



U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 12-JUL-2021
ORM Number: SPA-2021-00175
Associated JDs: N/A or ORM numbers and identifiers (e.g. HQS-2020-00001-MSW-MITSITE)
Review Area Location¹: Homestake Twin Lakes Vault below dam
State/Territory: CO City: County/Parish/Borough: Lake County
Center Coordinates of Review Area: Latitude 39.076265 Longitude -106.301845

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list **MUST** be selected. Complete the corresponding sections/tables and summarize data sources.

- The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- There are “navigable waters of the United States” within Rivers and Harbors Act jurisdiction within the review area (complete table in section II.B).
- There are “waters of the United States” within Clean Water Act jurisdiction within the review area (complete appropriate tables in section II.C).
- There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)²

§ 10 Name	§ 10 Size	§ 10 Criteria	Rationale for § 10 Determination
N/A	N/A	N/A	N/A

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters)³

(a)(1) Name	(a)(1) Size	(a)(1) Criteria	Rationale for (a)(1) Determination
N/A	N/A	N/A	N/A

Tributaries ((a)(2) waters):

(a)(2) Name	(a)(2) Size	(a)(2) Criteria	Rationale for (a)(2) Determination
N/A	N/A	N/A	N/A

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):

(a)(3) Name	(a)(3) Size	(a)(3) Criteria	Rationale for (a)(3) Determination
N/A	N/A	N/A	N/A

Adjacent wetlands ((a)(4) waters):

(a)(4) Name	(a)(4) Size	(a)(4) Criteria	Rationale for (a)(4) Determination
N/A	N/A	N/A	N/A

¹ Map(s)/Figure(s) are attached to the AJD provided to the requestor.

² If the navigable water is not subject to the ebb and flow of the tide or included on the District’s list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

³ A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.

⁴ Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

⁵ Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.



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D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12))⁴:

Exclusion Name	Exclusion Size	Exclusion ⁵	Rationale for Exclusion Determination
2021-00175 Homestake Twin Lakes AJD	1.6 acres	(b)(1) Non-adjacent wetland	Isolated Wetlands

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

- ___ Information submitted by, or on behalf of, the applicant/consultant: *Title(s) and date(s)*.
This information (*is/is not/is and is not*) sufficient for purposes of this AJD.
Rationale: *N/A or describe rationale for insufficiency (including partial insufficiency)*.
- ___ Data sheets prepared by the Corps: *Title(s) and/or date(s)*.
- ___ Photographs: (*NA, aerial, other, aerial and other*) *Title(s) and/or date(s)*.
- ___ Corps Site visit(s) conducted on: *Date(s)*.
- ___ Previous Jurisdictional Determinations (AJDs or PJDs): *ORM Number(s) and date(s)*.
- ___ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B.*
- ___ USDA NRCS Soil Survey: *Title(s) and/or date(s)*.
- ___ USFWS NWI maps: *Title(s) and/or date(s)*.
- ___ USGS topographic maps: *Title(s) and/or date(s)*.

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	N/A.

B. Typical year assessment(s): N/A or provide typical year assessment for each relevant data source used to support the conclusions in the AJD.

C. Additional comments to support AJD: The isolated wetlands occurs in the center of the project area where the Vault structure is. Present seepage from the existing structure is the sole source that maintains the existence of the isolated wetlands. As a result of the seepage, wetlands occur adjacent to the structure and remain as isolated wetlands adjacent to the existing Homestake Vault. The wetland would cease to exist if the vault was no longer in use, as there appears to be no other water source near the wetland.

¹ Map(s)/Figure(s) are attached to the AJD provided to the requestor.

² If the navigable water is not subject to the ebb and flow of the tide or included on the District’s list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

³ A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where independent upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD form.

