Township 8S, Range 39E SECTION 13

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Cliff Features



Looking North

Photo: 2_1_06_04

FEATURE TYPE: Cliff

GEOMETRIC DIMENSIONS: Length: 100 ft Height: 10 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

16010 421411.60 2670746.27 **16011** 421509.73 2670735.34

SUBSTRATE: Sandstone/siltstone

EXPOSURE: Western facing slope

DESCRIPTION OF FEATURE: The cliff feature shown above has a solid sandstone/siltstone

rock face that is approximately 10 feet tall. The feature sits on sandy silt soil that contains small pieces of scoria. This cliff

overlooks riparian feature R_0058.



Looking West

Photo: 2_1_06_21

FEATURE TYPE: Cliff

GEOMETRIC DIMENSIONS: Length: 95 ft Height: 20 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

16050 421156.56 2669403.97 **16051** 421197.54 2669317.42

SUBSTRATE: Sandstone/siltstone

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: The cliff feature shown above has a fractured

sandstone/siltstone rock face that is approximately 20 feet tall. The feature sits on sandy silt soil and overlooks the Spring Creek

drainage.



Looking East

Photo: 2_1_06_40

FEATURE TYPE: Cliff

GEOMETRIC DIMENSIONS: Length: 95 ft Height: 10 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting Northing Easting 16097424088.53 **Easting Northing Easting**2669603.35 **16099**423964.02
2670376.83

16098 423852.88 2670098.99

SUBSTRATE: Sandstone/siltstone

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: The cliff feature shown above is composed of hard

sandstone/siltstone rock and sits on a highly erosive sandy silt soil. The feature stands about 10 ft tall along the top of a southern facing slope. See the pictures on the next page for

additional views of this feature.



Looking Southwest



Photo: 2_1_06_42

Looking South

Revised 4/06; Reference – South Fork Extension Amendment #00174

Township 8S, Range 39E SECTION 13

Rock Outcrop Features



Looking West

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 285 ft Width: 20 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

15042 425441.31 2668684.28 **15043** 425201.92 2668839.19

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located at the top of a small

hill. The weathered, layered rocks sit on highly erosive, sandy silt. This soil has eroded, leaving overhangs beneath the rocks.



Looking East

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 120 ft Height: 5 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

> **15044** 424965.53 2669086.96 **15045** 424925.39 2669199.28

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located at the top of a small

hill. The weathered, layered rocks sit on highly erosive, sandy silt. This soil has eroded, leaving overhangs beneath the rocks.

The rocks in this outcropping are very thin.



Looking East

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 420 ft Width: 50 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

15046 424984.39 2669331.63 **15047** 425037.91 2669745.58

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on a relatively flat

hilltop. The rocks are rounded and large over the length of this feature. The surrounding vegetation includes grass, sagebrush,

and trees.



Photo: 1_30_06_24

Looking East

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.18 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Northing Easting Northing Easting

15048 424161.63 **15050** 424107.76 2669971.96 2669833.36 **15049** 423996.60 2669918.76 **15051** 424151.20 2669849.19

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on a hill composed of

highly erosive, sandy silt soil. Due to the layout of the large, rounded rocks, there are voids between and below the rocks.



Looking Southwest

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 210 ft Height: 5 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

15052 424283.83 2670002.40 **15053** 424413.40 2669835.53

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Northern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on a hill composed of

highly erosive, sandy silt soil. The sandstone/siltstone rocks in this feature are layered and very weathered. There are areas where overhangs have been created beneath the rocks due to

erosion of the subsoil.



Looking West

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 1.38 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Northing Easting Northing Easting

15054 425272.23 2669492.76 2669885.15 **15056** 425270.48 **15055** 425231.82 2669876.13 **15057** 425537.07 2669502.20

Sandstone/siltstone SUBSTRATE: **EXPOSURE:** Northern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on a highly erosive,

sandy silt soil. The sandstone/siltstone rocks in this feature are layered and very weathered. There are areas where overhangs have been created beneath the rocks due to erosion of the subsoil. See the pictures on the next page for additional views of

this feature.



