

ESCA RP Erosion Monitoring Form

Conducted By: J. Talis

MRA: IAR-R47

Monitoring Date: 1/5/2015

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	<u>Yes</u>	<u>N</u>	<u>Many are decomposing but are no longer needed.</u>
Blanket	<u>-</u>	<u>-</u>	
Silt Fence	<u>Yes</u>	<u>Y</u>	<u>The 3rd silt fence (from west) has holes from staples. A 10' section of silt fence should be replaced</u>
Sand Bags	<u>Y</u>	<u>N</u>	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comments:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y / N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: Joshua Tallis

MRA: FEG - Grenade Range

Monitoring Date: 1/5/2015

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	<u>Yes</u>	<u>N</u>	
Blanket	<u>Yes</u>	<u>N</u>	
Silt Fence	<u>No</u>	<u>N</u>	
Sand Bags	<u>Yes</u>	<u>N</u>	
Water Bars	<u>Yes</u>	<u>N</u>	<u>Water properly draining out south side of mid</u>
Hydroseeding	<u>Yes</u>	<u>N</u>	<u>slope water bars.</u>
			<u>Grass growing well but starting to turn red due to drought stress.</u>

2. Are there signs of water erosion? Y N - N/A

Rilling - gullyng - Loss of fines from surface - Sand/silt deposit in fans/basins

Comments:

3. Are there signs of wind erosion? Y N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding?

Y / N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form	Conducted By: <u>Joshua Tallis</u>
MRA: <u>IAR - R47</u>	Monitoring Date: <u>1/14/2014</u>
Weather: <u>Clear, 60's °F, >72 hrs since rain</u>	
Type of Monitoring: Pre-rain event - Post rain-event <input checked="" type="radio"/> Routine <input type="radio"/> Other	

1. Existing Erosion/Sediment Control Measures Present Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	Y	N	
Blanket	Y	N	Blanket has been covered by hydroseeding
Silt Fence	Additional 4 stakes needed to cover small holes in silt fence on N side		Y
Sand Bags	Y	N	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullyng - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment: _____

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments: _____

4. Are there areas of ponding? Y / N Size and depth: _____

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe: _____

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis

MRA: FEG-Grenade Range + S. of ASP

Monitoring Date: 1/22/2015

Weather: Partly cloudy in AM, 50°F, no rain in >72 hrs

Type of Monitoring: Pre-rain event - Post rain-event - ~~Routine~~ - ~~Other~~ → Baseline conditions S. of ASP.

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	Yes	No	
Blanket	Yes	No	
Silt Fence	NA		
Sand Bags	Yes	No	
In the new work area south of the ASP and along Barlow Canyon rd there are no BMPs.			

2. Are there signs of water erosion? Y N - N/A

~~Rilling~~ ~~gully~~ - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment: occurring along old Army roads running perpendicular to the contour in new area S. of ASP

3. Are there signs of wind erosion? Y N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding?

Y N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

Rilling + gully along old roads appears to be a long term problem from the road design. The roads have partially revegetated.

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis

MRA: IAR - R47

Monitoring Date: 2/11/2015

Weather: Clean, 60's

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	Y	N	
Blanket	N/A		
Silt Fence	Y	Y	Some staples needed to keep fence erect
Sand Bags	Y	N	
Hydro seed	Y	N	Grass growing well on excavation. other species not observed in hydroseed, only <i>Elymus glaucus</i>

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullyng - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y / N Size and depth:

No ponding behind catchment basins, at all

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis
 Monitoring Date: 2/18/2015

MRA: FEG - Grenade Range

Weather: Overcast, 50's

Type of Monitoring: Pre-rain event Post rain-event - Routine - Other ~ 2 weeks since rain

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	<u>Y</u>	<u>N</u>	
Blanket	<u>Y</u>	<u>N</u>	
Silt Fence	<u>N/A</u>		
Sand Bags	<u>Y</u>	<u>N</u>	
Hydro-mulch/seed	<u>Y</u>	<u>N</u>	<u>Grass in hydro-mulch/seed is growing very well, especially in old rills + small gullies.</u>