⁴ Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps Districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

⁵ Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

June 16, 2021

Mr. Kiel Downing
Denver Regulatory Office
U.S. Army Corps of Engineers
9307 South Wadsworth Boulevard
Littleton, Colorado 80128-6901

RE: Request for Approved Jurisdictional Determination for Homestake Twin Lakes Valve Vault Construction, Lake County, Colorado

Dear Mr. Downing,

On behalf of Dewberry Engineers, Inc. (Dewberry), ERO Resources Corporation (ERO) is requesting an approved Jurisdictional Determination (JD) for an isolated wetland adjacent to the existing Homestake Vault located east of Twin Lakes Reservoir in Lake County, Colorado (project area; Figure 1). Dewberry, on behalf of Colorado Springs Utilities, is proposing improvements to the Homestake Vault that would require unavoidable impacts on an adjacent wetland. On September 17, 2020, ERO delineated the project area for any potential jurisdictional waters.

The project area is immediately east of Twin Lakes Reservoir in Section 23, Township 11 South, Range 80 West of the 6th Principal Meridian in Lake County, Colorado (Figure 1). The UTM coordinates for the approximate center of the project area are NAD 387390mE, 4326046mN, Zone 13 North. The longitude/latitude of the project area is 106.301845°W/39.076265°N. The elevation of the project area is approximately 9,180 feet above sea level. Photo points of the project area are shown on Figure 2, and the photo log is attached.

The project area is bounded by Lake Creek to the north, County Road 25 to the east and south, and Twin Lakes Reservoir to the west. The project area consists primarily of shrublands dominated by big sagebrush (*Artemisia tridentata*) and rubber rabbitbrush (*Ericameria nauseosa*) with an understory of smooth brome (*Bromus inermis*), crested wheatgrass (*Agropyron cristatum*), western wheatgrass (*Pascopyrum smithii*), meadow fescue (*Schedonorus pratensis*), and Sandberg bluegrass (*Poa secunda*) (Photos 1 and 2). Lake Creek occurs along the northern boundary of the project area, and the banks of Lake Creek consist of boulder and riprap (Photo 3). The existing Homestake Vault occurs in the center of the project area, and water was seeping from the existing structure. As a result of the seepage, wetlands occur adjacent to the structure and are dominated by meadow foxtail (*Alopecurus pratensis*) and Baltic rush (*Juncus arcticus*) (Figure 2; Photo 4). The wetland occurs in a minor depression in the project area adjacent to the existing Homestake Vault. The wetland is surrounded entirely by upland vegetation, and there does not appear to be a surface connection between the wetland and Lake Creek to the north. Additionally, it is ERO's opinion that the wetland is artificially irrigated by seepage from the vault and that the wetland would cease to exist if the vault was no longer in use, as there appears to be no other water source near the wetland.

Denver
1842 Clarkson Street
Denver, CO 80218
303.830.1188

Durango
1015 ½ Main Avenue
Durango, CO 81301
970.422.2136

Hotchkiss
P.O. Box 932
161 South 2nd Street
Hotchkiss, CO 81419
970.872.3020

Idaho
4001 East Main Street
Emmett, ID 83617
208.365.7684

Based on the information provided, ERO has the following questions:

- Does the U.S. Army Corps of Engineers agree that the wetland in the project area is artificial and that the wetland would revert to upland should seepage water to that area cease?
- Does the U.S. Army Corps of Engineers agree that the wetland is isolated from Lake Creek to the north and that there is no hydrologic connection between the wetland and Lake Creek?
- Does the U.S. Army Corps of Engineers have enough information to determine the jurisdictional status of the identified wetland in the project area? If so, please provide an approved JD. If not, please provide a list of additional information needed to provide an approved JD.

Please contact me with any questions at hsnieder@eroresources.com.

