APPENDIX F
ADDENDUM TO THE RECLAMATION AND MITIGATION CONCEPTS REPORT

(Draft EIS Volume II Appendix D presented options
for reclamation and mitigation.
This appendix identifies mitigation concepts
that are part of the Preferred Alternative)

ADDENDUM TO:
TEMPORARY WETLAND IMPACTS
AND
RECLAMATION AND MITIGATION CONCEPTS
FOR
ST. MARIES RIVER PERMIT AREAS

BENEWAH AND SHOSHONE COUNTIES, IDAHO

Prepared for:
Emerald Creek Garnet, LTD.
PO Box 190
Fernwood, Idaho [83830]

Prepared by:
Mike Carroll
169 Newman Middle Branch Rd.
Elma, Washington [98541]

July 2004

1.0 Introduction

Volume II Appendix D of the Emerald Creek Garnet Environmental Impact Statement is a technical report entitled *Temporary Wetland Impacts and Reclamation and Mitigation Concepts for St. Maries River Permit Areas.* This technical report provided Emerald Creek Garnet (ECG) with an assessment of potential wetland impacts, and a range of mitigating options that would avoid, reduce, and compensate for those potential impacts. Many of these options were adopted in the Plan of Operations and were described in the Draft EIS. Several comments on the Draft EIS asked for clarification, additional information, and additional mitigation. This addendum clarifies the options that would be implemented by ECG pursuant to the §404 permit.

1.1 Vegetation Design Concepts Plant Option (Section 4.4)

ECG would use Plant Option 1, which is formulated to provide an optimum mix of immediate sod-building and erosion-reducing groundcover species and a mix of endemic woody vegetation.

In summary, Plant Option 1 provides the following components.

1. A 30-pound per acre seed mix of endemic grasses and clover for seasonally and shallowly inundated PEM1E habitats.

2. A 32-pound per acre seed mix of endemic grasses and clover for pasture wetlands.

3. A 21-pound per acre seed mix of endemic grasses and clover for all other wetland habitats (PSS1E, PFO1E, PEM1F, PEM1H, PSS1F, and POWH[1]).

4. A woody plant palette with 10 trees per acre in PSS1E, 36 trees per acre in PFO1E, and 110 trees per acre in forested corridors (refer to Volume II Appendices A and D).

5. A woody plant palette with 85 shrubs per acre in PSS1E, 69 shrubs per acre in PSS1F, and 35 shrubs per acre in PFO1E.

These components have the following attributes:

1. Seed mixes have an emphasis on sod-forming endemic species. This approach provides a quick groundcover to stabilize recently regraded topsoil and minimize erosion. A quick groundcover also reduces establishment of invasive species such as reed canarygrass and purple loosestrife.

2. Woody plant palette emphasizes native trees and shrubs.

3. Woody plant palette would provide a 10 percent tree cover in PSS1E habitats.

4. Woody plant palette would provide a 30 percent tree cover in PFO1E habitats.

[1] Open water habitat is primarily dependent upon groundwater for hydrologic support. Open water would be excavated to a depth of 5.0 to 9.0 feet, depending upon groundwater depth. The excavated area would have side slopes of 0.5H:1V to 1H:1V. These side slopes require vegetation, in an amount varying with groundwater depth and seasonal fluctuations. Seeding is necessary, and especially important to minimize erosion in the high-flow season after excavation occurs.

5. Woody plant palette would provide 110 trees per acre in forested corridors (an initial 20' x 20' spacing).

6. 4,140 trees would be planted as mitigation for removal of 693 trees over a 9- to 15-year period of mining activities.

1.2 Wetland Planting Standards (Section 7.2.2)

Performance standards for emergent and pasture wetland vegetation would be as follows:

- Establish at least 45 percent aerial cover at all sample sites at the end of three years;

- Establish at least 80 percent aerial cover at the end of the five-year monitoring period;

- Observe a continual increase in cover percentage, plant species diversity, and plant age/size class diversity throughout the five year monitoring period;

- Establish at least 5 ground layer species in the wetland at the end of the five year monitoring period; and

- Allow natural recruitment of desirable wetland species to be included as cover and as species diversity during long-term monitoring.

Performance standards for scrub-shrub wetland vegetation would be as follows:

- Establish at least 45 percent total aerial cover of all seeded, planted, and transplanted species at all sample sites at the end of three years;

- Establish at least 15 percent aerial cover of all shrub species at the end of three years;

- Establish at least 80 percent total aerial cover of all seeded, planted, and transplanted species at the end of the five-year monitoring period;

- Establish at least 30 percent aerial cover of all shrub species at the end of the five-year monitoring period;

- Observe a continual increase in cover percentage, plant species diversity, and plant age/size class diversity throughout the five-year monitoring period;

- The forested component would have an average 5 percent aerial cover at the end of the five-year monitoring period;

- Maintain at least 75 percent survival of planted trees and shrubs at the end of the five-year monitoring period;

- Establish at least two ground layer species, two shrub species, and one tree species in the wetland at the end of the five-year monitoring period; and

- Allow natural recruitment of desirable wetland species to be included as cover and as species diversity during long-term monitoring.

Performance standards for forested wetland vegetation would be as follows:

- Establish at least 45 percent total aerial cover of all seeded, planted, and transplanted species at all sample sites at the end of three years;

- Establish at least 15 percent aerial cover of all tree species at the end of three years;

- Establish at least 80 percent total aerial cover of all seeded, planted, and transplanted species at the end of the five-year monitoring period;

- Establish at least 30 percent aerial cover of all tree species at the end of the five-year monitoring period;

- Observe a continual increase in cover percentage, plant species diversity, and plant age/size class diversity throughout the five-year monitoring period;

- Maintain at least 75 percent survival of planted trees and shrubs at the end of the five-year monitoring period;

- Establish at least 2 ground layer species, 2 shrub species, and 1 tree species in the wetland at the end of the five-year monitoring period; and

- Allow natural recruitment of desirable wetland species to be included as cover and as species diversity during long-term monitoring.

1.3 Wetland Protection (Section 5.5)

Short-term Fencing

Two types of short-term fencing would be utilized. Perimeter fencing would be placed around all reclaimed ground on land under all ownerships. This fencing would be maintained for five years, or until all reclamation performance standards are satisfied. On non-ECG ownership, perimeter fencing would be removed once performance standards are satisfied. Cluster fencing would then be placed around forested wetlands to exclude cattle until trees have reached a size that would not be impacted by grazing. Cluster fencing duration is based on the following stock size:

- 1 gallon cottonwood or aspen; 4 feet to 6 feet height, 10 to 15 years

- 2 gallon cottonwood or aspen, 6 feet to 8 feet height, eight to 10 years

- Cottonwood poles, 3-inch caliper, 7 feet above ground, five years

Short-term perimeter fencing on ECG ownership would become long-term fencing once performance standards are satisfied.

Long-term Fencing

On ECG's ownership, all short-term perimeter fencing would become long-term perimeter fencing. This fencing would be employed to protect all reclaimed wetlands on ECG's ownership as long as ECG owns the property, or until a change in land use occurs. Fifty-five acres of this would be protected permanently, as described below.

Permanent Protection

ECG would provide permanent protection to 55 acres of its ownership in the St. Maries River floodplain at the downstream end of the project. This area would include more than 38 acres of reclaimed wetlands at the end of mining activities. This parcel would be permanently fenced and placed in trustee status. If no viable trustee assumes responsibility, an irrevocable legal agreement for permanent protection would be constructed.