2. Are there signs of water erosion? Y N N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment:

3. Are there signs of wind erosion? Y N N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47. One photos taken

ESCA RP Erosion Monitoring Form

Conducted By: Joshua Tallis
 Monitoring Date: 2/23/2015

MRA: SEA - Blue Line Rd
 Weather: Clear, 50°'s F, Windy, >72 hrs since rain.
 Type of Monitoring: Pre-rain event - Post rain-event - (Routine) - Other

1. Existing Erosion/Sediment Control Measures Present? (Y) or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	-		
Blanket	-		
Silt Fence	-		
Sand Bags	-		
Rolling ^{ones near wattle} gate rd working <u>Maybe</u> Dip well ^{are} <u>ones near north end of blue line rd working but fill starting to gully above dip.</u>			

2. Are there signs of water erosion? Y (N) N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comments: Except one for one location in N SEA above rilling dip.

3. Are there signs of wind erosion? Y (N) N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y (N) Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

yes.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallio

MRA: IAR Devd Parcel Soil Pile

Monitoring Date: 2/23/2015

Weather: Clear, 50s, windy

772 hrs since rain

Type of Monitoring: Pre-rain event - Post rain-event (Routine) - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles			Soil pile in IAR development parcel in NW corner.
Blanket			
Silt Fence			
Sand Bags			

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullyng - Loss of fines from surface - Sand/silt deposit in fans/basins
 Comment:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other
 Comments: The pile is becoming vegetated. It is currently about 20% vegetated.

4. Are there areas of ponding? N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)
not present
 Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis
 Monitoring Date: 3/9/2015

MRA: IAR - Development parcel

Weather: Clear, 60°F

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other > 72 hrs. since

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2. rain event

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	<u>Y</u>	<u>N</u>	
Blanket	<u>N/A</u>		
Silt Fence	<u>N/A</u>		
Sand Bags	<u>N</u>	<u>Y</u>	<u>All are used to form water bars. All are functioning well except in one location shown on map where water undercutting.</u>

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment: one large gully as indicated on map. It is sending a lot of sand down gradient.

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y / N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis

MRA: IAR - NR44

Monitoring Date: 3/11/2015

Weather: Clear, 60°F Rainfall of 0.13" two days earlier.

Type of Monitoring: Pre-rain event - Post rain-event - (Routine) Other

1. Existing Erosion/Sediment Control Measures Present? Y or (N) If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles			
Blanket			
Silt Fence			
Sand Bags			

2. Are there signs of water erosion? (Y) - N - N/A

Rilling - gullyng - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment: Head cutting observed @ north end of scrape where it meets excavation ("crater") as seen on map. Alluvial fan created in the excavation.

3. Are there signs of wind erosion? Y (N) - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y (N) Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

Yes.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis

MRA: FEGM

Monitoring Date: 3/26/2015

Weather: Clear, 75°F

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	Y	N	
Blanket	Y	N	
Silt Fence	N/A		
Sand Bags	Y	N	

2. Are there signs of water erosion? Y - N - N/A

Rilling gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment: small amount of gullying got a little worse in area marked on map. Area is relatively flat so

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

this is not a major problem.

4. Are there areas of ponding? Y / N

Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

Date:

3/26/2015



ESCA RP Erosion Monitoring Form

Conducted By: Joshua Tallis
 Monitoring Date: 8/27/2015

MRA: SEA - Blue Line Rd.
 Weather: Clear 70's °F

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles			
Blanket			
Silt Fence			
Sand Bags			
Rolling Dip water bar	functioning well	N	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment: Rilling along north end of blue line. Some problem I reported many months earlier.

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding?

Y / N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No.

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form	Conducted By: <u>Joshua Tallis</u>
MRA: <u>IAR-R47</u>	Monitoring Date: <u>8/27/2015</u>
Weather: <u>Clear 70's OF</u>	
Type of Monitoring: Pre-rain event - Post rain-event - <u>Routine</u> - Other	

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		N	
Blanket		N	
Silt Fence		Y	{ several retention basins need repair - silt fence material is breaking down.
Sand Bags		N	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullyng - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y/N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

Need to repair silt fence.

