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Danville, CA 94526

May 26, 2011

Mr. Craig Hoffman, CPM
(09-AFC-4C)
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

**SUBJECT: Oakley Generating Station (09-AFC-4C)
BIO-5 Revised Worker Environmental Awareness Program (WEAP) Booklet
and Biological Resources Poster**

Dear Mr. Hoffman:

Please find attached three hard copies of the final Worker Environmental Awareness Program (WEAP) booklet and one hard copy of the final biological resources poster. The revised documents incorporate the remaining edits identified by CEC Staff on May 24, 2011.

If you have any questions regarding this submittal, please do not hesitate to contact me at (916) 799-9463 or Doug Davy at (916) 286-0278.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gregory Lamberg", with a stylized flourish at the end.

Greg Lamberg
CCGS LLC
Senior Vice President

Attachment: Three hard copies of the final WEAP booklet for OGS (09-AFC-4C)
One hard copy of the Biological Resources Poster

cc: Jim McLucas, CCGS LLC
Doug Davy, CH2M HILL



Oakley Generating Station (OGS)

Worker Environmental Awareness Program
Handbook for Biological, Cultural, &
Paleontological Resources



2485 Natomas Park Drive
Sacramento, California 95833

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Contra Costa Generating Station LLC Commitment

Contra Costa Generating Station LLC (CCGS) is committed to protecting environmental resources during construction and operation of the Oakley Generating Station (OGS), and the project design has been modified to ensure their protection. CCGS and the California Energy Commission (CEC) have developed protection measures to minimize project impacts. Knowledge and practice of these measures is the responsibility of all onsite personnel and violation of these measures could result in costly project delays or shutdowns, and also serious consequences for those who have done so.

This handbook provides an overview of the sensitive biological, cultural, and paleontological resources that construction of the OGS may affect. It also includes a description of the laws, protection measures, responsibilities, and penalties associated with those resources and this project. This book also provides information on best management practices for stormwater.

This handbook is part of the Worker Environmental Awareness Program (WEAP) for the OGS. It is your guide to understanding your responsibilities, taking the proper precautions on the job, and contacting the appropriate persons when you have questions. There will be Biological, Cultural, and Paleontological monitors on the construction site to help you, so always ask before you act. With your cooperation, the OGS construction project will run smoothly and will be successful.



Environmental Laws, Regulations, and Penalties

Many of the resources found in the project area are protected by state and federal laws.

Federal Endangered Species Act: Provides protection for federal-listed threatened and endangered plant and animal species. It also prohibits the destruction of habitat critical to their recovery.

California Endangered Species Act: Similar to the federal act, it prohibits the take of state-listed endangered and threatened wildlife.

Migratory Bird Treaty Act: Prohibits the take of migratory birds. "Take" is defined as to pursue, hunt, take, kill, capture, or harass. This includes eggs, nests, and feathers of any bird, which are fully protected.

California Fish and Game Codes: Prohibits take of protected plants and animals in California and protects areas designated as significant habitat.

The Clean Water Act: Oversees protection of jurisdictional wetlands and waterways.

The following agencies have regulatory authority in the area and will also monitor construction activities. They could be onsite at any time:

- City and County Officials
- California Energy Commission
- East Contra Costa County Habitat Conservancy
- California Department of Fish and Game
- Central Valley Regional Water Quality Control Board
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency



REMEMBER

Stay out of exclusion zones. They protect sensitive habitats.

Violation of state and/or federal environmental laws can result in penalties, including fines as high as \$100,000 and/or up to one year in jail.

Violations can involve corporate and individual penalties.

Violations can result in stop work orders and construction delays.

Biological Resources

The OGS project site and vicinity include habitat for protected plants and wildlife. These habitats include agricultural land, wetlands, drainages, grasslands, and trees. These habitats are home to endangered or threatened birds, reptiles, amphibians, and mammals. Remember that all forms of wildlife are protected by law on this project; it is your responsibility as an employee of the OGS project to ensure that all areas that have not been previously disturbed must be surveyed by the Designated Biologist and Biological Monitor prior to disturbance.

Designated Biologist and Biological Monitor

The OGS Designated Biologist and Biological Monitor are responsible for implementing the project's Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), ensure that all permit requirements are followed, and provide direct assistance in avoiding impacts on natural resources. **The Designated Biologist has the authority to stop work if activities do not comply with protection measures outlined in the project's BRMIMP.**

Duties of the Designated Biologist:

- Advise Site Superintendent or Construction Manager on the implementation of the CEC's biological resources Conditions of Certification.
- Prepare and supervise the implementation of this WEAP.
- Supervise or conduct monitoring and other biological resource compliance efforts, including implementation of protection measures.
- Consult with natural resource agencies on potential biological issues and remedial actions.
- Advise project construction workers if there are changes in the environmental protection plans.
- Notify OGS staff and the CEC Compliance Project Manager of non-compliance with any condition and the corrective actions taken, and advise the construction and operations manager when to stop and resume construction in sensitive areas.

-
- Maintain written records for inclusion in monthly compliance reports.
 - Submit monthly and annual compliance reports, if necessary, to the CEC.
 - Supervise and support the efforts of the Biological Monitor.
 - Coordinate with wildlife agencies for compliance with protection measures.

