

November 8, 2018

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RE: Response to, Joint Agency Comments, Questa Tailings Pipeline Removal, Stage 8 Work Plan, Chevron Environmental Management Company, Questa Mine

Dear Ms. Stankosky

Thank you for providing comments to the above referenced document. Please see below a list of your comments from the Approval letter sent on September 11, 2018 and Chevron's responses. Also included is an updated version of the work plan which encompasses the comments. Please note, as discussed during the inspection that took place on October 23, 2018 the changes to the grading plan presented in Appendix C are addressed in the text of this version.

EPA Comments for the Draft Questa Tailings Pipeline Removal Stage 8 Work Plan (September 11, 2018)

General Comments

 Approval to leave tailing in place at the Lower Dump Sump (LDS) is predicated on a demonstration that groundwater quality is not being impacted from the potential tailing source areas. Following the demonstration, a minimum of three feet of clean borrow will be placed over the tailing area excavation and revegetated. The Arcadis Groundwater Monitoring Memo (Memo) in Appendix E does not describe how a demonstration will be made to show that leaving the historic tailing in place at the LDS has/will not negatively impacted groundwater beneath the tailing. The Memo indicates that a new down-gradient monitoring well will be installed and monitored as outlined in the Performance Monitoring Plan. Please add details in the Work Plan on how a demonstration will be



made to show that leaving the historic tailing in place at the LDS has not negatively impacted groundwater beneath the tailing.

<u>Response</u>

Groundwater quality data are available demonstrating that tailing deposits at the Lower Dump Sump have not impacted groundwater quality. For example, groundwater sample results from monitoring wells and private wells downgradient of the Lower Dump Sump have never exceeded any State or Federal groundwater standard, or USEPA cleanup levels. The Lower Sump monitoring wells (LS-1, -2, and -3) were first sampled in 1991 and have been sampled at a quarterly frequency since 1999 under DP-1055, and no groundwater standards have been exceeded. Private well PR3, which is immediately downgradient of the Lower Dump Sump tailing, was sampled in January, April, May, September and November 2004, February 2005, January 2006, and July 2007, during the Remedial Investigation and no groundwater standards were exceeded. Other private wells downgradient of the Lower Dump Sump, PR4 and PR5, were sampled in May 2004 during the Remedial Investigation and no groundwater standards were exceeded. A temporary well installed near Hunt's Pond was installed specifically to determine if tailing in the area affected groundwater. The Hunt's Pond well was sampled in May 2004 during the Remedial Investigation and no groundwater standards were exceeded. Another significant line of evidence for tailing having no impacts on groundwater quality are results from a grab sample of accumulated water in the bottom of the Western Trench that was collected during the historic tailing spill removal action. The Western Trench was excavated adjacent to and immediately downgradient of the tailing at the Lower Dump Sump. Molybdenum was detected at 0.015 mg/L (cleanup level is 0.08 mg/L) in the sample from the trench, indicating that the water was not impacted by tailing. Leaching tests on tailing material have also been performed as part the Eagle Rock Lake removal action. TCLP and SPLP leaching test methods revealed that it is unlikely that tailing left in place will have a negative effect on groundwater quality. Chevron believes that the sampling program for the Lower Dump sump, which will included existing monitoring well LS-3 and a new monitoring immediately downgradient of the tailing material, will demonstrate the continued protection of groundwater quality.

As discussed during the September 17, 2018 kick-off meeting, NMED requested a new groundwater sample be collected and analyzed downgradient of the 2018 LDS activities. The following outlines discussions with the agencies related to the selection of a groundwater monitoring location:

- On October 10, 2018 EPA and NMED conducted a site visit and CMI proposed well location for LDS-4.
- On October 15, 2018 a follow up discussion was held to discuss the CMI proposed well location and evaluate a new location further to the North.



- On October 18, 2018 NMED visited the site to discuss a new location for the groundwater sample. During this visit NMED indicated that LS-4 monitoring well included in the workplan may not be required because the Western Trench groundwater sample collected in 2014 already indicted non-detect on COCs. (NOTE: this was also the date that NMED notified CMI to stop placing tailing in the proposed Site 1 repository; on October 19, 2018 CMI agreed to place all disturbed tailing from the LDS area at the tailing facility vs an onsite repository.) NMED verbally approved that LDS-4 well would not be required if no new tailing was going to be placed in an on-site repository.
- October 23, 2018, NMED and EPA conducted a site visit where CMI and the agencies agreed on the location to collect a groundwater sample from a temporary well downgradient of the LDS area. The selected location is presented in the revised November 8, 2018 work plan on figure 4-3.
- The temporary well is planned for installation on November 6, 2018. CMI has coordinated with NMED on the installation of the well and conducting an inspection and obtaining a split sampling once the well is completed.
- 2. Please describe the procedures that will be used to verify the cover material placed over the LDS area has a minimum thickness of three feet. Previous cover projects at the mine site and tailing facility have required either additional material to achieve the three-foot soil cover or post-construction verification to guarantee achievement of a three-foot cover system.

<u>Response</u>

All areas where tailing will be capped in-place within the Stage 8 work area will be covered with 3.3 ft. of clean fill material from either the onsite or tailing area borrow locations. This thickness will provide for settling of borrow material post placement. The borrow thickness will be controlled by using GPS enabled heavy equipment for placement. The work plan text will be amended to reflect the 3.3 ft. borrow thickness (Section 5.3.3 and Section 6.0, paragraph 1)

3. The only borrow source previously approved by the Agencies is indicated in the Appendix B map. In the Appendix C Grading Plan, the proposed borrow source is from the LDS area and not the previously approved borrow area. If an alternative borrow source is proposed, the material needs to be sampled to demonstrate appropriateness and analyzed following Table E1 in the Work Plan.