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tally's
 Monitoring Date: 8/27/2015

MRA: FEG - Grenade Range

Weather: Clear 70's °F

Type of Monitoring: Pre-rain event - Post rain-event (Routine) - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		N	
Blanket		N	
Silt Fence		N	
Sand Bags		N	
Hydro seed + mulch	Good growth of grass, but most is senesced/dead above ground.	N	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y/N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: Joshua Tallis

MRA: PF - Drive by on walking

Monitoring Date: 8/27/2015

Weather: Clear, 70's Scout Rd + Grigling

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		Y	
Blanket			
Silt Fence			
Sand Bags			

2. Are there signs of water erosion? Y / N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment:

3. Are there signs of wind erosion? Y / N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y / N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form	Conducted By: <u>Justin Tallis</u>
MRA: <u>IAR - Devel. parcel</u>	Monitoring Date: <u>10/27/2015</u>
Weather: <u>Clear 70's</u>	
Type of Monitoring: <u>Pre-rain event</u> - Post rain-event - Routine - Other	

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles	→	Y	Some wattles breaking apart.
Blanket	-		
Silt Fence	-		
Sand Bags	Many sand bags needed to divert flow at various locations.	Y	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins
 Comment: Previously reported + know erosion locations

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other
 Comments:

4. Are there areas of ponding? Y / N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)
 Describe:

6. Do you have other erosion concerns?

No

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis

MRA: IAR - R47

Monitoring Date: 10/27/2015

Weather: Clear 70's °F

Type of Monitoring: Pre-rain event - Post rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		N	
Blanket		N	
Silt Fence	Repair silt fence sediment retention basins	Y	
Sand Bags	Add sand bags along perimeter fence on north side of front gate.	Y	

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comment:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding? Y/N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, not present? (Circle applicable)

Describe:

6. Do you have other erosion concerns?

No.

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form

Conducted By: J. Tallis
 Monitoring Date: 10/27/2015

MRA: FEG - Grenade Range
 Weather: Clear 10's

Type of Monitoring: Pre-rain event - Post-rain-event - Routine - Other

1. Existing Erosion/Sediment Control Measures Present? Y or N. If N skip to 2.

Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		N	
Blanket		N	
Silt Fence		None	
Sand Bags	Need to clean out sand from chevrons and repair sand bar	Y	
	water bar located on road between upper + lower parts of grenade range.		

2. Are there signs of water erosion? Y - N - N/A

Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins

Comments:

3. Are there signs of wind erosion? Y - N - N/A

Loss of fines on surface - Dunes - Soil on leaves - Other

Comments:

4. Are there areas of ponding?

Y/N Size and depth:

5. Work Areas

Stockpiles are surrounded with wattles, covered, compacted, (not present) (Circle applicable)

Describe:

6. Do you have other erosion concerns?

Repair above mentioned items.

Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.

ESCA RP Erosion Monitoring Form		Conducted By: <u>S. Tallig</u>	
MRA: <u>FEG - Grenade Range</u>		Monitoring Date: <u>11.9.2015</u>	
Weather: <u>Clear, 70's</u>			
Type of Monitoring: Pre-rain event <input checked="" type="checkbox"/> Post rain-event <input type="checkbox"/> Routine <input type="checkbox"/> - Other <input type="checkbox"/>			
1. Existing Erosion/Sediment Control Measures Present? <input checked="" type="checkbox"/> Y or N. If N skip to 2.			
Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		N	
Blanket		N	
Silt Fence		N	
Sand Bags	Functioning properly	Some maint. required	Removed sand and sediment from chevrons. Filled up 20 sand bags and placed on water bar between upper and lower sides of grenade range
2. Are there signs of water erosion? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A			
Rilling - gullying - Loss of fines from surface - Sand/silt deposit in fans/basins			
Comment: <u>Chevrons filled with sand & silt / require cleaning</u>			
3. Are there signs of wind erosion? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A			
Loss of fines on surface - Dunes - Soil on leaves - Other			
Comments:			
4. Are there areas of ponding? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N Size and depth:			
5. Work Areas			
Stockpiles are surrounded with wattles, covered, compacted, <input checked="" type="checkbox"/> not present? (Circle applicable)			
Describe:			
6. Do you have other erosion concerns?			
<u>No</u>			
Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.			

