Preliminary Assessment Prepared for:

U.S. Department of the Interior
National Park Service
Death Valley National Park
579 Cow Creek Service Road, Building CC50
Death Valley, CA 93238

Preliminary Assessment for Keane Wonder Mine

Death Valley National Park
Inyo and San Bernardino Counties, California

March 2014

Prepared By:

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ACRONYMS AND ABBREVIATIONS

ATV	All-Terrain Vehicles
BLM	Bureau of Land Management
DEVA	Death Valley National Park
ECM	Environmental Cost Management, Inc.
EDR	Environmental Data Resource, Inc.
EPA	(U.S.) Environmental Protection Agency
GPS	Global Positioning System
HRS	Hazard Ranking System
NAD	North American Datum
NAIP	National Agriculture Imagery Programs
NEPA	National Environmental Policy Act
NFRAP	No Further Remedial Action Planned
NPS	U.S. Department of the Interior, National Park Service
PA	Preliminary Assessment
RCRA	Resources Conservation and Recovery Act
USDI OIG	United States Department of Interior, Office of Inspection General
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
XRF	X-ray Fluorescence

EXECUTIVE SUMMARY

Environmental Cost Management, Inc. (ECM) conducted a Preliminary Assessment (PA) at Keane Wonder Mine in Death Valley National Park (DEVA). ECM conducted site research and reconnaissance to collect information concerning site background, operational history, and current environmental conditions sufficient to assess potential threats posed to human health and the environment and determine whether additional characterization is needed. The primary type of waste generated at this site was tailings resulting from milling of gold ore and subsequent cyanide and mercury processing activities associated with the former Keane Wonder Mine.

ECM conducted a site visit to define the project setting and document environmental conditions. Published documents and historical data and reports contained in files maintained by the National Park Service (NPS) were reviewed to compile and document available information for the site and identify evidence of potential releases to the environment. In addition, site data and information pursuant to the National Environmental Policy Act (NEPA), compiled by Environmental Data Resource, Inc. (EDR) were evaluated.

Based on the visual evidence, environmental setting, and historical information, specialized software (HRS Quickscore Version 3.0.5) was used to score Keane Wonder Mine according to U.S. Environmental Protection Agency's (EPA's) Hazard Ranking System (HRS). Keane Wonder Mine received an HRS score of 7.71. Typically, sites that score less than 28.50 receive a no further remedial action planned (NFRAP) recommendation. However, ECM prepared preliminary conceptual site models for human and ecological receptors indicating potentially complete pathways for surface soil, subsurface soil, groundwater, stream sediments, and airborne sediment. Therefore, ECM recommends additional investigation at Keane Wonder Mine consisting of soil sampling at selected locations around the mill tailings and groundwater samples collected from the onsite well and nearby spring for background. A copy of the HRS score sheet is included in **Appendix A** of the report.

1 INTRODUCTION

At the request of the U.S. Department of the Interior, National Park Service (NPS), Environmental Cost Management, Inc. (ECM) conducted a Preliminary Assessment (PA) to evaluate the potential for release of hazardous constituents related to historical operations and waste management activities at the Keane Wonder Mine in Death Valley National Park (DEVA). **Figure 1** shows the location of the site. The PA was conducted in accordance with the *Preliminary Assessment Work Plan for Keane Wonder Mine, Death Valley National Park, Inyo County, California* (ECM, 2013).

The PA was conducted to meet the following objectives:

- Identify, describe, and document past and present practices and processes related to storage, use, and disposal of hazardous materials;
- Identify routine and non-routine activities that may have led to releases of hazardous constituents into the environment;
- Determine operational history including when specific hazardous material management practices began and ceased; the type and quantity of substances involved; and locations where storage, use, and disposal activities occurred;
- Evaluate the U.S. Environmental Protection Agency (EPA) Hazard Ranking System (HRS) score associated for the site and
- Evaluate available information and recommend appropriate further action at the site.

The scope of the investigation included review of available local, state, and federal agency file information; a preliminary evaluation of potential impacts to site media; identification of potential migration routes, exposure pathways, and receptors; a site inspection/reconnaissance; and interviews with NPS personnel.

1.1 GENERAL SITE SETTING

DEVA is located primarily in the state of California, within Inyo and San Bernardino counties, and lies east of the Sierra Nevada in the Basin and Range physiographic province (**Figure 1**). The park consists of over 3 million acres of badlands, valleys, canyons, and mountains. The area was declared a national monument in 1933 and formally became a national park in 1994. It includes the whole of Death Valley, which runs for approximately 150 miles between the Amargosa and Panamint mountain ranges. DEVA occupies an area of physical extremes; elevations range from a low of 282 feet below mean sea level at Badwater Basin, to a high of 11,049 feet above mean sea level at Telescope Peak. It is the hottest and driest area in North America. Temperatures in the valley range from 40 degrees in the winter (but often dip below freezing) to greater than 120 degrees Fahrenheit in the summer. Average annual rainfall in the valley is 1.5 to 2 inches[1].

The Keane Wonder Mine milling area is accessible via a gated unpaved road located approximately four miles southeast of the Hells Gate junction, which is the intersection of the Beatty Cutoff Road and Mud Canyon Road. **Figure 2** shows the road access to the site. The NPS has temporarily closed the Keane Wonder Mine and surrounding area to public access. The closed area is from the junction of Keane Wonder Road and Beatty Cutoff Road east to

[1] National Park Service. (Updated February 5, 2014). Death Valley National Park, Weather and Climate. *NPS.gov.* Retrieved February 10, 2014, from http://www.nps.gov/deva/naturescience/weather-and-climate.htm.

Chloride City, and approximately one mile both north and south of Keane Wonder Mine, including Keane Wonder Mill, Cyty's Mill, Big Bell Mine, and King Midas Mine[2].

1.2 OPERATIONAL HISTORY AND WASTE CHARACTERISTICS

The Keane Wonder Mine is a historic mining site located at the western slope of the Funeral Mountains in the Amargosa Range, on the eastern side of Death Valley **(Figures 1** and **2)**. It was one of the most successful mines in Death Valley, where miners followed a rich vein of gold deposited in fractures in the metamorphic rock. Most of the buildings and structures historically associated with the mine have been removed, but the products of mining activities remain visible on the landscape, including mine entries, rock dumps, tailings, terraced areas, and archaeological deposits.

Mining-related equipment and remains of structures used in the mining process can be found throughout the site, but are concentrated in two clusters, one associated with the main mine development level and one associated with the mill processing area (NPS, August 26, 2010). The upper and lower levels are linked by the remains of a mile-long aerial tramway that was once used to transport ore from the mine entry, located 2500 feet above mean sea level, to the mill site roughly 1200 feet below (Photo 1, **Appendix C**). Two mill tailing process areas were operated, one associated with mercury processing and the other with cyanide processing (Photos 2 and 3, **Appendix C)**. The study area includes the stamp mill, two processing areas, and locations of tailing deposits (**Figure 3**).

Mercury and cyanide were historically used at the site to extract gold from the ore. Ore was passed through stamps in the mill to physically break the ore into small particles and the resultant material was rolled over metal plates brushed with mercury to extract the gold. The tailings were later reprocessed on site using cyanide in tanks. A pipeline was constructed to convey water from the Keane Wonder Springs to the processing areas. Later, water used to support processing was conveyed from a well shaft located 200 feet from the mill and pumped into a tank above the mill (NPS, 2010).

Mill tailings generated using mercury extraction processes are located to the south of the stamp mill, while the tailings generated from cyanide processing activities are found to the west of the stamp mill. The tailings associated with both processes were placed at the mouth to a canyon over a three-decade period that ended in the 1930s. Stockpiled tailings remain on site and wind and water have scattered the tailings downgradient. The locations of the stamp mill, pipeline, mercury and cyanide processing areas, and extent of tailings are shown on **Figures 4** and **5**.

1.3 PREVIOUS INVESTIGATIONS AND REGULATORY ACTIVITY

From March 2007 to April 2008 the United States Department of the Interior, Office of Inspection General (USDI OIG) conducted site inspections at numerous abandoned mines throughout California, Arizona, and Nevada to assess the public health and safety risks associated with the abandoned mines (USDI OIG, 2008). The Keane Wonder Mine was identified as a site where physical and environmental risks to the public exist.

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[2] National Park Service. (Updated February 7, 2014). Death Valley National Park, Keane Wonder Mine. *NPS.gov.* Retrieved February 10, 2014, from http://www.nps.gov/deva/ history culture/keane-wonder-mine.htm.

In April 2008 DEVA employees used X-ray fluorescence (XRF) technology to collect in-situ screening data for metals at two locations within the Keane Wonder Mine Site (NPS, 2008). These locations are shown on **Figure 3**. The results were compared to the human risk management criteria and wildlife/livestock risk management criteria outlined in the *Risk Management Criteria for Metals at BLM Mining Sites*[3] (see DEVA Technical Notes 2008, **Appendix E**). Risk-based concentrations developed for a camper and all-terrain vehicle (ATV) driver were selected for comparison because these receptors most closely represent the likely users of this area and are consistent with EPA regulation and guidance (DEVA Technical Notes 2008). While ATV driver is considered a representative screening-level category, ATV use is prohibited within DEVA boundaries. Mercury, copper, thallium, and zinc were detected at one or both sample locations at concentrations below the screening criteria. Lead concentrations reported at both locations exceeded the screening levels for a camper and ATV driver. Arsenic, cobalt, molybdenum, nickel, and selenium were not reported above the limit of detection in either sample. No testing for cyanide has been conducted.

To ensure public safety, the NPS closed the Keane Wonder Mine area to the public and non-essential employees in 2008 (NPS Death Valley News Release, 2008). Park officials cited both environmental concerns and the presence of physical and structural hazards at the mine site and surrounding area. Between March 2010 and April 2011, NPS completed extensive mitigation of all identified physical hazards at the site. Conditions prior to and following closure of the mine area are documented in the NPS report, *Death Valley National Park, CA AML PA Reporting, Keane Wonder Mine Closures, FY 2011* (**Appendix E**). The report contains maps showing the locations of key site features and photographs documenting pre- and post-closure status of mine tunnels, shafts, tanks, ruins, wells, and springs.

2 RECORDS REVIEW

Prior to the site reconnaissance visit, ECM obtained and reviewed the following:

- National Register of Historical Places Registration Form 10-900 (NPS, August 26, 2010);
- *Historic Resource Study: A History of Mining In Death Valley National Monument* (NPS, March 1981);
- Environmental Data Resources, Inc. (EDR) database search reports (**Appendix B**);
- Keane Wonder Mine internet files (http://www.nps.gov/deva/historyculture/keane-wonder-mine.htm);
- EnviroStor database (http://www.envirostor.dtsc.ca.gov/public);
- Google Earth imagery; and
- Topographic maps (EDR, 2013a, **Appendix B**).

During the site reconnaissance visit, ECM conducted a search of the NPS archived files for the site, including:

- NPS DEVA correspondence documents pertaining to Keane Wonder Mine (**Appendix E**);
- *Death Valley National Park, CA AML PA Reporting, Keane Wonder Mine Closures, FY 2011* (NPS, 2011);
- Current geologic map (Streitz and Stinson, 1991); and

[3] BLM, 2004. *Risk Management Criteria for Metals at BLM Mining Sites*, Technical Note 390 rev. October 2004.

- Current and historic (1969) aerial photographs.

2.1 AERIAL PHOTOGRAPHS

Satellite aerial imagery by ESRI World Imagery was used to construct the site figures. The aerial imagery shows the extent of land disturbances at the Keane Wonder Mine and surrounding area, including drainage patterns, depositional areas, and some cultural features. The earliest available aerial photographs, reviewed during the file search, are from 1969. Comparing this photo to current aerial photos indicates very little migration of visible tailings.

2.2 INTERVIEWS

ECM interviewed DEVA personnel to obtain information about the current and historical use of the site. The following DEVA personnel provided information contributing to this report:

- Mr. Jeremy Stoltzfus, DEVA Mine Technician
- Mr. Richard Friese, DEVA Hydrologist
- Ms. Linda Manning, DEVA Wildlife Biologist
- Ms. Blair Davenport, DEVA Cultural Resource Manager
- Mr. Gregory Cox, Cow Creek Museum Curator

Mr. Jeremy Stoltzfus, DEVA Mine Technician, personally accompanied ECM staff on the site reconnaissance visits and provided electronic and hard copy materials for review.

3 SITE VISIT

The Keane Wonder Mine and vicinity was inspected during a site reconnaissance on January 8, 2014, by Chris McCormack, Geologist (ECM), with guidance and general assistance from Mr. Jeremy Stoltzfus and Linda Manning. During the visit, site features were mapped using a hand-held Global Positioning System (GPS) device. The site was inspected for evidence of possible hazardous materials; extent of mine tailings; locations of former ore processing areas; site layout, topography, and drainage patterns; presence of springs or other surface water; confirmation of the onsite well location; and indications of material management and storage activities. Digital photographs document site features (**Appendix C**). Two cinnabar veins were noted during the visit indicating natural presence of mercury. No indication of stressed vegetation or impact on wildlife was noted.

Photographs showing site features and current environmental conditions are presented in **Appendix C**. **Figure 3** shows the locations of the former stamp mill, mercury and cyanide processing areas, tailing stockpile area, and present extent of tailings. Additional details for the mercury processing area and cyanide processing area are depicted on **Figure 4** and **Figure 5**. Site features such as springs, water features, access roads, parking area, and remains of mining structures are depicted. The locations where select site photographs were taken are posted on the figures for reference.

4 PATHWAY AND ENVIRONMENTAL HAZARD ASSESSMENT

The human health and ecological conceptual site models for Keane Wonder Mine are presented on **Figures 6** and **7**. The conceptual site models integrate information about the site to describe potential source areas, release and transport mechanisms, and complete and incomplete exposure pathways. They also identify potentially exposed receptors under the current and

reasonably anticipated future land and water uses. The preliminary site conceptual models are used to identify chemical and nonchemical data gaps and guide recommendations for future action at the site. Future data generated can be used to refine the preliminary conceptual site models.

Potentially exposed media of concern evaluated in the conceptual site models include groundwater, surface and subsurface soil, sediment in ephemeral conveyances during storm events, and air. Based on the operational history and previous investigations, the environmental hazards considered in the evaluation focus on the mill tailings, which are potentially associated with elevated concentrations of mercury, lead, and cyanide. Typical release and transport mechanisms include deposition, erosion, runoff, infiltration, leaching, and windborne suspension and deposition of particulates.

Currently the mine area is closed to the public and access to the site is limited. Potential pathways of exposure are identified for DEVA personnel and contractors. Potential ecological receptors include terrestrial plants, soil organisms, birds, mammals, and reptiles. Sensitive environments potentially used by DEVA-designated[4] "Species of Management Concern", Nelson's bighorn sheep, have been identified within 0.25 to one mile of the site (EDR, 2013b). Potential exposure routes for each pathway are shown in the conceptual site models, and include ingestion, dermal contact, and inhalation.

4.1 GROUNDWATER HYDROGEOLOGICAL SETTING

Subsurface materials at the site consist of high-grade metamorphic bedrock from the lower member of the Crystal Springs Formation. Alluvial deposits consist of clastic sediments ranging in size from clay to boulders (**Appendix C**, Photo 4). The surface soils in the area are composed of gravelly coarse sands with high infiltration rates (EDR, 2013a). Local groundwater recharge occurs from infrequent but significant storm events. A topographic elevation profile of the site is provided in the EDR Summary Radius Map Report of the Keane Wonder Mine (see EDR, 2013a, **Appendix B**). Based on the elevation profile, the groundwater flow direction is to the southwest from the upper-level mine development area. One water well was identified approximately 200 feet cross-gradient from the mercury processing area (EDR, 2013b, **Figure 3**). The well was converted to a mineshaft due to discovery of gold, and currently is filled with water and covered by a large metal mesh grate to prevent humans and wildlife from entering (**Appendix C,** Photo 5). Water level in the mineshaft is approximately 30 feet below ground surface. No groundwater samples have been collected from the well/mineshaft.

Groundwater Exposure Pathway

Sources of chemicals to groundwater include historic releases from the site, infiltration and leaching of chemicals in soil, and flow of groundwater through mineralized bedrock and alluvial materials. During the intense, infrequent rain events, stormwater flows across the site and infiltrates surface and subsurface soils, resulting in potential for leaching and migration of contaminants to groundwater. Stormwater runoff has the potential to transport waste constituents downgradient to the southwest until the flows infiltrate directly into the soil matrix. The onsite well is the only potential groundwater monitoring point within the 4-mile-radius target

[4] Linda Manning, DEVA Wildlife Biologist, (personal communication to Holly Trejo, ECM, March 10, 2014).

distance. Water quality is unknown, but groundwater from the well is not used as a drinking water source.

Conclusions

Potentially complete pathways for human and ecological receptors via incidental ingestion and direct contact with constituents in groundwater exist at the site. The onsite well is not used for drinking water, and so a complete groundwater exposure pathway via drinking water from the well is unlikely. Risk to receptors posed by groundwater exposure pathways is considered insignificant because of the depth to groundwater and the limited extent of constituents of concern to be transported off site. Groundwater flows in this area do not result in transport of chemicals from the subsurface environment to surface water.

4.2 SURFACE WATER HYDROLOGIC SETTING

Infrequent but significant flash floods have occurred at the site during rainstorms. During rain events, suspended sediments are carried downslope through a narrow defile and deposited on an alluvial fan that opens at the mouth of the canyon and spreads across the valley floor. Overland drainage from the site flows southwest across the alluvial fan and rapidly infiltrates the soil matrix or evaporates into the atmosphere. There are no lakes, permanent ponds, or creeks/rivers within the target distance of 15 miles downgradient of the site, and because of the arid climate and rapid infiltration rate, transport of waterborne waste constituents off site is unlikely. The mill tailings were stockpiled near the mouth of the canyon during mining operations. Rare but significant flash floods have transported the visible tailings out onto the alluvial fan for distances to 0.5 mile (**Appendix D,** ECM Field notes).

During the site inspection on January 8, 2014, the ECM geologist observed evidence of minor pooling and runoff from the Keane Wonder Spring and secondary spring located approximately 3,500 feet northwest from the cyanide processing area (**Appendix C**, Photos 6 and 7). These springs are located cross- and upgradient of the site near the Cyty Mine area. Historically, a pipeline conveyed water from the spring to the cyanide processing area to support ore extraction activities, and so the spring could be a former source for elevated metals in soil and tailings in the ore processing area. The waters in the spring have characteristic hydrogen sulfide odor and the water is not considered potable. However, wildlife is attracted to the spring area.

Surface Water Exposure Pathways

Surface water is not subject to impacts by erosion processes or stormwater runoff because there are no surface water bodies near the site. There are no primary receptors within the surface water target distance (15 miles hydraulically downgradient) and there are no wetlands located within target distance (**Appendix B**, EDR, 2013b). Sensitive environments potentially used by DEVA-designated[5] “Species of Management Concern”, Nelson’s bighorn sheep, have been identified within 0.25 to one mile of the site (EDR, 2013b).

Conclusions

No surface water pathway exists for human and ecological receptors via incidental ingestion and direct contact because there are no surface water bodies within 15 miles downgradient from

[5] Linda Manning, DEVA Wildlife Biologist, (personal communication to Holly Trejo, ECM, March 10, 2014).

the site. Mill tailings around the slopes of the Funeral Mountains can potentially release contaminants downgradient during storm events, but since the surface water runoff rapidly infiltrates the alluvial material no release of contaminants to surface water is suspected. Springs located cross- and upgradient of the site are not potable. Although sediment and chemical precipitate accumulations may occur in empheral pools downgradient of the springs, drainage patterns indicate that no impacts will occur at the Keane Wonder Mine site. Area vegetation did not appear to be stressed beyond impacts attributed to severe drought conditions. Discolored soil was observed in the area of the tailings piles and downgradient but not outside the boundaries of the site.

4.3 SOIL, SEDIMENT, AND AIR

The estimated volume of mill tailings existing in the former mercury processing area is less than 20 cubic yards. A larger volume of mill tailings, up to 30,000 cubic yards, is estimated to exist in the cyanide processing area (ECM Field Notes, **Appendix D**). Although only screening level data are available for metals in soil/tailings, the sediments originating from the ore processing are anticipated to contain elevated concentrations of mercury, lead, and/or cyanide. The waters discharged likely contained elevated concentrations of acid-soluble metals. When the mine was operational, mill tailings were stockpiled at the mouth of the canyon (**Figure 3**) and infrequent flash floods have spread the tailings downgradient. Surface and subsurface soils and sediment in depositional areas downgradient of the site could be directly impacted by potential releases associated with erosional processes or surface water runoff. Deposition of transported contaminants could occur, and infiltration of waters into the soil could result in leaching of contaminants and transport through the soil column to subsurface soil at depth. Releases to air from suspension of contaminated particulates derived from surface soil and exposed sediment are likely because the tailings are not buried and the area is subject to wind erosion. Mill tailings are fine-grained and subject to wind transport.