Looking West



Looking Northeast

Revised 4/06; Reference – South Fork Extension Amendment #00174

313D-T8SR39E13-13



Photo: 1_30_06_29

Looking West

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.99 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting Northing Easting

15058 424606.20 2668804.26 **15060**¹ 424899.65 2668515.91 **15059** 424748.48 2668804.81 **15061**¹ 424778.15 2668481.12

This point is located in Township 8S, Range 39E, Section 14.

SUBSTRATE: Sandstone/siltstone

EXPOSURE: Northern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on a northern slope

vegetated with grass, sagebrush and trees. The rocks are lowlying and weathered. This feature also falls into Section 14 but

the majority of the area was in Section 13.



Photo: 2_1_06_05

Looking South

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 55 ft Height: 15 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

> **16012** 421488.71 2670761.85 **16013** 421433.88 2670758.46

SUBSTRATE: Scoria

EXPOSURE: Western facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above consists of scoria that sits at the

top of a steep (greater than 3H:1V) slope. The face of the feature is jagged and fractured. This feature overlooks riparian

feature R_0058.



Photo: 2_1_06_07

Looking North

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 110 ft Height: 10 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

16014 421602.92 2670796.87 **16015** 421711.91 2670783.01

SUBSTRATE: Scoria

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above consists of scoria that sits at the

top of a steep (greater than 3H:1V) slope. The face of the feature is jagged and fractured. This feature overlooks riparian

feature R_0058.



Looking Southeast

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 65 ft Height: 5 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

16016 421894.31 2670895.87 **16017** 421863.60 2670961.43

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Northern facing slope

DESCRIPTION OF FEATURE: Rock outcrops like the one shown above are very common in

The rock layer is composed of layered this area. sandstone/siltstone, which is embedded within a sandy silt soil. The soil beneath the rock layer has eroded, leaving an overhang.



Looking Northeast

FEATURE TYPE: Rock Outcrop

Height: 5 ft **GEOMETRIC DIMENSIONS:** Length: 80 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Easting Northing Easting Northing

2671703.55 **16018** 421897.34 2671776.33 16020 422150.32

16019 422074.84 2671625.96

Sandstone/siltstone SUBSTRATE: **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: Rock outcrops like the one shown above are very common in

The rock layer is composed of layered this area. sandstone/siltstone, which is embedded within a sandy silt soil. The soil beneath the rock layer has eroded, leaving an overhang. This feature also intersects a small draw. See the picture on the

next page for another view of this feature.



Photo: 2 1 06 10

Looking North



Looking Northwest

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 90 ft Height: 5 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

16021 422161.18 2671251.31 **16022** 422243.82 2671212.47

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: Rock outcrops like the one shown above are very common in

The rock layer is composed of layered this area. sandstone/siltstone, which is embedded within a sandy silt soil. The soil beneath the rock layer has eroded, leaving an overhang.

This feature overlooks a small draw.



Looking Northeast

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.10 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Easting Northing Northing **Easting**

16023 422315.79 2670957.07 422370.78 2670965.62 16025 **16024** 422374.38 2671076.54 422340.12 2670920.13 16026

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located at the top of a small hill

that consists of sandy silt soil. The sandstone/siltstone rocks are thin and layered. Sparse grass, sagebrush, and some small

trees vegetate the area around this feature.



Looking Northeast

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 130 ft Height: 10 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

16027 422313.29 2670655.03 **16028** 422431.87 2670599.54

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop feature shown above consists of a

sandstone/siltstone rock layer that sits at the top of a sandy silt slope. The rock is weathered and voids have been created beneath the rock due to erosion caused by runoff flows. The

feature overlooks a small channel.