<u>Response</u>

Chevron has sampled the material within the LDS footprint to verify that it meets the clean fill requirements. This data was provided to EPA, NMED and MMD on October 1, 2018. EPA approved the use on this material via email on October 4, 2018. Analytical results from the onsite borrow source (areas B and D) have been added to Appendix F.



EPA Section-Specific Comments

1. Section 1.1, Page 1-1, 2nd paragraph, first sentence – The proper name of the NMED bureau in charge of the project is the Ground Water Quality Bureau not the Groundwater Bureau. Please correct.

<u>Response</u>

This correction has been made to the text.

2. Section 1.1, Page 1-2, 2nd paragraph, fifth sentence – In the Pipeline Removal Work Plan it states that the plan was written to meet the requirements of CMI's Mine Permit (TA0001RE). Please also include that the Work Plan was written to meet Condition 45 of NMED Discharge Permit 933.

<u>Response</u>

This correction has been made to the text.

3. Section 2.0, Page 2-1, sixth bullet – Under the U.S. Army Corps of Engineers bullet, it states that "based on recent aquatic resources field survey results, no wetlands or emergent wetlands are present on-site at Stage 8." Figures 3-2 and 3-4 show freshwater forested/shrub wetlands adjacent to the Stage 8 area and indicate the retention ponds are verified non-wetland. In Figures 3-2 and 3-4, Lower Dump Sump Wetlands Maps have text boxes for the retention ponds in Stage 8 area that states, "BMP: straw wattles or compost filter socks around freshwater emergent wetland as necessary to prevent sediment runon." Please correct/clarify the Figures 3-2 and 3-4 text boxes for the retention ponds in Stage 8 area statement to reflect the recent field survey if no such emergent wetlands exist in the area.

<u>Response</u>

The above text boxes were an artifact of an earlier version. Field inspections have verified that the subject areas are not wetlands. Details of this field work can be found in the "Aquatic Resource Inventory Report, July 2018" (Appendix A). The subject text boxes have been deleted from the figures.

4. Section 4.1, Page 4-1, first paragraph, first sentence – The sampling of PCBs is described as being adjacent to and below the on-site electrical transformers. The text in this section indicates that four samples will be taken, but Figure 4-1 shows only two sampling locations. The first sentence in the second paragraph states, "if PCBs are found in one or both of the soil samples..."; this indicates that only two samples will be taken. Please clarify.

<u>Response</u>

This has been corrected on the figure. Four locations have been sampled and analyzed for PCBs. The results have been received since the first version of the work plan and all samples were non-detect for PCBs.

In addition, this section states that samples will be taken 12" below the ground surface. During the Remedial Investigation (RI), "soil samples were collected at depths of 0 to 6 inches and 0 to



24 inches. The highest concentrations of PCBs were generally located within the 0 to 6-inch samples. PCBs bind strongly to soil and tend to remain in place unless soil or sediment itself is moved. Therefore, it is not anticipated that the PCBs present at the mill are located at depths much deeper than initially sampled in the RI (two feet)."

<u>Response</u>

This has been corrected in the text. Samples were collected on September 5, 2018 as part of the approved early actions but prior to receiving these comments. Samples (4) were collected from the 0" to 12" soil horizon. It is unlikely that materials in this area have been physically moved over time. The 0-12in sample depth should adequately capture any PCBs that may be present.

Please include near surface soil sampling per Chevron SOP Number 4.0, Section 5.1 for PCB surface sampling from 0 to 6 inches, as well as sampling subsurface (SOP 4, Section 5.2) at 12 inches based on the field reconnaissance visit to the LDS by Chevron and the Agencies.

<u>Response</u>

Sampling for PCBs was conducted prior to approval of this work plan. Four samples were collected, one beneath each transformer location. The sampling interval for each sample was 0" to 12".

5. Appendix B, Table E-1 Borrow Sampling – Molybdenum is listed twice in Table E-1 with the second listing having a footnote associated with it. Please clarify and complete the footnote with a description of what is being indicated by the footnote.

<u>Response</u>

This is an artifact from an earlier report.

6. Appendix C, Figure 3, Cultural Resources Survey Summary – The borrow area indicated on Figure 3 is not the borrow area proposed in the Work Plan. Please clarify.

<u>Response</u>

The figure illustrates the borrow area as it was understood at the time the Resource Survey was drafted and shared with SHPO. The current footprint of the LDS and the new borrow area currently under consideration are illustrated in the Stage 8 work plan submitted.

NMED and MMD Comments for the Draft Questa Tailings Pipeline Removal Stage 8 Work Plan (August 9, 2018)

General Comments

1. Borrow areas shown in *Appendix B of the* Work Plan shows the borrow areas to be located at the Tailing Facility with associated Analysis Table (Table E-1), but *Appendix C, Grading Plan*, talks about using borrow material from Site 3 and Site 5 of the Lower Dump Sump (LDS) area and



possibly not needing borrow material from the Tailing Facility. Below are the specific agency comments on borrow materials:

- a. Borrow materials taken from Site 3 and Site 5 of the LDS are required to be analyzed in the same manner as borrow materials taken from the Tailing Facility Area.
- 2. Borrow areas shown in *Appendix B of the* Work Plan shows the borrow areas to be located at the Tailing Facility with associated Analysis Table (Table E-1), but *Appendix C, Grading Plan*, talks about using borrow material from Site 3 and Site 5 of the Lower Dump Sump (LDS) area and possibly not needing borrow material from the Tailing Facility. Below are the specific agency comments on borrow materials:
 - b. Borrow materials taken from Site 3 and Site 5 of the LDS are required to be analyzed in the same manner as borrow materials taken from the Tailing Facility Area.

<u>Response</u>

Borrow materials from within the footprint of the LDS have been analyzed and were provided to the agencies on October 1, 2018. CMI received email approval to use the on-site borrow on October 4, 2018. Analytical results have been added to Appendix F.

c. All areas that have material borrowed, whether the LDS area or the Tailing Facility, must be reclaimed to the same standards as other reclaimed areas on the mine site.