Potential Exposure Pathways

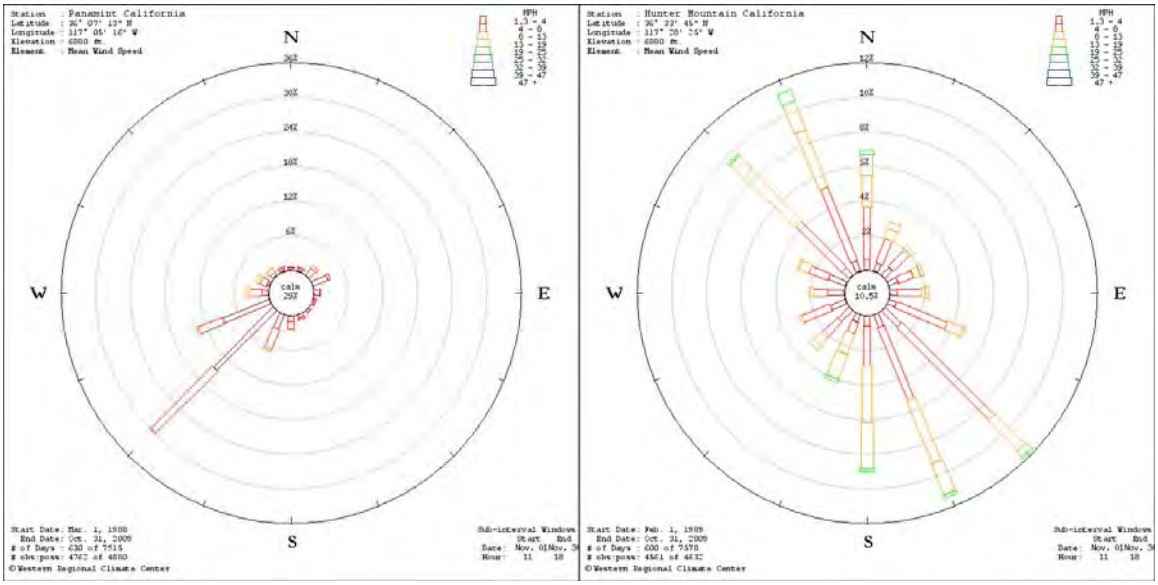
The Keane Wonder Mine is currently closed to the public; however, DEVA personnel and contractors still access the site to perform inspections and maintenance. As previously stated, the site is accessible via a gated unpaved road located approximately four miles southeast of the Hells Gate junction, which is the intersection of the Beatty Cutoff Road and Mud Canyon Road (**Figure 2**).

There are no residents within 200 feet (the soil pathway target distance limit[6]) of the site; however, Nelson's bighorn sheep have been identified within 0.25 and one mile of the site (EDR, 2013b). The potential for the presence of these animals, combined with the National Register status of the site, makes the Keane Wonder Mine a terrestrial sensitive environment. Additionally, potentially complete exposure pathways for soil, sediment, and wind-borne particulates exist for DEVA personnel, contractors, and site visitors (if present).

NPS maintained a climate station at Furnace Creek in Death Valley until 2007. Although exact wind speeds were not archived, daily wind movement, which measures the total distance the wind moves each day, were recorded (Roof and Callagan, 2003). According to Roof and Callagan (2003), "Average daily wind movement is lowest during the winter and peaks during the early spring. During March–May, daily wind movement commonly exceeded 250–300 miles

[6] EPA, Office of Emergency and Remedial Response, EPA/540/G-91/013, Guidance for Performing Preliminary Assessments Under CERCLA, September 1991

per day." Prevalent wind direction is from the south; however, conditions vary greatly in specific locations (NPS, 2002). The weather station at Park Village indicates wind directions 0 to 360 degrees (i.e., north and south) and scalar wind speeds up to 16 meters per second (2.24 miles per hour) (NPS, 2002). The Panamint, California, and Hunter Mountain, California, weather stations are located south and west of Keane Wonder Mine, respectively. The station wind rose from Panamint indicates prevalent southwesterly wind origins[7]. The station wind rose from Hunter Mountain indicates wind from north-northwest and south-southeast[8]. See the two excerpted wind roses below.



Conclusions

Potentially complete pathways are present for exposure of human and ecological receptors to contaminants in soil and exposed sediment (**Figures 6** and **7**). DEVA personnel, site visitors (if present), and plants and wildlife within the area, including endangered or threatened species, could be exposed to elevated concentrations of hazardous chemical constituents via incidental ingestion or direct contact with surface soil and sediment. A potentially complete pathway for subsurface soil is present for DEVA personnel performing intrusive activities at the site as well as for deep-rooted plants, soil organisms, or burrowing animals. Soil analytical data from the XRF analysis conducted at the site in April 2008 indicated elevated levels of lead are present at the site, which could pose an exposure threat to human health and the environment at the site. Area vegetation did not appear stressed.

Releases to air from suspension of contaminated particulates derived from surface soil and exposed sediment represent a potentially complete exposure pathway and risks to human and ecological receptors might be significant at this site if elevated concentrations of mercury are present (**Figures 6** and **7)**.

[7] Western Regional Climate Center. (Updated February 11, 2014). Station Wind Rose Climatology, Panamint California. Retrieved February 11, 2014, from http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?caCPAN

[8] Western Regional Climate Center. (Updated February 11, 2014). Station Wind Rose Climatology, Hunter Mountain California. Retrieved February 11, 2014, from http://www.raws.dri.edu/cgi-bin/rawMAIN.pl?caCHNM

5 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Potentially complete exposure pathways include soil, groundwater, sediment, and air. Groundwater is a potentially complete pathway, but exposure of human and ecological receptors to contaminants in groundwater is unlikely based on depth to groundwater and the fact that the only well within target distance of the site is not intended for drinking water. Springs near Keane Wonder Mine are located cross- and upgradient and groundwater emanating from springs is not likely to be impacted by tailings. Exposures related to inhalation of windborne particulates are considered likely due to the arid climate, high wind speeds, and extended wind movement at the site, and the extent to which the mill tailings have been moved across the site during flash flood events. Targets of concern are DEVA employees, contractors, and visitors to the site (if present) within the 200-foot-radius limit for soil exposure, and potentially several miles for windborne particles. In addition, Nelson's bighorn sheep may be present in the area.

The site was evaluated using the EPA HRS scoring software. The PA score for this site is 7.71 (**Appendix A**). Typically, under the PA process, sites that score 28.50 or greater receive a further action recommendation, while sites that score less than 28.50 receive an NFRAP recommendation. The low score in this case is due to the remoteness of the site, limiting population exposures. However, ECM recommends additional waste characterization to obtain soil and tailing analytical data from the mercury and cyanide processing areas for mercury, lead, and cyanide in order to determine whether these contaminants exist at concentrations that could put human health and the environment at risk. If it is determined that contaminant concentrations are of concern to the National Park, ECM recommends sampling in the downgradient depositional area to identify the extent and concentrations of constituents of concern that may pose threats to human health and the environment. Because metals may occur naturally at elevated concentrations in this area, and ore deposits and mineralized zones including cinnabar are present, soil samples should also be collected upgradient of the study area and from areas not impacted by tailing deposits to determine background concentrations of the constituents of concern. Additionally, a groundwater sample should be collected from the Keane Wonder Mine Spring to characterize background concentrations in groundwater, and from the onsite well to identify potential impacts to groundwater from ore processing and upgradient mining activities.

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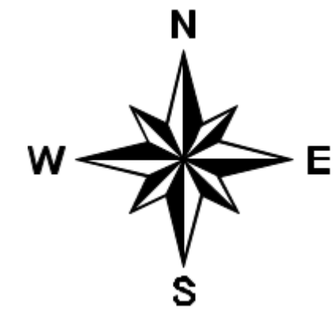
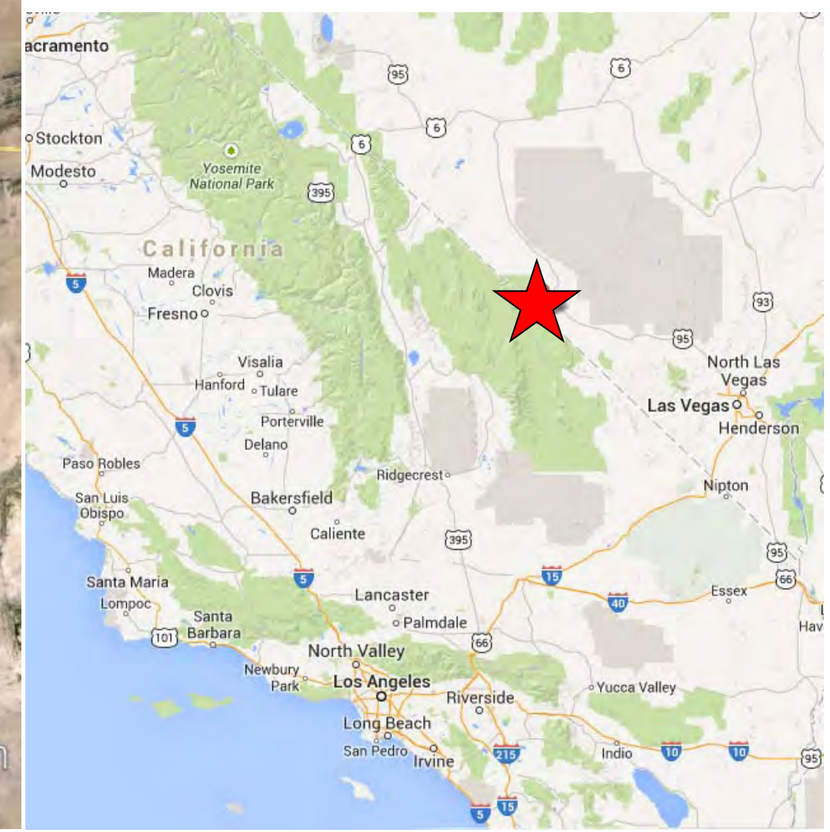
FIGURES





U.S. Dept. of Interior, National Park Service
Death Valley National Park, California

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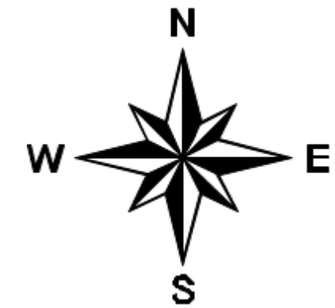
Site Location Map
Keane Wonder Mine

Figure
1



1.25 mile

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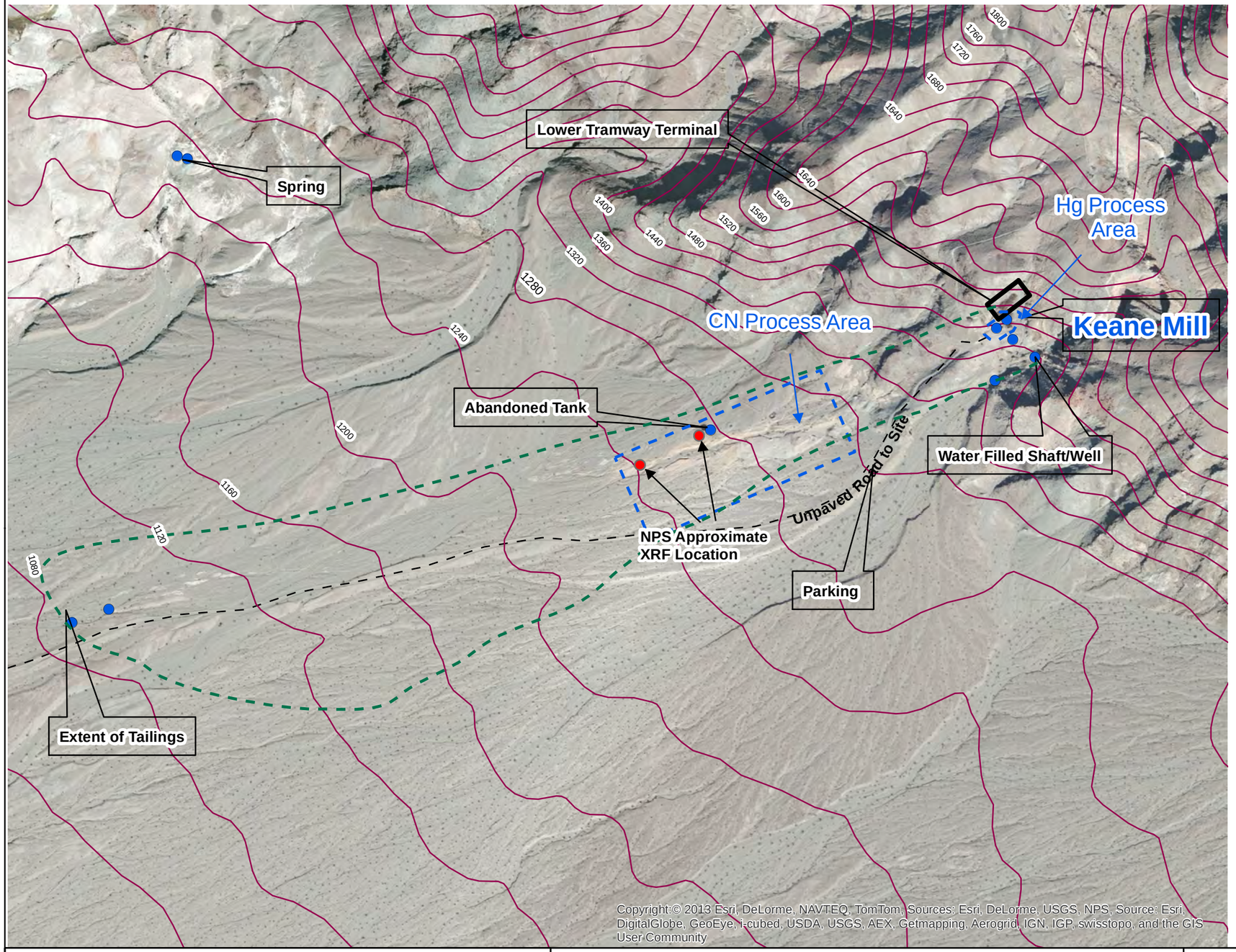
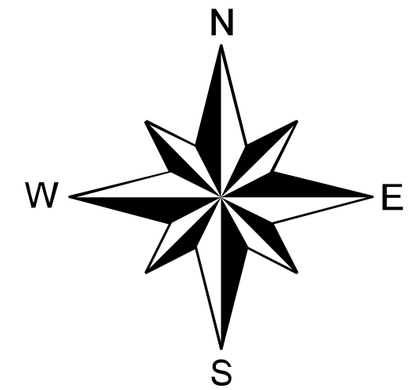
Aerial Photo Location Map
Keane Wonder Mine

Figure
2





Legend

- Keane Wonder Mine Stie Features
- Location of NPS Previous XRF Samples
- Elevation Contour
- Trail into Keane Wonder Mine From Parking Lot
- Out line of Process Areas
- Extend of Mill Tailings

Notes:

Contour Interval is 40 Feet

Hg = Mercury

CN = Cyanide

0 375 750 1,500 Feet

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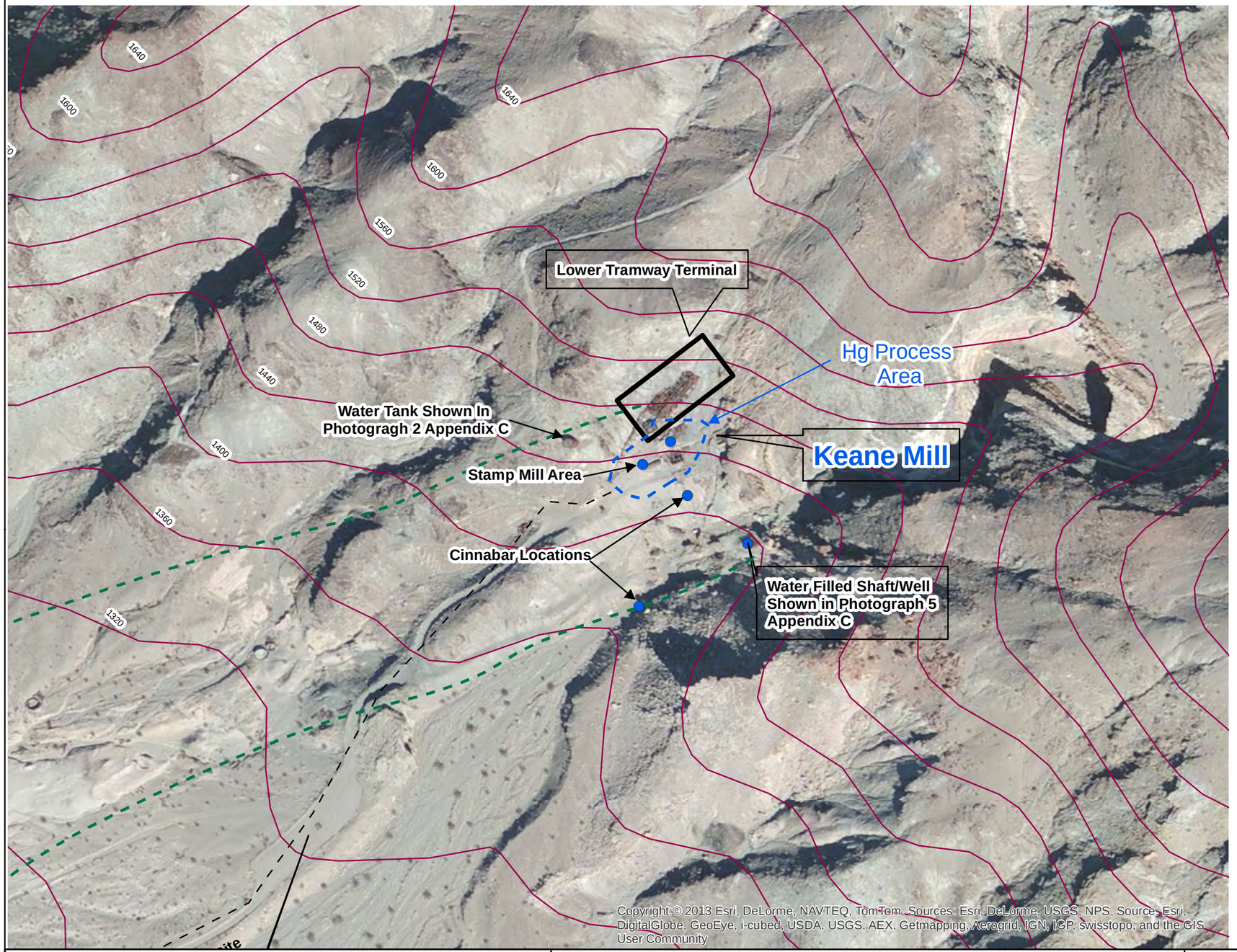
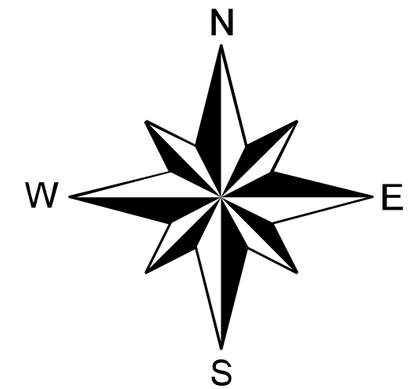
Site Features Map
Keane Wonder Mine

Figure 3





Legend

- Keane Wonder Mine Stie Features
- Elevation Contour
- Trail into Keane Wonder Mine From Parking Lot
- Out line of Process Areas
- Extend of Mill Tailings

Notes:

Contour Interval is 40 Feet
Hg = Mercury
CN = Cyanide

0 145 290 580 Feet

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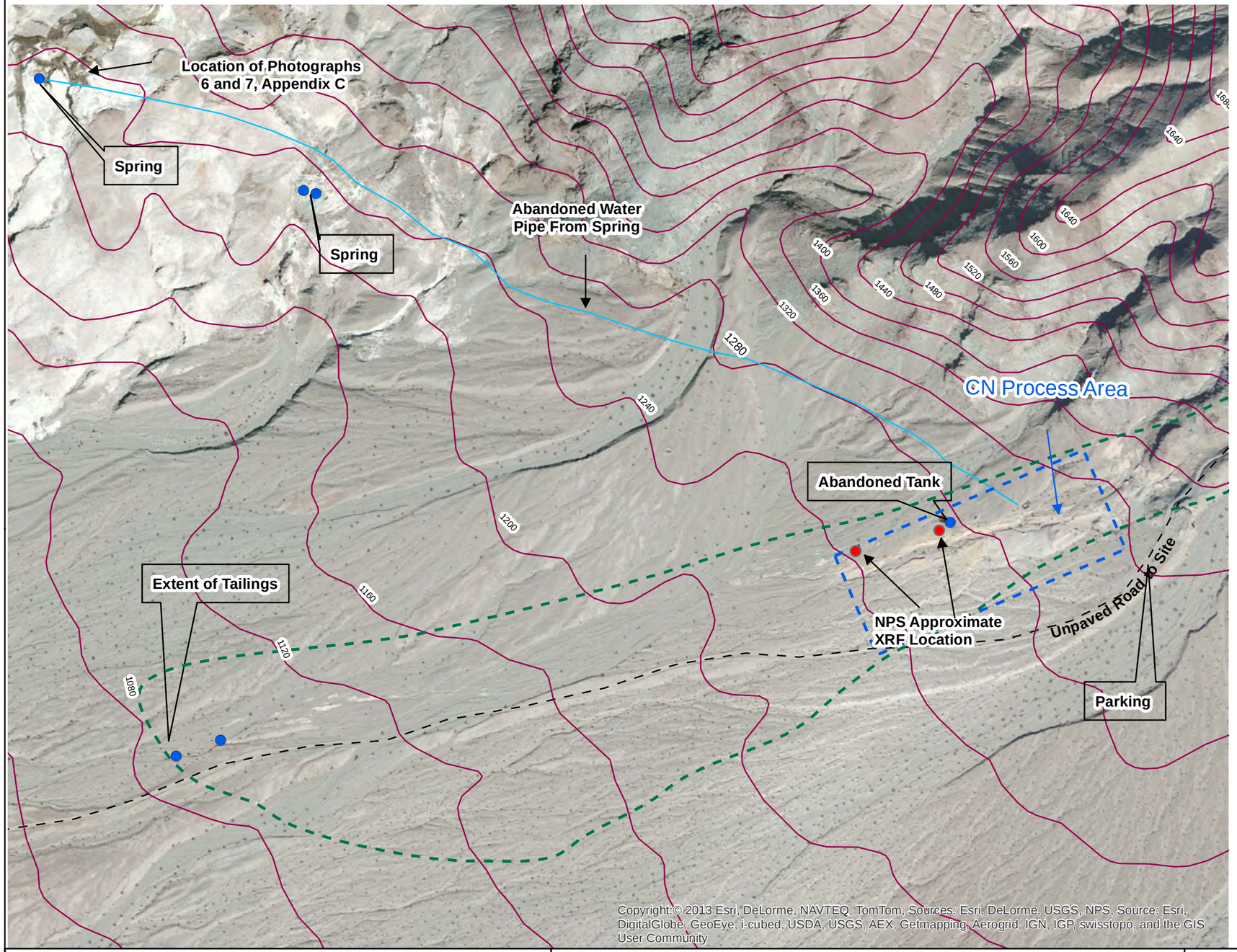
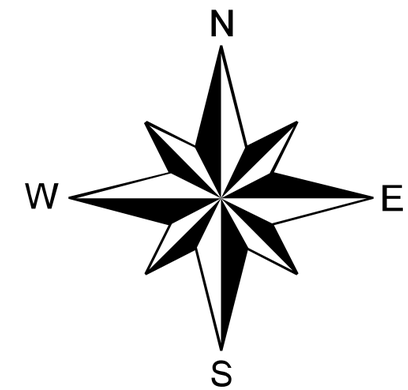
Mercury Process Area
Keane Wonder Mine

