

APPENDIX E
Evaluation and Monitoring Methods

EVALUATION TESTING AND DATA RECOVERY METHODS

The following methods will be utilized to conduct evaluation-testing and data recovery operations for archaeological sites within the San Diego Gas and Electric Company Sunrise Powerlink Project Final Environmentally Superior Southern Route APE. Field methods include site mapping and surface collections in addition to subsurface investigations. Additional site specific data recovery methods will be addressed as necessary through the establishment of Historic Properties Treatment Plans for any site or portion of a site determined eligible for listing on the NRHP and/or the CRHR as stipulated in the text of this HPMP.

SITE MAPPING AND SURFACE COLLECTION

Mapping of the sites will be oriented from a temporary datum point that was georeferenced on the UTM coordinate system accurate to 50 cm with Differential Global Positioning Systems (GPS) equipment. These datum points and the GPS grid will be used to plot shovel tests and other excavations on an aerial map. Site maps will also include the site boundary, natural features, and surface artifacts. Digital photographs will record the general character of each site. At sites with extensive surface components, only diagnostic artifacts or artifact concentrations will be plotted, while all artifacts at sites with smaller surface concentrations will be included on site maps. All surface artifacts from project sites will be collected unless there are over 100 artifacts on the ground surface within the Area of Direct Impact, in which case Controlled Surface Collections will be executed in order to collect a representative surface sample. CSCs of between 1-x-1-m to 20-x-20 m areas within dense concentrations of artifacts or shell will be utilized when a complete surface mapping is not carried out. CSC execution consists of collection of all cultural material on the ground surface within the designated area.

SHOVEL TEST PITS

Shovel test units or pits (STPs) will be used to determine the presence, extent, and structure of subsurface deposits, and assist in the determination of the nature of the sites and site boundaries. Each STP will measure approximately 40 cm in diameter and will be excavated in 10-cm levels until sterile sediment is encountered or the STPs reach approximately 80-100 cm below surface (the limits of hand shovel excavation). STP excavations will be conducted on grids until negative STPs bound the surface manifestation of the site, providing subsurface boundaries. Sediment will be screened through 1/8-in. hardware mesh, and all cultural material will be collected, bagged, labeled, and transported for processing. Results will be documented on STP forms, which include provenience location, artifact inventory, information on sediment type and color, termination depth, and general observations. All STPs will be backfilled.

AUGER PROBES

Hand augers may be used in some cases for subsurface testing within STP excavations when STP excavation is unable to encounter culturally sterile sediment. The hand augers remove a column of matrix 10 cm in diameter. The auger barrel itself when full removes about 25 vertical cm of matrix at a time, depending on the compaction and mixture. Sediment will be screened through 1/8-in. hardware mesh, and all cultural material will be collected, bagged, labeled, and transported for processing in a manner consistent with STP excavation. Results will be documented on auger forms, which include provenience location, artifact inventory, information on sediment type and color, termination depth, and general observations.

SHOVEL SCRAPE UNITS

The implementation of shovel scrape units (SSUs) will determine the presence, extent, and structure of subsurface deposits, and assist in the determination of the nature of the sites and site boundaries in areas with little to no sedimentation. Each SSU will measure between 2-x-2-m to 5-x-5-m in size, and extend to a maximum of approximately 10-20 cmbs, dependent on substrate conditions. Sediment will be screened through 1/8-in. hardware mesh, and all cultural material will be collected, bagged, labeled, and transported for processing. Results will be documented on SSU forms, which include provenience location, artifact inventory, information on sediment type and color, termination depth, and general observations. All SSUs will be backfilled to the extent possible.

UNIT EXCAVATIONS

Excavation of 1-x-1-m units will be used to determine the character, structure, and integrity of subsurface cultural deposits at the sites. Units will be subjectively placed in areas where there is a relatively strong likelihood that such deposits are present based on surface observations and the results of STP excavations.

