Paleotological Resources Management Plan

Recommended outline or table of contents to bring forward Specific Paleo Resource Management requirements, as identified in O&M plan Class I, II, and III activities

**Appendix X Paleontological Resources Management Plan**

Overview

**Applicable Laws and Regulations**

National Environmental Policy Act (16 USC § 431 et seq.)

The National Historic Preservation Act of 1966

Federal Land Policy and Management Act (43 USC 1701)

Paleontological Resources Preservation Act (PRPA)

Code of Federal Regulations, Title 43, Section 8365

**Paleontological Permitting**

Paleontological Resource Use Permits and Modifications

Fieldwork Authorizations

**Definition and Significance of Paleontological Resources**

Potential Fossil Yield Classification System.
Area of Potential Effects [36 CFR § 800.16(d) and Protocol Stipulation]

**Description of O&M Activities**

Class I Activities [Plan Section]

Class II Activities [Plan Section]

Class III Activities [Plan Section]

O&M Activities and Paleontological Resources.

**Paleontological Resource O&M Program Process**

Existing Data Analysis and Geological Sampling

Paleontological Resource Summary Reports

Avoidance Measures

**Unanticipated Discoveries**

**Incident Management**

Incidents Involving Paleontological Resources

Incidents Involving Paleontological Controlling Documents

Revisions and Supplemental Procedures.

**Attachment: Paleontological Resources Use Permit Template**

**Attachment: Paleontological Fieldwork Authorization Template**

**Attachment: BLM Field Office-Specific Information**

 **Paleontological Resources Management Plan**

# Overview

This Paleontological Resources Management Plan (PRMP) serves as a nexus between Bureau of Land Management (BLM) guidelines (BLM Manual 8270 and inserted Handbook H-8270-1, BLM Instruction Memorandum [IM] 2016-124,) and the Utility Operations and Maintenance Plan (Plan). The Plan is a term and condition of the Utility right-of-way (ROW) grants, to ensure compliance with the applicable laws, regulations, and BLM-specific policies (PRMP Section D.2).

The PRMP should be developed closely with BLM this Sample Plan is provided to help guide development of BLM office specific PRMP plans.

The PRMP includes a Paleontological Resources O&M Program Process (PROMPP) to demonstrate that the BLM considered the potential impacts Utility operations and maintenance (O&M) activities may have on paleontological resources on BLM-administered lands within the state of State.

The BLM has assessed that paleontologically sensitive formations exist within the Undertakings’ Area of Potential Effects (APE) but the nature and scope of O&M activities make it difficult to identify, recover, assess, and collect recoverable paleontological resources (PRMP Section). As a result, this PRMP includes a commensurate, high-level PROMPP to mitigate for O&M activities on an O&M program level (PRMP Section). The PROMPP may also identify Field Office-specific paleontological sensitive areas where additional Resource Protection Measures (RPMs) and/or Best Management Practices (BMPs) may be needed (PRMP Section). These areas are captured as Field Office Special Consideration Areas (FOSCA)[1](#_bookmark2) in Plan Appendix Xand are assigned Field Office- specific guidance and recommendations regarding paleontological avoidance measures.

Utility paleontological resource specialists (Utility PRS) and consultant paleontological resource specialists (Consultant PRS), under BLM-issued Paleontological Resource Use Permits (PRUPs), will implement the PRMP. The PRMP has been designed to build and maintain a relevant dataset of paleontological resources within Utility ROWs and access road corridors on BLM-administered lands. The dataset helps avoid impacts to paleontological resources and enables the BLM to demonstrate compliance with applicable permits, laws, and regulations.

The PRMP, codified herein, is compliant with BLM guidelines, and valid for the life of the ROW grants. The BLM will continue to ensure that proposed land uses do not inadvertently damage or destroy important paleontological resources on public lands (BLM Manual 8270: Objective C) and may modify the PRMP as needed during scheduled Plan review (PRMP Section).

.

# Applicable Laws and Regulations

O&M activities are subject to federal environmental statutes governing paleontological resources because they are on federally administered lands and require federal permits.

## National Environmental Policy Act (16 USC § 431 et seq.)

The National Environmental Policy Act (NEPA), as amended, requires analysis of potential environmental impacts to important historic, cultural, and natural aspects of our national heritage (United States Code (USC), § 431 et seq.; 40 Code of Federal Regulations (CFR) § 1502.25). NEPA

directs Federal agencies to use all practicable means to “Preserve important historic, cultural, and natural aspects of our national heritage…” (§ 101(b) (4)). Regulations for implementing the procedural provisions of NEPA are found in 40 CFR § 1500-1508.