Figure
4





Legend

- Keane Wonder Mine Stie Features
- Location of NPS Previous XRF Samples
- Elevation Contour
- Trail into Keane Wonder Mine From Parking Lot
- Out line of Process Areas
- Extend of Mill Tailings

Notes:

Contour Interval is 40 Feet
Hg = Mercury
CN = Cyanide

0 250 500 1,000
Feet

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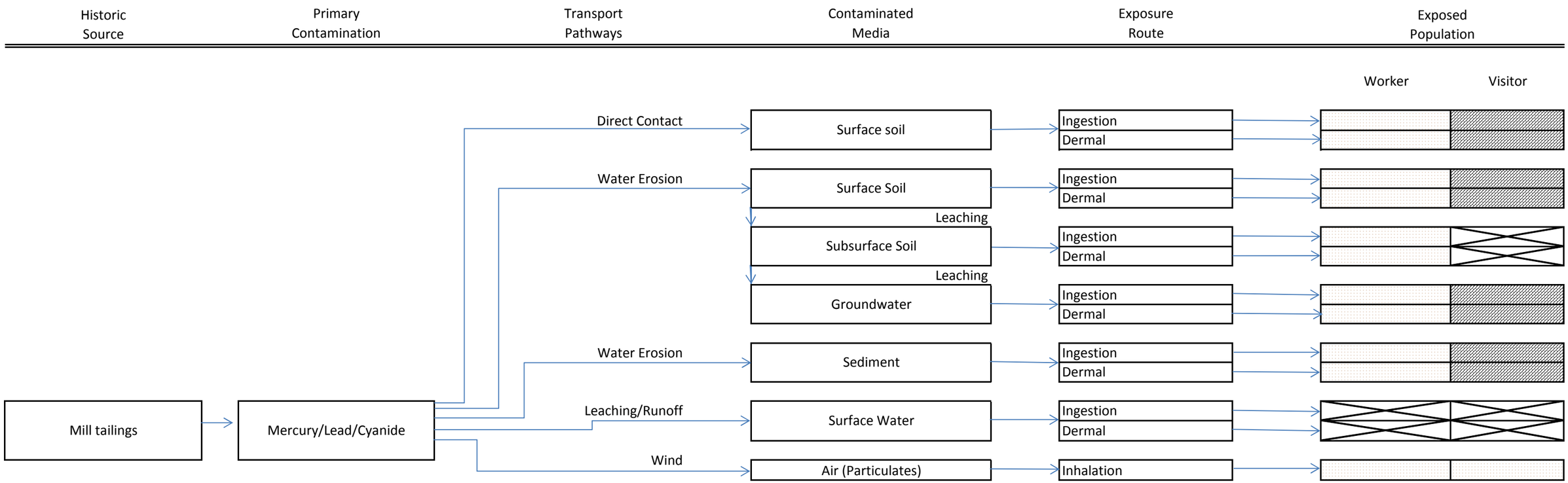
Cyanide Process Area
Keane Wonder Mine

Figure
5



Note: Preliminary conceptual site model based on qualitatitve evaluation only; no quantitative data available.

Pathway not complete; No evaluation necessary.

Pathway potentially complete but considered insignificant.

Pathway potentially complete and may be significant.

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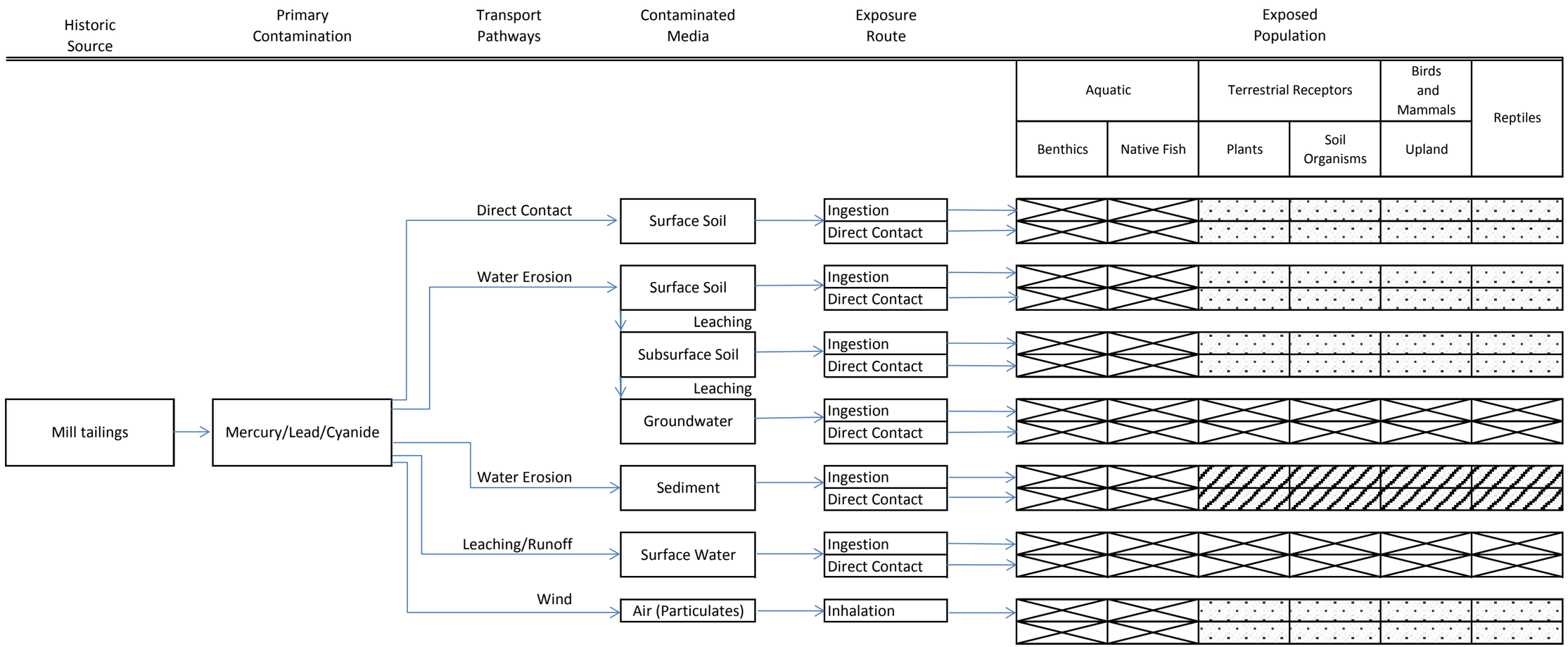
Site Conceptual Model
Human Targets
Keane Wonder Mine

Figure

6



Note: Preliminary conceptual site model based on qualitatitve evaluation only; no quantitative data available.

Pathway not complete; No evaluation necessary.

Pathway potentially complete but considered insignificant.

Pathway potentially complete and may be significant.

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Site Conceptual Model
Ecological Targets
Keane Wonder Mine

Figure

7

APPENDICES

Appendix A
Preliminary Assessment Score Sheet and Data Summary Form

****** CONFIDENTIAL ******
******PRE-DECISIONAL DOCUMENT ******
****** SUMMARY SCORESHEET ******
****** FOR COMPUTING PROJECTED HRS SCORE ******

****** Do Not Cite or Quote ******

Site Name: Keane Wonder Mine HRS

Region: Region 9

Scenario Name: Mill tailing

City, County, State: , California

Evaluator: Smith/McCormack

EPA ID#:

Date: 01/23/2014

Lat/Long: 36:40:0,116:54:0

Congressional District:

This Scoresheet is for:

Scenario Name: Mill tailing

Description:

	S pathway	S^2 pathway
Ground Water Migration Pathway Score (S_{gw})	0.0	0.0
Surface Water Migration Pathway Score (S_{sw})	0.0	0.0
Soil Exposure Pathway Score (S_s)	13.31	177.16
Air Migration Score (S_a)	7.77	60.37
$S^2_{gw} + S^2_{sw} + S^2_s + S^2_a$		237.53
$(S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4$		59.38
$/ (S^2_{gw} + S^2_{sw} + S^2_s + S^2_a)/4$		7.71

Pathways not assigned a score (explain):

TABLE 3-1 --GROUND WATER MIGRATION PATHWAY SCORESHEET

Factor categories and factors	Maximum Value	Value Assigned	
Aquifer Evaluated: Shallow alluvial fan groundwater			
Likelihood of Release to an Aquifer:			
1. Observed Release	550	550.0	
2. Potential to Release:			
2a. Containment	10	10.0	
2b. Net Precipitation	10	1.0	
2c. Depth to Aquifer	5	3.0	
2d. Travel Time	35	5.0	
2e. Potential to Release [lines 2a(2b + 2c + 2d)]	500	90.0	
3. Likelihood of Release (higher of lines 1 and 2e)	550		550.0
Waste Characteristics:			
4. Toxicity/Mobility	(a)	100.0	
5. Hazardous Waste Quantity	(a)	10000.0	
6. Waste Characteristics	100		32.0
Targets:			
7. Nearest Well	(b)	0.0	
8. Population:			
8a. Level I Concentrations	(b)	0.0	
8b. Level II Concentrations	(b)	0.0	
8c. Potential Contamination	(b)	0.0	
8d. Population (lines 8a + 8b + 8c)	(b)	0.0	
9. Resources	5	0.0	
10. Wellhead Protection Area	20	0.0	
11. Targets (lines 7 + 8d + 9 + 10)	(b)		0.0
Ground Water Migration Score for an Aquifer:			
12. Aquifer Score [(lines 3 x 6 x 11)/82,5000][c]	100		0.0
Ground Water Migration Pathway Score:			
13. Pathway Score (S_{gw}), (highest value from line 12 for all aquifers evaluated)[c]	100		0.0

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 4-1 --SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET			
Factor categories and factors	Maximum Value	Value Assigned	
Watershed Evaluated: Death Valley			
Drinking Water Threat			
Likelihood of Release:			
1. Observed Release	550	550.0	
2. Potential to Release by Overland Flow:			
2a. Containment	10	10.0	
2b. Runoff	10	2.0	
2c. Distance to Surface Water	5	3.0	
2d. Potential to Release by Overland Flow [lines 2a(2b + 2c)]	35	50.0	
3.Potential to Release by Flood:			
3a. Containment (Flood)	10	10.0	
3b. Flood Frequency	50	0.0	
3c. Potential to Release by Flood (lines 3a x 3b)	500	0.0	
4. Potential to Release (lines 2d + 3c, subject to a maximum of 500)	500	50.0	
5. Likelihood of Release (higher of lines 1 and 4)	550		550.0
Waste Characteristics:			
6. Toxicity/Persistence	(a)	4000.0	
7. Hazardous Waste Quantity	(a)	10000.0	
8. Waste Characteristics	100		56.0
Targets:			
9. Nearest Intake	50	0.0	
10. Population:			
10a. Level I Concentrations	(b)	0.0	
10b. Level II Concentrations	(b)	0.0	
10c. Potential Contamination	(b)	0.0	
10d. Population (lines 10a + 10b + 10c)	(b)	0.0	
11. Resources	5	0.0	
12. Targets (lines 9 + 10d + 11)	(b)		0.0
Drinking Water Threat Score:			
13. Drinking Water Threat Score [(lines 5x8x12)/82,500, subject to a max of 100]	100		0.0
Human Food Chain Threat			
Likelihood of Release:			
14. Likelihood of Release (same value as line 5)	550		550.0
Waste Characteristics:			
15. Toxicity/Persistence/Bioaccumulation	(a)	2.0E8	
16. Hazardous Waste Quantity	(a)	10000.0	
17. Waste Characteristics	1000		1000.0
Targets:			
18. Food Chain Individual	50	0.0	
19. Population			
19a. Level I Concentration	(b)	0.0	
19b. Level II Concentration	(b)	0.0	
19c. Potential Human Food Chain Contamination	(b)	0.0	
19d. Population (lines 19a + 19b + 19c)	(b)	0.0	
20. Targets (lines 18 + 19d)	(b)		0.0
Human Food Chain Threat Score:			
21. Human Food Chain Threat Score [(lines 14x17x20)/82500, subject to max of 100]	100		0.0
Environmental Threat			
Likelihood of Release:			
22. Likelihood of Release (same value as line 5)	550		550.0
Waste Characteristics:			
23. Ecosystem Toxicity/Persistence/Bioaccumulation	(a)	2.0E8	
24. Hazardous Waste Quantity	(a)	10000.0	
25. Waste Characteristics	1000		1000.0

Targets:			
26. Sensitive Environments			
26a. Level I Concentrations	(b)	0.0	
26b. Level II Concentrations	(b)	0.0	
26c. Potential Contamination	(b)	0.0	
26d. Sensitive Environments (lines 26a + 26b + 26c)	(b)	0.0	
27. Targets (value from line 26d)	(b)		0.0
Environmental Threat Score:			
28. Environmental Threat Score [(lines 22x25x27)/82,500 subject to a max of 60]	60		0.0
Surface Water Overland/Flood Migration Component Score for a Watershed			
29. Watershed Score[c] (lines 13+21+28, subject to a max of 100}	100		0.00
Surface Water Overland/Flood Migration Component Score			
30. Component Score (S_{sw})[c] (highest score from line 29 for all watersheds evaluated)	100		0.00

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 4-25 --GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET			
Factor categories and factors	Maximum Value	Value Assigned	
Watershed Evaluated: Death Valley			
Drinking Water Threat			
Likelihood of Release to an Aquifer:			
1. Observed Release	550	0.0	
2. Potential to Release:			
2a. Containment	10	0.0	
2b. Net Precipitation	10	0.0	
2c. Depth to Aquifer	5	0.0	
2d. Travel Time	35	0.0	
2e. Potential to Release [lines 2a(2b + 2c + 2d)]	500	0.0	
3. Likelihood of Release (higher of lines 1 and 2e)	550		0.0
Waste Characteristics:			
4. Toxicity/Mobility	(a)	0.0	
5. Hazardous Waste Quantity	(a)	0.0	
6. Waste Characteristics	100		0.0
Targets:			
7. Nearest Well	(b)	0.0	
8. Population:			
8a. Level I Concentrations	(b)	0.0	
8b. Level II Concentrations	(b)	0.0	
8c. Potential Contamination	(b)	0.0	
8d. Population (lines 8a + 8b + 8c)	(b)	0.0	
9. Resources	5	0.0	
10. Targets (lines 7 + 8d + 9)	(b)		0.0
Drinking Water Threat Score:			
11. Drinking Water Threat Score ([lines 3 x 6 x 10]/82,500, subject to max of 100)	100		0.0
Human Food Chain Threat			
Likelihood of Release:			
12. Likelihood of Release (same value as line 3)	550	0.0	
Waste Characteristics:			
13. Toxicity/Mobility/Persistence/Bioaccumulation	(a)	0.0	
14. Hazardous Waste Quantity	(a)	0.0	
15. Waste Characteristics	1000		0.0
Targets:			
16. Food Chain Individual	50	0.0	
17. Population			
17a. Level I Concentration	(b)	0.0	
17b. Level II Concentration	(b)	0.0	
17c. Potential Human Food Chain Contamination	(b)	0.0	
17d. Population (lines 17a + 17b + 17c)	(b)	0.0	
18. Targets (lines 16 + 17d)	(b)		0.0
Human Food Chain Threat Score:			
19. Human Food Chain Threat Score [(lines 12x15x18)/82,500,suject to max of 100]	100		0.0
Environmental Threat			
Likelihood of Release:			
20. Likelihood of Release (same value as line 3)	550		0.0
Waste Characteristics:			
21. Ecosystem Toxicity/Persistence/Bioaccumulation	(a)	0.0	
22. Hazardous Waste Quantity	(a)	0.0	
23. Waste Characteristics	1000		0.0
Targets:			
24. Sensitive Environments			
24a. Level I Concentrations	(b)	0.0	
24b. Level II Concentrations	(b)	0.0	

24c. Potential Contamination	(b)	0.0	
24d. Sensitive Environments (lines 24a + 24b + 24c)	(b)	0.0	
25. Targets (value from line 24d)	(b)		0.0
Environmental Threat Score:			
26. Environmental Threat Score [(lines 20x23x25)/82,500 subject to a max of 60]	60		0.0
Ground Water to Surface Water Migration Component Score for a Watershed			
27. Watershed Score[c] (lines 11 + 19 + 28, subject to a max of 100)	100		0.0
28. Component Score (S_{gs})[c] (highest score from line 27 for all watersheds evaluated, subject to a max of 100)	100		0.0

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] Do not round to nearest integer

TABLE 5-1 --SOIL EXPOSURE PATHWAY SCORESHEET			
Factor categories and factors	Maximum Value	Value Assigned	
Likelihood of Exposure:			
1. Likelihood of Exposure	550		550.0
Waste Characteristics:			
2. Toxicity	(a)	10000.0	
3. Hazardous Waste Quantity	(a)	10.0	
4. Waste Characteristics	100		18.0
Targets:			
5. Resident Individual	50	0.0	
6. Resident Population:			
6a. Level I Concentrations	(b)	0	
6b. Level II Concentrations	(b)		
6c. Population (lines 6a + 6b)	(b)		
7. Workers	15	10.0	
8. Resources	5		
9. Terrestrial Sensitive Environments	(c)	100.0	
10. Targets (lines 5 + 6c + 7 + 8 + 9)	(b)		110.0
Resident Population Threat Score			
11. Resident Population Threat Score (lines 1 x 4 x 10)	(b)		1089000.0
Nearby Population Threat			
Likelihood of Exposure:			
12. Attractiveness/Accessibility	100	100.0	
13. Area of Contamination	100	100.0	
14. Likelihood of Exposure	500		500.0
Waste Characteristics:			
15. Toxicity	(a)	10000.0	
16. Hazardous Waste Quantity	(a)	10.0	
17. Waste Characteristics	100		18.0
Targets:			
18. Nearby Individual	1	1.0	
19. Population Within 1 Mile	(b)		
20. Targets (lines 18 + 19)	(b)		1.0
Nearby Population Threat Score			
21. Nearby Population Threat (lines 14 x 17 x 20)	(b)		9000.0
Soil Exposure Pathway Score:			
22. Pathway Score[d] (S_s), [lines (11+21)/82,500, subject to max of 100]	100		13.31

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c] No specific maximum value applies to factor. However, pathway score based solely on terrestrial sensitive environments is limited to a maximum of 60
[d] Do not round to nearest integer

TABLE 6-1 --AIR MIGRATION PATHWAY SCORESHEET

Factor categories and factors	Maximum Value	Value Assigned	
Likelihood of Release:			
1. Observed Release	550	550.0	
2. Potential to Release:			
2a. Gas Potential to Release	500	7.0	
2b. Particulate Potential to Release	500	10.0	
2c. Potential to Release (higher of lines 2a and 2b)	500	10.0	
3. Likelihood of Release (higher of lines 1 and 2c)	550		550.0
Waste Characteristics:			
4. Toxicity/Mobility	(a)	200.0	
5. Hazardous Waste Quantity	(a)	10000.0	
6. Waste Characteristics	100		32.0
Targets:			
7. Nearest Individual	50	20.0	
8. Population:			
8a. Level I Concentrations	(b)	0.0	
8b. Level II Concentrations	(b)	0.0	
8c. Potential Contamination	(c)	16.4	
8d. Population (lines 8a + 8b + 8c)	(b)	16.4	
9. Resources	5	0.0	
10. Sensitive Environments:			
10a. Actual Contamination	(c)	0.0	
10b. Potential Contamination	(c)	0.0	
10c. Sensitive Environments (lines 10a + 10b)	(c)	0.0	
11. Targets (lines 7 + 8d + 9 + 10c)	(b)		36.4
Air Migration Pathway Score:			
12. Pathway Score (S_a) [(lines 3 x 6 x 11)/82,500][d]	100		7.77

[a] Maximum value applies to waste characteristics category
[b] Maximum value not applicable
[c]No specific maximum value applies to factor. However, pathway score based solely on sensitive environments is limited to a maximum of 60.
[d] Do not round to nearest integer

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Groundwater score sheet (0)

Observed Release (Yes) = 550 Yes observed Release: Mill tails are visible, and moved by in frequent flash floods

2)Potential to Release

a) Containment = 10 uncontained soil pile
b) Net precipitation = 1 Average annual precipitation = 0-5inches/ year from NOAA 30 year Average
c) Depth to aquifer = 3 Depth to water of onsite well = 30 feet Maximum of onsite well
d) Travel time = 5 because Thickness of lowest hydraulic conductivity layer Between 10^{-5} and 10^{-7}

7) Nearest Well = 0 No wells within 4 miles of site
8) Population = 0 No residents with 4 miles of site
9) Resources = 0 No drinking water and stock with in 4 miles

10) = 0 No contaminates

Surface Water Scoresheet (0)

1) Observed Release = 550 yes observed Release
2) Potential to Release
   a) 10 no contaminate
   b) Drainage Area = 2 >1000 Acres Soil group C/B 2 years 24 hours rain
   c) Distance = 3 Distance to surface water > 1.5 miles from site
3) Potential to Release by flood
   a. = 10 No containments
   b. Flood frequency = 0 Flash flood and high run off
   c. Potential to release by flood = 0 calculated
4) Potential to Release 50 (calculated
5) Likelihood of release 550 (See 1)

Threats

6) Toxicity/Persistence 4000 (persistence factor of 0.4)
7) Hazardous waste quantity 10,000 (Hazardous waste quantity value . 10,000 to 1,000,000)
8) Waste characterization = 56 (calculated)
9) Nearest intake 0 (no intakes with 15 mile of site)
10) Population 0 None with in target distance
11) Resources = 0 no irrigation nearby, no watering livestock within target distance, no commercial food preparation and no Major or designated water recreation area, excluding drinking water use.
12) Targets = 0 No targets with target distance

Soil Exposure (13.31)

1) Likelihood of exposure = 550
2) Toxicity = 10,000 for Mercury (assigned)
3) Hazardous waste quantity = 10 (Hazardous characteristic factor assigned Tier A Haz Constituent Quantity)
4) Waste characterization= 18 (calculated see HRS score sheet)

5) Resident individual = 0 " *Resident individual.* Evaluate this factor based on whether there is a resident individual, as specified in section 5.1.3, who is subject to Level I or Level II concentrations.