ESCA RP Erosion Monitoring Form		Conducted By: <u>S. Galis</u>	
MRA: <u>IAR, Range 47</u>		Monitoring Date: <u>11-10-11-2015</u>	
Weather: <u>Clear, 70's</u>			
Type of Monitoring: Pre-rain event - <u>Post rain-event</u> - Routine - Other			
1. Existing Erosion/Sediment Control Measures Present? <input checked="" type="radio"/> Y or N. If N skip to 2.			
Type	Functioning Properly? (Evidence of overtopping, undermining or flow around?)	Need repair or correction?	Comments/Notes
Wattles		No	
Blanket		No	
Silt Fence		Yes	Made repairs to silt fence (attached fabric to wood stakes) on water retention basin along fence line on N side of Range 47.
Sand Bags		No	
2. Are there signs of water erosion? <input checked="" type="radio"/> Y - <input type="radio"/> N - N/A			
Rilling - gullying - Loss of fines from surface - <u>Sand/silt deposit in fans/basins</u>			
Comment:			
3. Are there signs of wind erosion? Y <input checked="" type="radio"/> N - N/A			
Loss of fines on surface - Dunes - Soil on leaves - Other			
Comments:			
4. Are there areas of ponding? <input checked="" type="radio"/> Y <input type="radio"/> N Size and depth:			
5. Work Areas			
Stockpiles are surrounded with wattles, covered, compacted, <u>not present?</u> (Circle applicable)			
Describe:			
6. Do you have other erosion concerns?			
<u>No</u>			
Note: Photograph all BMPs and areas where flow might become concentrated. In IAR photograph the steep, bare parts of the development parcel adjacent to range 47.			

Table C-1
2015 Aquatic Feature Monitoring in the Future East Garrison MRA Grenade Range

ESCA RP 2015 Annual Natural Resources Report

Date	Aquatic Feature Number	Water depth (ft.)	Turbidity	pH	Percent Emergent and Submergent Vegetation**	Flora Observed	Fauna Observed	CTS present?	CA Linderiella present?	Aquatic Invertebrates Present?	Total Rainfall During Last 7 days (in.)	Total Rainfall Since Last Monitoring Event (in.)	Total Rainfall Year to Date (in.)
1/5/2015	AF09-1A*	1.4	Low	7.3	-	<i>Plantago coronopus</i> , <i>Juncus phaeocephalus</i> , <i>Anagallis arvensis</i>	tree frog egg masses (abundant) and larvae, mosquito larvae, water beetle, dragon flies (ovipositing)	no	no	yes	0	7.99	10.9
	AF09-1B	0.34	Low	6.7	-	-	mosquito larvae, water beetle, UniD tiny red invertebrate	no	no	yes			
	AF09-2	1.18	Medium	6.7	-	<i>Plantago coronopus</i> , <i>Eleocharis macrostachya</i> , <i>Spiranthes romanzoffiana</i> , <i>Juncus phaeocephalus</i> , <i>Anagallis arvensis</i>	tree frog egg masses (mostly old), larvae, and adults (heard), mosquito larvae, water beetle, UniD tiny red invertebrate	no	no	yes			
1/22/2015	AF09-1A*	1.28	Low	-	25% emergent; 37% submergent	<i>Senecio glomeratus</i> , <i>Acmispon glaber</i> , <i>Hypochaeris glabra</i>	tree frog egg masses and larvae present, large shore bird tracks.	no	no	yes	0.01	0.03	10.93
	AF09-1B	0	N/A	-	-	-	-	no	no	no			
	AF09-2	0.68	Medium	-	21% emergent; 7% submergent	<i>Quercus agrifolia</i> , <i>Arctostaphylos montereyensis</i> , <i>A. crustacea</i> , <i>Acmispon glaber</i> , <i>Hypochaeris glabra</i>	tree frog larvae	no	no	no			
2/18/2015	AF09-1A*	1.14	Low	6.9	21% emergent; 43% submergent	<i>Eleocharis macrostachya</i>	tree frog larvae abundant	no	no	no	0	0.39	11.32
	AF09-1B	0	-	-	-	-	-	no	no	no			
	AF09-2	0.64	Medium	6.7	1% emergent; 1% submergent	<i>Eleocharis macrostachya</i>	adult and many larval tree frogs, dark eyed junco foraging around aquatic feature	no	no	no			
3/26/2015	AF09-1A*	0.87	Medium	7.5	30% emergent; 45% submergent	-	few (~10) tree frog larvae, water beetle, robins using pool for water	no	no	yes	0.04	3.06	14.38
	AF09-1B	0	-	-	-	-	-	no	no	no			
	AF09-2	0.32	Low	6	1% emergent; 4% submergent	<i>Eleocharis macrostachya</i>	many (50+) tree frog larvae and adults), mosquito larvae, water boatmen, uniD 1" ochre colored aquatic worm/larvae	no	no	yes			
4/15/2015	AF09-1A*	0.44	Low	-	60% emergent; 10% submergent	<i>Tribolium obliterum</i> at high water line	tiny orange invertebrates (<1mm) at waters edge	no	no	yes	0	0.01	14.39
	AF09-1B	0	-	-	-	Unidentified <i>Stylocline</i> sp.	-	no	no	no			
	AF09-2	0	-	-	-	<i>Eleocharis macrostachya</i>	-	no	no	no			
5/4/2015	AF09-1A*	0	-	-	-	-	Unidentified <i>Lepidoptera</i>	no	no	yes	0	0.42	14.8
	AF09-1B	0	-	-	-	-	-	no	no	no			
	AF09-2	0	-	-	-	<i>Eleocharis macrostachya</i>	-	no	no	no			
	AF09-2	0	-	-	-	<i>Eleocharis macrostachya</i>	-	no	no	no			

