

**CJ Interim Completion Report – Addendum M
Attachment 2.**

**Geologic Characterization of the Crescent Junction
Cell Excavation Phase IV**

Attachment 2. - Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

General Observations:

The eastern portion of the fourth cell has been excavated into the weathered Mancos Shale. No visual signs of moisture or seeps were observed. Locations were chosen based on accessibility and representation of the weathered Mancos Shale within the excavation cell. The general lithology and structure, bedding, and clasts size were described. The Munsell Soil Color Chart was used for recording the color of the wetted rock. When present, clay content, gypsum, iron, and limonite staining were noted.

Date: 06/22/23 Geologist: McPherson Location Number: 1

Observations: Weathered Mancos Shale, north section of the phase IV excavation. Flaggy mottled bedding, fine-grained, soft, subangular, 10 YR 6/2 (brown beige), no clay content (0%), trace gypsum precipitation on bedding planes.

Photographs (ID number and description):

1: Flaggy mottled bedding present on cell floor along the north edge of cell wall.

Survey Points:

N: 6796191.7

E: 2126084.2

Elevation: 4958.78

**Attachment 2. - Geologic Characterization of the Crescent Junction
Cell Excavation Phase IV**



Photograph 1

Attachment 2. - Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Date: 06/22/23

Geologist: McPherson

Location Number: 2

Observations: Weathered Mancos Shale, northeastern corner of the phase IV excavation. Highly weathered, flaggy mottled bedding, fine-grained, subangular, 10 YR 6/2 (brown beige), no clay content (0%), trace gypsum present on bedding planes.

Photographs (ID number and description):

2: Highly weathered flaggy mottled bedding present on cell floor along the northeastern corner of cell wall.

Survey Points:

N: 6796244.2

E: 2126294.9

Elevation: 4959.2 ft asl

**Attachment 2. - Geologic Characterization of the Crescent Junction
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Photograph 2

Attachment 2. - Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

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Date: 06/22/23

Geologist: McPherson

Location Number: 3

Observations: Weathered Mancos Shale, northeastern edge of the phase IV excavation. Highly weathered, flaggy mottled bedding, fine-grained, thin-friable, subangular, 10 YR 6/2 (brown beige), no clay content (0%), trace gypsum present on bedding planes, trace mica.

Photographs (ID number and description):

2: Highly weathered flaggy mottled bedding present on cell floor along the northeastern edge of cell wall.

Survey Points:

N: 6796040.8

E: 2126332.4

Elevation: 4954.3 ft asl

**Attachment 2. - Geologic Characterization of the Crescent Junction
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Photograph 3

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Photograph 4

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Date: 06/22/23

Geologist: McPherson

Location Number: 5

Observations: Weathered Mancos Shale, east central portion of the phase IV excavation. Flaggy mottled bedding, very hard, friable bedding planes, fine-grained, subangular fragments ¼" to 2", 7.5 YR 6/6 (yellow tan), no clay content, no gypsum present.

Photographs (ID number and description):

5: Hard flaggy bedding present on cell floor along the within the east central portion of the cell.

Survey Points:

N: 6795735.7

E: 2126137.9

Elevation: 4948.0 ft asl

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Photograph 5

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Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Date: 06/22/23

Geologist: McPherson

Location Number: 6

Observations: Weathered Mancos Shale, center eastern edge of the phase IV excavation, flaggy mottled bedding, hard and friable, fine-grained, angular-subangular fragments ¼" to 3", 10 YR 7/2 (beige-tan), no clay content, abundant mica and gypsum present on surface.

Photographs (ID number and description):

6a: Hard friable bedding present on cell floor along the eastern edge of the cell.

6b: Close up of mica and gypsum.

6c: Close up of mica and gypsum.