## The National Historic Preservation Act of 1966

This law provides leadership, as well as financial and technical assistance to foster prehistoric and historic preservation of the resources of the United States and of the international community in partnership with States, Indian tribes, Native Hawaiians, and local governments. Specifically, Section 106 of the National Historic Preservation Act (NHPA) is relevant because it provides for the survey, recovery, and preservation of paleontological resources when they are found in culturally-related contexts and when they may be destroyed or lost due to a federal, federally licensed, or federally funded project (Public Law 89-665; 80 Stat. 915; 16 USC 470 et seq. [Caltrans, 2012; National Park Service, 2013c]).

Section 106 of the NHPA does not apply to paleontological resources unless the paleontological specimens are found in culturally related contexts (e.g., fossil shell included as a mortuary offering in a burial or a culturally related site such as petrified wood locale used as a chipped stone quarry). In such instances, the materials are considered cultural resources and are treated in the manner prescribed for the site in question; mitigation being almost exclusively limited to sites determined eligible for, or listed on, the National Register of Historic Places.

## Federal Land Policy and Management Act (43 USC 1701)

Federal law including the Federal Land Policy and Management Act (FLPMA) of 1976 (43 USC 1701) includes objectives such as the evaluation, management, protection and location of fossils on BLM- administered lands, defines fossils, and lays out penalties for the destruction of significant fossils.

Also, FLPMA requires that the public lands be managed in a manner that protects the “… quality of

scientific…” and other values. Most recently, the Omnibus Public Lands Act refines NEPA and FLPMA guidelines and strictures, as well as outlines minimum punishments for removal or destruction of fossils from Federal/public lands (see below).

## Paleontological Resources Preservation Act (PRPA)

Paleontological Resources Preservation, Title VI, Subtitle D in the Omnibus Public Lands Act of 2009, Public Law 111-011 Purpose: The Secretary (Interiorand Agriculture) shall manage and protect

paleontological resources on Federal land using scientific principles and expertise. With the passage of the PRPA, Congress officially recognizes the importance of paleontological resources on federal lands (U.S. Department of the Interior, US Department of Agriculture) by declaring that fossils from federal lands are federal property that must be preserved and protected using scientific principles and expertise. The PRPA was codified in 43 CFR § 49, directing “the BLM, Bureau of Reclamation (Reclamation), U.S. Fish and Wildlife Service (FWS), and National Park Service (NPS) to preserve, manage, and protect paleontological resources on Federal land using scientific principles and expertise.” The PRPA provides:

1. Uniform definitions for “paleontological resources” and “casual collecting;”
2. Uniform minimum requirements for paleontological resource use permit issuance (terms, conditions, and qualifications of applicants);
3. Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from Federal lands; and
4. Uniform requirements for curation of federal fossils in approved repositories.

## Code of Federal Regulations, Title 43, Section 8365

Under the Title 43, CFR § 8365.1-5, the collection of scientific and paleontological resources, including vertebrate fossils, on federal land is prohibited. The collection of a “reasonable amount” of common invertebrate or plant fossils for non-commercial purposes is permissible (43 CFR § 8365.1- 5 [United States Government Printing Office, 2014]).

# Paleontological Permitting

All Consultant PRSs performing PRMP activities will maintain active State State Office-issued PRUPs and obtain Fieldwork Authorizations (FWA), pursuant to the respective PRUPs, from the appropriate BLM State Field Office (Field Office). All fossils collected from BLM-administered lands must be housed in a BLM-approved paleontological repository.

## Paleontological Resource Use Permits and Modifications

A PRUP is a land use authorization issued to a qualified applicant for the purpose of carrying out various paleontological activities, such as identification, survey, collection, or excavation, on lands managed by BLM. Such permits are nonexclusive, noncompetitive, minimum impact permits, and are not subject to Notice of Realty Action, filing fees or cost reimbursement. State Offices are responsible for processing and issuing such permits in consultation with the appropriate Field Office and Regional Paleontologist (BLM Manual 8270).

Under BLM policy (BLM Manual 8270; H-8270-1), the BLM State Director (SD) (or his/her delegate) has authority to modify a PRUP whenever essential management considerations have changed, including modification of any pertinent State-specific permit condition. Modifications may be needed to facilitate data sharing, reporting, and other requirements of this Plan. The BLM Click or tap here to enter text.State Office (SO) is encouraged to continue to modify PRUPs in a manner that facilitates implementation of the Plan. Template PRUP language may be found in PRMP Attachment.

## Fieldwork Authorizations

Field Offices are encouraged to issue 3-year blanket FWAs covering all O&M activities authorized under the ROW grants, rather than FWAs specific to each O&M activity involving paleontological resources fieldwork. Field Offices will renew blanket FWAs at 3-year intervals. Blanket FWAs cannot exceed the essential conditions of a consultant’s PRUP such as the permit's expiration date, geographic scope, nature of work, and listed Field Directors and Principal Investigator, unless approved in advance by the SO. A permittee will not be issued a blanket FWA without a current PRUP. Template blanket FWA language may be found in PRMP Attachment.