Looking North

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.39 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Northing Easting Northing **Easting**

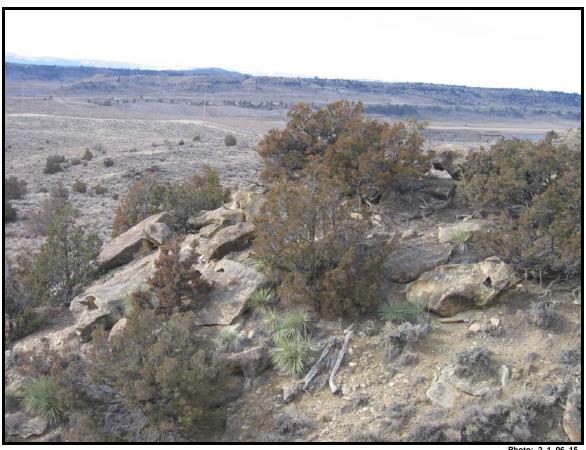
16029 423585.65 2670182.54 423833.99 2670078.95 16031 **16030** 423566.26 2670147.02 **16032** 423822.59 2670177.44

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop feature shown above consists of fractured

sandstone/siltstone rock that sits on a sandy soil. Due to erosion, small pedestals emerge in several locations over the

feature area.



Looking Southwest

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.07 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Easting Northing Northing **Easting**

16033 423666.44 2669748.72 423635.12 2669682.60 16035 **16034** 423684.00 2669727.49 16036 423588.92 2669720.24

Sandstone/siltstone SUBSTRATE: **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock feature shown above is located at a small point on a

southern facing slope. The sandstone/siltstone rocks are highly weathered and pocketed. The area around the feature is vegetated with grass, sagebrush, and some small trees. See the picture on the next page for another view of the rocks in this

outcrop.



Photo: 2 1 06 16

Looking East



Looking Northwest

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.33 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Northing Easting Northing **Easting**

16037 423317.32 2669556.04 423275.70 2669397.30 16039 **16038** 423404.33 2669426.70 **16040** 423201.32 2669353.23

Scoria SUBSTRATE:

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: Scoria outcrops, like the one shown above, are very common

across the mine area. The dark scoria is covered with lichens and extends up to seven feet high. This feature is located overlooking a small draw. The feature area is vegetated with

grass and sagebrush.



Photo: 2_1_06_19

Looking West

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.19 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting Northing Easting

16042 422084.30 2669441.06 **16044** 421999.71 2669645.21 **16043** 422107.16 2669471.31 **16045** 421955.65 2669636.31

SUBSTRATE: Sandstone/siltstone

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on the side of a hill

composed of sandy silt subsoil. The rocks are layered and weathered. Overhangs and pockets within the face of the rock

are common in this feature.



Looking Northeast

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.01 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting Northing **Easting**

16046 421714.89 2669636.37 421764.35 2669699.32 16048 2669640.82 **16049 16047** 421736.93 421741.32 2669663.92

Sandstone/siltstone SUBSTRATE: **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on the side of a hill

composed of sandy silt subsoil. The rocks are layered and weathered. Overhangs and pockets within the face of the rock are common in this feature. The area is vegetated with sparse

grass, sagebrush, and trees.



Looking North

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 105 ft Height: 20 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

16052 421252.61 2669328.55 **16053** 421326.88 2669256.42

SUBSTRATE: Scoria

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: Scoria outcrops, like the one shown above, are common across

the minesite. The face of the feature is fractured and jagged and

sits at the top of a hill.



Photo: 2 1 06 33

Looking Northeast

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.14 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Northing Easting Northing **Easting 16081** 423977.44 424073.27 2668793.10 2668762.64 16083

16082 423994.18 2668829.23 424045.34 16084 2668719.13

Sandstone/siltstone SUBSTRATE: **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located on a gentle slope

composed of sandy silt soil. The rocks are weathered and have unique holes in their face. This feature is located below cliff feature C_0059 and some of these rocks may have been

deposited from that rock face.



