



# **WETLAND ASSESSMENT**

Cloud Break Pad

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## **1. Introduction**

Bison IV Operating (Bison) contracted H2E Incorporated (H2E) to conduct a wetland assessment of the Cloud Break Pad in Weld County, Colorado. This report summarizes the results of the wetlands and other waters of the U.S. (WOTUS) evaluation that occurred on September 17, 2024.

Bison proposes construct and develop an oil & gas production pad/well pad (Cloud Break) located just north of HWY 14, with an access road from CR 81 heading west into the project site. Using a 2,640-foot buffer around the proposed pad location, H2E conducted a desktop analysis of the project area, followed by an on-site assessment to determine the presence/absence of wetlands and/or ordinary high-water marks (OHWM) that may exist within the project area and buffer.

## **2. Methodology**

### **2.1. Desktop Review**

A desktop review of the proposed Cloud Break project location was conducted using GIS software overlaying the National Wetland Inventory (NWI), National Hydrography Dataset (NHD), and aerial imagery on the proposed project area. To identify any wetlands that may occur near the proposed Cloud Break project, 500-foot, 1,000-foot and 2,640 buffers were placed around the proposed pad location and used as the survey area. The Natural Resource Conservation Service (NRCS) Web Soil Survey was used to determine the potential occurrence of hydric soils within close proximity of the proposed Cloud Break location.

### **2.2. Site Assessment**

Following the desktop analysis, an on-site assessment was conducted to determine the presence/absence of any potential wetlands within the survey area/buffer. A wetland assessment was performed at each potential wetland following the US Army Corps of Engineers (USACE) wetland delineation methods. This method consists of documenting the presence or absence of hydrophytic vegetation, wetland hydrology characteristics, and hydric soils (if hydrophytic vegetation and hydrology indicators are present). This site assessment was conducted by certified/qualified field staff with experience determining wetland presence/absence and delineating wetland boundaries. Any wetland or water features identified in the field are delineated and mapped using a high-precision Geode, which was configured to exhibit sub-meter accuracy.

## **3. Results**

### **3.1. Desktop Review**

The desktop review indicated the potential presence of an NWI unnamed portion of an intermittent drainage (NWI designation for drainage type = "Riverine") ~1,840 feet north/northwest of the proposed production/well pad location, as well as another potential (uncharacterized/unmapped) drainage feature ~1,190 feet to the southeast of the project based off aerial imagery. Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) data did not indicate the presence of any mapped

floodplains in the area. A review of the NRCS Web Soil Survey for the area indicates that the proposed pad location and the entire survey area surrounding the proposed pad do not have hydric soils.

See Attachment A for locations of NWI and/or NHD-mapped features and aerial imagery of the survey area.

### 3.2. Site Assessment

An on-site assessment was conducted to determine the presence/absence of wetland features on September 17, 2024. The NWI-mapped feature was evaluated following the methods provided by the USACE Wetlands Delineation Manual and the criteria provided in the Great Plains Regional Supplement. Four wetland data points (WET01-WET04) were collected along this potential NWI-feature, with one data point near the center of the unmapped portion of the potential NWI feature (WET01), one data point ~1,778 feet north of the proposed Cloud Break boundary (WET02), one data point ~2030 feet northwest of the proposed Cloud Break pad (WET03), and one data point ~1,985 feet northwest of the proposed Cloud Break pad boundary (WET04). All four (4) data points were collected within a range of ~0-200 feet cross/upgradient (south) of the NWI feature boundary. The NWI-mapped feature and all four (4) data points were determined to be non-wetland, as they lacked hydric soils, hydrophytic vegetation, and/or hydrology indicators and characteristics. The site characteristics were consistent upslope (southeast/south) of the NWI-mapped feature (low-lying intermittent drainage) and there were no distinct changes in hydrology characteristics outside of the NWI feature. The plant community within the NWI-mapped feature primarily consisted of *Triticum aestivum* (Wheat). Plant communities at the data points outside of (south of) the NWI-mapped feature consisted of *Triticum aestivum* (Wheat), *Salsola tragus/kali* (Russian thistle) and *Eragrostis cilianensis* (Candy grass). Two wetland data points (WET05-WET06) were collected along the unmapped potential drainage route displayed via desktop review of aerial imagery (~1,190 feet southeast of the pad), just south of HWY 14. Access was restricted via landowner to the south portion of the unmapped feature ~1,300 feet south/southeast of the proposed pad boundary and beyond. Data points were assessed within the limited accessible area near the road, and an additional portion of this feature ~1,000 feet to the south was visually inspected as far as line of sight allowed. Data points WET05 and WET06 are ~1,215 feet and ~1,160 feet east/southeast of the Cloud Break pad boundary. The site characteristics were consistent upslope (east) and down-gradient (west/south) of the unmapped feature, and there were no distinct changes in hydrology characteristics outside of the drainage feature. The unmapped feature and both data points were determined to be non-wetland, as each lacked hydrophytic vegetation, hydric soil indicators and hydrology indicators. The plant community within the feature consisted primarily of *Cirsium arvense* (Canada thistle) and *Amaranthus palmeri* (Palmer's pigweed). The plant community outside of the unmapped feature primarily consisted of *Amaranthus retroflexus* (Redroot pigweed) and *Sporobolus airoides* (Alkali sacaton).