# Definition and Significance of Paleontological Resources

As defined by Murphey and Daitch (2007): “Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth.” Paleontological resources, or fossils, are the remains, imprints, or traces of once- living organisms preserved in rocks and sediments. These include mineralized, partially mineralized, or unmineralized bones and teeth, soft tissues, shells, wood, leaf impressions, footprints, burrows, and microscopic remains. Paleontological resources include not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils’ associated sedimentary matrix.

The fossil record is the only evidence that life on earth has existed for more than 3.6 billion years. Fossils are considered non-renewable resources because the organisms they represent no longer exist. Thus, once destroyed, a fossil can never be replaced. Fossils are important scientific and educational resources because they are used to:

1. Study the phylogenetic relationships amongst extinct organisms, as well as their relationships to modern groups;
2. Elucidate the taphonomic, behavioral, temporal, and diagenetic pathways responsible for fossil preservation, including the biases inherent in the fossil record;
3. Reconstruct ancient environments, climate change, and paleo-ecological relationships;
4. Provide a measure of relative geologic dating that forms the basis for biochronology and biostratigraphy, and which is an independent and corroborating line of evidence for isotopic dating;
5. Study the geographic distribution of organisms and tectonic movements of land masses and ocean basins through time;
6. Study patterns and processes of evolution, extinction, and speciation; and
7. Identify past and potential future human-caused effects to global environments and climates.”

Paleontological resources vary widely in their relative abundance and distribution and not all are regarded as significant. Vertebrate fossils, whether preserved remains or track ways, are classed as significant by most state and federal agencies and professional groups. In some cases, fossils of plants or invertebrate animals are also considered significant and can provide important

information about ancient local environments. According to the Society of Vertebrate Paleontology (2010):

“A Significant Fossiliferous Deposit is a rock unit or formation which contains significant nonrenewable paleontologic resources, here defined as comprising one or more identifiable vertebrate fossils, large or small, and any associated invertebrate and plant fossils, traces and other data that provide taphonomic, taxonomic, phylogenetic, ecologic, and stratigraphic information.”

According to the BLM IM 2009-011 (BLM, 2008), a “Significant Paleontological Resource” is defined

as:

“Any paleontological resource that is considered to be of scientific interest, including most vertebrate fossil remains and traces, and certain rare or unusual invertebrate and plant fossils. A significant paleontological resource is considered to be of scientific interest if it is a rare or previously unknown species, it is of high quality and well-preserved, it preserves a previously unknown anatomical or other characteristic, provides new information about the history of life on earth, or has an identified educational or recreational value.

Paleontological resources that may be considered not to have scientific significance include those that lack provenience or context, lack physical integrity due to decay or natural erosion, or that are overly redundant or are otherwise not useful for research. Vertebrate fossil remains and traces include bone, scales, scutes, skin impressions, burrows, tracks, tail drag marks, vertebrate coprolites (feces), gastroliths (stomach stones), or other physical evidence of past

vertebrate life or activities.”

# Potential Fossil Yield Classification System

The Potential Fossil Yield Classification (PFYC) System is a predictive resource-management tool founded on two basic facts of paleontology: Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them, and the likelihood of the presence of fossils can be broadly predicted from the distribution of geologic units at or near the surface (Table). Therefore, geologic mapping, as the documentation of geologic unit distribution, is a reliable method for assessing the potential of geologic units to preserve fossils.

The PFYC System classifies geologic units on the relative abundance of scientifically significant vertebrate, invertebrate, or plant fossils and their sensitivity to adverse impacts, with a higher classification number indicating a higher potential for fossil occurrences. Among paleontologists, it is understood that this classification is preferably applied to the geologic formation, member, or other distinguishable unit at the most detailed mappable level. The PFYC System is not intended to be applied to specific paleontological localities or small geographic areas within geologic units.

Although significant localities may occasionally occur in a geologic unit, the existence of a few important fossils or localities widely scattered over a large area does not necessarily indicate a higher classification for the unit. The relative abundance of scientifically important paleontological resources and their sensitivity to adverse impacts is intended to serve as the major determinant for the class assignment. The PFYC System is intended to provide baseline guidance for predicting, assessing, and mitigating impacts on paleontological resources.

Example table: The PFYC System, Summarized from BLM IM 2016-124 (BLM, 2016)

**PFYC**

**Designation Assignment Criteria Guidelines and Management Summary**

1 = Very Low Potential

Geologic units are not likely to contain recognizable paleontological resources.

Units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units. Units are Precambrian in age.

2 = Low Potential Geologic units are not likely to contain paleontological resources.