6) Resident Population

   6a Level 1 Concentrations None

   6b Level 2 Concentrations None

7) Workers = 10 (number of worker 1 to 100)

8) Resources = 0 No agriculture, no Silviculture and livestock production nearby
9) Terrestrial sensitive environments = 10 due to national park (9)
10) Targets = 110 (calculated)
11) Resident/nearby population threat = 1,089,000
12) Attractiveness accessibility = 100 because rec area
13) Areas of contamination = 100 due to square footage between 125, 000 and 250,000 (13) Targets
18) Nearby individual = 1 **Travel distance for nearby individual (miles) >0 to ¼**
14) Population within one mile = score of 0 because 11 to 30 people within one mile (19)

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Air Score (7.77)

1) Observed release Yes = 550

2) Source substantially surrounded by engineering windbreak and no other containment specifically described in this table applies Gas and particulate score are 10 (2) "other' on both charts

C) All situations except those specifically listed below = 10

3) Likelihood of Release 550 (See 1)

Waste Characteristics

4) Toxicity/ Mobility = 200 Mobility factor 0.2

5) Hazardous waste Quantity = 10000 assigned (Hazardous waste quantity value between 10,000 and 1,000,0000 estimated)

6) Waste Characteristics = 32 (calculated)

7) Nearest Individual = 20 (Distance to nearest Individual, Miles) 0 -1/8

8) Population

a) NA

b) NA

C) Potential Contamination = 164 Number of people within the distance category 101 to 300 (estimated for peak of tourist traffic and site workers high estimate to be conservative)

9) Resources = 0 no commercial agriculture, silviculture not a designated recreation area anymore

APPENDIX B
EDR Reports

Keane Wonder
Death Valley National Park
Death Valley, CA 92328

Inquiry Number: 3807730.1s
December 11, 2013

The EDR Radius Map™ Report with GeoCheck®

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

DEATH VALLEY NATIONAL PARK
DEATH VALLEY, CA 92328

COORDINATES

Latitude (North):	36.6685000 - 36˚ 40' 6.60''
Longitude (West):	116.9099000 - 116˚ 54' 35.64''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	508051.6
UTM Y (Meters):	4057900.5
Elevation:	1354 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	36116-F8 CHLORIDE CITY, CA
Most Recent Revision:	1988

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	2010, 2012
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL..... National Priority List

EXECUTIVE SUMMARY

Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls
LUCIS ..... Land Use Control Information System

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report

SLIC ..... Statewide SLIC Cases
INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land
FEMA UST ..... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ..... Clandestine Drug Labs
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
Toxic Pits ..... Toxic Pits Cleanup Act Sites
CDL ..... Clandestine Drug Labs
US HIST CDL ..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ..... Facility Inventory Database
HIST UST ..... Hazardous Substance Storage Container Database
SWEEPS UST ..... SWEEPS UST Listing

Local Land Records

LIENS 2 ..... CERCLA Lien Information
LIENS ..... Environmental Liens Listing
DEED ..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System

CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators
DOT OPS	Incident and Accident Data
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
UIC	UIC Listing
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE	Hazardous Waste & Substance Site List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
HWT	Registered Hazardous Waste Transporter Database
HWP	EnviroStor Permitted Facilities Listing
Financial Assurance	Financial Assurance Information Listing
LEAD SMELTERS	Lead Smelter Sites
2020 COR ACTION	2020 Corrective Action Program List
US AIRS	Aerometric Information Retrieval System Facility Subsystem
PRP	Potentially Responsible Parties
WDS	Waste Discharge System
EPA WATCH LIST	EPA WATCH LIST
US FIN ASSUR	Financial Assurance Information
PCB TRANSFORMER	PCB Transformer Registration Database

EXECUTIVE SUMMARY

PROC..... Certified Processors Database
MWMP..... Medical Waste Management Program Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP..... EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat..... EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners..... EDR Exclusive Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

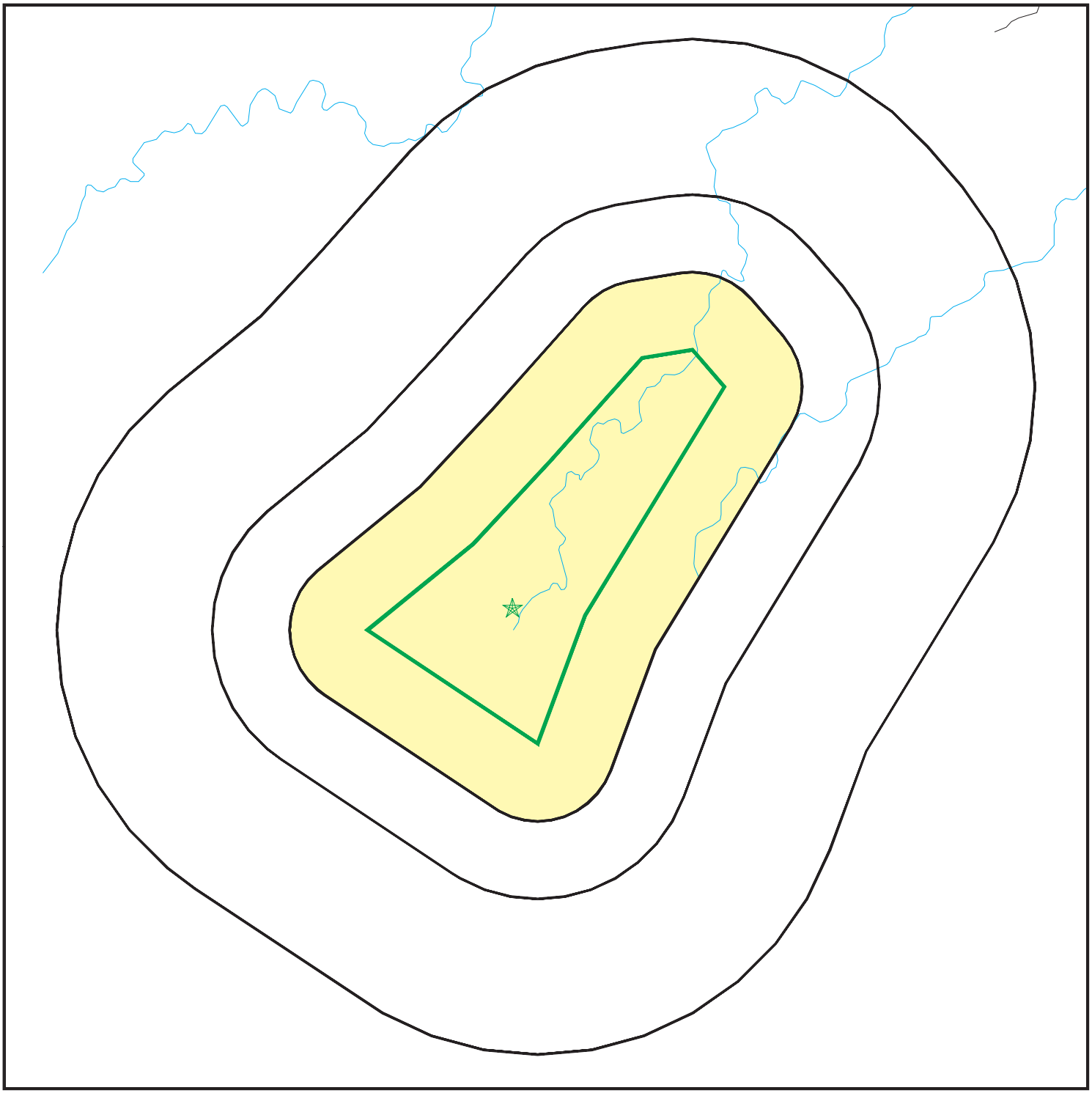
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 20 records.

Site Name	Database(s)
COW CREEK MAINTENENCE FAC	HIST CORTESE
GRAPEVINE MAINTENENCE FAC	HIST CORTESE
WILDROSE CANYON	HIST CORTESE, LUST
CALTRANS DEATH VALLEY YAR	HIST CORTESE, LUST
FURNACE CREEK RANCH	SWEEPS UST
L.A. DWP-COW CREEK MAINTENANCE	SWEEPS UST
PACIFIC BELL FURNACE CREEK	SWEEPS UST
STOVEPIPE WELLS	HIST UST, SWEEPS UST
GRAPEVINE MAINTENENCE FACILITY	LUST
COW CREEK MAINTENENCE FACILITY	LUST
FURNACE CREEK	UST
STOVEPIPE WELLS VILLAGE	HIST UST
PACIFIC BELL (LB-229)	RCRA-SQG, FINDS, HIST UST
U S BORAX INC RYAN MINE	RCRA-SQG, FINDS, HAZNET
DEATH VALLEY JUNCTION DISPOSAL SIT	ENVIROSTOR
AMERICAN BORATE - BILLIE MINE	ENVIROSTOR
TONOPAH AND TIDEWATER RAILROAD YAR	ENVIROSTOR
CALTRANS MAINTENANCE YARD	ENVIROSTOR
KEENE WONDER MILL	ENVIROSTOR
STOVEPIPE WELLS DISPOSAL SITE	ENVIROSTOR

OVERVIEW MAP - 3807730.1s



Target Property
Sites at elevations higher than or equal to the target property
Sites at elevations lower than the target property
Manufactured Gas Plants
National Priority List Sites
Dept. Defense Sites

0 1/4 1/2 1 Miles

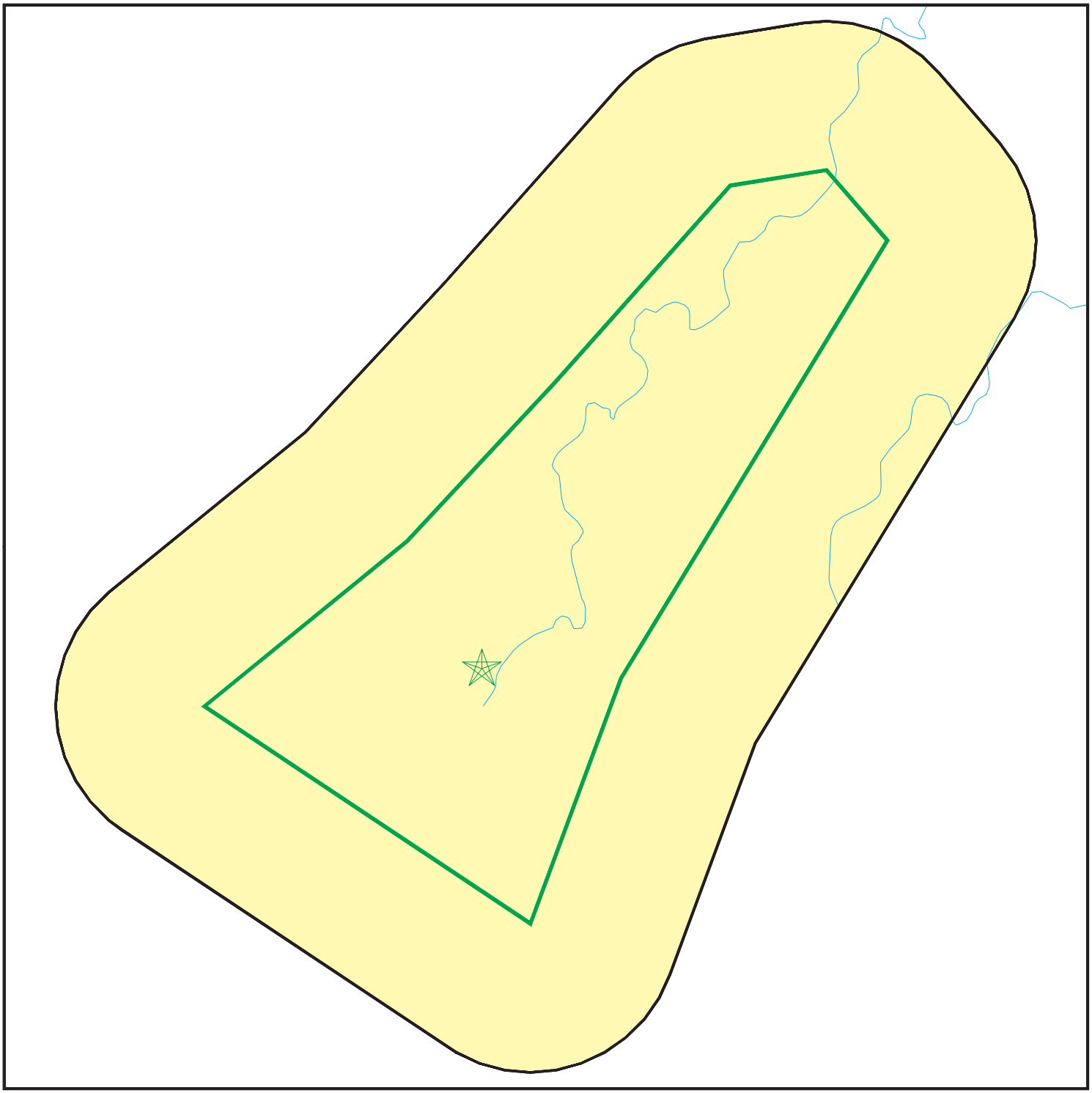
Indian Reservations BIA
Oil & Gas pipelines from USGS
100-year flood zone
500-year flood zone

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Keane Wonder ADDRESS: Death Valley National Park Death Valley CA 92328 LAT/LONG: 36.6685 / 116.9099	CLIENT: Environmental Cost Management, Inc. CONTACT: Holly Trejo INQUIRY #: 3807730.1s DATE: December 11, 2013 3:21 pm

DETAIL MAP - 3807730.1s



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Keane Wonder ADDRESS: Death Valley National Park Death Valley CA 92328 LAT/LONG: 36.6685 / 116.9099	CLIENT: Environmental Cost Management, Inc. CONTACT: Holly Trejo INQUIRY #: 3807730.1s DATE: December 11, 2013 3:23 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
SWEEPS UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PROC	0.500		0	0	0	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 20 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
DEATH VALLEY	U003788906	FURNACE CREEK	HWY 190	92328	UST
DEATH VALLEY	U001574753	STOVEPIPE WELLS VILLAGE	HIGHWAY 190	92328	HIST UST
DEATH VALLEY	S106926502	FURNACE CREEK RANCH	HIGHWAY 190	92328	SWEEPS UST
DEATH VALLEY	S106928329	L.A. DWP-COW CREEK MAINTENANCE	DEATH VLY NATL MONUM	92328	SWEEPS UST
DEATH VALLEY	S105023494	COW CREEK MAINTENENCE FAC	DEATH VALLEY NAT. MNMT.	92328	HIST CORTESE
DEATH VALLEY	S105023493	GRAPEVINE MAINTENENCE FAC	DEATH VALLEY NAT. MNMT.	92328	HIST CORTESE
DEATH VALLEY	S105023492	WILDROSE CANYON	DEATH VALLEY NAT. MNMT.	92328	HIST CORTESE, LUST
DEATH VALLEY	S104160691	GRAPEVINE MAINTENENCE FACILITY	DEATH VALLEY NAT MNMT	92328	LUST
DEATH VALLEY	S104160690	COW CREEK MAINTENENCE FACILITY	DEATH VALLEY NAT MNMT	92328	LUST
DEATH VALLEY	S102426183	CALTRANS DEATH VALLEY YAR	FURNACE CREEK RTE 190	92328	HIST CORTESE, LUST
DEATH VALLEY	S106930361	PACIFIC BELL FURNACE CREEK	E HWY 190 1 MI N/O TEX	92328	SWEEPS UST
DEATH VALLEY	S101480379	DEATH VALLEY JUNCTION DISPOSAL SIT	SW OF JUNCTION OF HWY 190 AND	92328	ENVIROSTOR
DEATH VALLEY	1000857022	U S BORAX INC RYAN MINE	4 MI SE HWY 190	92328	RCRA-SQG, FINDS, HAZNET
DEATH VALLEY	U001574752	STOVEPIPE WELLS	STATE HIGHWAY 190	92328	HIST UST, SWEEPS UST
DEATH VALLEY	S100183819	AMERICAN BORATE - BILLIE MINE	STATE HIGHWAY 190, 21 MI NW OF	92328	ENVIROSTOR
DEATH VALLEY	S100180438	TONOPAH AND TIDEWATER RAILROAD YAR	STATE HIGHWAYS 190 AND 178	92328	ENVIROSTOR
FURNACE CREEK	S101480361	CALTRANS MAINTENANCE YARD	HIGHWAY 190, 1 MI NORTH OF TOW	92328	ENVIROSTOR
FURNACE CREEK	1000250386	PACIFIC BELL (LB-229)	E/S HWY. 190, 1 MI. N/O TEXAS	92328	RCRA-SQG, FINDS, HIST UST
FURNACE CREEK	S100538522	KEENE WONDER MILL	T15S R01E, SECTION 6; FUNERAL	92328	ENVIROSTOR
STOVEPIPE WELLS	S100714208	STOVEPIPE WELLS DISPOSAL SITE	HWY 190, NORTH OF TOWN	92328	ENVIROSTOR

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 05/09/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 62

Source: EPA
Telephone: N/A
Last EDR Contact: 11/11/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/09/2013	Telephone: N/A
Date Made Active in Reports: 07/10/2013	Last EDR Contact: 11/11/2013
Number of Days to Update: 62	Next Scheduled EDR Contact: 01/20/2014
	Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/29/2013	Telephone: 703-412-9810
Date Made Active in Reports: 08/09/2013	Last EDR Contact: 11/11/2013
Number of Days to Update: 72	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/31/2013	Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/08/2013	Telephone: 703-603-8704
Date Made Active in Reports: 12/06/2013	Last EDR Contact: 10/11/2013
Number of Days to Update: 151	Next Scheduled EDR Contact: 01/20/2014
	Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 04/26/2013	Source: EPA
Date Data Arrived at EDR: 05/29/2013	Telephone: 703-412-9810
Date Made Active in Reports: 08/09/2013	Last EDR Contact: 11/11/2013
Number of Days to Update: 72	Next Scheduled EDR Contact: 03/10/2014
	Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 06/17/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 104

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 50

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 10/16/2013
Date Data Arrived at EDR: 10/17/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC: Statewide SLIC Cases
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 10/16/2013
Date Data Arrived at EDR: 10/17/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 08/27/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 66

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 03/01/2013
Date Data Arrived at EDR: 03/01/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/27/2012
Date Data Arrived at EDR: 08/28/2012
Date Made Active in Reports: 10/16/2012
Number of Days to Update: 49

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 10/16/2013
Date Data Arrived at EDR: 10/17/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 41

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/05/2013
Date Data Arrived at EDR: 02/06/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 65

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 07/30/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 129

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 07/29/2013
Date Data Arrived at EDR: 08/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 92

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 02/28/2013
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 43

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 70

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 09/28/2012
Date Data Arrived at EDR: 11/07/2012
Date Made Active in Reports: 04/12/2013
Number of Days to Update: 156

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/01/2014
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/17/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 66

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/24/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/19/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 28

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 10/29/2013
Date Made Active in Reports: 12/05/2013
Number of Days to Update: 37

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 08/06/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 22

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 12/05/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 09/03/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 09/03/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/06/2013
Date Data Arrived at EDR: 04/25/2013
Date Made Active in Reports: 05/10/2013
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 11/13/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 10/08/2013
Date Data Arrived at EDR: 10/15/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 11/13/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/05/2013
Number of Days to Update: 22

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 12/10/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 55

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 10/14/2013
Date Data Arrived at EDR: 10/30/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 34

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 10/30/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 10/16/2013
Date Data Arrived at EDR: 10/17/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 41

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 10/16/2013
Date Data Arrived at EDR: 10/17/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 41

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 10/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 07/11/2013
Date Data Arrived at EDR: 08/08/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 10/02/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 11/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 03/13/2013
Number of Days to Update: 15

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 09/10/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/07/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 57

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/26/2013
Date Data Arrived at EDR: 06/11/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 143

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/13/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/26/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 28

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/06/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/27/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 11/21/2014
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems
Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 10/09/2014
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2013
Date Data Arrived at EDR: 07/17/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 107

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/22/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 91

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/09/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 23

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 03/08/2013
Date Data Arrived at EDR: 03/21/2013
Date Made Active in Reports: 07/10/2013
Number of Days to Update: 111

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 12/10/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/08/2012
Date Data Arrived at EDR: 05/25/2012
Date Made Active in Reports: 07/10/2012
Number of Days to Update: 46

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 11/25/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 50

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

UIC: UIC Listing
A listing of underground control injection wells.

