

**Specification Aggregates Quarry Amendment  
Exhibit H (Rule 6.4.8) – Wildlife Resources**

Wildlife resources within the current mine permit boundary were documented in the original permit application and the 2003 Amendment by Greystone Environmental Consultants. A subsequent wildlife resources evaluation for the 64.13-acre amendment area located south of the current permit area was completed in 2021 by Pinyon Environmental, Inc and included in the attached Biological Resources Memorandum (**Exhibit H1**).

Martin Marietta will follow the recommendations below that are included in the memo:

- To avoid or minimize potential impacts to birds protected under the MBTA, Pinyon recommends that vegetation removal and initial clearing/grubbing related to the proposed quarry expansion occur prior to April or after August (i.e., outside of the songbird nesting season). If this timeframe is not feasible, Pinyon recommends that the project conduct nest surveys within 10 days prior to vegetation clearing. If active nests are noted, they should be flagged for avoidance until the young have left the nest. Inactive (unoccupied) nests may be removed anytime.
- Although no raptor nests or roosts were noted during the site visit, there is suitable habitat for raptors within 0.5 mile of the study area and raptors may develop new nests or roosts prior to construction. If construction activities occur during the raptor nesting season (February – August), Pinyon recommends that the project conduct pre-construction nest surveys for raptors. If nesting raptors are noted within 0.5 mile of the project area, then the recommendations outlined in CPW *Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* should be followed (CPW, 2020). If Bald Eagle (*Haliaeetus leucocephalus*) or Golden Eagle (*Aquila chrysaetos*) nests or roosts are noted in the area, additional coordination with the USFWS may be required.



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## Biological Resources Memorandum

**Applicant Name:** Martin Marietta Materials Real Estate Investments, Inc.  
 c/o Martin Marietta Materials, Inc.  
**Date:** February 26, 2021  
**Case Number:** 20-126999PA  
**Subject:** Biological Resources Memorandum for the Golden Spec Agg Quarry Expansion,  
 Jefferson County, Colorado

### Introduction

Pinyon Environmental, Inc. (Pinyon), has been contracted by Martin Marietta to identify potential environmental constraints for the Golden Specification Aggregates (Spec Agg) Quarry Expansion (project) in Jefferson County, Colorado. Pinyon understands that Martin Marietta is proposing to expand the existing quarry to the south (see Figure 1 for the proposed expansion area, or “study area”). Current and future mining activities focus on mining aggregate for ready-mix concrete. Pinyon visited the site on February 1, 2021 to assess biological resources in and near the study area. This *Biological Resources Memorandum* (memorandum) documents the results of that assessment and highlights potential biological constraints that should be considered in project planning. This memorandum also provides an analysis of the potential adverse impacts of the proposed project to biological resources and recommends mitigation measures and next steps based on potential impacts.

The project is within a portion of Matthews/Winters Park which is operated by Jefferson County Open Space but not typically accessible to the public. Project location information is summarized in Table 1.

**Table 1. Project Location**

<b>County</b>	Jefferson County
<b>U.S. Geological Survey 7.5-Minute Topographic Map</b>	Morrison, Colorado (USGS, 1994)
<b>Section, Township, and Range (6<sup>th</sup> Principal Meridian)</b>	Section 15 in Township 4 South, Range 70 West
<b>Approximate Average Elevation of the Study Area (Feet Above Mean Sea Level)</b>	6,700
<b>Approximate Center Location of the Study Area (Decimal Degrees, World Geodetic System 84)</b>	39.700595°, -105.212080°

### Methods

Pinyon biologist Pam Wegener conducted a desktop review of biological resources in and near the study area using publicly available databases, including the following:

- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (USFWS, 2020)
- U.S. Department of Agriculture (USDA) soil maps (USDA, 2019)

