FREEPORT-MCMORAN
Freeport-McMoRan Chino Mines Company
P.O. Box 10
Bayard, NM 88023

April 10, 2025

Certified Mail # 70190140000026681300
Return Receipt Requested

Mr. Kevin Barnes
Energy, Minerals and Natural Resources Department (EMNRD)
Mining and Minerals Division (MMD)
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Barnes:

Re: Minimal Impact Exploration Permit Application Part 3- Chino Main Entrance Project

Please find attached, the Part 3 Minimal Impact Exploration Permit Application, completed by Freeport-McMoRan Chino Mines Company (Chino). All activities associated with this project will take place on Chino property. The project will consist of five drill holes from a total of three drill pads. The total new disturbance will not exceed five acres.

As per prior communication and agreement, the Minerals and Mining Division (MMD) has agreed to Chino issuing the Office of the State Engineer (OSE) permits following the MMD site inspection. Chino will provide forms WR-07 and WD-8 to MMD. Additionally, Chino will conduct a rare plant survey with a third-party consultant and nesting surveys prior to any disturbance.

Please note that the total calculated disturbance does not match the financial assurance calculation. This discrepancy is due to Chino's decision to include a contingency for potential unplanned additional disturbances within the project area.

Enclosed is the minimal impact application fee of $500. If you have any questions or concerns related to this project, please contact me at (575) 694-0013 or Mariana Lafon at (575) 912-5234.

Sincerely,

Tyler R. Johnson, Chief Engineer
Environmental Services

TRJ:ml
Enclosures
20250327-001

PART 3
MINIMAL IMPACT EXPLORATION OPERATION

PERMIT APPLICATION

Accompanying instructions for this permit application are available from MMD, and on MMD webpage:

http://www.emnrd.state.nm.us/MMD/MARP/MARPApplicationandReportingForms.htm

Send 6 copies of the completed application to:

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
Director
Mining and Minerals Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: (505) 476-3400

Webpage: www.emnrd.state.nm.us/MMD/index.htm

CHECK OFF LIST TO DETERMINE YOUR PROJECT'S STATUS AS A MINIMAL IMPACT EXPLORATION OPERATION:

☐ Yes ☑ No My project **will exceed 1000 cubic yards of excavation**, per permit.

☐ Yes ☑ No Surface disturbances for constructed roads, drill pads and mud pits **will exceed 5 acres** total for my project.

☐ Yes ☑ No My project is located in or is expected to have a direct surface impact on wetlands, springs, perennial or intermittent streams, lakes, rivers reservoirs or riparian areas.

☐ Yes ☑ No My project is located in designated critical habitat areas as determined in accordance with the federal Endangered Species Act of 1973 or in areas determined by the Department of Game and Fish likely to result in an adverse impact on an endangered species designated in accordance with the Wildlife Conservation Act, Sections 17-2-37 through 17-2-46 NMSA 1978 or by the State Forestry Division for the Endangered Plants Act, section 75-6-1 NMSA 1978.

☐ Yes ☑ No My project is located in an area designated as Federal Wilderness Area,

Wilderness Study Area, Area of Critical Environmental Concern, or an area within the National Wild and Scenic River System.

☐ Yes ☑ No My project is located in a known cemetery or other burial ground.

☐ Yes ☑ No My project is located in an area with cultural resources listed on either the National Register of Historic Places or the State Register of Cultural Properties.

☐ Yes ☑ No My project will or is expected to have a direct impact on ground water that has a total dissolved solids concentration of less than 10,000 mg/L, except exploratory drilling intersecting ground water may be performed as a minimal impact operation.

☐ Yes ☑ No My project is expected to use or using cyanide, mercury amalgam, heap leaching or dump leaching in its operations.

☐ Yes ☑ No My project is expected to result in point or non-point source surface or subsurface releases of acid or other toxic substances from the permit area.

☐ Yes ☑ No My project requires a variance from any part of the Mining Act Rules as part of the permit application.

If you answer yes to any of the above questions, your project does not qualify as a minimal impact exploration operation.

Confidential Information

☑ Yes ☐ No Is any of the information submitted in this application considered by the applicant to be confidential in nature? If yes, please provide this information separately and marked as “confidential.”

Timeline

- Exploration applications must be provided no less than 45 days prior to the anticipated date of operations desired by the applicant.
- Renewal applications shall be filed at least 30 days preceding expiration of the current permit. Permits are valid for one year.
- Approved permit is valid for one year from the date of approval.

SECTION 1 – OPERATOR INFORMATION (§304.D.1)

Project Name: Chino Main Entrance Project

Nearest Town To Project: Bayard, NM 88023

Applicant Name and Contact Information (entity obligated under the Mining Act):

Name: Freeport Chino Mines Company

Address: Environmental Services

Office Phone: 575-912-5234 Cell Phone: 575-519-9572

Fax Number: Email: mlafon@fmi.com

Name of On-Site Contact, Representative, or Consultant:

Name: Mariana Lafon

Address: Same as above

Office Phone: same as above Cell Phone: same as above

Fax Number: Email:

SECTION 2 – RIGHT TO ENTER INFORMATION (§302.D.1)

A. Describe or attach copies of documents that give the applicant the right to enter the property to conduct the exploration and reclamation, include: lease agreements, access agreements, right of way agreements, surface owner agreements, and claim numbers, if applicable.

Applicant owns the project area.

Attachment Figure 1

B. List the names and addresses of surface and mineral ownership within the proposed permit area. If the mineral is federal mineral, indicate as federal mineral, but provide the name of the claim holder or lease holder.

Surface Estate Owner(s):

Name	Address	Phone #
☐ U.S. BLM		
☐ U.S. Forest Service		
☐ State of NM		
■ Private/Corporate	P.O. Box 10 Bayard, NM 88023	575-912-5234
Name: Freeport Chino Mines Company		
☐ Other		
Name:		

Lease Holder(s) of Surface Estate (if applicable):

Name	Address	Phone #
N/A		

Mineral Estate Owner(s):

Name	Address	Phone #
☐ Bureau of Land Management		
☐ US Forest Service		
☐ State of NM		
■ Claim/Lease Holder	P.O. Box 10 Bayard, NM 88023	575-912-5234
Name: Freeport Chino Mines Company		
Claim Numbers:		
☐ Claim/Lease Holder		
Name:		
Claim Numbers:		
☐ Other		
Name:		

C. Has a Cultural Resource Survey been performed on the site? ■ Yes ☐ No

If yes, please provide the author, title, date and report number, and include a copy of the survey with this application, if possible:

Chino contracted Westland Resources to conduct a Class lll cultural resource survey of the project area. The report will be submitted as a separate document from this application. Cultural resources information is to be used only in compliance with applicable state and federal laws and regulations including but not limited to the New Mexico Cultural Properties Act of 1978 (NMSA 1978, §§18-6-1 to 18-6-171) and the Archaeological Resources Protection Act of 1979 (16 U.S.C. §470aa, et seq.). Additional applicable United States laws include but may not be limited to Section 304 (54 U.S.C. §307103) of the National Historic Preservation Act of 1966. Please ensure this information remains confidential and is not posted in a location accessible by the public.

Attachment N/A

D. Has a wildlife survey or vegetation survey been performed for the permit area?

■ Yes ☐ No If yes, please provide the author, title, date and report number, and include a copy of the survey with this application, if possible:

Chino contracted Westland Resources to conduct a Biological Evaluation of the project area. A copy of the report is attached to this application: Chino Mines Company Exploratory Drilling Biological Evaluation, WestLand Engineering and Environmental Services, March 26, 2025. A rare plant survey is scheduled to take place prior to drilling activities.

Attachment A

SECTION 3 – MAPS AND PROJECT LOCATION (§302.D.2)

A. Project Location:

Township 17S Range 12W Section 32

Township _____ Range _____ Section _____

Township _____ Range _____ Section _____

List the drill hole/exploration name and the GPS coordinates for each site.

I.D. Number	Northing / Latitude	Easting / Longitude
MG_Leach_25_007: 32° 46' 55.0486" N 108° 06' 20.1259" W		
MG_Leach_25_002: 32° 46' 55.0532" N 108° 06' 20.1264" W		
MG25-003: 32° 46' 58.4572" N 108° 06' 17.9133" W		
MG_Leach_25_003: 32° 47' 02.6918" N 108° 06' 19.5656" W		
MG_Leach_25_001: 32° 47' 02.6918" N 108° 06' 19.5656" W		

I.D. Number	Northing / Latitude	Easting / Longitude

Coordinate system used to collect GPS data points:

- ☐ NAD83 Geographic
- ☐ NAD83 UTM Zone 13 (or 12)
- ☒ WGS 1984
- ☐ NAD27 Geographic
- ☐ NAD27 UTM Zone 13 (or 12)
- ☐ Other: _____

Attachment N/A (for listing additional boreholes)

B. Maps (see application form instructions for examples of maps to be included):

Are topographic maps included with the application that show the following items:

■ Yes – The boundary of the proposed exploration project Permit Area

■ Yes – The proposed exploration locations (i.e., borehole locations)

■ Yes – Existing roads, new roads and overland travel routes

☐ Yes ■ N/A – Areas of proposed road improvement

Attachments Figure 2

Are maps or figures included with the application showing the approximate dimensions and locations of drill pads and other disturbances:

■ Yes – Drill pad dimensions and constructed drill pad locations

Attachments Figure 2

C. Provide detailed driving directions to access the site:

From the town of Bayard, NM, drive north on Hwy 356 and turn right (east) onto Santa Rita Mine road.

For the drill pad on the north side of Santa Rita Mine road:
- Turn north onto the Hanover Dam 20 road through the yellow metal gates.
-Then turn west on to the road built for the pad.

For drill pads on the South side of Santa Rita Mine road:
-Access through the metal gate on the southwest side of the road, 1/4 mile before the Chino Mine main gate.
-Use the newly constructed roads on the other side of the gate.

For access to these locations, please contact Freeport McMoRan Chino Mines.

SECTION 4 – EXPLORATION DESCRIPTION (§302.D.3 & 4)

A. Anticipated exploration: Start Date: 8/1/2025 End Date: 10/1/2025

B. List the mineral(s)/element(s) to be explored for: Copper, Molybdenum, Gold, Lead, Zin

C. Proposed method(s) of exploration:

☒ **Air drilling (air rotary, coring, etc.):**

5 # of holes see Table 1 Depth (ft.) 3.5 Diameter (in.)

3 # of drill pads 100 Length (ft.) 100 Width (ft.)

Will drill pads be graded/bladed or overland: ☒ Graded/bladed ☐ Overland

Will drill pads need some mechanical leveling (grading/blading): ☒ Yes ☐ No

Approx. Weight of Drill Rig (lbs.) 18,500 Number of Axles: 2

Total length of drill stem that can be carried on the rig: 10 feet

Is a support pipe truck anticipated? ☒ Yes ☐ No 33,000 Weight (lbs.)

Weight of support compressor (lbs.): N/A Trailer mounted? No

Anticipated Drilling Contractor: Layne Christensen License No. WD-1854

☒ **Mud/fluid drilling:**

5 # of holes See Table 1 Depth (ft.) 5.5 Diameter (in.)

3 # of drill pads 100 Length (ft.) 100 Width (ft.)

Will drill pads be graded/bladed or overland: ☒ Graded/bladed ☐ Overland

Will drill pads need some mechanical leveling (grading/blading): ☒ Yes ☐ No

Will a closed loop system be used or will mud/fluid pits be used? Pits will be used

Please note that the target depth from Table 1 differs from Table 2.
The cumulative depth of the four deepest holes that may be drilled simultaneously is 10,000 ft.

If mud/fluid pits are proposed:

5 # of pits 10 Length (ft.) 100 Width (ft.) 8 Depth (ft.)

Anticipated excavating equipment: Backhoe/Trackhoe

How will excavating equipment be transported to the site (i.e., driven, low-boy, etc.):

Driven

Will mud pits be lined?: ☒ Yes ☐ No

If yes, proposed material to line the mud pits: Visqueen lining

Approx. Weight of Drill Rig (lbs.) 18,500 Number of Axles: 2

Anticipated Drilling Contractor: Layne Christensen License No. WD-1854

☐ **Test pits / exploratory trenches:**

_____ # of pits _____ Length (ft.) 100 Width (ft.) _____ Depth (ft.)

Anticipated excavating equipment: Not applicable

How will excavating equipment be transported to the site (i.e., driven, low-boy, etc.):
N/A

☐ **Other methods of exploration** (i.e., cuts, shafts, tunnels, adits, declines, blasting, etc.). Indicate method and details:

N/A

TOTAL ACREAGE TO BE DISTURBED DUE TO DRILL PADS = 0.69 **acres**
(to convert to acres, multiply total square footage of drill pads by 0.0000229)

D. Disposal of drill cuttings

If this exploration project is for uranium or other radioactive elements/minerals, applicant agrees to perform a gamma radiation survey at each drill site prior to, and after, exploration activities. Applicant/Owner/Operator agrees to restore gamma radiation levels at each drill site to pre-exploration levels. ☐ Yes ☐ No ■ N/A

Will excess drill cuttings be buried at each drill site location or within a single disposal pit?
■ At each drill pad location ☐ Within a single disposal pit

If a single disposal pit is proposed, please provide the following:

Description or GPS coordinates of the proposed cuttings disposal pit location:

Dimensions of the single proposed cuttings disposal pit (length, width, and depth):

_____Length (ft.) _____Width (ft.) _____Depth (ft.)

TOTAL ACREAGE TO BE DISTURBED DUE TO DISPOSAL PIT = 0 **acres**
(to convert to acres, multiply total square footage of disposal pit by 0.0000229)

E. Other Supporting Equipment (check all that apply):

■	4x4 Trucks/Vehicles	Quantity:	6
■	Water Truck	Weight (lbs.):	46,000
■	Geophysical Truck	Weight (lbs.):	9,900
■	Pipe Truck (rig support)	Weight (lbs.):	35,000
■	Bulldozer	Type:	D-8
■	Backhoe	Type:	345/390
☐	Trackhoe	Type:	
■	Scaper/Grader	Type:	H-14
■	Trailers	Quantity/Type:	1 flatbed utility
■	Portable Toilet	Quantity:	1
☐	Other	List:	

F. Roads and Overland Travel:

List of new roads to be constructed for this exploration project:

Description of *NEW* Roads	Length (ft.)	Width (ft.)	Total Acres (length x width x 0.0000229)
Road segment to MG_Leach_25_007 & _002	300	15	0.103
Road segment to MG25-003	450	15	0.154
Road segment to MG_Leach_25_001 & _003	450	15	0.154
TOTAL ACRES DISTURBED BY NEW ROAD CONSTRUCTION :			0.411

Describe how new roads will be constructed:
Roads will be pushed in using a dozer.

List for extension or widening of existing roads:

Description of Modification to *EXISTING* Roads	Length (ft.)	Width (ft.)	Total Acres (length x width x 0.0000229)
N/A			
TOTAL ACRES DISTURBED BY ROAD IMPROVEMENTS :			0

Describe how existing roads will be extended or widened:
N/A

List for routes of overland travel:

Description of *OVERLAND TRAVEL* Routes	Length (ft.)	Width (ft.)	Total Acres (length x width x 0.0000229)
N/A			
TOTAL ACRES DISTURBED BY OVERLAND TRAVEL :			0

G. Support Facilities

Describe (location and size) any support facility disturbances (equipment staging, equipment and material storage and/or lay down areas, vehicle parking, temporary housing and/or trailers) to be created or situated on the site during exploration operations.

Equipment will be staged at existing laydown yards within Chino Mine Operations. No additional disturbance for support facilities/equipment.

H. **TOTAL ACREAGE TO BE DISTURBED BY PROJECT =** 1.101 **acres**
(include all disturbed acreage from drill pads, cuttings disposal pit, new roads, improved roads and overland travel routes)

Please note that the total calculated disturbance in the application form (1.101 acres) is different from Table 2 (5 acres). This variance is to accommodate any unexpected disturbances that might occur during exploration activities.

SECTION 5 – CHEMICAL USE (§302.D.4)

A. Check any and all chemicals that will be used for this project.

☑	Drilling Mud (i.e., EZ Mud)	Type/Quantity:	EZ Mud Plus (5-20 gallons)
☑	Diesel Fuel	Quantity:	2,000 gallons
☑	Down-hole Lubricants	Type/Quantity:	Marok 150 (Phillips 66)-15 gal.
☑	Lost Circulation Materials	Type/Quantity:	N-Seal (Baroid) 25, 20 lb sacks
☑	Oils/Grease	Quantity:	Chevron DELO (25 gal.)
☑	Gasoline	Quantity:	15 gal.
☑	Hydraulic Fluid	Quantity:	20 gal.
☐	Ethylene Glycol	Quantity:	N/A
☑	Cement	Type/Quantity:	Portland Type II - 1190 sacks
☑	Water (freshwater)	Source:	FMI Chino Mines
☑	Bentonite	Quantity:	40, 50 lb sacks
☐	Fertilizer	Type/Quantity:	
☐	Other	Type/Quantity:	

B. Describe, in detail, a plan for the containment, use and disposal of all chemicals listed above:

All chemicals and petroleum products will be stored in secondary containment area and will be used according to its Safety Data Sheets (SDS). All waste shall be managed on site at the direction of the Environmental Department at FMI Chino Mines.

