

APPENDIX C

SUMMARY MEMORANDUM FOR THE FORT ORD NATURE RESERVE OU-1 ENVIRONMENTAL MONITORING IN SUPPORT OF SUMMER 2007 WELL CONSTRUCTION



Denise Duffy & Associates, Inc.

PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: **Friday, January 18, 2008**

To: **Roy Evans, HydroGeoLogic, Inc.**

From: **Matthew Johnson, Associate Environmental Scientist, Denise Duffy and Associates, Inc.**

RE: **Summary Memorandum for the Fort Ord Nature Reserve OU-1
Environmental Monitoring in Support of Summer 2007 Construction
Activities**

Denise Duffy and Associates, Inc. (DD&A) was contracted to monitor construction activities within the Fort Ord Nature Reserve (FONR). This task required part-time and on-call environmental monitoring of construction activities to advise the HydroGeoLogic, Inc. (HGL) Field Supervisor on avoidance of special-status plant and wildlife species and provide guidance on minimizing habitat impacts in response to requests from the construction field staff. These construction activities (which were undertaken to complete the FONR component of the Operable Unit 1 groundwater remediation effort) were initiated on July 18, 2007 and were completed on September 14, 2007.

DD&A was also contracted to coordinate with FONR staff through the HGL Field Supervisor to provide site orientation to construction crews before the start of construction activities, including pre-construction inspection of the proposed well sites and identification of any areas that should be avoided to protect special-status species. DD&A staff provided intermittent monitoring during the construction activities. Specifically, DD&A staff was present at the initiation of the project to provide an orientation presentation, during the subsequent initiation of all individual pipe installation site activities, and at the conclusion of pipe installation activities. In addition, DD&A staff conducted site visits to address specific requests for guidance, as needed.

The following is a summary of specific monitoring events and communication by DD&A personnel subsequent to initiation of construction activities at FONR. The summary below documents communication and meetings with staff from FONR, HGL, Granite Construction (sub-contracted construction firm) and Telemetrix (sub-contracted electrical firm); construction oversight by DD&A environmental monitors; and activities that required direct intervention by DD&A staff. DD&A staff was present on-site at least weekly in addition to the dates listed below. DD&A staff took pictures of work sites before and after clearing, as well as pictures documenting specific construction issues and resources. A map for each photograph and a photographic record compiled by the DD&A environmental monitors is included in Attachment A. The map included in Attachment A also includes site locations that will be referred to throughout this text.

- During the initial site visit on July 18, 2007, DD&A environmental monitors conducted an environmental worker education training seminar for the HGL personnel, Granite Construction staff and other relevant personnel. Relevant environmental documentation, including permits and a review of known special-status species within and in the vicinity of the project site, were reviewed.
- During the site visit on July 25, 2007, DD&A environmental monitors observed construction activities located at site 3. The significant resources or issues discussed are listed below:
 - Along the main road, trenches were excavated and DD&A environmental monitors examined the trenches for soil ramps at either end so that special-status species would not become trapped (Attachment A, Photos 1 & 2).
 - DD&A environmental monitors documented that fences and caution tape were placed around the open trenches (Attachment A, Photo 3).
- During the site visit on July 26, 2007, DD&A environmental monitors observed construction activities along site 3, including placement of piping in the trenches constructed along the dirt road associated with site 3 (Attachment A, Photo 4).
- DD&A environmental monitors were called to the project site on July 27, 2007, to confirm the presence and identification of a possible California tiger salamander (*Ambystoma californiense*, CTS) discovered within the construction zone. In accordance with the environmental guidance governing activities within the FONR, the HGL field supervisor also informed Mr. William Collins (Biologist, Fort Ord Base Realignment and Closure team; permitted for CTS relocation) of the CTS sighting. Before DD&A environmental monitors arrived on site, Mr. Collins had identified and relocated the CTS. DD&A environmental monitors documented with photos and GPS positional data the location that the CTS was captured (Attachment A, Photo 5) and the location the CTS was released (Attachment A, Photo 6). DD&A also photographed the CTS (Attachment A, Photos 7 & 8).
- During the site visit on August 2, 2007, DD&A environmental monitors observed construction activities being conducted at sites 3 and 6. The significant resources or issues discussed are listed below:
 - FONR site 6: Plastic piping was lying on the ground without caps on the ends (Attachment A, Photo 9). DD&A environmental monitors advised the HGL field supervisor that all piping associated with construction activities should be capped during storage. During subsequent visits DD&A environmental monitors observed all piping stored and capped according to the guidelines set out in the initial environmental worker education training seminar.
 - FONR Site 6, well location EW-OU1-71-A: Activities associated with construction had created ruts approximately 4-6 inches deep along the road associated with this well (Attachment A, Photo 10). DD&A environmental monitors communicated that the road must be graded to pre-construction conditions at the completion of construction activities to the HGL Field Supervisor. The re-grading was later performed as documented in Attachment A, Photo 27.
- During the site visit on August 3, 2007, DD&A environmental monitors observed construction activities at sites 3, 6, and 7. The significant resources or issues discussed are listed below:
 - FONR Site 7, well location MW-OU1-85-A: Concrete was poured at well location MW-OU1-85-A (Attachment A, Photo 11 & 12). Concrete was poured in a