See Attachment A for wetland data point locations in relation to the NWI/NHD features and the project boundary. See Attachment B for photos of wetland data point locations, and Attachment C for the wetland data sheets used to determine the presence/absence of wetland features at each of these locations.

#### **4. Conclusions**

Based on the findings of the desktop review and the site assessment, the NWI-mapped features located north/northwest and the unmapped potential feature located south/southeast of the proposed Cloud Break project both lack hydric soils, hydrophytic vegetation and were both determined to be non-wetland. No other wetland features or OHWMs were identified within the 2,640-foot buffer survey area surrounding the Cloud Break location.

## Appendix A

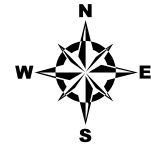
### **Wetland Assessment Map**





## Wetland Delineation Site Map

**Cloud Break Pad**  
**SECTION 22, TOWNSHIP 8N, RANGE 62W,**  
**WELD COUNTY, CO**



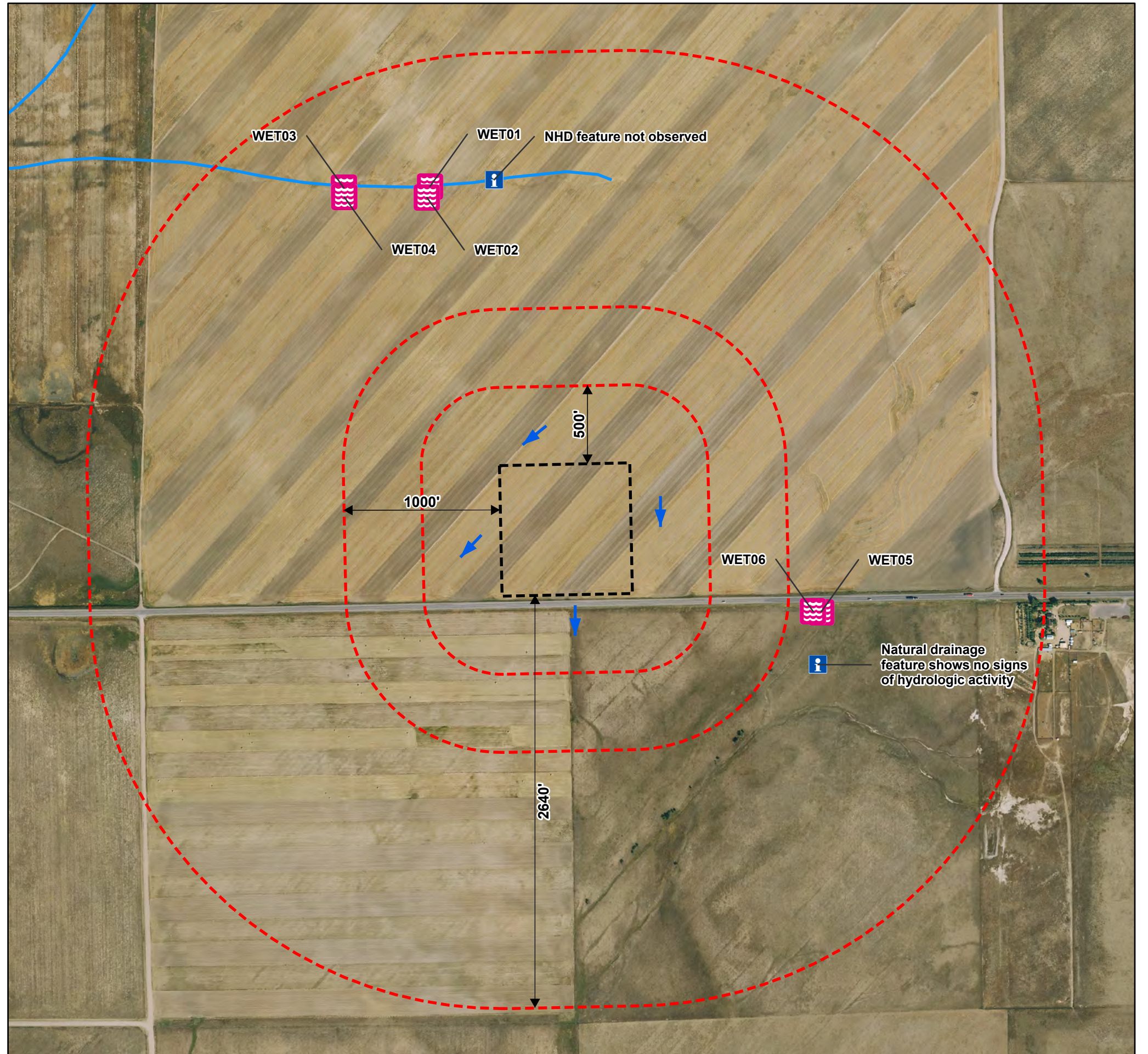
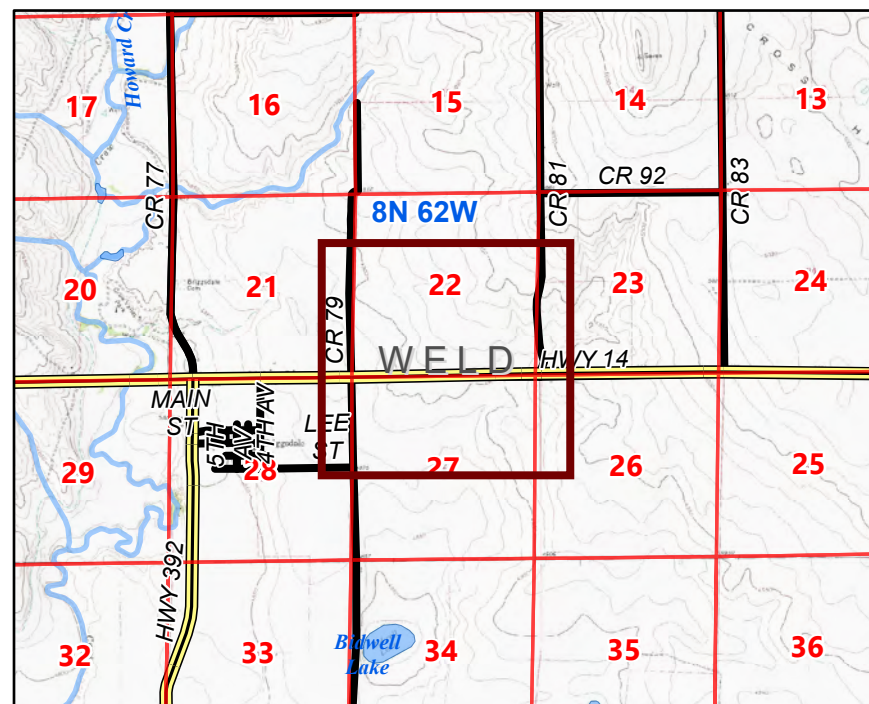
0 500 1,000  
Feet