C. Describe where equipment fueling/refueling will occur:

Equipment fueling/refueling will occur within the bermed area of the drill site/on site via pickup with fuel tank.

D. Describe how hazardous material spills/leaks will be handled:

Drillers will utilize best spill containment practices and maintain equipment in condition that does not present environmental releases. Spill containment kits will be readily available and inspected regularly to ensure that it is in working order and containing all necessary material. In the event of a spill/leak, it will be immediately reported, cleaned up, and the contaminated materials/soil will be treated and monitored by Chino mine waste management facilities until final disposal.

E. Identify spill cleanup materials that will be kept on-site (check all that apply):

- ☒ Bentonite clay or cat litter
- ☒ Adsorbent pads, rolls, mats, socks, pillows, dikes, etc.
- ☒ Drum or barrel for containing contaminated soil/adsorbent materials
- ☐ Other/list: _____
- ☐ Other/list: _____
- ☐ Other/list: _____

F. Applicant/owner/representative agrees to immediately notify the State of New Mexico immediately of any spills of hazardous materials (see page 1 of this application for phone numbers to notify): ☒ Yes ☐ No

SECTION 6 – GROUNDWATER/SURFACE WATER INFORMATION (§302.D.5)

A. Provide an estimate of depth to ground water and the total dissolved solids (TDS) concentration.

Depth to groundwater (ft.): 205 TDS concentration (mg/L): 829

Describe the source of this information:

Groundwater quality monitoring data collected by Freeport McMoRan Chino Mines Company.

B. Will dewatering activities be conducted: ☐ Yes ☒ No

If yes, please describe:

C. Is groundwater anticipated to be encountered during exploration: ☒ Yes ☐ No

If YES:

Have you completed Form WR-07 (Application for permit to drill a well with no consumptive use of water) and mailed it to the District Office of the State Engineer? ☐ Yes No ■

Have you completed Form WD-08 (Well plugging plan of operations) and mailed it to the District Office of the State Engineer? ☐ Yes No ■ See Cover letter for additional information.

Attachment N/A (copies of the completed WR-07 and WD-08 forms

D. Exploration Borehole Abandonment

Dry Boreholes

☐ Dry hole abandonment (option 1): 100% bentonite pellets/chips (i.e. HOLEPLUG® manufactured by Baroid Industrial Products), dropped from surface then hydrated in place according to the manufacturer's recommendations, emplaced from total depth to within 12 feet of the original ground surface, followed by 10 feet of neat cement followed by 2 feet of topsoil/topdressing.

■ Dry hole abandonment (option 2): Neat cement slurry, mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 2 feet of the original ground surface, followed by 2 feet of topsoil/topdressing.

☐ Dry hole abandonment (option 3): Cement + 6% bentonite slurry, mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 2 feet of the original ground surface, followed by 2 feet of topsoil/topdressing.

☐ Dry hole abandonment (option 4): High-density bentonite clay (≥ 20% active solids; i.e. QUIK-GROUT® manufactured by Baroid Industrial Products), mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 12 feet of the original ground surface, followed by 10 feet of neat cement, followed by 2 feet of topsoil/topdressing.

☐ Dry hole abandonment (option 5): Other materials / describe and justify use:

Wet Boreholes

■ Wet hole abandonment (option 1): Neat cement slurry, mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 2 feet of the original ground surface, followed by 2 feet of topsoil/topdressing.

☐ Wet hole abandonment (option 2): High-density bentonite clay (≥ 20% active solids; i.e. QUIK-GROUT® manufactured by Baroid Industrial Products), mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 12 feet of the original ground surface, followed by 10 feet of neat cement, followed by 2 feet of topsoil/topdressing.

☐ Wet hole abandonment (option 3): Other sealing material approved by the Office of the State Engineer. Describe and include well plugging plan approval by the State Engineer:

D. Applicant agrees to contain any water produced from the exploration borehole at the drill site and acknowledges that discharge of this water to a watercourse may be a violation of the Federal Clean Water Act: ■ Yes ☐ No

E. Is any drilling proposed to occur within the channel of any perennial, intermittent, or ephemeral streams? ☐ Yes ☒ No

F. Is any drilling anticipated to occur within 100 feet of any perennial, intermittent, or ephemeral streams? ☐ Yes ☒ No

SECTION 7 – RECLAMATION & OPERATION PLAN (§302.D.6 AND 302.I.K)

A. Salvage/Preservation of Topsoil

Before any grading/blading or similar activities occur in relation to this project, operator agrees to salvage and preserve all topsoil and topdressing for use in future reclamation of this project ☒ Yes ☐ No

Describe how topsoil will be salvaged prior to initiation of exploration activities (check all that apply):

☐ N/A – no construction work will occur, therefore no soil salvage is needed.
☒ Excavated from drill pads and stored at each drill pad
☒ Excavated from road improvements/construction and stored adjacent to road
☒ Excavated from mud/fluid pits and storage at each pit
☐ Other, describe:

B. Erosion Control

Describe the best management practices that will be implemented to control erosion:

☒	Silt fencing	Location:	To be determined in the field
☒	Straw waddles	Location:	To be determined in the field
☒	Straw bales	Location:	To be determined in the field
☒	Ditches/swales	Location:	To be determined in the field
☒	Berms/dikes/dams	Location:	To be determined in the field
☒	Sediment basins	Location:	To be determined in the field
☐	Other or N/A	Type/Location:	

C. Wildlife Protection / Noxious Weed Prevention

Will the perimeter of drill pits be fenced to prevent wildlife entrapment? ☒ Yes ☐ No

Proposed pit perimeter fence material:

5 ft metal panel at all times over mud pits. Pit will be backfilled after completion of project.

Describe how the pit perimeter fencing will be installed and secured (i.e., T-posts, wooden stakes, etc.):

Metal panes stand upright by design and stakes will be used to secure tarps.

Will at least one side of the interior of the drill pits be sloped at 3:1 as a ramp for wildlife escape? ☒ Yes ☐ No

If No, will another type of constructed escape ramp be installed? Describe:

Applicant/Owner/Operator commits to pressure-washing or steam-clean all equipment prior to entering the permit area: ☒ Yes ☐ No

D. Reclamation Details

Describe in general how re-contouring or re-establishment of the surface topography will be restored:

Backfill pits, regrade and rip if needed. Roads will be regraded and ripped to prevent erosion. All sites will be reseeded.

Describe how the reclamation of portals, adits, drilling fluid/mud and/or waste pits, shafts, ponds, roads and other disturbances will be performed:

NA

Is seeding of the reclaimed areas proposed: ☒ Yes ☐ No

If no, provide a justification as to why no revegetation is needed:

Plant mix to be used in the re-establishment of vegetation:

☐ US Forest Service specified mix applied through broadcast at their recommended rate
☐ BLM specified mix applied through broadcast at their recommended rate
☒ Other:

Plant Name	Seeding Rate (lbs./acre)
Blue Grama	1.5
Side-oats Grama	2
Plains Lovegrass	0.5
Purple Prairie Clover	2
Buffalo Grass	1

Broadcast applied or drill-seeded: ☒ Broadcast ☒ Drill-seeded

Scarification Methods (check all that apply):

☐ Primary tillage to greater than 6-inches depth of all constructed drill pads and roads
☐ Secondary tillage of all constructed drill pads and roads, and/or overland travel routes
☒ Chain drag or tire drag over seeds in areas used for overland travel
☐ Light raking of soil over seeds in areas used for overland travel
☐ None
☒ Other/describe:

Rip with blade prior to seeding.

Mulch Use:

☐ Certified weed-free straw mulch will be placed over areas that have been tilled/disced or ripped at a rate of 2 tons per acre, and will be crimped in place
☒ No mulch is proposed

E. Reclamation Timeline

Applicant/Owner/Operator commits to reclamation of the disturbed area as soon as possible following the completion or abandonment of the exploration operation, unless the disturbed area is included within a complete permit application for a new mining permit:

☒ Yes ☐ No

Anticipated Start of Reclamation:

☐ 0-30 days after completion of drilling
☐ 31-60 days after completion of drilling
☒ Other/specify: Chino will inform MMD of the reclamation schedule, based on the timing of monsoon season.

SECTION 8 – PERMIT FEES AND FINANCIAL ASSURANCE (§302.I.2 AND 5)

A. Financial assurance must be posted with Mining and Minerals Division prior to approval of this application. The acceptable forms of financial assurance are surety bonds, letters of credit, and certificates of deposit. Provide an estimate of, and an instrument for, the proposed financial assurance required by Subpart 3.

☒ Surety Bond
☐ Letter of Credit
☐ Cash Account / Certificate of Deposit

☒ Estimated amount of financial assurance: See Table 2

Or

☐ Applicant will provide the amount of financial assurance calculated by MMD.

B. Attach the permit fees as determined pursuant to Subpart 2. The application fee for a minimal impact exploration permit is $500.00.

☐ Money Order/Cashier's Check
☒ Check

Check Number : 0001053890

Financial Institution: Bank of America

SECTION 9 – CERTIFICATION REQUIREMENT (§302.I.3 & 4)

I certify that I have personally examined and am familiar with the information submitted herein, and based on my inquiry of those individuals responsible for obtaining the information; I believe the submitted information is true, accurate, and complete. I agree to comply with the reclamation requirements set forth in this permit application and related correspondence, the New Mexico Mining Act and the Rules. Further, I certify that I am not in violation of any other obligation under the New Mexico Mining Act or the Rules adopted pursuant to that Act and I allow the Director to enter the permit area, without delay, for the purposes of conducting inspections during exploration and reclamation.

Signature of Permittee or Authorized Agent: _____

Name (type or print): Mariana Lafon

Title/Position: Environmental Scientist II

Date: April 10, 2025

Figures

Chino Main Entrance Project – Property Ownership

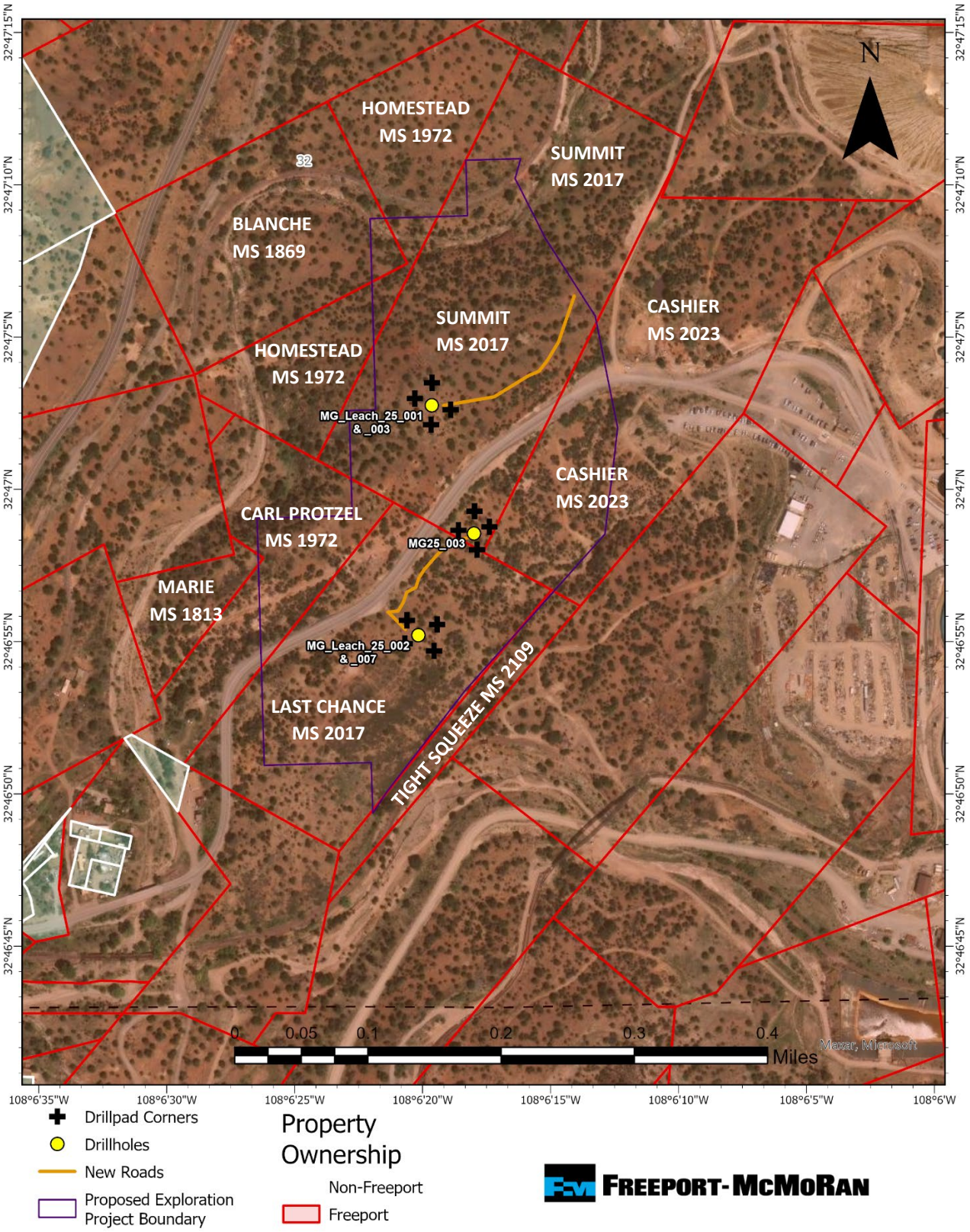
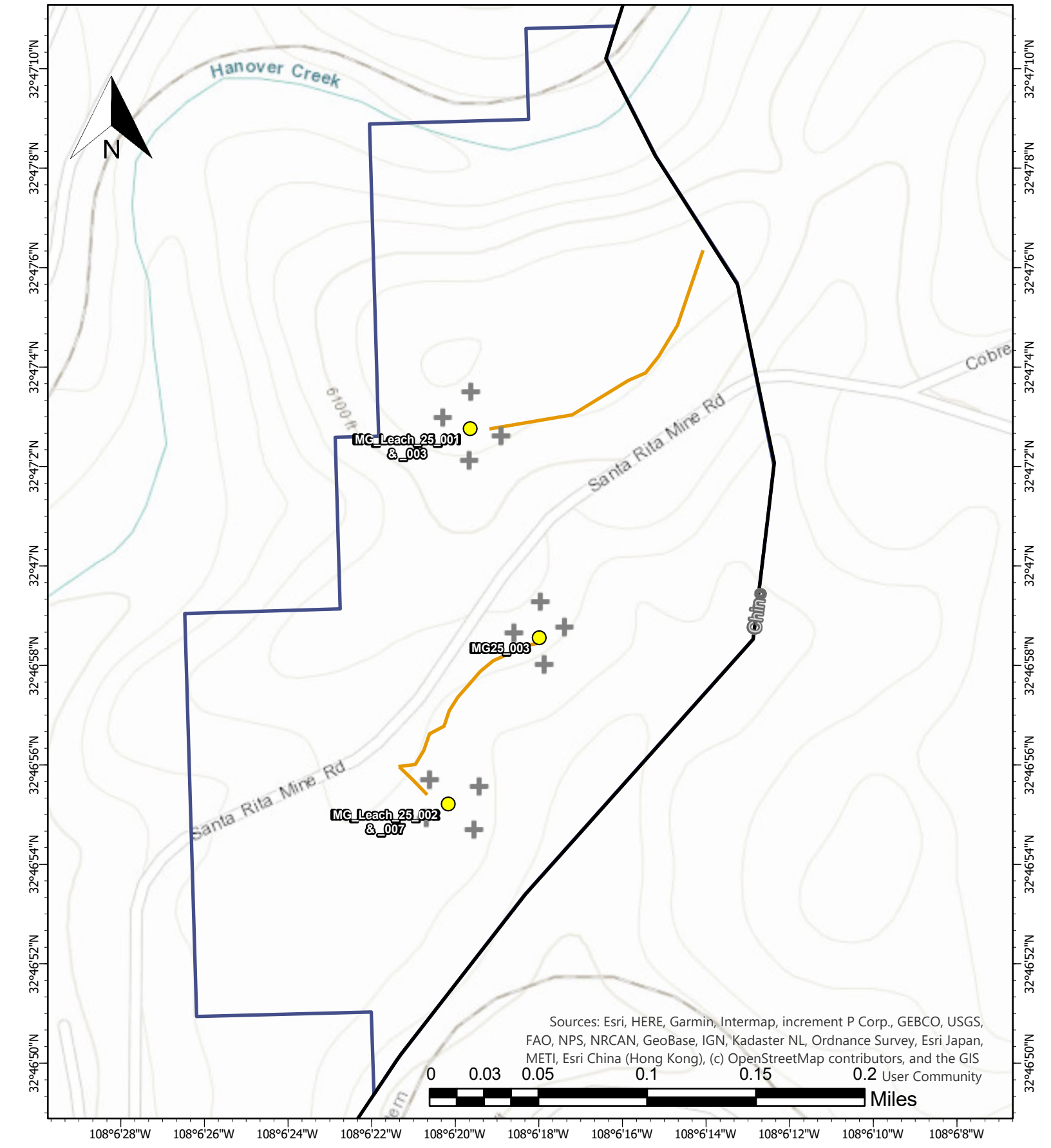


