

CIVIL PENALTIES GRANT S14AP20030 PERFORMANCE REPORT
Priscilla Burton, Utah Division of Oil, Gas & Mining, April 8, 2016

In July 2014 the Office of Surface Mining (OSM) Civil Penalty Funds were awarded to complete the remaining reclamation at the White Oak Mine, C007/001. That reclamation included reclamation of the roadway, removal of fill and restoration of Eccles Creek, as follows.

September 2015

Contract Specifications for Eccles Creek Pad and Culvert Removal Reclamation Construction were put out to bid under Utah state contract AR16068.

Stream Alteration permit 15-91-05SA was obtained for Eccles Creek. To view the documents associated with this stream alteration permit, follow this link:

http://www.waterrights.utah.gov/cgi-bin/strmview.exe?Modinfo=Viewapp&Permit_Number=15910005

October 2015

Oil, Gas & Mining and Division of Wildlife Resources staff collected 110 willow cuttings, 150 sedge plugs and 150 rush plugs were collected from within the permit area, downstream of the work location and stored in wet burlap for planting along the reclaimed channel.

State contract AR16068 was awarded to NELCO, Inc. LLC. and Notice to Proceed was given on October 15, 2016.

A highway encroachment permit was obtained for work within the right of way of State Route 264. A hand crew installed silt fence on both sides of the creek, from one side of the creek to another, above the culvert and up both sides of the embankment. A trackhoe broke up asphalt on the pad surface into 6 inch minus pieces, leaving a pullout along the highway that is 15-20 ft wide. A loader hauled the broken asphalt to the cut slope on the access road above Eccles Creek. Below the asphalt and road base an estimated 4,000 CY of fill. The fill was moved using a front end loader, until the slopes became too steep for the loader to negotiate. Then five 10-wheel dump trucks were used and the fill was hauled off to a third party location. In all, the contractor removed 7,600 CY of fill from the pad.

Very little rock was encountered until the last seven feet of fill. The fill was placed on the access road to bury the asphalt in the cut, while maintaining a 10 foot access way for foot traffic. The fill surface was roughened with pocking, seeded and covered with 1.5 ton/ac straw mulch. Water bars were established along the road at 50 ft. intervals. A swale was created in the location of a former culvert. The seed mix was as described in the construction specifications with two replacements: for species that were unavailable: dogwood (*Cornus stoloniferus*) was replaced with smooth sumac (*Rhus glabra*) and longstyle rush (*Juncus longistylis*) was replaced with alkali bulrush (*Bolbuschoenus maritimus*).

November 2015

A change of plan was agreed upon by all parties to leave the existing 48 inch culvert buried below the reconstructed Eccles Creek channel, because it is two feet below the existing water surface at its inlet

and four feet below the water surface at its outlet. i.e. The river drops down into the culvert at its inlet and the river bubbles up from the culvert at its outlet. Constructing the channel on top of the culvert was advantageous for several reasons.

- 1) Eccles Creek continued to flow in the culvert during construction of the new channel.
- 2) We did not have to over-excavate the existing channel to remove the culvert and then build on fill.
- 3) The culvert was plugged at both ends by rock and cement and buried by rock in the channel.
- 4) The temporary 36 inch bypass was installed which eliminated issues surrounding installation and removal of the bypass culvert (i.e. the over-excavation of the highway outslope and sediment entering the creek during removal).

This change in approach was discussed with and approved by Daren Rasmussen, Utah Division of Water Rights for Stream Alteration Permit #15-91-0005; Justin Hart, Aquatics Manager, Division of Wildlife Resources; Keenan Storrar, Division Oil Gas & Mining Hydrologist, and Cheryl Parker Division of Oil Gas & Mining Engineer.

The channel grade was established. South slope was laid back to an average of 40% (2h:1v or less) and pocked as much as possible, given the steep drop into the channel. The channel is approximately 12 feet wide and 100 ft. long. Filter rock was imported and placed on the excavated grade. Rock riprap was placed. Four drop structures were constructed. On Wednesday November 18, water was directed into the new channel. A track hoe filled 48 inch culvert inlet with rock and cement and put a HUGE rock on top. Several bags of cement were placed in front of the rock.

There were deep pools at the inlet and outlet of the new channel. Four riffles were visible in the channel. There is a slight meander. A small water fall brought flow to a pool at the outlet. Some sediment was carried downstream during the final stages of the work, but afterwards the water appeared clear.

