



MEMORANDUM

Date: January 30, 2024

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: Jan Leshner 
County Administrator

Re: **Hudbay Copper World Project Update**

The last comprehensive update I provided to the Board on Hudbay's Copper World project was on [August 18, 2023](#). Since then, Hudbay released its Pre-Feasibility Study (PFS) and County staff and I held meetings with Hudbay representatives and the Arizona Department of Environmental Quality (ADEQ). This memorandum provides a summary of the information presented in the PFS and provided to us as it relates to Hudbay's latest mine plans and the status of Hudbay's permit applications.

Mine Plan Updates

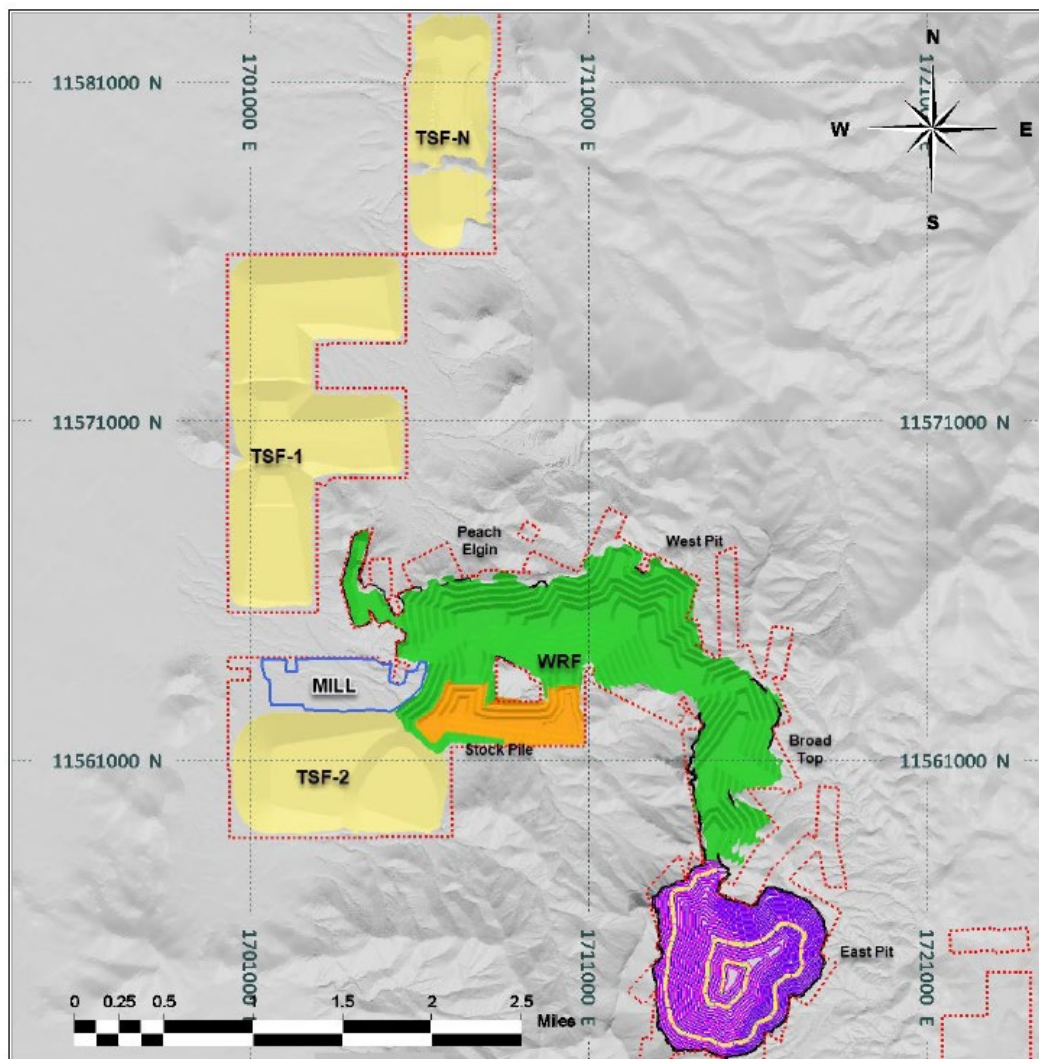
Hudbay released its Pre-Feasibility Study (PFS) in September. Staff reviewed the document and compiled the following summary of changes and other notable information related to the latest mine plan:

- *Phase I is now 20 years and is limited to private lands.*
The PFS contemplates a 20-year Phase I, and unlike the 2022 Preliminary Economic Assessment it does not include a second phase expansion onto federal lands. Instead, the PFS considers operations on private lands requiring only state and local permits. Hudbay's total private land package now includes approximately 5,500 acres.
- *Mining the East Pit remains the primary goal.*
For the first three years 100 percent of the mine's production will be extracted from the three "satellite" pits: Peach-Elgin, Broadtop and West (Figure 1). Mining the East Pit (the original Rosemont pit) will begin in Year 3, and by Year 5 it is expected to contribute 100 percent of the mine's production through the end of Phase I. While the three satellite pits will be backfilled with waste rock, there are no plans to backfill the East Pit. It will remain open and require dewatering, presumably in perpetuity, although the PFS does not discuss this.
- *Hudbay no longer plans to construct a heap leach facility; instead, a concentrate leaching facility is planned for Year 5.*
This change is notable because generally a concentrate leaching facility presents less environmental risk than a heap leach facility. Per a recent [Arizona Daily Star article](#), Hudbay is seeking federal tax credits to pay up to 30 percent of the facility's construction costs. If they qualify, Hudbay would likely be required to use those

credits within two to three years, potentially pushing construction of the facility earlier than Year 5. While the elimination of the heap leach facility was highlighted in both in the PFS and at the November meeting with Hudbay, the company's application for an aquifer protection permit (APP) still includes the heap leach facility, indicating Hudbay continues to seek approval for it. According to ADEQ, it is typical for proponents to include a broad range of actions in the application to avoid having to seek amendments to the APP if plans change.

- *There is limited capacity for tailings and waste rock on private lands.*
Three Tailing Storage Facilities (TSF) and one Waste Rock Facility (WRF) are planned (Figure 1). However, the PFS notes this storage space is insufficient while operations are limited to private lands, calling it an "important constraint" on Phase I operations.