The Biological Monitor will be onsite during earthwork activities and will clear areas before any and all surface disturbance begins. **The Biological Monitor has the authority to stop work if any violation of mitigation measures occurs in the project area. Mitigation measures for the project are described in the BRMIMP, available for review from the OGS Environmental Compliance Manager.**

Duties of the Biological Monitor:

- Supervise construction in sensitive habitat areas to monitor compliance with mitigation measures.
- Advise OGS staff on how best to avoid adverse impacts on biological resources.
- Assist the Site Superintendent in preparing construction zone limits in sensitive habitats—including flagging and signage.
- Immediately notify the Designated Biologist, OGS staff, and the OGS Environmental Compliance Manager of non-compliance and the corrective actions taken, and advise the construction and operations engineer when to resume construction.
- Notify onsite personnel if there are any changes in the plan.

REMEMBER

The Designated Biologist and Biological Monitor have the authority to stop work if construction activities are non-compliant.

Environmental Impacts and Mitigation Measures

Minimizing Construction Impacts:

- Open trenches must have escape ramps so animals such as frogs, snakes, and squirrels won't get trapped.
- Minimize the need for restoration by minimizing disturbance.
- Avoid disturbing nesting birds by staying 200 feet away, or other designated buffer as delineated by the Designated Biologist. Have the Biological Monitor clear the area before you begin any and all work.
- Project construction boundaries are positioned to protect wetlands and sensitive biological resources, and must not be crossed at any time.

Mitigation Measures as Conditions of Certification:

- Biological Monitors must be onsite or on call during construction.
- Construction exclusion zones must be clearly marked to protect sensitive habitats. Cyclone, silt, and orange fencing with Keep Out signs mark your access boundaries—be aware of your limits.
- Pre-construction surveys must be conducted by the Biological Monitor prior to all ground disturbances.
- Erosion control and revegetation will be implemented in all construction areas.
- Impacts on biological resources will be monitored and reported to the appropriate agencies.
- During construction, all pipes, culverts, or similar structures with a diameter of 3 inches or greater that are stored at the construction site overnight must be thoroughly inspected for wildlife before using or moving the equipment or materials.

Nesting and Migratory Birds

The OGS project site and vicinity supports various nesting opportunities for native **raptors** such as **hawks** and **owls**, **waterfowl**, and **songbirds**. The birds, nests, eggs, and young are all protected under California Fish and Game laws and by the Federal Migratory Bird Treaty Act (MBTA).

Waterfowl and **migratory birds** such as geese, ducks, herons, shorebirds, and cranes use the Pacific Flyway as a major winter migration route and may be observed using the project site or surrounding areas. If dead or injured animals are found, contact the Designated Biologist, Biological Monitor, Environmental Compliance Manager, or your foreman so that the injured or dead animal can be correctly cared for.

Work areas will be surveyed for nesting birds prior to and during construction. If an active nest is found, the immediate area will be temporarily off limits. **Be sure to get clearance from the Biological Monitor before initiating work in previously undisturbed areas, including gravel pads and equipment yards.**

The **Swainson's hawk** is an example of a protected raptor that might nest or forage near or on the project site. Typical adult Swainson's hawks have bright white wing linings contrasting with dark leading wing feathers, a narrow brown chestband between a white throat and white belly, and a gray tail above that is often white and streaked at the base. This bird is listed as Threatened under the California Endangered Species Act. This species is a long-distance migrant, spending winters as far south as South America and returning to California in early spring. In the spring and summer, Swainson's hawks are found throughout the agricultural areas of the Central Valley, including Contra Costa County. They often nest in trees adjacent to crop fields (such as alfalfa, hay, and row crops) and feed on rodents and insects.

Swainson's hawk, white-tailed kite, red-tailed hawk and northern harrier have been identified in the project vicinity and hawks may forage on or near the site. If you see an injured hawk or nest, report it immediately to the Designated Biologist or Biological Monitor. If a Swainson's hawk nest is identified within 1,000 feet of the site, construction may not occur within the area between the construction corridor and the nest tree. If another species of hawk, such as the white-tailed kite or red-tailed hawk, nests on or near the project site, there will be a setback from the nest tree that will be determined in consultation with the CEC and the Conservancy. In the event a raptor nest is identified within the project boundaries, orange protective fencing and "KEEP OUT SENSITIVE RESOURCE" signage will be placed around the construction exclusion zone. This protection measure will be used to protect the nests of hawks and other birds.



Swainson's Hawk



White-Tailed Kite

The **white-tailed kite** is a white hawk with black shoulder patches. It is a Fully Protected bird in California—so any harm or harassment of this species is against the law. This species hovers while foraging for rodents and other prey.



Burrowing Owl

The **western burrowing owl**, is considered a sensitive species and inhabits dry open grasslands and typically nests in small burrows that have been constructed and abandoned by burrowing mammals, such as ground squirrels or badgers. Burrowing owls are year-long residents; their breeding season is late February through August. Juvenile and adult burrowing owls have been killed by destruction, plugging, and flooding of occupied burrows; collisions with motor vehicles and construction equipment; predation by native and domestic animals; exposure to certain insecticides and rodenticides; and shooting.