Date of Government Version: 08/21/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 30

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/17/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 10/01/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/09/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 56

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/16/2013
Date Made Active in Reports: 08/26/2013
Number of Days to Update: 41

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/25/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 58

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/27/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/28/2013
Date Data Arrived at EDR: 10/29/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 38

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/01/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/19/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 28

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 08/29/2013
Date Data Arrived at EDR: 09/13/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 31

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/10/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 09/13/2013
Next Scheduled EDR Contact: 12/23/2013
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/15/2013
Date Data Arrived at EDR: 10/15/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 43

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 10/15/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/28/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/26/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/12/2013
Date Data Arrived at EDR: 08/20/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 49

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 10/31/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/03/2013
Number of Days to Update: 27

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 10/25/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/29/2013
Date Data Arrived at EDR: 02/14/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/24/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 11/11/2011
Date Data Arrived at EDR: 05/18/2012
Date Made Active in Reports: 05/25/2012
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/15/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: N/A

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 04/15/2013
Date Data Arrived at EDR: 07/03/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 72

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 10/04/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Quarterly

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/23/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/06/2013
Number of Days to Update: 30

Source: EPA
Telephone: 202-564-5962
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Annually

EPA WATCH LIST: EPA WATCH LIST
EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 06/30/2013
Date Data Arrived at EDR: 08/13/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/15/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Proprietary Historic Dry Cleaners - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Auto Stat: EDR Proprietary Historic Gas Stations - Cole

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: N/A
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 07/25/2013
Date Data Arrived at EDR: 07/26/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 14

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 07/25/2013
Date Data Arrived at EDR: 07/26/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 25

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 06/20/2013
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 08/21/2013
Number of Days to Update: 61

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/02/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 20

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/20/2013
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 08/09/2013
Number of Days to Update: 39

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 11/15/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 46

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/09/2013
Date Data Arrived at EDR: 01/10/2013
Date Made Active in Reports: 02/25/2013
Number of Days to Update: 46

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/20/2013
Date Data Arrived at EDR: 08/23/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 46

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/16/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 42

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/09/2013
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 13

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 28

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing

Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/22/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 42

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/23/2013
Date Data Arrived at EDR: 01/25/2013
Date Made Active in Reports: 02/27/2013
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern

San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: No Update Planned

HMS: Street Number List

Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 03/28/2013
Date Data Arrived at EDR: 06/17/2013
Date Made Active in Reports: 08/21/2013
Number of Days to Update: 65

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities

Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/21/2013
Date Data Arrived at EDR: 10/22/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 36

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 10/22/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/17/2013
Next Scheduled EDR Contact: 11/04/2013
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/30/2013
Date Data Arrived at EDR: 02/21/2013
Date Made Active in Reports: 03/25/2013
Number of Days to Update: 32

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 10/21/2013
Date Data Arrived at EDR: 10/25/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 33

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 07/15/2013
Date Data Arrived at EDR: 07/18/2013
Date Made Active in Reports: 08/20/2013
Number of Days to Update: 33

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 10/09/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 09/20/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 24

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/07/2013
Date Data Arrived at EDR: 10/09/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 48

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 08/23/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 42

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 09/04/2013
Date Data Arrived at EDR: 09/05/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 39

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 09/11/2013
Date Data Arrived at EDR: 09/12/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 32

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 27

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 11/04/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/13/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 21

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 08/22/2013
Date Data Arrived at EDR: 08/22/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 49

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2013
Date Data Arrived at EDR: 10/22/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2013
Date Data Arrived at EDR: 10/22/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/05/2013
Date Data Arrived at EDR: 10/10/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 47

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/05/2013
Date Data Arrived at EDR: 10/10/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 47

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 09/03/2013
Date Data Arrived at EDR: 09/03/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 37

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2012
Date Data Arrived at EDR: 11/06/2012
Date Made Active in Reports: 11/30/2012
Number of Days to Update: 24

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 11/18/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 09/25/2013
Date Data Arrived at EDR: 09/27/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 21

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/26/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/20/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/08/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 49

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/13/2013
Next Scheduled EDR Contact: 09/30/2013
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 09/16/2013
Date Data Arrived at EDR: 09/17/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 29

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 09/03/2013
Date Data Arrived at EDR: 09/04/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 36

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 09/03/2013
Date Data Arrived at EDR: 09/06/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 12/02/2013
Next Scheduled EDR Contact: 03/17/2014
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 08/14/2013
Date Data Arrived at EDR: 08/16/2013
Date Made Active in Reports: 10/08/2013
Number of Days to Update: 53

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 11/08/2013
Next Scheduled EDR Contact: 02/24/2014
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 08/22/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 09/09/2013
Date Data Arrived at EDR: 09/10/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 34

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/21/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 09/18/2013
Date Data Arrived at EDR: 09/20/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 27

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/18/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/18/2013
Number of Days to Update: 24

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 09/30/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/01/2013
Date Data Arrived at EDR: 10/02/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/30/2013
Next Scheduled EDR Contact: 01/13/2014
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 12/09/2013
Next Scheduled EDR Contact: 03/24/2014
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/04/2013
Date Data Arrived at EDR: 11/06/2013
Date Made Active in Reports: 12/04/2013
Number of Days to Update: 28

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 08/19/2013
Date Data Arrived at EDR: 08/27/2013
Date Made Active in Reports: 10/10/2013
Number of Days to Update: 44

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/19/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 10/07/2013
Next Scheduled EDR Contact: 01/20/2014
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/19/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 10/02/2013
Date Data Arrived at EDR: 10/30/2013
Date Made Active in Reports: 11/27/2013
Number of Days to Update: 28

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 10/28/2013
Next Scheduled EDR Contact: 02/11/2014
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 08/29/2013
Date Data Arrived at EDR: 09/18/2013
Date Made Active in Reports: 10/16/2013
Number of Days to Update: 28

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 09/24/2013
Date Data Arrived at EDR: 10/01/2013
Date Made Active in Reports: 11/26/2013
Number of Days to Update: 56

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/23/2013
Next Scheduled EDR Contact: 01/08/2014
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 08/01/2013
Date Data Arrived at EDR: 08/05/2013
Date Made Active in Reports: 08/22/2013
Number of Days to Update: 17

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 12/06/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/22/2013
Next Scheduled EDR Contact: 03/03/2014
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/18/2013
Next Scheduled EDR Contact: 01/27/2014
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 11/01/2013
Date Data Arrived at EDR: 11/07/2013
Date Made Active in Reports: 11/18/2013
Number of Days to Update: 11

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 11/07/2013
Next Scheduled EDR Contact: 02/17/2014
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 07/24/2013
Date Made Active in Reports: 08/19/2013
Number of Days to Update: 26

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/21/2013
Next Scheduled EDR Contact: 02/03/2014
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 06/21/2013
Date Made Active in Reports: 08/05/2013
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/25/2013
Next Scheduled EDR Contact: 03/10/2014
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 08/09/2013
Date Made Active in Reports: 09/27/2013
Number of Days to Update: 49

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 09/16/2013
Next Scheduled EDR Contact: 12/30/2013
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

KEANE WONDER
DEATH VALLEY NATIONAL PARK
DEATH VALLEY, CA 92328

TARGET PROPERTY COORDINATES

Latitude (North):	36.6685 - 36˚ 40’ 6.60’’
Longitude (West):	116.9099 - 116˚ 54’ 35.64’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	508051.6
UTM Y (Meters):	4057900.5
Elevation:	1354 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	36116-F8 CHLORIDE CITY, CA
Most Recent Revision:	1988

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

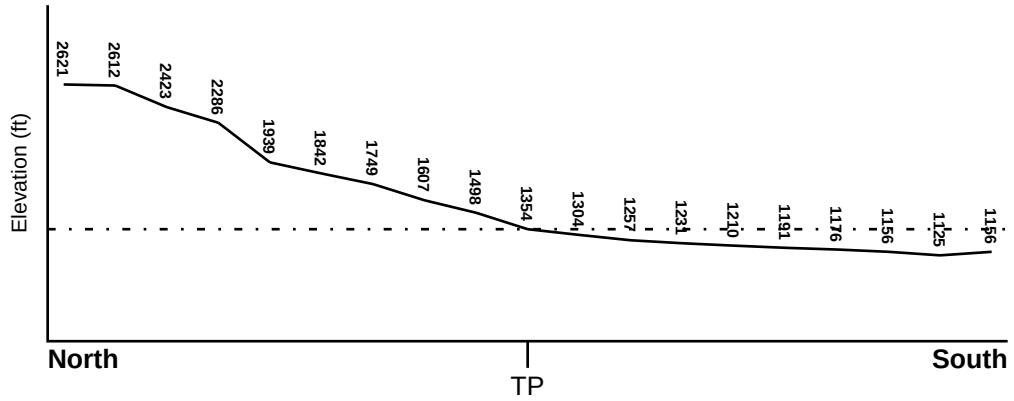
TOPOGRAPHIC INFORMATION

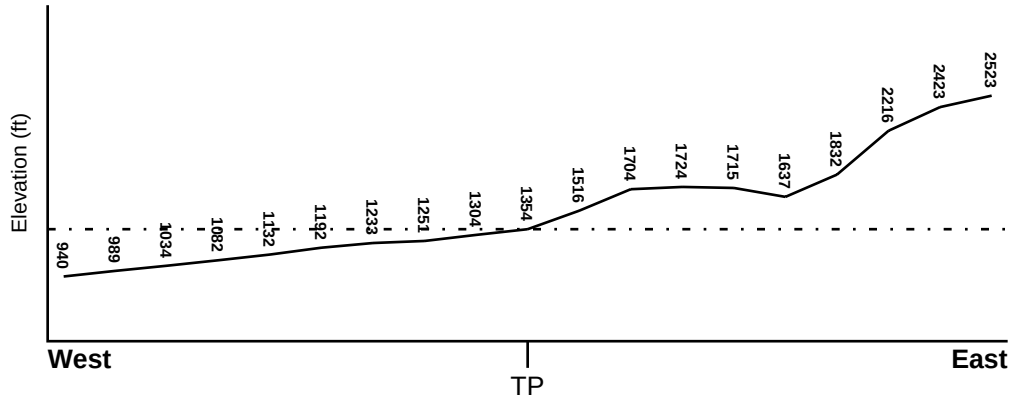
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 1354 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
INYO, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 0600731200B - FEMA Q3 Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
CHLORIDE CITY	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Precambrian
System:	Precambrian
Series:	Y Sedimentary rocks
Code:	Y *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	CARRIZO
Soil Surface Texture:	very gravelly - coarse sand
Hydrologic Group:	Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.
Soil Drainage Class:	Excessively. Soils have very high and high hydraulic conductivity and low water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	HIGH
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	10 inches	very gravelly - coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 20.00 Min: 20.00	Max: 8.40 Min: 7.40
2	10 inches	60 inches	extremely gravelly - coarse sand	Granular materials (35 pct. or less passing No. 200), Stone Fragments, Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Clean gravels, Poorly Graded Gravel.	Max: 20.00 Min: 20.00	Max: 8.40 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: very gravelly - loamy coarse sand
stony - sand
very gravelly - sandy clay loam
unweathered bedrock
gravelly - fine sand

Surficial Soil Types: very gravelly - loamy coarse sand
stony - sand
very gravelly - sandy clay loam
unweathered bedrock
gravelly - fine sand

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: very stony - coarse sand
very gravelly - sand
unweathered bedrock
sand

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000176231	0 - 1/8 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

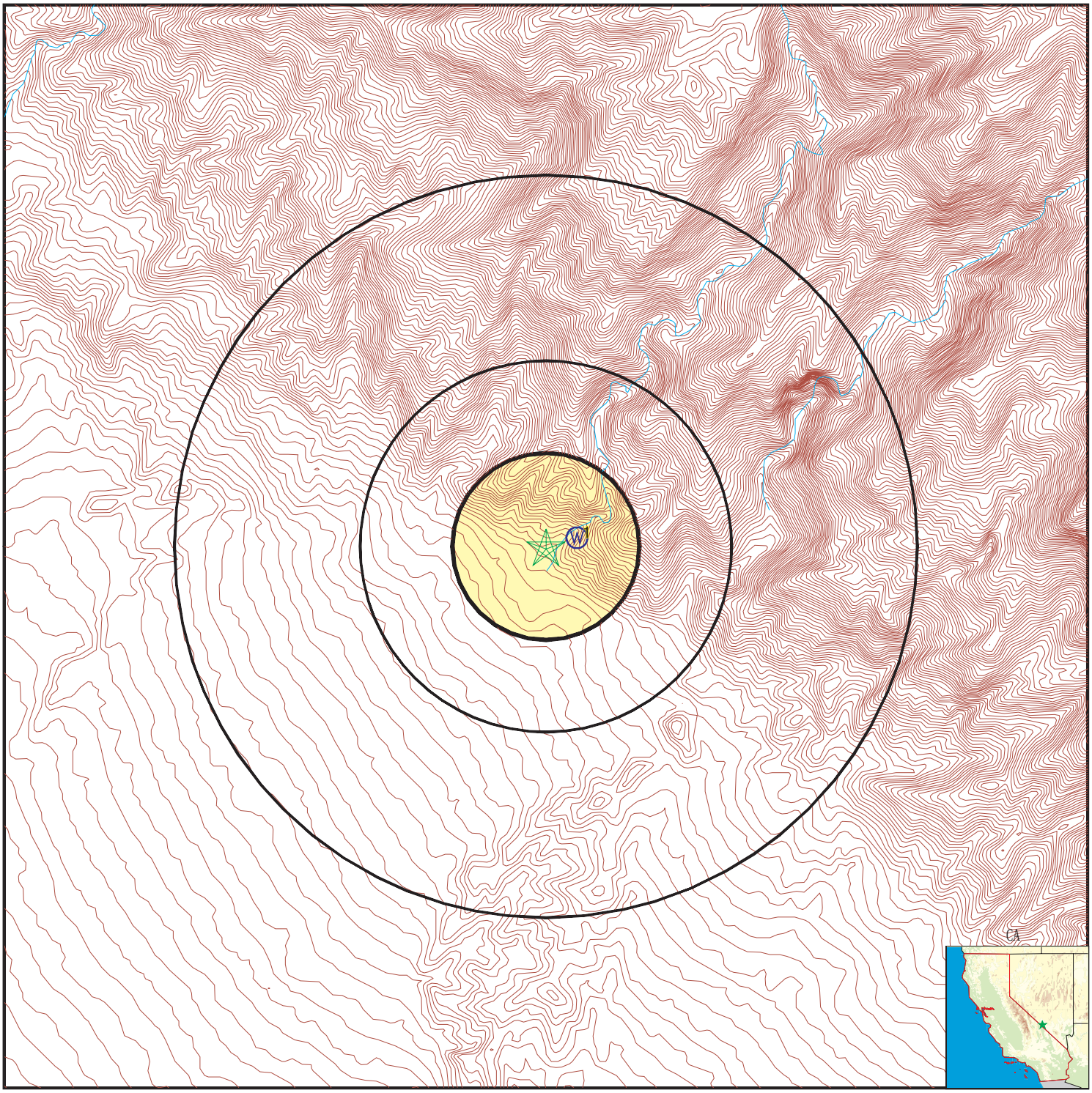
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 3807730.1s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

N

SITE NAME: Keane Wonder ADDRESS: Death Valley National Park Death Valley CA 92328 LAT/LONG: 36.6685 / 116.9099	CLIENT: Environmental Cost Management, Inc. CONTACT: Holly Trejo INQUIRY #: 3807730.1s DATE: December 11, 2013 3:23 pm

Map ID Direction Distance Elevation	Database	EDR ID Number
1 **ENE** **0 - 1/8 Mile** **Higher**	**FED USGS**	**USGS40000176231**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-364008116542701		
Monloc name:	029N001E06K001S		
Monloc type:	Well		
Monloc desc:	DETAILED SKETCH AND PHOTO IN FILE		
Huc code:	Not Reported	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	36.6688369
Longitude:	-116.9083909	Sourcemap scale:	62500
Horiz Acc measure:	5	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	1440
Vert measure units:	feet	Vertacc measure val:	40
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Basin and Range basin-fill aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for INYO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for INYO COUNTY, CA

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

Keane Wonder
Death Valley National Park
Death Valley, CA 92328

Inquiry Number: 3807730.2s
December 11, 2013

EDR NEPACheck®

Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

FORM-KKT

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EDR NEPACheck® DESCRIPTION

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies include in their decision-making processes appropriate and careful consideration of all environmental effects and actions, analyze potential environmental effects of proposed actions and their alternatives for public understanding and scrutiny, avoid or minimize adverse effects of proposed actions, and restore and enhance environmental quality as much as possible.

The EDR NEPACheck provides information which may be used, in conjunction with additional research, to determine whether a proposed site or action will have significant environmental effect.

The report provides maps and data for the following items (where available). Search results are provided in the Map Findings Summary on page 2 of this report.

Section	Regulation
Natural Areas Map	
• Federal Lands Data:	
- Officially designated wilderness areas	47 CFR 1.1307(1)
- Officially designated wildlife preserves, sanctuaries and refuges	47 CFR 1.1307(2)
- Wild and scenic rivers	40 CFR 6.302(e)
- Fish and Wildlife	40 CFR 6.302
• Threatened or Endangered Species, Fish and Wildlife, Critical Habitat Data (where available)	47 CFR 1.1307(3); 40 CFR 6.302
Historic Sites Map	
• National Register of Historic Places	47 CFR 1.1307(4); 40 CFR 6.302
• State Historic Places (where available)	
• Indian Reservations	
Flood Plain Map	
• National Flood Plain Data (where available)	47 CFR 1.1307(6); 40 CFR 6.302
Wetlands Map	
• National Wetlands Inventory Data (where available)	47 CFR 1.1307(7); 40 CFR 6.302
FCC & FAA Map	
• FCC antenna/tower sites, FAA Markings and Obstructions, Airports, Topographic gradient	47 CFR 1.1307(8)
Key Contacts and Government Records Searched	

MAP FINDINGS SUMMARY

The databases searched in this report are listed below. Database descriptions and other agency contact information is contained in the Key Contacts and Government Records Searched section on page 23 of this report.