Survey Points:

N: 6795738.8

E: 2126301.2

Elevation: 4947.68 ft asl

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Photograph 6a

**Attachment 2. - Geologic Characterization of the Crescent Junction
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Photograph 6b

**Attachment 2. - Geologic Characterization of the Crescent Junction
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Photograph 6c

Attachment 2. - Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

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Date: 06/22/23

Geologist: McPherson

Location Number: 7

Observations: Weathered Mancos Shale, central portion of the phase IV excavation. Flaggy mottled bedding, softer than previous location, fine-grained, small subangular fragments ¼" to 1" cobbles, 10 YR 6/4 (tan), partial limonite staining on some bedding faces.

Photographs (ID number and description):

7: Mottled subangular fragments present in the central portion of the cell.

Survey Points:

N: 6795557.0

E: 2126297.1

Elevation: 4943.6 ft asl

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Photograph 7

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Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Date: 06/22/23

Geologist: McPherson

Location Number: 8

Observations: Weathered Mancos Shale, east central portion of the phase IV excavation. Highly weathered flaggy mottled bedding, friable, angular-subangular fragments ½" to 2", 10 YR 5/3 (brown), limonite staining on bedding faces.

Photographs (ID number and description):

8: Close up of weathered subangular clasts present in the east central portion of the cell.

Survey Points:

N: 6795482.3

E: 2126149.5

Elevation: 4942.2 ft asl

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Photograph 8

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Date: 06/22/23

Geologist: McPherson

Location Number: 9

Observations: Weathered Mancos Shale, east central portion of the phase IV excavation. Flaggy mottled bedding, fine-grained, hard angular fragments, 10 YR 6/4 (tan), gypsum precipitation, some iron and limonite staining.

Photographs (ID number and description):

9: Weather bedding with iron and gypsum present on cell floor in the east central portion of the cell.

Survey Points:

N: 6795260.5

E: 2126172.0

Elevation: 4937.2 ft asl

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Photograph 9

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Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Date: 06/22/23

Geologist: McPherson

Location Number: 10

Observations: Weathered Mancos Shale, south central edge of the phase IV excavation. Lightly weathered, fine-grained, hard angular fragments ¼" to 3", 10 YR 5/3 (brown), distinct bedding plane on larger fragments.

Photographs (ID number and description):

10: Lightly weathered fragments present on cell floor in the south portion of the cell.

Survey Points:

N: 6795243.4

E: 2126446.6

Elevation: 4936.0 ft asl

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Photograph 10

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Date: 06/22/23

Geologist: McPherson

Location Number: 11

Observations: Weathered Mancos Shale, south central portion of the phase IV excavation. Mottled flaggy bedding, fine-grained, round-subangular fragments ¼" to ¾", 10 YR 6/2 (tan-brown beige), trace gypsum and mica deposits.

Photographs (ID number and description):

11: Round-subangular fragments on cell floor in the south central portion of the cell.

Survey Points:

N: 6795145.0

E: 2126419.0

Elevation: 4933.6 ft asl

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Photograph 11

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Date: 06/22/23

Geologist: McPherson

Location Number: 12

Observations: Weathered Mancos Shale, southern portion of the phase IV excavation. Hard angular fragments, distinct bedding planes, 10 YR 7/2 (beige-tan), trace clay (10%) present.

Photographs (ID number and description):

12: Hard angular fragments on cell floor in the southern portion of the cell.

Survey Points:

N: 6794793.0

E: 2126144.6

Elevation: 4926.8 ft asl

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Photograph 12

Attachment 2. - Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Geologic Characterization of the Crescent Junction Cell Excavation Phase IV

Date: 06/22/23

Geologist: McPherson

Location Number: 13

Observations: Weathered Mancos Shale, southeastern corner of the phase IV excavation. Hard mottled bedding, angular fragments, friable, distinct bedding planes, 10 YR 6/2 (tan-brown beige), trace mica/gypsum present, no clay content.

Photographs (ID number and description):

13: Hard angular fragments on cell floor in the southeastern corner of the cell.

Survey Points:

N: 6794776.9

E: 2126476.6

Elevation: 4925.1 ft asl

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Photograph 13