Table C-1
2015 Aquatic Feature Monitoring in the Future East Garrison MRA Grenade Range

ESCA RP 2015 Annual Natural Resources Report

Date	Aquatic Feature Number	Water depth (ft.)	Turbidity	pH	Percent Emergent and Submergent Vegetation**	Flora Observed	Fauna Observed	CTS present?	CA Linderiella present?	Aquatic Invertebrates Present?	Total Rainfall During Last 7 days (in.)	Total Rainfall Since Last Monitoring Event (in.)	Total Rainfall Year to Date (in.)
Aquatic Features Dry From Spring-Fall 2015													
8/27/2015	AF09-1A*	0	-	-	-	<i>Juncus phaeocephalus</i>	none	no	no	no	0	0	0
	AF09-1B	0	-	-	-	-	none	no	no	no			
	AF09-2	0	-	-	-	<i>Eleocharis macrostachya</i>	none	no	no	no			
10/27/2015	AF09-1A*	0	-	-	-	<i>Juncus phaeocephalus</i>	none	no	no	no	0.03	0.25	0.25
	AF09-1B	0	-	-	-	-	none	no	no	no			
	AF09-2	0	-	-	-	<i>Eleocharis macrostachya</i> <i>Juncus bufonius</i>	none	no	no	no			
11/3/2015	AF09-1A*	0.68	High	-	2% emergent; 15% submergent	-	none	no	no	no	1.49	1.49	1.79
	AF09-1B	0	-	-	-	-	none	no	no	no			
	AF09-2	0.81	Medium	-	10% emergent; 30% submergent	<i>Eleocharis macrostachya</i> ; <i>Juncus bufonius</i> ; <i>Juncus phaeocephalus</i>	none	no	no	no			
11/9/2015	AF09-1A*	0.7	High	6.8	60% emergent; 10% submergent	New <i>Salix</i> sp. sprouting around SE bank; <i>Tribolium obliterum</i> at high water line	none	no	no	no	1.89	0.43	2.22
	AF09-1B	0	-	-	-	-	none	no	no	no			
	AF09-2	0.78	Medium	6.6	60% emergent; 10% submergent	<i>Eleocharis macrostachya</i> ; <i>Juncus bufonius</i> ; <i>Juncus phaeocephalus</i>	none	no	no	no			
11/17/2015	AF09-1A*	1.12	Medium	6	5% emergent; 15% submergent	<i>Juncus phaeocephalus</i>	water beetles	no	no	yes	0.56	0.9	3.12
	AF09-1B	0	-	-	-	-	-	no	no	no			
	AF09-2	1.22	Medium	6.5	60% emergent; 10% submergent	Visible vegetation is largely seasonally dead	Pacific chorus frog heard near aquatic feature	no	no	no			
12/3/2015	AF09-1A*	0.96	Low	6.2	2% emergent; 4% submergent	<i>Salix</i> sp.	dark-eyed junco, deer hoof prints, California towhee	no	no	no	0	0.27	3.39
	AF09-1B	0	-	-	-	-	-	no	no	no			
	AF09-2	0.98	Low	6.2	15% emergent; 60% submergent	<i>Juncus phaeocephalus</i>	dark-eyed junco, California towhee	no	no	no			
12/11/2015	AF09-1A*	1.02	High	6.2	3% emergent; 20% submergent	<i>Acmispon glaber</i> , <i>Anagallis arvensis</i> , fine hair-like aquatic plant	Pacific chorus frog heard near aquatic feature	no	no	no	0.31	0.36	3.75
	AF09-1B	0.07	Low	-	3% emergent; 10% submergent	<i>Acmispon glaber</i> , <i>Stylocline</i>	-	no	no	no			
	AF09-2	1.16	Medium	6.5	15% emergent; 50% submergent	Visible vegetation is largely seasonally dead	Pacific chorus frog heard near aquatic feature	no	no	no			