### Biological Resources Memorandum

- USFWS's Information for Planning and Consultation (IPaC) database (USFWS, 2021)
- Colorado Parks and Wildlife (CPW) Species Activity Data (CPW, 2019)
- CPW Threatened and Endangered Species Lists (CPW, 2021)
- Colorado Natural Heritage Program (CNHP) Conservation Status Handbook Tracking Lists (CNHP, 2019)
- U.S. Geological Survey (USGS) 7.5-Minute Topographic Maps (USGS, 1994)
- USGS National Hydrography Dataset (USGS, 2019)
- Aerial imagery (Google Earth Pro, 2021)

Following the desktop review, Ms. Wegener visited the site on February 1, 2021 to assess the following biological resources:

- General habitat and vegetation
- Habitat suitability for federally listed threatened and endangered species
- Habitat suitability for state-listed threatened and endangered species and state special concern species
- Habitat suitability for songbirds within the study area, and raptors within 0.5 mile of the study area
- Potential Waters of the U.S. (WUS), including wetlands and non-wetland waters within the study area

No wetland vegetation was noted during the site visit, and a formal wetland delineation was therefore not warranted. Ms. Wegener mapped potential non-wetland water boundaries by recording the ordinary high water mark (OHWM) in the field with sub-meter accuracy using *Collector for ArcGIS* paired with a R.I Global Navigation Satellite System Receiver. In addition, Ms. Wegener took notes and photographs to document general conditions. A Photographic Log is attached.

## Results

### General Habitat and Vegetation

The project is situated on the southeast slope of Lookout Mountain, outside Golden, Colorado (Figure 1 and 2). This area has been shaped by industrial activity including aggregate quarry mining to the immediate north, the development of both U.S. Highway 40 (U.S.-40) and Interstate 70 to the south, and the presence of large impermeable asphalt surfaces to the immediate east. Twelve mule deer (*Odocoileus hemionus*) were noted near the study area, as well as evidence of heavy use in the area by the species (e.g., bones, droppings, and bedding areas). Several Black-billed Magpies (*Pica hudsonia*) and American Crows (*Corvus brachyrhynchos*) were also noted within the study area.

Two ephemeral drainages originate within the steep slopes of the study area (Unnamed Drainage 1 and Unnamed Drainage 2; Figure 2). Neither drainage had flowing water at the time of the site visit; however, some snow was present in the beds of the drainages. The drainage bottoms had upland vegetation surrounded by thick riparian vegetation dominated by Rocky Mountain maple shrubs and trees (*Acer glabrum*).

Aside from the riparian area associated with the drainages, few trees were noted within the study area (Photo 1 in Photographic Log). Vegetation was mostly composed of upland, weedy herbaceous species including American licorice (*Glycyrrhiza lepidota*), Canada thistle (*Cirsium arvense*), common mullein (*Verbascum thapsus*), dalmatian toadflax (*Linaria dalmatica*), downy brome (*Bromus tectorum*), flixweed (*Descurainia sophia*), hairy golden aster (*Heterotheca villosa*), hairy rock-cress (*Arabis hirsuta*), hoary alyssum (*Berteroa incana*), houndstongue (*Cynoglossum officinale*), musk thistle (*Carduus nutans*), purple threeawn (*Aristida purpurea*), redstem filaree (*Erodium cicutarium*), Scotch thistle (*Onopordum acanthium*), smooth brome (*Bromus inermis*), and yarrow (*Achillea millefolium*). Shrubs and sub-shrubs included alderleaf mountain mahogany (*Cercocarpus montanus*), creeping barberry (*Mahonia repens*), fringed sage (*Artemisia frigida*), Rocky Mountain maple (*Acer glabrum*), wax currant (*Ribes cereum*), Woods' rose (*Rosa woodsii*), and yucca (*Yucca glauca*).

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### Biological Resources Memorandum

## Federally Listed Species

Based on a review of the USFWS online IPaC System, there are federally listed species with the potential to occur in, or be impacted by, projects in or near the study area (USFWS, 2021). Four of these species occur downstream of the study area and could be impacted by projects that result in water depletions to the South Platte River or its tributaries: the pallid sturgeon (*Scaphirhynchus albus*; federally endangered), Piping Plover (*Charadrius melodus*; federally threatened), Whooping Crane (*Grus americana*; federally endangered), and western prairie fringed orchid (*Platanthera praeclara*; federally threatened).