The placement of all 1-x-1-m units will be oriented on a north-south axis and situated on a subjective basis. Each unit datum will always be the southwest corner. In the absence of distinct stratigraphic layers, excavation will be conducted in 10-cm surface-parallel levels. If stratigraphic changes are sufficiently distinct to be discernible, excavation will proceed by observable natural levels. Cultural features, if noted, will be excavated separately. Unit records compiled for each level will include provenience, sediment description and disturbance, artifact inventory, and excavator's observations. Excavated deposits will be sieved through 1/8-inch hardware mesh. Cultural materials, including prehistoric lithic tools, flaked lithic debitage, ceramics, animal bone, and marine shell, will be collected, bagged, and labeled. Historic and modern cultural items also will be retained. Charcoal will be collected when it occurs in concentrations potentially useful for radiocarbon dating or in pieces large

enough for plant source identification. Small charcoal samples will be collected for accelerator dating. Fire-affected rocks will be counted, but not collected.

As a general rule, units will be excavated to clearly sterile subsoil. Exceptions may occur in cases in which the cultural deposits are very diffuse due to downward movement by rodents. It may be necessary to expand the unit size in the event that a feature is encountered that requires more complete delineation or sampling to meet the objectives of the test program. Unit expansions will involve only the minimal area necessary for such purposes. Unit expansions will be excavated in the same manner as the original adjoining units, but will have a separate recording sequence.

After excavation of a unit is complete, a stratigraphic profile of at least one sidewall will be drawn, the unit will be photographed, and it will be backfilled. Backfilling may be postponed if expansion of the unit is contemplated or if further reference to the unit's stratigraphy is needed. Any unit left open overnight will be covered with a plywood sheet and enclosed by red fencing as a safety measure.

LABORATORY METHODS

The procedures to be used in the initial processing of recovered material include the cleaning (as appropriate), sorting, and cataloging of all items. All items will be individually examined and cataloged according to class, type, and material, counted (except for bulk invertebrate and vertebrate remains) and weighed on a digital scale. Very large items, such as oversize ground stone, will be weighed on a dial scale. All coded data will be entered into Microsoft Access 2000. Data manipulation of a coded master catalog combining all sites will be performed in Microsoft Excel. While all data is initially entered as coded data into Access, it is later converted to text before export into Excel for analysis.

The cultural material will be sorted during cataloging into following categories: twelve classes of prehistoric artifacts, two classes of ecofacts (i.e., vertebrate and invertebrate), a single class of ethnohistoric items, historic and modern items, and five classes of samples as necessary. The prehistoric artifact classes include debitage, cores, utilized flakes, retouched flakes, bifaces, modified cobbles, percussing tools, ground stone, ceramics, bone artifacts, shell artifacts, and miscellaneous items.

All flaked stone will be separated by material types. Cores will be separated by platform variability into multidirectional, unidirectional, bipolar, and bifacial types. Debitage, including both flakes and angular debris, will also be sorted by cortical variation (primary, secondary, and interior) during cataloging. The classification of flaked stone tools will be determined by the type and technology of modification. Utilized flakes will be identified based on the presence of macro and/or microscopic use-wear. Retouched flakes include scrapers, graters, non-standard retouch, and other retouched pieces. Length, width, and thickness measurements will be taken on all modified stone, including cores, using a digital caliper.

Percussing tools, including hammers and abraders, will be defined based on their morphology and the type of macroscopic use-wear they exhibit. Ground stone artifacts will be classified as to type, including hand stones, milling stones, pestles, and mortars or stone bowls. Length, width, and thickness measurements will be taken for all items.

The stone tools (both flaked and ground) and cores will be individually analyzed for morphological, technological, and functional attributes in an attempt to gain insight into issues such as prehistoric adaptive strategies, site activities, chronology, and subsistence-settlement patterning. A selected range of traits will identify technological attributes from debitage, specifically bifacial and core technologies in conjunction with their reduction stages. These traits include a debitage typology, along with an attribute analysis for platform types, amount of dorsal cortex, size, weight, and completeness.

Ceramics will be sorted by ware, type, and vessel fragment type (i.e., rim or body). The ecofact classes consist of vertebrate and bulk shell specimens. Bulk shell will be sorted

according to taxon during cataloging and coded in a separate Excel database. Modified bone and shell will be separated from the unmodified bone and shell assemblages.