Figure 1

Proposed Exploration Drilling – Chino Main Entrance Project

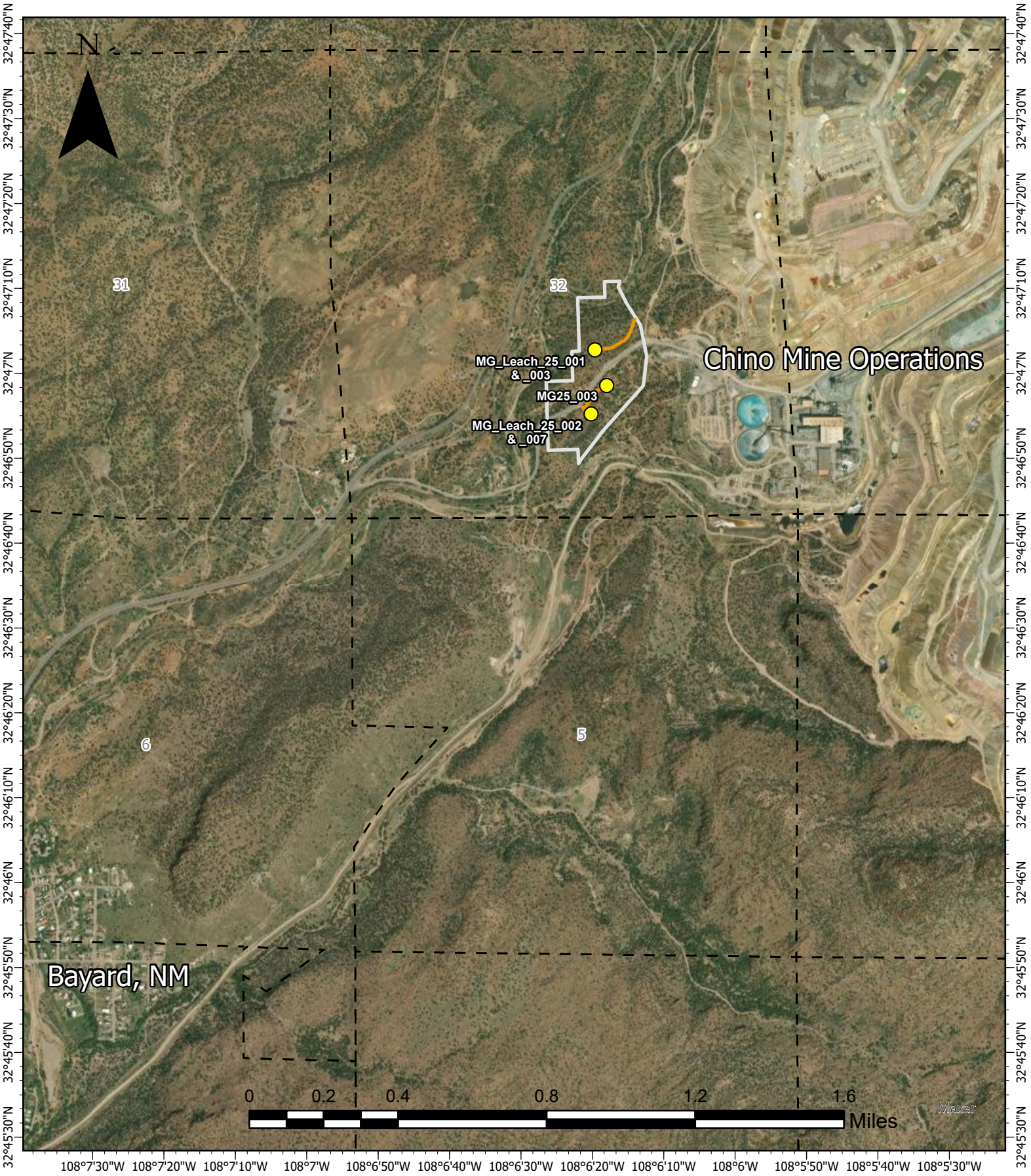


Drillpad Corners
Drillholes
New Roads
Proposed Exploration Project Boundary
MMD Chino Permit Boundary

FREEPORT-McMoRan

Figure 2

Proposed Exploration Drilling - Chino Main Entrance Project



Drillholes

New Roads

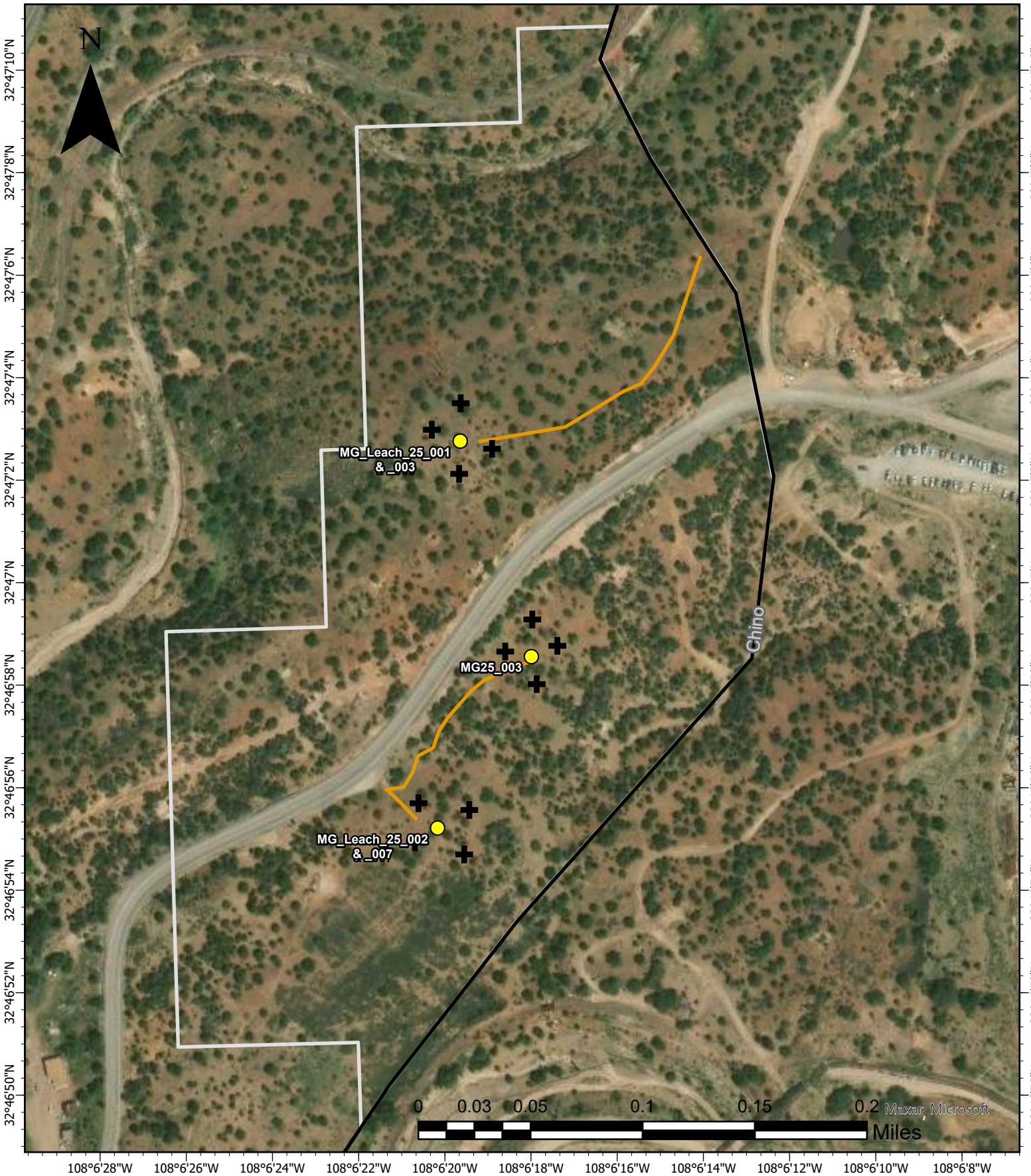
Proposed Exploration Project Boundary

FREEPORT-McMoRan

Figure 2.1

Supplemental Figures

Proposed Exploration Drilling - Chino Main Entrance Project



Drillpad Corners

Drillholes

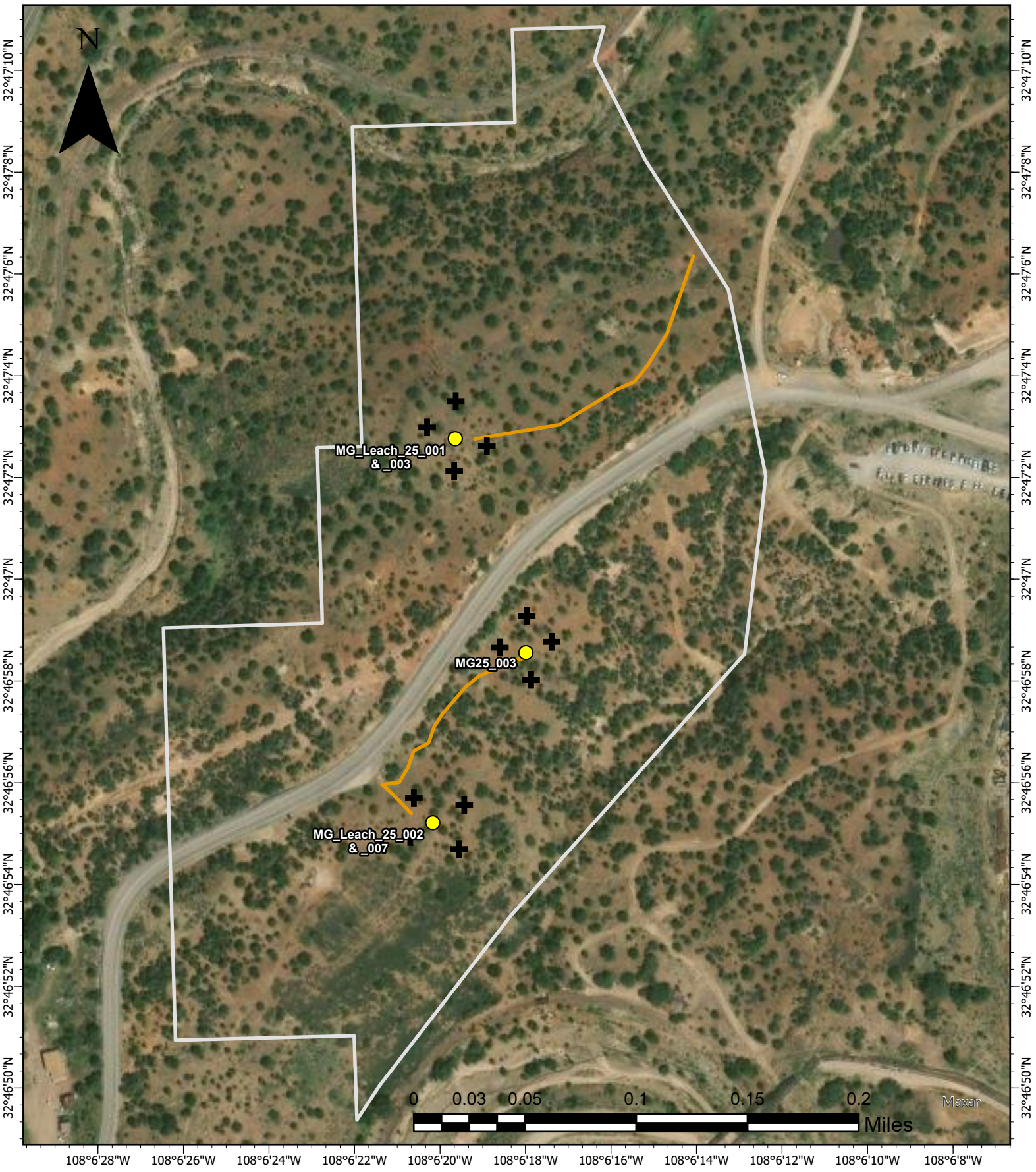
New Roads

Proposed Exploration Project Boundary

MMD Chino Permit Boundary

FREEPORT-McMoRan

Proposed Exploration Drilling - Chino Main Entrance Project



Drillpad Corners

Drillholes

New Roads

Proposed Exploration Project Boundary

FREEPORT-McMoRan

Tables

Table 1. Chino Main Entrance Project- Exploration Drilling Description

Pad #	DHID	Longitude (WGS 84)	Latitude (WGS 84)	Elevation	Azimuth	Dip	Maximum Depth (ft)	OSE Pod #	Comments
1	MG_Leach_25_007	108° 06' 20.1259" W	32° 46' 55.0486" N	6052	340	80	1,500	Pod numbers to be provided following the MMD site inspection	Drilling will be conducted from the same pad
1	MG_Leach_25_002	108° 06' 20.1264" W	32° 46' 55.0532" N	6052	270	55	2,000		
2	MG25-003	108° 06' 17.9133" W	32° 46' 58.4572" N	6,051	315	-60	4,000		
3	MG_Leach_25_003	108° 06' 19.5656" W	32° 47' 02.6918" N	6,097	0	90	2,000		Drilling will be conducted from the same pad
3	MG_Leach_25_001	108° 06' 19.5656" W	32° 47' 02.6918" N	6,097	330	55	2,000		

Table 2. Financial Assurance (FA) Cost Estimate for Exploration Drilling
Project: Chino Main Entrance Project 2025

Description	Unit	Quantity	Unit Rate ($/unit)	Total Cost ($)
Surface Reclamation Cost (1st acre)	acre	1.00	$ 8,900	$ 8,900
Drill Road & Pad Reclamation	acre	4.00	$ 4,900	$ 19,600
Plug and Abandon Exploration Drill Holes	ft.	10,000	$ 14	$ 140,000
			Total FA	**$ 168,500**

Please note that the total calculated disturbance in the application form (1.101 acres) is different from Table 2 (5 acres). This variance is to accommodate any unexpected disturbances that might occur during exploration activities. Please note that the target depth differs from original application. 10,000 ft is the sum of the 4 deepest holes that could be drilled at one time.

Attachment A
Biological Evaluation

Chino Mines Company
Exploratory Drilling Biological Evaluation

Prepared for:
Freeport-McMoRan Chino Mines Company
99 Santa Rita Mine Road, Vanadium, New Mexico 88023

Prepared by:
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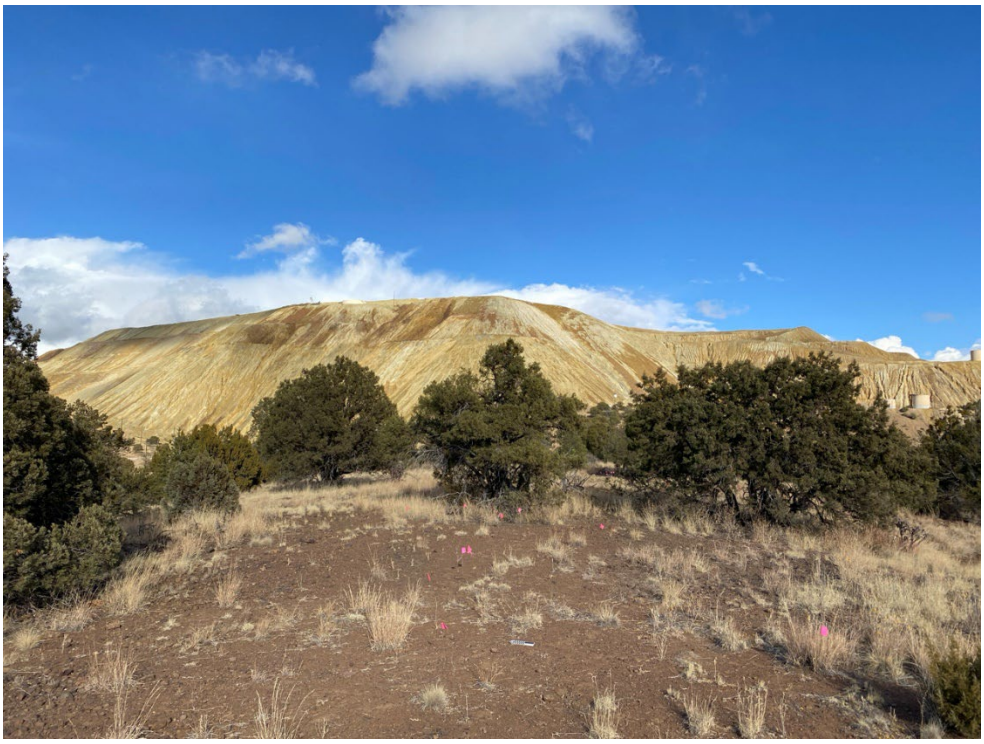
WestLand Project Number: 13177

March 26, 2025



WestLand Engineering & Environmental Services

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Appendices

1. INTRODUCTION

Freeport-McMoRan Chino Mines Company (Chino) proposes to initiate the exploratory drilling activities within their privately owned lands surrounding Chino Mine, in Grant County, NM (**Figure 1**). Chino contracted WestLand Engineering and Environmental Services (WestLand) to prepare a Biological Evaluation (BE) for the proposed project. The exploratory drilling activities consist of 3 drill pad locations and approximately 1,056 feet of access road directly adjacent to the Chino Mine, near Hanover Creek and NM State Highway 152 (the Project Area; **Figure 2**). To allow flexibility in final pad and road placement, this BE considers a Project Area consisting of 250 × 250-meter (820.21 × 820.21-foot) area around each proposed drill pad location, and a 40-meter-wide (131.23-foot-wide) corridor centered on the proposed road alignment for a total area of approximately 19 acres of private property.