Pinyon evaluated the potential for the remaining species to occur in the study area based on an assessment of habitat and species distributions (Table 2). No federally listed species or suitable habitat were observed in the study area during the site visit.

**Table 2. Potential for Federally Listed Species to Occur in the Study Area**

Common Name	Species	Federal Status	Habitat	Potential for Occurrence in the Study Area <sup>1</sup>
Canada lynx	<i>Lynx canadensis</i>	Threatened	Uneven-aged stands with relatively open canopies and well-developed understories of coniferous forests.	<b>None.</b> The study area is located outside of CPW-mapped potential habitat (CPW, 2019). Suitable habitat does not occur in the study area.
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Mature, old-growth forests that possess complex structural components; canyons, riparian and conifer communities.	<b>None.</b> Suitable habitat does not occur in the study area. The study area does not have sufficient tree coverage and/or canyons suitable for the species.
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Threatened	Occurs along the Front Range of Colorado along permanent or intermittent streams in areas with herbaceous cover and adequate cover of shrubs and trees.	<b>None.</b> The study area is located outside of critical habitat (USFWS, 2010). Suitable habitat does not occur in the study area. The study area does not have intermittent/perennial streams suitable for the species.
Ute ladies'-tresses orchid	<i>Spiranthes diluvialis</i>	Threatened	Sub-irrigated alluvial soils along streams; open meadows on floodplains including riparian areas. The species generally occurs at elevations below 6,500 feet.	<b>None.</b> Suitable habitat does not occur in the study area. The study area does not have open meadows or floodplains suitable for the species.

Notes:

<sup>1</sup>Based on a review of distribution maps from NatureServe Explorer online (NatureServe, 2021) and Colorado Parks and Wildlife Species Activity Mapping (CPW, 2019).

The Jefferson County Planning and Zoning Division requires trapping surveys for areas with suitable habitat to support the Preble's meadow jumping mouse. As there is no suitable habitat within the study area for Preble's meadow jumping mouse, trapping surveys are not required.

### State-listed Species and State Special Concern Species

Based on a review of CPW Threatened and Endangered Species Lists, CPW Species Activity Data, and the CNHP Conservation Status Handbook Tracking Lists, there are state-threatened species and state special concern species with the potential to be impacted by work occurring in the USGS 7.5-Minute Topographic map where the study area is located (CPW, 2021; CPW, 2019; CNHP, 2019; USGS, 1994). Note that state special concern species are not subject to regulatory requirements but have been designated by CPW as priority species for conservation efforts. Pinyon evaluated the potential for these species to occur in the study area based on an assessment of habitat and species distributions (Table 3). State-listed and state special concern species that are also federally listed are not included in Table 3, as they were previously discussed in Table 2. No state listed or special concern species were observed in the study area during the site visit.

**Table 3. Potential for State Listed and State Special Concern Species to Occur in the Study Area**

Common Name	Species	State Status	Habitat	Potential for Occurrence in the Study Area <sup>1</sup>
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Special concern	Open canopies with large, mature trees for perching and nesting. Prefer areas near open waters.	<b>Low.</b> No eagle nests, roosting areas, concentration areas, or forage areas were mapped or noted within 0.5 mile of the study area (CPW, 2019). However, there is suitable nesting and/or foraging habitat within 0.5 mile of the study area, and Bald Eagles may develop nests and/or roosts prior to construction.
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	Special concern	Shortgrass or mixed-grass prairie.	<b>None.</b> No black-tailed prairie dog burrows were noted near the study area during the site visit or from desktop imagery. Suitable habitat does not occur; the study area is steeply sloped.
Burrowing Owl	<i>Athene cunicularia</i>	Threatened	Burrows in prairie dog colonies in open grasslands, especially prairie, plains, and savanna.	<b>None.</b> No black-tailed prairie dog burrows were noted near the study area during the site visit or from desktop imagery. Suitable habitat does not occur; the study area is steeply sloped.