Field surveys have verified that significant paleontological resources are not present or are very rare.

Units are generally younger than 10,000 years before present. Recent aeolian deposits

Sediments exhibit significant physical and chemical changes (i.e., diagenetic alteration) that make fossil preservation unlikely

3 = Moderate Potential

4 = High Potential

5 = Very High Potential

U = Unknown Potential

Sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence.

Marine in origin with sporadic known occurrnces of paleontological resources.

Paleontological resources may occur intermittently, but these occurrences are widely scattered.

The potential for authorized land use to impact a significant paleontological resource is known to be low-to-moderate.

Geologic units that are known to contain a high occurrence of paleontological resources.

Significant paleontological resources have been documented but may vary in occurrence and predictability.

Surface-disturbing activities may adversely affect paleontological resources.

Rare or uncommon fossils, including nonvertebrate (such as soft body preservation) or unusual plant fossils, may be present.

Illegal collecting activities may impact some areas.

Highly fossiliferous geologic units that consistently and predictably produce significant paleontological resources.

Significant paleontological resources have been documented and occur consistently.

Paleontological resources are highly susceptible to adverse impacts from surface disturbing activities.

Unit is frequently the focus of illegal collecting activities. Geologic units that cannot receive an informed PFYC assignment

Geological units may exhibit features or preservational conditions that suggest significant paleontological resources could be present, but little information about the actual paleontological resources of the unit or area is known.

Geologic units represented on a map are based on lithologic character or basis of origin but have not been studied in detail.

Scientific literature does not exist or does not reveal the nature of paleontological resources.

Reports of paleontological resources are anecdotal or have not been verified. Area of geologic unit is poorly or under-studied.

BLM staff has not yet been able to assess the nature of the geologic unit.

**PFYC**

**Designation Assignment Criteria Guidelines and Management Summary**

W = Water Includes any surface area that is mapped as water.

Most bodies of water do not normally contain paleontological resources; however, shorelines should be carefully considered for uncovered or transported paleontological resources.

Reservoirs are a special concern because important paleontological resources are often exposed during low water intervals.

I = Ice Includes any area that is mapped as ice or snow.

Receding glaciers, including exposed lateral and terminal moraines should be considered for their potential to reveal recently exposed paleontological resources.

Other considerations include melting snow fields that may contain paleontological resources with possible soft-tissue preservation.

# Area of Potential Effects [36 CFR § 800.16(d) and Protocol StipulationX]

The NHPA defines an APE as “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” The APE, as described in Appendix X of the Plan - Cultural Resource Management Plan (CRMP) Section X, marks those areas associated with the ROW grants in which the Utilities are reasonably expected to conduct O&M activities. This same area was used for the paleontological resource data analysis captured in the PROMPP (PRMP Section X).

The BLM defined the APE for each undertaking as the utility ROW corridors and buffer (e.g., 200 feet wide for transmission and distribution) and access road corridors and buffer, averaging Dimensions ft wide, ranging from Dimensions ft wide. The APE corridor widths include those areas near ROWs and roads where utilities are reasonably expected to operate. The Field Office-specific ROW APE width is found in CRMP Attachment. The roads APE dimensions are the same for all Field Offices, which is the current road width (dimensions feet wide), with dimensions-foot berms on either side where applicable, and a dimensions- foot buffer on either side of road prism or berm edge.

# Description of O&M Activities

The sections below provide an overview of standard, regulatory-driven O&M activity classes (Class I, II, and III) and how they are performed in compliance with the applicable state and federal laws and regulations governing the safe and reliable delivery of electricity. Please see PRMP Section X of the Plan for further details. Activity classes are defined by scope of work and presence/absence of resources as described below.

## Class I Activities [Plan Section X ]

Class I activities have no or very limited (*de minimis*) potential to cause adverse environmental impacts due to limited scope and duration, location, and/or the application of BMPs. Class I activities are further described in Appendix X and Section X of the Plan. These activities occur at regularly

scheduled intervals or as needed, and no resources are anticipated to be affected. Notification of these activities occurs during BLM/Utility annual meetings.

## Class II Activities [Plan Section X ]

Class II includes O&M activities with the potential to cause adverse environmental impacts, but those impacts can be avoided or sufficiently minimized through the application of agreed upon BMPs and RPMs (Plan Appendix X; Appendix X). Class II activities are further described in Appendix X and Section X of the Plan. These activities are the result of Class I activity inspections and patrols and occur in accordance with State and Federal regulatory requirements and timelines. BLM approval is not required prior to performing Class II activities.