This BE provides a screening analysis to determine the potential to occur of special-status species and these species' designated and/or proposed critical habitat in the Project Area. For the purposes of this report, special-status species include:

1) Species listed or proposed for listing as threatened or endangered under the Endangered Species Act (ESA) by the U.S. Fish and Wildlife Service (USFWS) that have the potential to occur within the Project Area as identified by the USFWS Information, Planning and Consultation (IPaC) tool (**Appendix A**).
2) Species protected under the Bald and Golden Eagle Protection Act (BGEPA).
3) Species designated as state threatened or endangered by the New Mexico Department of Game and Fish (NMDGF) as identified by the Biota Information System of New Mexico (BISON-M) for Grant County (**Appendix B**).

The following sections describe the Project Area location and environmental setting (**Section 2**), the methods used in determining the potential to occur (**Section 3**), the results of the special-status species screening and potential to occur determinations (**Section 4**), and list the references cited (**Section 5**). A representative selection of photographs from the Project Area are provided as **Appendix C**.

2. PROJECT AREA

The Project Area is an approximately 19-acre area of private land located in Grant County, New Mexico, located approximately 1.5 miles northeast of the town of Bayard, New Mexico, and 0.5 miles south of the Hanover, New Mexico. The Project Area is located within portions of Section 32, Township 17 South, Range 12 West of the New Mexico Meridian (**Figures 1** and **2**).

2.1. PHYSIOGRAPHIC AND CLIMATIC

The Project Area lies within the Mexican Highland and Sacramento sections of the Basin and Range province of the Intermontane Plateaus (U.S. Department of Agriculture), at elevations ranging from approximately 6000 feet (ft) to 6100 ft above mean sea level (amsl). The Project Area is south of the Gila National Forest, and the western extent of the Project Area contains portions of Hanover Creek, an ephemeral drainage in the Mimbres watershed (HUC 13030202).

Climatic conditions in the Project are characterized by mild summers (69.76°Fahrenheit [F] average temperature in July, the hottest month) and mild winters (35.67°F average temperature in January, the coldest month) and low precipitation. The average annual precipitation is 17.05 inches in Mimbres, New Mexico (WRCC 2011).

2.2. LAND USE AND MANAGEMENT

The Project Area lies within private lands directly adjacent to the Chino Mine (**Figure 2**). These lands are primarily undeveloped, with the exception of existing access roads in the vicinity of and abutting the planned drill pad locations (**Figure 2**).

Land use within the Project Area is limited due to its proximity to Chino Mine, however; New Mexico State Road 356 runs north/south through the western portion of the Project Area, and New Mexico State Road 152 runs east/west through the northern portion. An active railroad line runs along the western portion of the Project Area, that connects Fierro, New Mexico Rail Town/Aside (the northern extent of the rail line) to the historic depot in Bayard, New Mexico (the southern extent of the rail line). There are a few scattered private residences adjacent to the northern portion of the Project Area in Wimsattville, New Mexico.

2.3. WATER RESOURCES

The Project Area is located within the Outlet San Vicente Arroyo Watershed, Hydrologic Unit Code (HUC) 10 (1303020203). The Project Area is intersected a few ephemeral drainages or arroyos, some of which possess xeroriparian vegetation consisting of the same plant species as those contained in the uplands but at greater densities. There are no other surface water features or riparian vegetation in the Project Area and the National Wetlands Inventory (NWI) does not map any features in the Project Area.

2.4. SOIL

The soils in the Project Area are primarily Santa Fe-Rock outcrop complex, 20 to 45 percent slopes (Soil Survey Staff 2025). It also features small amounts of Santa Fe-Rock outcrop complex, 5 to 15 percent slopes and Encierro-Rock outcrop complex, 15 to 35 percent slopes (Soil Survey Staff 2025). These sandy loam soils are well-draining and do not tend to flood or pond and are derived from mixed alluvium and/or colluvium derived from igneous, metamorphic, and sedimentary rock (Soil Survey Staff 2025).

2.5. VEGETATION

Browne and Lowe identify the vegetation community within the Project Area a Great Basin Conifer Woodland (Brown 1994). This vegetation community is characterized by juniper (*Juniperus* sp.) and pinyon (*Pinus* sp.), Gambel oak (*Quercus gambelii*), mountain mahogany (*Cercocarpus* sp.), skunkbush sumac (*Rhus trilobata*), gilias (*Gilia* spp.), buckwheats (*Eriogonum* spp.), globemallows (*Sphaeralcea* spp.), and hedgehog cacti (*Echinocereus* spp.) (Brown 1982).

3. METHODS

A screening analysis was completed to evaluate the potential for special-status species to occur within the Project Area. Special-status species were defined as species listed or proposed for listing, under the Endangered Species Act (ESA) by the USFWS that have the potential to occur within the Project Area as identified by the USFWS Information for Planning and Consultation (IPaC) tool, species protected under the Bald and Golden Eagle Protection Act (BGEPA), species designated as state threatened or endangered by the New Mexico department of Game and Fish as identified by the Biota Information System of New Mexico (BISON-M) for Grant County.

- The determinations of potential for special-status species to occur within the Project Area were based on a review of:
- The natural history and known geographical and elevational ranges of the species.
- Other occurrence records in published or grey literature, including citizen science data and unpublished data.
- The presence of suitable habitat based on available information and previously completed field evaluations.
- Results of the BISON-M species occurrences for Grant County, included as **Appendix B**.
- Data provided by the USFWS Critical Habitat Portal online mapping tool.

The criteria used to determine the potential of occurrence of each species included in this screening analysis are defined as follows:

Present: The species has been observed to occur within the Project Area; the Project Area is within the known range and distribution of the species; and habitat characteristics required by the species, including suitable vegetation type and elevational range, are present.

Possible: Except for eBird or other citizen science data and/or BISON-M records, there are no known records of the species in the Project Area; the known, current distribution of the species includes the Project Area; and the required habitat characteristics of the species appear to be present in the Project Area. The Project Area includes suitable vegetation types and elevational ranges documented for the species. Given the uncertainty associated with species identification and accuracy of the location of observations from

eBird and other citizen science databases, observations associated with citizen science databases are evidence that a species is possible within the Project Area.

Unlikely: The known, current distribution of the species does not include the Project Area but there may be eBird or other citizen science records; the distribution of the species is close enough such that the Project Area may be within the dispersal or foraging distance of the species, and they may show up as transients. The habitat characteristics required by the species may be present in the Project Area.

None: The Project Area is outside of the known distribution of the species, the habitat characteristics required by the species are not present, and the Project Area lacks suitable vegetation type and is outside the documented elevational range of the species.

4. POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR

Of the 41 special-status species evaluated, 23 species have a Potential to Occur of **None**, 12 are **Unlikely**, and eight were **Possible**, and no special-status species were determined to be Present in the Project Area. The special-status species evaluated include nine ESA-listed species identified by the USFWS IPaC tool (**Appendix A**), two BGEPA species, and 32 NMDGF-listed species. Although the results of the BISON-M species occurrences for Grant County (**Appendix B**) includes 40 NMDGF-listed threatened or endangered species, eight of these are included as ESA or BGEPA Special-Status Species and are not duplicated in the latter analysis. There is no designated or proposed critical habitat present in the Project Area.

4.1. ESA SPECIES SCREENING RESULTS

The IPaC screening identified nine ESA species with no designated critical habitat that may occur within the Project Area (**Appendix B**). No species were determined to be **Present**, one was determined to be **Possible**, three were determined to be **Unlikely**, and five were determined to have no potential to occur in the Project Area (**Table 1**).

Amphibians:

- None – threatened; Chiricahua leopard frog [CLF] (*Rana chiricahuensis*)

Birds:

- Unlikely – threatened; western Distinct Population Segment (DPS) of yellow-billed cuckoo (*Coccyzus americanus*)
- None – endangered with a non-essential experimental population; northern Aplomado falcon (*Falco femoralis septentrionalis*)
- Unlikely – threatened; Mexican spotted owl (*Strix occidentalis lucida*)

Fish:

- None – threatened; Chihuahua chub (*Gila nigrescens*)
- None – endangered; spikedace (*Meda fulgida*)
- None – endangered; loach minnow (*Tiaroga cobitis*)

Insects:

- Possible – proposed threatened; monarch butterfly (*Danaus plexippus plexippus*)

Mammals

- Unlikely – endangered with a non-essential experimental population; Mexican gray wolf (*Canis lupus baileyi*)

Table 1. ESA-Listed Special-Status Species Potential to Occur in the Project Area

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
AMPHIBIANS					
Lithobates chiricahuensis Chiricahua leopard frog	Threatened (USFWS 2002, USFWS 2012b); designated critical habitat (USFWS 2012b).	Breeds in perennial to semi-permanent montane aquatic environments including cattle tanks, creeks, cienegas, pools, rivers, springs, lakes and reservoirs (USFWS 2011). Larvae are obligate on aquatic habitats whereas adults are primarily aquatic but also utilize terrestrial habitats (USFWS 2012b). May disperse from occupied habitat one mile overland, three miles along intermittent drainages, and five miles along permanent water courses, or some combination thereof (USFWS 2012b). Elevation: 3,200–8,890 ft (USFWS 2012b).	Occurs in Arizona and New Mexico, U.S. and Sonora, Chihuahua and Durango, Mexico (USFWS 2012b).	In New Mexico, this species distribution occurs in the southwestern portion of the state throughout the Gila National Forest as well as the Peloncillo, Animas, Big Hatchet, and Alamo Hueco Mountains (BISON-M 2022a). Based on work conducted between 1994 and 1999, 41 sites containing this species were recorded; 33 were located north of Interstate ten and eight were located in southwest New Mexico (USFWS 2002). However, surveys conducted in 2000 found only eight of 34 sites from the original 41 to have populations of this species (USFWS 2002).	**None.** The Project Area does not contain suitable aquatic habitat for this species, and the intermittent aquatic feature in the Project Area is greater than 5 miles away from the Mimbres River, and aquatic system in which this species is believed to be extant (USFWS 2002). There is no designated critical habitat for this species in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
BIRDS					
Coccyzus americanus (western Distinct Population Segment) Yellow-billed cuckoo	Threatened (USFWS 2014a); designated critical habitat (USFWS 2021).	Most commonly found in lowland riparian woodlands where Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk are dominant (USFWS 2013c). Also utilizes drier woodlands including mesquite bosques, drainages in desert scrub and desert grassland with a tree component, and Madrean evergreen woodlands in perennial, intermittent or ephemeral drainages (USFWS 2020b). This species typically occurs at elevations less than 6,600 ft amsl (AGFD 2022d). Western yellow-billed cuckoos may migrate along riparian corridors and surrounding upland vegetation (Hughes 2020). Elevation: Typically below 6,600 ft (AGFD 2022d).	This species is a long-distance neotropical migrant (Hughes 2020). At the species level, breeds throughout temperate North America south to Mexico and the Greater Antilles (Hughes 2020). The western DPS breeds west of the Continental Divide and the watershed boundary between the Rio Grande and Pecos River and the Chihuahuan Desert. The USFWS considers the historical breeding range to include southern British Columbia, Canada and in Washington, Idaho, Nevada, Oregon, Utah, western Colorado, southwestern Wyoming, California, Arizona, western New Mexico, and Texas, U.S. Breeding range extends into the Cape Region of Baja California Sur, Sonora, Sinaloa, western Chihuahua and northwestern Durango, Mexico (USFWS 2014a). Winters in South America, east of the Andes and typically south of the Amazon Basin in southern Brazil, Paraguay, Uruguay, eastern Bolivia and northern Argentina (USFWS 2014a).	Occurs throughout the state where suitable habitat is present and is considered rare to fairly common. Breeding areas include the San Juan, Dry Cimarron, Rio Grande, Pecos, Mora, Canadian, San Francisco, and Gila valleys (BISON-M 2018g). Most common in the south and along major drainages (eBird 2021).	**Unlikely.** The Project Area contains potentially suitable habitat for this species in the form of drainages in desert scrub and desert grassland in intermittent/ephemeral drainages. Though there are no eBird records of this species occurring in the Project Area (eBird 2025; accessed on February 17, 2025), it is known to occur throughout this portion of the state and the Project Area may be utilized by this species as migratory stopover habitat. There is no designated critical habitat for this species in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Falco femoralis septentrionalis Northern aplomado falcon	Endangered (USFWS 1986); no critical habitat; non-essential experimental population (USFWS 2006).	Within the U.S., this species uses coastal prairies, desert grasslands, oak woodlands and riparian gallery forest (Keddy-Hector, Pyle, and Pattern 2017). This species has historically occurred in relatively flat and open habitats (USFWS 2014c). Builds nests in large trees, cliffs, utility poles, artificial platforms or on the ground when elevated nest sites are not available (Keddy-Hector, Pyle, and Pattern 2017). This species is expected to use similar habitat year-round (Keddy-Hector, Pyle, and Pattern 2017). Elevation: In southwestern U.S., most common from 3,300–4,900 ft (AGFD 2001b).	This species is mostly non-migratory, although local nomadic movement may occur (Keddy-Hector, Pyle, and Pattern 2017). The *septentrionalis* subspecies occurs in New Mexico and Texas, U.S. and the Mexican states of Chihuahua, northwestern Chiapas, western Campeche, Oaxaca, San Luis Potosi, Tabasco, and Vera Cruz (USFWS 2014c).	Occasional in the southern portion of the state; rare and local, mainly in grassland-shrubland areas at lower elevations (BISON-M 2017a).	**None.** The Project Area is outside of the current range of this species in New Mexico. Detections of this species in New Mexico tend to occur near the I-10 and I-25 (eBird 2025; accessed on February 17, 2025), in areas of the state that feature suitable habitat for this species (relatively flat and open habitats).