<u>Response</u>

All areas of surface disturbance will be reclaimed using the methods outlined in the overarching pipeline removal work plan (approved on June 14, 2017) and this document.

d. The Work Plan states that "expanding the potential borrow area will require an increase of proposed disturbance boundaries from 12.7 acres to something larger". How many acres is something larger?

Response

The footprint of disturbance for the LDS project is anticipated to be approximately 18 acres which includes the borrow area. The text will be amended to clarify this.

Please feel free to contact me at (307) 745-7474 with any questions.

Sincerely, Trihydro Corporation

Show R / June

Shaun Harshman Project Manager

476-027-001



ADDENDUM TO: HISTORIC TAILING SPILLS REMOVAL ACTION WORK PLAN AND STAGE 8 PIPELINE REMOVAL WORK PLAN CHEVRON QUESTA MINE SUPERFUND SITE CHEVRON MINING, INC.

November 8, 2018

Project #: 476-027-003

SUBMITTED BY: Trihydro Corporation

707 West 1st Street, Casper, WY 82601

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1.0 INTRODUCTION

Chevron Mining Inc. (CMI) is in the process of closing its former underground and open pit molybdenum mine and millings operation located east of the Village of Questa, in Taos County, New Mexico (Figure 1-1). Decommissioning and demolition activities are being completed under various work plans written to meet the requirements of CMI's Mine Permit (TA001RE, Revision 96-1) issued by the New Mexico Energy, Minerals and Natural Resources Department (EMNRD), Mining and Minerals Division (MMD) and resource-specific permits for air and water discharges issued by the New Mexico Environmental Department (NMED). Cleanup of historic contamination at the mine is being addressed under various additional work plans written to address removal actions required in the U.S. Environmental Protection Agency (EPA) Record of Decision (ROD) (USEPA 2010). In 2012 EPA issued Administrative Order on Consent (AOC) for Removal Actions (RA), CERCLA Docket No. 06-09-12, (USEPA 2012) specifically addressing historic tailings spills (HTS) along CMIs former tailings pipeline.

This document is being submitted to the EPA as an addendum to the "Final Historic Tailing Spills, Removal Action Work Plan, Chevron Questa Mine, Superfund Site" (HTS RA Work Plan) submitted by CMI in May 2012 (URS 2012a) to describe tasks and activities necessary to conduct HTS removal actions required in the 2012 AOC for RA. Tasks completed under the HTS RA Work Plan are described in the "Final Historic Tailings Spills, Removal Action Completion Report, Chevron Questa Mine Superfund Site, Revision 1" (HTS RA Completion Report) (URS 2014). The organizational structure for the activities reported in the HTS RA Completion Report were described in detail in the "Overall Site Plan, For Removal Actions, Chevron Questa Mine Superfund Site" (Overall RA Site Plan) (URS 2012b).

1.1 PURPOSE

The purpose of this addendum is to describe activities for the removal of structures at the Lower Dump Sump (LDS), referred to in the HST RA Completion Report as Site 24, and to identify, remove, and cap HTS, as well as to provide an overall site grading plan for the Lower Dump Sump area.

In 2017, Chevron Environmental Management Company (CME) submitted the "Questa Tailings Pipeline Removal MMD/NMED Work Plan, Chevron Environmental Management Company, Questa Mine" (Pipeline Removal Work Plan) to MMD, NMED Groundwater Quality Bureau, and to the EPA Region 6 (Trihydro 2017). The Pipeline Removal Work Plan was written to describe the overall process for decommissioning and demolition of the former tailings pipeline, including the Lower Dump Sump (i.e., HTS RA Completion Report Site 24). The Pipeline Removal Work Plan was approved by MMD, NMED, and EPA in letters dated June 5, 2017 and June 14, 2017 (MMD and NMED 2017, USEPA 2017). The Pipeline Removal Work Plan provides an overarching plan for the removal of the

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Questa tailings pipeline, including structures at the Lower Sump Dump. The Pipeline Removal Work Plan was written to meet the requirements of CMI's Mine Permit (TA0001RE) and Condition 45 of NMED Discharge Permit 933. The Pipeline Removal Work Plan also described covering HTS in the pipeline corridor pursuant to the RA AOC, Docket No. 06-09-12. In accordance with the Pipeline Removal Work Plan, segment-specific work plans will be submitted to NMED and MMD and any other agency where approval may be required for a specific segment of pipeline 60 days prior to commencement of demolition activities. This addendum/work plan will be submitted to NMED, MMD, and EPA for approval 60 days prior to beginning demolition.

The Pipeline Removal Work Plan divided the project into eight stages for planning and implementation purposes. Pipeline segments for each stage are listed in Table 1-1. Stage 8 activities will be performed at the Lower Dump Sump under the processes described in the following documents:

- Final HTS RA Work Plan (URS 2012a)
- Overall RA Site Plan (URS 2012b)
- Pipeline Removal Work Plan (Trihydro 2017)
- This addendum

The scope of work includes removal of pipeline, support buildings, the Lower Dump Sump facility, electrical infrastructure, removal of specified tailings, and regrading the areas around and adjacent to the Lower Dump Sump facility. In addition to the removal of the pipeline and associated structures, removal of tailing or where approved, containment of tailing in place with appropriate cover will be conducted in accordance with this Plan. The work conducted under this plan will be on Chevron owned property, thereby limiting the number of additional permits and access agreements required.