Prepared by:  
Scale: 1:8,091  
Date: 10/1/2024

Editor: nwilson  
File: BOG\_WetlandOHWM\_v1

- Wetland Data Point
- Information
- Construction Boundary
- Buffer
- Flow
- Distance
- NHD Mapped Stream





## Appendix B

### **Wetland Assessment Photos**



WET01 – Facing upslope (E)





WET01 – Facing Downslope (W)



Near WET02 – Facing Upslope (E)





Near WET02 – Facing Downslope (E)



WET03 – Facing Upslope (NE)



Near W04 – Facing Downslope (SW)



WET05 – Facing Downslope (S)





WET05 – Facing Upslope (E)



WET06 – Facing Upslope (E)





WET06 – Facing Downslope (S/SE)

## Appendix C

### **Wetland Assessment Datasheets**

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Great Plains Region</b> See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: <u>Cloud Break</u>	City/County: <u>Briggsdale, Weld</u>	Sampling Date: <u>09/17</u>
Applicant/Owner: <u>Bison IV</u>	State: <u>CO</u>	Sampling Point: <u>WET01</u>
Investigator(s): <u>S. Mitchell</u>	Section, Township, Range: <u>SEC. 22, 8N 62W</u>	
Landform (hillside, terrace, etc.): <u>Swale</u>	Local relief (concave, convex, none): <u>Concave</u>	Slope (%): <u>&lt;1</u>
Subregion (LRR): <u>LRR - G</u>	Lat: <u>40.647078</u>	Long: <u>-104.309315</u>
Soil Map Unit Name: <u>Nunn Clay Loam 0-6% slopes</u>	NW1 classification: <u>none</u>	

Are climatic / hydrologic conditions on the site typical for this time of year?    Yes X    No           (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology        significantly disturbed?    Are "Normal Circumstances" present?    Yes X    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 <u>      </u> No <u>X</u> Hydric Soil Present?    Yes <u>      </u> No <u>X</u> Wetland Hydrology Present?    Yes <u>      </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
Remarks:    Area is located in an actively cultivated agriculture field.  Location lacked wetland indicators for vegetation, soil and hydrology; non-wetland.	

**VEGETATION – Use scientific names of plants.**

Tree Stratum	(Plot size: <u>30 ft^2</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1.					<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0%</u> (A/B)
2.					
3.					
4.					
		<u>0%</u>	=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u>15 ft^2</u> )				<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>3%</u> x 3 = <u>9</u> FACU species <u>4%</u> x 4 = <u>16</u> UPL species <u>28%</u> x 5 = <u>140</u> Column Totals: <u>41%</u> (A) <u>165</u> (B) Prevalence Index = B/A = <u>4.02</u>
1.					
2.					
3.					
4.					
		<u>0%</u>	=Total Cover		
Herb Stratum	(Plot size: <u>5 ft^2</u> )				<b>Hydrophytic Vegetation Indicators:</b>  <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>      </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Triticum aestivum</u>		<u>25%</u>	<u>D</u>	<u>UPL</u>	
2. <u>Solanum angustifolium</u>		<u>10%</u>	<u>D</u>	<u>UPL</u>	
3. <u>Helianthus annuus</u>		<u>3%</u>		<u>FACU</u>	
4. <u>Portulaca oleracea</u>		<u>3%</u>		<u>FAC</u>	
5. <u>Eragrostis cilianensis</u>		<u>1%</u>		<u>FACU</u>	
6.					
7.					
8.					
9.					
10.					
		<u>41%</u>	=Total Cover		
Woody Vine Stratum	(Plot size: <u>30 ft^2</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>X</u>
1.					
2.					
		<u>0%</u>	=Total Cover		
% Bare Ground in Herb Stratum <u>59%</u>					

Remarks: Area is located in an actively cultivated agriculture field.

## SOIL

Sampling Point: WET01

[illegible]

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) <b>(LRR F)</b>	
<b>Field Observations:</b>			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
(includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			
Single secondary indicator of potential wetland hydrology present; No wetland hydrology present.			