Photo: 2_1_06_38

Looking Northeast

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 1.26 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Northing Easting Northing **Easting**

16091 424451.32 2668752.46 16093 424490.78 2669295.98

16092 424683.64 2669168.38

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located at the top of a southern

facing slope. The layered, sandstone/siltstone rocks are located on sandy silt soil, which is highly erosive. The rocks are

weathered and fractured.



Photo: 2_1_06_39

Looking North

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 0.54 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting Northing Easting

16094 424295.26 2669341.04 **16096** 423801.85 2669424.15

16095 424069.78 2669474.86

SUBSTRATE: Sandstone/siltstone

EXPOSURE: Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located along the top and the

face of a southern facing slope. The layered, sandstone/siltstone rocks are located on sandy silt soil, which is highly erosive. The rocks are weathered, which has formed

unique pockets and holes.



Looking East

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 1.31 acres

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting Northing **Easting**

2671139.42 **16103 16101** 424969.99 425068.15 2671691.34 **16102** 425052.83 2671219.35 **16104** 424898.23 2671513.55

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located along the top and the

face of a southern facing slope. The layered, sandstone/siltstone rocks are located on sandy silt soil, which is highly erosive. The area around the feature is vegetated with

grass, sagebrush, and trees.



Looking West

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Area of outcrop: 4.52 acres

LOCATION: Township: 8S Section: 13 Range: 39E

HANDHELD GPS POINTS: Easting Northing Northing **Easting**

16105 424538.86 2671904.77 423888.60 2672212.52 16108 424100.33 **16106** 424243.78 2672141.58 16109 2671655.67

16107 423869.92 2672311.25

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: This rock outcrop is located along the bottom, side and top of a

steep (greater than 3H:1V) slope. The rocks range from large solid-faced sandstone/siltstone smaller, to sandstone/siltstone. See the picture on the next page for

another view of the feature along the face of the hill.



Photo: 2 1 06 46

Looking West



Looking South

FEATURE TYPE: Rock Outcrop

GEOMETRIC DIMENSIONS: Length: 175 ft Height: 5 ft

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

16110 421802.93 2672014.39 **16111** 421647.03 2671931.66

SUBSTRATE: Sandstone/siltstone **EXPOSURE:** Southern facing slope

DESCRIPTION OF FEATURE: The rock outcrop shown above is located at the head of a small

draw. The feature consists of fractured sandstone/siltstone, which stands approximately five feet high. The feature is

surrounded by grass and sagebrush.

Township 8S, Range 39E SECTION 13

Riparian Areas

RIPARIAN FEATURE: R_0059



Photo: 2_1_06_18

Looking North

FEATURE TYPE: Riparian Area

GEOMETRIC DIMENSIONS: See attached topographic map

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing **Easting**

16041 422062.55 2669219.69

SUBSTRATE: Not Applicable

Drainage runs in a southerly direction **EXPOSURE:**

DESCRIPTION OF FEATURE: The drainage shown above has a wide channel that is vegetated

with grass and sagebrush. The channel varies from having an undefined geometry, to cutting deeply into the sandy silt subsoil.

RIPARIAN FEATURE: R_0061



Photo: 2_1_06_43

Looking Southeast

FEATURE TYPE: Riparian Area

GEOMETRIC DIMENSIONS: See attached topographic map

LOCATION: Township: 8S Range: 39E Section: 13

HANDHELD GPS POINTS: Northing Easting

16100 424367.09 2670658.10

SUBSTRATE: Not Applicable

EXPOSURE: Drainage runs in a southeasterly direction

DESCRIPTION OF FEATURE: The drainage shown above has a wide, undefined channel that is

vegetated with grass and sagebrush. The surrounding hills vary

from steep to moderately sloped.

Township 8S, Range 39E SECTION 13

Other Features

