

Cullinan Ranch Restoration Project: Self Monitoring Table

TABLE D-1 - SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS FOR SEARS POINT*						
(Final sampling plan can be altered by Discharger if funding or staff become limited.)						
SAMPLE POINT:		Sample Pt. 1: Breach 1 - San Pablo Bay	Sample Pt. 2: Breach 2 - Tolay Creek	Sample Pt. 3: Restored Tidal	Sample Pt. 4: Restored Tidal	Sample Pt. 5: Ambient
METHOD						
MATRIX: WATER						
Salinity ¹	multiparameter probe	D/M	D/M	D/M	D/M	D/M
pH ¹	multiparameter probe	D/M	D/M	D/M	D/M	D/M
Temperature ¹	multiparameter probe	D/M	D/M	D/M	D/M	D/M
Turbidity ¹	multiparameter probe	D/M	D/M	D/M	D/M	D/M
Dissolved oxygen ¹	multiparameter probe	D/M	D/M	D/M	D/M	D/M
Methyl mercury ² if biosentinels are not chosen	EPA 1630 or other appropriate method			A/B	A/B	
MATRIX: Biosentinels						
		Sears Point Restored Tidal Habitat	Seasonal Wetland Passive Enhancement Area and Vernal Pools			
Methyl mercury ²	UC Davis method for biosentinel fish preferred; FGS 045 or other appropriate method for sediment and water; Annual preferred; Biennial acceptable.	Mercury monitoring plan submittal awaiting mercury data from nearby projects. If funding allows, annually or biennially (every other year) for 5 Years. (A/B)				
BIOTA						
		Sears Point				
Birds#	area surveys as funding allows	up to four times annually in Years 1-3;				
Vegetation	1) Observations; 2) Mapping with aerial/satellite photos; 3) field observations	1) Annual Observations of colonizing species (qualitative); 2) ground observations in conjunction with aerial imagery analysis once 20% attained; In years 3-5. Thereafter, best professional judgment every 5 years until target met or				
salt marsh harvest mice#	area surveys as funding allows	In yrs. 4 and 5 if suitable habitat is present				

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Geomorphic Evolution						
Tidal Channels	measure top width of channel at breach	Yrs 1 and 5. Thereafter best professional judgment until target met or changed.				
Sedimentation#	a) deposition mapped as vegetation germinates; b) sediment plates, pins, erosion tables, or LIDAR	Yrs 1 and 5				
Field Photo Documentation	area surveys	pre-construction (baseline); post-construction Yrs 1 and 5				
Habitat Development	Rough comparison of aerial or easily accessible free satellite photos	pre-construction (baseline); B in yrs 1-5. Thereafter, best professional judgment every 5 years until target met or changed.				
Notes:						
* This schedule can be changed with Water Board approval. If feasible, baselines should be conducted in cases where data does not exist.						
Where data does exist, it should be compiled to compare pre- to post- restoration.						
Conditional or Functional Assessment						
			Collect a baseline in year 1 and conduct assessment again in year 3 and year 5			
¹ Field test only						
² Methyl mercury	Monitoring can include water, sediment, and/or biosentinels. If biosentinels are used, the fish protocol developed by U.C. Davis (Slotton) is preferred, but not required, based on previous sampling. If biosentinels are infeasible, then mercury and methyl-mercury can be sampled in water and sediment. Mercury monitoring is preferred annually, but can be conducted biennially. Implementation of mercury monitoring plan can await analysis of nearby projects, unless Water Board requires it sooner.					
A	Once per year					
B	Biennially (once every 2 years)					
D/M	Once within 3 days prior to breach; Once within 3 days following breach; and weekly during the first month. Alternatively, continuous monitoring will be performed in some or all of the sample points for 7 days prior to breach and 30 days following breach.					
#	should be carried out if funding is available					
yrs	years					