Seven willow bundles were placed around the former inlet and covered the cuttings with backfill. We also planted 10 willow bundles at the outlet (five bundles on each stream bank). One container of sedges and one container of rushes (@ approx 25/container) were planted along the north stream bank where ground was recently worked and therefore not frozen. Snow and frozen soils delayed the planting of the remaining willows (5 bundles) and sedges (125 plugs) and rushes (100 plugs) until the spring. (Unfortunately the rushes and sedges went missing over the winter, but the remaining willow bundles were placed into the water at the toe of the slope in June 2016.)

Ward Landscaping was subcontracted to do the hydromulching required on the steep slopes of the stream channel. Ward landscaping hand seeded the site (with a slightly different mix) and then applied hydromulch to the north side, but had difficulty reaching the far slope. Consequently, 10 lbs/ac Triticale were applied over the snow, to provide early spring cover and add a standing mulch the steep slopes. Work was completed November 19, 2015. The stream alteration final compliance report was filed on February 2, 2016.

Photographs of Work completed under Civil Penalties Grant S14AP20030

Begin removal of pad above creek 10/22/2015.



Eccles Creek funnels into the 4 foot culvert 10/26/2015



10/26/2015. Eccles Creek emerges from pipe which is submerged 4 feet below the surface.



10/26/2016 Fill removal from pad and placement on access road.



October 26, Below: Keenan Storrar, OGM, and Ron Need, NELCO, discuss swale reconstruction.



Below left: Cheryl Parker, OGM, observes fill placement on access road. Below right: Priscilla Burton monitors the project.



10/29/2015, Below: Gravelly clay fill found above culvert. Below right: imported filter rock.



11/6/2015. Below Flow into the culvert during construction of the new channel two feet above.



1/6/2015. Below: Hugh Christensen, NELCO, surveys in the channel.



11/06/2015 Center of Channel.



11/9/2015 Cheryl Parker, OGM, and Hugh Christensen, NELCO, evaluate stream grade rock structures.



11/9/2015 Cheryl Parker checks southslope gradient.



11/13/2015 Slopes are laid back and pocked



11/13/2015 A short segment remains to be constructed at the downstream outlet.



11/17/2015. The culvert outlet is plugged with rock.



11/18/2015 The culvert inlet is plugged with rock and cement.





Eccles Creek flows into reconstructed channel 11/18/2015, looking downstream.



11/18/2015 Looking upstream. Sedges, rushes and willows planted on the north ordinary high water mark (OWHM). Willows only were planted on the south OHWM.



11/18/2015 Former culvert inlet location is planted with willow cuttings.



11/18/2015 New outlet with willows planted on each side.



Slopes are seeded by hand and hydromulched, 11/19/2015.



Customer Mix Sheet

Mixture Name: Nelco/Eccles Creek Seed Mix

Seeding Rate/ Notes:

Customer Name:

Lot Number: 29455

PO Number: Jeff Wilson

Creation Date: 10/22/2015

Lot Number	Kind and Variety	Rate	PLS Lbs.	Bulk Lbs
RHGL-M-UT	Smooth Sumac, VNS		5.28	6.00
BTS-616	Sainfoin, Shoshone		2.76	3.00
W6-14-BUR-2	Small Burnet, Delar		2.75	3.00
10065166	Mountain Brome, Garnet		2.84	3.00
19062625R	Wheatgrass, Thickspike, Bannock		2.62	3.00
LB-34-13	Western Wheatgrass, Rosana		2.65	3.00
1.18162550	Snake River Wheatgrass, Secar		1.32	1.50
DNA-9119	Alkali Bullrush, Native		1.33	1.50
ARTRV-M-NV	Mountain Big Sagebrush, VNS		0.16	0.75
Lr-0331CD	Creeping Foxtail, Garrison		0.16	0.75
M50-12-71910	Redtop, VNS		0.13	0.15
Totals:			22.01	25.65

Ward Landscape/Eccles Mix 1.5 Acres

Purity	Mixture Contents	Origin	Gen
21.05%	Dogwood	UT	
12.27%	Sainfoin, Shoshone	WY	
12.26%	Brome Mountain, Bromar	MT	
12.23%	Small Burnet Deiar	CO	
12.23%	Redtop, VNS	OR	
11.30%	Wheatgrass, Thickspike, Bannock	WA	
11.20%	Western Wheatgrass, Rosana	MT	
0.72%	Mountain Big Sagebrush	ID	
0.63%	Creeping Foxtall, Garrison	WY	