## Class III Activities [Plan SectionClick or tap here to enter text. ]

Class III includes O&M activities with the potential to cause adverse environmental impacts and where BLM approval is required prior to the Utilities conducting the activity. Class III involves O&M activities that:

1. Require additional cultural resource review; or
2. Are likely to adversely affect listed species or significantly affect their habitat; or
3. May have activity constraints or conditions specified in FOSCAs, captured in the Field Office- specific appendix (Appendix X) that need BLM approval; or
4. Require additional approval from BLM for other resource management concerns (e.g., visual, recreation, noise, etc.).

As described in Plan Chapter X, Class III activities require a complete work package and approval from the BLM to proceed.

## O&M Activities and Paleontological Resources

The two O&M activities with a high potential to encounter paleontological resources are wood pole and plate anchor replacements. The size and depth of augered post and plate anchor holes make it extremely difficult for on-site monitors to visually inspect the sidewalls for paleontological resources. Further, the nature and scope of pole and plate anchor replacements make any previously unidentified fossil material difficult to identify, recover, assess, and collect during Utility O&M activities or soon after surface-disturbing actions through monitoring.

Other ground-disturbing O&M activities (e.g., road maintenance, overland travel, etc.), detailed in Plan Appendix X, involve a shallow and narrow scope of ground disturbance. These other ground- disturbing O&M activities may be considered “surface only activities” where work will not disturb potentially fossil-yielding bedrock or alluvium when the fossil resource is expected to be buried well below project compression or excavation depth or when surface fossil resources would be left undamaged. Additionally, these surface-only activities may occur in young alluvial deposits or deep soils that may cover and obscure sedimentary bedrock, where any fossils that may occur in that bedrock would be unidentified or irretrievable prior to disturbance actions These O&M activities require no additional paleontological resource management measures.

Surface-only activities that fall within specific paleontological sensitive areas, where the O&M activity may disturb potentially fossil-yielding bedrock or alluvium or surface fossil resources, may warrant additional avoidance measures. These paleontological sensitive areas may be captured as Special interest areas (PRMP Section X).

Based on these factors, the Utility will complete the PROMPP at the O&M program level due to the low likelihood of identifying recoverable paleontological resources during Utility O&M activities. The PROMPP may identify Field Office-specific paleontological sensitive areas where additional RPMs and/or BMPs may be needed to avoid potential impacts to paleontological resources (PRMP Section X). These areas are captured as special interest areas in Plan Appendix X.

# Paleontological Resource O&M Program Process

Field Offices must assess all proposed federal actions to identify possible effects to significant paleontological resources that are potentially recoverable and are likely to be within the zone of expected surface disturbance or relatively close to the surface The BLM assessed that paleontologically sensitive formations exist within the APE but the nature and scope of O&M activities make it difficult to identify, recover, assess, and collect recoverable paleontological resources (PRMP Section X). As a result, the PRMP includes a PROMPP that Field Offices and Utilities shall follow to mitigate for O&M activities.

The BLM Manual 8270 Handbook states that, “compliance with NEPA requires consideration of impacts to resources and so may involve mitigation where vertebrate fossils, or noteworthy occurrences of invertebrate or plant fossils, are known. Mitigation may be accomplished, for example, by (1) collection of data and fossil material, (2) by obtaining representative samples of the fossils, (3) by avoidance, or (4) in some cases by no action.” The PRMP describes how the BLM complies with all applicable permits, laws, and regulations through the implementation of a process to mitigate for potential paleontological resource impacts through data collection, sampling strategies, and avoidance measures.

## Existing Data Analysis and Geological Sampling

The PROMPP identifies up-front and on-going steps to develop and continuously maintain a paleontological resources dataset. These datasets will be Field Office-specific and include results from a geological sampling strategy to better identify potential fossil yield. An analysis of existing data and geological sampling supplants O&M activity-specific paleontological resource screening but does not preclude Field Office-specific guidance and recommendations (PRMP SectionClick or tap here to enter text.). Field Office-specific guidance and recommendations, based on the O&M activity and underlying geologic unit, shall be included in the Field Office-specific appendix (Plan Appendix X).

### Existing Data Analysis

An analysis of existing paleontological data will be completed in conjunction with the preparation of the Utility ROW grants and include the following elements:

* + - * 1. A review of BLM PFYC mapping, as well as a review of geologic mapping at local scale (1:24,000 to 1:48,000), where such mapping exists, to determine the distribution of geologic units within the APE (CRMP Section X);
				2. A records search of regional museum repositories to document existing localities recorded within Utility ROWs. The record search should also include any available data documenting the method of specimen collection. If specimens were collected during activities involving augering, these data will help to supplement the geological sampling results (PRMP Section X); and
				3. A records search of BLM Field Office files.

These textual and geospatial data will be compiled in the paleontological resource summary reports (PRMP Section X) for each Field Office.

### Geological Sampling

Given the nature and scope of O&M activities and the difficulty to identify, recover, assess, and collect fossil materials during O&M work (PRMP Section X), the BLM assessed that there is a low likelihood for O&M activities to impact recoverable significant paleontological resources.