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Strix occidentalis lucida Mexican spotted owl	Threatened (USFWS 1993); designated critical habitat (USFWS 2004).	Prefers old-growth mixed conifer or pine-oak forests, or such forests with complex structure. Also uses narrow canyons with cliffs and conifer or riparian woodlands (Gutiérrez, Franklin, and Lahaye 2020). In Arizona, canyon habitats typically contain Madrean evergreen oak or Madrean pine-oak woodlands (Wise-Gervais 2005). In forested areas, nests in large trees whereas in canyon habitats, will nest in trees, caves or on rocky ledges (USFWS 2012c). Primarily forages for rodents in a range of forest or woodland habitats, but diet also includes lagomorphs, bats, birds, reptiles and arthropods (AGFD 2023a, Gutiérrez, Franklin, and Lahaye 2020, USFWS 2012c) . This species has large home ranges, with single owls in Arizona utilizing an average of 1,600 acres and pairs an average of 2,000 acres (AGFD 2023a). Migration is variable within areas and among years (AGFD 2023a, Gutiérrez, Franklin, and Lahaye 2020). When winter movements do occur, this species may move locally, primarily to lower elevations and more open sites with pinyon pine-juniper woodlands, open mountain shrub habitat, conifer forests or deciduous riparian trees (AGFD 2023a, Gutiérrez, Franklin, and Lahaye 2020). Elevation: 2,720–10,000 ft (AGFD 2023a).	This species is primarily non-migratory, although there may be some short distance (12 to 30 miles) or altitudinal movement (Gutiérrez, Franklin, and Lahaye 2020). Occurs patchily in Colorado, Utah, Arizona, New Mexico and western Texas. Range extends from the international border southward along the Sierra Madre Occidental and Oriental to Michoacán (Gutiérrez, Franklin, and Lahaye 2020, USFWS 2012c).	Occurs in summer and winter throughout the state, except for in the eastern plains. They are more abundant in the south. Some of the larger populations are found in the Gila National Forest and Sacramento Mountains (Ganey et al. 2014, New Mexico Avian Conservation Partners 2017)**.**	**Unlikely.** While the Project Area does not contain suitable habitat for this species in the form of old-growth mixed conifer or pine-oak forests, narrow canyons with cliffs, or conifer or riparian woodlands, it is within the current and historic range of this species, and there are detections of this species in the Gila National Forest (eBird 2025; accessed on February 17, 2025), which is approximately 5 miles from the Project Area. It is possible that this species would use the Project Area as foraging habitat. There is no designated critical habitat for this species in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
FISH					
Gila nigrescens Chihuahua chub	Threatened (USFWS 1983); Proposed critical habitat (USFWS 1980).	Inhabits deep pools with undercut banks and other forms of cover such as downed trees and overhanging vegetation (BISON-M 2021). These stream are typically small to medium in size (BISON-M 2021).	Southern New Mexico and the state of Chihuahua, Mexico (BISON-M 2021).	This species historically occurred in New Mexico within the Mimbres River from Grant County to Luna County but is currently confined to Moreno Spring and an approximately 15 km stretch of the Mimbres River (BISON-M 2021; Accessed December 29, 2022). This stretch begins at the confluence of Allie Canyon (BISON-M 2021). A population was discovered in 2008 within the Mimbres River near Cooney Place and Monument Canyon (Osborne 2019).	**None.** The Project Area does not contain suitable habitat (perennial water). This species is not expected to occur in the Project Area. There is no designated critical habitat for this species in the Project Area.
Meda fulgida Spikedace	Endangered (USFWS 2012a); designated critical habitat (USFWS 2007)	Inhabits shallow riffles with sand, gravel, and rubble substrates of moderate to large perennial streams (USFWS 2012a). Elevation: 1,620–4,500 ft (AGFD 2013c).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. (USFWS 2012a).	In New Mexico, this species is found in the mainstem Gila River, as well as in the lower end of the West, Middle, and East forks of the Gila River, and Mangas Creek within Hidalgo, Grant, and Catron counties (BISON-M 2017k).	**None.** The Project Area does not contain suitable habitat (perennial water). This species is not expected to occur in the Project Area. There is no designated critical habitat for this species in the Project Area.
Tiaroga cobitis Loach minnow	Endangered (USFWS 2012a); designated critical habitat (USFWS 2007)	Typically inhabits swift, small to large perennial streams where it uses interstitial spaces or lee areas of primarily cobble substrates for resting and spawning (USFWS 2012a). However, slow, silty streams are occasionally used (Minckley and Marsh 2009, , p. 174). Adults are often found in areas with coarse, filamentous algae (Minckley and Marsh 2009, p. 174, USFWS 2012a). Elevation: Below 8,000 ft (USFWS 2012a).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. (USFWS 2012a).	In New Mexico, the species is found in the Gila River and its tributaries including the West, Middle, and East forks of the Gila River (Paroz and Propst 2007); the San Francisco and Tularosa Rivers and their tributaries in Catron County (Propst 2007); Blue River and its tributaries, including Dry Blue, Campbell Blue, Pace, and Frieborn Creeks (Catron County) and Dry Blue Creek. and Blue Rivers and some of their tributaries (Carter 2008, Clarkson et al. 2008, USFWS 2012a).	**None.** The Project Area does not contain suitable habitat (perennial streams). This species is not expected to occur in the Project Area. There is no designated critical habitat for this species in the Project Area.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
INSECTS					
Danaus plexippus plexippus Monarch butterfly	Proposed Threatened with designated critical habitat (USFWS 2024)	Monarch caterpillars feed exclusively on plants in the subfamily Asclepiadoideae (milkweed) and adults forage for nectar on a wide variety of flowers. This species can be found wherever milkweed occurs. Overwintering populations use the leaves, branches and trunks of large trees within forested groves. In California, both native tree species and eucalyptus trees are utilized (Jepsen et al. 2015). Elevation: In Arizona, found at all elevations (Morris, Kline, and Morris 2015).	*D. plexippus* occurs in North America, Central America, the Caribbean south to South America, Hawaii, Australia, some Pacific Islands, parts of Asia, Africa and southern Europe. Populations outside of the Americas may be non-native (Zhan et al. 2014). Most populations of the *plexippus* subspecies are migratory and breed in southern-most portions of all Canadian provinces except Newfoundland and Labrador, the conterminous U.S. states and the Mexican states of Baja California, Chihuahua, Coahuila, Nuevo Léon, Sonora and Tamaulipas. The wintering range of migratory populations includes coastal California and southern Florida, U.S. and the Mexican states of Baja California, Mexico and Michoacán (Jepsen et al. 2015).	Breeding and migratory populations occur throughout the state. Some adults overwinter in New Mexico in areas where food resources are abundant (USFWS 2020d).	**Possible.** The Project Area is within the historic and current range of this species. Though the Project Area does not have mapped occurrences of milkweed plant species, individuals of this species were detected approximately 10 miles to the west of the Project Area, near Silver City, NM (The Xerces Society for Invertebrate Conservation 2025; accessed on February 17, 2025).

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
MAMMALS					
Canis lupus baileyi Mexican gray wolf	Endangered (USFWS 1975, USFWS 2015a); non-essential experimental population (USFWS 1998, USFWS 2015a); non-essential experimental population remanded but remains in place until a new rule is finalized (Ctr. for Biological Diversity v. Jewell 2018).	Occurs in sparsely to densely forested mountainous terrain or adjacent grasslands where prey is abundant. Prey species include cervids, peccaries, lagomorphs and rodents (USFWS 2015a). Elevation: 3,000–12,000 ft (AGFD 2001a).	The *baileyi* subspecies occurs in Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 2015a).	The non-essential experimental population boundaries are south of I-40 and is divided into management zones. Zone 1: Initial releases and translocations can occur into. Zone 2: Areas outside of Zone 1, south of I-40 and generally west of Highway 285. Initial releases allowed on private and tribal land with approved management agreements. Translocations and release of pups less than 5-months old allowed on Federal lands. Zone 3: Areas south of I-40 and east of Highway 285 to the south of Highways 81, 146, 26, 25, 70, 54,506, and 24, and south of I-10. Within Zone 3 no releases or translocations are allowed but can be occupied by naturally dispersing individuals (USFWS 2015a). As the end of May 2019, there were known packs or packs believed to be located in 14 New Mexico counties, including Bernalillo, Catron, Cibola, Doña Ana, Grant, Hidalgo, Lincoln, Luna, McKinley, Otero, Sierra, Socorro, Torrance, and Valencia (USFWS 2020c). The Mexican gray wolf population in New Mexico is expanding in both number and range. At the end 2013 there was a combined total of 83 known wolves in Arizona and New Mexico (USFWS 2015a). At the end of 2018 there were a total 131 known wolves (Mexican Wolf Interagency Field Team 2019). At the end of 2021 and the beginning of 2022, there was a combined total of 196 known wolves in Arizona and New Mexico (USFWS 2022).	**Unlikely**. The Project Area is outside of the Zone 1 management zone. Due to the low population density of this species and the developed nature of the Project Area, it is not anticipated that a Mexican gray wolf will occur in the Project Area. If this species occurred within the Project Area, it would be considered part of the non-essential experimental population. Because the non-essential experimental population is, by definition, not essential to the continued existence of the species, the effects of proposed actions on the non-essential experimental population will generally not rise to the level of jeopardizing the continued existence of the species.

4.2. BGEPA SPECIES SCREENING RESULTS

BGEPA species include golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*). The golden eagle was determined to have a potential to occur of **Possible** and bald eagle was determined to have a potential to occur of **Unlikely** in the Project Area. The basis for determination of each of the BGEPA-listed Special-Status Species' Potential to Occur within the Project Area is provided in **Table 2**.

- Possible – Golden eagle (*Aquila chrysaetos*)
- Unlikely – Bald eagle (*Haliaeetus leucocephalus*)

Table 2. BGEPA-Listed Special-Status Species Potential to Occur in the Project Area

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Aquila chrysaetos Golden eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	Range-wide, breeds in a wide variety of open habitats, with nests typically on cliffs, and avoids heavily forested areas (Katzner et al. 2020). In Arizona, prefers pinyon-juniper woodlands and Sonoran desertscrub (Driscoll 2005). Constructs large nests on cliff ledges, rock outcrops, tall trees or, rarely, transmission towers (Driscoll 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994), generally in open habitats where prey is available (Katzner et al. 2020). Primarily feeds on small mammals (greater than 80% of prey items) but also consumes birds, reptiles and fish (Katzner et al. 2020). In the western U.S. average territory size ranges from 22 to 55 square miles (AGFD 2002). Elevation: In Arizona, typically breeds between 1,300–9,000 ft (Driscoll 2005).	This species is a short to medium-distance partial migrant with a Holarctic distribution (Katzner et al. 2020). In North America, primarily breeds in western portion of the continent from Alaska to central Mexico. Northernmost populations are typically migratory. Year-round and non-breeding populations occur from central Saskatchewan to British Columbia, Canada and south throughout its range and sparsely in the eastern U.S. (Katzner et al. 2020).	In New Mexico, Golden Eagles breed locally in suitable habitat throughout the state (Katzner et al. 2020, Parmeter, Neville, and Emkalns 2002).	**Possible**. Though there is not suitable nesting habitat for this species in the Project Area, it does contain suitable open foraging habitat. There are ebird records of this species occurring within 3 miles of the Project Area (eBird 2025; accessed on February 17, 2025).
Haliaeetus leucocephalus Bald Eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	Breeding is concentrated in coastal areas, along rivers, lakes or reservoirs. Typically breeds in forested areas with edge habitat within 1.3 miles of aquatic habitats suitable for foraging. Prefers areas of shallow water and shorelines for fishing and hunting wide variety of waterfowl, and small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Winters primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). Elevation: In Arizona, 460–7,930 ft (AGFD 2022b).	Migratory behavior varies among populations and age groups (Buehler 2020). Breeds south of the tundra throughout Canada and the U.S., excluding Hawaii. Additionally, small breeding populations occur in Baja California, Sonora and Chihuahua, Mexico (Buehler 2020). Winter range appears to be expanding as populations increase in size. Most populations are year-round residents with only the northern most populations in Alaska, U.S. and Canada withdrawing southward or to coastal areas (Fink et al. 2018).	In New Mexico, bald eagles are present casually to occasionally in summer, but they migrate and winter almost statewide, although there is limited breeding in New Mexico (Buehler 2020).	**Unlikely**. Though the Project Area lies within the known range of this species and there are ebird records of this species occurring within 3 miles of the Project Area (eBird 2025; accessed on February 17, 2025), it does not contain suitable aquatic habitat for its foraging or suitable forested areas for its breeding.

4.3. NEW MEXICO STATE-LISTED SPECIES

The BISON-M online review tool was used to generate a list of New Mexico state species listed as either threatened or endangered by the NMDGF within Grant County (**Appendix B**). The potential for the 37 Special-Status Species unique to this list to occur within the Project Area are summarized below. The basis for determination of each of the NMDGF-listed Special-Status Species' Potential to Occur within the Project Area is provided in **Table 3**.

Amphibians:

- None – Lowland leopard frog (*Lithobates yavapaiensis*)

Birds:

- Possible – Abert's towhee (*Melozone aberti*)
- None – Baird's sparrow (*Centronyx bairdii*)
- Possible – Bell's vireo (*Vireo bellii*)
- Possible – Broad-billed hummingbird (*Cynanthus latirostris*)
- Unlikely – Common black hawk (*Buteogallus anthracinus*)
- Unlikely – Common ground dove (*Columbina passerine*)
- Possible – Costa's hummingbird (*Calypte costae*)
- None – Elegant trogon (*Trogon elegans*)
- Possible – Gila woodpecker (*Melanerpes uropygialis*)
- Unlikely – Gray vireo (*Vireo vicinor*)
- Unlikely – Lucifer hummingbird (*Calothorax lucifer*)
- None – Neotropic cormorant (*Phalacrocorax brasilianus*)
- None – Northern beardless tyrannulet (*Camptostoma imberbe*)
- Unlikely – American peregrine falcon (*Falco peregrinus anatum*)
- None – Southwestern willow flycatcher (*Empidonax traillii extimus*)
- None – Thick-billed kingbird (*Tyrannus crassirostris*)
- Unlikely – Varied bunting (*Passerina versicolor*)
- Possible – Yellow-eyed junco (*Junco phaeonotus*)

Fish:

- None – Gila chub (*Gila intermedia*)
- None – Headwater chub (*Gila nigra*)
- None – Chihuahua chub (*Gila nigrescens*)
- None – Roundtail chub (lower Colorado River populations; *Gila robusta*)

- None – Gila trout (*Oncorhynchus gilae*)
- None – Gila topminnow (*Poeciliopsis occidentalis occidentalis*)

Mammals:

Attachment A
Biological

- None – Lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*)
- Unlikely – Spotted bat (*Euderma maculatum*)

Reptiles:

- Unlikely – Reticulate Gila monster (*Heloderma suspectum suspectum*)
- None – Mexican gartersnake (*Thamnophis eques*)
- None – Narrow-headed gartersnake (*Thamnophis rufipunctatus*)

Molluscs:

- None – Gila springsnail (*Pyrgulopsis gilae*)
- None – New Mexico hot springsnail (*Pyrgulopsis thermalis*)

Table 3. NMDGF-Listed Special-Status Species Potential to Occur in the Project Area