contained area; excess concrete exceeded the contained area. DD&A environmental monitors communicated to the HGL Field Supervisor that any excess concrete must be contained and disposed of properly from the FONR project site. The excess concrete was later removed as documented in Attachment A Photo 24.

- FONR Site 3: Traffic from concrete trucks and tractors continued to create large ruts along main road between wells MW-OU1-71-A and MW-OU1-85-A (Attachment A, Photo 10). DD&A environmental monitors re-iterated that the road must be graded to pre-construction conditions at the completion of construction activities to the HGL Field Supervisor.
- During the previous visit, DD&A environmental monitors advised the HGL field supervisor that all piping associated with construction activities should be capped during storage. DD&A environmental monitors observed that the piping had been capped.
- During the site visit on August 8, 2007, DD&A environmental monitors observed the progress of the construction activities to date. Monitoring activities and observations are summarized below:
 - DD&A environmental monitors visited all the well locations to assess progress. DD&A environmental monitors observed that concrete had been poured at each of the wells (Attachment A, Photo 13 shows a typical well pad).
 - DD&A environmental monitors also observed that electrical work had taken place at some of the well locations (Attachment A, Photo 14).
 - FONR Site 6, well location EW-OU1-71-A: DD&A environmental monitors observed a possible barn owl (*Tyto alba*) roosting location in an oak tree near well EW-OU1-71-A. Barn owl feathers, scat, and white wash were observed on the ground beneath the roosting tree (Attachment A, Photo 15 & 16). The roosting tree was approximately 50 feet from well EW-OU1-71-A (Attachment A, Photo 17). DD&A environmental monitors communicated the presence of a possible barn owl roosting site near well EW-OU1-71-A to the HGL Field Supervisor.
- During the site visit on August 15, 2007, DD&A environmental monitors observed a barn owl roosting location at site 6 and a coast horned lizard at site 3, as described below:
 - FONR Site 6, well location EW-OU1-71-A: Barn owl roosting location was confirmed. Two adult barn owls were observed in the roosting location. Construction activities associated with well EW-OU1-71-A was approximately 50 feet from the observed barn owl roosting location. DD&A environmental monitors communicated the confirmation of a barn owl roosting site to the HGL Field Supervisor.
 - FONR Site 3, well location EW-OU1-87-A: A coast horned lizard (*Phrynosoma coronatum*) was observed along the main road (Attachment A, Photo 18). The coast horned lizard was approximately 75 feet from well location 87-A. DD&A environmental monitors communicated the observation of the coast horned lizard near well 87-A to the HGL Field Supervisor. The coast horned lizard was relocated along the main road approximately 300 feet beyond the construction area by DD&A environmental monitors.
- During the site visit on August 17, 2007, DD&A environmental monitors observed a second barn owl roosting location at site 6. Barn owl feathers, scat, and white wash were observed on the ground beneath the second roosting tree (Attachment A, Photo 19). The second roosting tree was located approximately 85 feet from well EW-OU1-71-A