1.2 SCOPE OF WORK

The following items will be addressed during demolition of the Lower Dump Sump:

- Provision of a means to demonstrate that HTS left in place at the Lower Dump Sump will not negatively impact groundwater in the area;
- Identify and if necessary mitigate any soil in the vicinity of on-site electrical transformers containing Polychlorinated Biphenyls (PCBs) by:
 - Following PCB sampling and analysis plan for potentially impacted areas
 - Delineating PCB levels in soil exceeding 25 mg/kg



- Removal of PCB contaminated soil exceeding 25 mg/kg
- Transport of PCB contaminated soil to off-site treatment/disposal facility
- Remove all structures from the site
- Waste management (per Pipeline Removal WP)
- Removal of specific tailings
- Regrade and reclaim the site

TABLE 1-1.	PIPELINE	SEGMENT	PRIORITIZ	ZATION	AND S	TAGE ID	ENTIFIC	ATION

Pipeline Segment Description	Stage	Approximate Length of Segment (feet)
Tailing Facility	1	10,000
Columbine Wells Area	2	4,000
Tailing Facility Entrance	2	2,800
Corny's Corner hillside	2	1,200
4th Road Crossing (State Road) plus Embargo Road	TBD	1,100
Singleton's Cut	2	2,900
Robinson's Property	2	850
East of Molycorp baseball field	2	1,400
Upstream of the lower Dump Sump	2	1,600
Pressure vessels to underground	3	500
East of Middle Pile	3	1,000
Goat Hill Entrance Area	3	2,350
Bear Cut	3	2,500
USFS Office Area	4	3,200
Forest Service Property west of Molycorp field	4	950
East of Sulphur gulch	5	650
West of Sulphur gulch	5	1,200
Sugar Shack South	5	4,100
1st Road Crossing (East Hwy 38 road)	5	90
Columbine Curve	5	1,400
2nd Road Crossing	5	90
Admin Section	5	1,800

Pipeline Segment Description	Stage	Approximate Length of Segment (feet)
Between Goat Hill and Bear Cut	5	2,500
3rd Road Crossing	5	90
Rock Wall (Between Bear Cut and Forest Service) (aka "Rock and Hard Place")	5	3,300
Rael Property	6	1,500
1st River Crossing (by Columbine Park)	6	60
2nd River Crossing (aka Thunder Bridge)	6	100
3rd River Crossing	6	100
Elevated Trestle	7	1,300
Lower Dump Sump	8	200



2.0 AGENCY PERMITS AND NOTIFICATIONS

Stage 8 (Lower Dump Sump) activities relating to HTS will be performed under the requirements specified under the RA AOC, Docket No. 06-09-12, as described in the HTS RA Work Plan (URS 2012a), Overall RA Site Plan (URS 2012b) and this addendum to the HTS Work Plan. In addition, Stage 8 activities relating to demolition and removal of structures will also be covered by the MMD Mining Act Permit (TA001RE, Revision 96-1) and NMED Discharge Permit (DP-933), as described in the Pipeline Removal Work Plan (Trihydro 2017). Additional agency requirements for this work include:

- The New Mexico Historic Preservation Division will be consulted regarding their need for and completion of additional survey of historic properties before beginning Stage 8 demolition activities. Two surveys have been completed and submitted to NMHPD.
- U. S. Army Corp of Engineers (USACE) pre-construction notification (PCN) has been submitted to the USACE.
 Based on recent aquatic resources field survey results, no wetlands or emergent wetlands are present on-site at
 Stage 8. Adjacent wetlands near Stage 8 should not be impacted during the Stage 8 field activities. A copy of the
 PCN and Aquatic Resource Report are included as Appendix A.



3.0 LOWER DUMP SUMP (STAGE 8) AREA

The Stage 8 pipeline removal focuses on an approximately 18.4 acre area surrounding the Lower Dump Sump structures. Included in this stage is the removal of approximately 200 feet of pipe (Table 3-1), the infrastructure listed in Table 3-2, tailings to a depth of three feet below ground surface and capping of remaining tailings with a minimum of three feet of borrow material. Figure 3-1 illustrates the location of the LDS in relation to the Village of Questa and the balance of the pipeline removal project. A detailed view of the Stage 8 Lower Dump Sump is included in Figure 3-2. Site photographs are shown in Appendix B.

TABLE 3-1. AREAS INCLUDED IN STAGE 8 PIPELINE REMOVAL PLAN

Pipeline Segment Description	Approximate Length of Segment (feet)	Seasonal Considerations or Preferred Months (Alternative 1)	Above (A) or Underground (U)?	CMI Ownership?	Figure
Lower Dump Sump	200	July-September Preferred	A	Y	3-2

TABLE 3-2. LOWER DUMP SUMP	STRUCTURE AND	DEQUIPMENT I	NVENTORY

Structures and Equipment				
All Buildings within the delineated area and their contents				
Concrete sump impoundment				
Sump fencing				
Transformers				
Power poles				
Tailing pipeline within delineated area				
Foundations				
Pumps				
Ancillary Piping and Valves				
Piping supports				
Monitoring Wells LS-1 and LS-2				
Catwalks, ladders, and structural supports				
All Electrical Equipment including all overhead or buried powerlines owned by Chevron				
All buried utilities including septic systems, sewer lines, leach fields, etc.				
Tailing material designated for removal				

3.1 SITE SETTING

The Lower Dump Sump is located on CMI property. The site can be accessed via Moly Mine Road and Old Red River Road. The Red River borders the Lower Dump Sump area to the north. The majority of the site is located outside of

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the flood plain and wetlands associated with the Red River. Figure 3.3 shows the Federal Emergency Management Agency (FEMA) flood hazard map (FEMA 2018) for the site. Figure 3.4 shows the wetlands in the vicinity of the Lower Dump Sump. Reclamation and grading activities are not expected to disturbed wetlands near the site.



4.0 SAMPLING AND ANALYSIS ACTIVITIES

The potential for PCB, asbestos contaminated materials (ACM) and lead based paint (LBP) contamination was identified in the early stages of project planning. Plans were set in place to sample suspect areas for these substances. Details of these investigations are provided in the sections below. Field activities, described below, will be performed in general accordance with the standard operating procedures presented in the overall site plan and QAPP. Best Management Practices will be followed to control the quality of the field work performed. Field activities will be documented daily as the work proceeds.