Common Name	Species	State Status	Habitat	Potential for Occurrence in the Study Area <sup>1</sup>
Orangethroat darter	<i>Etheostoma spectabile</i>	Special Concern	Small streams of the Republican River basin where shallow riffles or runs pass over a sand-gravel substrate.	<b>None.</b> Suitable habitat does not occur and the study area is outside of the Republican River basin.
Northern leopard frog	<i>Lithobates pipiens</i>	Special Concern	Within or near permanent water with rooted aquatic vegetation. Commonly inhabit wet meadows and fields during the summer.	<b>None.</b> Suitable habitat does not occur; there are no wetlands present in the study area.

## Notes:

<sup>1</sup>Based on a review of distribution maps from NatureServe Explorer online (NatureServe, 2021) and Colorado Parks and Wildlife Species Activity Data (CPW, 2019), and the Colorado Natural Heritage Program Status Handbook Tracking Lists (CNHP, 2019).

### Migratory Birds

The Migratory Bird Treaty Act (MBTA) protects birds and their active nests (except for rock doves [*Columba livia*], European starlings [*Sturnus vulgaris*], and some other non-native birds). In Colorado, most nesting and rearing activities occur between April and August; however, raptors may nest as early as February. These timeframes are guidelines and nesting birds covered under the MBTA are protected year-round.

Five magpie nests were noted within Rocky Mountain maple shrubs and trees in the riparian areas of Unnamed Drainages 1 and 2 (Photo 2 in Photographic Log; Figure 2). Shrubs and grasses in the study area provide suitable nesting habitat for migratory birds, and migratory birds may develop new nests prior to potential construction activities. No raptor nests or roost sites were noted during the site visit or mapped by CPW within 0.5 mile of the study area. However, large trees within 0.5 mile of the study area provide suitable nesting and/or roosting habitat for raptors, and raptors may develop new nests and/or roosts prior to potential construction activities.

### Waters of the U.S.

Section 404 of the Clean Water Act regulates WUS, which include wetlands and non-wetland waters. Impacts to WUS require permitting through the USACE. As discussed in the *General Habitat and Vegetation* section of this memo, two ephemeral drainages (Unnamed Drainage 1 and Unnamed Drainage 2) were noted within the study area (Figure 2). Unnamed Drainage 1 is depicted in the USGS 7.5-Minute Topographic Map and USGS National Hydrography Dataset, whereas Unnamed Drainage 2 is not depicted in either resource (USGS, 1994; USGS, 2019). However, both drainages had similar vegetative and hydrologic characteristics. Both drainages had intermittent OHWMs (i.e., beds and banks) that were intersected by swales (i.e., mildly concaved features that did not display field-indicators for OHWMs) (Photos 3 – 6 in Photographic Log; Figure 2). Within the OHWMs, the drainage bottoms were mostly vegetated although tended to have less vegetation than the surrounding uplands, with some areas lacking vegetation altogether. These areas also generally had rocky, cobble-sized substrate. Both drainages were dry at the time of the site visit, apart from patches of snow that were slow to melt within the shadows of the slopes.

Unnamed Drainage 1 and Unnamed Drainage 2 originate within the study area and continue northeast, where they appear to drain into a roadside drainage adjacent to U.S.-40. The roadside drainage follows U.S.-40 until it is routed into a concrete-lined ditch north of the highway. The ditch appears to flow into Maple Grove Reservoir southeast of Interstate-70 and Youngfield Street in Golden, approximately six miles downstream of the study area. Maple Grove Reservoir supplies water to Clear Creek, which ultimately flows to the South Platte River, a traditionally navigable water. Therefore, the features mapped within the OHWMs of Unnamed Drainages 1 and 2 (a total of 0.16 acre, or 7,011 square feet) may be jurisdictional. However, only the USACE has the authority to determine jurisdictional status.