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Great Plains Region</b> See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Cloud Break City/County: Briggsdale, Weld Sampling Date: 09/17/2024

Applicant/Owner: Bison IV State: CO Sampling Point: WET02

Investigator(s): S. Mitchell Section, Township, Range: SEC. 22, 8N 62W

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): <1%

Subregion (LRR): LRR - G Lat: 40.646880 Long: -104.309390 Datum: NAD 83

Soil Map Unit Name: Nunn Clay Loam 0 - 6% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>      </u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
Remarks: <u>Area is located in an actively cultivated agriculture field.</u>  <u>Location lacked wetland indicators for vegetation, soil and hydrology; non-wetland.</u>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft^2</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>33%</u> (A/B)
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft^2</u> )				<b>Prevalence Index worksheet:</b>  Total % Cover of: <u>      </u> Multiply by: OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>10%</u> x 3 = <u>30</u> FACU species <u>15%</u> x 4 = <u>60</u> UPL species <u>20%</u> x 5 = <u>100</u> Column Totals: <u>45%</u> (A) <u>190</u> (B) Prevalence Index = B/A = <u>4.2</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Herb Stratum (Plot size: <u>5 ft^2</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>      </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Triticum aestivum</u>	<u>20%</u>	<u>D</u>	<u>UPL</u>	
2. <u>Eragrostis Cilianensis</u>	<u>10%</u>	<u>D</u>	<u>FACU</u>	
3. <u>Portulacea oleracea</u>	<u>10%</u>	<u>D</u>	<u>FAC</u>	
4. <u>Salaola tragus</u>	<u>5%</u>	<u>      </u>	<u>FACU</u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
9. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
10. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>45%</u> =Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft^2</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>X</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
% Bare Ground in Herb Stratum <u>55%</u>				

Remarks: Area is located in an actively cultivated agriculture field.

## SOIL

Sampling Point: WET02

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 <sup>1</sup>	Loc <sup>2</sup>		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	wetland hydrology must be present,
		unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No _____
---	--

Remarks:  
No soil pit was dug for this point based on lack of hydrophytic vegetation and wetland hydrology

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?      Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?        Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Area is located in an actively cultivated agriculture field. No hydrology indicators were found onsite.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Great Plains Region</b> See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Cloud Break City/County: Briggsdale, Weld Sampling Date: 09/17/2024

Applicant/Owner: Bison IV State: CO Sampling Point: WET03

Investigator(s): S. Mitchell Section, Township, Range: SEC. 22, 8N 62W

Landform (hillside, terrace, etc.): Toe slope / Swale Local relief (concave, convex, none): Concave Slope (%): <1%

Subregion (LRR): LRR - G Lat: 40.647059 Long: 104.311293 Datum: NAD 83

Soil Map Unit Name: Nunn Clay Loam 0 - 6% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u>      </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
Remarks: Area is located in an actively cultivated agriculture field.  <div style="text-align: center;">Location lacked wetland indicators for vegetation and soil; non-wetland.</div>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft^2</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	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. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft^2</u> )				<b>Prevalence Index worksheet:</b> Total % Cover of: <u>      </u> Multiply by: <u>      </u> OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>      </u> x 3 = <u>      </u> FACU species <u>37%</u> x 4 = <u>128</u> UPL species <u>35%</u> x 5 = <u>175</u> Column Totals: <u>72%</u> (A) <u>303</u> (B) Prevalence Index = B/A = <u>4.2</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Herb Stratum (Plot size: <u>5 ft^2</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>      </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Bromus japonicus</u>	<u>35%</u>	<u>D</u>	<u>UPL</u>	
2. <u>Amaranthus albus</u>	<u>15%</u>	<u>D</u>	<u>FACU</u>	
3. <u>Panicum miliaceum</u>	<u>15%</u>	<u>D</u>	<u>FACU</u>	
4. <u>Amaranthus palmeri</u>	<u>5%</u>	<u>      </u>	<u>FACU</u>	
5. <u>Salaola tragus</u>	<u>2%</u>	<u>      </u>	<u>FACU</u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
9. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
10. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>72%</u> =Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft^2</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>X</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
% Bare Ground in Herb Stratum <u>28%</u>				

Remarks: Area is located in an actively cultivated agriculture field.

Location lacked hydrophytic vegetation indicators.