TARGET PROPERTY ADDRESS

KEANE WONDER
DEATH VALLEY NATIONAL PARK
DEATH VALLEY, CA 92328

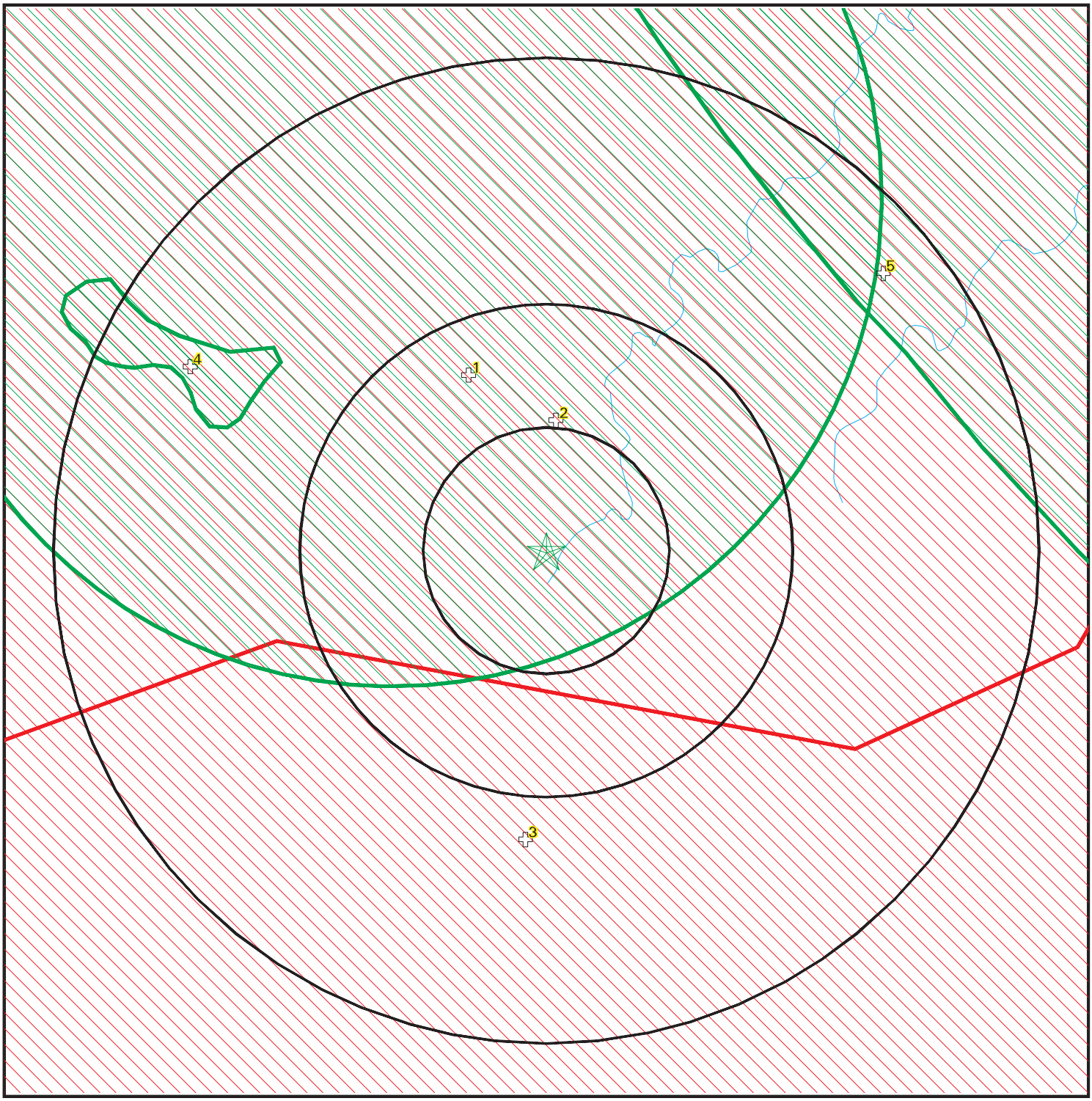
Inquiry #: 3807730.2s
Date: 12/11/13

TARGET PROPERTY COORDINATES

Latitude (North):	36.668499 - 36˚ 40' 6.6''
Longitude (West):	116.909897 - 116˚ 54' 35.6''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	508051.6
UTM Y (Meters):	4057900.5

Applicable Regulation from 47 CFR/FCC Checklist	Database	Search Distance (Miles)	Within Search	Within 1/8 Mile
NATURAL AREAS MAP				
1.1307a (1) Officially Designated Wilderness Area	US Federal Lands	1.00	YES	YES
1.1307a (2) Officially Designated Wildlife Preserve	US Federal Lands	1.00	YES	YES
1.1307a (3) Threatened or Endangered Species or Critical Habitat	CA Natural Diversity Database	1.00	YES	YES
1.1307a (3) Threatened or Endangered Species or Critical Habitat	County Endangered Species	County	YES	N/A
HISTORIC SITES MAP				
1.1307a (4) Listed or eligible for National Register	CA Historic Sites	1.00	NO	NO
1.1307a (4) Listed or eligible for National Register	National Register of Hist. Pla	1.00	NO	NO
	Indian Reservation	1.00	NO	NO
FLOODPLAIN MAP				
1.1307 (6) Located in a Flood Plain	FLOODPLAIN	1.00	NO	NO
WETLANDS MAP				
1.1307 (7) Change in surface features (wetland fill)	NWI	1.00	NO	NO
FCC & FAA SITES MAP				
	Cellular	1.00	NO	NO
	4G Cellular	1.00	NO	NO
	Antenna Structure Registration	1.00	NO	NO
	Towers	1.00	NO	NO
	AM Antenna	1.00	NO	NO
	FM Antenna	1.00	NO	NO
	FAA DOF	1.00	NO	NO
	Airports	1.00	NO	---
	Power Lines	1.00	NO	---

Natural Areas Map



- Target Property
- Roads
- County Boundary
- Waterways
- Water
- Locations
- Federal Areas
- Federal Linear Features
- State Areas
- State Linear Features

SITE NAME: Keane Wonder ADDRESS: Death Valley National Park Death Valley CA 92328 LAT/LONG: 36.6685 / 116.9099	CLIENT: Environmental Cost Management, Inc. CONTACT: Holly Trejo INQUIRY #: 3807730.2s DATE: December 11, 2013

NATURAL AREAS MAP FINDINGS

Federal Endangered Species Listed for: INYO County, CA.
Source: EPA Endangered Species Protection Program Database

BIRD:	EAGLE, BALD
BIRD:	VIREO, LEAST BELL'S
BIRD:	TOWHEE, INYO BROWN
FISH:	CHUB, OWENS TUI
FISH:	DACE, ASH MEADOWS SPECKLED
FISH:	TROUT, LAHONTAN CUTTHROAT
FISH:	PUPFISH, OWENS
MAMMAL:	SHEEP, SIERRA NEVADA BIGHORN
MAMMAL:	VOLE, AMARGOSA
PLANT:	MILK-VETCH, FISH SLOUGH
PLANT:	CENTAURY, SPRING-LOVING
PLANT:	EVENING-PRIMROSE, EUREKA VALLEY
PLANT:	GRASS, EUREKA DUNE
PLANT:	GUMPLANT, ASH MEADOWS
PLANT:	NITERWORT, AMARGOSA
PLANT:	IVESIA, ASH MEADOWS
REPTILE:	TORTOISE, DESERT

Map ID Direction Distance Distance (ft.)	EDR ID Database
1 North 0-1/8 mi 0	CAS0026349 CA Natural Diversity Database

Eondx:	32116
Fcode:	37119
Elmcode:	PDSAL01020
Occnumber:	2
Sitedate:	19030522
Elmdate:	19030522
Presence:	Presumed Extant
Trend:	Unknown
Occrank:	Unknown
Mapdetail:	N
Moreinfo:	N
Sensitive:	N
Maininfo:	JONES, M. SN POM #107378 (HERB)
Occtype:	Natural/Native occurrence
Directions:	KEANE.
Ownermgt:	UNKNOWN
Thrtcom:	Not Reported
Ecocom:	Not Reported
Distcom:	UNABLE TO LOCATE 'KEANE'. MAPPED IN VICINITY OF KEANE WONDER MILL, KEANE WONDER SPRING, AND KEANE WONDER MINE NEAR CHLORIDE CITY. ACCORDING TO HISTORICAL GAZATEER, THESE SITES ARE ATTRIBUTED TO A MR. KEANE THAT WORKED THE AREA CIRCA 1903.
Gencom:	ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1903 COLLECTION BY JONES. COLLECTION MADE AT 1700' ELEVATION.
Edr id:	CAS0026349
Elmmcode:	PDSAL01020

Sname:	POPULUS ANGUSTIFOLIA
Cname:	NARROW-LEAVED COTTONWOOD
Grank:	G5
Srank:	S2S3
Fedlist:	None
Callist:	None
Cdfg:	Not Reported
Cnpslist:	Plants rare, threatened, or endangered in CA, but more common elsewhere
Redcode:	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported/Endangered in a portion of its range/More or less widespread outside of California
Genhab:	RIPARIAN FOREST. IN CALIFORNIA, KNOWN ONLY FROM INYO AND SAN BERNARDINO COUNTIES; WIDESPREAD OUTSIDE THE STATE.
Microhab:	ALONG CREEKS AND RIVERS IN RIPARIAN FOREST. 500-2125M IN CALIFORNIA.

2
North
0-1/8 mi
0

CUSA136766
US Federal Lands

Fedlanp020:	38735
Feature1:	National Park NPS
Feature2:	Not Reported
Feature3:	Not Reported
Agbur:	NPS
Url:	http://www.nps.gov/deva
Name1:	Death Valley National Park
Name2:	Not Reported
Name3:	Not Reported
State:	CA-NV
State fips:	06-32
Latn:	36.458115
Longn:	-117.00503
Isdod:	N
Merc x:	-34216695.3092289
Merc y:	11422263.7709274
Envid:	CUSA136766
Air:	Y
Edr id:	CUSA136766

3
South
1/4-1/2 mi
1482

CUSA137342
US Federal Lands

Fedlanp020:	39311
Feature1:	Wilderness NPS
Feature2:	National Park NPS
Feature3:	Not Reported
Agbur:	NPS
Url:	http://www.wilderness.net/index.cfm?fuse=NWPS&sec=wildView&wname=Death 20Valley

Name1:	Death Valley Wilderness
Name2:	Death Valley National Park
Name3:	Not Reported
State:	CA
State fips:	06
Latn:	36.590746
Longn:	-116.80426
Isdod:	N
Merc x:	-34110639.728386
Merc y:	11429384.4432906
Envid:	CUSA137342
Air:	Y
Edr id:	CUSA137342

4
NW
1/2-1 mi
3486

CAS0003434
CA Natural Diversity Database

Eondx:	20445
Fcode:	21483
Elmcode:	PMCYP0B0N0
Occnumber:	5
Sitedate:	1983XXXX
Elmdate:	XXXXXXXX
Presence:	Presumed Extant
Trend:	Unknown
Occrank:	Unknown
Mapdetail:	N
Moreinfo:	N
Sensitive:	N
Maininfo:	DEDECKER, M. 1983 (PERS)
Occtype:	Natural/Native occurrence
Directions:	KEANE HOT SPRINGS (MAPPED AT KEANE WONDER SPRINGS), 5 KM SW OF CHLORIDE CITY.
Ownermgt:	NPS-DEATH VALLEY NP
Thrtcom:	Not Reported
Ecocom:	Not Reported
Distcom:	Not Reported
Gencom:	LOCATION IS ONLY SOURCE OF INFORMATION FOR THIS SITE.
Edr id:	CAS0003434
Elmmcode:	PMCYP0B0N0
Sname:	FIMBRISTYLIS THERMALIS
Cname:	HOT SPRINGS FIMBRISTYLIS
Grank:	G4
Srank:	S2.2
Fedlist:	None
Callist:	None
Cdfg:	Not Reported
Cnpslist:	Plants rare, threatened, or endangered in CA, but more common elsewhere
Redcode:	Distributed in a limited number of occurrences, occasionally more if each occurrence is small/Endangered in a portion of its range/More or less widespread outside of California

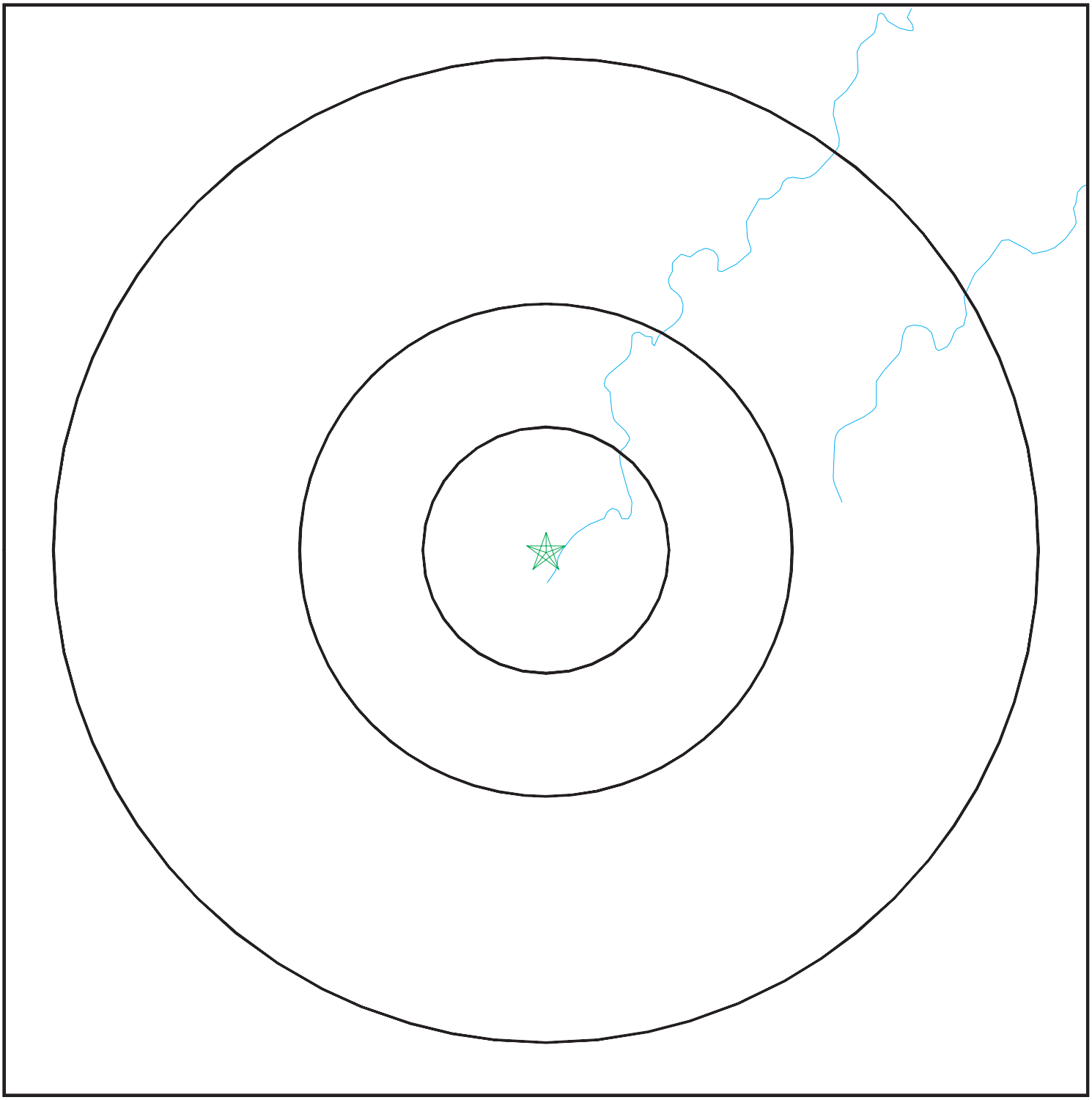
Genhab: MEADOWS (ALKALINE).
Microhab: NEAR HOT SPRINGS. 120-1340M.

5
NE
1/2-1 mi
4266

CAS0005679
CA Natural Diversity Database

Eondx: 12416
Fcode: 05033
Elmcode: AMALE04013
Occnumber: 24
Sitedate: 1986XXXX
Elmdate: 1986XXXX
Presence: Presumed Extant
Trend: Increasing
Occrank: Unknown
Mapdetail: N
Moreinfo: N
Sensitive: N
Maininfo: WEAVER, R. 1986 (PERS)
Occtype: Natural/Native occurrence
Directions: FUNERAL MOUNTAINS.
Ownermgt: NPS-DEATH VALLEY NP
Thrtcom: Not Reported
Ecocom: Not Reported
Distcom: Not Reported
Gencom: POPULATION ESTIMATE OF 35 INDIVIDUALS. DECLINE SINCE 1972, BUT STABLE NOW.
Edr id: CAS0005679
Elmmcode: AMALE04013
Sname: OVIS CANADENSIS NELSONI
Cname: NELSON'S BIGHORN SHEEP
Grank: G4T3
Srank: S3
Fedlist: None
Callist: None
Cdfg: Not Reported
Cnpslist: Not Reported
Redcode: Not Reported
Genhab: WIDELY DISTRIBUTED FROM THE WHITE MTNS IN MONO CO. TO THE CHOCOLATE MTS IN IMPERIAL CO.
Microhab: OPEN, ROCKY, STEEEP AREAS WITH AVAILABLE WATER AND HERBACEOUS FORAGE.

Historic Sites Map



0 1/4 1/2 1 Miles

- Target Property
- Streets
- County Boundary
- Waterways
- Water
- Historic Sites
- Federal Historic Areas
- State Historic Areas
- US Indian Reservations
- Scenic Trail

SITE NAME:	Keane Wonder	CLIENT:	Environmental Cost Management, Inc.
ADDRESS:	Death Valley National Park Death Valley CA 92328	CONTACT:	Holly Trejo
		INQUIRY #:	3807730.2s
LAT/LONG:	36.6685 / 116.9099	DATE:	December 11, 2013

HISTORIC SITES MAP FINDINGS

Map ID Direction Distance Distance (ft.)	EDR ID Database

No mapped sites were found in EDR's search of available government records within the search radius around the target property.

UNMAPPABLE HISTORIC SITES

Due to poor or inadequate address information, the following sites were not mapped:

Status
EDR ID
Database

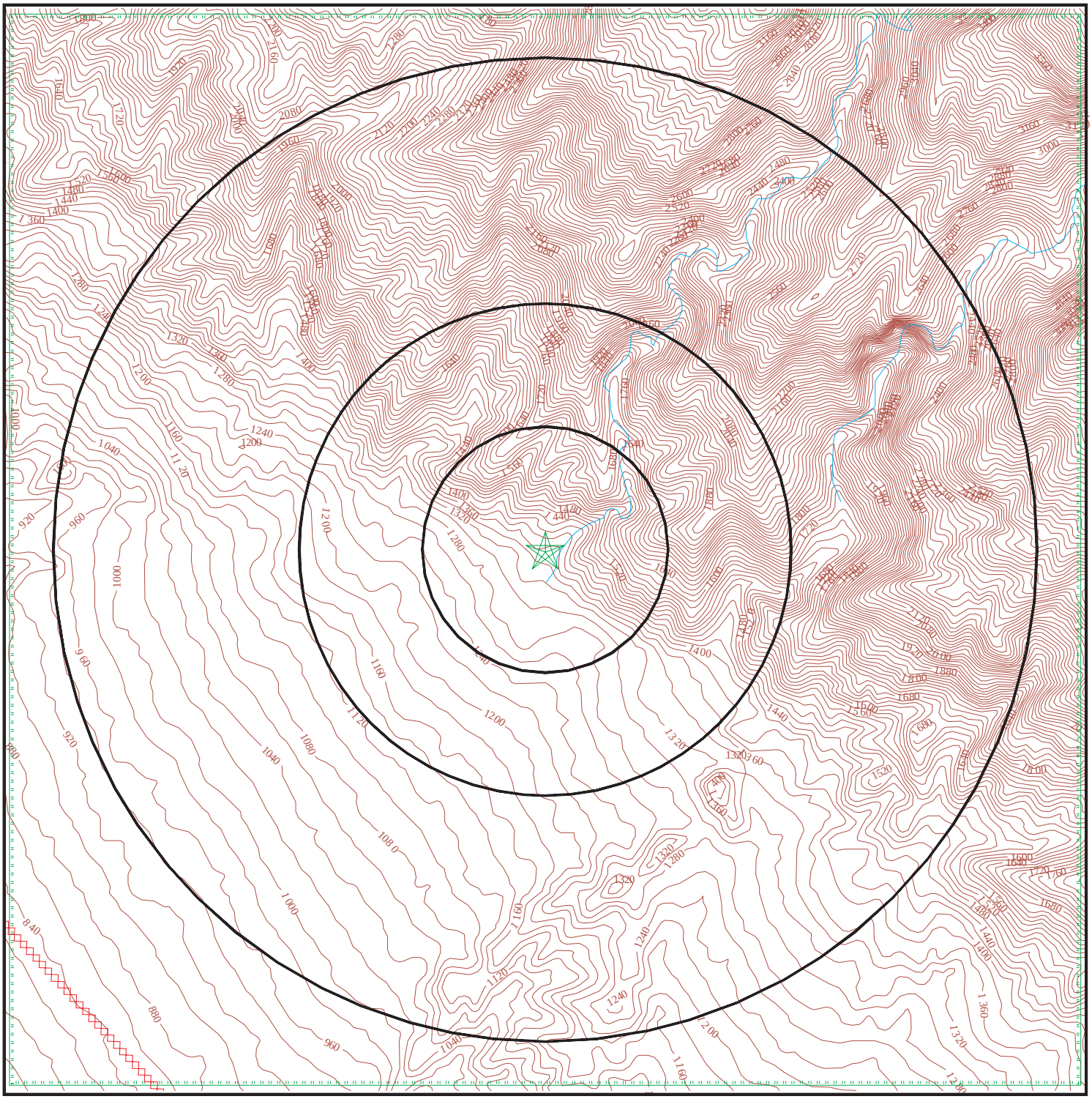
Unmappable
75000221
National Register of Hist. Places

Resname:	Leadfield
Address:	Death Valley National Monument on Titus Canyon Trail
City:	Death Valley
Vicinity:	Not Reported
County:	Inyo
State:	CALIFORNIA
Certdate:	19750610
Multname:	Not Reported
Federal agency:	NATIONAL PARK SERVICE
Resource name:	Leadfield
Address:	Death Valley National Monument on Titus Canyon Trail
State:	CALIFORNIA
County:	Inyo
City:	Death Valley
Listed date:	1.975061E+007
Multiple name:	Not Reported
Acre:	94.0+

Unmappable
74000349
National Register of Hist. Places

Resname:	Skidoo
Address:	Death Valley National Monument, Wildrose District
City:	Death Valley
Vicinity:	Not Reported
County:	Inyo
State:	CALIFORNIA
Certdate:	19740416
Multname:	Not Reported
Federal agency:	NATIONAL PARK SERVICE
Resource name:	Skidoo
Address:	Death Valley National Monument, Wildrose District
State:	CALIFORNIA
County:	Inyo
City:	Death Valley
Listed date:	1.9740416E+007
Multiple name:	Not Reported
Acre:	4160.0+

Flood Plain Map



0 1/4 1/2 1 Miles

Major Roads
Contour Lines
Waterways
County Boundary
Power Lines
Pipe Lines
Fault Lines
Water
100-year flood zone
500-year flood zone
Electronic FEMA data available
Electronic FEMA data not available