## Conclusions and Recommendations

On February 1, 2021 Pinyon visited the study area to assess general vegetation and land use, federally and state-listed species habitat, migratory bird habitat, and WUS to assist Martin Marietta with the planning phase for the proposed quarry expansion. The following provides details regarding potential impacts of the proposed project to biological resources and recommended mitigation measures and next steps.

- Impacts to the four federally listed species that occur downstream of the study area (pallid sturgeon, Piping Plover, Whooping Crane, and western prairie fringed orchid) would be covered under Colorado's Depletions Plan as part of the Platte River Recovery Implementation Program (PRRIP, 2015). Therefore, no further action regarding these four downstream species is required. Activities related to the proposed quarry expansion would not impact the four remaining federally listed that are on the IPaC list (Preble's meadow jumping mouse, Canada lynx, Mexican spotted owl, and Ute ladies'-tresses orchid). No consultation with the USFWS, additional survey, or mitigation is required for these species.
- Of the state-listed or state special concern species assessed, only the Bald Eagle has potential to occur near the study area. Potential impacts to Bald Eagles would be avoided and/or minimized by following recommendations in the section regarding raptors below. Activities related to the proposed quarry expansion would not impact any other state-listed or state special concern species. No further action or mitigation is required related to state-listed species.
- Grasses, shrubs, and trees within the study area provide suitable nesting habitat for non-raptor migratory birds (i.e., songbirds), and five magpie nests were noted during the site visit. To avoid or minimize potential impacts to birds protected under the MBTA, Pinyon recommends that vegetation removal and initial clearing/grubbing related to the proposed quarry expansion occur prior to April or after August (i.e., outside of the songbird nesting season). If this timeframe is not feasible, Pinyon recommends that the project conduct nest surveys within 10 days prior to vegetation clearing. If active nests are noted, they should be flagged for avoidance until the young have left the nest. Inactive (unoccupied) nests may be removed anytime.
- Although no raptor nests or roosts were noted during the site visit, there is suitable habitat for raptors within 0.5 mile of the study area and raptors may develop new nests or roosts prior to construction. If construction activities occur during the raptor nesting season (February – August), Pinyon recommends that the project conduct pre-construction nest surveys for raptors. If nesting raptors are noted within 0.5 mile of the project area, then the recommendations outlined in *CPW Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors* should be followed (CPW, 2020). If Bald Eagle (*Haliaeetus leucocephalus*) or Golden Eagle (*Aquila chrysaetos*) nests or roosts are noted in the area, additional coordination with the USFWS may be required.
- No wetlands were noted within the study area. Therefore, no further action is required regarding wetlands.



- 0.16 acre, or 7,011 square feet, of potential non-wetland waters (as indicated by an OHWM) were noted within the study area. Only the USACE has the authority to make jurisdictional determinations. If Martin Marietta desires regulatory assurance that no Section 404 permit is required, an Approved Jurisdictional Determination (JD) request can be submitted to the USACE. The turnaround time for an Approved JD can be up to 6 months. Alternatively, Martin Marietta could assume that the features are jurisdictional and apply for a Section 404 Nationwide Permit prior to impacting the drainages. The turnaround time for a Nationwide Permit is approximately 45 days. Impacts would likely fall under NWP 44 – *Mining Activities*, which would require a pre-construction notification to the USACE. The project would be required to adhere to the general and regional conditions of the NWP.

## Limitations

This report was prepared by Pinyon, at the request of and for the sole benefit of Martin Marietta, or any entity controlling, controlled by, or under common control with Martin Marietta. The conclusions and recommendations offered in this report are based on the data obtained from a limited number of samples, within a prescribed study area as described in the text. Soil, hydrologic, vegetation, biological and ecological conditions typically vary even over short distances, by season, by elevation, and by meteorological conditions. Thus, the nature and extent of variations outside this biological investigation may not become evident except through further investigation. It is possible that ecological conditions may change from those observed, particularly over time.