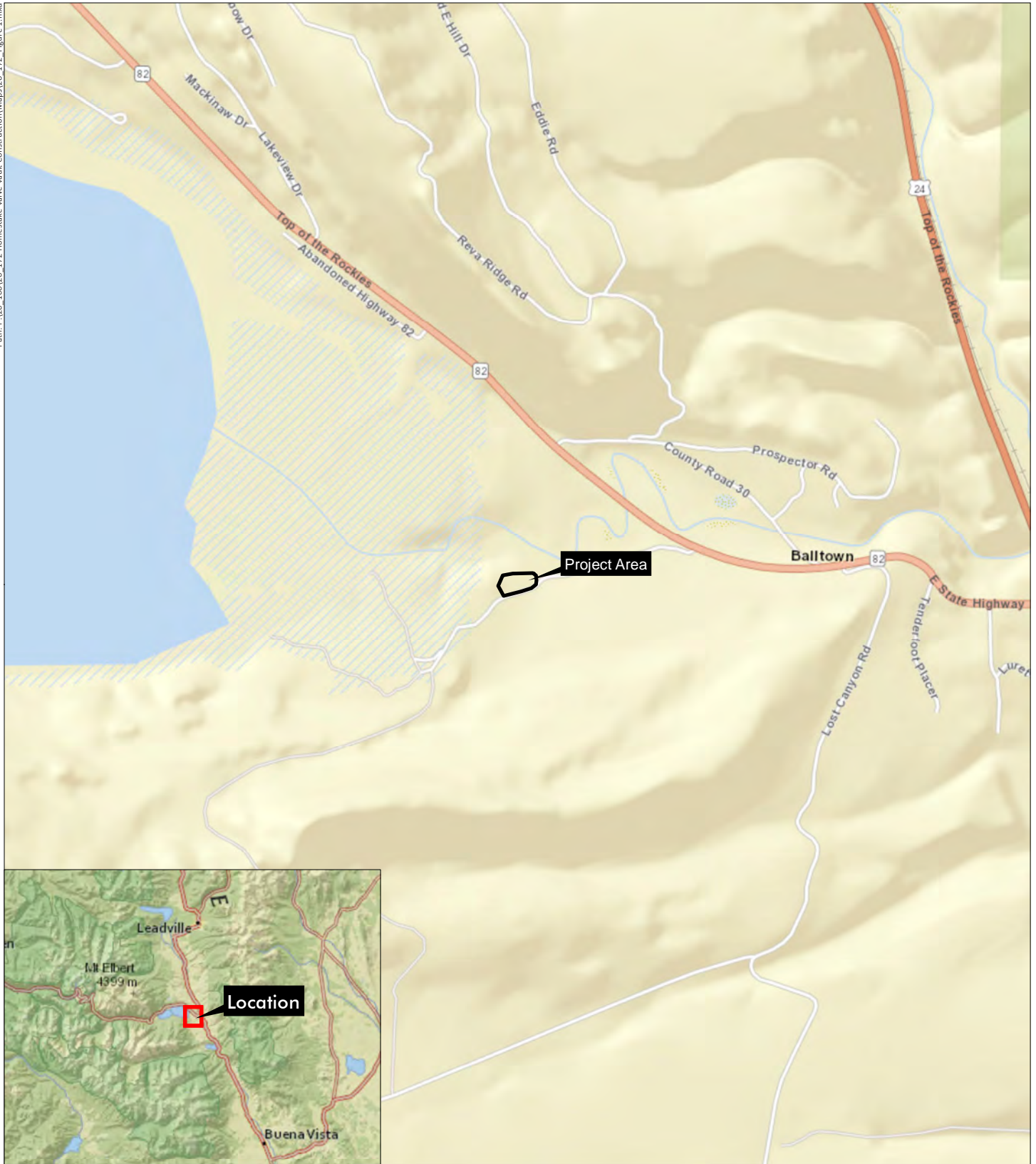
Sincerely,



Hidde Snieder
Biologist

cc: Michael Kainer – Dewberry Engineers, Inc.

Attachments: Figures 1 and 2, Photo Log, and Wetland Datasheets



Homestake Vault Construction

Section 23, T11S, R80W; 6th PM
 UTM NAD 83: Zone 13N; 387390mE, 4326046mN
 Longitude 106.301845°W, Latitude 39.076265°N
 USGS Granite, CO Quadrangle
 Lake County, Colorado

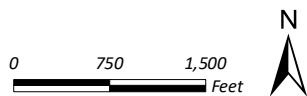


Figure 1 Vicinity Map

Prepared for: Dewberry Engineers
 File: 20_172_Figure 1.mxd (GS)
 September 24, 2020





Homestake Vault Construction

- Data Point
- ➔ Photo Point
- Limit of Delineation
- Wetland (0.031 ac)
- Ordinary High Water Mark (0.888 ac)
- Project Area Boundary

Image Source: Google Earth®, October 2019

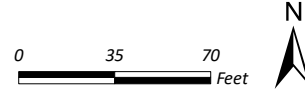


Figure 2
Existing Conditions

Prepared for: Dewberry Engineers
File: 20_172_Figure 2.mxd (GS)
October 27, 2020



PHOTO LOG
HOMESTAKE VAULT CONSTRUCTION
SEPTEMBER 17, 2020



Photo 1 - Overview of the uplands in the project area. View is to the northeast.