Historic items will be cataloged and identified as specifically as possible. In cataloging the assemblage, historic artifacts will be assigned to functional categories through which it would be possible to identify activity patterns, socio-economic class, ethnicity, gender, age and consumer preferences. These functional categories include architecture (nails, window glass, roof tiles), food preparation (bowls, jars, flatware), consumption (soda and beer bottles, food cans), household-related items (furniture parts, lighting), personal items (clothing parts, toiletries), and transportation (wagon or car parts). Animal bone is classified by species, cut, economic value, butchering methods and cooking patterns. Temporally diagnostic artifact features, including bottle finish, glass color, tin can type, and makers mark, will be recorded and analyzed for potential date ranges. Ethnohistoric items will be cataloged and coded according to type and material.

FIELD DOCUMENTATION FORMS

- Environmental Monitoring Daily Report
- Monitoring Log
- CSC Form
- STP Form
- Auger Form
- Unit Level Form
- Stratigraphic Profile Form
- Feature Form

ASM Stratigraphic Monitoring Log

ASM Project Name: _____

ASM Project Number: _____

Date: _____

Name of Monitor(s): _____

Site No./Location: _____

Type of Excavation: trenching coring other: _____

Size (area/diameter): _____

Cultural Materials Observed: Artifacts (flakes, lithic tools, pottery, etc.)? yes no
Collected? yes no Specify: _____

Other Cultural Materials Observed (shell, bone, FAR, etc.)? yes no
Collected? yes no Specify: _____

Proportion of Spoils Inspected for Cultural Materials: 1% 10% 50% 100%
 other: _____

Screen-sorted? yes no

Stratigraphic Observations:

Depths	Color	Character (e.g., "silty sand," etc.)

Photos: _____

Comments: _____



Feature Form

EXCAVATORS _____

DATE ___ / ___ / ___ UNIT NO. _____

Top Elevation:

Bottom Elevation:

Associated Artifacts, Ecofacts, and Manuports (within and adjacent to):

Special Samples Taken - Flotation & Charcoal (Sample #s, Location, Etc):

Degree and Nature of Disturbance and Structural Integrity:

Description (Discuss shape, size, level at which feature originated, other distinguishing characteristics, and relationship to adjacent cultural deposits):

ASM PROCEDURES MONITORING FORM

The following document outlines ASM's procedures for archaeological monitoring

Monitors are required to comply with the following procedures and regulations:

Safety:

- Wear hardhat, reflective vest, and work boots at all times they are present on the job site
- Follow all safety precautions required by on-site safety officers
- Report any hazards or unsafe behavior taking place on the job site to both ASM and the on-site safety officer
- Use their good judgment on the jobsite

Harassment:

- Report any incidents of harassment to ASM immediately

Duties:

- Be on the jobsite during all required excavation or earthmoving activities unless otherwise instructed by ASM
- Observe all earthmoving activity
- Keep detailed notes on daily activities

IN THE CASE OF POTENTIAL ARCHAEOLOGICAL DEPOSITS BEING FOUND

- Halt earthmoving activity immediately and restrict activity in the area
- Inform construction foreman or site supervisor that work has been halted
- Contact ASM for further instruction on how to proceed
- Inform site supervisor on what will happen from that point
- Proceed per PI's instructions
- In the case of noncompliance, contact ASM immediately

Signed

Dated

Signed

Dated

Site: _____

STP No.: _____

Recorded by: _____

Date: _____

Excavators: _____

Size: _____ cm diameter Maximum Depth: _____ cm Provenience: _____

Dry Screen Size: 1/4" 1/8" 1/16"

Depth	Sediment Description (type, color, texture, compactness, etc.)

Depth	Prehistoric Artifacts (#)									In-vertebrates (#)	Vertebrates (#)	F.A.R. (#)	Charcoal (y/n)	Modern/Historic (#)		
	debitage	biface (proj. point)	uniface	core	ground stone	metate	ceramics									

Comments (note changes in artifact distribution, sediment and prominent faunal types): _____

Site: _____ Unit No.: _____ Level: _____ - _____ cm Deposit/Stratum: _____

Date: _____ Recorded by: _____ Excavators: _____

Size: _____ x _____ m Unit Datum: NW NE SW SE Provenience: _____

Dry Screen Size: 1/4" 1/8" 1/16" Attachments: unit plan form continuation sheet

Samples Collected: flotation sample (depth _____ cm; attach a plan view illustrating location) fine fraction
 soil sample radiocarbon wet screen