## Figures

Figure 1            Project Location  
Figure 2            Biological Resources

## Attachments

Photographic Log

## References

- CNHP, 2019. "CNHP Conservation Status Handbook Tracking Lists",  
<https://cnhp.colostate.edu/ourdata/trackinglist/>. Updated November 2019. Accessed January 2021.
- CPW, 2019. "CPW Species Data." Colorado Parks and Wildlife, GIS Unit. Updated December 8, 2020.  
Available at: <https://pinyon-env.maps.arcgis.com/home/item.html?id=50322b83e815436aadf588757822e72f> . Accessed January 2021.
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- CPW, 2021. "Threatened and Endangered List." Available at: <https://cpw.state.co.us/learn/Pages/SOC-ThreatenedEndangeredList.aspx>. Accessed February 2021.
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USFWS, 2010. "Preble's Meadow Jumping Mouse Critical Habitat." Available at: <https://www.fws.gov/mountain-prairie/es/preblesMeadowJumpingMouse.php>. Accessed January 2021.

USFWS, 2020. "National Wetlands Inventory," Wetlands Mapper. Updated October 1, 2020. Available at: <https://www.fws.gov/wetlands/data/mapper.html>. Accessed January 2021.

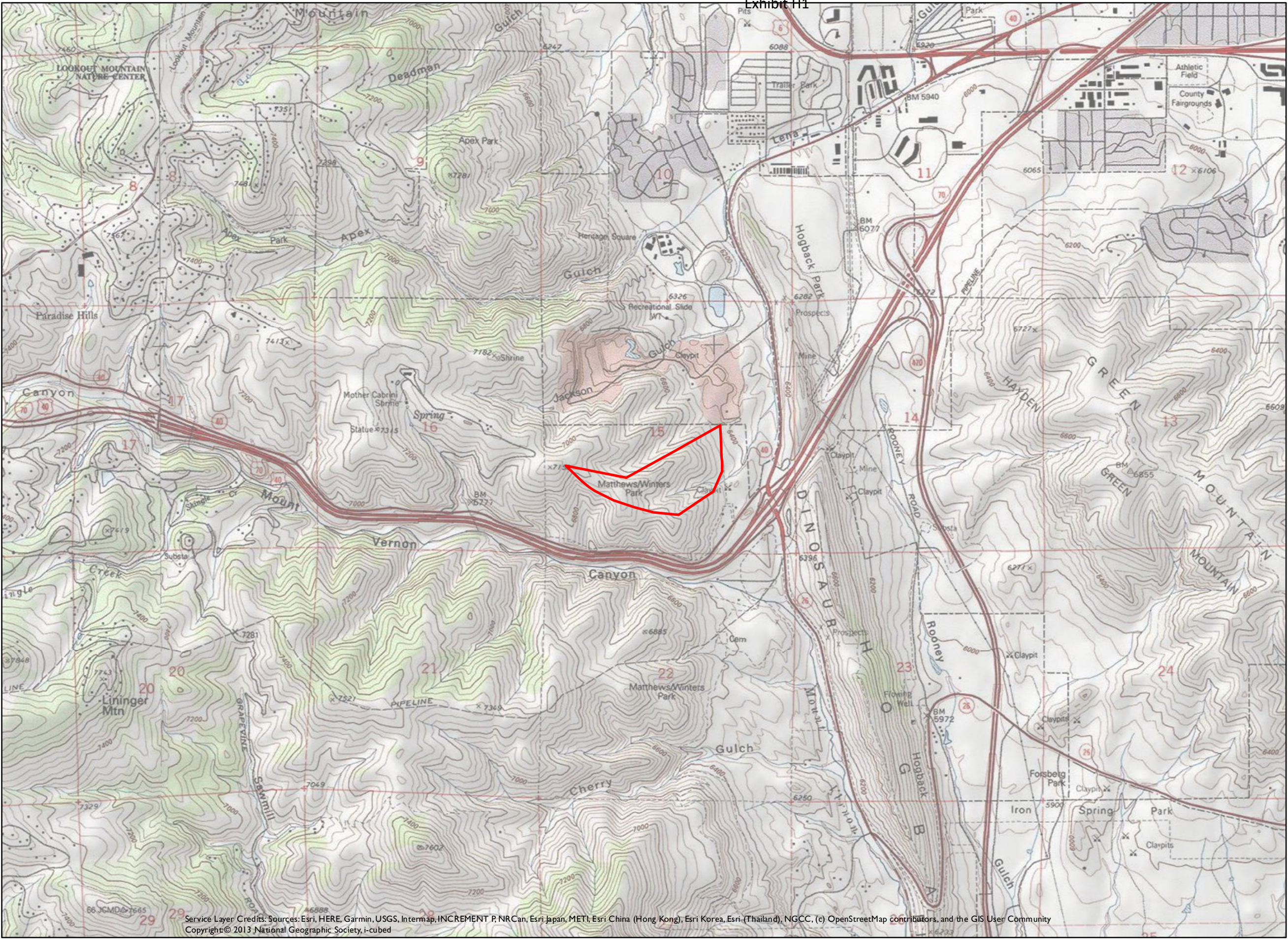
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USGS, 1994. "7.5-Minute Topographic Map, Morrison, Colorado," U.S. Geological Survey, 1965. Revised 1994.