Figure 1. Mine Plan Site Layout



- *Power demand for operations is estimated at 138 MW.*

TEP's current resource plan for Copper World estimates demand at 105 MW starting in 2031, with lower demand the year prior as operations ramp up. According to Pima County's Energy Manager, any baseline that gets you close in the energy industry can be plus or minus 10-20 percent and still be right, so the difference in projections is not a concern. TEP's existing customer demand is projected to be 2,490 MW by 2031. Projected Copper World power demands equate to an increase of about 4-5 percent in overall TEP power demand wholly attributable to Copper World. It is unclear how TEP will meet this increased demand.

- *Information on reclamation & closure is limited.*

No details are provided on the planned revegetation process, and there are a number of outstanding questions related to the type of maintenance planned, how invasive species will be addressed, and planned monitoring activities post-closure. Groundwater monitoring is mentioned but no details are provided on parameters or methodologies.

- *The PFS estimates tax revenues.*

Hudbay estimates they will contribute approximately \$170 million in state income and severance taxes (average of \$8.5 million per year) and approximately \$250 million in property taxes (average of \$12.5 million per year). Based on the property tax estimate and the tax rates for those levying property taxes in this tax area, approximately \$4.75 million per year, or 38 percent of the total, would be paid to Pima County.

It is worth noting that the estimated tax payments presented in the PFS are over three times the amount presented in a 2011 economic impact study conducted by TREO (now Sun Corridor, Inc.). The most significant variable affecting these estimates is the price of copper. The PFS uses a price of \$3.75/lb for its estimates; in comparison, the 2011 economic impact report assumed a price of \$1.85/lb. The PFS does not consider the reduction in tax revenues from adjacent properties negatively impacted by the mine, which were disclosed in the Rosemont Environmental Impact Statement.

Hudbay expects Phase I of the project to create 430 permanent jobs; however, at the November meeting with County staff Hudbay increased that estimate to 550 jobs. Reasons for this increase are unclear.

- *The PFS includes a list of caveats and assumptions that may impact project feasibility, including copper prices.*

Like the required U.S. Securities and Exchange Commission (SEC) filings, the PFS discloses factors and assumptions that may impact project feasibility. A few of the most significant issues based on past experience with the Rosemont project include: the ability to obtain all required permits within the anticipated timeline, potential impacts from litigation, variable copper prices, additional investment and financing

availability, whether a concentrate leach facility is constructed, community relations, and future economic conditions. The PFS states that the company will not proceed with the development of an actual feasibility study until all required permits have been obtained and additional investment secured.

Permitting Status

On November 1, 2023, County staff and I met with Hudbay to discuss the PFS and the status of the project's various permits, and on December 6, 2023 we met with the ADEQ to discuss two permits in particular: the aquifer protection permit and the air quality permit. The following provides an update on Hudbay's ongoing permitting efforts as well as concerns related to air quality, groundwater quality and quantity, surface water quality, state lands, and County resources.

- *Groundwater Quality (ADEQ Aquifer Protection Permit)*
On January 5, 2024, the ADEQ published a [public notice](#) announcing their intention to issue an aquifer protection permit (APP) for the Copper World Project. [A draft permit and related documentation are now available for public review](#) and public comments will be accepted through February 23, 2024. While the notice states that ADEQ will hold a public hearing if there are enough requests to do so, ADEQ staff told us at the meeting and more recently via email that they will hold a public hearing and announce the location when it is determined. More information on the draft APP will be provided in the next Board update, once there has been an opportunity to review it and prepare comments.

Hudbay's APP was the primary topic of discussion at our December meeting with ADEQ. Among other things, staff expressed concerns that Copper World's groundwater pumping may impact the existing underground sulfate plume in the Green Valley and Sahuarita area. Sulfate is classified as a secondary contaminant and while not toxic it can affect the taste, odor, and color of drinking water. The plume resulted from a 1970s-era tailings pile built without a capture system at what is now the Freeport McMoRan Mine. In 2006 Freeport-McMoRan established a well field to test groundwater, stabilize the plume, and pull sulfate-laden water away from community wells for reuse in mining operations; however, staff is concerned that Copper World's additional groundwater pumping in this area could cause the plume to migrate and potentially impact Green Valley and Sahuarita drinking water.

ADEQ responded that the plume is Freeport McMoRan's responsibility and as such they will not require Hudbay to have compliance wells to measure whether their pumping impacts the plume. The agency expects that Freeport's monitoring wells are sufficient and should there be indications the plume is moving it will be reported to PDEQ and ADEQ. County staff also brought up this issue at the November meeting with Hudbay, and Hudbay believes that groundwater reductions caused by their pumping will be mitigated by future plans to build a CAP pipeline from Pima Mine Road to the recharge area next to the Sahuarita well fields, which would allow for

significant recharge in the affected area. However, there is no estimated timeline for this project, and it is unclear if it would be completed in time to mitigate the potential effects of Hudbay's groundwater pumping.

Pima County staff have informed other governmental agencies and groups of the opportunity to review and comment on the APP, including the City of Tucson and Tucson Water, Town of Sahuarita, Green Valley Coordinating Council, Green Valley Water Coop, and the Pima Association of Governments.

- *Air Quality (ADEQ Air Quality Permit)*

ADEQ expects to share Hudbay's draft air quality permit with the County in January and will meet with us to answer questions and explain the agency's decision-making process. ADEQ will then consult with the Tohono O'odham Nation and other tribal interests before issuing public notice of the draft permit, followed by a 30-day public comment period. During that time ADEQ plans to hold a public hearing. Staff with the Pima County Department of Environmental Quality (PDEQ) has offered ADEQ their assistance with the hearing.

At the December meeting with ADEQ, County staff raised concerns about recent grading activities at the project site, which require a separate air quality permit for fugitive dust control. ADEQ assured us that Hudbay's current grading activities have been properly permitted.

- *Groundwater Quantity (ADWR Groundwater Permit)*

According to the PFS, Hudbay's primary source of water remains groundwater from the upper Santa Cruz basin. They are currently permitted by the Arizona Water Resources Department (ADWR) to withdraw 6,000 acre-feet per year for 20 years, but the PFS notes the amount may change once the engineering studies are finalized. If the amount increases, Hudbay may be required to amend their current permit. Hudbay also holds 42,593 acre-feet of long-term storage credits that can be withdrawn from the aquifer.