4.1 POLYCHLORINATED BIPHENYLS (PCBS)

A total of five electrical transformers are located within the Lower Dump Sump removal boundary (Photo 1, Appendix B). Four of the electrical transformers are located on a platform located adjacent to and south of one of the steel support buildings (Photo 2, Appendix B). The fifth transformer is located individually on a power pole on the south side of the site (Photo 1, Appendix B).

4.1.1 PCB SAMPLING

Samples were collected on September 5, 2018 from four locations in the Lower Dump Sump adjacent to and below the on-site electrical transformers (Figure 4-1) and analyzed for PBC Aroclors. A memorandum detailing the sampling procedure is included as Appendix C. The samples were collected from the 0 to 1 foot interval. A sampling hole was dug using a clean shovel. Soil was loosened from the wall of the sampling holes using the clean shovel. A clean trowel or other appropriate clean sampling device was used to collect the loosened soil and place the soil into a clean sampling jar provided by the laboratory for that purpose. The soil jar was packed completely with soil to insure sufficient volume. The jar was sealed immediately and labeled. The jar was then submitted to TestAmerica Laboratories Inc., under a CoC protocol for analysis of PCB Aroclors by EPA Method SOM01.2 (or the most recent version). Sampling trowels and shovels were decontaminated between sampling locations using a three stage decontamination procedure consisting of an Alconox wash and two rinses of deionized water.

4.1.2 PCB ANALYSIS

All four of the samples collected within the LDS were non-detect for PCBs. Details of sampling locations can be found in Figure 4-1 and a summary of the analytical results can be found in Table 4-1. Further details and analytical data can be found in Appendix C.

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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

TABLE 4-1. PCB ANALYTICAL RESULTS

4.2 LEAD BASED PAINT OR ASBESTOS CONTAINING MATERIAL

In August 2017, CEMC completed a lead and asbestos investigation along the length of the former tailings pipeline, including the Lower Dump Sump (Stage 8) area (Trihydro 2018). The intent of this sampling and analysis was to verify the presence or absence of asbestos containing material (ACM) and lead based paint (LBP) and quantify the levels present in materials scheduled for demolition.

4.2.1 ACM AND LBP SAMPLING

Seven samples were collected from the Lower Dump Sump structures. Six of the seven samples were tested for asbestos. All seven samples were tested for lead. The seven samples locations included one (A183017) from pipe coating wrap, one (L183017) from pipe surface coating, two (INS183017 and INS283017) from pipe insulation, and three from pipe victualic gaskets.

4.2.2 ACM AND LBP ANALYTICAL RESULTS

Asbestos was non-detectable in all of the six samples tested. Six of the seven samples tested for lead did not contain detectable levels. One sample (L183017) contained 330 mg/kg lead. Sample L183017 was collected from pipe surface coating. Sample locations can be found on Figure 4-2 and a summary of the results are presented in Table 4-2. Analytical reports are included as Appendix D

Based on these sampling results, structures and piping removed from the Lower Dump Sump (Stage 8) area will not require special handling due to asbestos. Pipe coated with lead based paint will be recycled with pipe from other removal stages in accordance with State, Federal regulations as well as Chevron's Third Party Waste Stewardship (TWS) requirements. It is important to note that 40CFR261.4 excludes scrap metal that is being recycled from the definition of solid waste.



Sample Location ID	Sample Date	Asbestos (mg/kg)	Lead (mg/kg)
A183017	8/30/2017	ND	ND
L183017	8/30/2017	NS	330
INS183017	8/30/2017	ND	ND
INS283017	8/30/2017	ND	ND
VG183017	8/30/2017	ND	ND
VG283017	8/30/2017	ND	ND
VG383017	8/30/2017	ND	ND

TABLE 4-2. ASBESTOS CONTAINING MATERIAL AND LEAD BASED PAINT ANALYTICAL RESULTS

4.3 GROUNDWATER SAMPLING AND ANALYSIS PLAN

A total of three CMI owned monitoring wells, LS-1, LS-2, and LS-3, are located near the Lower Dump Sump. Monitoring well locations are shown in Figure 4-3. Wells LS-1 and LS-2 reside upgradient of the Lower Dump Sump and HTS areas while LS-3 is cross gradient or down gradient from HTS. Groundwater sampling and analysis has shown that the alluvial aquifer has not been impacted by the tailings spills at the Lower Dump Sump (Appendix E). It is proposed to install a temporary monitoring well (LS-4), on CMI property prior to the abandonment/removal of wells LS-1 and LS-2. This new well will be placed at the northern boundary of the tailings that will be left in place as shown in Figure 4-3. Groundwater sampling and analysis will be performed one time following the procedures described in the Tailing Facility Performance Monitoring Plan in order to demonstrate the effect of tailing on groundwater quality in the Lower Dump Sump area. An analyte list is included as Table 4-3. The results of this sampling and analysis will be presented to EPA, NMED and MMD in a separate document.

Group #AnalytesGroup 1 =water level, temperature, pH, and electrical conductivityGroup 2 =general chemistry analytes included calcium, magnesium, sodium, and potassium
(USEPA Method 200.8); carbonate and bicarbonate (Standard Method 2320B);
sulfate, chloride, and fluoride (USEPA Method 300.0); nitrate (USEPA Method
353.2); and total dissolved solids (Standard Method 2540C)Group 3 =metal analytes include aluminum, arsenic, barium, beryllium, cadmium, chromium,
cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver,
thorium, uranium, vanadium, and zinc (USEPA Method 200.8) and mercury

TABLE 4-3. ANALYTE LIST

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5.0 REMOVAL ACTIVITIES

5.1 PIPE REMOVAL

Pipe removal will be conducted under the guidelines specified under Section 4.1 of the Pipeline Removal Work Plan. The pipe in Stage 8 is on the surface or inside of support structures. This pipe will be removed by separating the pipe joints at the Victaulic couplings. In areas where de-coupling is impractical the pipe will be cut using a hydraulic shear mounted on an excavator. The pipe will then be loaded and trucked to a laydown area on the tailings facility.