To validate the BLM’s assessment (PRMP Section X), geologic samples shall be collected from O&M activities. The geological sampling strategy will support the BLM’s effort to mitigate for potential impacts to recoverable paleontological resources to prevent damage or destruction from future O&M activities over the course of the ROW grant timeframe.

During the first two years of issuing ROW grants, Utility and Consultant PRSs will do the following:

* + - * 1. Collect 12 (twelve) five-gallon geological samples of post-hole back dirt spoils from each geologic formation assigned PFYC 4, 5, and U designations.
				2. Geological samples will be taken from Class II pole and/or anchor replacement O&M activities. Pole and anchor replacements represent the two O&M activities with a high potential to encounter paleontological resources (PRMP SectionClick or tap here to enter text.). The descriptions of these activities are below.

Mechanical augering of a new post hole disturbs less than one percent of one acre, depending on the size of the bit. Auger spoils are placed adjacent to the newly excavated hole and consist of mixed coarse-to-fine granules created from the auger’s circular drilling motion. The post hole diameter is approximately number inches and up to number feet deep (diameter and depth depend on new pole height).

A plate anchor consists of a sheet cross plate and anchor rod. The steel plate is installed perpendicular to the angle of the anchor rod. The rod can extend a minimum of number inches and a maximum of number inches above the finished grade. In general, the vertical bored hole is approximately number inches in diameter and number feet deep. The rod trench and bored hole are backfilled and tamped hydraulically or by hand.

* + - * 1. Process each five-gallon sample in a laboratory setting to determine whether recoverable significant paleontological resources may be identified. This is done to specifically examine the potential to identify subsurface scientifically significant paleontological resources. Geological screening will follow the typical methodology for screen-washing sediments for microfauna (see Murphey et al. 2019).
				2. Determine whether the condition of any recoverable paleontological resources includes characteristics and physical attributes necessary to positively identify the paleontological resources as significant.
				3. Geological sample locations will be processed through the Utility environmental review process (Plan ChapterX). The samples will not be excavated within or in close proximity to cultural resources. If cultural resources are identified during geological sampling, Utilities will follow the post-review discovery process for cultural resources (CRMP Section X).

## Paleontological Resource Summary Reports

The Utilities will submit two summary reports to the BLM describing 1) the results of the analysis of existing data, and 2) the results of the geological sampling. Results of the summary reports may include, but not be limited to the following:

1. Resulting textual and geospatial data from the existing data analysis and geological sampling.
2. Reassessment of potential to encounter significant paleontological resources based on specific O&M activity implementation.
3. Reassessment of potential to encounter significant paleontological resources based on location of specific O&M activity implementation.
4. Request for additional data.
5. No further consideration of potential effects to significant paleontological resources during O&M activity implementation.

## Avoidance Measures

As described in the BLM Manual 8270 Handbook, avoidance of potentially significant fossil localities is an effective mitigation method to avoid effects to paleontological resources. If impacts to significant paleontological resources seem likely, the preferred approach is to avoid and/or minimize potential impacts, which may include facility relocation (to the extent feasible with O&M work) (BLM IM

2009-011 [I][C][3]).

The Plan identifies standard BMPs and RPMs to avoid and minimize potential impacts from O&M activities (described in Appendix X). The BLM and Utilities use existing paleontological data along with the results from the paleontological resource summary reports (PRMP Section X) to identify Field Office-specific paleontological sensitive areas, where additional RPMs and/or BMPs may be needed.

These areas are captured as special identified areas in Plan Appendix X and PRMP Attachment X, and are assigned Field Office-specific guidance and recommendations regarding paleontological avoidance measures. Field Office-specific guidance and recommendations are based on the respective geologic unit, along with the nature and context of the specific O&M activity and associated activity methods.

When avoidance is not possible, alternative BMPs and RPMs may include excavation or collection (data recovery), stabilization, monitoring, protective barriers and signs, or other physical and administrative protection measures (BLM IM 2009-011 [III][A]).

# Unanticipated Discoveries

If a paleontological resource (or potential paleontological resource) is discovered during a O&M activity, the following process is followed:

1. O&M activity crews will stop work and contact a Utility CRS.
2. The Utility CRS will engage a Utility or Consultant PRS to assess the discovery. A Utility or Consultant PRS with the appropriate PRUP and FWA will mobilize to the site to assess the discovery.
3. If the discovery is thought to potentially be a significant paleontological resource, the Consultant PRS will establish a number ft Environmentally Sensitive Area (ESA) around the discovery.
4. Consultant PRS will immediately notify the BLM Staff and/or Field Office Field Manager via phone or email.
5. BLM will confirm the discovery is paleontological or request additional information.
6. Within 24 hours (or as soon as feasible) of confirming the discovery is paleontological in nature, and the discovery is significant, a Utility or Consultant PRS will provide BLM Staff with a description of the discovered paleontological materials, feasibility of avoidance, and additional RPMs to address potential impacts.
7. If a cultural resource is intersecting, or in close proximity to the paleontological resource, discovery notification to the BLM will include its location, distance, and stratigraphic context to cultural resources. If the cultural resource occurrence is also a post-review discovery as defined in the CRMP, the post-review discovery process for cultural resources (CRMP Section X) will be followed.