Hudbay continues to disagree with our characterization of their proposed groundwater pumping as a share of overall pumping in the Tucson Active Management Area (TAMA). While Hudbay anticipates pumping approximately 5,100 acre-feet per year from the Sahuarita well field, they subtract what they've previously recharged to calculate their net groundwater usage as only 2,509 acre-feet per year, which equates to a 2.1% increase in overall groundwater usage in the TAMA. However, most of Hudbay's previous recharge has occurred downstream in a different watershed in the Marana area, so the 5,100 acre-feet per year being pumped from the Sahuarita area is not being directly offset by that recharge.

- *Surface Water (ADEQ Stormwater Quality permit; RFCD Flood Plain Use Permit)*

As noted in the last update, the Arizona Pollution Discharge Elimination System (AZPDES) permits are five-year general permits for pollutant discharges associated

with construction and mining activities. ADEQ has been issuing AZPDES permits to the mine owners since 2008 and this permit is currently up to date. ADEQ is waiting for the Environmental Protection Agency (EPA) to complete its assessment to determine whether this permit is required for the Copper World project.

Discussions continue between the Regional Flood Control District (RFCD) and Hudbay regarding Hudbay's application for Flood Plain Use Permits for those components of the mine site not statutorily exempt from permitting. Regarding their application for a Flood Plain Use Permit for facilities, RFCD staff continues to provide input on their application materials, review studies related to the mine site, and meet when requested. RFCD also received a Flood Plain Use Permit application for construction of an access road that runs along the west side of the "F" shaped property within a right of way (ROW) granted by Arizona State Land Department (ASLD). This application is attached (Attachment 1). The access will be at-grade so no flood impacts are anticipated. The application is to document and mitigate disturbance to the regulated riparian habitat during road construction via payment of an in-lieu fee. This application was found to be acceptable and the RFCD is working with Hudbay on permit issuance and fee payment.

- *Land (Arizona State Land Department Auctions and Rights-of-Way (ROW))*
Our understanding from Hudbay was that the decision to auction the State Trust land properties they want to purchase was at the Governor's office. The Southern Arizona Office of the Governor's Office recently requested information on the County's Sonoran Desert Conservation Plan and what aspects of the plan are in conflict with the proposed mine, which we provided.

Hudbay stated that they had agreed to deed restrictions on the northern parcel to prohibit development in perpetuity so if the auction does proceed and Hudbay is successful in purchasing the properties, this parcel will likely be used to buffer nearby neighborhoods.

ASLD more recently informed us that since statutes require ASLD to advertise the auction ten weeks prior to an auction date that the timeframe associated with the prior ASLD Board of Appeals (BOA) review cannot be met, and therefore a new BOA review would be necessary prior to proceeding to auction. No BOA meeting has been set for this purpose, and ASLD will notify us if and when this occurs.

In early December, Save the Scenic Santa Ritas sent a letter to ASLD stating that the agency granted a ROW to Hudbay for a tailings slurry pipeline without disclosing its intended use. The slurry pipeline, which will connect the mine site at Helvetia to the "F" shaped property intended for use as a Tailings Storage Facility, was described in the ROW application only as a "utility corridor." FICO filed a lawsuit over this issue in spring 2023. Hudbay has suggested that ASLD redo the public notice for the ROW and disclose the use; however, ASLD has not yet done so.

Public Concerns

Landowners near the mine site have continued to express their concerns to the County, ASLD and ADEQ about potential impacts to water quality resulting from Hudbay's mining activities. Hudbay disputes that any potential contaminants would flow toward these landowners. However, the underground geology of this area is quite complex and the actual potential for impacts to these landowners' water quality is unclear without further information. ADEQ hydrogeologists assured County staff that the required compliance wells will provide information regarding water quality changes upstream of residential properties.

Summary

Staff will continue to monitor the various aspects of this project and the related permitting processes. The next update to the Board will be prepared once staff have fully reviewed the draft aquifer protection permit.

JKL/anc

Attachment

c: Carmine DeBonis Jr., Deputy County Administrator
Francisco Garcia, MD, MPH, Deputy County Administrator & Chief Medical Officer
Steve Holmes, Deputy County Administrator
Scott DiBiase, Director, Pima County Department of Environmental Quality
Linda Mayro, Director, Office of Sustainability and Conservation
Eric Shepp, Director, Regional Flood Control District
Nicole Fyffe, Senior Advisor, County Administrator's Office



December 28, 2023

Mr. Andy Seiger
Civil Engineering Manager
Floodplain Management Division
Pima County Flood Control District
201 N. Stone Avenue
Tucson, Arizona 85701

RE: Copper World Project – Floodplain Use Permit (FUP) Application for ASLD ROW Area

Dear Mr. Seiger:

Copper World, Inc. (Copper World) is submitting this letter and attached documents in support of a floodplain use permit (FUP) application associated with Right of Way (ROW) No. 14-123251 issued to Copper World by the Arizona State Land Department (ASLD). The entirety of this ROW covers 11.09 acres.

Future uses of this ROW will include utilities and an engineered road affecting ephemeral drainages within the ROW. At present, a proposed interim 40-foot-wide access road is proposed that will be constructed as an “at grade crossing” with no cut/fill occurring within the drainage invert (bed), i.e., no effect to the flow pattern within the affected drainages (see Attachment 1). Additionally, no utilities are planned at this time. Another FUP application for structures impacting the drainages will be submitted to the Pima County Flood Control District (PCFCD) at a future date when detailed design plans are solidified. Therefore, no flow or scour calculations were performed (or are provided) with this submittal.

It is anticipated that these future improvements will require the entire ROW area. Therefore, the intent of this FUP application is to cover impacts to riparian habitat affected by the interim access road as well as by future activities within the ROW. All of the area within the ROW will eventually be disturbed; therefore, there is no space within the ROW to perform habitat mitigation. As such, a Regulated Riparian Habitat In-Lieu Fee Mitigation Proposal (Proposal) has been prepared (see Attachment 2).

Based on Pima County mapping, it is estimated that 1.98 acres of Regulated Riparian Habitat (RRH) will be affected by current and future works within the ROW. Attachment 2 proposes an in-lieu fee (ILF) based on current rates. Based on the timing of this application, Copper World is amenable to adjusting the mitigation fee to 2024 rates as appropriate.