Notes:

* Restored Aquatic Feature

** Percent cover is based on visual estimate and is affected by water turbidity.

Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 1

Restored aquatic
feature AF09-1A

5 January 2015



Photograph 2

Reference aquatic
feature AF09-2

5 January 2015

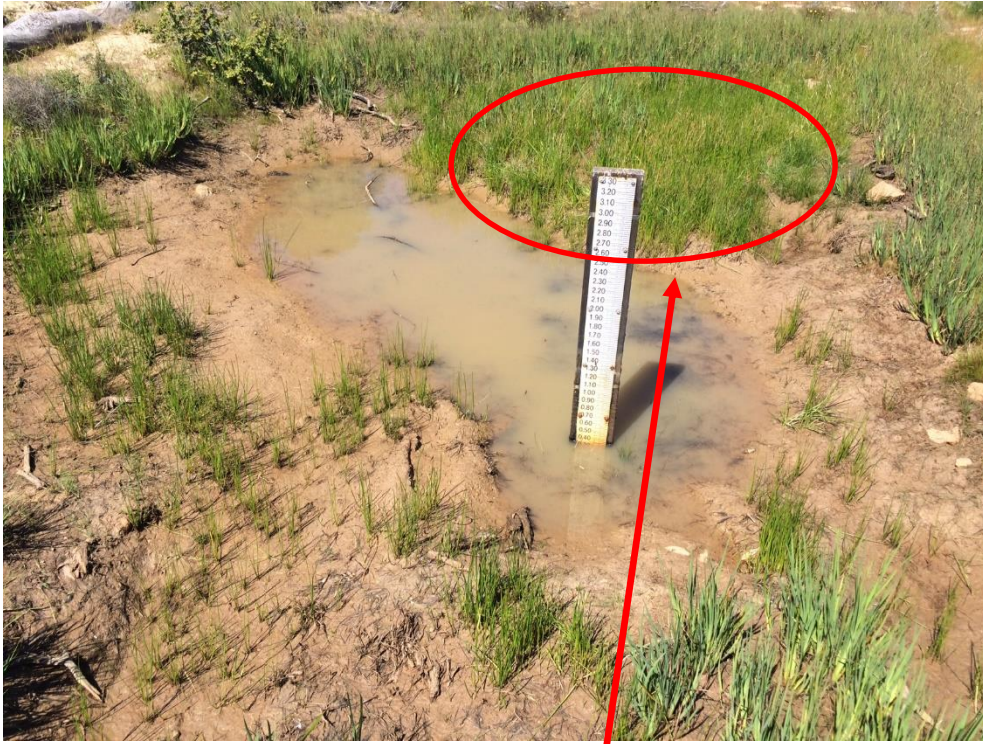
FORA ESCA Remediation Program

Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range

Photograph 3

Reference aquatic
feature AF09-2

26 March 2015



Photograph 4

Flowering common
spikerush
(*Eleocharis
macrostachya*) from
reference aquatic
feature AF09-2