#  Incident Management

Activities or occurrences considered by Utilities or BLM as noncompliant with the procedures outlined in the Plan are subject to a noncompliance documentation process. Utilities are responsible for remediating the non-compliance when the BLM deems it necessary (Plan Section X).

## Incidents Involving Paleontological Resources

If an incident occurs that may involve paleontological resources (e.g., failure to implement Field Office-specific RPMs, failure to implement the unanticipated discovery process, etc.), all work will immediately stop. Incidents involving paleontological resources may also be detected after the O&M activity has been completed, as mentioned above. The BLM may rely on a third party to identify paleontological resource-related incidents. Incidents may be identified regardless of how much time has elapsed since the incident occurred.

## Incidents Involving Paleontological Controlling Documents

Incidents involving paleontological controlling documents are activities or occurrences that may be noncompliant with one or more of the applicable paleontological resource controlling

documents/permits: PRUP/FWA, data sharing agreement(s), the Plan/ROW grant, and the respective laws and regulations from which the Plan follows. Paleontological resource-related incidents are potentially subject to review by the State office as a PRUP compliance issue (e.g., past-due and/or poor-quality deliverables), or by the Field Office as an FWA compliance issue. These may merit disciplinary action related to the PRUP/FWA which is governed by various laws, regulations, and BLM policie[s2,](#_bookmark29) and managed by the SO/Field Office.

#  Revisions and Supplemental Procedures

This PRMP is intended to be responsive to changing circumstances. Therefore, it will track and align with future paleontology guidance revisions. These updates may be made at the scheduled Plan meetings or may be updated and modified as needed. It also will align with Section X of the Plan to address periodic modifications, clarifications, or revisions. Any modifications or amendments to the PRMP will be in accordance with applicable legal requirements.

2 FLPMA, PRPA, and BLM Manual 8270.

# Paleontological Resources Use

**Permit Template**

|  |
| --- |
| **Form 8270\_1 (2010) United States *Office Use Only*****Department of the Interior Application Number:****Bureau of Land Management****Paleontological Resources Use Permit Application**Sec. 302(b) of Pl 94-579, October 21, 1976, 43 U.S.C. 1732 |
| 1a. Applicant: | 1b. Affiliation: |
| 2. Mailing Address Office:Field Party: Email address: | 3. Telephone number Office:Fax:Field Party:Fax: |
| 1. Nature of paleontological fieldwork proposed:
	1. Survey and limited surface collection **or** b. Excavation
 |
| 5. Location of proposed work (attach topo map copy with project boundaries):Click or tap here to enter text.statewide on BLM-administered lands. |
| 6. Purposes and methodology of proposed work (attach separate sheet).Conduct paleontological surveys & monitoring for consulting purposes on utility O&M activities. No specific project has been identified. |
| 7. Dates of proposed work:Start: End: |
| 8. Name(s) of individual(s) responsible for planning, supervising, and carrying out fieldwork. |
| 9. Name and address of repository. |
| 10. Additional materials required:a. Resume for each individual named in Line 1a and Line 8: b. Summary of organizational capabilities: c. Summary of organizational history: d. Written certification, signed by a properly authorized official of the repository named in Line 9, attesting to the repository's willingness to accept any collections, and as applicable, records, data, photographs, and other documents generated during the proposed work, and to assume permanent curatorial responsibility for such materials on behalf of the United States Government. |
| 11. Signatures:Applicant (Line 1a)Co-applicant(s) | 12. Dates: |

