Hayden Gulch Loadout
C-1992-081
Sediment Control Plan for Remaining Reclaimed Railroad Spur Area

1.0 Introduction

The Hayden Gulch Loadout (HGL) is a former coal loadout located in Routt County, approximately 2 miles southeast of Hayden Colorado. The last active use of this facility was for temporary coal storage in 1992. Since that time the loadout facilities, rail spur, and offices have been removed and reclaimed and the former haul road has been transferred to Routt County for use as a public county road. The Hayden Gulch Terminal facility originally consisted of 391.2-acres. However, all but 6.8-acres of the facility, of which 2.3-acres were disturbed, have received complete Phase III Bond Release. The small 2.3-acre parcel was formally associated with the railroad bed that led to main rail spur and is located within the interior of a grass hay agriculture field. The area was reclaimed in 2021 to meet the agriculture postmine landuse of DRMS Permit No. C-1992-081 and the reclaimed ground is indistinguishable from the surrounding, undisturbed, portions of the agriculture field.

A Site Map depicting the remaining 2.3-acre parcel that is relevant to this Sediment Control Plan, the three stormwater outfalls established under CDPHE Permit No. C00049071, and receiving water bodies is provided in Appendix A.

2.0 Best Management Practices

The HGL has developed a plan to manage runoff from disturbed areas with Best Management Practices (BMPs). The 2.3-acre parcel that this Sediment Control Plan applies to only represents about two percent of the overall agriculture field. This parcel has been reclaimed to meet the postmine land use requirements of DRMS Permit and blends seamlessly with the larger agriculture field. The reclaimed parcel is surrounded by a network of agriculture drainage ditches and the areas downstream of the outfalls are extremely limited and too small to install stormwater collection or infiltration devices, both of which would reduce the area available for production and would also prevent efficient harvesting by the farmer. Therefore, the stormwater runoff control measure implemented for the three outfalls is vegetation.

Appendix B includes the SedCAD model that demonstrates that the reclaimed 2.3-acre area will not result in sediment yields that exceed those for the agricultural area prior to disturbance. Due to very small size of this parcel, the dense vegetation, and very flat topography, there is less than a 0.00 cfs peak discharge and no appreciable change in the in the peak settleable solids or peak sediment concentration in response to the10-year, 24-hour design storm event.

3.0 Maintenance/Construction

The HGL is fully reclaimed and closed. No industrial equipment or systems are located onsite. The only area applicable to the Sediment Control Plan is a small parcel within a larger agriculture field. This area has been fully reclaimed and the grass hay vegetation is indistinguishable from the vegetation in the surrounding agriculture field. Vegetation is the only practical control that aligns

with the post mine land use. Sediment yields will not exceed those of the undisturbed portions of the agricultural field. Due to the limited contributing area, very flat terrain, and vegetation, erosion is not anticipated. If any erosion were to be identified, repairs will be completed as necessary. Repairs may include minor regrading and reseeding of the area.