Structures such as pipe couplings, anchor structures, pipe bend structures, and concrete thrust blocks will be removed in accordance with Section 5.5 of the overarching Pipeline Removal Work Plan.

5.2 SUPPORT STRUCTURE REMOVAL

Water contained in the concrete sump consists of stormwater. The water will be pumped into tanker trucks and transported to the Tailings Facility for disposal in one of the evaporation ponds. Support buildings will be emptied of their contents and demolished. The concrete bottom of the sump will be broken up and the concrete wall and foundations will be broken up and placed in the sump area. This broken concrete will be covered with a minimum of three feet of clean fill, as detailed in Chapter 6.0. Excess concrete will be disposed of in the mine pit.

5.3 TAILINGS REMOVAL

Three principal areas of tailing deposits have been identified within the LDS area. Figure 5-1 indicates the area where tailing exists within the 2017 Lower Dump Sump boundary (Site 1) and areas where tailing was discovered in 2018 (Site 2 and 4). During an assessment of the LDS areas of tailing were identified that had not been documented in the ROD or previous historic tailing spill assessment. The new areas are identified as Site 2 and Site 4 on Figure 5-1. Test pits and visual inspection confirmed the presence of tailing in these areas. A description of planned tailing removal activities and the final grading plan are presented below on a Site by Site basis. For reference, Sites 1, 2 and 4 are areas of tailing deposits. Site 3 and 5 are potential borrow areas. The Plan Sheet section following the Figure section contains the detailed design drawings produced for the grading plan. These sheets will be referenced by sheet number throughout the remainder of Chapter 5.

5.3.1 SITE 1 TAILING REMOVAL AND REGRADING

Site 1 consists primarily of a depression created during previous tailing removal activities. Approximately 2,800 cubic yards (CY) of tailing are slated for further removal from this area. Tailing removal is detailed in Sheet 1 and subsequent earthwork cross-section sheets. Once tailing removal has been completed, Site 1 will be regraded in

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accordance with Plan Sheet 2 and subsequent earthwork cross-section sheets. Site 1 is to be bisected by an east-west trending ridge near the middle of the site. The north area drains north, and the south area drains towards the west. The site was bisected in this manner due to existing site conditions. Much of the revised grading requires import fill material to be placed within the grading footprint. A small area of cut is in a berm along the west edge of the site. Cut in this area is required to provide a smooth swale profile and to limit possible erosion. The southern portion of the Site 1 area drains to a depression at this location. Cuts within the grading footprint range from 0-3 feet and fills range from 0-12 feet. Deep fill areas coincide with locations of steep existing ground slopes. Slopes within the pit area of Site 1 ranged from 2H:1V to 4H:1V. The revised grading plan reduces the angle of the slopes within the pit area to 6H:1V or flatter.

Total borrow material volume to complete the revised grading at Site 1 is approximately 15,500 CY. Clean borrow materials are available from three separate sources within the LDS area, Site 3, Site 5, and an auxiliary borrow area north of Site 5. Borrow locations are shown on Sheets 1 and 2 of the Plan Sheet section.

5.3.2 SITE 2

Site 2 consists of mounded tailings. Areas with mounded tailing (or tailings that have a distinct stockpile shape above surrounding natural topography., i.e. Site 2) will be excavated and the tailing material will be removed to the tailing facility area, previously used for disposal during the 2013/2014 Historic Tailing Spill activities. Grading information for Site 2 is found in Sheets 1 and 2 of the Plan Sheet section. Approximately 2,700 CY of tailing is anticipated to be removed from the Site 2 area. If tailing extends below the ground surface it will be excavated to a depth of 3 feet below ground surface (BGS) and capped with clean fill according to the process outlined in Section 5.3.3.

5.3.3 SITE 4

For areas where tailing was found below grade (i.e. Site 4), a uniform removal of 3 feet of tailings material will be completed and the removed tailing will be disposed of at the tailing facility. The area will then be backfill to near existing contour with clean borrow. No less than 3.3 feet of clean fill will top the disturbed areas. Clean fill will be placed, graded, and verified with by GPS guided equipment to match the original topography and the designed drainages for the Lower Dump Sump. Sheet 2 and subsequent earthwork cross-sections detail the final grading plan for Site 4. The proposed final grading is consistent with the May 19, 2017 approved workplan.

It is estimated that there is a total of approximately 8,100 cubic yards (CY) of tailings material in Site 4 detailed in Plan Sheet 1 and subsequent earthwork cross-sections. Approximately 8,200CY of the clean borrow material will be used for backfill at the Site 4 location, as noted in Plan Sheet 2 and subsequent earthwork cross-section sheets.

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5.4 BORROW MATERIAL

Borrow areas have been identified internally and externally to the LDS. The locations of borrow material and analytical data supporting the materials suitability are detailed below.

5.4.1 INTERNAL BORROW SOURCES

Sources of borrow material internal to the LDS footprint are identified as Site 3, 5 and an auxillary site on Sheets 1 and 2 of the Plan Sheet section. Sampling and analysis of these materials has been conducted with the results being summarized in Appendix F. Using the internal borrow sources will limit, or even eliminate, the need for off-site borrow materials. Currently, the final grading contours shown on Sheet 2 produce a volume of approximately 14,400 CY of clean backfill material. The revised total clean backfill material required for the site is approximately 23,700 CY. Trihydro estimates that the possible auxiliary borrow site shown on Sheets 1 and 2 of the Plan Sheet section contains approximately 9,000CY of potential borrow material, and in conjunction with the other noted borrow areas, could produce enough material to complete grading activities at the LDS. If CEMC elects to use the auxillary borrow area, the total disturbance for work at the LDS area will be approximately 10 of the 18 acres. This disturbance includes all final grading areas and borrow areas. Ancillary construction disturbance is not included in the estimated disturbance

5.4.2 EXTERNAL BORROW SOURCES

An external source of borrow material has been identified as the previously approved area adjacent to the tailings facility. The location of this source is shown in Appendix F.