- (Attachment A, Photo 20). DD&A environmental monitors communicated presence of a second barn owl roosting site to the HGL Field Supervisor.
- During the site visit on August 20, 2007, DD&A environmental monitors observed construction activities at site 6. Two adult and two sub-adult barn owls were observed by DD&A environmental monitors (Attachment A, Photo 21).
 - During the site visit on August 27, 2007, DD&A environmental monitors observed construction activities at site 8. The significant resources or issues discussed are listed below:
 - FONR Site 8, well location MW-OU1-46-AD: Telemetrix staff were observed mounting and installing transformers at well location MW-OU1-46-AD (Attachment A, Photo 22).
 - FONR Site 3, well location MW-OU1-87-A: a coast horned lizard was observed along the main road in between wells MW-OU1-87-A and EW-OU1-71-A (Attachment A, Photo 23). The coast horned lizard was approximately 65 feet from well MW-OU1-87-A. DD&A environmental monitors communicated the observation of the coast horned lizard near well 87-A to the HGL Field Supervisor. The coast horned lizard was relocated along the main road approximately 300 feet beyond the construction area by DD&A environmental monitors.
 - DD&A environmental monitors observed that excess concrete mentioned during the August 3rd site visit had been collected and disposed of properly by HGL and Granite staff (Attachment A, Photo 24).
 - During the site visit on September 11, 2007, DD&A environmental monitors observed construction activities at all well locations. The significant resources or issues discussed are listed below :
 - DD&A environmental monitors observed that pumps and the electrical boxes had been installed at all well locations (Attachment A, Photos 25 and 26 show typical installations).
 - Installation of the pumps took place on August 31, 2007, and on September 4-5, 2007. The DD&A environmental monitors were not present during pump installation.
 - DD&A environmental monitors observed that impacts to the roads throughout the site mentioned during the August 2nd site visit had been graded to pre-construction conditions by HGL and Granite staff (Attachment A, Photo 27).
 - DD&A Environmental monitors conducted a final site visit on October 10, 2007. During this site visit DD&A environmental monitors visited and photographed all the final construction sites. Key observations are listed below:
 - Several items were left throughout the construction site including: a portable toilet, caution tape and staking, and piping (without capped ends). All unnecessary or temporary equipment and debris should be removed and disposed of properly at the completion of construction activities (Attachment A, Photos 28-30).
 - DD&A environmental monitors photographed each well site where construction activities took place to document the conditions of each site at the completion of construction activities (Attachment A, Photos 31-36).
 - DD&A environmental monitors observed that all roads had been graded to pre-construction conditions, gravel was used at one location. HGL staff discussed the advantages of using gravel to regrade the roads with FONR staff. No

special-status plant species had been previously mapped along these sections so no impact was expected.

- During the initial site visit mammal burrow openings located within the staging area next to site 5 were flagged by DD&A environmental monitors. (Attachment A, Photo 38) Construction and HGL personnel were instructed to avoid these flags during construction activities. DD&A environmental monitors also documented a staging area located near site 1 (Attachment A, Photo39).