Golden eagles, a California Department of Fish and Game Fully Protected Species, may use the OGS site to hunt or forage. The golden eagle is protected under the MBTA and the Bald and Golden Eagle Protection Act.



Golden Eagle



Loggerhead Shrike

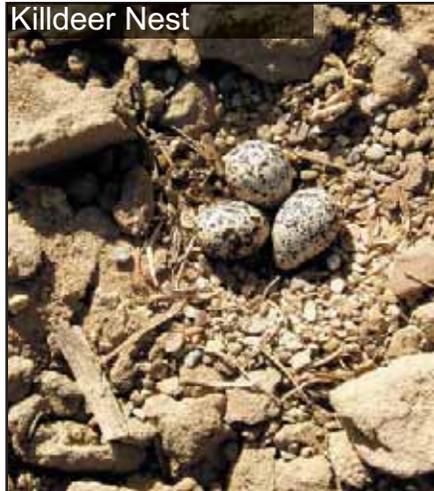
Loggerhead shrikes are a federal species of concern and a California Species of Special Concern. Shrikes are often found in open terrain with well spaced perches or lookout points like the OGS site. This species will often impale its prey on barbed wire or thorn bushes.



Northern Harrier

The **Northern Harrier** is a California Department of Fish and Game Species of Special Concern which inhabits wetlands and annual grasslands and nests on the ground.

©Dan Pancamo



Most birds are busy building nests, laying eggs, and raising young in the early spring through mid-summer.

Not all nests are in trees. Many birds build their nests in man-made structures and some, such as burrowing owls, northern harriers, and killdeers make nests on the ground or in burrows. Construction sites can actually provide unlikely nesting opportunities for a variety of bird species. A killdeer nest, for instance, is usually little more than a scrape on the ground in a large barren area—making a cleared construction site a perfect nesting opportunity.

Killdeer eggs can be difficult to see but if you notice lots of killdeer activity in an area, a nest is probably close by. After hatching, the killdeer chicks are on the move, like chickens and ducklings. The chicks can be difficult to see, but they usually stay close to their parents. When threatened, the chicks will freeze making them even more difficult to see and avoid.

Other birds, like mourning doves and house finches, may build their nests directly in or on site structures or equipment. If you observe birds building nests in equipment or on the ground, contact the Biological Monitor immediately.



Except for a limited few, nearly all birds are protected by federal and state laws. Destruction of nests or eggs is a violation of the MBTA and California Fish and Game codes. An offense is considered criminal and can include substantial fines and possible jail time.

REMEMBER

All nests shall be avoided and reported to the Designated Biologist, Rick Crowe at (916) 296-5525.

Amphibians and Reptiles

Giant Garter Snake

The giant garter snake is listed as Threatened under the federal and state endangered species acts. Giant garter snakes are found in aquatic habitats such as rice fields, canals, and slow-moving streams during the spring to fall active season (May 1 to September 30).

During their winter dormancy period (October 1 to April 30), giant garter snakes typically occupy small

mammal burrows and soil crevices. Impacts on giant garter snake habitat can occur near slow-moving streams, freshwater marsh, and other aquatic habitat and associated upland habitat. Increased traffic due to OGS construction could have a significant adverse impact on individual snakes from road kills. Snakes may cross roads and may also use them as a basking surface during their active period, which is usually May 1 through September 30. Giant garter snake habitat has been identified along the transmission line right-of-way in the vicinity of East Antioch Creek.



To mitigate potential impacts on the giant garter snake, the following avoidance and mitigation measures will be followed:

- Construction affecting potential giant garter snake habitat will be conducted between May 1 and September 30 in order to avoid impacts to snakes in crevices during the winter dormancy period.
- No construction work will be conducted during the winter dormancy period (October 1 through April 30) in potential giant garter snake habitat.
- Dewatering of the immediate work area (e.g., using diversion pipe) may be necessary in the event of unexpected groundwater. During dewatering, the contractor will ensure that stream flows up- and downstream of the work area are maintained at all times.
- Biologists will inspect work areas before construction activities begin, and will have the authority to stop work if a giant garter snake is encountered during construction.
- Temporarily disturbed areas will be returned to pre-construction conditions.
- Speed limits of 15 miles per hour will be imposed for traffic on all project controlled roads.

-
- The Biological Monitor will be present during any new ground-disturbing activities. The transmission line construction personnel must inspect and examine any open excavations prior to the start of construction each morning. If a giant garter snake is observed, contact the Designated Biologist, Biological Monitor, or the Environmental Compliance Manager immediately.

Western Pond Turtle

The western pond turtle is a California Department of Fish and Game Species of Special Concern. Western pond turtles occur in both permanent and intermittent waters, including marshes, streams, rivers, ponds, lakes, and irrigation canals. They favor habitats with large amounts of emergent logs or boulders where they congregate to bask in the sun. Despite their name, pond turtles regularly use upland terrestrial habitat, most often during nesting or overland dispersal. Identified western pond turtle habitat is along the transmission line right-of-way in the vicinity of East Antioch Creek.