5.5 WASTE MANAGEMENT

All waste will be disposed of according to the methods outlined in Pipeline Removal Work Plan (Trihydro 2017) Section 2.3.3 and Section 5-1. Approximate quantities of material to be removed are detailed below in Table 4.0.

Pipeline Segment Description	Approximate Quantity of Pipe to be Removed (feet)	Approximate Quantity of Concrete (tons)	Approximate Quantity of Steel (tons)
Lower Dump Sump	200	Unknown	0.035

TABLE 5-1. QUANTITIES OF DEMOLITION MATERIALS

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6.0 RECLAMATION

Areas disturbed during pipe removal, tailing removal, borrow excavation, regrading and other demolition activities conducted under this work plan will be reclaimed according to the procedures outlined in Section 4.2.10 of the Removal Work Plan, May 2017 and in this chapter. Clean fill will be imported from approved borrow sources as discussed in Section 5.4. Maps indicating the locations of borrow material are included as Appendix F. Also included in Appendix F is analytical data which demonstrates the suitability of material from the Lower Dump Sump area for use as a borrow source. As part of the demolition, the lower dump sump concrete structures will be crushed and recycled as fill for the sump. Any excess concrete from the demolition of the sump will be disposed in the Questa Mine Open Pit as per the Removal Work Plan, May 2017. Steel rebar from the concrete fill pieces will not protrude more than 6 inches. Any protruding rebar from concrete structures will be cut to the appropriate length and recycled as per the work plan. Clean fill will be placed per Chapter 5 and graded to a minimum thickness of 3.3 feet, as verified by GPS guided equipment to match the designed topography for the Lower Dump Sump area.

Once the grading has been completed disturbed areas will be reseeded using the mix detailed in Table 6-1. Alternate seed mixes may be used depending upon the anticipated land use or if availability of certain seed species is limited. The seed mix may be negotiated with the proper regulatory agencies based on the area of application.

Grasses		lbs PLS/acre
Western Wheatgrass, var. Arriba	Pascopyrum smithii	5.0
Slender Wheatgrass, var. Sna Luis	Elymus trachycaulus	3.0
Bluebuch Wheatgrass, var. Goldar	Pseudoroegneria spicata	4.0
Sand Dropseed	Sporobolus cryptandrus	1.0
Prairie Junegrass	Koeleria macrantha	2.0
Forbs		
Western Yarrow	Achillea millefolium	2.0
Rocky Mountain Penstemon, var. Bandera	Penstemon strictus	4.0
Prairie Coneflower	Ratibida Columnifera	4.0
Showy Evening Primrose	Oenothera speciose	2.0
Shrubs		
Big Rabbitbrush	Ericameria nauseosa	2.0
Apache Plume	Fallugia paradoxa	1.0

TABLE 6-1. SEED MIXTURE



7.0 STAKEHOLDER ENGAGEMENT

The key stakeholders for this stage of pipeline removal include:

- USEPA
- NMED
- MMD
- NM Historic Preservation Division
- NM Department of Game and Fish
- USACE
- Village of Questa

Outreach to the key stakeholders has begun and will continue throughout the pipeline removal project.



8.0 SCHEDULE

The schedule for Stage 8 of the Questa pipeline removal project is detailed below in Table 8-1.

Pipeline Segment Description	Target Date of Commencement for Pipe Removal	
Clearing and Grubbing	8/27/18 - 9/7/18	
Construction/Demolition	9/18/18 - 9/24/18	
HTS Removal	10/8/18 - 11/30/18	
Embankment Removal	11/14/18 - 12/12/18	
Site Restoration	12/12/18 - 12/20/18	
Demobilization	12/18/18 - 12/20/18	
Turnover	1/11/19 - 1/11/19	
Temporary Well Installation	11/6/18 - 11/8/18	
Well Abandonment	TBD	

TABLE 8-1. STAGE 8 PIPELINE REMOVAL SCHEDULE



9.0 HEALTH AND SAFETY

CMI, Entact and Trihydro put safety first and foremost in all operations. A project specific Health and Safety Plan has been developed for the pipeline removal activities. This plan will include:

- Emergency response procedures and reporting
- Project team organization and responsibilities
- Training, orientation, and medical monitoring requirements
- A site hazard analysis
- Analysis of chemical, physical, and biological hazards
- Required personal protective equipment
- Air monitoring requirements
- Site control measures
- Waste management
- Motor vehicle safety requirements

Other documents used to identify and mitigate hazards associated with the project include:

- Pre-fieldwork safety readiness reviews. This document provides project management an opportunity to interact with field personnel prior to commencement of field activities. An example is provided in Appendix G.
- Job Safety Analyses (JSA). JSAs are drafted for each task. Job steps, potential hazards and mitigation steps are identified and communicated to team members. The JSA form is included in Appendix G.
- Field observations. Observations will be conducted throughout the project to verify compliance with operational safety standards. The observation form is included in Appendix G.
- Near Miss investigations. Near misses identified by team members will be investigated to determine root causes and means to avoid similar incidents in future operations. The outcome of these investigations will be shared with all team members. The Near Miss reporting form is included in Appendix G.
- Daily tailgate safety meetings. Daily tailgate safety meeting will be conducted every day prior to commencement of operations. The meetings are an opportunity to review JSAs, discuss changing conditions, lessons learned and operational details.

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- Weekly management safety meetings. This meeting is an opportunity for the project leadership to discuss upcoming operations, lessons learned, near loss investigations and other potential issues.
- Journey management plans (JMP). JMPs are used to identify hazards associated with transportation. These plans identify hazard and provide mitigation steps for enhancing vehicle operational safety. An example JMP is included in Appendix G.

The use of the documents create the foundation for hazard awareness and mitigation. Our companies have embedded their use into our respective corporate cultures and freely share best practices and lesson learned.



10.0 CONTRACTORS KEY PERSONNEL

Entact LLC will be the primary contractor for Stage 8 removal activities, waste management, and regrading of the Lower Dump Sump. Key Entact personnel include:

- Michael Cinciripini. Michael is the Project Manager and primary operations contact for Entact on the tailings
 pipeline removal project (Project). Michael holds a Bachelor of Science degree in Civil and Environmental
 Engineering, a Construction Management Certificate and is a Lean Sigma Green Belt. He has a significant level of
 experience at the Questa Mine facility. He can be reached at (412) 417-8460 or mcincirpini@entact.com.
- Veto Vialpando. Veto fills the role of Health and Safety Officer for Entact on the Project. Veto has AHERA
 Asbestos Supervisor training, Chevron Managing Safe Work (MSW) training, is an MSHA Instructor, Mine
 Rescue Instructor and has OSHA 40 hour HAZWOPER training. Mr. Vialpando also has extensive experience at
 the Questa Mine facility. He can be reached at (575) 263-4343 or vvialpando@entact.com.

Trihydro Corporation will be responsible engineering, contractor oversight, environmental sampling, permitting and regulatory support. Key Trihydro personnel include:

- Shaun Harshman. Shaun is the Project Manager and primary contact for Trihydro on the Project. Shaun has a
 Bachelor of Science degree in Soil Science. He has over 30 years of experience in the environmental field, with
 over 18 years of experience on Chevron projects. He can be reached at (307) 259-5909 or
 sharshman@trihydro.com.
- Tony Kupilik. Tony will be Trihydro's primary construction oversight and health and safety manager. Tony has
 over 25 years of experience in heavy construction and mining. He is a certified MSHA instructor, New Mexico
 Surface Coal Foreman, Excavation Competent Person, 3D Driving instructor and has OSHA 40 hour HAZWOPER
 training. He is also certified in Red Cross CPR, AED, and First Aid. He can be reached at (307) 760-8082 or
 tkupilik@trihydro.com.



11.0 REFERENCES

- New Mexico Energy, Minerals and Natural Resources Department (EMNRD) and the New Mexico Environment Department (NMED). 2017. Joint Agency Approval, Questa Tailings Pipeline Removal, NND/NMED Work Plan, Chevron Environmental Management Company, Questa Mine (TA001RE, Revision 96-1 and DP-933). June 5, 2017.
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- USEPA. 2012. CERCLA Docket No. 06-09-12, Administrative settlement Agreement and Order on Consent for Removal Actions. Filed March 8, 2012.
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FIGURES













CONCRETE SUMP AREA OF EXCAVATION FRESHWATER FORESTED/SHRUB WETLAND RIVERINE FORMER TAILINGS RETENTION AREA (FIELD VERIFIED NON-WETLAND)

Image Citation: ©2018 Microsoft Corporatio ©2018





	AREA OF MINIMAL FLOOD HAZARD
E:AC 5C PS	Provide the service center, flood map s
	LOWER DUMP SUMP

FLOOD HAZARD BOUNDARY

QUESTA MINE QUESTA, NEW MEXICO

ed Bv [.] TH	Scale [.] 1" = 200'	Date: 11/4/18
Ceu Dy. III	Ocale. 1 - 200	Date. 11/4/10

File: 20181103_SWPPP_FIG3-3_ST8_FLOODZONES



EXPLANATION



PIPELINE

GROUND SURFACE ELEVATION CONTOUR (FEET) APPROXIMATE GROUND WATER FLOW DIRECTION LOWER DUMP SUMP AREA



FRESHWATER FORESTED/SHRUB WETLAND FRESHWATER POND RIVERINE FORMER TAILINGS RETENTION AREA





			FIGURE	3-4
LOWER DUMP SUMP WETLANDS MAP QUESTA MINE QUESTA, NEW MEXICO				
				/INE MEXICO
ed By: TH		Scale:1" = 300'	Date: 11/5/18	File: 20181103_SWPPP_FIG3-4_ST8_WETLANDS
	,			



- ELECTRICAL BOX POWER POLE
- TRANSFORMER AND SOIL SAMPLE LOCATIONS
- $\times \times \times$ FENCE

ACCESS RAMP

SUPPORT BUILDING LOWER DUMP SUMP AREA



Tribydro 1252 Commerce Drive Laramie, WY 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.77 Drawn By: DH Checke

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

FIGURE 4-1			
SOIL SAMPLE LOCATIONS			
QUESTA MINE QUESTA, NEW MEXICO			
By: BAH	Scale: 1 " = 30 '	Date: 9/17/18	File: Fig4-1_St8_SoilSampleLocs.mxd
	By: BAH	SOIL : QUE By: BAH Scale: 1 " = 30 '	FIGURE SOIL SAMPLE LO QUESTA M QUESTA, NEW By: BAH Scale: 1 " = 30 ' Date: 9/17/18



Drawn By: PC Checked By: CS Scale: 1" = 1000' Date: 10/25/17 File: 476-QM-PRMT-SITEDETAIL201710





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		-
	TAILINGS AREA SUM	MARY
		AREA (SQ FT)
	SITE 1 - NORTH OF TURNAROUND SITE 1 - TURNAROUND	36,561
Globe	SITE 2 - EMBANKMENT	20,733
SITE 4 73,857		
LOWER DUMP SUMP TAILINGS IDENTIFICATION		
QUESTA MINE CHEVRON MINING QUESTA, NEW MEXICO		

Drawn By: KCW Checked By: SL Scale: AS SHOWN Date: 11/5/18 File: 20181102_TAILINGSIDENTIFICATIO



PLAN SET













rdro.com/culents/ohevron/cemc_minins/questamine/PiPelue/cadd/workins/_intranet-lowerdumPsumP/Figures/20181107_uPdATED sheet 1