Attachment A
Fort Ord Nature Reserve OU-1 Site Photos

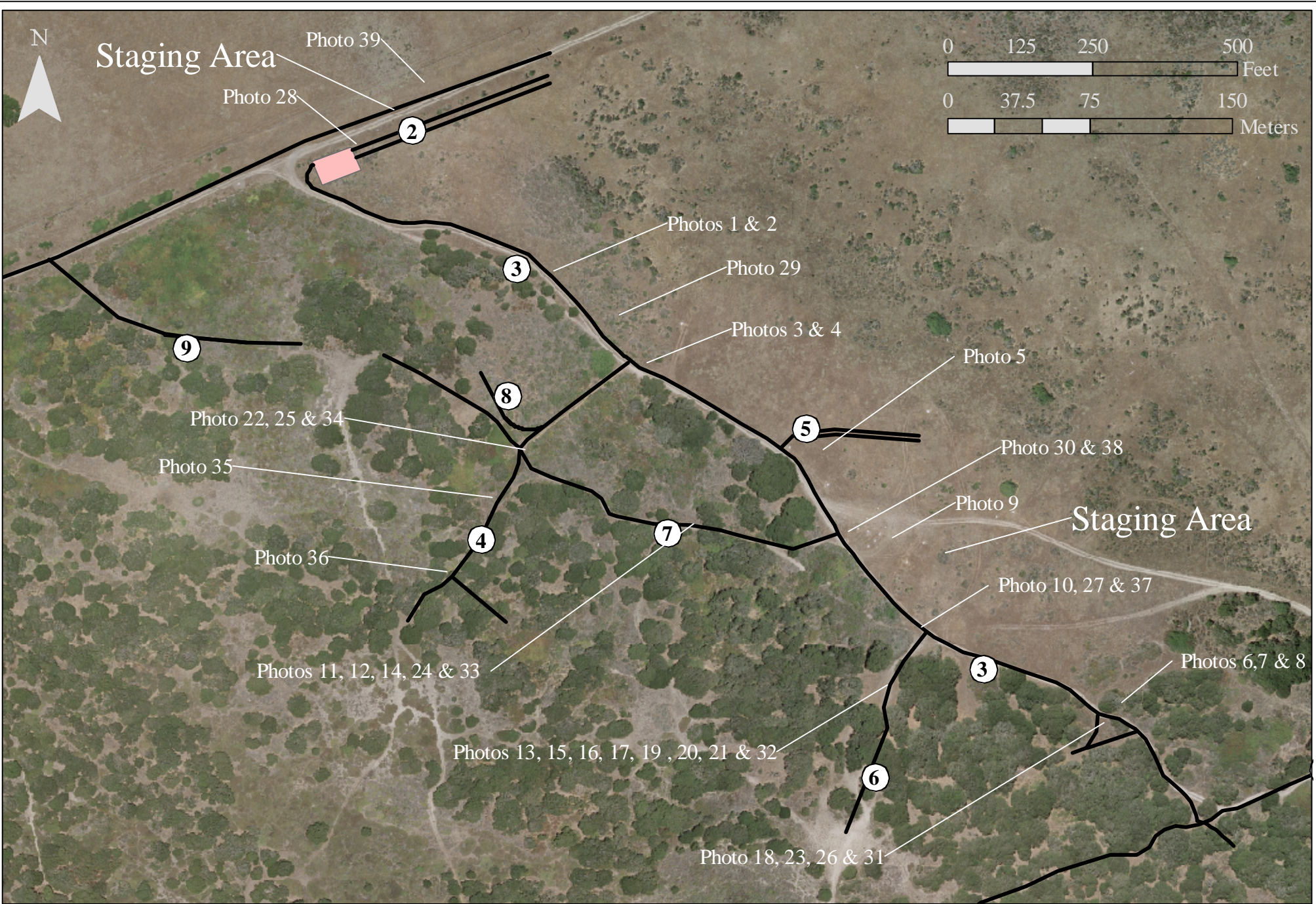




Photo 1. Trench with dirt ramp (looking East).



Photo 2. Close up of a dirt ramp (looking Southeast).

FONR OU-1 Environmental
Monitoring Report Site Photos

Figure
1



Photo 3. Trenches buffered with caution tape and fence (looking Northwest).



Photo 4. Pipe installation (looking Northwest).

FONR OU-1 Environmental
Monitoring Report Site Photos



Photo 5. Location where possible CTS was found (looking East).



Photo 6. Location where possible CTS was relocated.



Photo 7. Possible CTS that was found.



Photo 8. Close up of possible CTS.

FONR OU-1 Environmental
Monitoring Report Site Photos



Photo 9. Piping at site 3 uncapped (looking Northeast).



Photo 10. Ruts at junction of main access road (Site 3) and well access road (Site 6) (looking Southwest).



Photo 11. Pouring concrete at well location MW-OU1-85-A.



Photo 12. Pouring concrete at well location MW-OU1-85-A.

FONR OU-1 Environmental
Monitoring Report Site Photos



Photo 13. Concrete poured at well location EW-OU1-71-A.



Photo 14. Electrical work at well location MW-OU1-85-A.



Photo 15. Barn owl feathers under roosting location near EW-OU1-71-A.



Photo 16. Barn owl white wash under roosting location near EW-OU1-71-A.

FONR OU-1 Environmental
Monitoring Report Site Photos



Photo 17. Barn owl roosting tree approximately 50 feet from well EW-OU1-71-A (looking Northwest).



Photo 19. Barn owl scat under roosting location near EW-OU1-71-A.



Photo 18. Coast horned lizard near well MW-OU1-87-A.



Photo 20. Barn owl second roosting tree approximately 85 feet from well EW-OU1-71-A (looking Northwest).

FONR OU-1 Environmental
Monitoring Report Site Pictures



Photo 21. Juvenile barn owl in roosting tree near well EW-OU1-71-A.



Photo 23. Juvenile coast horned lizard near well MW-OU1-87-A.



Photo 22. Transformers mounted on metal well cover at well MW-OU1-46-AD.



Photo 24. Spilled concrete cleaned up at well MW-OU1-85-A.

FONR OU-1 Environmental
Monitoring Report Site Pictures



Photo 25. Metal box mounted on well MW-OU1-46-AD.



Photo 26. Well pump inside of metal box at well MW-OU1-87-A.



Photo 27. Regraded road along site three (looking Southwest).



Photo 28. Piping left in staging area. Caps missing on pipe ends (looking Northeast).

FONR OU-1 Environmental
Monitoring Report Site Pictures



Photo 29. Caution tape and staking left along Site 3 after the completion of construction activities (looking Northwest).



Photo 30. Portable toilet left near staging area after the completion of construction activities (looking North).



Photo 31. Completed well site MW-OU1-87-A.



Photo 32. Completed well site EW-OU1-71-A.

FONR OU-1 Environmental
Monitoring Report Site Pictures



Photo 33. Completed well site MW-OU1-85-A (looking Northwest).



Photo 34. Completed well site MW-OU1-46-A.



Photo 35. Completed well site MW-OU1-84-A.



Photo 36. Completed well site IW-OU1-74-A.

FONR OU-1 Environmental
Monitoring Report Site Pictures



Photo 37. Gravel used to grade road along site 3 (looking Southwest).



Photo 38. Staging Area near site 5 with flagged mammal burrows (looking Northeast).



Photo 39. Staging area located near site 1 (looking Southwest).

FONR OU-1 Environmental
Monitoring Report Site Pictures