

Rosemont Copper Project

Pre- Section 7 Reinitiation
Working Group Meeting

August 19, 2014

Attendees:

Coronado: Mindy Vogel

SWCA: Chris Garrett, Melissa Polm, Angela Barclay, Mike Hatch

FWS: Jeanne Calhoun, Jason Douglas, Susan Sferra

BLM: Jeff Simms,

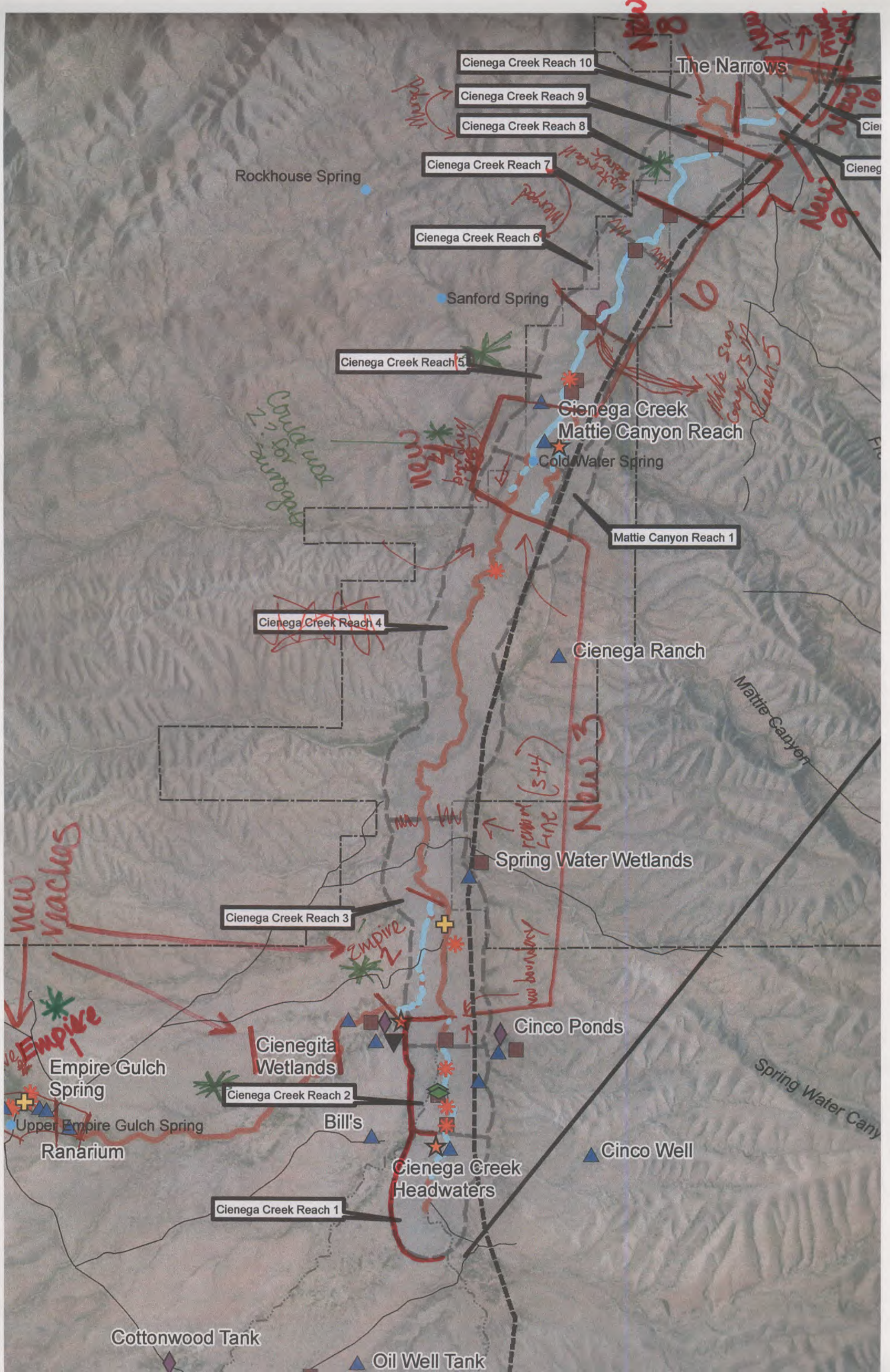
USGS: Nick Peretti

Topics of Discussion:

- Empire Gulch and Cienega Creek reach delineation and changes to previous
- Rationale for key reaches:
 - Empire 1- significant spring, closest to mine impacts, important for frogs and birds
 - Empire 2- long perennial string of pools, important to CLF, original HWU population?
 - Cienega 2- Nearly 1 mi with all species
 - Cienega 4- combination of flowing stream and mars, unusual properties and spring
 - Cienega 5- have USGS gauge info and typical perennial reaches downstream
 - Cienega 8- most HWU patches, could inform other reaches downstream
- Desirable data collection & modeling possibilities

Action Items:

- n/a



reach_name	Instruments Present	Data Collected	Reach length (total/wet)	Max depth	max width	Floodplain width	Wet	Pools/Riffles	Wetland/Marsh/swamp	Substrate	Other Stream characteristics	Dominant overstory	Dominant mid-story	Dominant low-story	Other Vegetation characteristics	CLF	NMG	SWFL	YBC	HWU	GT	GC	DP	Other fish/wildlife
Cienega Creek 01	Two piezometers (WP11, WP12)	groundwater levels (2011-2013), permanent fish sampling site back to 1989	GIS	6+ ft	20 ft	300 yd	partial	y-riffles exceeding rare	marsh trending toward swamp	several feet of ooze, anoxic, low gradient, low velocities,	channel is agrading	willow and cottonwood	seep willow, ash, walnut	sedges, herbaceous, cattails and bullrush	riparian area is extending southward from headwaters, mesquite patches adjacent	y	y	y	y	y	n	n	na	na
Cienega Creek 02	Two piezometers (WP13, WP8), BLM flow measurement station	monthly flows and water quality, groundwater levels (2011-2013)	3/4 mi	10 ft	25ft	50 yds	y	pools and runs	all	several feet of ooze, low gradient, low velocities,	deeply incised, disconnected from historic floodplain, no longer continues to creation of wetlands	willow and cottonwood	mesquite on edges, ash, walnut, seep willow	herbacious	trend is from marshy to swamp communities	y	y	y	y	y	y	y	na	longfin at garner confluence
Cienega Creek 03	Two wells (Box, Sam's), three piezometers (WP2, WP4, WP14), EPA flow measurement station (101176/26.68)	groundwater levels (1998-2013), six flow measurements (2000-2002)				1/2 mi	n				narrow, low moisture,	cottonwood willow	seep willow, ash, walnut	sacaton grass, deer grass	30-50 yds wide cuckoo hab, sacaton grass, "49 wash" mesquite bosque adjacent	y	y	y	y	n	n	n	na	
Cienega Creek 04	EPA flow measurement station (100601/22.98)	One flow measurement (1998)	1/2 mi	7+ ft	20 ft	1/4 mi	y	run and pools	marsh and stream	several feet of ooze, low gradient, low velocities,	floodplain function at ecological potential due to long rest from grazing (35yrs), confluence with Mattie Cyn, water not from channel, but re-wetted from coldwater spring (1/4 mi long)	cottonwood willow, ash	seep willow, ash, walnut	herbacious	mesquite on floddplain drown and die as expanded- in adjacent canyons	y	y	?	y	y	y	y	na	LFD
Cienega Creek 05	USGS gaging station; two EPA flow measurement stations (100600/22.12; 100266/22.42)	Daily flow and depth (2001-present); other flows (1991-1993; 2005-2006)		6+ ft	25 ft	100 yds	y	pool run riffle	some marsh	mostly sand and gravel with mud false bottom	"power reach"- most baseflow of entire area, steeper gradient than above mattie cyn confl, northern end of reach has a bedrock grade control	cottonwood, willow and ash	walnut, young ash, seep willow	herbacious	mature, mesquite bosque along the edges of riparian area, channel is incised 20+ ft from old terrace	y	y	y	y	y	y	y	na	LFD
Cienega Creek 06	None	None		7+ ft	30 ft	50 yds	y	pools, runs, riffles	na	sand and gravel, bedrock	excess sediment from pump, wood canyons, floodplain still widening, old terrace walls are about 15 ft above new bed, higher/highest gradient	cottonwood, willow and ash	walnut, young ash, seep willow	herbacious	mature, mesquite bosque along the edges of riparian area, channel is incised 20+ ft from old terrace	y	y		y	y	y	y	na	lfd