4.0 Inspection Criteria

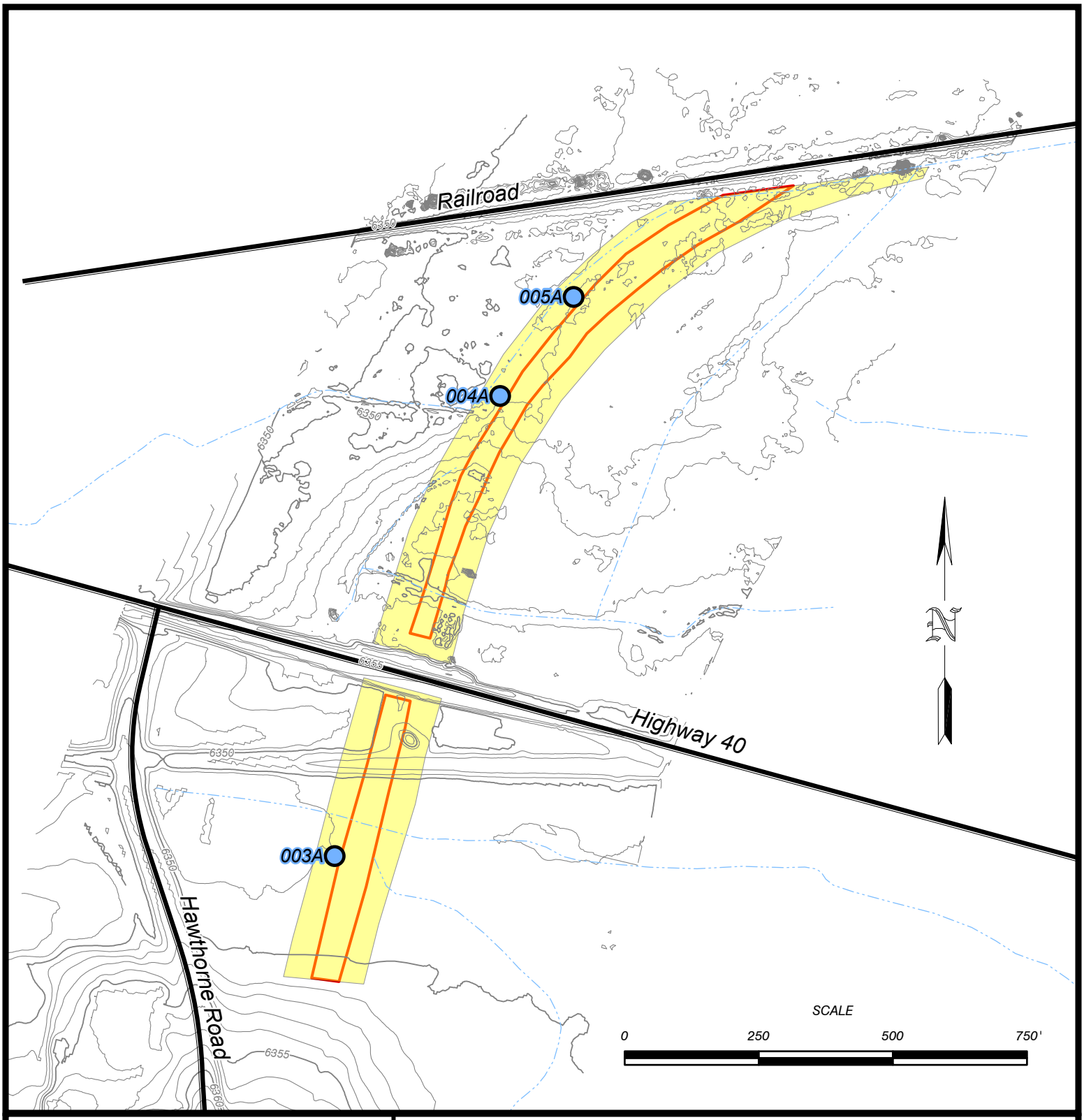
Ocular inspections of this 2.3-acre field will be completed during monthly DRMS inspections to confirm the area remains stable and no repairs are needed. In addition, two comprehensive stormwater inspections will be completed annually per the requirements of CDPHE permit CO0049071.

5.0 Performance/Longevity

The grass hay vegetation acts as a vegetation filter strip and will prevent substantial increases of stormwater driven sediment yields on this ground. Covering topsoil with permanent vegetation is a long-term solution that will minimize sediment yields from these fields for as many years as the vegetation is present. The grass hay is either grazed by cattle or cut during the harvest period and the field is not left fallow. This field has been producing grass hay for many decades and there is no indication that this will change in the future. The modeling demonstration in Appendix B indicates there will be no appreciable changes in sediment generation in this area, even after a 10-year, 24-hour storm event.

