sediment Logs	LF	2,950	<input type="text"/>
M-2	Fabric Sediment Fence	LF	400	<input type="text"/>
N-1	Pre-ripping	Acre	63.0	<input type="text"/>
N-2	Fertilizing	Acre	63.0	<input type="text"/>
N-3	Composted Manure	Acre	63.0	<input type="text"/>
N-4	Agricultural Disking	Acre	63.0	<input type="text"/>
N-5	Mycorrhizal Fungi Inoculating	Acre	63.0	<input type="text"/>
N-6	Pitting and Seeding	Acre	63.0	<input type="text"/>
O-1	Miscellaneous Force Account	Force Account	50,000	<input type="text"/>
Q-1	Wire Fence	LF	5,800	<input type="text"/>
Q-2	Grouse Flight Diverters	Panel	350	<input type="text"/>

ACCIDENT/INCIDENT REPORTING FORM



General Information

Incident Type: **Incident** ☐ **Near Miss** ☐

Primary Incident Type: **Injury/Illness** ☐ **Motor Vehicle Accident** ☐ **Property / Equipment Damage** ☐
Environmental ☐ **Exposure** ☐ **Other** ☐

Occurrence Date: _____ Occurrence Time: _____ ☐ AM ☐ PM

Date Reported: _____ Time Reported: _____ ☐ AM ☐ PM

Reported By: _____ Telephone: _____

Occurrence Location: _____ On Site: ☐ Off Site: ☐

Stop Work Involved: **Yes** ☐ **No** ☐ SSE Involved: **Yes** ☐ **No** ☐

Police Notified: **N/A** ☐ **Yes** ☐ **No** ☐

Transportation to medical facility: **N/A** ☐ **Yes** ☐ **No** ☐

If yes, provide the following Facility Name: _____

Medical treatment received: **N/A** ☐ **Yes** ☐ **No** ☐

Description of Incident: _____

Individuals involved (Company Employee, Subcontractor Employee, Client Employee, Member of the Public, Witnesses)

Name	Organization	Title	Telephone

Vehicle Incident Details:

Check any that apply: **Company Vehicle Involved** ☐

Non-Company Vehicle Involved ☐

Vehicle Information: Vehicle #: _____ Vehicle VIN: _____
License Plate #: _____ Vehicle Make/Model: _____
Vehicle Year _____ Vehicle Color: _____
If Rental Vehicle, Rental Company: _____
of Passengers: _____ Names: _____

Driver Information First Name: _____ Last Name: _____
Address: _____
City _____ State: _____ Zip Code: _____
Phone # 1: _____ Phone # 2: _____
License Plate #: _____ Vehicle VIN: _____
Vehicle Year _____ Vehicle Make/Model: _____
Vehicle Color: _____ Driver License #: _____
of Passengers: _____ Names: _____
Insurance Company: _____ Phone: _____
Insurance Agent: _____ Phone: _____
Policy # _____ Exp. Date: _____

Details: Weather: Clear ☐ Rain ☐ Fog ☐ Wind ☐ Other ☐
Road Condition: Clear ☐ Wet ☐ Icy ☐ Debris ☐ Other ☐
Light Condition: Dawn ☐ Day: ☐ Dusk ☐ Dark ☐
Estimated Speeds _____

Attending Police: Office Name: _____ Badge #: _____
Division: _____ Phone # _____

Tow Truck Operator: Company: _____ Phone #: _____
Drivers Name: _____
Address Towed To: _____

Citation Issued: **Yes** ☐ **No** ☐

Accident/Incident Investigation Report

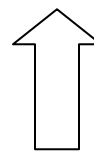
Diagram: include streets, traffic controls, visual obstacles, etc.

1

Vehicle 1

2

Vehicle 2



N

Accident/Incident Investigation Report

Environmental/Exposure Incident Details:

Agent: Chemical/Substance ☐ Explosion ☐ Noise ☐ Radiation ☐ Vibration ☐
Medium: Air ☐ Soil ☐ Ground Water ☐ Surface Water ☐
Effect On: People ☐ Vegetation ☐ Animals ☐ Structures ☐ Equipment ☐ Materials ☐

Substance Information:

Name of Substance	Amount	Unit of Measure

PPE Worn: *Yes* ☐ *No* ☐

List PPE: _____

Response Details:

With any incident/accident:

Initial Notifications must be made to:

Police, Ambulance, 911 (if applicable)

H&S Team

Risk Management

Project Manager (PM)

Supervisor

Client (as directed by the PM)

Site Managers (as directed by the PM)

If medical treatment is needed:

Contact WorkCare at (888) 449-7787

Coordinate drug/alcohol testing within 3 hours

Complete the Accident/Incident Reporting Form and requested investigation items for submittal to the H&S Team.

If after hours, contact the Safety Response number at (307) 755-4888.