## SOIL

Sampling Point: WET03

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 <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 3/2	100					Sandy Loam	
8-15	10YR 4/3	100					Clay Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<b>(MLRA 72 &amp; 73 of LRR H)</b>	wetland hydrology must be present,
		unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Compacted Clay layer</u> Depth (inches): <u>15"</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:  

No hydric soil indicators present during assessment; Compacted clay layer at 15".

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input checked="" type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?        Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  

Drift deposits found just down-slope of the natural drainage route.



<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Great Plains Region</b> See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Cloud Break City/County: Briggsdale, Weld Sampling Date: 09/17/2024

Applicant/Owner: Bison IV State: CO Sampling Point: WET04

Investigator(s): S. Mitchell Section, Township, Range: SEC. 22, 8N 62W

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): <1%

Subregion (LRR): LRR - G Lat: 40.646903 Long: -104.311297 Datum: NAD 83

Soil Map Unit Name: Nunn Clay Loam 0 - 6% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>      </u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
Remarks: <u>Area is located in an actively cultivated agriculture field.</u>  <u>Location lacked wetland indicators for vegetation and hydrology; non-wetland.</u>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft^2</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0%</u> (A/B)
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft^2</u> )				<b>Prevalence Index worksheet:</b>  Total % Cover of: <u>      </u> Multiply by: OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>5</u> x 3 = <u>15</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>20</u> x 5 = <u>100</u> Column Totals: <u>45</u> (A) <u>195</u> (B) Prevalence Index = B/A = <u>4.33</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Herb Stratum (Plot size: <u>5 ft^2</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>      </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Triticum aestivum</u>	<u>20%</u>	<u>D</u>	<u>UPL</u>	
2. <u>Salsola kali</u>	<u>15%</u>	<u>D</u>	<u>FACU</u>	
3. <u>Sporobolus airoides</u>	<u>5%</u>	<u>      </u>	<u>FAC</u>	
4. <u>Eragrostis Cilianensis</u>	<u>5%</u>	<u>      </u>	<u>FACU</u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
9. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
10. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>45%</u> =Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft^2</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>X</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
% Bare Ground in Herb Stratum <u>55%</u>				

Remarks: Area is located in an actively cultivated agriculture field.

## SOIL

Sampling Point: WET04

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 <sup>1</sup>	Loc <sup>2</sup>		

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<b>(MLRA 72 &amp; 73 of LRR H)</b>	wetland hydrology must be present,
		unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No _____
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Remarks:  
No soil pit was dug for this point based on lack of hydrophytic vegetation and wetland hydrology.

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<b>(where tilled)</b>	
<input type="checkbox"/> Drift Deposits (B3)	<b>(where not tilled)</b>	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

<b>Field Observations:</b> Surface Water Present?    Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present?    Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present?    Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)				<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
Location lacked any wetland hydrology indicators.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Great Plains Region</b> See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Cloud Break City/County: Briggsdale, Weld Sampling Date: 09/17/2024

Applicant/Owner: Bison IV State: CO Sampling Point: WET05

Investigator(s): S. Mitchell Section, Township, Range: SEC. 27, 8N 62W

Landform (hillside, terrace, etc.): Toe slope Local relief (concave, convex, none): Concave Slope (%): <1%

Subregion (LRR): LRR - G Lat: 40.639544 Long: -104.300360 Datum: NAD 83

Soil Map Unit Name: Platner Loam 0-3% NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)

Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>X</u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
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Remarks: Landowner restrictions - unable to access south portion of drainage.

Location lacked hydrophytic vegetation and hydric soil indicators; non-wetland.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft^2</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</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>0%</u> (A/B)
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft^2</u> )				<b>Prevalence Index worksheet:</b>  Total % Cover of: <u>      </u> Multiply by: OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>      </u> x 3 = <u>      </u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>      </u> x 5 = <u>      </u> Column Totals: <u>95</u> (A) <u>380</u> (B) Prevalence Index = B/A = <u>4.0</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Herb Stratum (Plot size: <u>5 ft^2</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>      </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Circium arvense</u>	<u>65%</u>	<u>D</u>	<u>FACU</u>	
2. <u>Amaranthus palmeri</u>	<u>20%</u>	<u>D</u>	<u>FACU</u>	
3. <u>Helianthus annuus</u>	<u>5%</u>	<u>      </u>	<u>FACU</u>	
4. <u>Elymus smithii</u>	<u>5%</u>	<u>      </u>	<u>FACU</u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
9. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
10. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>95%</u> =Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft^2</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>X</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
% Bare Ground in Herb Stratum <u>5%</u>				

Remarks: Location near HWY 14 in a low-lying roadside ditch at the toe slope.