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
AMPHIBIANS				
Lithobates yavapaiensis Lowland leopard frog	Occur in a variety of perennial to near perennial waters in desert grasslands to pinyon juniper biotic communities (AGFD 2006). Inhabits large rivers, streams, canals, cienegas, cattle tanks or other aquatic features (Rorabaugh 2008). Can survive in semi-permanent aquatic systems by retreating into deep mud cracks, mammal burrows, or rock fissures, but large pools are required for adult survival and reproductive efforts (Lower Colorado River Multi-Species Conservation Program 2016). Elevation: In Arizona, from 480–6,200 ft (AGFD 2006).	Historic range included Arizona, California, Nevada, New Mexico, U.S. and extreme northeastern Baja California, northern Sonora, and possibly northwestern Chihuahua, Mexico (AGFD 2006, Lower Colorado River Multi-Species Conservation Program 2016). Current range is restricted to southern Arizona and adjacent portions of Sonora (Lower Colorado River Multi-Species Conservation Program 2016).	Is thought to be extremely rare and likely extirpated in the state. A 1995 survey of 72 potential locations in the state, including six historical sites that had not been surveyed in the past 10 years, resulted in no observations. Populations are now believed to be extirpated or occurring in very low numbers (BISON-M 2019b).	**None.** There is no suitable aquatic habitat in the Project Area and this species is likely extirpated from the state.
BIRDS				
Melozone aberti Abert's towhee	Occupies riparian areas with cottonwood-willow woodlands, mesquite bosque, marshes and mixed exotic-native vegetation within the lower Sonoran life zone. Prefers a dense understory (Tweit and Finch 1994). Most abundant in low-elevation riparian vegetation with cottonwood, willows and mesquite or dry washes with dense thickets. Additionally, utilizes areas with dense stands of tamarisk, patches of dense shrubs along irrigation ditches or run-off retention ponds in agricultural areas and densely vegetated suburban areas (Corman 2005a). Occurs in the same habitat year-round (Tweit and Finch 1994). In its New Mexico range, this species uses thickets of seepwillow and other riparian habitats. Elevation: In Arizona and neighboring states, generally below 4,300 ft (Corman 2005a).	Non-migratory. The core of their range is in Arizona, but also extends into adjacent portions of southeastern California, southwestern New Mexico, southeastern Nevada, and extreme southwestern Utah, U.S. Additionally, there are populations just south of the international border in Baja California and Sonora, Mexico (Corman 2005a, Tweit and Finch 1994).	Found along portions of the Gila River from the Arizona border to Mogollon Creek in Grant County, and at the San Simon Cienega in Hidalgo County where suitable habitat exists (BISON-M 2018a, Tweit and Finch 2020).	**Possible.** There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within 3 miles of the Project Area (eBird 2025; accessed on February 18, 2025).
Centronyx bairdii **[recently changed from *Ammodramus bairdii*]** Baird's sparrow	Utilizes prairie habitats. Winters in areas of dense and expansive grasslands, with only a minor shrub component (Green et al. 2020). In southern New Mexico, this species prefers areas with denser grass cover than surrounding areas (BISON-M 2019a). Elevation: 3,900-6,570 ft (BISON-M 2019a).	Nests in the Dakotas, Montana, and Minnesota, as well as the Canadian provinces of Alberta, Manitoba, and Saskatchewan. Winters primarily in northern Mexico, although some may be found in southern Texas, New Mexico, and Arizona (BISON-M 2019a, Green et al. 2020).	Species migrates in the eastern and extreme southern areas of the state, where it is considered rare to uncommon (BISON-M 2019a, Green et al. 2020).	**None.** The Project Area does not contain suitable habitat for this species (dense and expansive grasslands), and there are no records of this species occurring within the vicinity of the Project Area (eBird 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Vireo bellii Bell's vireo	Breeds in a wide variety of dense shrubby habitats, often near water, particularly in arid environments, including riparian scrub along drainages, successional riparian vegetation, brushy fields, mesquite brushlands, chaparral and young forests and woodlands (Kus et al. 2020). In New Mexico, they characteristically occurs near riparian habitat and dense shrubland or woodland along lowland stream courses (Kus et al. 2020). In the southeast and southwest parts of the state, most nests occur in willow, seepwillow, or hackberry (Kus et al. 2020) Elevation: In Arizona, breeds 120–5,120 ft (Averill-Murray and Corman 2005).	A neotropical migrant (Kus et al. 2020). Breeds throughout the central and southwestern U.S. including Arizona, Arkansas, California, Colorado, Illinois, Indiana, Kentucky, Louisiana, Michigan, Missouri, Nebraska, Nevada, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Texas, Utah, Wisconsin, and Wyoming. Additionally, breeds in northern Mexico in Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo Leon, San Luis Potosi, Sinaloa, Sonora, Tamaulipas, and Zacatecas. The wintering range is less well known but includes Baja California Sur and south along the Pacific Slope from Sonora through Oaxaca, El Salvador, Honduras and Nicaragua (Kus et al. 2020). There are scattered winter records throughout the southern U.S. portion of the breeding range and in Florida (Kus et al. 2020).	Considered a common and widespread summer resident in southern parts of the state (Bailey 1928, Hubbard 1978). There are known populations in the lower Gila Box, San Simon Cienega, and Guadalupe Canyon.	**Possible.** There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within 10 miles of the Project Area near Silver City and Mimbres, NM (eBird 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Cynanthus latirostris Broad-billed hummingbird	Utilizes a wide variety of habitats across its range including riparian forest, thorn forest, tropical deciduous forest, pine-oak forest and successional or disturbed habitats (Powers and Wethington 2020). In New Mexico, occurs along drainages with riparian habitat (Powers and Wethington 2020). Additionally, uses densely vegetated washes with mesquite, netleaf hackberry, juniper or oaks, parks and residential areas (Corman 2005b). There is no information on habitat use during migration. Winters in habitats outside of the U.S. (Powers and Wethington 1999). Elevation: Range-wide 490–9,840 ft (Powers and Wethington 2020). In Guadeloupe Canyon, New Mexico, breeds at approximately 4,480 ft (Powers and Wethington 2020).	A partial migrant, with the northern most populations withdrawing southward (Powers and Wethington 1999). Breeds in southeastern Arizona, extreme southwestern New Mexico and rarely in southwestern Texas, U.S. Range extends southward into Mexico in eastern Sonora, western Chihuahua, Sinaloa, extreme western Durango, Nayarit, west Zacatecas, Aguascalientes, Jalisco, Guanajuato, Querétaro, Hidalgo, Colima, Michoacán, México D. F., northern Guerrero, northern Puebla, extreme western Vera Cruz, Oaxaca, extreme southwestern Chiapas, San Luis Potosí, extreme western Tamaulipas, and extreme southern Nuevo León (Powers and Wethington 1999). During the winter, most individuals leave the U.S., northern Sonora and Nuevo León (Corman 2005b, Powers and Wethington 1999).	Dependent on riparian habitat in extreme southwest portion of the state in the Peloncillo and Guadeloupe Mountains in Hidalgo County (Powers and Wethington 1999). Have also been vagrant sightings of this species in Hidalgo, Doña Ana, and Sierra counties (BISON-M 2020).	**Possible.** There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within 10 miles of the Project Area near Silver City, NM (eBird 2025; accessed on February 18, 2025).
Buteogallus anthracinus Common black hawk	Is associated with swamps, marshes, flooded forests, coastal plains, mangroves, and riparian areas with perennial water. In the southwestern U.S. they are an obligate riparian species (Schnell 2020). In Arizona, this species occurs along perennial and intermittent streams with perennial pools in drainages with sycamores, Arizona alder, Fremont cottonwood, Arizona cypress, Arizona walnut, Goodding's willow, velvet ash, velvet mesquite or tamarisk. Hunts for arthropods and small vertebrates including fish, frogs, snakes, and lizards from streamside perches. High branches, rock ledges, sandbars or streamside rocks are used as foraging perches (Schnell 2020). U.S. populations are migratory and winter in Mexico or further south (Schnell 2020). Migratory habitat is insufficiently known, but this species is generally believed to follow riparian corridors (Sadoti 2010). Elevation: In Arizona, 1,800–7,000 ft (Averill-Murray and Corman 2005).	A partial migrant. Migratory breeding populations in extreme southern Utah and Nevada, Arizona, New Mexico and western Texas in the U.S. and eastern Sonora, western Chihuahua, western Durango, and eastern Nayarit. Resident from Sinaloa and Tamaulipas and south, primarily along the coasts to Ecuador, Columbia, and Venezuela in northern South America. Occasional individuals have been reported overwintering in southern Arizona (Schnell 2020).	Found along the Gila, San Francisco, and Mimbres rivers in the southwest quadrant of the state, as well as along the Rio Hondo in the southeast. It occasionally nests along the Rio Grande as far north as Albuquerque, and in the Canadian River and Upper Pecos drainages. (AGFD 2013a, Averill-Murray and Corman 2005).	**Possible.** There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within the immediate vicinity of the Project Area (eBird 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Columbina passerine Common ground dove	Inhabit arid, open woodlands in the early stages of forest development, including pine woods, hammocks, lake shores, forest edges, coastal dunes, mesquite flats, river bottom woodlands, deserts, desert scrublands, oak scrublands, and savannas (Bowman 2020). Also found in human landscapes, especially irrigated farm fields and residential neighborhoods. Elevation: 1,000 to 6,000 ft in New Mexico (BISON-M 2017b).	Ranges from southern California to southern Florida, with populations occurring through Central and South America. Normally resident throughout breeding range, but vagrants north of range not uncommon. May move from interior to coastal areas; comparison of breeding and winter distributions suggest some movement southward from northern portions of range, but most movement into existing breeding areas (Bowman 2020).	Formerly was most regularly found in the southern part of the state at Las Cruces in the Rio Grande drainage and near Carlsbad (BISON-M 2017b).	**Unlikely.** While the Project Area contains suitable habitat for this species in the form of oak scrublands, there are no records of this species occurring within the vicinity of the Project Area (eBird 2025; accessed on February 18, 2025).
Calypte costae Costa's hummingbird	Breeds in Sonoran and Mojave desertscrub, coastal scrub, chaparral and tropical deciduous forest (Baltosser and Scott 1996). In Arizona, this hummingbird occurs in upland desertscrub, desert washes and in riparian vegetation associated with springs or intermittent streams (Corman 2005c). During migration, this species uses xeric habitats but also is known to travel along drainages, which may be more mesic than habitats used during breeding (Baltosser and Scott 1996). Arizona populations may travel westward to summer in chaparral and costal scrub of California and Baja California (Baltosser and Scott 1996). Elevation: In Arizona, typically 100–4,700 ft, but occasionally up to 7,800 ft (Corman 2005c).	A partial migrant (Baltosser and Scott 1996). Migratory breeding populations occur in east-central California, southern Nevada, Arizona and extreme southwestern New Mexico and Sonora, Mexico. Resident breeding populations occur in southern California, southwestern Arizona and in Baja California, Baja California Sur and northwestern Sonora, Mexico. Wintering populations occur in southern Sonora, Sinaloa and Nayarit (Baltosser and Scott 1996).	Uncommon and sporadic breeder in the southwest and south-central mountains, and is most commonly found in Guadalupe Canyon and in side canyons along the lower Gila River from Cliff south (BISON-M 2017c).	**Possible.** There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within 10 miles of the Project Area near Silver City, NM (eBird 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Trogon elegans Elegant trogon	Most common tropical deciduous forest (Williams 2011) but uses a wide variety of habitats including semi-arid pine-oak woodland, xeroriparian areas in thornscrub, thorn forest, pine and pine-oak forests, riparian woodlands, montane rainforest and plantations (Kunzmann, Hall, and Johnson 1998). Habitat use in New Mexico is poorly known, but in Arizona, this species breeds in canyons with large sycamores and Madrean pine-oak woodlands and, less frequently, in lower elevation canyons with sycamores and adjacent slopes with scattered oaks, pinyon pine or juniper (Corman 2005d). There is no information on migration habitat (Kunzmann, Hall, and Johnson 1998, Williams 2011). Elevation: Range not well known in New Mexico. In Arizona, typically 3,400–6,800 ft (AGFD 2014) but have been observed above 7,000 ft (Corman 2005d).	A partial migrant, with only the northern most populations withdrawing southward (Kunzmann, Hall, and Johnson 1998, Williams 2011). Breeds from southeastern Arizona and southwestern New Mexico, U.S. south through Mexico from Sonora and Chihuahua along the Pacific Slope and from Tamaulipas and Nuevo León to southern Oaxaca. Additionally, occurs in southeastern Guatemala, El Salvador, western Honduras, Nicaragua and northwestern Costa Rica (Kunzmann, Hall, and Johnson 1998). During the winter, U.S. and northern Sonora populations withdraw southwards (Williams 2011).	Scattered records in Guadalupe Canyon and is also described as rare in the Peloncillo and Animas mountains (BISON-M 2017d, Kunzmann et al. 2020).	**None.** The Project Area does not contain suitable habitat for this species in the form of tropical deciduous forest, semi-arid pine-oak woodland, xeroriparian areas in thornscrub, thorn forest, pine and pine-oak forests, riparian woodlands, montane rainforest and plantations, and there are no records of this species occurring within 10 miles of the Project Area (eBird 2025; accessed on February 18, 2025).
Melanerpes uropygialis Gila woodpecker	Occurs in desert areas with large cacti or trees, dry subtropical forests, riparian woodlands and residential areas (Edwards and Schnell 2000). In Arizona, this species is most common in upland areas of Sonoran Desert with abundant saguaros, paloverde, mesquite, and ironwood. Is present, but less common in low desert areas and washes where there are few to no saguaros. Commonly nests in riparian woodlands with Fremont cottonwood, Goodding's willow, mesquite, or sycamores. Generally tolerant of some types of human activities and utilizes residential and rural areas (Bradley 2005). They utilize similar habitat throughout the year (Edwards and Schnell 2000). Elevation: In Arizona, 150–4,800 ft (Bradley 2005). In New Mexico, 3,000-5,000 ft (BISON-M 2018b).	Non-migratory, although short-distance local movements may occur (Edwards and Schnell 2000). Found in Arizona, California, Nevada and New Mexico, U.S. and the Mexican states of Aguascalientes, Baja California, Baja California Sur, Chihuahua, Durango, Jalisco, Nayarit, Sinaloa, Sonora and Zacatecas (Edwards and Schnell 2000).	Present only in extreme southwest part of the state, in Grant and west Hidalgo counties (Edwards and Schnell 2000). Primarily found in the lower Gila Valley in both Grant and Hidalgo counties, Guadalupe Canyon, San Simon Cienega, drainages of the Animas and Peloncillo Mountains, and Bitter Creek in western Grant County **(BISON-M 2018b, Edwards and Schnell 2000)**.	**Possible**. There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within 10 miles of the Project Area near Silver City, NM (eBird 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Vireo vicinior Gray vireo	Preferred breeding habitat includes pinyon pine-juniper woodlands, oak scrub and chaparral in arid mountain ranges and high plains (Barlow, Leckie, and Baril 2020). In Arizona and New Mexico, occurs in chaparral-juniper and dwarf conifer forests, as well as sites with Graves oak (Quercus gravesii), mixed piñon, and madrone (Arbutus spp.; (Barlow, Leckie, and Baril 2020). Occasionally occurs in chaparral dominated slopes and Madrean evergreen oak woodlands with only scattered pinyon pine or junipers (Corman 2005e). Habitat used during migration is likely similar to the breeding and wintering habitats. In Arizona, wintering habitat includes lowland Sonoran desertscrub and rocky canyons in desert mountains. Elsewhere in the wintering range this species uses Chihuahuan desertscrub and lowland riparian areas with willow and cottonwood near springs or intermittent streams (Barlow, Leckie, and Baril 2020). Elevation: Typically breeds 3,500–6,800 ft (Corman 2005e), winters much lower (Barlow, Leckie, and Baril 2020).	A short-distance migrant (Barlow, Leckie, and Baril 2020). Breeds from central and southern Utah and western Colorado, south to southern Nevada, Arizona, and New Mexico, U.S. Isolated populations also breed in southern California, Baja California, western Texas, U.S. and in Mexico in northwestern Coahuila and possibly north-central Durango. Wintering range is poorly known, but this species has been reported from south-central Arizona, western Sonora, Baja California Sur and western Texas (Barlow, Leckie, and Baril 2020).	Rare summer residents of the Gila National Forest and only in the state during the warmer months. Has been recorded in central and western counties east to Pecos, western San Miguel County, and Gran Quivara National Monument, eastern Socorro County, the Silver City area, the foothills of the Magdalena, Manzanita, and Sandia mountains and in the southeast in the Guadalupe Mountains and in eastern Otero County (BISON-M 2017f).	**Unlikely.** While the Project Area contains suitable habitat for this species in the form of lowland riparian areas, there are no records of this species occurring within the vicinity of the Project Area (eBird 2025; accessed on February 18, 2025).
Calothorax lucifer Lucifer hummingbird	Range-wide, this species primarily occurs in arid habitats including desertscrub, densely vegetated dry washes, lava fields, volcanic hills, rocky slopes but occasionally uses deciduous riparian woodland (Scott 1994). Little is known about habitat use in New Mexico. There is no information on migratory habitat and this species winters outside of the U.S. (Scott 1994). However, individuals have been reported from feeding stations in drainages dominated by sycamores, Madrean evergreen oak woodlands or pine-oak forest during the presumably post-breeding period (Corman 2005f). Elevation: Range-wide 2,625–7,220 ft (Scott 1994).	Migratory behavior is poorly understood, but this species is likely primarily migratory (Scott 1994). There are sparse breeding populations in southeastern Arizona, extreme southwestern New Mexico and the Big Bend region of Texas, U.S. The breeding range extends along the Sierra Madre Occidental and Oriental in northeastern Sonora, Chihuahua, Durango, Coahuila and Nuevo Leon to the Central Plateau and possibly as far south as Puebla (Scott 1994). Winters in central and southwestern Mexico in Jalisco, Guanajuato, Querétaro, Guerrero, Oaxaca, Colima, Michoacán and Morelos (Scott 1994).	A rare breeder and sparse visitor to the mountain ranges in the southwestern portion of the state including Post Office Canyon in the Peloncillo Mountains. Has also been recorded in the Peloncillos at Clanton Canyon and Skeleton Canyon (BISON-M 2018c).	**Unlikely.** There is suitable habitat for this species in the immediate vicinity of the Project Area along Hanover Creek, and there are records of this species occurring within 10 miles of the Project Area near Silver City, NM (eBird 2025; accessed on February 18, 2025), however; this record was from 1985 and there are no recent detections of this species in this area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Phalacrocorax brasilianus Neotropic cormorant	Inhabits a wide variety of wetlands in fresh, brackish, or saltwater. In coastal areas, this species remains close to the shore in sheltered bays, inlets, estuaries, lagoons, rock outcrops, and islands. Inland, occupies broad slow-flowing rivers, mountain streams, lakes, marshes, swamps, and reservoirs. Habitat requirements include water deep enough for diving and elevated perches in trees and shrubs (Telfair II and Morrison 2020) Elevation: across range, found from sea-level to 16,400 ft in the Andes (Telfair II and Morrison 2020).	Breeding resident throughout lowland South America and Aruba. Largely resident in Central America to northwestern Mexico, and north to Gulf Coast of United States from Texas to Louisiana, with inland breeding colonies established in Louisiana, Mississippi Delta, southern Florida, southwestern Arkansas, southeastern and north-central Oklahoma, central Kansas, eastern South Dakota, southern New Mexico, south-central Arizona, and southern, eastern, north-central, and western Texas (Telfair II and Morrison 2020). Nonbreeding range is similar to breeding range (Telfair II and Morrison 2020).	Found throughout the state in areas with suitably large bodies of water (BISON-M 2018d).	**None.** There is no suitable aquatic habitat for this species in the Project Area.
Camptostoma imberbe Northern beardless tyrannulet	Occurs in arid to semi-humid brushy areas, thickets and forest edges, commonly along streams and dry washes (Tenney 2000). In New Mexico, irregular and uncommon in lowland riparian woodland and adjacent scrub (Tenney 2000). Also uses mesquite bosque and intermittent foothill drainages or dry washes with mesquite and netleaf hackberry (Corman 2005g). Migration habitat use is poorly known but has been reported in areas with desertscrub. Wintering habitat is similar to breeding habitat and includes lowland riparian woodland and adjacent habitats, chaparral and mesquite (Tenney 2000). Elevation: Poorly known for New Mexico. In Arizona, breeds 1,920–4,600 ft (Corman 2005g).	A partial migrant, with northern-most populations being short-distance migrants (Tenney 2000). Breeds locally in southcentral and southeastern Arizona, extreme southwestern New Mexico and in south Texas along the Rio Grande Valley. Range extends southward from U.S. populations through Mexico to Guatemala, although is absent from western Sonora, northwestern Sinaloa, the north Central Plateau, and the highlands of southeastern Chiapas. Also occurs in El Salvador, Honduras, Nicaragua and Costa Rica (Tenney 2000). Winter range is the same as the breeding range with only a portion of the populations in the northern-most extent of the range withdrawing (Tenney 2000).	Breeds irregularly in Guadalupe Canyon in extreme southwest Hidalgo County. Occasionally may occur in the Animas Mountains and north into southern Grant County (BISON-M 2017g).	**None.** Though the Project Area contains suitable riparian habitat for this species, it is outside of the restricted range of this species in New Mexico.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Falco peregrinus anatum American peregrine falcon	Breeds in a wide range of open habitats (White et al. 2002). Prefer steep cliffs that overlook woodlands and riparian areas. Habitat selection is mainly driven by the abundance of prey (birds and occasionally bats). They dive from cliffs to ambush prey. Usually forages within 9 miles of the nest site, but foraging distances of 15 miles are common (Luensmann 2010). Can be found in less optimal habitats, such as small, broken cliffs or cliffs in xeric areas, when preferred habitat is not available. Will roost on tall buildings when prey is abundant (AGFD 2022a). In Arizona, this species is most often found in forested regions from pinyon pine-juniper and evergreen oaks to ponderosa pine and mixed conifer, to cold-temperate desertscrub and Sonoran desertscrub (AGFD 2022a, Burger 2005). Migratory and overwintering habitats are diverse and include similar habitats to those used during breeding and areas devoid of cliffs (White et al. 2002). Elevation: In Arizona, 400–9,000 ft (AGFD 2022a).	*F. peregrinus* occurs on every continent expect Antarctica (White et al. 2002). The *anatum* subspecies is a partial migrant and breeds throughout North America south of the tundra, excluding coastal Pacific Northwest, to northern Mexico (White et al. 2002). Winter range includes portions of the breeding range where prey is abundant year-round and extends south through Central America and South America through Chile (AGFD 2022a, White et al. 2002).	They pass through the state during migration from March-May and there are isolated breeding records throughout the state (White et al. 2002).	**Unlikely**. Though the Project Area is within the migration path of this species, and migrating individuals may utilize habitat within it as stopover habitat, there are no detections of this species within 10-miles of the Project Area (eBird 2025; accessed on February 18, 2025).
Empidonax traillii extimus Southwestern willow flycatcher	Breeds in successional stands of dense riparian vegetation composed of trees and shrubs along rivers or lakes (AGFD 2022c, USFWS 2013a). Migrates along riparian habitats, including those with shorter or more sparse vegetation or smaller patches than would be suitable for nesting (USFWS 2013a). They are a long-distance neotropical migrant and winters in habitats outside of the U.S. (Sedgwick 2020). Elevation: In Arizona, 75–9,180 ft (AGFD 2022c).	They are a long-distance neotropical migrant (Sedgwick 2020). Breeds in Arizona, California, Colorado, New Mexico, Nevada, Texas and Utah, U.S. Winters in southern Mexico and south to northern South America (Sedgwick 2020, USFWS 2013a).	Populations occur along the Rio Grande and Gila River drainages, with much smaller populations at isolated locales in the San Juan, upper Canadian, Zuni, San Francisco, Mimbres, and Pecos river drainages (NMDGF 2018). Historical breeding records are also known from the Canadian, Chama, San Francisco, San Juan, and Zuni River drainages. Species occurs widely throughout the state during migration (BISON-M 2022b).	**None.** There is no suitable dense riparian habitat for this species in the Project Area.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Tyrannus crassirostris Thick-billed kingbird	Prefers low elevation gallery forest and edge habitats in tropical deciduous forest. The gallery forest may be surrounded by subtropical thorn scrub, desertscrub or oak woodland (Lowther, Pyle, and Patten 2020). Habitat use in New Mexico is poorly understood, but in Arizona, breeds in broad drainages at the edges of riparian woodland with large sycamores or cottonwoods. Also uses areas with tall cottonwoods around manmade ponds. Frequently forages in adjacent brushy areas (Corman 2005h) including oak-pine woodland or mesquite grassland (AGFD 2010).Winters in habitats outside of the U.S. Migratory habitat is unknown but is expected to be similar to that used for breeding (Lowther, Pyle, and Patten 2020). Elevation: Range-wide, occurs below 6,070 ft (Lowther, Pyle, and Patten 2020).	A partial migrant with only the northernmost populations withdrawing southward (Lowther, Pyle, and Patten 2020). Breeds from southeastern Arizona and extreme southwestern New Mexico, U.S. and south along the Pacific Slope of Mexico from eastern Sonora and western Chihuahua to Guerrero, México D.F., Morelos, southern Puebla, and central Oaxaca. Winters from southeastern Sonora, through the remainder of the breeding range to southwestern Chiapas. Rarely found as far south as Guatemala (Lowther, Pyle, and Patten 2020).	Occurs in Hidalgo County in extreme southwestern New Mexico, including Antelope Wells and the foothills of the Animas Mountains (BISON-M 2017i, Lowther, Pyle, and Patten 2020).	**None.** The Project Area does not contain suitable habitat for this species in the form of gallery forest and edge habitats and there are no detections of this species within 10-miles of the Project Area (eBird 2025; accessed on February 18, 2025).
Passerina versicolor Varied bunting	Range-wide, they breed in densely vegetated areas with desertscrub, thornscrub, scrubby woodlands, forest edges, and overgrown clearings (Groschupf and Thompson 2020). Habitat use in New Mexico is poorly described. However, in Arizona, most breeding records are from arid slopes adjacent to drainages with mesquite and netleaf hackberry and from areas with dense Sonoran desertscrub (Corman 2005i). During migration habitat use is similar to that used for breeding (Groschupf and Thompson 2020). They winter in habitats outside of the U.S. (Groschupf and Thompson 2020). Elevation: In Arizona, breeds between 1,350–5,100 ft (Corman 2005i). In New Mexico, 3,000-5,000 ft (BISON-M 2017j).	Is a partial migrant (Groschupf and Thompson 2020). Breeding range includes south-central and southeastern Arizona, southern New Mexico and southern Texas, U.S. The range extends southward to northern Michoacán, Mexico and locally in Guatemala. During the winter, northern populations withdraw southward and this species can be found in Mexico from southern Sonora on the Pacific Slope, Guanajuato in the interior and northern Tamaulipas and eastern Nuevo León on the Atlantic Slope and southward through the breeding range (Groschupf and Thompson 2020). There is some evidence that they may be expanding northward into Arizona and New Mexico (Groschupf and Thompson 2020).	Occurs in southern part of the state near the Carlsbad Caverns in Hidalgo County and the Guadalupe Mountains. Vagrants have also been detected in west-central portions of the state (BISON-M 2017j, Groschupf and Thompson 2020).	**Unlikely.** While the Project Area contains suitable habitat for this species in the form of scrubby woodlands, there are no records of this species occurring within the vicinity of the Project Area (eBird 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Junco phaeonotus Yellow-eyed junco	Utilizes open conifer forest, ponderosa pine forest, pine-oak forests, scrubby or brushy areas, pastures or other fields During the winter, may move to lower elevations sites with oak-pine woodland, oak-woodland or chaparral (Corman 2005j). Elevation: Range-wide, occurs between 3,940–11,480 ft (Sullivan 2018).	Typically non-migratory (Sullivan 2018). The range extends from southeastern Arizona and extreme southwestern New Mexico, U.S. and southward into Mexico. In Mexico, this species in a two-pronged distribution from northeastern Sonora and western Chihuahua, and western Nuevo León and southwestern Tamaulipas, south to central Oaxaca. Also found in Chiapas, and adjacent southwestern Guatemala (Sullivan 2018).	Fairly common in southwestern part of the state in the Animas Mountains of Hidalgo County (Sullivan 2018). There have also been some detections of this species in the Big Hatchet Mountains of Hidalgo County and the Piños Altos Mountains in Grant County (BISON-M 2018h, Sullivan 2018).	**Possible.** There is marginally suitable habitat for this species in the immediate vicinity of the Project Area and there are records of this species occurring within 10 miles of the Project Area near Silver City, NM (eBird 2025; accessed on February 18, 2025).
FISH				
Gila robusta[1] Roundtail chub	Inhabits cool to warm water streams and rivers (USFWS 2015b). Typically found in largest and deepest pools of middle to large streams and is considered to be less associated with dense cover than other chub species (AGFD 2015, Minckley and Marsh 2009). Young-of-the-year favor slow, shallow water associated with vegetated shorelines (USFWS 2015b). Elevation: 1,210–7,220 ft, most common between 2,000–5,000 ft (AGFD 2015, Minckley and Marsh 2009).	Note: The distribution described below reflects USFWS description of the proposed DPS and not the current understanding of the species complex. Historically from The Bill Williams, Gila, Little Colorado, Salt and Verde river drainages in Arizona and New Mexico. At the full species level: In the U.S.: the Colorado River basin in Arizona, Colorado, New Mexico, Utah and Wyoming (USFWS 2015b). In Mexico: Rio Yaqui and Piaxtla in Sonora (AGFD 2015).	Found in Rio Arriba, San Juan, and New Mexico counties (BISON-M 2018f).	**None.** The Project Area does not contain suitable habitat (perennial water). This species is not expected to occur in the Project Area.