1

# Paleontological Fieldwork

**Authorization Template**

|  |  |
| --- | --- |
| **UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT** | INFORMATIONREQUIREMENT APPROVED OMB NO. 1024-0037 |
| Field work authorization**To Conduct Specific Paleontological Resource Work Under the Authority of****a Paleontological Resources Use Permit Issued by the Bureau of Land Management Pursuant to Sec. 302(b) of P.L. 94-579, October 21,1976, 43 U.S.C. 1732** | FOR BLM USE ONLY |
| FWA Request No. |
| Reviewed and Approved by: |
| 1. CA Permit for Paleontological Investigation Number and Date Issued Name of Permittee**[PRUP Number and Issuance and Expiration Date] [Consultant Name]** |
| 2. Mailing Address 3. Telephone Number(s)**[Consultant Mailing Address] [Consultant Phone Number]** |
| 4. Nature of Paleontological Resources Work (If Consultation Work, Identify Client and Project):**[Consultant name] is performing surface paleontological investigations and monitoring for paleontological resources in support of operations and maintenance (O&M) activities defined in the Master O&M Plan, within the BLM [Field Office Name] through [PRUP Expiration Date].****Survey area, results, and GIS spatial data will be submitted in compliance with the Master O&M Plan Appendix**Click or tap here to enter text.**: Paleontological Resources Management Plan. Reporting requirements will also comply with BLM California State Office PRUP conditions.** |
| 1. Location of Proposed Work (Include Map) b. Identification of Paleontological Resource(s) Involved
	1. Description of Public Lands Involved (if applicable)

**Utility electrical facilities on BLM [Field Office Name] - administered lands** |
| 6. Period During Which Work Will be ConductedFrom: **[Submittal Date]** To: **[PRUP Expiration Date]** |
| 7. Name of Individual(s) Responsible for Planning & Supervising Field Work & Approving Reports, Evaluations, & Recommendations:**[Names of Consultant Principal Investigators and Field Directors]** |
| 8. Signature of Applicant/s/ **[Digital Signature] [Date of Signature]** |
| 9. Signature of BLM Authorizing Officer/s/ |

Form 8151-3

BLM Field Office-Specific Information

**Paleontological Resource Field-Office Specific**

**Attachment**

1. **Introduction**

The purpose of the Paleontological Resource Field Office-Specific Attachment (PR-FOSCA) is to document data points (i.e., Field Office-specific paleontological sensitive areas, etc.) unique to individual Field Offices, and identify additional resource protection measures needed to manage O&M activities after the O&M Plan’s Paleontological Resource O&M Program Process PROMPP is applied (PRMP SectionClick or tap here to enter text.). Paleontological resource-specific protection measures are captured in Table Click or tap here to enter text. and may be changed with BLM-Utility mutual agreement.

# BLM FO Name Field Office Area of Potential Effects (PRMP Section X, CRMP Section X)

The BLM defined the Area of Potential Effects (APE) for each undertaking as the utility ROW corridors and buffer (e.g., 200 feet wide for transmission and distribution) and road corridors and buffer. The utility corridor APE is Field Office specific and based on vegetation community characteristics such as tree species and height. The BLM and Utility shall consider O&M activities authorized under the ROW grants and described in the O&M Plan, how those activities are performed, and the type of equipment used when determining the APE width. This same area was used for the paleontological resource data analysis captured in the PROMPP (PRMP Section X).

Utilities typically use one of two APE widths for corridors on BLM lands: number feet and Number feet. For Field Offices with smaller vegetation communities, Number feet is used (Number feet on either side of the farthest transmission/distribution line) is used. For vegetation communities with taller trees, number feet (number feet on either side of the farthest transmission/distribution line), is used. These two APE widths are proven and field-tested as comprehensive distances to adequately include those areas Utilities are expected to operate within for O&M activities. **The BLM name Field Office Utility ROW Corridor APE is number feet.**

The roads APE dimensions are the current road width (number feet wide), with number-foot berms on either side where applicable, and a number-foot buffer on either side of road prism or berm edge. These roads APE dimensions are the same for name Field Offices.

# Paleontological Resource Considerations (PRMP SectionX)

Field Office Special Consideration Areas (FOSCAs) are field office-specific areas that require BLM review and approval of Utility O&M activities prior to work being conducted (O&M Plan Section 3.4). FOSCAs require additional Best Management Practices (BMP) or Resource Protection Measures

(RPM) when certain O&M activities are performed. These O&M activities may be submitted as either Class II or Class III, depending on specific conditions. Please see Table 1 and O&M Plan Appendix X for further information.

The BLM and Utilities use existing paleontological data along with the results from the paleontological resource summary reports (PRMP Section X) to identify Field Office-specific paleontological sensitive areas, where additional RPMs and/or BMPs may be needed. These areas are captured as FOSCAs and are assigned Field Office-specific guidance and recommendations regarding paleontological avoidance measures. Field Office-specific guidance and recommendations are based on the respective geologic unit, along with the nature and context of the specific O&M activity and associated activity methods.

Example table identifying Field Office Special Consideration Areas for Paleo and related activity, BMP/RMP and activity class.

 **Table: Paleontological Resource Field Office FOSCAs**

**FOSCA O&M Activity BMP/RPM Activity Class**

Kettleman Hills Plate Anchor Replacements 1. A paleontological Class III

 Inter-Set Installations monitor will be

 Pole Replacements present during

 Temporary Line Installations augering and

 (Shoo-Fly) excavation

 Tower Replacements