Western pond turtle is known to occur in the project vicinity. To avoid potential adverse effects to the turtle, the following avoidance and minimization measures will be implemented during construction:



- Construction affecting western pond turtle habitat will be conducted between May 1 and September 30 in order to avoid impacts on turtles in crevices or underground burrows during their winter dormancy period.
- Biologists will inspect work areas before construction activities start, and will have the authority to stop work if a western pond turtle is encountered during construction.
- The Biological Monitor will be present during any new ground-disturbing activities. The transmission line construction personnel must inspect and examine any open excavations prior to the start of construction each morning. If a western pond turtle is observed, contact the Designated Biologist, Biological Monitor, or the Environmental Compliance Manager immediately. The Biological Monitor will transport the turtle out of the project area and release it into suitable habitat.

California Tiger Salamander

California tiger salamander (CTS) is a Federally Threatened Species. This species occurs in annual grasslands and grassy understories of valley-foothill hardwood habitats. They require underground refuges during the dry season and use vernal pools or other seasonal water sources for breeding. CTS is known to occur in the project vicinity.



To avoid potential adverse effects to CTS the following avoidance and minimization measures during construction will be implemented:

- Construction activities in grasslands will occur during the dry season (April 15 through October 15) or sediment fence will be placed around the project site within defined dispersal corridors to minimize the potential for mortality of dispersing salamanders or other native amphibians.
- The Biological Monitor will be present during any new ground-disturbing activities. Construction personnel must inspect any open excavations prior to the start of construction each morning. If a tiger salamander is observed, contact the Biological Monitor immediately. The Biological Monitor will transport the animal out of the project area and release it into suitable habitat.

California Red-legged Frog

The red-legged frog, a Federally Threatened and State Species of Special Concern, occurs in coastal and foothill creeks (slow moving), ponds, stockponds, ditches, and created wetlands. They over-summer in small mammal burrows and deep cracks in soil. The red-legged frog has many color phases, some can be dark with little to no red and others can be quite bright and covered in red markings.



Silvery Legless Lizard

The silvery legless lizard is a California species of concern which primarily occurs in areas with sandy or loose loamy soils such as those found on the OGS site and transmission line corridor.



Mammals

Bats

Two species of bats have the potential to use the project site for foraging and roosting: The Western Red Bat and the Pallid Bat. Both species are State Species of Special Concern. Roosting is most likely to occur in the tree canopy of the eucalyptus trees onsite.

Western Red Bat



Pallid Bat



San Joaquin Kit Fox

The San Joaquin kit fox, a Federally Endangered and State Threatened Species, is primarily nocturnal, but is commonly seen during the day in late spring and early summer. This species typically occurs in valley and foothill grassland or mixed shrub/grassland habitats throughout low, rolling hills and valleys, and also use habitats that have been altered by humans, such as agricultural lands and oil fields.

San Joaquin Kit Fox



American Badger

American badgers, a California Species of Special Concern, were once fairly widespread throughout open grassland habitats of California. They are now uncommon, permanent residents throughout most of the state, with the exception of the northern North Coast area. They are most abundant in the drier open stages of most shrub, forest, and herbaceous habitats with friable soils. The American badger may den or forage in the vicinity of the project site.

American Badger



If any animals are present in your work area, temporarily stop work and notify the Designated Biologist, Biological Monitor, or OGS Environmental Compliance Manager to have it removed. Do not attempt to handle injured or dead animals without first contacting the Designated Biologist or Biological Monitor.

Your Responsibility

- All personnel, equipment, and vehicles must remain inside the project boundary fence or in designated parking areas.
- If any animals (including snakes) are present in your work area, temporarily stop work and notify the Designated Biologist, Biological Monitor, or OGS Environmental Compliance Manager to have it removed.
- If wildlife is accidentally harmed, immediately notify the Biological Monitor.
- Do not handle wildlife.
- Do not feed or disturb wildlife.
- Report wildlife observations to the Designated Biologist, Biological Monitor, or OGS Environmental Compliance Manager.
- Fill out a Wildlife Observation form (in Environmental Compliance Manager's trailer and safety training trailer) for all wildlife observed on the site—alive, injured, or dead.

General Work Practices

- Stay in approved work areas (construction zone limits).
- Use only approved access roads.
- Keep out of designated exclusion areas.
- Inspect open trenches for wildlife each morning before starting work.
- Do not litter.
- No pets, firearms, or hunting allowed on the project site or in the project area.
- No fires.
- Smoke only in authorized cleared areas.
- Keep fluid spill containment and clean up materials readily available.
- Clean up and report all hazardous material spills immediately.
- Do not discharge water into unapproved areas.
- Protect waterways and storm drains by implementing protective measures, such as silt fencing.
- Report trapped, injured, or dead wildlife to the Designated Biologist, Biological Monitor, or OGS Environmental Compliance Manager, and record the specifics on a Wildlife Observation Form. Forms are available in the Environmental Compliance Manager's trailer and the safety training trailer.



REMEMBER

Always ask before you act.