[1] Proposed threatened status withdrawn because the it did not meet the definition of a species under the Act (USFWS 2017). USFWS determined that *G. nigra* and *G. intermedia* should be subsumed into *G. robusta*.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Gila intermedia [2] Gila chub	The species typically occurs in pools of small streams or cienegas. However, this species can also be found in larger streams. It is often found near undercut banks, overhanging vegetation, and various types of cover within the aquatic habitat (USFWS 2015c). Elevation: 2,000–5,500 ft (USFWS 2015c).	Endemic to the Gila River Basin in Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 2015c).	This species is believed to persist in Turkey Creek, Hidalgo County, NM (BISON-M 2024a).	**None.** The Project Area does not contain suitable habitat (perennial water). This species is not expected to occur in the Project Area.
Gila nigra[3] Headwater chub	Inhabits the middle to upper reaches of moderately-sized cool to warm water streams. Adults favor nearshore pools near swifter water with sand and gravel substrate. Young-of-the-year and juveniles use small pools with low water velocity nearshore with undercut banks (USFWS 2015b). Elevation: 4,350–6,560 ft (USFWS 2015b).	Arizona and New Mexico (USFWS 2015).	In New Mexico, this species is restricted to the Gila River Basin in middle to headwater reaches of middle-sized streams (BISON-M 2024c).	**None.** The Project Area does not contain suitable habitat (perennial water). This species is not expected to occur in the Project Area.
Oncorhynchus gilae Gila trout	Inhabits perennial montane streams in coniferous and mixed woodland, montane coniferous forest, and subalpine forests (USFWS 2003). These streams area characterized by high flow variability but with low turbidity and high dissolved oxygen. Spawns in areas with flow over substrates of coarse sand or gravel. Juveniles likely use areas with slow current such as stream margins, side channels or shallow bars. Subadults favor riffle habitats whereas adults prefer pool habitats (USFWS 2003). Elevation: 5,400–9,200 ft (USFWS 2003).	Arizona and New Mexico, U.S. (USFWS 2003).	In New Mexico, this species historically occurred in the headwater streams of the Gila and San Francisco rivers. As of 2001, there were documented populations in Grant, Catron, and Sierra counties, New Mexico (USFWS 2002b). Three streams within Grant County were known to contain populations of the Gila trout (McKnight Creek, Sheep Corral Canyon, and Black Canyon). Gila trout were introduced into McKnight Creek (USFWS 1993b).	**None.** The Project Area does not contain suitable habitat (perennial montane streams). This species is not expected to occur in the Project Area.

[2] Endangered (USFWS 2005b); designated critical habitat (USFWS 2005a). [Note: USFWS (USFWS 2017) determined that G. nigra and G. intermedia should be subsumed into G. robusta and intends to review the status of Gila chub.]

[3] Proposed threatened status withdrawn because the it did not meet the definition of a species under the Act (USFWS 2017). USFWS determined that G. nigra and G. intermedia should be subsumed into G. robusta.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Poeciliopsis occidentalis occidentalis **[Note: There are no currently recognized subspecies of *P. occidentalis* (ITIS 2019, Accessed April 8, 2019)].** [4] Gila topminnow	Occurs in springs, cienegas, permanent and intermittent streams and the margins of large rivers. Prefers warm, shallow and slow-moving water but can occur in lentic habitats or lotic habitats with moderate current. Additionally, favors areas with algal mats or debris along stream margins (USFWS 1998). Elevation: Historical records from 1,320–7,510 ft, with most records occurring below 5,000 ft (AGFD 2024).	In the U.S., occurs in the Gila River Basin of Arizona and New Mexico. In Mexico, occurs in the Rio Sonora, Santa Cruz River and Rio de la Concepción basins in Sonora (USFWS 1998).	In New Mexico, this species occurs in Grant and New Mexico County within the Gila-San Francisco River drainage (BISON-M 2024b).	**None.** The Project Area does not contain suitable habitat (perennial water). This species is not expected to occur in the Project Area.
MAMMALS				
Leptonycteris curasoae yerbabuenae [Note: This taxa has been elevated to full species status as L. yerbabuenae (ITIS 2019, accessed December 2, 2019)].[5] Lesser long-nosed bat	Occurs in thornscrub or Sonoran desertscrub and through semi-desert grasslands and into oak woodlands or deciduous forest where columnar cacti and agaves are present (AGFD 2011, Medellín 2016). Roosts in caves, abandoned mines, vegetation and occasionally old buildings (AGFD 2011, USFWS 2018b). Forages at night on nectar and pollen of columnar cacti and agaves (AGFD 2011, USFWS 2018b). In some portions of its range, fruits of cacti are commonly consumed. Additionally, this species readily finds and utilizes hummingbird feeders. Sometimes bypass foraging areas close to roost sites in favor of distant areas and have been documented travelling greater than 40 miles from known roosts. Elevation: Range-wide, reported as high as 8,530 ft but is typically found below 5,905 ft (Medellín 2016).	In the U.S.: southern Arizona and extreme southwestern New Mexico. Outside the U.S.: south from the U.S. border through Mexico (including Baja), Guatemala, El Salvador, and Honduras **(NatureServe 2020, accessed May 7, 2020)**. Note that USFWS **(USFWS 2018b)** indicates that the range outside of the U.S. only extends as far south as southern Mexico.	Southwestern portions of the state in the Animas and Peloncillo mountains of Hidalgo County (Cole and Wilson 2006, Richardson 2007, USFWS 2016).	**None.** While the Project Area contains suitable roosting habitat for this species, it does not contain foraging habitat and is outside of its known range in New Mexico.

[4] Endangered (USFWS 1967) as P. occidentalis; no critical habitat.

[5] Delisted due to recovery (USFWS 2018a).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Euderma maculatum Spotted bat	Occurs in a wide-range of vegetation types including desertscrub, pinyon-juniper woodlands, ponderosa pine forests, mixed conifer forest, canyon bottoms, riparian areas, fields, pastures, and sub-alpine meadows. Roost in cracks and crevices of rock cliffs and in caves. They are generally solitary but may roost or hibernate in small groups. Foraging ranges may be large and up to 25 miles from their roost sites. Primarily consume moths. Are rarely caught in nets, potentially due to rarity, high flight patterns or sensitivity to light and sound. In Arizona, this species is most commonly captured near water or along canyon rims. It is unknown if this species is migratory. In Arizona, they appear active year-round (Luce, Chambers, and Herder 2005). Elevation: In Arizona, 110–8,670 ft (AGFD 2003).	Occurs in British Columbia, Canada and the U.S. states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Texas, Washington, and Wyoming. Range extends south from U.S. populations to Durango and Queretaro, Mexico (AGFD 2003, Hammerson 2015).	Documented from Bernalillo, Catron, Cibola, Doña Ana, Eddy, Grant, Lincoln, Los Alamos, Otero, Rio Arriba, Sandoval, San Juan, Santa Fe, Valencia, and Socorro counties. In 2006, this species was observed in Grant County at the following locations: near the Gila River at Lichty Farm, near Buckhorn, Big Burro Mountains, and near Santa Fe at Black Canyon Campground (BISON-M 2017h).	**Unlikely.** The Project Area contains suitable habitat for this species in the form of mixed conifer forests and riparian habitat, but does not contain potential roosting habitat.
REPTILES				
Heloderma suspectum Gila monster	Inhabit desert and mesquite-grassland, but also pine- oak forest, tropical deciduous forest, and thorn forest. It is usually found in rocky foothill regions and avoids open flats. It typically inhabits the lower slopes of mountains and nearby outwash plains, especially in canyons and arroyos where water is at least periodically present (Beck 2009). In some areas, they also frequent irrigated farmlands that adjoin those habitat types. Cover in such areas often includes boulders, rock crevices, downed vegetation, and litter (AGFD 2013b). Elevation: 3,800-6,400 ft (Beck 2009).	Occupies the southern areas of Utah, Nevada, California, and New Mexico. The most southern population lives in the Sonoran desert of Mexico near the towns of Alamos Guayamas and Ortiz (AGFD 2013b, Beck 2009).	Peripheral in the state, reaching the eastern edge of its range in the southwest, where it is known from Hidalgo, Grant, Luna and perhaps Doña Ana counties (BISON-M 2018e). Most common at the Redrock Wildlife Area on the Gila River west of the Big Burro Mountains (BISON-M 2018e).	**Unlikely**. While the Project Area contains suitable habitat for this species, it is near the eastern limit of its known geographic range. No known records of this species within 10 miles of the Project Area (iNaturalist 2025; accessed on February 18, 2025).