26 March 2015



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Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 5
Reference aquatic feature AF09-1B
26 March 2015



Photograph 6
Restored aquatic feature AF09-1A
26 March 2015

FORA ESCA Remediation Program

Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 7

Reference aquatic feature AF09-1B

7 April 2015



Photograph 8

Reference aquatic feature AF09-2

Pacific chorus frog

7 April 2015

FORA ESCA Remediation Program

Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 9

Reference aquatic feature AF09-2

27 August 2015



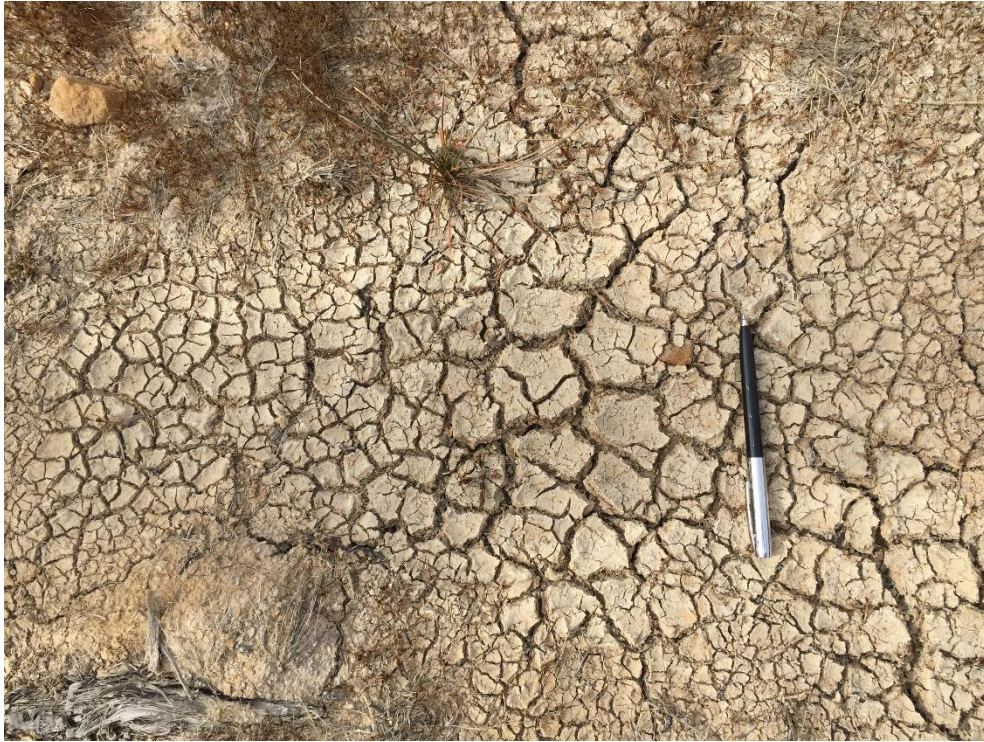
Photograph 10

Restored aquatic feature AF09-1A

27 October 2015

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Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 11

Reference aquatic
feature AF09-2

27 October 2015



Photograph 12

Restored aquatic
feature AF09-1A

27 October 2015

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Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 13
Reference aquatic feature AF09-2
17 November 2015



Photograph 14
Reference aquatic feature AF09-2
17 November 2015

FORA ESCA Remediation Program

Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range



Photograph 15

Reference aquatic feature AF09-1B

17 November 2015



Photograph 16

Restored aquatic feature AF09-1A

17 November 2015

FORA ESCA Remediation Program

Appendix C – 2015 Aquatic Feature Monitoring Photo-documentation
Future East Garrison MRA – Grenade Range

Photograph 17

Restored aquatic
feature AF09-1A

17 November 2015



Photograph 18

Restored aquatic
feature AF09-1A

17 November 2015



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