Wildlife Observation Form

It is the responsibility of all personnel to complete a wildlife observation form whenever they encounter an animal; alive, injured, or dead; or an animal nest, burrow, or other animal sign onsite that requires displacement. These forms will be available in the Environmental Compliance Manager's office and the safety training trailer. Sightings must also be reported to the Biological Monitor. The monitor will assist you if you have any questions about completing these forms.

WILDLIFE OBSERVATION FORM To Record Animals Found In Oakley Generating Station Project Areas <small>To be filled out by personnel who find active nest sites and burrows, dens, and dead or injured wildlife, or other biological resources during daily construction activities.</small>	
Name of employee:	
Date:	
Location of observation:	
Wildlife species:	
Condition of wildlife: <input type="checkbox"/> Alive <input type="checkbox"/> Dead	
Possible cause of injury or death:	
Where is the animal currently?	
Is the resource in danger of project (or other) impacts?	
Comments:	
<small>Please contact the Designated Biologist for questions and to report any wildlife, nest, or den in the project area that could be disturbed. The Designated Biologist will advise personnel on measures required by California Department of Fish and Game (CDFG) and United States Fish and Wildlife Service (USFWS) to protect fish, wildlife and vegetation from construction impacts.</small>	
DESIGNATED BIOLOGIST Rick Crowe: Cell (916) 296-5525 Office (916) 286-0416	
BIOLOGICAL FIELD MONITORS Victor Leighton: Cell (916) 425-7862 Office (916) 286-0415 Dan Williams: Cell (916) 943-8247 Office (916) 286-0229	
<small>CH2MHILL • 2485 Natomas Park Drive, Suite 600, Sacramento, California 95833 • (916) 920-0300</small>	

Cultural Resources

Any trace of past human activity older than 50 years could be an important cultural resource. Places or sites where these traces occur are a part of a proud heritage that belongs to all of us. In the Contra Costa County area, there are archaeological remains that represent over 11,000 years of Native American prehistory and continue until 1769, when Spanish settlement occurred in California. Historical archaeological features, deposits, and architectural structural resources may also be found in the area. Significant cultural resources represent historical events, engineering achievements, and art or architecture styles that define what Americans have experienced. Ethnographic resources are also cultural resources, and they may include traditional plant gathering areas, shrines and ceremonial areas, cemeteries, natural landscape features, and ethnic structures or districts. Because these achievements define what we are and affect what we become, the past belongs to us all and we all have a responsibility to help preserve significant cultural resources.

Archaeological and historical sites are a non-renewable resource. Though we are always creating new cultural resources for people of the future to interpret or preserve for posterity, historical and archaeological sites, once destroyed, cannot be recreated.

Archaeological remains are often so fragmentary that it is possible to scrape, dig, or bulldoze right through a buried site without realizing it. Here's what to look for:

- Discolored soil, particularly gray-black soil with a “greasy” feel to it, in an area of lighter colored soils.
- Any animal or human bone. The proper treatment of Native American graves is of great concern. Possession of artifacts or human remains from a Native American grave is a felony (PRC 5097.99).
- A thin layer, or series of layers, particularly dark layers containing charcoal or ash, in an excavation side wall.
- Shell, freshwater or marine, or shell artifacts
- Any unusual concentration of rocks, particularly if they seem to form a pattern (such as a campfire).
- A concentration of small pieces of broken rock, particularly obsidian or chert with sharp edges.
- A concentration of historic-era trash, including bottles, broken glass, broken ceramic, bone, and metal pieces.
- A concentration of brick, concrete, or mortared stone that might indicate a structural foundation.

The kinds of cultural resources that may be discovered at the OGS project site include prehistoric artifacts such as grinding stones, arrowheads, and stone flakes, and historic artifacts such as glass bottles, metal objects, animal bones, and building foundations. Human skeletons may also be exposed.

Cultural Resources Monitors

The Oakley Generating Station will have a Cultural Resources Monitor onsite during all ground disturbance activities, including earth-moving, clearing, grading and drilling. The Cultural Resources Monitor will observe all work involving native soil disturbance in areas where buried cultural resources may exist. It is the monitor's job to evaluate any cultural resources discovered during construction activities, and to stop work on the project if any important cultural resources are discovered.

Examples of Cultural Resources

The following are examples of cultural resources that could be uncovered in the project area. The first seven examples are all stone tools shaped for specific functions.

The first example is a small **hammer stone**. Hammer stones were used for a wide range of tasks and may show wear at one or both ends.



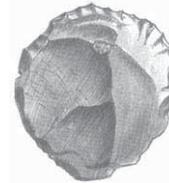
Hammer Stone



Flaked Cobble

Flaked cobbles were used for scraping, digging, or cutting. They can occur in a variety of shapes and sizes, with a smooth end for holding.

Scrapers had a variety of uses including preparing animal skins, shaping wood, or preparing food. Depending on their function, scrapers come in many shapes and sizes.



Scraper



Lithic Debitage

Lithic debitage is the waste material produced during the manufacture of flaked stone tools such as knives and projectile points. Debitage may be found in a variety of shapes and sizes, often as a concentration of small flakes of stone.