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Cienega Creek 07	Two EPA flow measurement stations (101177/20.88; 20.45)	Six flow measurements (2001-2002); one flow measurement (2012)		6+ ft	15-20 ft	30-50 yds	y	pools, runs, riffles	some marshy hab	sand and gravel, bedrock	fairly steep gradient	cottonwood, willow, ash	seep willow, ash, walnut	herbacious	mature, mesquite bosque along the edges of riparian area, channel is incised 20+ ft from old terrace, supports largest and densest HWU population	y + LLF	y	n	y	y	y	y	na	LFD
Cienega Creek 08	None	None				100+ yds	n			lots of bedrock, sand, gravel	dries up, when wet, holds GC & GT	cottonwood, wilow, ash	seep willow, ash, walnut	deer grass	some HWU with moisture, mesquite bosque is close proximity	y + LLF	y	n	y	y	sporadically	sporadically	na	LFD
Cienega Creek 09	None	None		10 ft	40 ft	variable (up to 40 yds)	y	dominant pools, some run riffle	some marsh	sand and gravel, bedrock	a lot of bedrock, forces water to surface, Fresno cyn dam backs up water into large pool	cottonwood willow ash	seep willow, ash, walnut	herbacious	extensive mesquite bosque contiguous with riparian	LLF	y	n	y	y	y	y	na	LFD
Cienega Creek 10	None	None		6 ft when wet	30 ft	50-100 yds	seasonal	na	na	gravel, cobble rubble, boulder	13 ft incision and another, riparian areas health has collapsed, some small pools remain through dry season	cottonwood willow ash	seep willow, ash, walnut	deer grass	overstory dying, replacement by seep willow	LLF	y	n	y	n	y	n	na	LFD
Cienega Creek 11	None	None									really dry, pools begin around I-10				sporadic trees- seep and desrt willow									
Cienegita Wetlands (Empire)	Photopoints	physical, water quality, seasonal depth and species populations, succession of vegetation monitored- photo and transects	1/4 acre each	6-7 ft	8 ac		y		wetland		perennial wetlands is 3/4 acres, seasonal-8 ac, perennial with great depth fluctuation	na	na		low sprawling herbaceous plants-managing vegetation, flood plain 1/4 mi wide, mequite bosque is 1/4 mi, surrounded by sacton grassland, has ditributary that allows periodic flooding from Empire Gulch	y	not yet	n	n	y	y	n	y	

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Empire 1	Piezometer flow measurement station	monthly, tempature and DO connectivity, temp and pH- 1st measurement in 89-12gpm	1000' surface water/ 1/2 mi riparian	5-6 ft	12 ft		y	pools and runs	marsh and swamp	several feet of ooze, anoxic, low gradient, low velocities,	functional floodplain, aquatic habitat has issues for fish, low DO continuous covering and duckweed and watercress- lack of open water, flood plain shaped like triangle as wide as 100-300 meters	2 species of willow and cottonwood	willow walnut	herbaceous	riparian area highly functioning, sparse mesquite- bosque to the north that's huge (adjacent)	y	n	y	y	n	n	n	n	n	demsfly and dragonfly some of the highest
Empire 2	Well	record of water levels, no flow data	1/2-3/4 mi	6+ ft	15-20 ft		y	pools	marsh	several feet of ooze, anoxic, low gradient, low velocities,	not perrenial surface flow, it is per. Pools, anoxic in the past (mid 90s)	low density gooding willow and cottonwood	na	herbaceous veg	Tree density is bare-cottonwood old- few willows, no tree generation, adjacent planty community is dense sacton floodplain, minimal mesquite invasion, creeping field sedge	y?	y	n	y?	y-1996	n	n	n		
Maddie Canyon 1	none		1/2 mi	3 ft	15 ft	highly variable (30 ft except mouth)	y	pools runs	marsh	sand gravel, fals mud bottom	excess sediment supply from accelerated erosion/headcutting 1 mi upstream	cottonwood, willow, ash	seep willow, ash, walnut	herbacous	more herbacious cover coming in over time (trend)	y	y	n	y	y	y	y	na	LFD	