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Thamnophis eques megalops Northern Mexican gartersnake	Strongly associated with water due to its primarily aquatic prey base and is heavily dependent on fish species. Occurs near or in ponds, cienegas, lowland river riparian forests and woodlands, and upland stream gallery forests. Avoids steep mountain canyons. Most abundant in densely vegetated habitat. Associated with a variety of biotic communities including Sonoran Desertscrub, Semidesert Grasslands, Interior Chaparral, Madrean Evergreen Woodland and into the lower reaches of Petran Montane Conifer Forest (AGFD 2023b, USFWS 2013b). May be found up to one mile (or more) away from water, using terrestrial habitat for brumation, digestion, or for thermoregulatory needs such as developing young (Jeff Servoss, USFWS pers. comm. to D. Cerasale, April 18, 2016). Elevation: 130-8,497 ft (USFWS 2014b) but is most common below 5,000 ft (AGFD 2023b).	Occurs in Arizona and New Mexico, U.S. **(USFWS 2014b)**. Although it is poorly known, the range extends into Mexico and is thought to include Sonora, Chihuahua, Durango, Coahuila, Zacatecas, Guanajuato, Nayarit, Hidalgo, Jalisco, San Luis Potosí, Aguascalientes, Tlaxcala, Puebla, México, Michoacán, Oaxaca, Veracruz, and Querétaro (AGFD 2023b).	The status in the state is uncertain, although it is possible that this species may occur in Mule Creek (USFWS 2014d), and there is proposed critical habitat for this species in Gila River and Duck Creek, although portions of these areas are being considered for exclusion (USFWS 2020a); however, it is likely extirpated.	**None.** There is no suitable habitat (ponds, cienegas, lowland river riparian forests and woodlands, and upland stream gallery forests) for this species in the Project Area or within its dispersal range.
Thamnophis rufipunctatus Narrow-headed gartersnake	Are strongly associated with pool and riffle habitats in clear, rocky streams habitats in Petran Montane Conifer Forest, Great Basin Conifer Woodland, Interior Chaparral and the Arizona Upland subdivision of Sonoran Desertscrub. Occasionally utilizes lake shoreline habitats (USFWS 2014b). They primarily preys on fish species (USFWS 2014b). Bank-line vegetation is an important habitat component and this species favors areas with shrub- and sapling-sized plants for thermoregulation (USFWS 2014b). Been documented using site up to 656 ft away from the floodplain for hibernation (USFWS 2014b). Typically surface active between March and November with air temperatures of 52° to 89° F (USFWS 2014b). Elevation: 2,300-8,000 ft (USFWS 2014b).	Occurs in Arizona and New Mexico **(USFWS 2014b)**.	Confined to the Catron, Grant, and Hidalgo counties where it reaches the easternmost edge of its distribution, where it uses suitable rocky rivers and streams of the San Francisco and Gila River drainages. Expected to exist within the San Francisco River drainage at low densities. Individuals have been recently detected in Saliz Creek, Whitewater Creek, Diamond Creek, and Dry Blue Creek near the Arizona border in Catron County (NMGFD 2020).	**None.** The Project Area does not contain suitable aquatic habitat for this species and is outside of its current range within New Mexico.
MOLLUSCS				
Pyrgulopsis gilae Gila springsnail	Inhabits cool springs and brooks, but a few have also been found in a nearby thermal spring. Occurs in mud, debris, and vegetation. Typical habitat is a rivulet about 3 ft wide and grown up with watercress (*Nasturtium officinale*) (BISON-M 2017e). Elevation: Unknown.	Endemic to New Mexico **(BISON-M 2017e)**.	Limited to a series of thermal springs along the Gila River in Grant County in the East and West Forks. Has also been observed along Beaver Creek, Mimbres District and in the Black Range District **(BISON-M 2017e)**.	**None**. Project Area is outside of the highly restricted geographic range.

Species Name	Known Suitable Habitat	Total Range	Distribution in New Mexico	Potential to Occur
Pyrgulopsis thermalis New Mexico springsnail	Inhabits waters as warm as 38°C but is more common where temperatures are 33-35°C. Occupies substrates in areas of steep or even vertical rock, covered with thin sheets of water. Also found in minor spring flows on algal film and crusts of lime-depositing algae. Likely also occurs in dense grasses and sedges bordering the springs (BISON-M 2019c). Elevation: Unknown.	Endemic to New Mexico (BISON-M 2019c).	Restricted to a series of thermal springs along the Gila River in Grant County (BISON-M 2019c).	**None**. Project Area is outside of the highly restricted geographic range.

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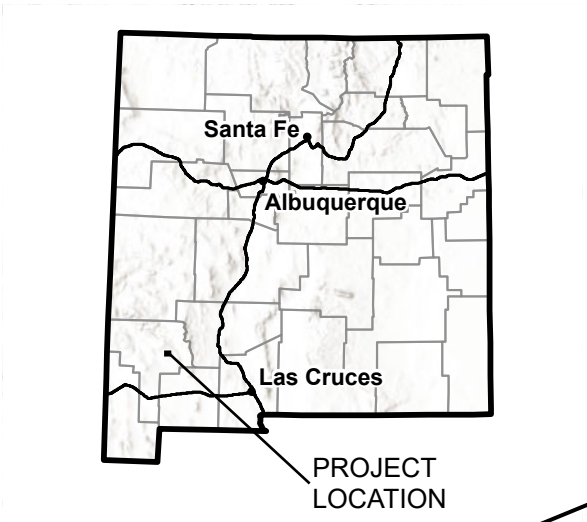
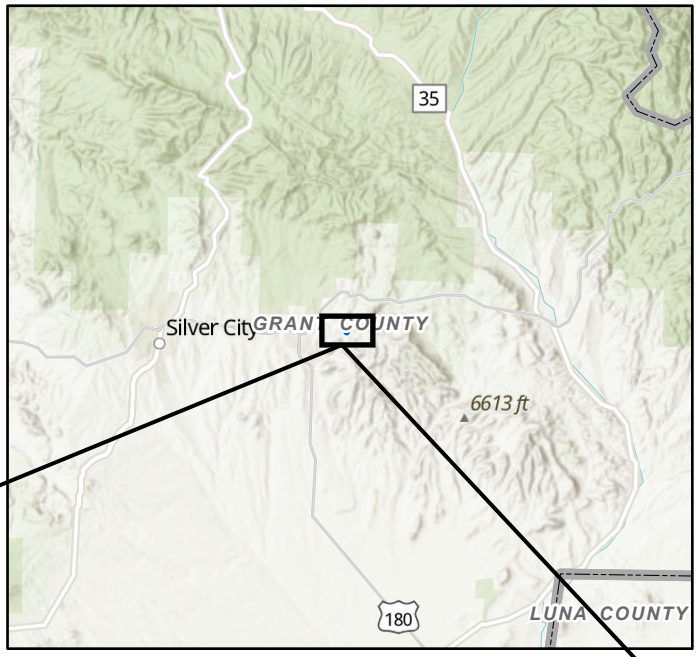
FIGURES

NEW MEXICO



PROJECT VICINITY



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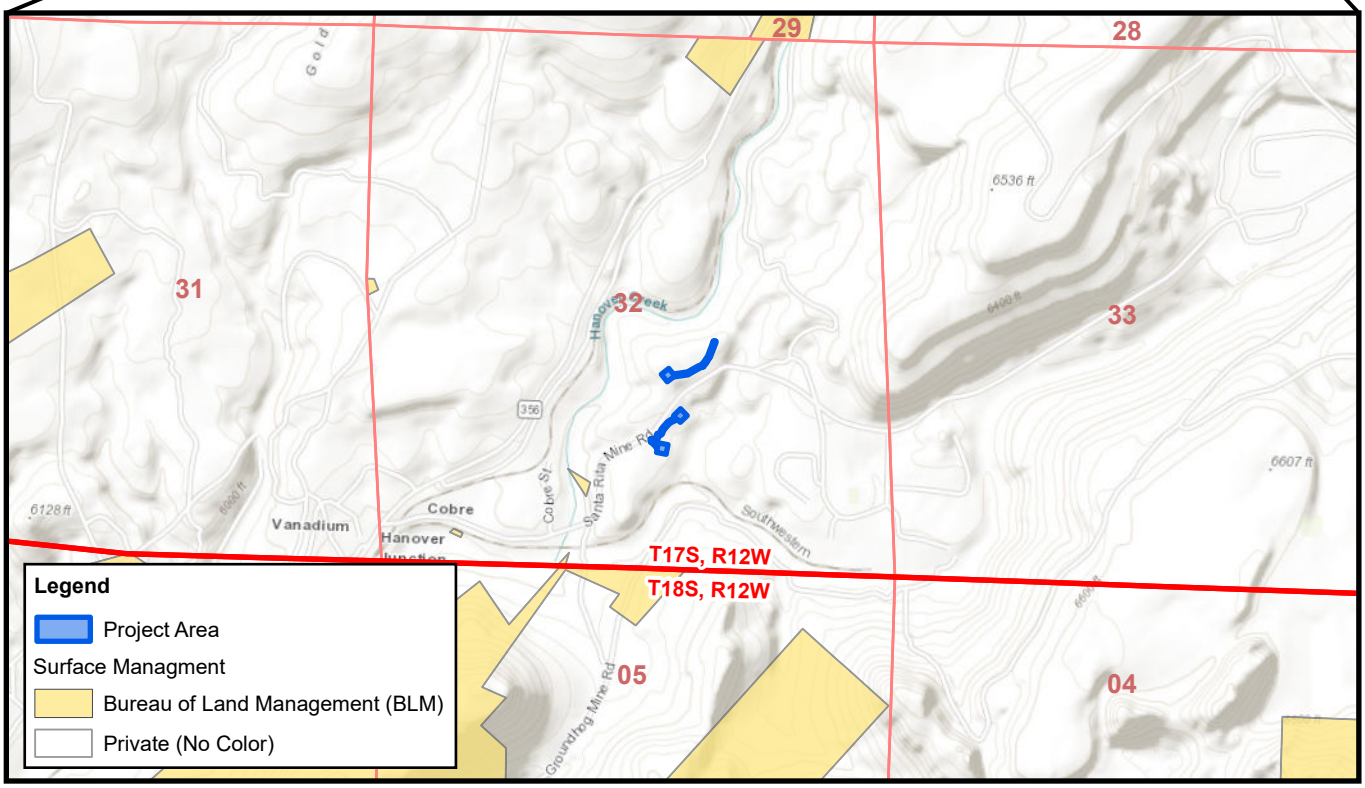

T17S, R12W, a Portion of Section 32,
Grant County, New Mexico
Projection: NAD 1983 UTM Zone 13N
Surface Management: BLM 2023
Image Source: ArcGIS Online, World Topographic Map

FMI CHINO
Exploratory Drilling
Biological Evaluation

VICINITY MAP
Figure 1

WestLand Engineering & Environmental Services

N

0 1,000 2,000 Feet

0 300 600 Meters

T17S, R12W, a Portion of Section 32,
Grant County, New Mexico
Projection: NAD 1983 UTM Zone 13N
Image Source: Maxar 7/24/2024

N

0 300 600 Feet

0 100 200 Meters

WestLand Engineering & Environmental Services

FMI CHINO
Exploratory Drilling Biological Evaluation

AERIAL OVERVIEW
Figure 2

APPENDIX A
USFWS IPaC Report

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Grant County, New Mexico

Local office

New Mexico Ecological Services Field Office

(505) 346-2525
(505) 346-2542

2105 Osuna Road Ne
Albuquerque, NM 87113-1001

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. 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.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Mexican Wolf Canis lupus baileyi No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3916	EXPN

Birds

NAME	STATUS
Mexican Spotted Owl Strix occidentalis lucida Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8196	Threatened
Northern Aplomado Falcon Falco femoralis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1923	EXPN
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
Chiricahua Leopard Frog Rana chiricahuensis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1516	Threatened

Fishes

NAME	STATUS

Chihuahua Chub Gila nigrescens Wherever found There is **proposed** critical habitat for this species. https://ecos.fws.gov/ecp/species/7156	Threatened
Loach Minnow Tiaroga cobitis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6922	Endangered
Spikedace Meda fulgida Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6493	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information

help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Broad-tailed Hummingbird *Selasphorus platycercus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 25 to Aug 21

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

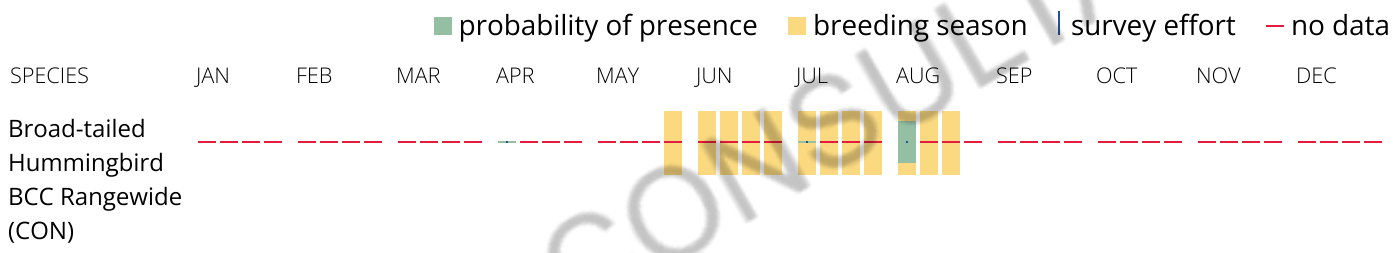
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as “Vulnerable”. See the FAQ “What are the levels of concern for migratory birds?” for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ “Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds”.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local

government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX B
BISON-M List, Grant County, NM

Species of Greatest Conservation Need and Federal or State Threatened/Endangered

Grant

Taxonomic Group	# Species	Taxonomic Group	# Species
Amphibians	2	Birds	22
Fish	8	Mammals	3
Molluscs	2	Reptiles	3

TOTAL SPECIES: 40

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat	SGCN	Photo
Lesser Long-nosed Bat	Leptonycteris yerbabuenae	T			Y	View
Spotted Bat	Euderma maculatum	T			Y	View
Mexican Gray Wolf	Canis lupus baileyi	E	E		Y	View
Common Ground Dove	Columbina passerina	E			Y	View
Yellow-billed Cuckoo (western pop)	Coccyzus americanus occidentalis		T	Y	Y	View
Lucifer Hummingbird	Calothorax lucifer	T			Y	View
Costa's Hummingbird	Calypte costae	T			Y	View
Broad-billed Hummingbird	Cynanthus latirostris	T			Y	View
Neotropic Cormorant	Phalacrocorax brasilianus	T			Y	View
Bald Eagle	Haliaeetus leucocephalus	T			Y	View
Common Black Hawk	Buteogallus anthracinus	T			Y	View
Mexican Spotted Owl	Strix occidentalis lucida		T	Y	Y	View
Elegant Trogon	Trogon elegans	E			Y	View
Gila Woodpecker	Melanerpes uropygialis	T			Y	View
Aplomado Falcon	Falco femoralis	E	E		Y	View
Peregrine Falcon	Falco peregrinus	T			Y	View
Northern Beardless-Tyrannulet	Camptostoma imberbe	E			Y	View
Thick-billed Kingbird	Tyrannus crassirostris	E			Y	View
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y	Y	View
Bell's Vireo	Vireo bellii	T			Y	View
Gray Vireo	Vireo vicinior	T			Y	View
Yellow-eyed Junco	Junco phaeonotus	T			Y	View
Baird's Sparrow	Centronyx bairdii	T			Y	View
Abert's Towhee	Melozone aberti	T			Y	View

Species of Greatest Conservation Need and Federal or State Threatened/Endangered

Grant

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat	SGCN	Photo
Varied Bunting	Passerina versicolor	T			Y	View
Reticulate Gila Monster	Heloderma suspectum suspectum	E			Y	View
Mexican Gartersnake	Thamnophis eques	E	T	Y	Y	View
Narrow-headed Gartersnake	Thamnophis rufipunctatus	E	T	Y	Y	View
Chiricahua Leopard Frog	Lithobates chiricahuensis		T	Y	Y	View
Lowland Leopard Frog	Lithobates yavapaiensis	E			Y	View
Gila Chub	Gila intermedia		E	Y	Y	View
Headwater Chub	Gila nigra		C		Y	View
Chihuahua Chub	Gila nigrescens	E	T		Y	View
Roundtail Chub (lower Colorado River populations)	Gila robusta	E	C		Y	View
Spikedace	Meda fulgida	E	E	Y	Y	View
Loach Minnow	Rhinichthys cobitis	E	E	Y	Y	View
Gila Trout	Oncorhynchus gilae	T	T		Y	View
Gila Topminnow	Poeciliopsis occidentalis occidentalis	T	E		Y	View
Gila Springsnail	Pyrgulopsis gilae	T			Y	No Photo
New Mexico Hot Springsnail	Pyrgulopsis thermalis	T			Y	No Photo

APPENDIX C
Representative Ground Photos

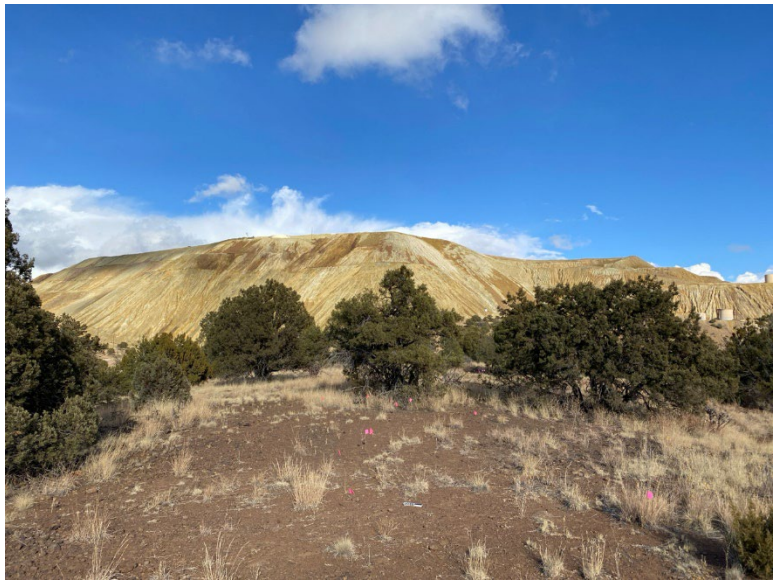


Photo 1. Overview of northern drill pad and access road locations.

Photo 2. Overview of northern drill pad and access road locations.

Photo 3. Overview of northern drill pad and access road locations.

Photo 4. Overview of northern drill pad and access road locations.

Photo 5. Overview of western drill pad and access road locations.

Photo 6. Railroad near Project Area.

Photo 7. Overview of western drill pad and access road locations.

Photo 8. Overview of western drill pad and access road locations.