Flaked Knives

Flaked knives are very distinctive and easily identified by shape and flaking pattern. Flaked knives can be found in a large number of shapes and sizes.

Projectile Points are also very distinctive, and are commonly referred to as arrowheads. Projectile points can range in size from one to six inches long and several inches wide.



Arrowheads



Mortar and Pestle

The **Mortar** and **Pestle** were used together as a grinding tool. They were used to prepare foods, pigments, medicines, and potions.

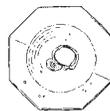
Historic artifacts that may be present include glass bottles, bone, ceramics, metal cans, and other metal objects, including wire, nails, and building hardware, as well as the remains of former building foundations and underground utilities.



Medicine Bottle



Glass Ink Bottle
*Clear glass octagonal ink bottle
early 20th century*



Glass Milk Bottle
*One quart milk bottle
Hester Dairy, San Jose, CA
circa 1935*

Your Responsibility

If a Cultural Resources Monitor is present when a cultural resource is exposed, he or she will direct you to stop work at the location of the “find.” The Cultural Resource Specialist and Cultural Resource Monitors have the authority to halt construction in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the Cultural Resource Specialist. Stopping construction in the vicinity of an archaeological find is an important condition of the project's license from the CEC and one with which we expect you to comply. Work may be stopped or redirected for only a few minutes, or it may be shut down for an extended period of time, depending on what is found.

If a Cultural Resources Monitor is not present when a cultural resource is found, it is your responsibility to stop work and notify your supervisor and the Cultural Resource Specialist or Cultural Resource Monitor. Work may not resume until the construction supervisor and the Cultural Resource Specialist determine how to redirect work to avoid the find until the CEC and Cultural Resources Specialist can evaluate its significance.

It is illegal for you to collect any objects, including old bottles, from public land according to the California Public Resources Code (sections 5097.5 and 5097.9). Disturbing Native American burial sites is a felony under California Public Resources Code Section 5097.99. In addition, the deliberate destruction and removal of cultural resources on private land is prohibited under the conditions of the project's license from the CEC.

The following state and federal laws and regulations affect the management of cultural resources:

- Archaeological Resources Protection Act
- National Historic Preservation Act
- California Environmental Quality Act
- California Public Resources Code (Sections 5097.5, 5097.9, and 5097.99)

Violations of these regulations can result in federal indictment, and are punishable by civil and criminal penalties, including both fines and/or imprisonment, and could result in the revocation of project certifications and shutdown of the project at the direction of the appropriate state agency.

Only authorized personnel may handle cultural resources. Notify the Cultural Resources Monitor or Site Superintendent if you think you may have found a cultural resource. Do not touch or move the object.

If you have any questions about these procedures, please ask your Site Superintendent or Cultural Resources Monitor for more information.

Paleontological Resources

Along with the project's commitments to cultural and biological resources, the Conditions of Certification of the California Energy Commission require everyone on this project to watch out for and avoid impacts on paleontological resources. CCGS is committed to adhering to the rules regarding paleontological resources monitoring and mitigation during construction at the OGS.

Paleontological resources, or fossils, are the remains of prehistoric plants and animals. Fossils include animal bones and teeth, and plant remains such as logs and even prehistoric leaf litter. Fossils also include such things as ancient burrows and tracks, and even very small remains such as the bones of birds and rodents, and even seeds.

Paleontological resources are protected by state and federal laws, and it is a violation of those laws to disturb fossils, except in the course of their scientifically controlled recovery, or to collect fossils without proper authorization.

Fossils have been found nearby, and because of that, this project includes a paleontological resources protection program. As part of that program paleontological resources monitoring will be implemented and managed by a designated Paleontological Resources Specialist. A Paleontological Resources Monitor will be onsite during excavation of native soil that might contain fossils. If a potential fossil is discovered, the Paleontological Resources Monitor will evaluate it to determine if it is a fossil and consult with the Paleontological Resources Specialist. **Like the Cultural Resources Monitor, the Paleontological Resources Monitor will have the authority to stop or redirect work in the immediate vicinity of a fossil find until it is properly recorded and recovered.**

Examples of Paleontological Resources

It is important that you are able to recognize fossils. Scientifically significant fossils take all shapes and sizes: Here we see the track of an extinct trilobite preserved in mica-rich shale with a trilobite fossil of about the right size. These animals went extinct some 270 million years ago.



And here we have two ammonites, which were squids living in shells, recovered from rocks laid down when the ocean covered most of California, up to about 65 million years ago when they became extinct.