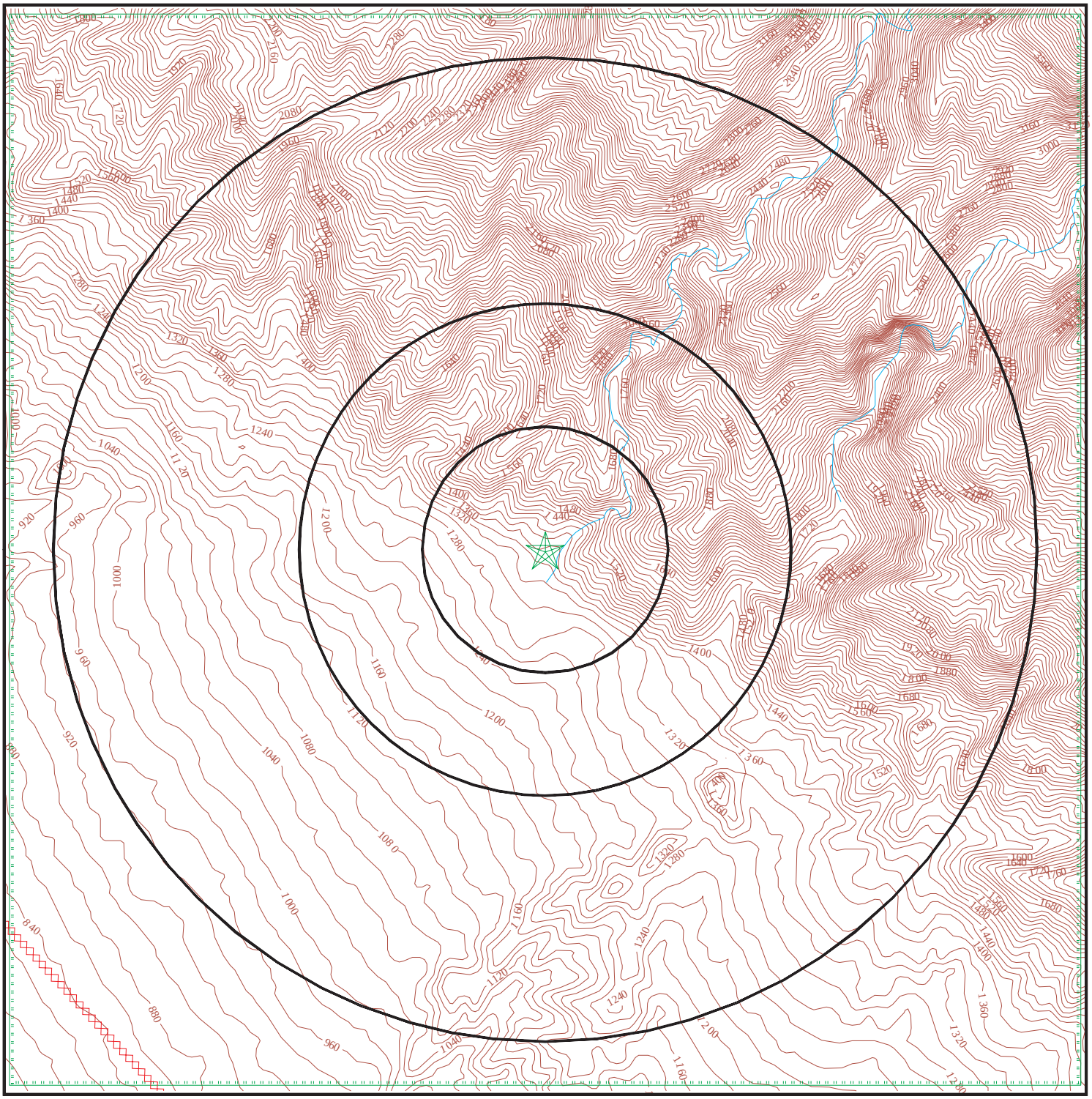
SITE NAME:	Keane Wonder	CLIENT:	Environmental Cost Management, Inc.
ADDRESS:	Death Valley National Park Death Valley CA 92328	CONTACT:	Holly Trejo
		INQUIRY #:	3807730.2s
LAT/LONG:	36.6685 / 116.9099	DATE:	December 11, 2013

FLOOD PLAIN MAP FINDINGS

Source: FEMA DFIRM Flood Data, FEMA Q3 Flood Data

County	FEMA flood data electronic coverage
INYO, CA	YES
Flood Plain panel at target property:	0600731200B (FEMA Q3 Flood data)
Additional Flood Plain panel(s) in search area:	None Reported

National Wetlands Inventory Map



0 1/4 1/2 1 Miles

Major Roads
Contour Lines
Waterways
County Boundary
Power Lines
Pipe Lines
Fault Lines
Water
National Wetlands Inventory
Electronic NWI data available
Electronic NWI data not available

SITE NAME:	Keane Wonder	CLIENT:	Environmental Cost Management, Inc.
ADDRESS:	Death Valley National Park Death Valley CA 92328	CONTACT:	Holly Trejo
		INQUIRY #:	3807730.2s
LAT/LONG:	36.6685 / 116.9099	DATE:	December 11, 2013

WETLANDS MAP FINDINGS

Source: Fish and Wildlife Service NWI data

NWI hardcopy map at target property: Chloride City
Additional NWI hardcopy map(s) in search area:
Not reported in source data

Map ID Direction Distance Distance (ft.)	Code and Description*	Database

No Sites Reported.

*See Wetland Classification System for additional information.

WETLANDS CLASSIFICATION SYSTEM

National Wetland Inventory Maps are produced by the U.S. Fish and Wildlife Service, a sub-department of the U.S. Department of the Interior. In 1974, the U.S. Fish and Wildlife Service developed a criteria for wetland classification with four long range objectives:

- to describe ecological units that have certain homogeneous natural attributes,
- to arrange these units in a system that will aid decisions about resource management,
- to furnish units for inventory and mapping, and
- to provide uniformity in concepts and terminology throughout the U.S.

High altitude infrared photographs, soil maps, topographic maps and site visits are the methods used to gather data for the productions of these maps. In the infrared photos, wetlands appear as different colors and these wetlands are then classified by type. Using a hierarchical classification, the maps identify wetland and deepwater habitats according to:

- system
- subsystem
- class
- subclass
- modifiers

(as defined by Cowardin, et al. U.S. Fish and Wildlife Service FWS/OBS 79/31. 1979.)

The classification system consists of five systems:

1. marine
2. estuarine
3. riverine
4. lacustrine
5. palustrine

The marine system consists of deep water tidal habitats and adjacent tidal wetlands. The riverine system consists of all wetlands contained within a channel. The lacustrine systems includes all nontidal wetlands related to swamps, bogs & marshes. The estuarine system consists of deepwater tidal habitats and where ocean water is diluted by fresh water. The palustrine system includes nontidal wetlands dominated by trees and shrubs and where salinity is below .5% in tidal areas. All of these systems are divided in subsystems and then further divided into class.

National Wetland Inventory Maps are produced by transferring gathered data on a standard 7.5 minute U.S.G.S. topographic map. Approximately 52 square miles are covered on a National Wetland Inventory map at a scale of 1:24,000. Electronic data is compiled by digitizing these National Wetland Inventory Maps.

SYSTEM **MARINE**

SUBSYSTEM **1 - SUBTIDAL** **2 - INTERTIDAL**

	1 - SUBTIDAL					2 - INTERTIDAL			
CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom	AB-AQUATIC BED	RF-REEF	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm		1 Algal 3 Rooted Vascular 5 Unknown Submergent	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

SYSTEM **E - ESTUARINE**

SUBSYSTEM **1 - SUBTIDAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RF-REEF	OW-OPEN WATER / Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	

SUBSYSTEM **2 - INTERTIDAL**

CLASS	AB-AQUATIC BED	RF-REEF	SB - STREAMBED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	SS-SCRUB SHRUB	FO-FORESTED
Subclass	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	2 Mollusk 3 Worm	1 Cobble- Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble- Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen

SYSTEM — **R - RIVERINE**

SUBSYSTEM	**1 - TIDAL**	**2 - LOWER PERENNIAL**	**3 - UPPER PERENNIAL**	**4 - INTERMITTENT**	**5 - UNKNOWN PERENNIAL**
CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	*SB-STREAMBED	AB-AQUATIC BED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	**EM-EMERGENT	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

* STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM.
**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS.

SYSTEM — **L - LACUSTRINE**

SUBSYSTEM — **1 - LIMNETIC**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	

SUBSYSTEM — **2 - LITTORAL**

CLASS	RB-ROCK BOTTOM	UB-UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	RS-ROCKY SHORE	US-UNCONSOLIDATED SHORE	EM-EMERGENT	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

SUBSYSTEM **P - PALUSTRINE**

CLASS	RB--ROCK BOTTOM	UB--UNCONSOLIDATED BOTTOM	AB-AQUATIC BED	US--UNCONSOLIDATED SHORE	ML--MOSS-LICHEN	EM--EMERGENT	SS--SCRUB-SHRUB	FO--FORESTED	OW-OPEN WATER/ Unknown Bottom
Subclass	1 Bedrock 2 Rubble 3 Mud 4 Organic	1 Cobble-Gravel 2 Sand	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 Unknown Submergent 6 Unknown Surface	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 Deciduous 7 Evergreen	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6Deciduous 7 Evergreen	

MODIFIERS

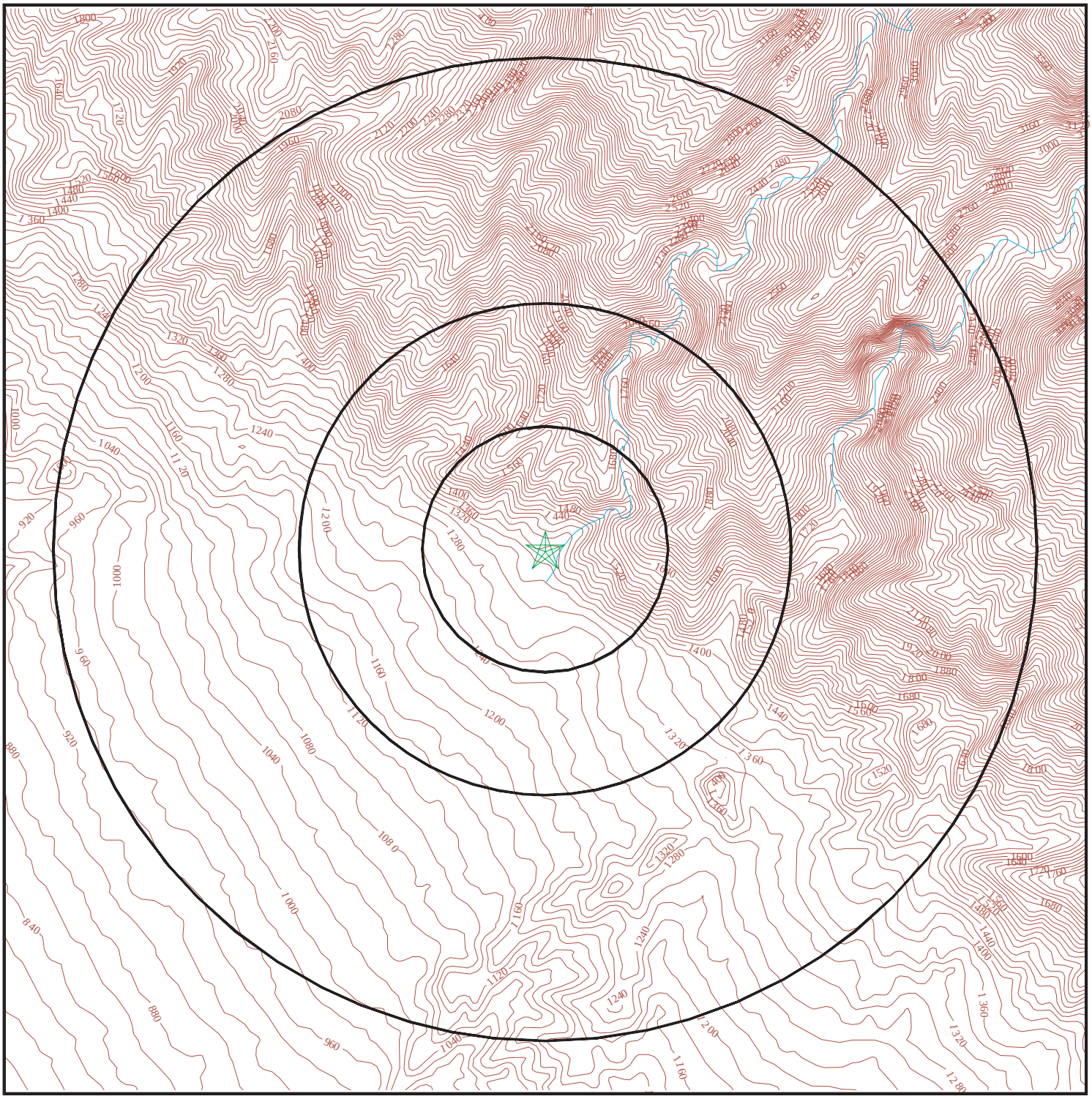
In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil, or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system.

WATER REGIME				WATER CHEMISTRY			SOIL	SPECIAL MODIFIERS
Non-Tidal	**Tidal**	**Coastal**	**Halinity**	**Inland**	**Salinity**	**pH**	**Modifiers for all Fresh Water**	
A Temporarily Flooded B Saturated C Seasonally Flooded D Seasonally Flooded/ Well Drained E Seasonally Flooded/ Saturated F Semipermanently Flooded G Intermittently Exposed	H Permanently Flooded J Intermittently Flooded K Artificially Flooded W Intermittently Flooded/Temporary Y Saturated/Semipermanent/ Seasonal Z Intermittently Exposed/Permanent U Unknown	K Artificially Flooded L Subtidal M Irregularly Exposed N Regularly Flooded P Irregularly Flooded	*S Temporary-Tidal *R Seasonal-Tidal *T Semipermanent -Tidal V Permanent -Tidal U Unknown	1 Hyperhaline 2 Euhaline 3 Mixohaline (Brackish) 4 Polyhaline 5 Mesohaline 6 Oligohaline 0 Fresh	7 Hypersaline 8 Eusaline 9 Mixosaline 0 Fresh	a Acid t Circumneutral i Alkaline	g Organic n Mineral	b Beaver d Partially Drained/Ditched f Farmed h Diked/Impounded r Artificial Substrate s Spoil x Excavated

*These water regimes are only used in tidally influenced, freshwater systems.

Source: U.S. Department of the Interior
Fish and Wildlife Service
National Wetlands Inventory

FCC & FAA Sites Map



0 1/4 1/2 1 Miles

Streets
Contour Lines
County Boundary
Waterways
Power Lines
Water
Sites

SITE NAME: Keane Wonder ADDRESS: Death Valley National Park Death Valley CA 92328 LAT/LONG: 36.6685 / 116.9099	CLIENT: Environmental Cost Management, Inc. CONTACT: Holly Trejo INQUIRY #: 3807730.2s DATE: December 11, 2013

FCC & FAA SITES MAP FINDINGS
TOWERS

Map ID Direction Distance Distance (ft.)	EDR ID Database

No Sites Reported.

FCC & FAA SITES MAP FINDINGS
AIRPORTS

EDR ID
Database

No Sites Reported.

FCC & FAA SITES MAP FINDINGS
POWERLINES

EDR ID
Database

No Sites Reported.

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Various Federal laws and executive orders address specific environmental concerns. NEPA requires the responsible offices to integrate to the greatest practical extent the applicable procedures required by these laws and executive orders. EDR provides key contacts at agencies charged with implementing these laws and executive orders to supplement the information contained in this report.

NATURAL AREAS
Officially designated wilderness areas
Government Records Searched in This Report

FED_LAND: Federal Lands
Source: USGS
Telephone: 703-648-5094
Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.
- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

Federal Contacts for Additional Information

National Park Service, Pacific West Region
600 Harrison Street, Suite 600
San Francisco, CA 94107
415-427-1300

USDA Forest Service, Pacific Southwest
630 Sansome Street
San Francisco, CA 94111
415-705-2557

BLM - California State Office
2800 Cottage Way, Room W-1834
Sacramento, CA 95825-1886
916-978-4400

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

Officially designated wildlife preserves, sanctuaries and refuges
Government Records Searched in This Report

FED_LAND: Federal Lands
Source: USGS
Telephone: 703-648-5094
Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.
- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

State Contacts for Additional Information

Department of Fish & Game 916-653-7667

Wild and scenic rivers

Government Records Searched in This Report

FED_LAND: Federal Lands
Source: USGS
Telephone: 703-648-5094
Federal data from Bureau of Land Management, National Park Service, Forest Service, and Fish and Wildlife Service.
- National Parks
- Forests
- Monuments
- Wildlife Sanctuaries, Preserves, Refuges
- Federal Wilderness Areas.

Date of Government Version: 12/31/2005

Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

Endangered Species

Government Records Searched in This Report

Endangered Species Protection Program Database
A listing of endangered species by county.
Source: Environmental Protection Agency
Telephone: 703-305-5239

CA Endangered Species: Natural Diversity Database
Source: Dept. of Fish and Game.
Telephone: 916-324-3812

Federal Contacts for Additional Information

Fish & Wildlife Service, Region 1
Eastside Federal Complex 911 NE 11th Avenue
Portland, OR 97232-4181
503-231-6188

State Contacts for Additional Information

Natural Heritage Program, Dept. of Fish & Game 916-322-2493

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

LANDMARKS, HISTORICAL, AND ARCHEOLOGICAL SITES
Historic Places
Government Records Searched in This Report

National Register of Historic Places:
The National Register of Historic Places is the official federal list of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture. These contribute to an understanding of the historical and cultural foundations of the nation.
The National Register includes:
- All prehistoric and historic units of the National Park System;
- National Historic Landmarks, which are properties recognized by the Secretary of the Interior as possessing national significance; and
- Properties significant in American, state, or local prehistory and history that have been nominated by State Historic Preservation Officers, federal agencies, and others, and have been approved for listing by the National Park Service.

Date of Government Version: 03/23/2006

CA Historic Landmarks: CA Historical Landmarks
Source: Office of Historic Preservation.
Telephone: 916-653-6624

Federal Contacts for Additional Information

Park Service; Advisory Council on Historic Preservation
1849 C Street NW
Washington, DC 20240
Phone: (202) 208-6843

State Contacts for Additional Information

Office of Historic Preservation, Ept. Of Parks & Recreation 916-653-6624

Indian Religious Sites
Government Records Searched in This Report

Indian Reservations:
This map layer portrays Indian administrated lands of the United States that have any area equal to or greater than 640 acres.
Source: USGS
Phone: 888-275-8747
Date of Government Version: 12/31/2005

Federal Contacts for Additional Information

Department of the Interior- Bureau of Indian Affairs
Office of Public Affairs
1849 C Street, NW
Washington, DC 20240-0001
Office: 202-208-3711
Fax: 202-501-1516

National Association of Tribal Historic Preservation Officers
1411 K Street NW, Suite 700
Washington, DC 20005
Phone: 202-628-8476
Fax: 202-628-2241

State Contacts for Additional Information
A listing of local Tribal Leaders and Bureau of Indian Affairs Representatives can be found at:
http://www.doi.gov/bia/areas/agency.html

Phoenix Area Office, Bureau of Indian Affairs
One North First Street P.O. Box 10
Phoenix, AZ 85001
602-379-6600

Sacramento Area Office, Bureau of Indian Affairs
2800 Cottage Way
Sacramento, CA 95825
916-979-2600

Cultural Division, Yuork Tribe
1034 6th Street
Eureka, CA 95501

Scenic Trails

State Contacts for Additional Information
Pacific Crest Trail Association
5325 Elkhorn Boulevard, #256
Sacramento, California 95842
916-349-2109

FLOOD PLAIN, WETLANDS AND COASTAL ZONE

Flood Plain Management
Government Records Searched in This Report
Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

Federal Contacts for Additional Information
Federal Emergency Management Agency 877-3362-627

State Contacts for Additional Information
Office of Emergency Services 916-262-1843

Wetlands Protection
Government Records Searched in This Report
NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2004 from the U.S. Fish and Wildlife Service.

Federal Contacts for Additional Information
Fish & Wildlife Service 813-570-5412

State Contacts for Additional Information
Department of Fish & Game 916-653-7667

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

Coastal Zone Management

Government Records Searched in This Report

CAMA Management Areas
Dept. of Env., Health & Natural Resources
919-733-2293

Federal Contacts for Additional Information

Office of Ocean and Coastal Resource Management
N/ORM, SSMC4
1305 East-West Highway
Silver Spring, Maryland 20910
301-713-3102

State Contacts for Additional Information

California Coastal Commission 415-904-5200

FCC & FAA SITES MAP

For NEPA actions that come under the authority of the FCC, the FCC requires evaluation of Antenna towers and/or supporting structures that are to be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law.

Government Records Searched in This Report

Cellular

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
888-225-5322

4G Cellular

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
888-225-5322

Antenna Structure Registration

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
888-225-5322

Towers

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
888-225-5322

AM Antenna

Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
888-225-5322

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

FM Antenna
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554
888-225-5322

FAA Digital Obstacle File
Federal Aviation Administration (FAA)
1305 East-West Highway, Station 5631
Silver Sprinng, MD 20910-3281
Telephone: 301-713-2817
Describes known obstacles of interest to aviation users in the US. Used by the Federal Aviation Administration (FAA) and the National Oceanic and Atmospheric Administration to manage the National Airspace System.

Airport Landing Facilities
Federal Aviation Administration
Telephone (800) 457-6656
Private and public use landing facilities.

Electric Power Transmission Line Data
Rextag Strategies Corp.
14405 Walters Road, Suite 510
Houston, TX 77014
281-769-2247
U.S. Electric Transmission and Power Plants systems Digital GIS Data.

Excessive Radio Frequency Emission
For NEPA actions that come under the authority of the FCC, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the determination of whether the particular facility, operation or transmitter would cause human exposure to levels of radio frequency in excess of certain limits.