Please do not hesitate to contact me at (520) 495-3527 (office), (520) 260-3490 (cell), or via e-mail at david.krizek@hudsonbayminerals.com if you have any questions regarding this correspondence or need additional information regarding this FUP application.

Sincerely,

A handwritten signature in black ink that reads "David Krizek". The signature is written in a cursive, flowing style.

David Krizek, P.E.

Senior Manager, Environmental & Permitting

Attachments:

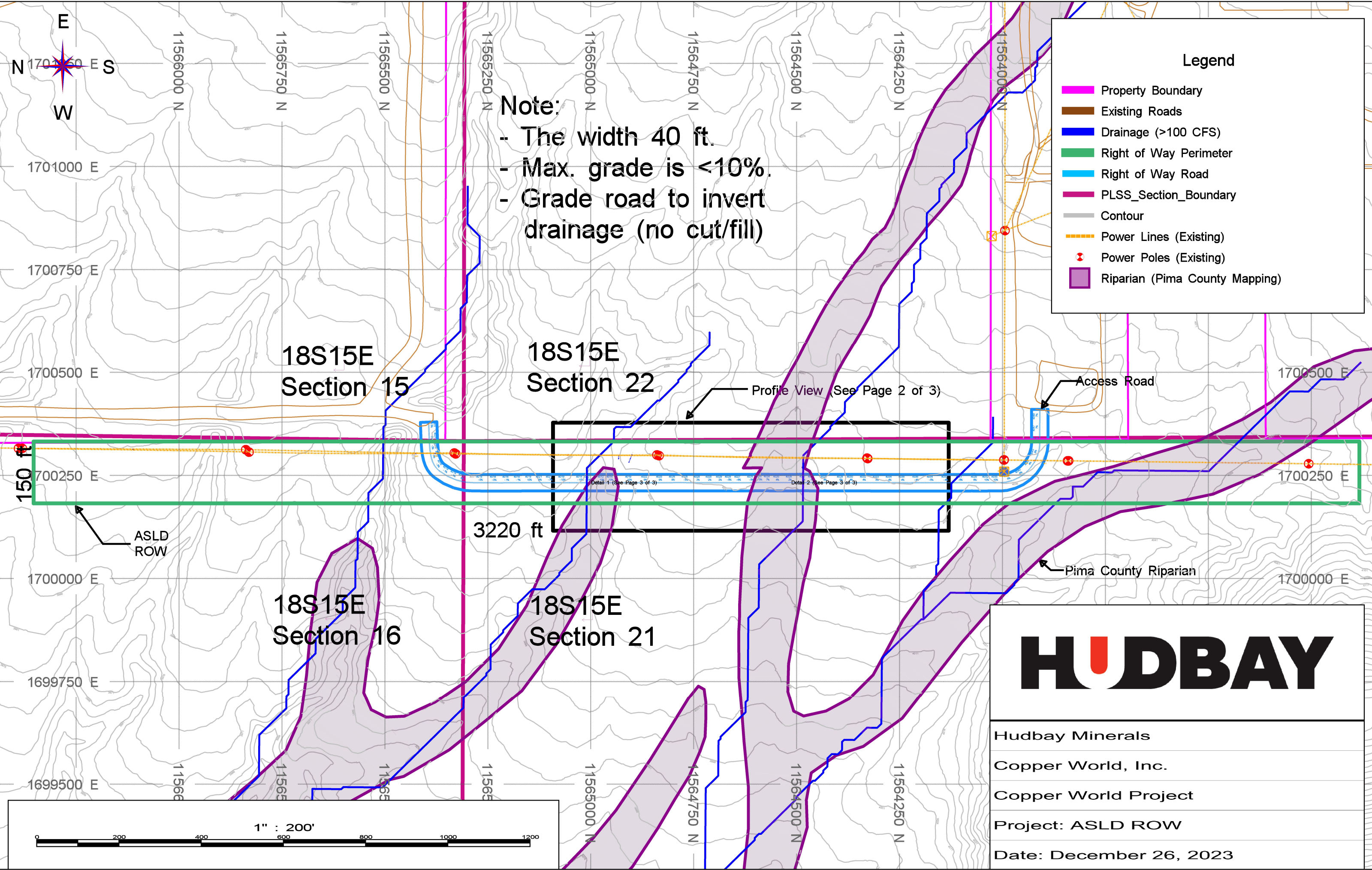
Attachment 1: Interim Access Road within ASLD ROW


