

ENVIRONMENTAL ASSESSMENT, FONSI AND DECISION RECORD

**BLM, Bishop Field Office
351 Pacu Lane, Suite 100
Bishop, CA 93514**

I. EA Number: CA-170-06-60

II. Proposed Action Title/Type:

Plate Boundary Observatory (PBO) Global Positioning System (GPS) Network Rights of Way.

Five 5-6 foot high geophysical data collection monuments and an adjacent solar collector power panel are proposed for authorization as rights-of- ways in five separate locations. All five are analyzed in this environmental assessment. A sixth is proposed as a Temporary Use Permit (TUP) in the Southern Inyo Wilderness Study Area (WSA) (CA-010-056) and is analyzed separately under Environmental Assessment CA-170-06-61 due to its WSA location and governing management policies.

III. Location of Proposed Action:

Five locations are proposed for installation and maintenance of GPS monuments: Antelope Mountain (P650), Granite Mountain (P649A), Blind Springs Hill (P653), Long Valley (aka Fossil Tiltmeter P646), and Chalfant Valley (P651). The following legal descriptions describe the locations of each site:

Site Name	Legal Description
Antelope Mountain	SE 1/4 Sec 4, T1S., R31E., MDM
Granite Mountain	SW1/4 NW 1/4 Sec 36, T1N., R29E.,MDM
Blind Springs Hill	NE1/4 NW1/4 Sec 32, T2S., R32E., MDM
Long Valley	E1/2 NW1/4 Sec 19, T3S., R29E., MDM
Chalfant Valley	NW1/4 NW1/4 Sec 31, T4S., R33E., MDM

IV. Applicant:

UNAVCO Inc.,(aka University NAVSTAR Consortium), 6350 Nautilus Drive, Boulder, Co. 80301

V. Plan Conformance:

The proposed action has been analyzed for its broad effects on the environment in the proponent's statewide Programmatic Environmental Assessment dated January 30, 2006. The BLM California State Office Environmental Review and Decision Record states: "BLM has conducted an independent review of the Proponent's programmatic EA and has determined the programmatic EA is consistent with BLM requirements and is in compliance with NEPA".

Appendix A of the proponent's EA lists the Bishop Resource Management Plan's major resource protection prescriptions the project would conform with when identifying the site specific proposals. Although the programmatic EA identified the Bishop RMP prescriptions and its intent to conform with them, it lacked the site specific implementation measures necessary to meet the identified plan objectives. As a result of this deficiency, BLM Bishop personnel conducted subsequent discussions with UNAVCO representatives to amend the original proposal and identify on-site field measures the BLM would require to fully conform with the plan's prescriptions. In September of 2006, UNAVCO submitted a revised proposal of field actions and locations to install and maintain the proposed facilities to improve conformance with the RMP's objectives.

The proposed action is subject to the Bishop RMP, approved March 25 1993. The proposed action was developed to conform with General Policies, Area Manager's Guidelines, Valid Existing Management, Standard Operating Procedures, Decisions and Support Needs prescribed in the Bishop RMP. The proposed action has been reviewed and modified to conform with the plan.

Finally, an existing Decision Record and associated Environmental Assessment CA - 017-05-65 dated 10/21/05 authorizes the closure and gating of an access road where the Long Valley Site is proposed. UNAVCO has agreed to gate the road to protect its facilities and conform with the aforementioned Decision Record to reduce impacts to nearby sage grouse habitat.

VI. Need for Proposed Action:

The proposed action would improve the retrieval of seismic information on a continental scale, benefiting scientific research, and increasing public safety. It would fill a gap in the existing Plate Boundary Observatory project network by locating measurement instruments throughout California. Through the use of modern geophysical observational and monitoring equipment and satellite telecommunications technology, the proposed geodetic network would provide round-the-clock observational data describing the geophysical condition of the state, as well as the western United States and Alaska. UNAVCO proposes an initial land use agreement right of way for ten years with the option to renew for an additional ten years.

VII. Description of Proposed Action:

UNAVCO proposes to install five continuously operating GPS reference stations (monuments) to measure ground shifts by volcanic and tectonic processes on land managed by the Bureau of Land Management, Bishop Field Office. See Appendix 1 for diagrams/photos of the proposed facilities.

Each site would consist of installation and maintenance of two measurement instruments: one monument would collect tectonic data based on crustal movement and the other would collect solar energy to power the first monument. The power source would also contain gel type batteries designed to have no adverse environmental impact. Both instruments would be connected by electrical conduit buried about a foot deep. The instruments would be about 20 - 30 feet apart. The Antelope Mountain site would be the exception where the antenna would be a maximum of 13 feet high due to snow and high winds. The height of the two monuments would be 5-6 feet maximum. The short term construction disturbance would be 300 square feet for each site. The monuments, where technically feasible, would be painted earth tone colors to blend in with the nearby environment. Portions of the monuments such as the solar panel and GPS data collector cannot be painted without impairing their operational capability.

Two of the proposed monuments would be the "short" drill-braced type and three would be the "deep" drill-based type. The short drill based monuments would be located at Antelope Mountain and the Blind Springs Hill sites, while Granite Mountain, Long Valley, and Chalfant Valley would be deep drilled since the necessary bedrock anchor points are further below the surface. The short drill sites would be anchored by rods or pipe to a depth of about 6 feet while the deep drill sites would be a maximum of 35 feet deep. The holes would range from 2 to 5 inches in diameter. All subsurface cuttings would be spread uniformly on the nearby access road. No drilling fluids would be used. Concrete would be used to secure the piping in the holes. The holes for the short drill sites would be hand drilled while the three deep drill braced holes would require a drill rig.

Some vegetation, about 1 to 5 individual shrubs would be removed to install and anchor the devices and bury the electrical wiring. The track mounted drilling rig would require cross-country access into the Granite Mountain site, the Long Valley site, and the Chalfant Valley sites to drill the deeper holes. Otherwise, all vehicle use would be on existing roads. The expected long term direct impact area for each site would be about 2.5 square feet where 1- 5 shrubs would be removed to accommodate the facilities themselves.

Each site would take about 2 days to a maximum of 5 days for installation. The proponent would notify the BLM realty specialist 72 hours prior to construction in order to monitor the project. Annual maintenance would be conducted one day per year to ensure the facilities are operating properly.

Pertinent proposal information for each site and map locations are addressed below.

Antelope Mountain and Blind Springs Hill Sites

Access to the Antelope Mountain and Blind Springs Hill site would be by foot from where the existing road access ends at each location i.e. 60 feet for the former and 200 feet for the latter. No cross-country vehicle access would occur at these sites. A few plants would be removed to install the facilities with an expected long term direct impact area of about 2 square feet although the facilities would be located within an overall area of about 800 square feet each.

The proposed facilities for both sites would be installed before 11/1 or after 4/30 to comply with the Casa Diablo Mule Deer Seasonal Use Restriction as prescribed in the Bishop RMP. Additionally, any subsequent maintenance conducted within the seasonal use restriction period would be limited to a maximum length of one day in order to conform to the seasonal use restriction. Facilities for these two sites would be installed first.

Granite Mountain and Long Valley Sites

Access to the Granite Mountain and the Long Valley sites would be by a tracked drill rig to drill the 35 foot holes into the bedrock. A six ton truck would also be used to haul equipment to the site.

Access to the Granite Mountain Site would be about 15 feet from where the existing access road ends to the installation site; the Long Valley installation would occur about six feet from the existing road. Cross country vehicle use to the Granite Mountain and Long Valley site with the tracked drilling rig would occur on 4' by 8' plywood sheets laid on the vegetation to reduce shrub mortality from the drill rig's track impacts. Shrubs would be crushed but not churned up from this cross country access technique. Both the drill rig and the truck would be allowed into and out of the site only one time to keep vegetation impacts to a minimum.

The proposed facilities for the Granite Mountain site would be installed before 5/1 or after 6/30 to comply with the Bishop RMP's Sage Grouse Seasonal Use Restriction within two miles of existing sage grouse leks located in proximity of the proposed site.

The proposed facilities for the Long Valley site would be installed before 11/15 or after 6/30 to meet the Bishop RMP's prescription to provide seasonal protection within 2 miles of existing sage grouse leks, a snowmobile use prohibition in sage grouse wintering areas, and a yearlong protection prescription to maintain sage grouse species and habitat integrity of leks located within 1/3 mile of the proposed facility. The facilities would be installed up to six feet from an existing access road. The drill rig would drill the anchors for portions of the monuments from the existing access road, keeping the

facility footprint and vegetation removal to a minimum. Cross-country vehicle use from the drill rig for the back side of the monuments would be done on 4' by 8' plywood boards with the rig going into the site only one time to keep vegetation impacts to a minimum. Shrubs would be crushed but not churned up from this cross country access technique. The equipment truck would remain on the road and require no cross country use.

The Long Valley project would be installed immediately following the Blind Springs Hill and Antelope Mountain sites. Additionally, UNAVCO would install an earth tone colored gate to protect its facilities at the junction of Little Antelope Valley Road and the road to the proposed site. This would close about 0.16 miles of public access additionally protecting a USGS Right of Way that exists in this location. This road has been authorized for closure under a prior Decision Record associated with EA CA -017-05-65 dated 10/21/05. The purpose of the authorized road closure is to protect associated sage grouse habitat as per RMP direction.

Additionally, any subsequent maintenance conducted within the seasonal use restriction periods for the Granite Mountain and Long Valley locations would be limited to a maximum length of one day in order to conform to the seasonal use restrictions for these sites.

Chalfant Valley Site

Access to the Chalfant Valley site would occur about 30 feet from where the existing access road ends. The site is within feet of private land and in the absence of an official comprehensive cadastral survey, the proponent has received a letter of permission authorizing the site on his private land should a future survey identify it as such.

Cross country vehicle use with the tracked drilling rig would occur on 4' by 8' plywood sheets laid on the vegetation to reduce shrub mortality from the drill rig's track impacts. Shrubs would be crushed but not churned up from this cross country access technique. Both the drill rig and the truck would be allowed into and out of each of the sites only one time to keep vegetation impacts to a minimum.



(A)



(B)

Figure 1 - Drilling a Short Drill-Braced Monument (A) and Final Site (B)



(A)

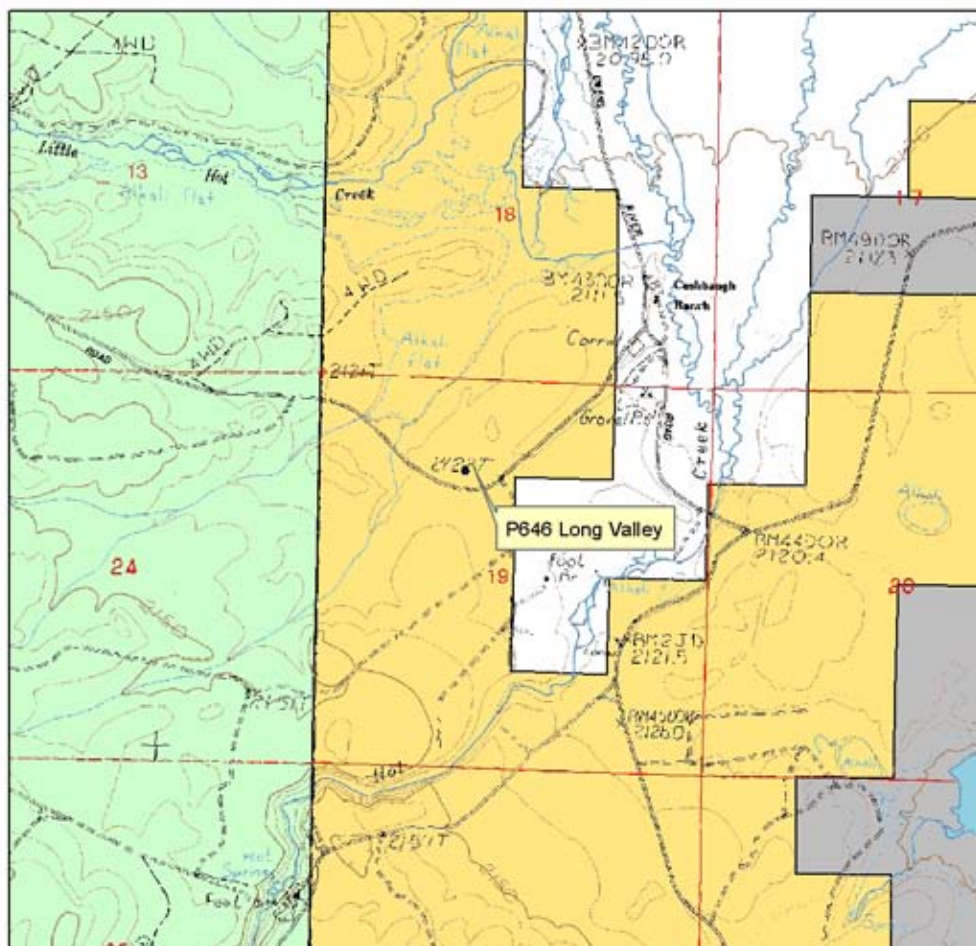


(B)

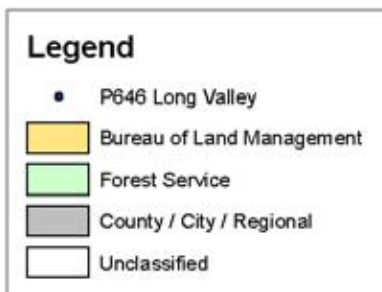
Figure 2 Drilling a Deep Drill-Braced Monument (A) and Final Site (B)

LONG VALLEY

UNAVCO Plate Boundary Observatory



USGS 7.5' Quad: Whitmore Hot Springs. T3S; R29E; SW1/4 of NE1/4 of NW 1/4 Section 19.

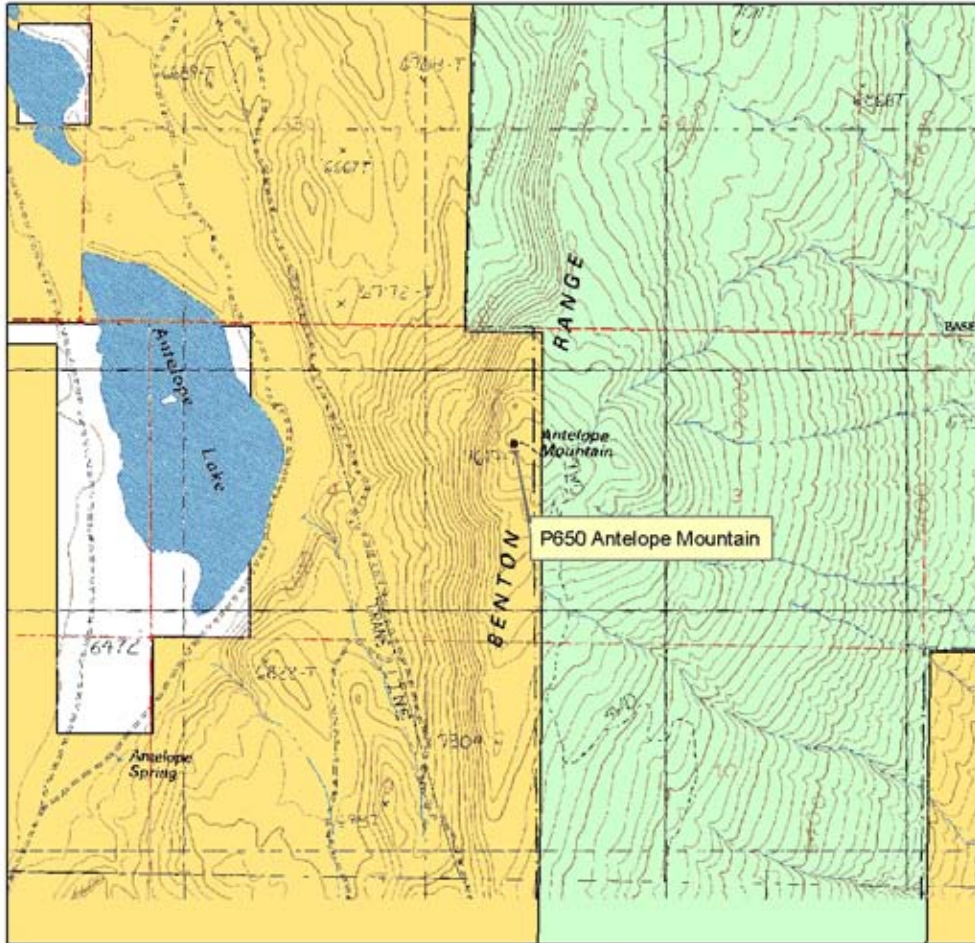


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ANTELOPE MOUNTAIN
UNAVCO Plate Boundary Observatory



USGS 7.5' Quad: River Springs. T1S; R31E; E1/2 of SE1/4 of NE 1/4 Section 4.

Legend

- P650 Antelope Mountain
- Bureau of Land Management
- Forest Service
- County / City / Regional
- Unclassified

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BLIND SPRINGS HILL
UNAVCO Plate Boundary Observatory



USGS 7.5' Quad: Hammil Valley. T2S; R32E; NE1/4 of NE 1/4 of NW 1/4 Section 32

Legend

- P653 Blind Springs Hill
- Bureau of Land Management
- County / City / Regional
- Unclassified

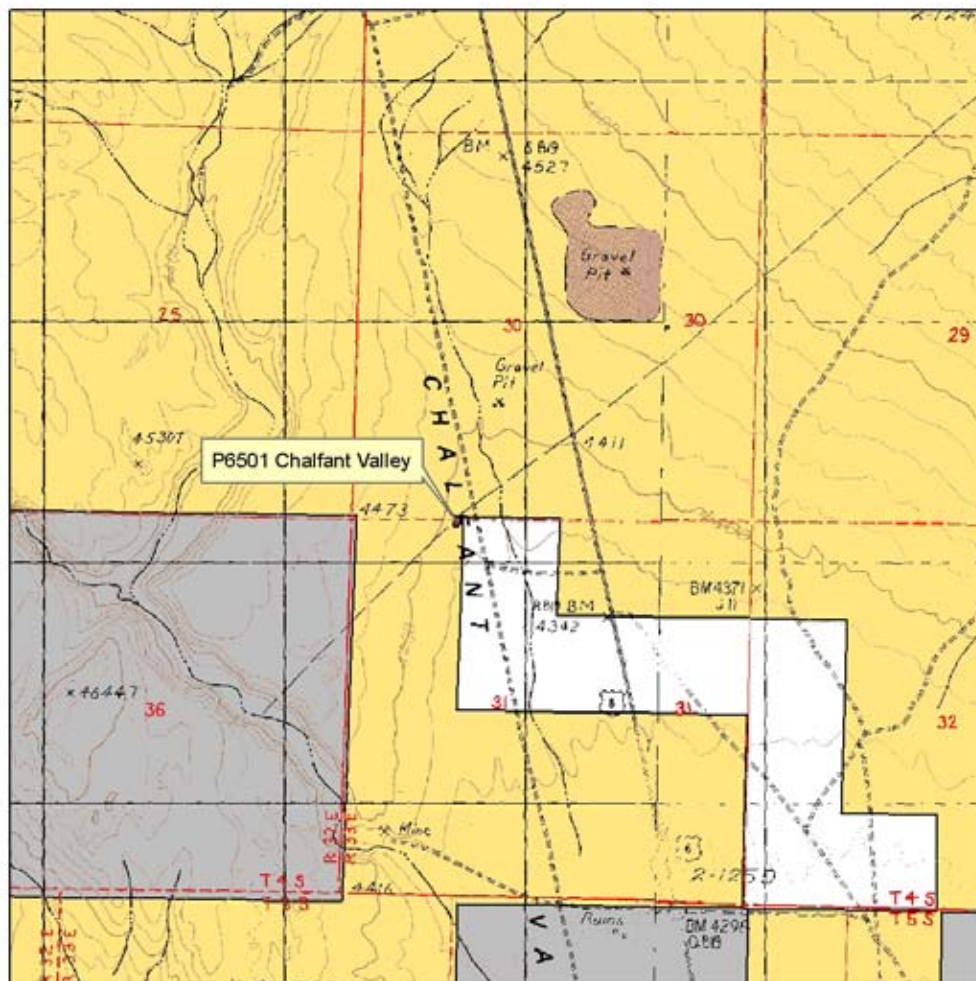
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CHALFANT VALLEY

UNAVCO Plate Boundary Observatory



USGS 7.5' Quad: Chidago Canyon. T4S; R33E; NW1/4 of NE1/4 of NW1/4 Section 30

Legend

- P651 Chalfant Valley
- Bureau of Land Management
- County / City / Regional
- Unclassified

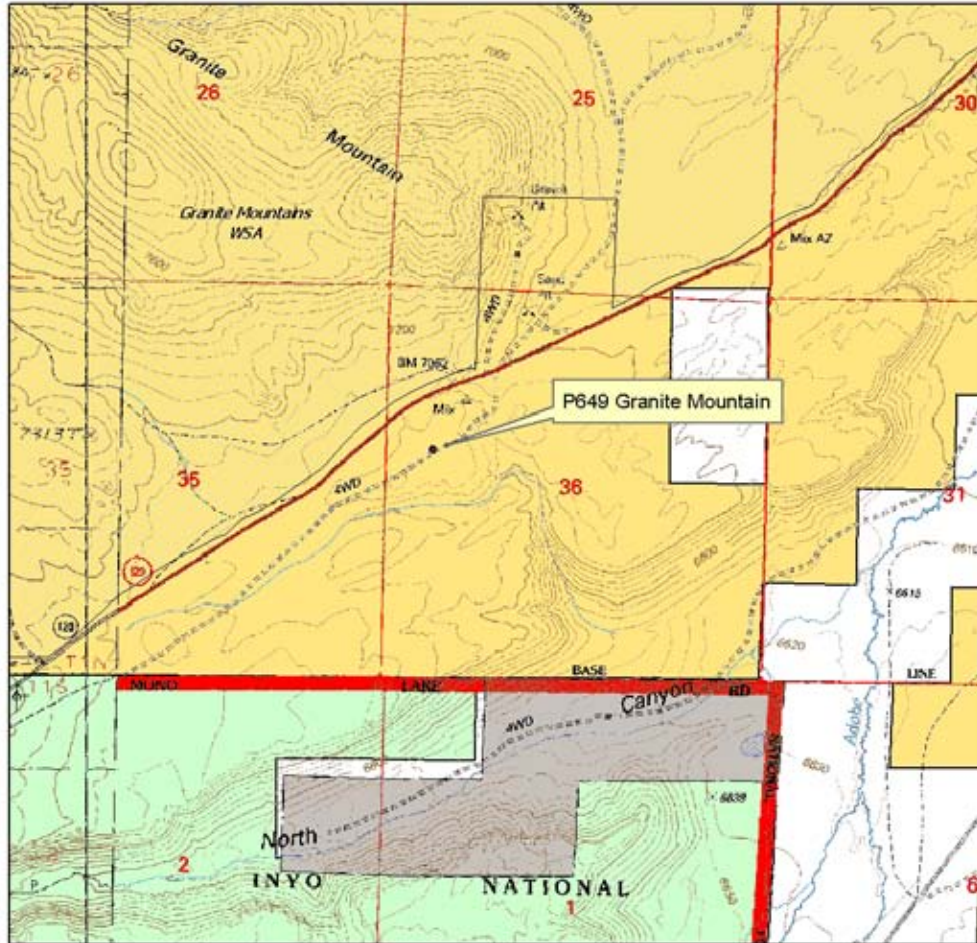
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GRANITE MOUNTAIN ALTERNATIVE

UNAVCO Plate Boundary Observatory

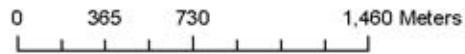


USGS 7.5' Quad: Indian Meadows, T1N; R29E; SW1/4 of SW1/4 of NW 1/4 Section 36.

Legend

- P649 Granite Mountain Alternative
- Bureau of Land Management
- Forest Service
- County / City / Regional
- Unclassified
- ▨ Wilderness Study Area

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VIII. No Action Alternative

The No Action alternative would maintain the existing sites in their present condition. No facilities would be developed on the sites. The proponent would be forced to look elsewhere for other research sites.

IX. Affected Environment

Air Quality

The proposed action is not within the Mono Basin-Owens Valley federal non-attainment area.

Areas of Critical Environmental Concern (ACECs)

None of the five proposed sites are proposed in an ACEC.

Cultural Resources

The proposed project sites were subjected to a Class III, complete, survey during summer of 2006. The area of potential effect (APE) was surveyed as well as a minimum 10 meter buffer. Each survey block measured 40x40 m in area. No cultural resources were identified within any of the project APEs. For more detail on the evaluations see Cultural Resources Inventory Report: CA-170-06-30.

Environmental Justice

The proposed action does not take place in any low income or minority group vicinity. Each site is located in areas of vacant public land.

Farmlands, Prime or Unique

The proposed action does not take place on any Farmlands.

Hazardous Materials

The proposed action is not within a hazardous materials site. No known hazardous materials exist at any of the proposed sites. The proponent's proposed facilities contains no hazardous materials.

Invasive, Non-Native Species

No invasive, non-native plant species occurs at any of the proposed sites except the Blind Springs Hill site where cheat grass has occupied portions of the area. The existing plant communities integrity and lack of prior disturbance at other sites has prevented the establishment and proliferation of weed species.

Minerals

There is no current mining activity or known claims occurring at the proposed sites.

Recreation Opportunities

Recreation at the proposed location consists of varied dispersed use. Vehicle users exploring semi-primitive backcountry roads and trails, hiking, and wildlife viewing are common. No intensive recreation use activity occurs near any of the proposed locations.

Threatened and Endangered Plants/Animals

There are no known Threatened or Endangered species or habitats within the proposed footprints and/or access routes into any of the sites.

Visual Resources

The proposed locations span Visual Resource Management class objectives of Class II to III. None of the proposed locations lies near a key observation point with a viewshed such as a federal/state/county road or recreation use facility where the proposals would be seen by the casual observer.

Vegetation

The dominant plant communities within the scope of the proposed sites are mixed desert scrub, shadscale scrub and sagebrush/bitterbrush. Shadscale scrub is dominated by shadscale (*Atriplex confertifolia*) and budsage (*Artemisia spinescens*) with a sparse (15% or less) understory of desert needlegrass (*Achnatherum speciosum*) and Indian rice grass (*Achnatherum hymenoides*). Additional species include, but are not limited to: hop sage (*Grayia spinosa*), horsebrush (*Tetradymia canescens* and *T. axillaris*), Nevada ephedra (*Ephedra nevadensis*), winter fat (*Krasheninnikovia lanata*), yellow rabbitbrush (*Chrysothamnus naseosus*), green rabbitbrush (*Chrysothamnus teretifolius*), and gold bush (*Ericameria cooperi*).

Sagebrush/bitterbrush communities are comprised of (*Artemisia arbuscula*, *A. tridentata* ssp. *vaseyana*, *A. tridentata* ssp. *tridentata*, and *A. tridentata* ssp. *wyomingensis* with bitterbrush (*Purshia tridentata* var. *tridentata*) as a co-dominant. Understory grasses such as Indian rice grass (*Achnatherum hymenoides*), desert needlegrass (*Achnatherum speciosum*), needle and thread (*Hespirostipa comota*), western

needlegrass (*Achnatherum occidentale*), and Thurber's needlegrass (*Achnatherum thurberianum*) make up 15-20% of the understory cover.

Water Quality/Wetlands/Riparian

None of the proposed sites are located in proximity to any spring, stream, pond, lake or other water body or source.

None of the proposed sites are located in or immediately adjacent to any wetland or riparian habitat.

Wildlife Habitat

The proposed project sites provide habitat for a variety of wildlife species including a variety of resident small mammals and birds associated with sagebrush-steppe and mixed desert scrub plant communities. Specific species of management concern identified in the Bishop RMP and known to occupy habitat in the vicinity of the proposed project sites include sage grouse (*Centrocercus urophasianus*) and mule deer (*Odocoileus hemionus*).

Sage grouse, a BLM California Sensitive wildlife species, occurs in the vicinity of both the Long Valley and the Granite Mountain sites. Both sites are located within 2 miles of known leks and provide suitable nesting habitat. The Long Valley site is located 0.25 miles of the Lek 8 complex and provides suitable near lek roosting habitat. Both sites also exhibit suitable sage grouse winter habitat characteristics and may be used by sage grouse during the winter period depending upon snow cover conditions. The Blind Springs Hill site consists of rocky, low sage/perennial grass habitat which is typical of sage grouse roosting habitat in the region. The Blind Springs Hill site vicinity was surveyed for signs of sage grouse roosting or other use during the fall of 2004. No evidence of sage grouse use was documented.

The Blinds Springs Hill and Antelope Mountain sites are located within critical winter and migratory habitat for the Casa Diablo mule deer herd. Population numbers in this herd have declined substantially over the past 15 to 20 years and several traditional wintering areas currently support low deer numbers. Blind Springs Hill is one of the few areas within this herd's winter range where larger concentrations of deer are still encountered during annual winter and early spring helicopter surveys conducted by the California Department of Fish and Game (Tim Taylor, CDFG, personal communication). In addition, four wildlife drinkers have been installed on Blind Springs Hill to improve water distribution for wintering and migrating mule deer in the general vicinity over the past 15 years. One of these drinkers is located about 400 feet south of the proposed Blind Springs Hill site.

The Long Valley and Granite Mountain sites are also located within potential habitat for pygmy rabbit (*Brachylagus idahoensis*), a BLM California Sensitive wildlife species.

Both sites were surveyed for pygmy rabbit burrows and other evidence of use during the summer of 2006. No evidence of pygmy rabbit burrows or use in the vicinity of the proposed sites was documented.

Wilderness/Wild and Scenic Rivers

The proposed sites do not occur in either wilderness, wilderness study areas, wild and scenic river corridors, or eligible wild and scenic river corridors.

X. Environmental Impacts

The following table applies to resources or elements affected by any of the alternatives described in this Environmental Assessment. Immediately following the table is a further discussion of environmental impacts.

Table 1. Critical Element Table

Critical Element	No Impact	May Impact	Not Present	Rationale
Air Quality	X			The proposed action is not within a federal air quality non-attainment area. The actions would not result in the emission of PM ₁₀ .
ACEC's			X	Resource is not present as per Bishop RMP (BLM, 1993).
Cultural	X			The sites have undergone a Type III intensive surveyed and no cultural resources have been identified.
Environmental Justice			X	No minority or low income groups would be affected by disproportionately high & adverse human health or environmental effects because these proposed actions would not cause adverse health or environmental impacts nor would these actions take place in the vicinity of any such groups.
Farmlands, Prime or Unique			X	Resource is not present as per Bishop RMP (BLM, 1993).
Hazardous Materials			X	Resource is not present nor will be created by the proposed action or alternative.
Invasive, Non-native Weed Species		X		Addressed in Environmental Assessment
Recreation Opportunities	X			Stations located away from recreation sites
T&E Fauna/Flora	X			Any identified T&E plant or animal

				species would be surveyed and avoided prior to project implementation. Projects would be designed to reduce impacts to such identified resources.
Visual Resources	X			None of the proposed site location are near a key observation point
Water Quality/surface/ground water	X			Projects would be designed to ensure no additional opportunity for sediment (the major water quality pollutant) transport in to streams, springs and shallow pond locations.
Wetlands/Riparian			X	Resource is not present as per Bishop RMP (BLM, 1993).
Wild and Scenic Rivers			X	Resource is not present as per Bishop RMP (BLM, 1993).
Wilderness/Wilderness Study Areas			X	For this EA, no project is proposed. See EA # 170-06-061 for a similar proposal in WSA CA-010-056.

Air Quality

Alternative 1: Install PBO Network. The creation of dust may impact site air quality during the construction phase. This would be short term, intermittent and negligible. The PBO stations have no operational emissions, so air quality impacts would not occur past the construction. Vegetation would reestablish in any disturbed areas holding susceptible airborne soils in place.

Alternative 2: No Action. The No Action alternative would have no impact to existing air quality.

Areas of Critical Environmental Concern(ACECs)

Alternative 1: Install PBO Network. No impacts to ACECs would occur because none of the proposed sites would be within these areas.

Alternative 2: No Action. The No Action alternative would have no impact on ACECs.

Cultural Resources

Alternative 1: Install PBO Network. Since no cultural resources were identified within the proposed project sites, there would be no effect to cultural properties as a result of the proposed undertaking. To protect any cultural resources not found on the surface or subsurface, any late, inadvertent discoveries would necessitate a cessation of the project in that location. The Bishop Field Manager and Archaeologist would also need

to be notified to evaluate the late discovery prior to resumption of the project in the discovery location.

Alternative 2: No Action. The No Action alternative would have no impact to cultural resources.

Environmental Justice

Alternative 1: No Action. The No Action alternative would have no impact to minorities or low income groups since none exist near the proposed site locations.

Alternative 2: Install PBO Network. There will be no impacts because the proposed action does not take place in any low income or minority group vicinity.

Farmlands

Alternative 1: Install PBO Network. No impacts would occur to Farmlands because no stations are located on farmlands.

Alternative 2: No Action. The No Action alternative would have no impact to Farmlands

Hazardous Materials

Alternative 1: Install PBO Network. No hazardous materials would be brought on site or produced during operations of the PBO network. No impact would occur.

Alternative 2: No Action. The No Action alternative would have no impact on hazardous materials.

Invasive, Non-Native Species

Alternative 1: Install PBO Network. The proposed activity would expose an approximately 3 - 5 ft. radius of exposed soil per site. Once the site is rehabilitated as per the specific mitigation measures it is unlikely these sites will be at high risk for weed invasion.

Alternative 2: No Action. The No Action would not increase the risk of invasive species into the proposed sites because no ground disturbing activities would occur.

Minerals

Alternative 2: Install PBO Network. The Proposed Action would have no effect on minerals since no activity occurs at the sites.

Alternative 1: No Action. The No Action alternative would have no impact on existing minerals.

Recreation Opportunities

Alternative 1: Install PBO Network. There would be no impact in the recreational opportunities because each site was located to avoid recreation use areas and because of the small size of the PBO station.

Alternative 2: No Action. The No Action alternative would have no impact on recreation opportunities.

Threatened and Endangered Plants/Animals

Alternative 1: Install PBO Network. The proposed action would not impact any threatened or endangered species because these target species do not occur at any of the proposed site locations.

Alternative 2: No Action. The No Action alternative would have no impact on threatened and endangered species

Visual Impacts

Alternative 2: Install PBO Network. No impacts to visual resources would occur because none are located near a key observation point where the facilities would be seen. Additionally, the compact design and minimal facilities' impact to the characteristic landscape is low. However, the stainless steel reflective appearance of the instruments would be immediately visible in the immediate locale. All project sites are in conformance with the Visual Resource Management classes as stated in the Bishop RMP (1993).

Alternative 1: No Action. The No Action alternative would have no impact on existing visual quality.

Vegetation

Alternative 1: Install PBO Network. The Proposed Action would require the removal of several (1-5) native shrub species per site. Shrubs and grasses along the access routes would be crushed and some portions of individual plants would be broken-off. Repeated crushing of vegetation would not occur since site ingress and egress would be limited to one occurrence and would occur on plywood boards.

Alternative 2: No Action. No impact to existing vegetation would occur

Water Quality/Wetlands/Riparian

Alternative 1: Install PBO Network. The proposed action would have no impact on existing water quality or wetland and riparian habitats since they are not located in these sites.

Alternative 2: No Action. The No Action alternative would have no impact on existing water quality/wetlands/riparian.

Wilderness/Wild and Scenic Rivers

Alternative 1: Install PBO Network. *No impact to wilderness, wilderness study areas, wild and scenic rivers, or eligible wild and scenic rivers would occur since none of the proposed sites occur in these areas.*

Alternative 2: No Action. The No Action alternatives would have no impact on existing wilderness, wild and scenic rivers, eligible wild and scenic rivers, or wilderness study areas.

Wildlife Habitat

Alternative 1: Install PBO Network. The proposed action would result in the direct loss of wildlife habitat quality in the immediate vicinity of the proposed sites due to the loss of vegetative cover resulting from project construction. Generally this direct loss of habitat quality would be short term and restricted to the site footprint. Habitat conditions would be expected to improve over the long-term as the vegetation recovered.

The proposed action would also result in some long-term change to habitat structure associated with the presence of the PBO station and solar array. These changes would be most likely to negatively affect sage grouse habitat conditions at the Long valley and Granite Mountain sites.

Project installation and maintenance would result in the temporary displacement and disturbance of wildlife from the project site and the surrounding vicinity. This impact would be short term and limited non-critical use periods by the incorporation of seasonal protections stipulations identified in the proposed action.

No measurable long-term direct loss of wildlife habitat quantity or quality would result from project construction.

Alternative 2: No Action. The No Action alternative would have no impact on existing wildlife habitat conditions.

XI. Cumulative Effects

Cumulative actions consist of about 50 proposed PBO stations located on BLM public lands throughout California, with six proposed on lands administered by the Bishop FO. Five are assessed under this environmental assessment while a sixth one is proposed in a WSA and will be analyzed in a separate environmental analysis (EA 170-06-061). Statewide cumulative effects were analyzed under the programmatic environmental assessment conducted by the proponent in January 2006. This assessment will address those cumulative effects expected to occur on public lands managed by the Bishop FO.

A total of about 1500 square feet of site disturbance would occur for all five sites in the short term while long term impacts, once the sites undergo rehabilitation, would be about 15 square feet total. Up to 25 plants would be removed with brush around the Granite Mountain, Long Valley, and Chalfant construction sites incurring some crushing from cross-country vehicle use which would occur on plywood boards as described in the proposed action. Some short term impact would occur at the sites containing mule deer and sage grouse habitat during construction although this would diminish since the proposed projects would comply with BLM's RMP seasonal protection prescriptions and vegetation would reestablish itself once the project construction is completed.

These projects would cumulatively advance scientific research and knowledge of global crustal movement and improve public notification of natural hazards such as earthquakes.

Reasonably foreseeable future actions, past and present scientific research advancements lead us to believe that in the long term the progression of more precise and compact measurement instruments would replace the proposed facilities and possibly in other locations.

Finally, the proposed action's relationship to past and present research projects improves geophysical scientific knowledge and public safety with little to no individual or cumulative negative impacts to other resources. As a result, the proposed action's cumulative effects anticipated over the next decade within the context of past and present actions would not cause a significant environmental impact throughout the eastern Sierra region on lands administered by the BLM.

XII. Description of Mitigation Measures and Residual Impacts

1. If previously undiscovered surface or subsurface cultural resources are found during project implementation, implementation would be stopped and the Bishop Field Office Archaeologist notified.
2. Except where the project facilities are sited, removal of vegetation within and/or adjacent to ingress/egress route is prohibited.

3. Pressure wash all vehicles, tools, and materials used during project implementation prior to transport to the project site to avoid the spread of noxious weeds.
4. Notify Bishop FO Realty Specialist 72 hours prior to construction of each site for BLM monitors to be present at the project site during construction related activities.
5. Site invasion of weed species, as determined by BLM during post project implementation monitoring, would be hand removed by project proponent up to two years after the project is constructed.
6. Rake and cover exposed bare ground as a result of project implementation activities around and among existing disturbed vegetation to camouflage impacts.
7. Camouflage all access points from view off of existing roads by raking-out of all tire tracks. Shoot pre and post project implementation photos to document effectiveness of this mitigation.
8. BLM would require installation of anti-perch devices on the Long Valley and Granite Mountain sites if future field surveys document unanticipated “tall structure” impacts to sage grouse. If impacts cannot be mitigated BLM may require PBO station removal and site restoration.
9. BLM may require the installation of anti-perch devices on the Blind Springs Hill site if future field surveys document sage grouse use of Blind Spring Hill and any unanticipated “tall structure” impacts. If impacts cannot be mitigated BLM may require PBO station removal and site restoration.
10. BLM will remove young (<15’ tall) pinyon pines invading the basin immediately surrounding the Granite Mountain site to further mitigate potential “tall structure” impacts to sage grouse.
11. Limit shrub removal to five plants per site unless BLM biological on site monitors identify otherwise.

Residual impacts from the mitigation measures would include increased plant restoration, improve wildlife habitat integrity, and protect unknown cultural resources in and around the proposed project sites. The measures are designed to take all prudent actions to comply with the Bishop RMP and enhance the balance of natural resources protection and the authorization of scientific research of natural hazards.

XIII. Implementation Monitoring

Bishop Field Office Staff would direct and monitor project implementation to ensure

conformance with restoration techniques and implementation requirements identified in the proposed action and mitigations.

XIV. Effectiveness Monitoring

Post project monitoring would be conducted as needed to assess the proposed action's and mitigations' effectiveness.

Project monitoring would entail a range of methods to include, but not be limited to photo point establishment, plant cover measurement and recruitment, and wildlife surveys. Vegetation monitoring would be made using standard BLM monitoring methods (BLM Tech. Ref 1730-1). Monitoring report(s) would be attached to the original copy of this document or in the project's administrative record.

XV. References

Bureau of Land Management. 1993. Bishop Resource Management Plan Record of Decision. U.S. Department of the Interior, Bureau of Land Management, California State Office, Sacramento, CA

UNAVCO/Bureau of Land Management. 2006. Plate Boundary Observatory Global Positioning System Network Environmental Assessment and Record of Decision. U.S. Department of the Interior, Bureau of Land Management, California State Office, Sacramento, CA

XVI. Preparer(s):

Anne Halford – Botanist
Mike Holt – Archeologist
Steve Nelson – Wildlife Ecologist
Joe Pollini – Environmental Coordinator
Larry Primosch – Realty Specialist
Rich Williams – Recreation, Wilderness, Visual Resources

Date:

Reviewed By: _____ **Date:** _____
Joseph Pollini, Environmental Coordinator

FINDING OF NO SIGNIFICANT IMPACT/DECISION RECORD

I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. The proposed project to install five seismic monuments to collect geophysical data incorporates protective measures and implementation requirements that substantially reduce the potential for significant environmental impacts. Additional mitigation measures are required to incorporate measures to reduce environmental impacts further than those identified in the proposed action. These mitigations are listed below.

The scientific value related to the research of the proposed project has public safety benefits and enhances human knowledge of the geophysical sciences. The impacts from the project are small and negligible, both individually and cumulatively, especially in consideration of the project's overall benefits. As a result of the environmental assessment, I have determined that the proposed action with the mitigation measures described below would not have any significant impacts on the human environment and that an EIS is not required.

There would be no negative effect on threatened or endangered species as a result of the action.

I have determined that the proposed project is in conformance with the Bishop Resource Management Plan, which was approved March 25, 1993. This plan has been reviewed, and the proposed action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5.

It is my decision to implement the project with the mitigation measures identified below.

Mitigation Measures/Remarks:

The following protective measures would be applied during project implementation to reduce the probability of residual impacts and the need for subsequent mitigation:

General Mitigations:

1. If previously undiscovered surface or subsurface cultural resources are found during project implementation, implementation will be stopped and the Bishop Field Office Archaeologist notified.
2. Except where the project facilities are sited, removal of vegetation within and/or adjacent to ingress/egress route is prohibited.

3. Pressure wash all vehicles, tools, and materials used during project implementation prior to transport to the project site to avoid the spread of noxious weeds.
4. Notify Bishop FO Realty Specialist 72 hours prior to construction of each site for BLM monitors to be present at the project site during construction related activities.
5. Site invasion of weed species, as determined by BLM during post project implementation monitoring, will be hand removed by project proponent up to two years after the project is constructed.
6. Rake and cover exposed bare ground as a result of project implementation activities around and among existing disturbed vegetation to camouflage impacts.
7. Camouflage all access points from view off of existing roads by raking-out of all tire tracks. Shoot pre and post project implementation photos to document effectiveness of this mitigation.
8. BLM will require installation of anti-perch devices on the Long Valley and Granite Mountain sites if future field surveys document unanticipated "tall structure" impacts to sage grouse. If impacts cannot be mitigated BLM may require PBO station removal and site restoration.
9. BLM may require the installation of anti-perch devices on the Blind Springs Hill site if future field surveys document sage grouse use of Blind Spring Hill and any unanticipated "tall structure" impacts. If impacts cannot be mitigated BLM may require PBO station removal and site restoration.
10. BLM will remove young (<15' tall) pinyon pines invading the basin immediately surrounding the Granite Mountain site to further mitigate potential "tall structure" impacts to sage grouse.
11. Limit shrub removal to five plants per site unless BLM on site biological monitors identify otherwise.

Authorized Official: _____
Bill Dunkelberger, Field Office Manager

Date: _____