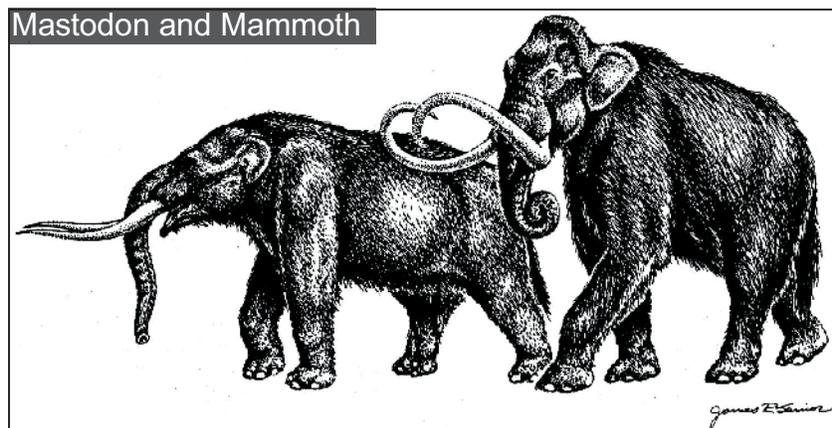


Fossils are non-renewable resources because they represent life and environments that no longer exist. If they are destroyed or taken without proper, scientifically controlled collection the detailed evidence of that past life is lost forever. It does not help if the fossil is in somebody's private collection because scientists will not have access to it for study. When properly collected, fossils provide important scientific evidence not only of the types of animals or plants of the distant past, but also data on past environments, climate change, and past extinction events.

As important scientific and educational resources, fossils are protected by state and federal law. Those laws require all of us to specifically watch for, and take steps to protect, fossils during excavations for the OGS. The laws protecting fossils are specific: NO individual can disturb fossils except in the course of their scientific investigation and controlled recovery. So we need to take care during excavations to identify and protect any fossils that may be uncovered until they are examined and removed by a qualified paleontologist.

Important fossils have come from soils like those at the OGS site. The remains of Ice Age animals and plants were included in the sediment washed out of the Sierra and deposited here. For example, mammoth and mastodon lived in the Central Valley during the last Ice Age.

The mastodon is the shorter, stockier "elephantid" to the left, the mammoth is to the right.



From studies of the geology of the area, we know that there are areas underlain by sediment that may contain fossils, such as these vertebrae of the extinct North American camel. That is why the California Energy Commission requires a Paleontological Resources Monitor to be present during excavations that will disturb sediments with fossil potential. But we need your help as well.



Be on the look-out for anything that looks strange or different—a bone, a log, or other remain that is just out of place or is shaped strangely. These need to be brought to the attention of either the paleontological or the archaeological monitor, or to your construction supervisor. What you find may be a fossil that will need to be recovered properly to avoid violating laws protecting it.



A Paleontological Resources Monitor will be present during excavations in paleontologically sensitive sediment. But the monitor has only two eyes, and your eyes are needed too. If it doesn't look like a rock, it may not be a rock, and it might be a fossil. And, even though it looks like nothing more than a discarded peach pit, this is actually a fossil walnut that is about 700,000 years old that came from a well boring near Turlock.

When they are covered with dirt, fossils are never as obvious as these specimens. Here we have a shoulder blade of the extinct North American camel, from the Walnut Energy Center near Turlock.



What To Do if a Fossil Discovery is Made

If you think you've found a fossil, leave it where it is, contact the Paleontological Resources Monitor and divert construction activities away from the find.

If a Paleontological Resources Monitor is not immediately available, stake and flag it yourself in such a way that others will know not to enter that area. Use construction avoidance fencing, or lathe and construction avoidance tape, to create an exclusion zone where the fossil find can be protected until removed, and where the paleontologists can work to clear the find without having to worry about heavy equipment.

Do not congregate near the find or impede the scientists investigating the find in any way—they're working to get it out of the way as quickly as possible, while recovering its scientific values as required by law.

Your Responsibility

CCGS is committed to the protection of fossil resources. **Remember: it is your duty to help with this protection effort.** If you think you have found a fossil, stop work in the immediate area, and notify the Environmental Compliance Manager and/or the Paleontological Resources Monitor so that your "find" can be evaluated as quickly as possible.

The following state and federal laws and regulations affect the management of paleontological resources:

- Federal Antiquities Act of 1906
- California Environmental Quality Act
- California Public Resources Code (Sections 5097.5 and 5097.9)

Violation of these regulations is punishable by civil and criminal penalties, including both fines and/or imprisonment, and could result in the revocation of project certification and shut-down of the project at the direction of the appropriate state agency.

Stormwater Management

Polluted runoff can negatively impact birds, aquatic life, livestock, recreation, pipe systems, navigation in waterways, and sources of drinking water. The primary stormwater pollutant at construction sites is excess sediment. At the national level, the U.S. EPA states that 40% of all U.S. waters are not fishable or swimmable, and has identified sediment from construction sites as the #1 non-point source pollutant. Sediment also transports other pollutants such as pesticides, metals, oils, and greases.



National Pollutant Discharge Elimination System General Permit Order No. 2009-0009-DWQ, also known as the Construction General Permit, regulates discharges of pollutants in stormwater discharges to waters of the U.S. from construction sites that disturb one or more acres of land surface. It is illegal to pollute local waterways, and fines and criminal charges are becoming more common. Members of regulatory agencies with jurisdiction over stormwater discharges from a construction site, such as the Regional Water Quality Control Board, can arrive at the site unannounced at any time to inspect all areas for compliance with the Construction General Permit.