Unable to access south portion due to landowner property restrictions.

## SOIL

Sampling Point: WET05

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 <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	100					Loam	
6-14	10YR 3/2	100					Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<b>(MLRA 72 &amp; 73 of LRR H)</b>	wetland hydrology must be present,
		unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: <u>Compacted Clay layer</u> Depth (inches): <u>15"</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:  
 No hydric soil indicators present during assessment; Compacted clay layer at 15".

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Secondary indicator criteria reached for the presence of wetland hydrology.

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Great Plains Region</b> See ERDC/EL TR-10-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 11/30/2024</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Cloud Break City/County: Briggsdale, Weld Sampling Date: 09/17/2024

Applicant/Owner: Bison IV State: CO Sampling Point: WET06

Investigator(s): S. Mitchell Section, Township, Range: SEC. 27 8N 62W

Landform (hillside, terrace, etc.): Flat / Toe slope Local relief (concave, convex, none): None Slope (%): <1%

Subregion (LRR): LRR - G Lat: 40.639556 Long: -104.300546 Datum: NAD 83

Soil Map Unit Name: Platner Loam 0-3% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No        (If no, explain in Remarks.)

Are Vegetation       , Soil       , or Hydrology        significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>      </u> No <u>X</u> Hydric Soil Present? Yes <u>      </u> No <u>X</u> Wetland Hydrology Present? Yes <u>      </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>      </u> No <u>X</u>
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Remarks: Landowner restrictions - unable to access south portion of drainage.

Location lacked hydrophytic vegetation, hydric soil, hydrology indicators; non-wetland.

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>30 ft^2</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>50</u> (A/B)
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Sapling/Shrub Stratum (Plot size: <u>15 ft^2</u> )				<b>Prevalence Index worksheet:</b>  Total % Cover of: <u>      </u> Multiply by: OBL species <u>      </u> x 1 = <u>      </u> FACW species <u>      </u> x 2 = <u>      </u> FAC species <u>11%</u> x 3 = <u>33</u> FACU species <u>17%</u> x 4 = <u>68</u> UPL species <u>5%</u> x 5 = <u>25</u> Column Totals: <u>33%</u> (A) <u>121</u> (B) Prevalence Index = B/A = <u>3.81</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
3. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
Herb Stratum (Plot size: <u>5 ft^2</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>      </u> 1 - Rapid Test for Hydrophytic Vegetation <u>      </u> 2 - Dominance Test is >50% <u>      </u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>      </u> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Amaranthus retroflexus</u>	<u>17%</u>	<u>D</u>	<u>FACU</u>	
2. <u>Sporobolus airoides</u>	<u>11%</u>	<u>D</u>	<u>FAC</u>	
3. <u>Bromus japonicus</u>	<u>5%</u>	<u>      </u>	<u>UPL</u>	
4. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
5. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
6. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
7. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
8. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
9. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>33%</u> =Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft^2</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>X</u>
1. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
2. <u>      </u>	<u>      </u>	<u>      </u>	<u>      </u>	
<u>0%</u> =Total Cover				
% Bare Ground in Herb Stratum <u>67%</u>				

Remarks:

## SOIL

Sampling Point: WET06

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 <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 3/2	100					Loam	
6-9	10YR 3/2	100					Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)	

<b>Restrictive Layer (if observed):</b> Type: <u>Compacted Clay layer</u> Depth (inches): <u>9"</u>	<b>Hydric Soil Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:  
No hydric soil indicators present during assessment; Compacted clay layer at 9".

## HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> (where tilled)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> (where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)	

<b>Field Observations:</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
No hydrology indicators presented throughout assessment.