Attachment 2: Regulated Riparian Habitat In-Lieu Fee Mitigation Proposal

Doc. No. 065/23-10.4.2

ATTACHMENT 1

Interim Access Road within ASLD ROW





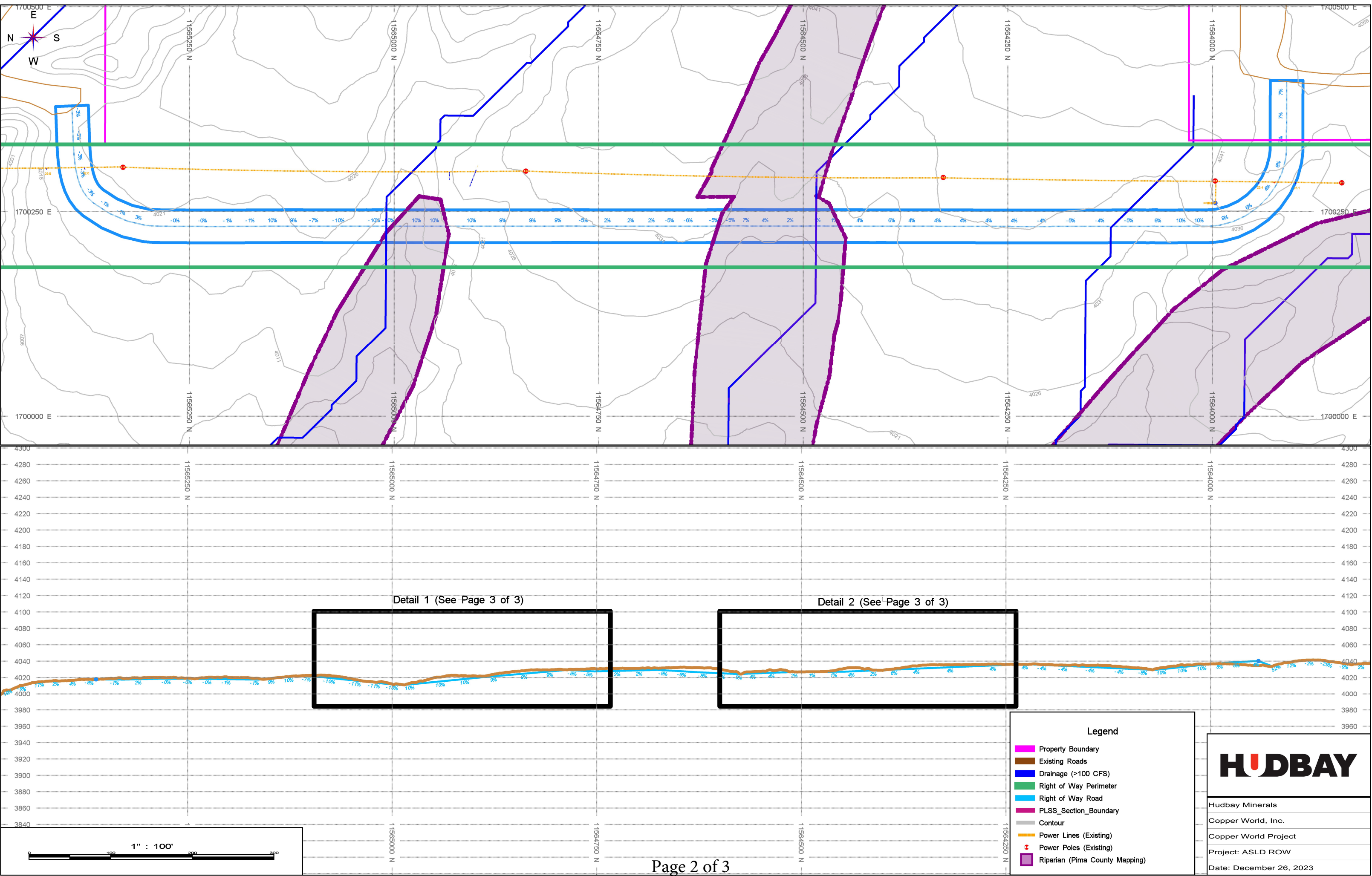
Hudbay Minerals

Copper World, Inc.

Copper World Project

Project: ASLD ROW

Date: December 26, 2023

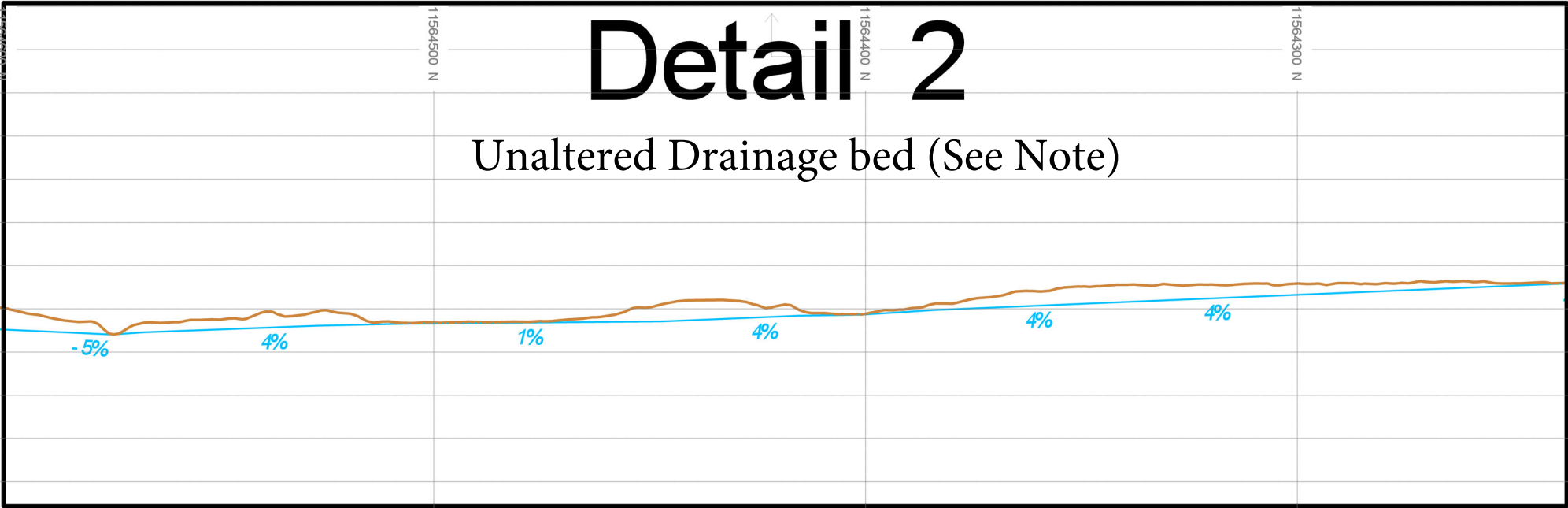
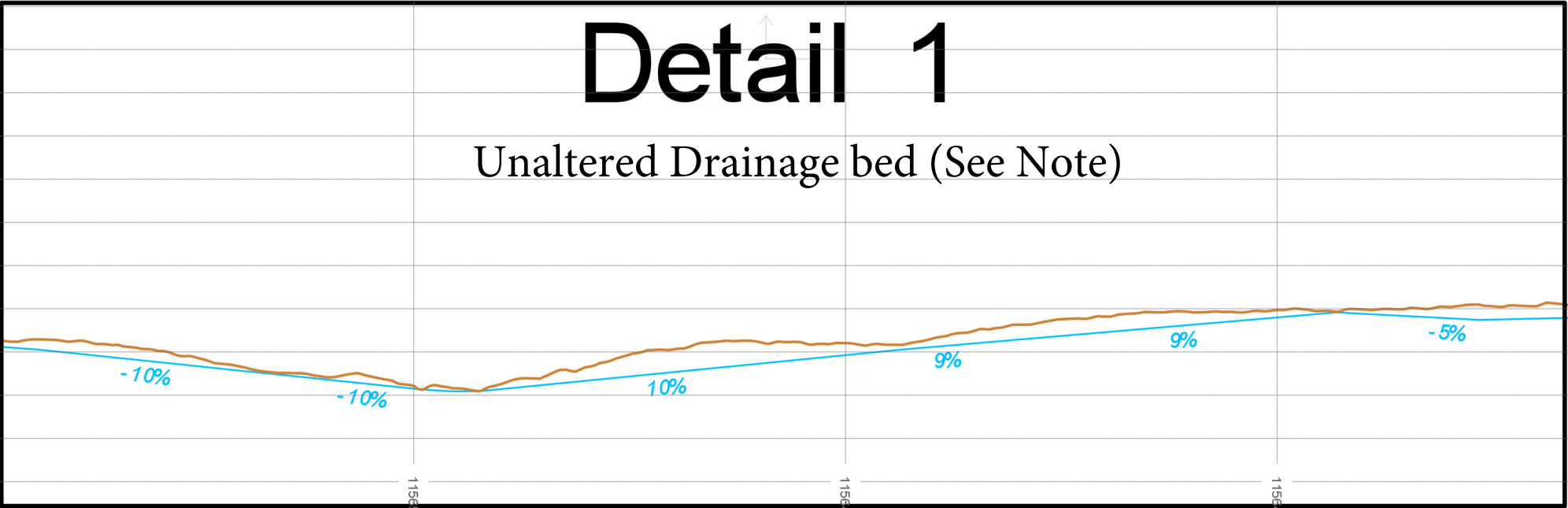


