APPENDIX L:

CHANGES IN VEGETATION PALETTE

Memorandum

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Cc:

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Date: August 29, 2013
Subject: Permanente Quarry COA 78 – BMP Installations

Per COA 28 of the Final Conditions of Approval, re-vegetation shall include only plant materials identified in the re-vegetation palette contained in the approved RPA. The Mine Operator shall follow the "test plot" program in the RPA to determine the appropriateness and success rates of the proposed re-vegetation palette identified in the RPA.

Per COA 30, the Planning Manager shall have authority to administratively review and approve minor revisions to the re-vegetation palette contained in the approved RPA. The status report shall be given to the Planning Commission after any revisions and presented at the next available Planning Commission meeting.

The final hydroseeding palate used for the 2013 Permanente Creek Reclamation Area (PCRA) erosion control efforts differed slightly from the palate proposed in the initial Revegetation Plan, Permanente Quarry (WRA 2011a). The hydroseeding palate was changed based on the results from the latest vegetation test plot monitoring efforts from 2011 and 2012 (years 3 and 4) (see WRA 2011b-2012) and seed availability. The palates that were proposed in the 2011 Revegetation Plan are represented in Tables 1 and 2, while the vegetation palate used in the fall of 2012 is shown in Tables 3 and 4.

The Erosion Control Hydroseeding Seed Mix is to be used in locations that are not designed to be permanent in nature such as soild stockpiles, hillsides that are to be re-worked in future years, and areas of temporary soil stabilization. The PCRA Hydroseeding Seed Mix is designed to be used in the areas adjacent to Permanente Creek and areas that are to remain more stable over time. The major difference between the Erosion Control Hydroseeding Seed Mix and the PCRA Hydroseeding Seed Mix is that the former contains a larger percentage of faster-growing herbaceous and grass species, whereas the latter contains larger protions of shrubs and longer-dwelling and slower-growing species.

The 2013 hydroseeding scheduled to be applied later this year, if applicable, may be altered based on the results of the final (Year 5) test plot monitoring results.

Table 1. Revegetation Plan (2011) Erosion Control Hydroseeding Seed Mix

SCIENTIFIC NAME	COMMON NAME	PURE LIVE SEED (lb / acre)
GRASSES AND HERBS		
Bromus carinatus	California brome	16.00
Elymus glaucus	blue wildrye	10.00
Lupinus nanus	sky lupine	5.00
Nassella pulchra	purple needlegrass	8.00
Plantago erecta	California plantain	3.00
Trifolium willdenovii	tomcat clover	3.00
Vulpia microstachys	three weeks fescue	8.00
	TOTAL	**53.00**

Table 2. Revegetation Plan (2011) PCRA Hydroseeding Seed Mix

SCIENTIFIC NAME	COMMON NAME	PURE LIVE SEED (lb / acre)
GRASSES AND HERBS		
Artemisia californica	California sagebrush	1.4
Baccharis pilularis	coyote brush	0.2
Eriogonum fasciculatum	California buckwheat	1.0
Salvia leucophylla	purple sage	0.7
Salvia mellifera	black sage	1.1
Achillea millefolium	yarrow	1.7
Artemisia douglasiana	mugwort	0.1
Bromus carinatus	California brome	4.6
Elymus glaucus	blue wildrye	4.6
Eschscholzia californica	California poppy	1.2
Heterotheca grandiflora	telegraph weed	0.2
Lotus purshianus	Spanish clover	0.7
Lotus scoparius	deerweed	1.5
Lupinus nanus	sky lupine	0.8
Melica californica	California melic	1.3
Nassella pulchra	purple needlegrass	2.9
Poa secunda	one-sided bluegrass	1.3
Trifolium willdenovii	tomcat clover	1.4
Total		**26.7**

Table 3. 2012 Applied Erosion Control Hydroseeding Seed Mix

Scientific Name	Common Name	Rate of application (lbs / acre)
GRASSES AND HERBS		
Bromus carinatus	California brome	19
Elymus glaucus	blue wildrye	13
Trifolium willdenovii	tomcat clover	3
Vulpia microstachys	three weeks fescue	10
Lipinus nanus (innoc)	Lupine	5
Plantago erecta*	Plantain	3
TOTAL		**53**

Table 4. 2012 Applied PCRA Hydroseeding Seed Mix

Scientific Name	Common Name	Rate of application (lbs / acre)
SHRUBS		
Artemisia californica	California sagebrush	0.5
Baccharis pilularis	coyote brush	0.1
Eriogonum fasciculatum	California buckwheat	1.0
GRASSES AND HERBS		
Bromus carinatus	California brome	12
Elymus glaucus	blue wildrye	10
Eschscholzia californica	California poppy	1.5
Heterotheca grandiflora	telegraph weed	0.5
Lotus scoparius	deerweed	3.0
Nassella pulchra	purple needlegrass	5.0
Vulpia microstachys	three weeks fescue	6.0
Festuca rubra	Red fescue	5.0
Lipinus nanus (innoc)	Lupine	4.0
Plantago erecta	Plantain	4.0
TOTAL		**52.6**