APPENDIX A

SITE MAP



Legend

- Outfalls
- 1' Intermediate Contour
- 5' Index Contour
- Permit Area
- Disturbance Boundary
- Drainages, Ditches, and Canals

HAYDEN GULCH LOADOUT

29515 RCR #27 Oak Creek, CO 80467

NORTHERN RAIL LOOP RECLAMATION

STORMWATER OUTFALL LOCATION MAP

Permit No. C-1992-081

Peabody

Designed By:	PAS	Scale:	1":250'
Drawn By:	PAS	C.I.:	1'
Checked By:	Env. Dept.	Sheet:	1 of 1
Date Drawn:	11/01/24	File:	Outfall Mapping

APPENDIX B

SedCAD MODELS

Hayden Gulch Loadout
Premining Runoff Calculation
10-Year 24-Hour Event

Phil Murphree

General Information

Storm Information:

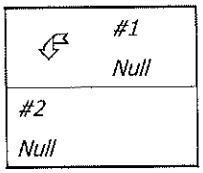
Storm Type:	NRCS Type II
Design Storm:	10 yr - 24 hr
Rainfall Depth:	1.800 inches

Particle Size Distribution:

Size (mm)	Reclaimed	Clay Loam	Sandy Loam	Native	Scoria_Sand
2.0000	100.000%	100.000%	100.000%	100.000%	46.900%
1.0000	96.500%	90.000%	70.000%	96.200%	41.500%
0.5000	91.000%	88.000%	67.000%	89.000%	41.500%
0.2500	75.000%	85.000%	58.000%	75.000%	11.300%
0.1250	61.000%	82.000%	52.000%	61.000%	7.400%
0.0630	46.000%	74.000%	38.000%	43.000%	7.400%
0.0160	30.000%	56.000%	21.000%	30.000%	0.000%
0.0040	20.000%	38.000%	11.000%	20.000%	0.000%

Structure Networking:

Type	Stru #	(flows into)	Stru #	Musk. K (hrs)	Musk. X	Description
Null	#1	==>	#2	0.000	0.000	Reclaimed Area
Null	#2	==>	End	0.000	0.000	



Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#1	2.300	2.300	0.00	0.00	0.0	1	0.00	0.00
#2	0.000	2.300	0.00	0.00	0.0	1	0.00	0.00

Particle Size Distribution(s) at Each Structure

Structure #1 (Reclaimed Area):

Size (mm)	In/Out
2.0000	0.000%
1.0000	0.000%
0.5000	0.000%
0.2500	0.000%
0.1250	0.000%
0.0630	0.000%
0.0160	0.000%
0.0040	0.000%

Structure #2:

Size (mm)	In/Out
2.0000	0.000%
1.0000	0.000%
0.5000	0.000%
0.2500	0.000%
0.1250	0.000%
0.0630	0.000%
0.0160	0.000%
0.0040	0.000%

Structure Detail:

Structure #1 (Null)

Reclaimed Area

Structure #2 (Null)

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	2.300	0.207	0.000	0.000	48.000	S	0.00	0.000
	Σ	**2.300**						**0.00**	**0.000**
#2	Σ	**2.300**						**0.00**	**0.000**

Subwatershed Sedimentology Detail:

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
#1	1	0.320	100.00	1.00	0.0500	1.0000	3	0.0	1	0.00	0.00
	Σ							**0.0**	**1**	**0.00**	**0.00**
#2	Σ							**0.0**	**1**	**0.00**	**0.00**

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	6. Grassed waterway	0.20	1.00	500.00	0.670	0.207
#1	**1**	**Time of Concentration:**					**0.207**

Hayden Gulch Loadout
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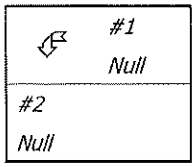

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0.0160	0.000%
0.0040	0.000%

Structure #2:

Size (mm)	In/Out
2.0000	0.000%
1.0000	0.000%
0.5000	0.000%
0.2500	0.000%
0.1250	0.000%
0.0630	0.000%
0.0160	0.000%
0.0040	0.000%

Structure Detail:

Structure #1 (Null)

Reclaimed Area

Structure #2 (Null)

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