The Stormwater Pollution Prevention Plan

A Stormwater Pollution Prevention Plan, also known as a SWPPP, was developed to address the construction activities associated with the OGS project and identify Best Management Practices (BMPs) for stormwater pollution prevention. Adherence to the BMPs is required in order to keep the project site in compliance with applicable regulations and prevent the levying of fines or even an Immediate Cease and Desist Order.

The Qualified SWPPP Practitioner has primary responsibility for the implementation, inspection, and maintenance of the BMPs identified in the SWPPP. BMPs implemented onsite include controls for erosion, sedimentation, tracking, wind erosion, non-stormwater discharges, and waste management.

Best Management Practices

Erosion control, also referred to as soil stabilization, is a source control measure that is designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion-control BMPs protect the soil surface by covering or binding soil particles. Examples of erosion controls are the use of mulch or geotextiles.

- Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. Examples of sediment controls are the use of silt fence or fiber rolls.

Silt Fence



Tracking Control



- Tracking controls prevent sediment and other loose construction materials from being tracked off the project site. An example of a tracking control is the use of a stabilized construction entrance or exit.

- Dust erosion control measures, such as watering the disturbed areas at the construction site, are implemented to minimize the wind-blown loss of soil from the site.
- Non-stormwater control measures address the storage, use, and disposal of materials such as vehicle fluids and curing compounds.
- Waste management controls manage the various waste streams generated from construction activities, such as the disposal of excess concrete.

Inlet Protection



Your Responsibility

At the job site, you can assist in the effort to prevent pollutant-laden stormwater from discharging offsite by:

- Installing fencing to protect sensitive resources and limit construction areas in coordination with the Site Supervisor and Biological Monitor. Respect the boundaries of these fenced areas, and only open or remove them upon direction of the Site Supervisor and Biological Monitor.
- Installing fiber rolls, silt fence, covers on stockpiled materials, and other BMPs as directed by the Site Supervisor.
- Only moving, adjusting, or removing BMPs in coordination with the Site Supervisor.
- Immediately contacting the Site Supervisor if you see fiber rolls, silt fence, or other BMPs in need of maintenance or repair.

To minimize dust:

- Drive vehicles onsite at the posted speed limit.
- Use the stabilized construction entrances/exits to prevent dirt on tires from being tracked-out onto public or paved roads.
- Inspect equipment vehicle tires and wash as necessary to be free of dust prior to entering paved roadways.
- Sweep or vacuum tracked dirt from paved roads daily, and as directed by the Air Quality Construction Mitigation Manager.
- Water the project site as directed by the Site Supervisor to control dust associated with vehicle traffic and construction activities.
- Cover and berm stockpiles of loose construction materials, such as soil, that are not actively being used.

To minimize the potential of a release of pollutants into stormwater:

- Use the designated concrete washout area, material storage areas, and vehicle maintenance and fueling areas as specified in the SWPPP.
- Walk, drive, and park only in designated areas and paths.
- Inspect your vehicles and equipment daily for leaks, and report leaks to the Site Supervisor.
- Refuel equipment or vehicles only in designated areas.
- Use drip pans or absorbent pads for all vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids.
- Wash equipment and vehicles only in designated areas. When feasible, wash them offsite.
- Store all materials only in their designated areas.
- Put all waste materials only in their respective designated containers.
- Close disposal containers, including trash bins, at the end of every business day and during a rain event.
- Use the designated concrete washout area when needing to wash out concrete trucks or dispose of Portland cement concrete or asphalt concrete waste.
- Park paving equipment over plastic when not in use.
- Check with the Site Supervisor before you discharge groundwater or any wastewater.
- Report leaks, spills, or discovery of contaminated soil immediately to the Site Supervisor. Implement clean-up procedures as directed.

To help with the detection of pollutants in stormwater:

- Immediately report any dirty water or sedimentation or discharge of pollutants leaving the project site to the Site Supervisor.
- Immediately report the discovery of any debris in water areas to the Site Supervisor.

Contact Personnel

CCGS LLC Construction Manager, Jim McLucas
(925) 820-5222

OPC Construction Manager, Steve Fawcett
(913) 636-4828

OGS/CCGS LLC Environmental Compliance Manager, Greg Lamberg
(925) 820-5222

OGS SWPPP QSD, G.O. Graening
(916) 452-5442

OPC Air Quality Construction Mitigation Manager, Al Dame
(937) 750-1880

PG&E Air Quality Construction Mitigation Manager, Dena Parish
(707) 267-8674

Biological Monitors

Designated Biologist/Biological Monitor, Rick Crowe
Cell (916) 296-5525, Office (916) 286-0416

Biological Field Monitor, Victor Leighton
Cell (916) 425-7862, Office (916) 286-0415

Biological Field Monitor, Dan Williams
Cell (916) 943-8247, Office (916) 286-0229

Cultural Resources Specialist and Monitor

Designated Cultural Resources Specialist, Clint Helton
Cell (949) 500-2496

Cultural Resources Monitor, Phil Reid
Cell (510) 673-0909

Paleontological Resources Monitor

Designated Paleontological Resources Specialist, Dr. Geof Spaulding
Cell (702) 524-5860, Office (702) 953-1233

Paleontological Resources Monitor, Jaspal Saini
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