USGS, 2019. "National Hydrography Dataset." Updated October 20, 2019. Available at: <https://apps.nationalmap.gov/viewer/>. Accessed January 2021.



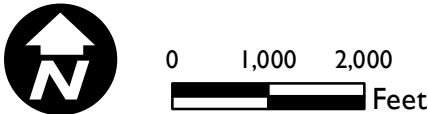
Exhibit H1



Legend

 Study Area

Map Source:  
U.S. Geological Survey 7.5' Topographic Map.  
Morrison, Colorado 1994.



**Pinyon**  
Environmental, Inc.

PROJECT LOCATION

Golden Spec Agg Quarry Expansion  
Jefferson County, Colorado

Site Location: Section 15 in Township 4 South, Range 70 West; 6th Principal Meridian.

Pinyon Project Number: I/21-1115-01

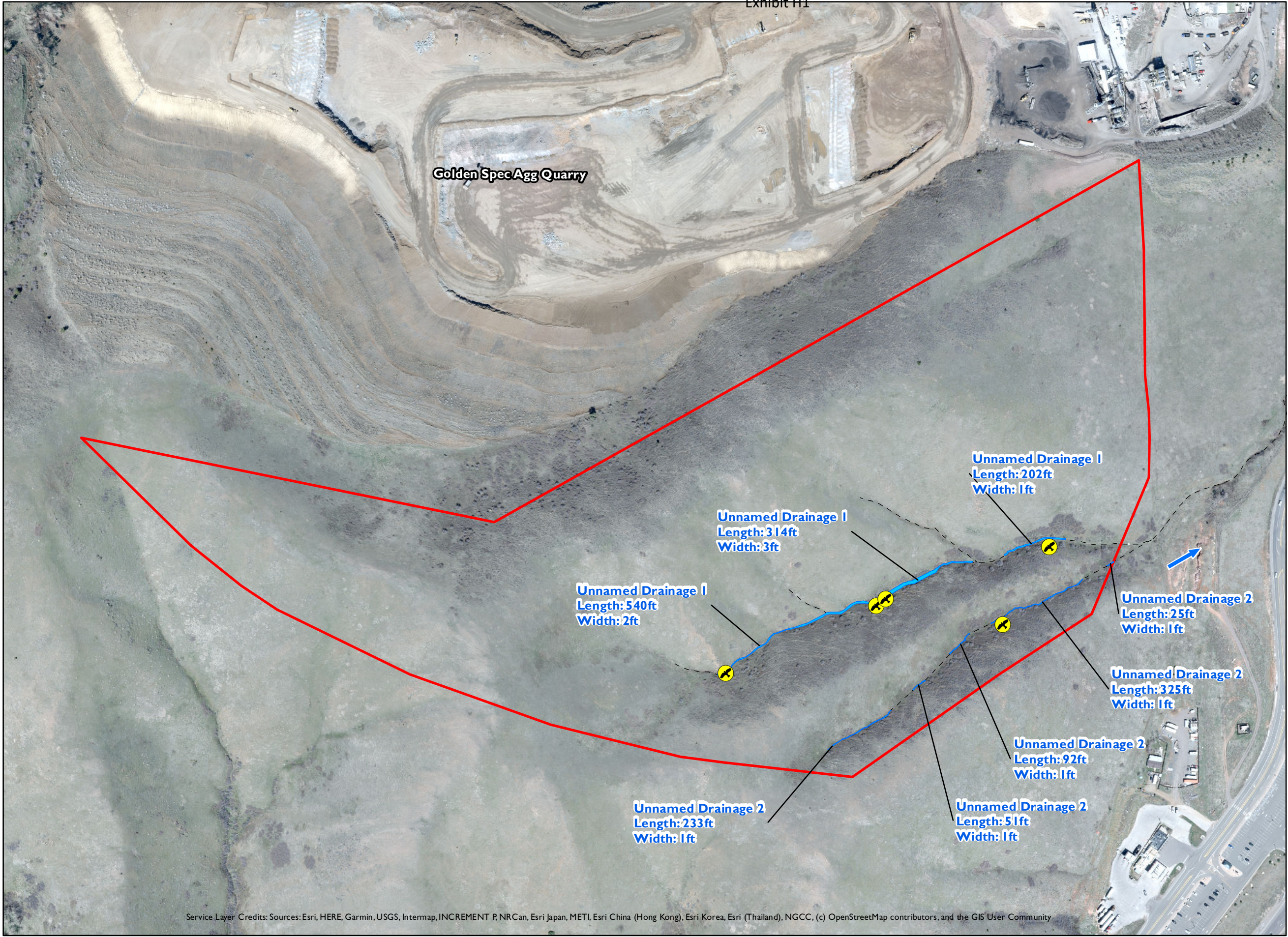
Drawn By: PJW

Figure: I

Reviewed By: MJS

Date: 2/11/2021





Legend

- Study Area
- Black billed Magpie Nests
- Swales
- Potential Non-Wetland Waters (OHWM)\*
- Flow Direction

Notes:  
\*Potential non-wetland waters were delineated on February 1, 2021 based on the ordinary high water mark (OHWM).

ft = feet



Pinyon Environmental, Inc.

BIOLOGICAL RESOURCES

Golden Spec Agg Quarry Expansion  
Jefferson County, Colorado



Photo 1.  
Representative  
view of upland  
habitat within  
the study area.  
Photo taken  
facing northwest.



Photo 2.  
Representative  
view of a Black-  
billed Magpie  
(*Pica hudsonia*)  
nest in the study  
area. Five magpie  
nests were  
noted in the  
riparian areas of  
Unnamed  
Drainages 1 and  
2.



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**Biological Resources Memorandum**

Golden Spec Agg Quarry Expansion, Jefferson County, Colorado  
Photographic Log; Photos taken February 1, 2021



Photo 3.  
Representative  
view of the  
ordinary high  
water mark  
(OHWM;  
outlined) of  
Unnamed  
Drainage I.  
Photo taken  
facing east.



Photo 4.  
Representative  
view of swale  
(i.e., no OHWM)  
along Unnamed  
Drainage I.  
Photo taken  
facing east.



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**Biological Resources Memorandum**

Golden Spec Agg Quarry Expansion, Jefferson County, Colorado  
Photographic Log; Photos taken February 1, 2021



Photo 5.  
Representative  
view of the  
OHWM  
(outlined)  
of  
Unnamed  
Drainage 2.  
Photo taken  
facing southwest.



Photo 6.  
Representative  
view of swale  
(i.e., no OHWM)  
along Unnamed  
Drainage 2.  
Photo taken  
facing southwest.



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**Biological Resources Memorandum**

Golden Spec Agg Quarry Expansion, Jefferson County, Colorado  
Photographic Log; Photos taken February 1, 2021