Sediment Description: _____

Munsell: _____

Disturbance: _____

Prehistoric Artifacts (#)	Faunal Remains (#)	Modern/Historic (#)
_____ debitage _____ bifaces _____ unifaces _____ cores _____ manos _____ metates _____ percussing tools _____ beads _____ ceramics _____ _____ _____ _____ _____ no material (sterile)	_____ Invertebrates _____ Vertebrates _____ Fire-Affected Rock (#) (describe rock types and distribution) _____ _____ _____ _____	_____ glass _____ metal fragments _____ wood fragments _____ ceramics _____ _____ _____ Charcoal Sample: _____ Depth: _____ Sample: _____ Depth: _____ Sample: _____ Depth: _____ Sample: _____ Depth: _____

Feature Descriptions: _____

Comments (discuss if relevant faunal & artifact distribution, change from previous level): _____

Photos: Roll No. _____ Frame(s) _____

Roll No. _____ Frames(s) _____

Recommended Qualifications for Native American Monitors by the California Native American Heritage Commission

Desirable Knowledge and Abilities:

1. The on-site monitor/consultant should have knowledge of local historic and prehistoric Native American village sites, culture, religion, ceremony, and burial practices.
2. Knowledge and understanding of Health and Safety Code section 7050.5 and Public Resources Code section 5097.9 et al.
3. Ability to effectively communicate the meaning of Health and Safety Code section 7050.5 and Public Resources Code section 5097.9 et al. to project developers, Native Americans, planners, landowners, and archaeologists.
4. Ability to work with local law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.
5. Ability to travel to project sites within traditional tribal territory.
6. Knowledge and understanding of CEQA Guideline, Section 15064.5 of the California Environmental Quality Act (CEQA) Guidelines, and Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended.
7. Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding of CEQA mitigation provisions, as stated in CEQA Guidelines section 15126.4(b)(A)(B), and through knowledge and understanding of Section 106 of the NHPA.
8. Ability to read a topographical map and be able to locate sites and reburial locations for future inclusion in the Native American Heritage Commission's (NAHC) Sacred Lands Inventory.
9. Knowledge and understanding of archaeological practices, including the phases of archaeological investigation. Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

Requirements:

1. Required to communicate orally and in writing with local Native American tribes, project developers, archaeologists, planners and NAHC staff, and others involved in mitigation plans.
2. Required to maintain a daily log of activities and prepare well written progress reports on any "findings" at a project site (i.e., human remains, associated grave goods, remains, bone fragments, beads, arrow points, pottery and other artifacts).
3. Required to prepare a final written report describing the discovery of any Native American human remains and associated grave goods, and their final disposition. This report shall contain at a minimum the date of the find, description of remains and associated grave goods, date of reburial, and the geographical location of reburial, including traditional site name if known. The report shall include a discussion of mitigation measures taken to preserve or protect Native American cultural features and, if applicable, a comparison with mitigation measures described in the environmental impact report. This report shall be submitted to NAHC after the completion of the project. Information from the report may be included in the NAHC Sacred Lands Inventory.
4. Ability to identify archaeological deposits and potential areas of impact.

Experience:

It is recommended that each monitor/consultant have experience working with Native American cultural features under the guidance of an archaeologist that meets the professional qualifications, as defined in the in the Secretary of the Interior's Standards and Guidelines for archaeology. Letters from an on-site archaeologist should be submitted with a copy of the archaeologist's resume.

Experience and knowledge regarding cultural, traditional, and religious practices can be gained by training from tribal elders. This experience and knowledge may be verified by the submission of such things as copies of contracts, reports, and letters from elders.

Formal education in an appropriate field, such as anthropology, archaeology, or ethnology, may be substituted for experience.

Preference:

It is recommended that preference for monitor/consultant positions be given to California Native Americans culturally affiliated with the project area. These Native Americans will usually have knowledge of the local customs, traditions, and religious practices. They are also aware of the local tribal leaders, elders, traditionalists, and spiritual leaders. Since it is their traditional area being impacted, culturally affiliated Native Americans have a vested interest in the project.