Photo 2 - Overview of the uplands in the project area. View is to the southeast.

PHOTO LOG
HOMESTAKE VAULT CONSTRUCTION
SEPTEMBER 17, 2020



Photo 3 - Overview of Lake Creek adjacent to the project area. View is to the east.



Photo 4 - Overview of wetlands in the project area. View is to the east.

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

Project/Site: Homestake Vault Construction City/County: Lake County Sampling Date: 9-17-2020
 Applicant/Owner: Dewberry State: Co Sampling Point: DP1
 Investigator(s): H. Snieder Section, Township, Range: Section 23, T1S, R80W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): G Lat: 39.076265° Long: -106.301941° Datum: _____
 Soil Map Unit Name: Pierian soils, 20 to 45 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			

Remarks:

Wetlands in depression supported by seepage from structure

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum	(Plot size: _____)			
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum	(Plot size: <u>5ft.</u>)			
1. <u>Alopecurus pratensis</u>	20	Y	FAC	
2. <u>Juncus arcticus</u>	40	Y	FACW	
3. <u>Epilobium ciliatum</u>	15	N	FACW	
4. <u>Carex praeegracilis</u>	10	N	FACW	
5. <u>Carex nebrascensis</u>	10	N	OBL	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
95 = Total Cover				
Woody Vine Stratum	(Plot size: _____)			
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____				
Remarks:				

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

Hydrophytic Vegetation Present? Yes No _____

SOIL

Sampling Point: DP1

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

Table with columns: Depth (inches), Matrix (Color (moist), %), Redox Features (Color (moist), %, Type, Loc), Texture, Remarks. Rows include 0-2 and 2-14 inch depths.

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

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

- ___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1) (except MLRA 1)
___ Loamy Gleyed Matrix (F2)
[checked] Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils3:

- ___ 2 cm Muck (A10)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:
Depth (inches):

Hydric Soil Present? Yes [checked] No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No [checked] Depth (inches):
Water Table Present? Yes ___ No [checked] Depth (inches):
Saturation Present? Yes [checked] No ___ Depth (inches): 0

Wetland Hydrology Present? Yes [checked] No

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

Remarks:

Saturated at surface by seepage from structure.

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

Project/Site: Homestake Vault Construction City/County: Lake County Sampling Date: 9-17-2020
 Applicant/Owner: Dewberry State: Co Sampling Point: DP2
 Investigator(s): H. Snieder Section, Township, Range: Section 23, T1S, R80W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR): G Lat: 39.076386° Long: -106.301999° Datum: _____
 Soil Map Unit Name: Pierian soils, 20 to 45 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			

Remarks:

Uplands adjacent to wetlands in depression

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
= Total Cover				Prevalence Index worksheet:	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15ft</u>)					
1. <u>Artemesia tridentata</u>	15	Y	UPL		Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
15 = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<u>Herb Stratum</u> (Plot size: <u>5ft</u>)					
1. <u>Schedonorus pratensis</u>	30	Y	FACU		
2. <u>Bromus inermis</u>	20	Y	UPL		
3. <u>Pascopyrum smithii</u>	15	Y	FACU		
4. <u>Poa secunda</u>	10	N	FACU		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
75 = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	
<u>Woody Vine Stratum</u> (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
<u>% Bare Ground in Herb Stratum</u> _____					
Remarks:					

SOIL

Sampling Point: DP2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	10YR 4/3	100					SaLo	

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

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

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

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)

- Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Stunted or Stressed Plants (D1) (**LRR A**)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks: