



## **FINDING OF NO SIGNIFICANT IMPACT**

### **NAVEL SPRING WATER SYSTEM REPAIR AND MAINTENANCE PROJECT DEATH VALLEY NATIONAL PARK, CALIFORNIA and NEVADA**

**January 2014**

The National Park Service (Service or NPS) approves the Navel Spring water rights claim holder's proposed action to repair its water diversion works; relocate, replace, and bury replace its water conveyance pipeline; and replace its water storage tank in the vicinity of Navel Springs in Death Valley National Park. The approved action takes specific measures to protect natural and cultural resources while satisfying NPS obligations under federal law to respond to maintenance requests from an existing pre-1914 appropriative water rights claim holder. The proposed action alternative has been developed to maximize the efficiency and sustainability of the water system while protecting natural and cultural resources in Death Valley National Park.

#### **PURPOSE AND NEED FOR FEDERAL ACTION**

Rio Tinto holds a pre-1914 appropriative water rights claim to Navel Spring, and the NPS has an obligation under federal law to respond to and reasonably regulate requests for maintenance of infrastructure connected with valid existing rights such as this pre-1914 appropriative water rights claim. In addition to this legal obligation, the NPS has identified other purposes for this undertaking. The proposed action would increase public safety by barricading potentially hazardous underground openings, facilitate safe cleaning, maintenance, and security of the water works, secure the underground water collection area from contamination, enhance the long term stability and sustainability of the spring, remove invasive plants from the spring area, and increase water storage capabilities for fire suppression and contemporary and future resident and visitor usage at Historic Ryan Camp, immediately adjacent to Death Valley National Park.

#### **SELECTED ALTERNATIVE**

Based on the environmental impact analysis documented in the *Navel Spring Water System Repair and Maintenance Environmental Assessment* (EA), and with consideration for public scoping comments as well as public comments received following release of the EA, the National Park Service has selected Alternative B: Proposed Repair and Maintenance for

implementation; there are no modifications to Alternative B as was described and analyzed in the EA. All work will be accomplished by the project proponent unless specifically noted otherwise. The selected alternative will implement comprehensive repairs designed to create a sustainable maintenance system for the water collection works at Navel Spring, without expansion of the historic disturbed footprint. The upper adit will be filled and stabilized with pervious cellular lightweight concrete (PCLWC). The pumpability of PCLWC allows for staging of the concrete equipment well away from the immediate area. Approximately 40 cubic yards of material will be pumped in to secure the upper adit.

As a component of the work at the upper adit, the project proponent will remove several palm stumps (*Phoenix dactylifera*) left in place when the NPS felled all above ground palm vegetation from Navel Spring in the course of routine exotic plant management activities. The stumps will be extracted using manual excavation and a winch. The stumps will be loaded onto a truck in the already established staging area and removed from the area for proper offsite disposal. Due to the possible leaching of chemicals into the water catchment area, no pesticides will be used. The area will be periodically inspected for palm re-growth by the project proponent and the NPS, and any re-growth will be treated mechanically by the project proponent.

At the lower adit, the existing portal door and timber sets will be removed by the project proponent to allow for replacement. The replacement portal structure will be composed of two steel sets bolted to two concrete curbs. The sets will be placed on 4-foot centers. The outby (first) steel set will be located approximately 2 feet in from the current brow. This position will provide for protection of the installation from potential flooding. The two sets will be blocked tight to the rock with timber blocking. The opening between the sets will be lagged with timber or composite decking material. A steel door with a shielded lock and continuous hinge will be mounted to a steel door jamb that will be scribed tightly to the surrounding rock. The door and jamb assembly will be secured to the outby steel set. A 4-inch reinforced concrete slab will be placed between the two concrete curbs; this slab will serve as a secure threshold for the door. Two removable dam boards placed into hitches cut into the conglomerate will serve as settling and collection points for the water system. In addition, the adit will be excavated to its original grade and ground support will be added as needed. The area directly outside of the adit will also be excavated to its original grade. A historic mine car track (circa 1950s) in the front of the adit will not be disturbed.

Once the upper adit is stabilized, the lower adit portal structure is complete, and the lower adit is cleaned down to the original grade level, the muck pile at the east end of the adit will be investigated in order to determine its source. Depending on the source of the material the area will be either completely mucked-out, spiled through (ground support method to mine through caved ground), or left as is. If there is more adit beyond this area it will also be cleaned out

down to original grade. All native material removed from the adit during construction and clean-up will be spread evenly in the wash bottom below the lower adit.

Death Valley National Park staff will replace the pipe to the east drinker of the existing wildlife water provisioning device, coordinating with the project proponent to ensure that pipe will be installed prior to the permeable concrete application in the adit. In consultation and agreement with the water rights claim holder, Death Valley National Park may in the future provide additional supplemental water to sheep if water availability is reduced to the point where sheep are water stressed, as indicated by: 1) reduction in the amount of available water, 2) ewes with lambs visiting the site and behavioral demonstration of stress in these individuals, 3) sheep mortality at the site or in the locality associated or attributable to water deprivation. Existing basins may be stabilized, repaired, or replaced as required.

The current degraded pipeline is a 2-inch high-density polyethylene (HDPE) line, installed between 1990 and 1991, which runs from slightly inside the portal door of the lower adit to the 10,800 gallon water storage tank 0.8 mile west of the spring. To mitigate visual impacts as well as to improve the system, two new fusion (heat) welded HDPE pipelines will be buried 18 inches deep in a trench along the center line of the Navel Spring access road. One pipeline will be used for water conveyance and the other will be held in reserve as a spare in case of pipeline failure. The older (non-historic) HDPE pipeline will be removed and disposed of as part of the project.

The existing water storage tank will be removed and replaced with a 33,788 gallon capacity steel tank, consistent with the size of the historic water tank. The replacement tank will be a 26' – 8 15/16" diameter by 8' – 1/2" high bolted steel 33,788 gallon potable water tank set on an engineered concrete ring foundation. The tank will be manufactured to A.W.W.A. D103-09 standards and be factory-coated inside and out (exterior would be "Superior Sand" color, which has been determined by the NPS to blend in with both the natural and cultural landscape). To minimize impacts to cultural resources the replacement tank will be placed east of the existing tank in an area of existing ground disturbance, and the historic timber tank foundation will be left in place. To alleviate visual impacts, two or three native mesquite trees (with a Death Valley genotype) will be planted in front of the tank; tank overflow will water these mesquite trees.

The selected action alternative will specifically prohibit the walking of dogs past the gate on the Navel Spring access road and prohibit them from Navel Spring, for the protection of sensitive wildlife including bighorn sheep. The closure to dogs will be accomplished by the NPS and noted in the Superintendent's Compendium. A "no dogs" sign will be posted on the Navel Spring access road gate by the NPS. The selected action alternative will not prohibit human foot traffic to Navel Spring.

The anticipated work schedule includes approximately four weeks of work at the spring proper, three weeks of work at the tank locale, and three weeks of work burying the pipeline. The construction activities at the spring and the pipeline burial will occur after October 1 and before March 1 to mitigate impacts to local bighorn sheep populations and migratory birds. The tank replacement will occur as soon as practicable, subject to issuance of Special Use Permit for the scope of work described herein.

## **OTHER ALTERNATIVES CONSIDERED**

One other alternative was considered in the EA in addition to the selected alternative.

Alternative A, the No Action Alternative, would allow for a continuation of ad hoc maintenance practices currently in place without a plan for stabilization or replacement of failing infrastructure. At Navel Spring, the water collection system would continue to require periodic cleaning and inspection, with a potential for adit collapse or failure. At the lower adit, the project proponent would continue to manually excavate and remove newly deposited gravels after flood events. In addition, personnel would maintain an existing trench in front of the lower adit in effort to prevent surface waters from entering and contaminating the underground collection area. The collection sump would need to be periodically cleaned of mud and debris, continuing a Ryan personnel safety issue. To accomplish enclosure from the adit, chicken wire would be added on an ad hoc basis to the space between the steel door and the sides of the adit as the ground continues to erode, perpetuating a public safety issue. The upper adit would be periodically monitored for on-going ground failures and potentially adverse effects to the lower adit. The date palm stumps would remain in place, with this exotic species resprouting and preventing the return of the Navel Spring area to a more natural habitat. The no-action alternative would allow for the inspection and repair of the pipeline on an ad hoc basis but would not address the freezing of the pipe in the winter nor the vapor-locking and stoppage of flow in the summer. The no-action alternative would not include water tank replacement; instead, there would be continuing attempts to repair the existing corroded and leaking water storage tank, resulting in potentially unsafe confined space work.

## **RATIONALE FOR SELECTED ALTERNATIVE**

Rio Tinto holds a pre-1914 appropriative water rights claim to Navel Spring and the NPS has an obligation under federal law to respond to requests for maintenance of infrastructure connected with valid existing rights, and to reasonably regulate the footprint of development related to these rights. The selected action addresses outstanding deferred maintenance issues associated with the existing water diversion and storage infrastructure while protecting park resources and enhancing public safety. Removal of exotic invasive date palm stumps and their resprouts will provide a benefit to the spring system and to wildlife such as bighorn sheep. Bighorn sheep will

also benefit from the closure of the area to dogs and the maintenance of the water provisioning system. In terms of public safety, the upper and lower adits at Navel Spring are poorly secured and unstable. The upper adit is collapsing underground and may be weakening the stability of the cliff immediately above the portal. Its broken wire rope netting closure is insufficient to deter public access into the opening. The lower adit, where water collection occurs, is subject to contamination. Its steel door is in poor condition and the ground above the door has eroded sufficiently to produce a gap of several inches allowing wildlife to enter and potentially contaminate the water collection area. The selected action will remedy these outstanding public safety concerns and protect park resources while providing for the repair of the water diversion system in its historic footprint.

### **Environmentally Preferred Alternative**

As documented in the EA, Alternative B: Proposed Repair and Maintenance, is the environmentally preferred alternative because it promotes the balance of humans and the environment, providing for the improvement of a desert spring habitat, protecting cultural and natural resources, and enhancing public safety while meeting the obligations of the NPS to provide for the reasonable maintenance of a water system associated with a pre-1914 appropriative water rights claim. The environmentally preferable alternative is the alternative that will promote the national environmental policy expressed in NEPA [Sec. 101(b)], and specifically:

- **fulfills the responsibilities of each generation as trustee of the environment for succeeding generations.** Implementation of Alternative B will ensure that the NPS has fulfilled this responsibility as trustee for the Park's resources as well as adjacent resources. The removal of palms and protection of habitat for bighorn sheep will ensure that future generations can enjoy the natural resources within Death Valley National Park. The updated water system will also help preserve a historic cultural resource at adjacent Ryan Camp.
- **ensures for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.** Implementation of Alternative B will result in safer conditions for park visitors and uncontaminated water for historic Ryan Camp residents and visitors, while limiting the project footprint and taking measures to integrate infrastructure with the natural and cultural landscape.
- **attains the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.** Implementation of Alternative B will allow and encourage long-term enjoyment of the diverse natural and cultural resources in the Navel Spring area, as well as the historic cultural resources at adjacent Ryan Camp, while addressing outstanding safety concerns.

- **preserves important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.** Implementation of Alternative B will protect and preserve a historic district significant to our national heritage – Ryan. The updated water system will provide protection for Ryan from structure fires and other emergencies. It will also allow for preservation and restoration work to be completed.
- **achieves a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities.** Implementation of Alternative B will achieve a balance between use of the land and water for recreation, natural ecosystem and habitat functions, and historic preservation.
- **enhances the quality of renewable resources and approaches the maximum attainable recycling of depletable resources.** Implementation of Alternative B will enhance the natural and cultural resources of Death Valley National Park and ensure that these remain renewable resources.

## **ALTERNATIVES CONSIDERED BUT DISMISSED**

The National Park Service considered five additional alternatives during internal scoping for this project, but dismissed these alternatives because of potential impacts and because they did not meet the purpose and need. These alternatives, which were considered but dismissed, include:

**Implementation by replacing adits with a catchment basin.** Under this alternative, a large (approximately 30 ft by 50 ft) basin would be excavated at the mouth of Navel Spring canyon and partially lined with an impervious membrane. Collection pipes would be placed in the basin, feeding into the pipeline going to the tank. The basin would be filled with pervious gravels. The catchment would collect ground water as it flowed underground out of the spring. Under this alternative, the pipeline would be buried in the center line of the road and the tank would be replaced with one of a 33,788 gallon capacity. The original water collection works would subsequently be abandoned. The catchment basin alternative was dismissed for several reasons. First, it involved large-scale excavation and ground disturbance at the spring, a naturally and culturally sensitive area. This excavation was beyond the scope of reasonable access for maintenance activities inherent in the pre-1914 water rights claim. In addition, the basin would require constant maintenance to keep the area above the basin free of contamination caused by the roots of vegetation and animal activity. Furthermore, the catchment basin would prevent water from naturally flowing underground into the wash, negatively impacting vegetation and wildlife. Also, this alternative would not address the instability of the underground workings at

the spring. The significant expansion of infrastructure and impacts associated with this alternative, as well as unacceptable impacts, caused this alternative to be dismissed.

**Installation of horizontal wells.** This alternative proposed drilling a series of horizontal wells in an effort to collect and divert subsurface spring water. The well heads would be plumbed together and tied to the pipeline running to the tank. Like the previous alternative, the pipeline would be buried in the centerline of the road, the original water collection works would be abandoned, and there would be no plans to stabilize the underground workings. This alternative was attractive to the project proponent in that it would increase the diversion rate of the spring. A faster flow and a quicker filling of the storage tank would greatly reduce the time required for tank recharge. This alternative was primarily dismissed because it was a significant expansion beyond the historic footprint of water collection infrastructure. Additionally, it would result in potential ground disturbances and impacts to cultural resources at the spring caused by drill rigs and other heavy machinery. Further, the impact of diverting more subsurface water surface waters is unknown, and could negatively affect wetland vegetation and wildlife access to water.

**More underground development.** In this alternative, the length of the underground workings would be increased in an effort to divert and collect additional water. The lower adit would be cleaned out to its original grade and extended in the direction of flowing water. The upper adit would be stabilized and sealed with pervious cellular concrete and the lower adit would be stabilized and sealed with a replacement door frame and door as in the preferred alternative. Materials excavated from the adit would be evenly distributed in the wash. The water catchment area would remain inside the adit. The pipeline would be buried in the centerline of the road. This alternative would have less ground disturbing potential than the previous two dismissed alternatives in that major development work would occur underground. In addition, this alternative would satisfy the need for stabilizing the underground workings. However, this alternative's impact to surface water, and thus to vegetation and wildlife at the spring, is unknown. Because of the unpredictability of impacts to associated park resource, this alternative was dismissed from further consideration.

**Implementation with a 10,800 gallon tank.** This alternative would allow for the work at the spring and the burial of the pipeline as included in the selected alternative; however it would limit the water storage tank to a 10,800 gallon capacity, as exists on the site at present. The existing tank rests on an historic timber foundation. Current building codes disallow the placement of potable water tanks on timbered foundations; hence, to avoid impacting historic structures, the location of the replacement tank would be to the east of the existing tank on a newly poured concrete foundation. Although this alternative decreases the potential visual impact to passing motorists on State Route 190, it was dismissed because the pre-1914 appropriative water rights holder has expressed a need for infrastructure consistent with the historic capacity of the water system and infrastructure. A larger tank, consistent with water use

as stipulated in the pre-1914 appropriative water rights claim and documented by historic use, is required to collect and store more diverted water on site for domestic use and in case of a structure fire or water system failure at Ryan.

**Implementation with a float valve.** This proposal would allow for the work at the spring, the burial of the pipeline, and the 33,788 gallon capacity storage tank as presented in the selected alternative; however, it would also include the addition of a float valve in the storage tank. A float valve would prevent the flow of water into the tank when it was full. Thus, when the tank filled, water would stop filling the tank and overflowing onto the ground as it does at present. Once the tank was full, water would flow out of the catchment area of the lower adit and likely pool in front of the underground workings. Ideally more water would be available for vegetation and wildlife at the spring, although the water would not be added to the wetland habitat at the level of the upper adit but would be collected below it in alluvial gravels. This alternative contains both technical and resource challenges. First, the pipeline conveys water a distance of 0.8 miles long with an elevation change of 300 feet; a filled tank and hence closed float valve would create a significant amount of water pressure (approximately 130 lb/in.) in the pipeline. The pressure is likely to strain certain pipeline components and has the potential to cause component failure at the tank. Failure of components due to pressure is a safety hazard and would result in unknown consequences. Second, due to calcification and mineralization the float valve would require constant maintenance and periodic replacement to function properly. Third, a float valve in preventing the flow of water and disallowing the refreshing of stored water, would cause the water in the tank to become stagnant. In addition, the activated float valve in causing water to flow out of the lower adit would likely increase erosion and have negative impacts on one of the only historic elements at the spring located in front of the lower adit, the mine car track. Water would pool in front of the lower adit and not be added to the established wetland area. Because of safety and feasibility issues, as well as the potential adverse effects to cultural resources, this alternative was dismissed from further consideration.

## MITIGATION MEASURES

Table 1 itemizes the required mitigation for the implementation of the Navel Spring Water System Repair and Maintenance Project. Measures are presented by category.

**Table 1. Mitigation Measures to be Implemented**

Resource Topic	Mitigation Measure	Responsibility
	The NPS project manager will ensure that the project remains confined within the parameters established in the compliance document and that mitigation measures would be properly	Park Resource Management Chief



<b>Resource Topic</b>	<b>Mitigation Measure</b>	<b>Responsibility</b>
<b>General Measures</b>	implemented.	
	Construction zones will be identified and flagged before beginning construction and all disturbances would be confined to the construction area. All project personnel will be instructed that their activities must be confined to locations within flagged areas and all equipment and materials must remain within these areas. Disturbances beyond the construction zone will be prohibited.	Park Resource Management Chief and Park Archeologist
	Best management practices for drainage and sediment control will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. Use of best management practices in the project area for drainage area protection will include all or some of the following actions, depending on site-specific requirements: (1) keeping disturbed areas small to minimize exposed soil and the potential for erosion; (2) evenly distributing excavated materials in the alluvial fan; (3) conducting regular site inspections during construction to ensure that erosion-control measures are properly installed and functioning effectively; (4) maintaining the Navel Spring access road with erosion control channels and preventing the road from becoming below grade, and (5) storing, using, and disposing of chemicals, fuels, and other toxic materials appropriately.	Park Hydrologist  Park Hydrologist
	A hazardous spill plan will be in place, stating what actions would be taken in the case of a spill, notification measures, and preventive measures to be implemented, including the placement of refueling facilities, storage, and handling of hazardous materials. All fuel, oil, transmission, or brake fluid leaks, or other hazardous waste leaks,	Park Resource Management Chief

<b>Resource Topic</b>	<b>Mitigation Measure</b>	<b>Responsibility</b>
<b>General Measures</b>	spills, or releases will be reported immediately to the NPS. The project proponent will be responsible for spill material removal and disposal to an approved off-site landfill and, if necessary, would notify the appropriate federal agency.	
	All equipment on the project will be maintained in a clean and well-functioning state to avoid or minimize contamination from automotive fuels, lubricants, and other fluids. All equipment will be inspected daily.	Park Safety Manager
	All protection measures will be clearly stated in the construction specifications and workers will be instructed to avoid conducting activities beyond work area boundaries.	Park Safety Manager
	Material stockpiling, machinery storage, and vehicle parking will only be permitted in designated staging areas. Staging for construction vehicles and equipment will be located in previously disturbed areas approved by the NPS and will be clearly identified in advance.	Park Resource Management Chief
	All tools, equipment, surplus materials, and rubbish will be removed from the project area upon project completion. All demolition debris, such as the existing water tank, will be removed from the project site.	Park Resource Management Chief
	Unnecessary construction vehicle engine idling will be limited to reduce noxious emissions.	Park Resource Management Chief
	Construction will be scheduled to avoid the excessively high summer temperatures. Construction will take place during the winter, spring, and fall months to the extent practicable.	Park Safety Manager
	Construction debris will be immediately hauled from the Park to an appropriate disposal location.	Park Resource Management Chief

Resource Topic	Mitigation Measure	Responsibility
	The proponent and any contractors will be required to properly maintain construction equipment (e.g. mufflers) to minimize noise of equipment use.	Park Resource Management Chief
Geology and Soils	Disturbed areas will be raked perpendicular to the slope. Native vegetative material which was removed during construction will be laid lengthwise across the disturbed areas (perpendicular to the slope). Erosion and sediment control will be required (see “General Considerations”).	Park Hydrologist
Vegetation  Vegetation	Disturbed areas will be returned to natural conditions with minor treatments.	Park Botanist
	Undesirable plant species will be controlled (using mechanical means) as necessary. To prevent the introduction and minimize the spread of non-native vegetation and noxious weeds the following measures will be taken: 1) Construction equipment will be pressure washed to ensure that all equipment, machinery, rocks, gravel, or other materials are clean and weed-free before entering the project area; 2) All construction equipment transporting material outside the project area will be brushed down after every drive; 3) Palm stumps will be removed and the area monitored for palm re-growth and controlled mechanically.	Park Botanist  Park Botanist
	Rare and special status plants will be protected during construction activities.	Park Botanist
	Native spring vegetation (primarily <i>Schoenoplectus americanus</i> ) will be allowed to recover to pre-construction conditions.	Park Botanist
Wildlife	Construction activities at the spring will occur between October 1 and March 15 to avoid disturbing the use of the spring by migrating birds, insects, and bighorn sheep during periods of excessive heat.	Park Wildlife Biologist
	Construction activities will take place only during	Park Wildlife

<b>Resource Topic</b>	<b>Mitigation Measure</b>	<b>Responsibility</b>
	daylight hours, Monday through Friday.	Biologist
<b>Wetland Habitat</b>	The upper spring pool will be avoided to the extent possible during construction activities and the removal of the palm stumps.	Park Hydrologist
	Material removed from the lower adit will be evenly spread in the gravel wash bottom, and the 0.11 acres of wetland habitat will be avoided.	Park Hydrologist
<b>Air Quality</b>	Fugitive dust plumes will be reduced to the extent possible by water sprinkling the soil during earth-disturbing activities.	Park Resource Management Chief
<b>Archeological Resources</b>	If, during construction, archeological resources are discovered, all work in the immediate vicinity of the discovery will be halted and the park archeologist would be notified. All necessary steps will be taken to protect the resources until they can be assessed and documented by the park archeologist. If it is determined that the archeological resources are significant, an appropriate mitigation strategy would be developed in consultation with the California State Historic Preservation Office (SHPO) and the Timbisha Shoshone Tribe.	Park Archeologist
<b>Archeological Resources</b>	Should human remains, funerary objects, sacred objects, or objects of cultural patrimony be discovered during construction, Park staff would follow provisions outlined in the Native American Graves Protection and Repatriation Act of 1990.	Park Archeologist
	Culturally sensitive areas near staging areas and access roads will be flagged and avoided during work hours. Flagging will be removed at the end of each work day. Work near sensitive areas will be monitored by park archeology staff.	Park Archeologist
	Paleontological remains and archeological specimens found within the construction area will only be removed by the NPS or by NPS-designated representatives.	Park Archeologist and Park Resource Management Chief

<b>Resource Topic</b>	<b>Mitigation Measure</b>	<b>Responsibility</b>
<b>Historic Districts</b>	Two sites at Navel Spring (10-063-01 and 10-063-03) will be included as contributing elements of the Ryan Historic District in the nomination of Ryan to the National Register of Historic Places.	Park Cultural Resource Manager
<b>Cultural Landscapes</b>	Cultural landscapes within the project area will be identified and recorded.	Park Cultural Resource Manager
	Existing areas of disturbance will be used as staging areas so as to maintain the setting and feeling of the Navel Spring cultural landscape.	Park Cultural Resource Manager
	The modern HDPE pipeline will be removed in an effort to restore the historic landscape.	Park Cultural Resource Manager
	A 33,788 gallon water storage tank, as existed historically at the site, will replace the existing water tank, thus restoring the historic feeling of the Navel Spring cultural landscape.	Park Cultural Resource Manager
	The newly installed steel door at the lower adit will be placed slightly within the portal to reduce its visibility.	Park Cultural Resource Manager
<b>Scenic Resources</b>	Native mesquites (of a genotype selected by the NPS botanist) will be planted in front of the water tank to limit visual disturbances.	Park Botanist
	The modern HDPE pipeline will be removed.	Park Cultural Resource Manager
	The replacement tank will be low profile and of a color that blends into the natural and cultural environment.	Park Cultural Resource Manager
<b>Health and Safety</b>	The following fire protection measures will be employed during construction activities: 1) All mobile and plant equipment will be equipped with fire extinguishers as well as spark arrestors (if applicable); and 2) A water truck with 1,000 gallon capacity, equipped with a pump and hose will be on site during construction activities.	Park Chief Ranger
	All work will conform to the standards established	Park Safety Manager

Resource Topic	Mitigation Measure	Responsibility
	by the Occupational, Safety and Hazard Administration (OSHA), as applicable.	
	Radio and satellite communication devices will be on site during work hours.	Park Chief Ranger

## **WHY THE SELECTED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT**

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

*Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an EIS.*

No major adverse or beneficial impacts were identified that would require analysis in an environmental impact statement.

### **Geology and Soils**

The selected alternative will result in short-term minor adverse impacts to soils and long-term moderate beneficial impacts to geology. Cleaning out the lower adit, the movement of construction equipment to the work area, removal of the palm stumps, trench excavation, increased traffic, and water tank foundation excavation would have short-term, minor, adverse impacts to natural erosion and deposition processes. Stabilization of the upper adit would have long-term, moderate beneficial impacts to the structure of the back wall of Navel Spring canyon.

### **Vegetation**

The selected alternative will present short-term negligible to minor adverse impacts resulting from vegetation removal and trampling during construction in travel corridors and in the drainage below the lower adit, as well as construction dust. Non-native palm removal will result in long-term moderate beneficial impacts to native vegetation at Navel Spring.

### **Wildlife**

Construction activities and human presence will prevent some wildlife from accessing Navel Spring and increased construction traffic could disturb wildlife, causing short-term minor adverse impacts to wildlife habitat. The removal of non-native palms is anticipated to provide more available water for wildlife, resulting in a long-term minor beneficial impact.

### **Special Status Species**

Construction activity, noise, and human presence would prevent special status species from accessing Navel Spring during working hours causing short-term minor adverse impacts to bighorn sheep. There are no federally listed species or habitat in the project area; thus, the determination of effect for federally listed species is *no effect*.

### **Wetland Habitat**

Activities at the level of the upper adit including filling the adit with concrete and removing the palm stumps will have short-term negligible to minor adverse and long-term minor to moderate beneficial impacts to wetland habitat.

### **Archeological Resources**

Ground disturbance associated with construction activities will cause short-term negligible to minor adverse impacts to archeological resources in the Navel Spring area. The selected alternative is anticipated to result in long-term minor beneficial impacts to the historic Navel Spring water system (site # 10-063-01).

### **Historic Districts**

Construction activities will cause short- and long-term minor adverse impacts to contributing elements 10-063-01 and 10-063-03. Impacts to the Ryan historic district as a whole from the rehabilitated water system will be short- and long-term, moderately beneficial.

### **Cultural Landscapes**

There will be negligible impacts to cultural landscapes from the selected alternative.

### **Ethnographic Resources**

Construction activities will not alter features of the spring and would restore the spring pool causing short- and long-term negligible to minor beneficial impacts.

### **Health and Safety**

Securing of the adits and a larger volume water storage tank will cause long-term moderate beneficial impacts to health and safety.

### **Scenic Resources**

Placement of a 33,788 gallon tank would cause long-term minor to moderate adverse impacts to scenic resources.

### **Visitor Use and Experience**

The selected alternative will have long-term, localized, minor adverse impacts to visitor use and experience. Prohibiting dogs from Navel Spring will cause these long-term minor adverse impacts to visitor use and experience.

#### **Adjacent Landowners and Land Uses**

Repairs, deferred maintenance, and upgrades to the water system will cause long-term moderate beneficial impacts to adjacent landowners and land uses.

#### ***Degree of effect on public health or safety.***

There will be long-term moderate beneficial impacts to public health and safety. Securing the adits will prevent visitor entry into potentially unsafe areas and increased water storage for fire suppression activities at Ryan Camp represent benefits to public health and safety.

#### ***Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.***

Prime farmlands, wetlands, wild and scenic rivers, and ecologically critical areas will not be affected. The selected alternative will have short-term minor adverse and long-term minor beneficial impacts on historic and cultural resources. No critical habitat for any endangered species will be affected.

#### ***Degree to which effects on the quality of the human environment are likely to be highly controversial.***

There was a small amount of public input during the public scoping process and during the EA public comment period. Issues raised during public scoping that were within the scope of the plan were addressed, and the majority of the nine comments made during the EA public comment period were supportive of the selected action. Effects on the quality of the human environment from the selected action are unlikely to be highly controversial.

#### ***Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.***

There were no highly uncertain, unique or unknown risks identified during either preparation of the EA or the public review period.

#### ***Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.***

The selected alternative neither establishes a National Park Service precedent for future actions with significant effects nor represents a decision in principle about a future consideration. The



selected alternative is consistent with the California Desert Protection Act and the pre-1914 water rights claim at Navel Spring.

***Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.***

Cumulative impacts were determined by combining the impacts of the selected alternative with other past, present, and reasonably foreseeable future actions. Several plans or actions were identified that would have negligible or minor contributions to cumulative impacts of the selected alternative. No plans or projects were identified that, when considered with the impacts of the selected alternative, would have greater than minor or moderate impacts.

***Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.***

The selected alternative will not adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places, nor will it cause loss or destruction of significant scientific, cultural, or historic resources.

***Degree to which the action may adversely affect an endangered or threatened species or its critical habitat.***

Endangered or threatened wildlife and plant species are not present within the planning area. The selected alternative directly addresses the protection of rare species that are not listed as threatened or endangered.

***Whether the action threatens a violation of federal, state, or local environmental protection law.***

The selected alternative will not violate any federal, state or local environmental protection laws. The project proponent will obtain any necessary permits needed by state or local agencies in association with implementation of the selected alternative.

## **PUBLIC INVOLVEMENT AND AGENCY CONSULTATION**

### **Public Scoping**

A press release initiating public scoping and describing the proposed action was issued on April 18, 2012, and public comments were solicited via the park's mailing list and the NPS Planning, Environment and Public Comment website during a public scoping period that ended May 18, 2012. Two agency comments and fifteen general public comments were received. The most prevalent concern was the proposal for increasing the size of the tank and its visual impact on the

surrounding natural landscape. Another comment stressed the importance of area wildlife continuing to have access to water at the spring. Several comments expressed concerns regarding the restriction of public access to Navel Spring. Additional concerns stemmed from misconceptions of the project: that an increase tank size would mean an increase in water diversion (the water diversion rate would remain at 1-2 gallons per minute, which is the rate of the spring flow and below the rate specified in the pre-1914 water rights claim); and that the project would be funded by the National Park Service, and hence the public (Rio Tinto would be funding the project). In addition to concerns, several comments mentioned the role that water from Navel Spring plays in the continued preservation of the historically significant, and National Register eligible district of Ryan. Although Ryan is not within the boundary of Death Valley National Park, it remains a contributing element of the Park's historical significance. One commentator commended the working relationship between the NPS, Rio Tinto, and the Death Valley Conservancy in acting as stewards of Navel Spring and cooperating to balance the water needs of Ryan with the maintenance of a desert spring habitat. Another commentator argued that the Navel Spring water supply system has been in place for over one hundred years, and is now a permanent fixture of the natural landscape. All commentators who mentioned the invasive date palms agreed that their removal would be beneficial to the spring. The California Department of Transportation requested that the project proponent acquire an encroachment permit for the access road leading from State Highway 190. All comments were used in developing the alternatives, refining the purpose and need, and accomplishing the environmental analysis presented in the EA.

### **Agency Consultation**

Agency consultation for this project included consultation with the State Historic Preservation Office, the Timbisha Shoshone Tribe, and the U.S. Fish and Wildlife Service. Timbisha elders visited the proposed project location with park staff on February 10, 2012. A letter initiating formal government-to-government consultation with the Timbisha Shoshone Tribe was sent to the Tribal Chairman on April 5, 2012. The project has been discussed in several meetings between the Timbisha Shoshone Tribal Chairman and the Park Superintendent. The Park Archeologist and Timbisha Tribal Historic Preservation Officer (THPO) visited the site again on March 7, 2013. The cultural resources assessment of effect for the proposed project was shared with the Timbisha Shoshone Tribal Chairman on July 18, 2013, along with a letter documenting the consultation and requesting any comments or concerns the Timbisha Shoshone Tribe might have regarding the project. On November 20, 2013, the Timbisha Shoshone Tribal Chairman and THPO were both sent copies of the environmental assessment, along with a request to share concerns or comments. The Tribe has not expressed any concerns related to the project and tribal elders and the THPO have contributed to the Park's research on the area.

An agency scoping letter was sent to the State Historic Preservation Officer (SHPO) on April 5, 2012. The SHPO's office had no comments at the time. The cultural resources assessment of effect for the proposed project was shared with the SHPO on July 18, 2013, along with a letter documenting the consultation and requesting concurrence with the Park's definition of the Area of Potential Effect for the undertaking, adequacy of identification efforts, and finding of no adverse effect. On November 20, 2013, the SHPO was sent a copy of the environmental assessment, along with a second request for concurrence. The SHPO responded with a memorandum of concurrence with the Park's definition of the Area of Potential Effect, adequacy of identification efforts, and finding of no adverse effect to cultural resources on December 16, 2013.

An agency scoping letter was sent to the U.S. Fish and Wildlife Service (USFWS) on April 5, 2012. The USFWS response stated that there are no federally listed, proposed, or candidate species, nor their critical habitats, known to exist in the project area. The NPS determined and documented in the EA that the selected alternative will have *no effect* on any threatened, endangered, or candidate species, completing informal consultation. The Park Superintendent sent a letter notifying the USFWS of this determination, including a copy of the Navel Spring Water System Repair and Maintenance Environmental Assessment on November 14, 2013.

### **Public Review of EA**

The EA was released for a 33-day public review period on June November 14, 2013. The document was made available on the Park's Public Planning website, and information about its availability was sent as a press release to over a hundred news outlets and individual reporters. Notice of the plan's availability was sent to all interested individuals and organizations on the Park's maintained database for this project. Hard copies of the plan were distributed to seven local libraries to enhance public availability. Thirteen additional hard copies were sent to stakeholders and individuals who requested the EA.

The NPS received nine pieces of correspondence during the public review period for the Navel Spring Water System Repair and Maintenance EA. One commenter felt the project could potentially scare bighorn sheep away from the site and proposed that no action be taken. This commenter suggested that to address the existing water rights claim the federal government exercise eminent domain—an option that is not legally available in this situation. Seven commenters wrote in support of the project, citing potential benefits to public safety and to historic preservation efforts at Ryan, as well as the limited impacts to park natural and cultural resources. The California Department of Transportation sent a comment noting that the required encroachment permit for State Highway 190 was in process. The NPS has taken all public and agency comments in due consideration while preparing this Finding of No Significant Impact, and these comments are now part of the administrative record for this project.

## CONCLUSION

The National Park Service has selected Alternative B – Proposed Repair and Maintenance for implementation, as described in this Finding of No Significant Impact. Based on the analysis in the EA, the capability of the incorporated mitigations to reduce or avoid potential impacts, and with due consideration for the public scoping and EA review comments, the NPS has determined that the selected alternative does not constitute an action that would normally require the preparation of an environmental impact statement. The selected alternative will not have significant impacts on public health, safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the selected alternative will not violate any federal, state, or local environmental law. Based on the foregoing, it has been determined that an environmental impact statement is not required by this action and thus will not be prepared, and implementation of the approved Navel Spring Water System Repair and Maintenance Project will be initiated as soon as practicable.

Recommended: Kathy Billings  
Kathy Billings  
Superintendent, Death Valley National Park

1/22/2014  
Date

Approved: Christine S. Lehnertz  
for Christine S. Lehnertz  
Regional Director, Pacific West Region

1/28/14  
Date

**Determination of No Impairment**  
**Navel Spring Water System Repair and Maintenance Project**  
**Death Valley National Park**  
**National Park Service**  
**January 2014**

The National Park Service (NPS) has determined that implementation of the selected alternative will not constitute impairment to the resources or values of Death Valley National Park. This conclusion is based on a thorough analysis of the environmental impacts described in the Navel Spring Water System Repair and Maintenance Environmental Assessment, relevant scientific studies and cultural resource reports, and professional judgment of the decision-maker guided by the direction in NPS Management Policies (2006). The selected alternative will not result in major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Death Valley National Park; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the Park's General Management Plan or other relevant National Park Service planning documents.

This determination of no impairment has been prepared for the selected alternative described in the Finding of No Significant Impact (FONSI), for the topics listed below. An impairment determination is not made for visitor use and experience, public health and safety, or adjacent landowners and land uses because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired in the same way that an action can impair park resources and values. Specific impact areas and the detailed analysis that led to the determination of no impairment are described below.

### **Findings on Impairment for Geology and Soils**

Under the selected alternative, minor short-term impacts to geologic features, processes and soils will result from the relocation of material from within and in front of the lower adit to a naturally occurring alluvial drainage in Navel Spring canyon. Deposited material will be evenly spread in the wash bottom. In addition, some road work will need to be completed to create a pathway for the equipment and to bury the replacement water line; hence some alluvial gravels will likely be disturbed from a previously disturbed roadway. The removal of the palm stumps has the potential to disturb the sediments and soils at the level of the upper adit and may cause some rock fall from the slope adjacent to the palms. In total, these adverse impacts to geologic features, processes and soils at Navel Spring will be short-term, localized, and minor in intensity. A large overhanging cliff above the upper adit has several tension cracks rendering it a potential geologic hazard. This may be due to the instability and caving of the upper adit. Although the magnitude and timing of future geologic hazards are difficult to forecast, the collapse of the upper adit and subsequent collapse of the overhang may induce a catastrophic rockfall that would leave an unnatural accumulation of debris and scarring of the cliff face. The selected alternative will fill the upper adit with pervious cellular concrete thus resulting in its long-term stabilization. Thus, the long-term impacts to geologic hazards at Navel Spring canyon will be minor and

beneficial. Overall, the adverse impacts to soils and geology are expected to be short-term and minor in intensity, with long-term benefits resulting from the selected alternative. This combination, duration, and intensity of impacts does not constitute impairment.

### **Findings on Impairment for Vegetation**

The selected alternative presents the potential for short-term adverse impacts to vegetation. During construction and occurring throughout the project area, vegetation in the pathway of construction vehicles and equipment could be trampled and crushed. Vegetation along roadways will likely receive construction dust. The limited vegetation growing in the centerline of the Navel Spring access road will be uprooted with excavation of the pipeline trench. In addition, a few large mesquites, especially near the current water storage tank, will need slight pruning where they protrude into the construction areas. The rare native plant, *Eriogonum hoffmanii* ssp. *hoffmanii*, present in the area between State Highway 190 and the water storage tank, could potentially be impacted; however, this plant does well with ground disturbance and any individual losses are likely to recover quickly. Two specimens of the rare plant *Juncus cooperi* are present in the project area. To protect these plants, wooden boxes will be placed over them during the palm stump removal and also during any construction activities occurring in their vicinity. The boxes will be removed during break and quitting times. The sum of these impacts to native vegetation will be minor in intensity and short-term in duration.

For the long-term, the total removal and management of the non-native date palms will benefit the Navel Spring native plant community. Native hydrophytic plants will no longer have to compete for soil nutrients and water and their populations are expected to flourish. The overall impacts of the palm removal on native vegetation will be long-term, moderate, and beneficial. The combination of short-term adverse impacts and long-term beneficial impacts do not constitute impairment of vegetation resources.

### **Findings on Impairment for Wildlife**

Under the selected alternative, construction activities could temporarily displace wildlife communities in the project area and have the potential to limit animals' access to water during working hours. Construction activities at Navel Spring will last approximately four weeks and will involve increased human activity, noise, and ground-disturbance with the potential to displace and disturb wildlife. The proposed construction could also temporarily increase the risk of wildlife mortalities through accidental killing of individuals or by increased susceptibility to predation or competitive stress. Construction at the spring will take place during daylight hours from October 1 to March 15 so as to not disturb migrating insects and birds. These short-term impacts are anticipated to be minor in intensity. The total removal of the palms will lead to increased native spring habitat and is likely to increase the surface water available for wildlife use and wildlife food sources in the form of native vegetation in the spring pool at the level of the upper adit. The resulting impacts to wildlife at the spring will likely be long-term, minor, and

beneficial. The combination of short-term minor adverse impacts and long-term minor beneficial impacts do not constitute impairment.

### **Findings on Impairment for Special Status Species**

Under the selected alternative, construction activities may temporarily displace special status species, namely bighorn sheep, in the project area and has the potential to limit animals' access to water during working hours. Construction activities at Navel Spring will last approximately four weeks and would involve increased human activity, noise, and ground-disturbance with the potential to displace and disturb sheep. For the long term, the palms' total removal and management is likely to increase the surface water available for bighorn use in the spring pool at the level of the upper adit. For bighorn sheep, the short-term adverse impacts, offset by planned mitigations and avoidance, do not constitute impairment. In addition, it is expected that the selected alternative will provide long-term habitat benefits to bighorn sheep in the form of more available water. There will be no impairment from this combination of short-term and long-term impacts. There are no federally listed species or habitat in the project area; therefore, the determination of effect for Section 7 of the Endangered Species Act is *no effect*.

### **Findings on Impairment for Wetland Habitat**

Under the selected alternative, the removal of the palm stumps will have short-term, minor, adverse impacts during construction, and long-term, minor to moderate, beneficial impacts after construction. During the removal of the palms stumps, excavation of the stumps may impact native wetland vegetation at the level of the upper adit. The removal of the palm stumps may also increase water turbidity; however, these impacts will be short-term. For the long-term, the total removal and management of the palms will benefit the Navel Spring wetland. With the palms totally removed, surface water at the spring pool is likely to increase. Native hydrophytic plants will no longer have to compete for soil nutrients and water and their populations are expected to benefit. The overall impacts of the palm removal on the existing wetland habitat would be short-term, minor and adverse and long-term, minor to moderate, and beneficial. The combination of these impacts does not constitute impairment.

### **Findings on Impairment for Archeological Resources**

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative, with mitigation measures in place, will result in no adverse effect to archeological resources. The Navel Spring water system is being treated as eligible for listing on the National Register. It is also considered to be a contributing element to the Ryan historic district. The water system includes the collection adits, historic pipeline, access road, and storage tank location. The water collection system will be affected by the selected alternative; however, effects will not diminish the integrity of the property. In fact, the project may increase the site's integrity of setting and feeling by removing or disguising non-historic

features and revealing and stabilizing historic features. Invasive date palms will be entirely removed from the level of the upper adit, helping the spring wetland return to a natural state as it was traditionally and prehistorically. The overburden burying the mine car tracks will be removed, exposing this historic (1950s-era) element. The upper adit will be filled with pervious cellular concrete; there is evidence that the adit is collapsing and this action will stabilize the historic feature. The design of the water works at the spring will remain; however a concrete frame with a steel door would be placed inside the lower adit portal. While this affects the underground design of the adit, it will also work to hide the steel door, which detracts from the setting. The selected alternative will not involve the use of heavy equipment. Hand tools will be used to construct two-foot wide scratch lines around the perimeter of the fire. Overall, impacts to archeological resources will be negligible to minor, and both adverse and beneficial. Based on the level of impacts, the selected alternative will not impair archeological resources.

### **Findings on Impairment for Historic Districts**

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative, with mitigation measures in place, will result in no adverse effect to historic districts. The proposed action alternative would have short- and long-term, minor adverse impacts on contributing elements 10-063-01 and 10-063-03; however, the effect of the project to the entire Ryan historic district would be short- and long-term, moderate, and beneficial. The selected alternative will not impair historic districts.

### **Findings on Impairment for Cultural Landscapes**

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative will result in no adverse effect to cultural landscapes or landscape features eligible for or listed in the National Register. The character-defining features of the Navel Spring cultural landscape will be negligibly impacted by the proposed action alternative in the short- and long-term. The spring pool would likely benefit from the entire removal and long-term management of the non-native date palms; therefore the proposed action alternative would have short- and long-term, minor, and beneficial impacts to this feature. The selected alternative will not impair cultural landscapes.

### **Findings on Impairment for Ethnographic Resources**

After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR part 800.5, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the selected alternative will result in no adverse effect to ethnographic resources. The selected alternative will not alter elements of Navel Spring which may be of significance for the Timbisha Tribe. The bighorn sheep, prized by the Tribe, will be adversely impacted during the duration of construction activities. In the long term, some of the project



components will benefit the integrity of the Traditional Cultural Property. The total removal of the date palms will allow native plants, which may have traditional ethnographic uses for the Tribe, to flourish. Complete removal of invasive palm trees is likely to increase the amount of water available for bighorn sheep. In addition, the stabilization of the upper adit will help deter the deterioration of the steep back wall of the canyon. The selected alternative will not impair ethnographic resources.

### **Findings on Impairment for Scenic Resources**

The selected alternative involves the installation of a larger water storage tank. The capacity of the replacement water storage tank will be three times the existing tank. Although the replacement tank differs from that found at the site currently, it comports to the historic tank in capacity and can be considered a restoration of a historic cultural landscape (per *NPS Management Policies 2006* Section 5.3.5.2). To mitigate natural visual impacts from State Highway 190, a low profile tank will replace the existing tank. To further mitigate visual impacts, the tank will be a color chosen by the NPS (Superior Sand) that blends into the natural and cultural landscape. In addition, the project proponent will plant two or three native mesquite trees (with a Death Valley genotype) in front of the tank and direct the tank overflow for their watering needs. The pipeline running along the surface from Navel Spring to the water storage tank will be replaced with a pipeline buried along the centerline of the Navel Spring access road. The abandoned pipeline would be removed, resulting in a negligible to minor beneficial impact to scenic resources. Overall, because of the larger tank size proposed, the selected alternative will have long-term, minor, and adverse impacts to scenic resources. With mitigations in place, these impacts do not constitute impairment of scenic resources.

### **Conclusion**

The impact analyses above demonstrate that the selected alternative will not result in major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Death Valley National Park; (2) key to the natural or cultural integrity of the park; or (3) identified as a goal in the Park's General Management Plan or other relevant National Park Service planning documents. Park resources other than those discussed have been determined to have no or negligible adverse impacts from the activities to be implemented. There will be no unacceptable impacts to park resources from implementing the selected alternative.