Detail 1 (See Page 3 of 3)

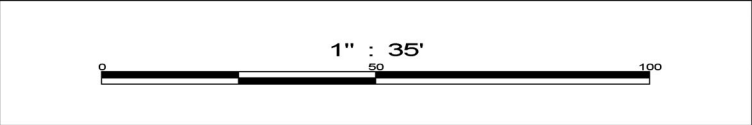
Detail 2 (See Page 3 of 3)

Legend

- Property Boundary
- Existing Roads
- Drainage (>100 CFS)
- Right of Way Perimeter
- Right of Way Road
- PLSS_Section_Boundary
- Contour
- Power Lines (Existing)
- Power Poles (Existing)
- Riparian (Pima County Mapping)



Note: Adjust Road grade as needed during construction to match drainage invert (No cut/fill in channel invert)



Hudbay Minerals

Copper World, Inc.

Copper World Project

Project: ASLD ROW

Date: December 26, 2023

ATTACHMENT 2

Regulated Riparian Habitat In-Lieu Fee Mitigation Proposal

Regulated Riparian Habitat In-Lieu Fee Mitigation Proposal: Arizona State Trust Land Right-of-Way

Prepared for: Hudbay Minerals Inc., Copper World, Inc.

Prepared by: WestLand Engineering & Environmental Services

Date: December 28, 2023

RFCD Project Number: Pending

FPUP Number: Pending

WestLand Project Number: 10389

Project Name: Regulated Riparian Habitat In-Lieu Fee Mitigation Proposal

1. PROJECT BACKGROUND

The proposed Hudbay Minerals Inc., Copper World, Inc. (Copper World) Project is an 11.09-acre Right-of-Way (ROW) located on Arizona State Trust Land in unincorporated Pima County, Arizona (**Figure 1**). The ROW spans Pima County Assessor's Parcel Numbers 305530250 and 305530200. Copper World secured the ROW from the Arizona State Land Department (ASLD) and will use this area to construct an interim access road, future utilities, and other improvements (Project) to service their Copper World Project. The ROW crosses several ephemeral drainages, three of which include designated Regulated Riparian Habitat (RRH; **Figure 2**). Representative ground photographs of habitat within the RRH are provided in **Attachment A**.

2. AVOIDANCE JUSTIFICATION

For the Project's purposes outlined above, there is no reasonably practicable alternative to removal of all vegetation within the 11.09-acre ROW, which was secured from ASLD by Copper World and meets the minimum size required for these activities. Vegetation removal within the ROW includes that which also exists within the designated RRH (**Figure 2**); thus, the entire ROW's impact to all vegetation within it leaves no option for onsite mitigation.

3. PROJECT ILF FEE CALCULATION

In-Lieu Fee (ILF) Mitigation Rates through December 31, 2023, based on RRH categories are provided in **Table 1**.

Table 1. ILF Mitigation Rates per RRH Category through December 31, 2023

Category ¹	Cost Per Acre
XA	\$ 17,000
XB	\$ 16,000
XC	\$ 14,000
XD	\$ 12,000
IRA/H	\$ 40,000
IRA/XA	\$ 30,000
IRA/XB	\$ 28,000
IRA/XC	\$ 25,000
IRA/XD	\$ 22,000

¹ XA through XD = Xeroriparian Class A through D
IRA/H = Important Riparian Area with underlying Class H (Hydroriparian)

A 15-percent increase to these fees was approved effective on January 1, 2024, with an additional 18-percent increase effective on July 1, 2025. Fee increases will occur on July 1 of each year after 2025 by the percentage equal to the increase in the Consumer Price Index using the base year for costs in 2023.

The ROW includes 1.98 acres of Xeroriparian Class C RRH distributed among the three ephemeral drainages shown in **Figures 3a-3c**. No other RRH classifications are present in the ROW. The mitigation ILF was calculated based on disturbance of the 1.98 acres of RRH and 2023 ILF flat rates. The anticipated mitigation ILF for the Project is **\$27,720 (Table 2)**.

Table 2. Estimated Mitigation ILF for Total Loss of ROW RRH

RRH Category	Date	Area within ROW (acres)	Cost per Acre	ILF Cost for Total Loss of RRH
XC	Prior to 1/1/2024	1.98	\$ 14,000	\$ 27,720

Figure 1. Vicinity Map

Figure 2. Aerial Overview

Figure 3a-c. Plan View

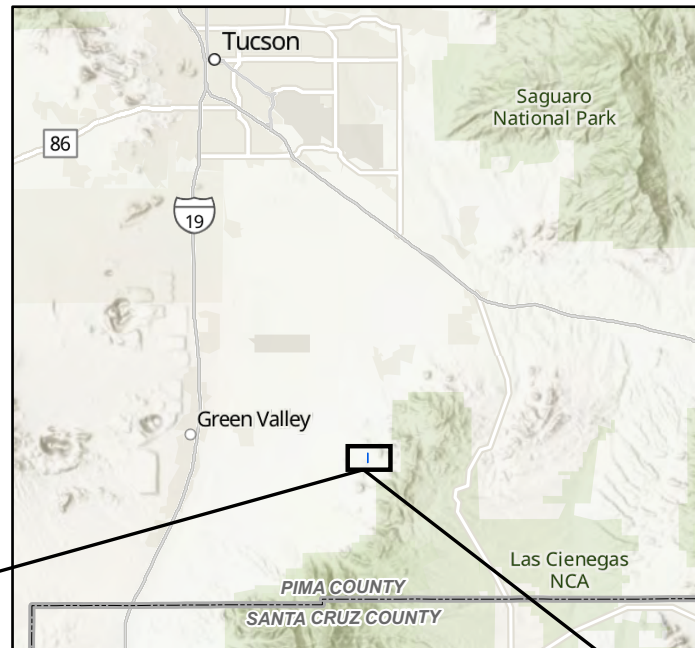
Attachment A. Representative Ground Photographs of ROW Regulated Riparian Habitat

FIGURES

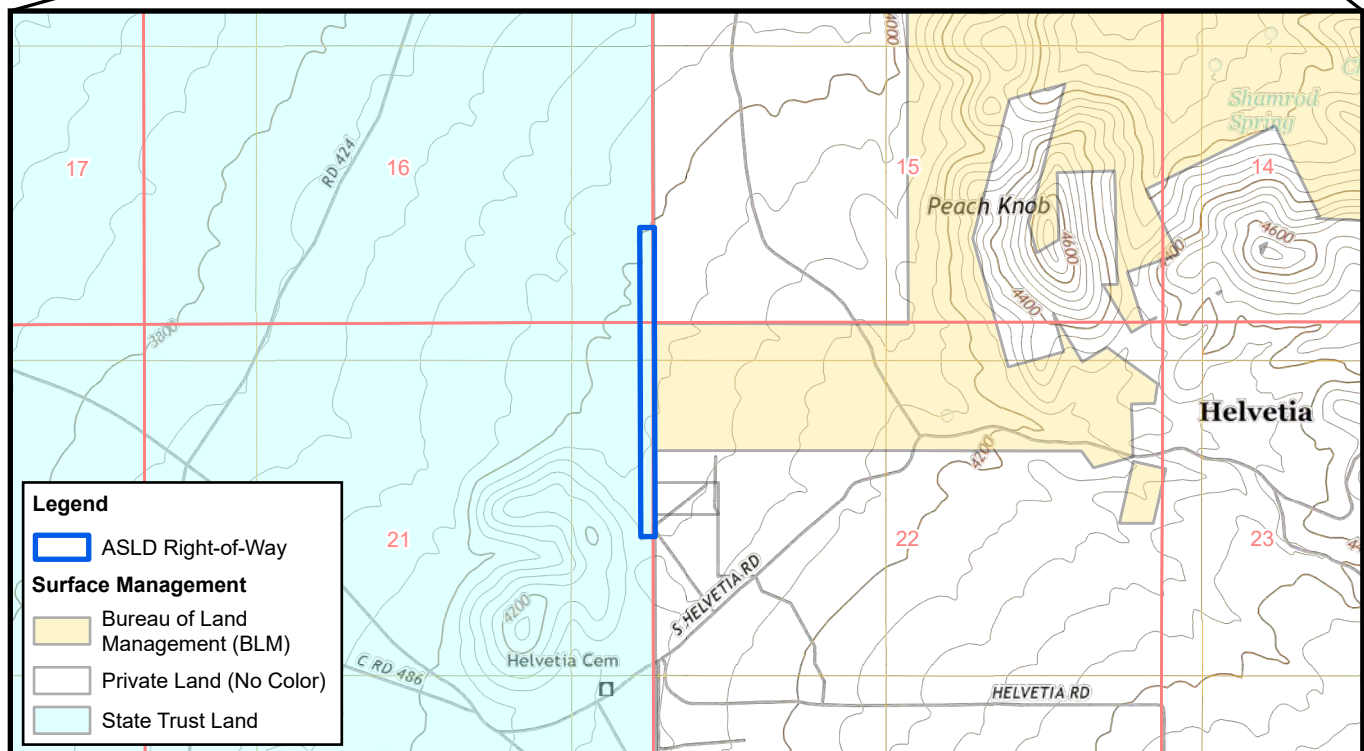
ARIZONA

PROJECT
LOCATION

PROJECT VICINITY



Approximate Scale 1 inch equals 12 miles



T18S, R15E, Portions of Sections 16, and 21,
Pima County, Arizona
Helvetia USGS 7.5' Quadrangle (2018)
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM 2022, WestLand modified 2023
Data Source: Darling Geomatics 11/07/2022
Image Source: ArcGIS Online, World Topographic Map

COPPER WORLD, INC.

ASLD Right-of-Way

FPUP number (Pending)

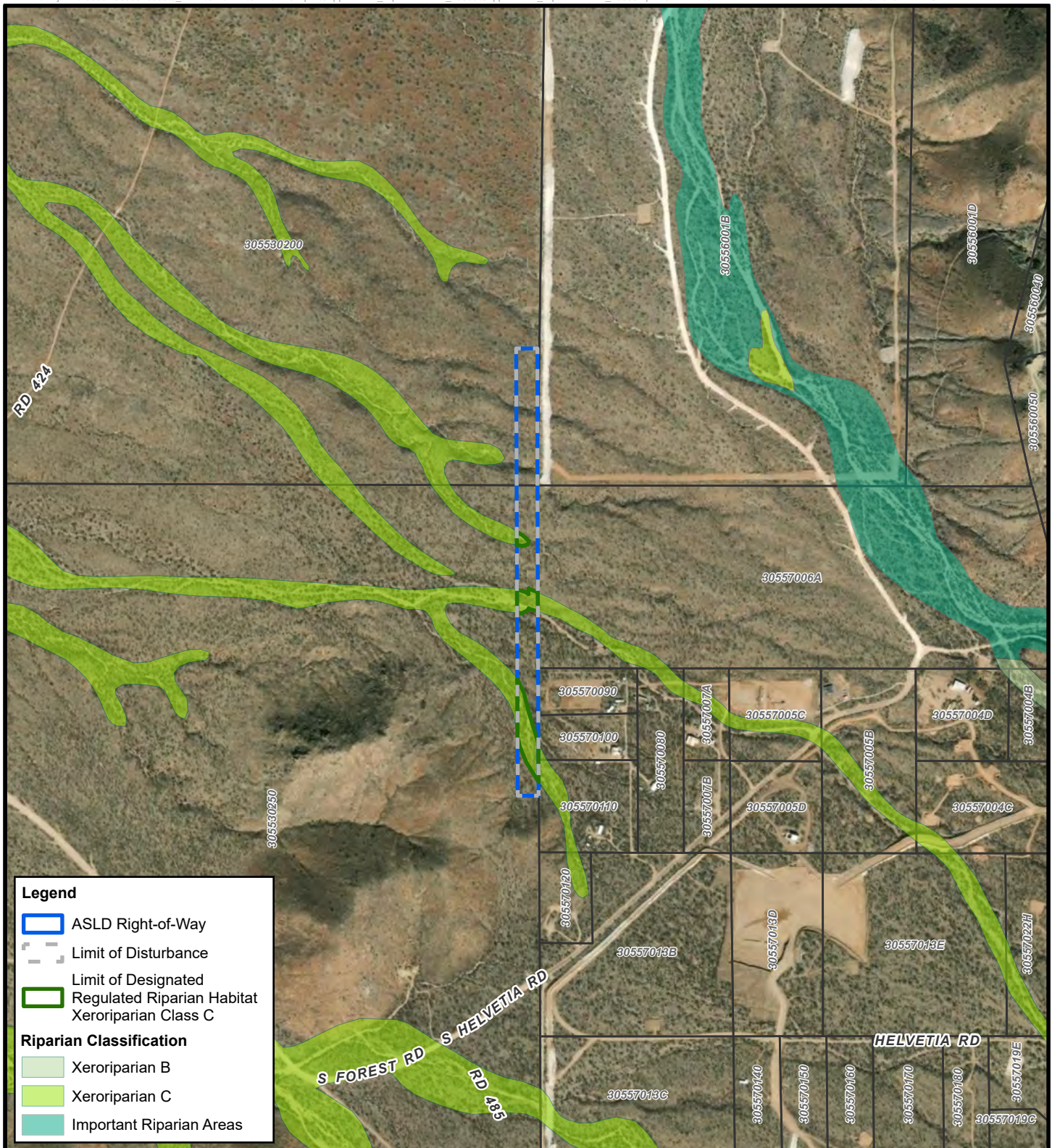
Project number (Pending)

Riparian Habitat Mitigation In-Lieu Fee Proposal

VICINITY MAP

Figure 1

WestLandEngineering &
Environmental
Services0 1,000 2,000
Feet0 300 600
Meters



T18S, R15E, Portions of Sections 16 and 21,
Pima County, Arizona
Projection: NAD 1983 UTM Zone 12N
Data Source: Darling Geomatics 11/07/2022
Riparian Classification and Parcels: Pima County
Image Source: Maxar 02/04/2023

COPPER WORLD, INC.

ASLD Right-of-Way

FPUP number (Pending)

Project number (Pending)

Riparian Habitat Mitigation In-Lieu Fee Proposal

AERIAL OVERVIEW

Figure 2

WestLand

Engineering &
Environmental
Services



0 500 1,000
Feet

0 150 300
Meters



Legend

ASLD Right-of-Way

Riparian Classification

Xeroriparian C

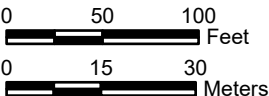
T18S, R15E, a Portion of Section 16,
Pima County, Arizona
Projection: NAD 1983 UTM Zone 12N
Data Source: Darling Geomatics 11/07/2022
Riparian Classification: Pima County 2015
Image Source: Maxar 02/04/2023

COPPER WORLD, INC.
ASLD Right-of-Way
FPUP number (Pending)
Project number (Pending)
Riparian Habitat Mitigation In-Lieu Fee Proposal

PLAN VIEW
Figure 3a




Engineering &
Environmental
Services






Legend



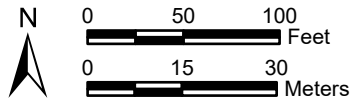
ASLD Right-of-Way

Riparian Classification



Xeroriparian C

T18S, R15E, a Portion of Section 21,
Pima County, Arizona
Projection: NAD 1983 UTM Zone 12N
Data Source: Darling Geomatics 11/07/2022
Riparian Classification: Pima County 2015
Image Source: Maxar 02/04/2023



COPPER WORLD, INC.
ASLD Right-of-Way
FPUP number (Pending)
Project number (Pending)
Riparian Habitat Mitigation In-Lieu Fee Proposal

PLAN VIEW
Figure 3b



Legend

ASLD Right-of-Way

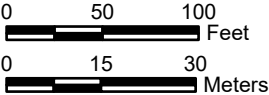
Riparian Classification

Xeroriparian C

T18S, R15E, a Portion of Section 21,
Pima County, Arizona
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Data Source: Darling Geomatics 11/07/2022
Riparian Classification: Pima County 2015
Image Source: Maxar 02/04/2023



Engineering &
Environmental
Services



COPPER WORLD, INC.
ASLD Right-of-Way
FPUP number (Pending)
Project number (Pending)
Riparian Habitat Mitigation In-Lieu Fee Proposal

PLAN VIEW
Figure 3c

ATTACHMENT A
Representative Ground Photographs of ROW
Regulated Riparian Habitat



Photo 1.

The southern-most of three RRH within the right-of-way (ROW).



Photo 2.

The middle RRH within the ROW.



Photo 3.

The south bank of the middle RRH within the ROW.



Photo 4.

The middle of three RRH within the ROW.



Photo 5.

The northern bank of the middle RRH within the ROW.



Photo 6.

The northern RRH within the ROW.



Photo 7.

The northern RRH within the ROW.



Photo 8.

Banks of the northern RRH within the ROW.



Photo 9.

Banks of the northern RRH
within the ROW.