Federal Contacts for Additional Information
Office of Engineering and Technology
Federal Communications Commission
445 12th Street SW
Washington, DC 20554
Phone: 202-418-2470

OTHER CONTACT SOURCES

NEPA Single Point of Contact
State Contacts for Additional Information
Grants Coordination
State Clearinghouse
P.O. Box 3044
Room 222
Sacramento, CA 95812-3044
916-445-0613

KEY CONTACTS & GOVERNMENT RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

Appendix C
Keane Wonder Mine
Site Inspection Photographs

Photo 1: January 8, 2014
Remains of The Tramway That Linked The Mine Development Area With The Mill Processing Area

Photo 2: January 8, 2014
Mercury Processing Area

Photo 3: January 8, 2014
Cyanide Process Area

Photo 4: January 8, 2014
Alluvium Deposits Below Mill Tailings Impact Area

Photo 5: January 8, 2014
Onsite Well (Shaft)

Photo 6: January 8, 2014
Spring Runoff at Keane Wonder Mine

Photo 7: January 8, 2014
Pools From Spring Runoff Downgradient form Keane Wonder Mine

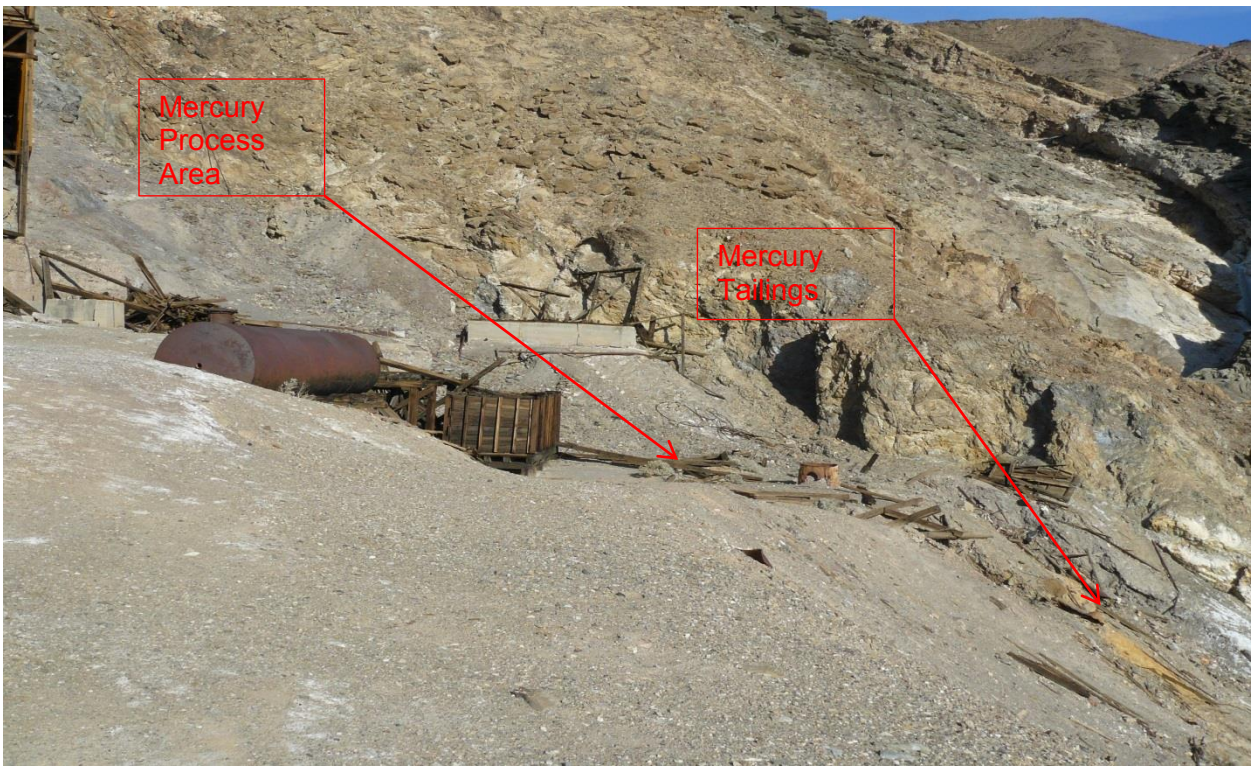


Photo 8: January 8, 2014
Mercury Processing Area Mill Tailings

Photo 9: January 8, 2014
Mill Tailings Below the Cyanide Process Area

Appendix D
Keane Wonder Mine
Site Inspection Field Notes

P. 1 of 6 DEVA K.W.M. PA Chris McCormack
1/6/14 ECM

13:30 – 23:30 Travel F/ Modesto to Sunset Campground

1/7/14

8:00 Meet w/ Jeremy Stoltzfus of DEVA [Mine Tech]
(760) 786-3214
Discussed Action plan, and PA strategy.

8:30 meet w/ Greg Cox of DEVA [museum curator]
(760) 786-3258
Greg was extremely helpful in providing historic file information on the Keane Wonder Mine, mill site. Also very informative on local operations
File Search

11:30 Meet w/ Jeremy again, update & discussion

11:45-12:15 Lunch

12:15 continue file search. Keane closure was due primarily to physical mine & structural mine equipment issues. Potential hazard of Mill tailings was yet another reason, Not primary

Mid 1980's a tourist fell to his death inside a mine Adit that had a shaft. Tourists were observed in dangerous areas during a federal audit.

Several prospect holes on and near site w/ GW @ 10-30' bgs. possible GW sample locations both on site & cross gradient.

15:30-16:15 meet w/ Richard Friese of DEVA [Hydrologist]
(760) 786-3255 confirmed that all surface runoff either dries up
Slow infiltration/migration → or sinks into alluvial fan, No surface water to impact.
confirmed that K.W.M. site is cross gradient F/ closest Private/Public water supply (Nevares Spring – feeding Cow Creek R.S. and further – Texas Springs – feeding Furnace Creek)
water originates from other side of Funeral Mtns. thru deep fault zones. 90°F indicates warming from geothermal gradient & deep source. 10,000 year old – no viable correlation to current Rainfall

 DEVA K.W.M. PA Chris McCormack ECM

1/6/14 cont.

16:15 – 17:00 continue file/records search.
Mid 1930's Mine was owned by E.L. Cord of Cord Automobile – never re-started work. last work was 1915/1916 time frame
Federal Gov. purchased in 1972 for 47,000 From investment group led by Marvin Small who owned the site F/ 1969

41.319 + 404.161 Acres (445.78)

17:00 – 17:30 meet w/ Jeremy – site plans for visit
Action plans for DEVA 24 2wk/1wk rotation will work weekends w/ or w/o Jeremy.

18:30 – 18:45 met w/ Blair Davenport of DEVA [Archeologist] (760) 786-3287
PA process discussion + set interview for Thursday AM.

17:30 – 19:30 continue file/records search
Furnace Creek population ≤ 200
Cow Creek population ≤ 80
Keane "most visited mine site" is an estimate, no actual data.
Keane is on list for possible acceptance to "National Historic register"
PA-only strategy was unavailable – well aware of need for SI w/ samples.

RAMS – Reclamation of Abandoned Mines Sites

1/8/14

DEVA KWM + Cyty Mill PA

Chris McCormack
ECM

8:00 Meet w/ Jeremy Stoltzfus & Linda Manning [Biologist] DEVA
(760) 786-3252
Mobilized to Keane Wonder Mine — Access is sealed by Locked gate - 2 mi. Graded Dirt road in. Mill site for site walk.
J.S. & L.M. - KWM site visited by 200/day during peak season. Employees (2-4) would average a combined total time of 4-6 hrs. max on site - including enforcement patrol, guide tours.
Explored down wash below/downstream of CN process area. Mill tails are fine gr (silt - fine sand), predominately pink - dk mustard yellow. Thick beds to 12' at CN tanks - confined to sides of wash exiting "Keane Canyon" w/ eroded remnants in middle of wash. As the wash is explored down stream the mill tails become sporadically less in volume, often covered by more recent alluvium very difficult to ascertain total volume, without extensive backhoe investigation & / or consolidation. Mill tails
10:00 visible in wash for ~ ½ mile & on both sides of & in access road. rough approx of visible tails would be 10-30K cu yds. At what appeared to be the 90% - 95% end of volume/length of visible tails, vegetation was assessed to be, at most, minor impact by tails. Area is in drought condition & most vegetation is stressed. No sensitive or endangered wildlife is expected to be impacted or present.
L.M. — L.M. - XRF Sample locations @ CN tank & 80% of CN Tank Mill tails downstream near post
Hiked back to vehicles where Linda Manning departed and Jeremy & I hiked into mill tails to inspect, then off north along pipeline to inspect springs & H_2O filled prospects/cisterns. first prospect next to CN process area was dry. CN process tanks are mostly all destroyed, only 1 tank is intact & has electric feed to mixer. no fuel oil tanks observed.
Hiked to water filled shaft w/ spring/seep next to. (spring #1). shaft is covered w/ fence-like material called "TECCO Netting" water level in shaft is 6-8' below grade.

1/8/14

DEVA KWM & Cyty Mill PA

Chris McCormack

11:30 — Spring had very low flow but ~~ec~~ ECM could be sampled also. Shaft had wood debris but could be bailed or perj pumped.
Continued upstream then further North to the "H_2S" shaft. a prospect shaft with large welded expanded steel grate over shaft opening. H_2S smell was moderate & sulphuric acid damage was corroding the steel grate. Spring was also nearby (spring #2). This is also the Northern termination of the pipeline that feeds KWM - its main water source. flow from spring looked to be ~ 5-15 gpm & easily sampleable. Water in H_2S shaft was at 20-25' below grade and running in a stream on bottom, approx 1-2" deep - very difficult to sample. The swampy area where the west flowing spring #2 discharge spreads out has 2 collection cistern/pits - both fenced. the North western most cistern is full and easily sampled. All spring #1, spring #2 & associated water filled shafts would be good background/baseline sample locations for both KWM & Cyty Mill - no mill tail impact possible.

12:00 — Continued North along base of range to Cyty's Mill & Cabin. 2 water filled prospect shaft/cisterns are to the south and downslope of the cabin/mill complex. Mill tail area is downslope and to the NW of the mill. The 2 cisterns are full of water to ~ 2-3' below grade and are fenced & easily sampled. Impact f/ mining is possible, although mill tails are observed mainly downslope & away to the north beyond a small ridge, the mill & activities could also drain towards the cisterns. The southern most cistern also has a ~75' ditch to the south for drain in/or out - unclear. No records found on the recovery process at mill but it is most thought that the lower mill tails area was home to a small CN process. unknown if Hg was used first - v. low short term production f/ mill. The area of mill tails below and N of cabin/mill (GPS) has a

DEVA KWM & Cyty Mill PA Chris McCormack ECM

Clear, distinct circular pattern in edge of mill tails where a tank had undoubtedly resided. Also historic references site a tank at this location Green & Lascher 1981, The mill tails are of small volume < 20 cu yds and have not visibly migrated downslope. fine gr Pink silt. No visible impact to local vegetation. Big Horn Sign (Scat & footprints) freshly visible on Mill site.
a small spring on site w/ v. low flow is also possible Sample location. If Hg processing occured it was likely to have been done at the base of the stamps, as there is enough room and a small steel cylindrical furnace-type relic present. Could be forge, down slope to South. Clear Forge present @ base of Mill. Site has very low visitation, ≤ 5% of Keane visitors would make the 1 mi trek. Ranger led tours would visit site approx 1/week. Area is accessed by rough road/trail F/ Keane parking area - North thru CN Mill tails then to Cyty Mill. Downslope from CN tank is a ledge area & further down more mine debris + Prospect pits. Returned South to KWM parking for:

13:30 - LUNCH

Investigated KWM Mill Site. very few mill tails present as the mine operation strategy ~~was~~ had included plans for Additional CN process to use the left over mill tails From Hg processing from the beginning of operation. This forced a "good housekeeping" operation as the Hg leftovers had a high value. Some mill tails visible at base of chute F/ ~~tram~~ offload area - these are likely pre-process mine tails, not impacted by Hg? ~ 10 cu yds.
Area below stamps has a crib/chute area and mill tails ≤ 10 cu yds exist in the spot - most likely used for the Hg process area. Down a steep slope to South of Hg Process area, into the canyon, several yards of yellow mill tails are visible, upon inspection it was also discovered (in a foliated schist) dark red veining - most likely Cinnabar - this has "deep" implications on validation of Hg samples downslope? more veining found in walls of canyon. Native Hg likely!

DEVA KWM & Cuty Mill PA Chris McCormack ECM

14:20 Continued downslope, across canyon bottom & ~20' up the other side to access the water filled shaft. Shaft was originally dug as a well but Au was encountered during construction & it was converted to a production shaft. large expanded steel mesh cover and water at ~30' below grade, must use "pin" bailer to sample. Possibly little or no impact as "shaft" is UP opposite canyon wall F/ tail spillage in Hg process area. Could be Hg impacted F/ downward migration of metals to aquifer, Also could have native Hg impact.

16:00 Left site & traveled to Nevares Spring - water source (drinking after R.O. treatment) for Cow Creek NPS complex (~80 people) inspected & GPS - This is the closest drinking water source to KWM & is cross gradient and ~~several~~ many miles away (~10).
Mobilized to Texas Springs - further F/ KWM & Drinking water source for Furnace Creek (~200 people)

16:30 Return to Cow Creek, interview w/ Blaire Davenport - informed about PA/SI processes & likelyhood of how & why samples will be needed, collected, met w/ Greg Cox - will look for oldest (1969?) KWM Air photos - to inspect down-fan migration of mill tails - if available

1/9/14

8:00-10:00 Mobe to Cow Creek & meet w/ Greg Cox investigated more records on KWM & Lost Burro & Jennigan's Mill. copies. found 1969 Air photo of KWM

10:00 Demobe to Antioch office

DEVA KWM Chris McCormick
1-7-14

Possible institutional/other controls - Discussed w/ NPS

Warning Signs
Fencing
Wind Closure
in situ burial w/ native alluvial Material - Maintained when erosion occurs
Removal - repository too much $
Site closure currently all fixed up @ great cost
& ready for public

DEVA KWM on-site Recon
1-8-14 Chris McCormack ECM
Jeremy Stoltzfus NPS-DEVA

PA INFO

① Site Accessibility & security - Site is behind a locked NPS Gate, then an approx 2 mi graded dirt road to the S/SE. F/ Beatty cutoff F/ Hwy 190 N.

② Boundries & Dimensions - Site covers ~450 acres from base of Funeral Mountains where all Mill activities were based, The mines where ore was extracted are up a steep Mtn. slope and ore was transported down for milling by tram.

③ Extent of Mine Tailings - The "Mill" Tailings are in 2 locations Small amounts ≤ 20 cu yds exist in & around the Mill & Hg process areas. The Hg processed Tails were then moved to a CN process area where final Au extraction & surface disposal occured. The tails have subsequently eroded down the alluvial fan due to the Stockpile location being at the mouth of the Canyon, over 100 years of rare but significant flash-flooding has moved the tails out into the alluvial fan for a distance of at least ½ mile, in a fan shape.

④ Distance from Potentially hazardous waste to other features. - The potentially hazardous tails are located in and around A popular tourist location.

⑤ PPE of waste stream to nearby surface water bodies - location is in The Most Arid region of the US, NO Surface water nearby.

DEVA KWM on-site Recon
1-8-14 Chris McCormack ECM
Jeremy Stoltzfus NPS-DEVA

P. 2 of 2

PA INFO

(6) Site layout and topography – Site is located at the top of a steep alluvial fan and at the base of a very steep ~~eastern~~ western slope of the Funeral Mtns. The Mill & Hg process area are on the N. canyon wall ~ 1~~00~~' ~~200~~' above the bottom. The CN process area lies just outside the canyon mouth on the N. Flank ~ 300 yds F/ the Mill complex.

(7) worker & residential proximity to site. – During full operation (now closed) Park personell & guests would be in potentially Direct contact w/ site + waste. Closest permenent residence is Cow Creek ~ 13 mi to South.

(8) Condition & type of vegetation – The area is in a drought and vegetation in impacted & not impacted Area is in a stressed condition – Not due to waste impact. The predominant veg. is Desert Holly & Creosote

(9) Observations of Materials within waste area – The waste is wholly mill tailings – a fine grain (silt-fine sand) ground/pulverized Rock flour w/ potential Hg &/or CN impact.

(10) Likeliness of release to the environment vs. relative containment – The mill tails are actively entering the environment thru erosion down the alluvial fan from infrequent but significant flash flooding for the last ~~100~~ 10 years.

(11) ALL wells and structures are clearly mapped & GPS located.

DEVA 1-8-14 KWM
1-8-14
Photo Log p. 1 of 2

	TARGET	TIME	Direction	CM-ECM #	
1-7-14	Sunrise @ Sunset camp grd.		E	P1090061	7:22
	Sunrise @ Panamints		W	62	7:23
	Telescope F/ camp		W	63	7:23
	" "		W	64	7:23
	ECM CAMP		N	65	7:24
	Cow Creek Ranger complex	GPS 001	SE	66	8:06
	" " "	↓	NE	67	8:06
	" " " – Resource mgmt bldg.		NW	68	8:06
	Mill tails F/KWM CN Plant in wash		E	69	9:59
	minor – Ø mill tails in wash	GPS 002 #3	W	70	9:59
	Thick bed of mill tails – down wash further		NW	71	11:03
	CN TANK – (best)	GPS 004	N	72	11:04
	Mill tails @ CN Tanks		E	73	11:04
	Fence covered Prospect shaft w/ water –	GPS 005	E	74	11:26
	Fence " " " " "		down	75	11:27
	Spring #1 runoff near covered shaft above	(006 GPS)	N	76	11:28
	expanded Mesh covered shaft w/ H_2S + Jeremy	(007 GPS)	W	77	11:40
	Spring #2 runoff near H_2S Shaft		E	78	11:52
	" " "		E	79	11:52
	" " "		W	80	11:52
	" " "		W	81	11:52
	Cistern collection point @ spring #2	GPS 008	down	82	11:59
	" " "		SE	83	11:59
	Cyty's Mill + cabin		N	84	12:05
	" "		N	85	12:05
	Prospect/well/cistern #1 @ ditch S. of Cyty mill	GPS 009	NW	86	12:11
	" " "		SW	87	12:11
	Cistern #2 (GPS 010)		down	88	12:17
	" " " w/ mill & cabin		N	89	12:17
	Cyty – Mill + Cabin		NE	90	12:21
	Retort? of furnace? Cyty		SE	91	12:21
	Cyty mill, soap + Hg? area	(GPS 011)	E	92	12:25
	Cyty forge? @ mill		W	93	12:26
	view of downslope – Cyty mill		S	94	12:26
	Cyty cabin		W	95	12:23
	Cyty CN tank location? – mill tails	(GPS 012)	N	96	12:32

DENA 1-8-14 KWM CM-ECM
Photo Log P. 2 of 2

downslope E of cyty CN Process area		W	97	12:32
Pink badlands + TUFA, not mill tails		NW		
Sign board @ Kezne Mill			98	14:04
Kezne Mill	GPS 013 +/-	E	99	14:04
Hg Process area	GPS 014 +/-	E	100	14:04
View of shaft on opposite side of canyon - water @ 30'		S	101	14:05
		S		
downslope of Hg process area		S	102	14:05
Cribs & chutes feeding Hg process area		S	103	14:14
Hg process area		S	104	14:14
Mill		NE	105	14:14
Cribs & chutes feeding Hg Process area		N	106	GPS 014 14:16
Mill tails @ Hg Process area		down	107	" 14:17
Mill tails under chutes & cribs		down	108	14:17
Hg Process area		E	109	14:17
water filled shaft - covered		N	110	GPS 015 14:24
Mill complex		N	111	14:24
Nevares spring - water supply for Cow Creek Ranger Complex		E	112	15:56
" " "		S	113	15:56
" " "		E	114	15:56
Texas Spring - water supply for Furnace Creek		E	115	16:28
Texas Spring tunnel		E	116	16:29

Keane Wonder Mill, DEVA			
Date:	1-8-14	Staff:	Chris McCormzek - ECM
GPS pt.	Location description	Media type	Rationale
001	cow creek NPS campgr Resource Management Parking COW CREEK	Location	N 36° 30.201' W 116° 52.207' -116' 7:48
002	@ end of 95% of mill tails in FAN END OF TAILS	Soil	N 36° 39.954' W 116° 55.216' +1059' 9:46
003	Sediment sample location NE end of mill tails - impacted SAMPLE	Soil	N 36° 39.944' W 116° 55.244' +1023 9:59
004	CN Process Tank @ CN mill tails TANK	Soil	N 36° 40.089' W 116° 54.763' +1228' 10:51
005	Covered Prospect shaft near spring #1 ↳ fence H_2O SHAFT	Water	N 36° 40.294' W 116° 55.157' 1194' 11:09
006	Spring #1 SPRING	Water	N 36° 40.296' W 116° 55.165' 1179' 11:10
007	Mesh covered shaft w/ H_2S odors near spring #2 H_2S SHAFT	Water	N 36° 40.428' W 116° 55.240 1308 11:31
008	Spring #2 - cistern SPRING CYS	Water	N 36° 40.365' W 116° 55.329 1214' 11:42
009	CYTY H2OSHAFT	Water	N 36° 40.500' W 116° 55.557' 1185' 11:58
010	CYTY SHAFT 2	Water	N 36° 40.533 W 116° 55.593 1201' 12:02
011	Cyty mill stamp & Hg area CYTY SAMP	Soil	N 36° 40.575' W 116° 55.611' 1200 12:10
012	Cyty CN? tank w/ mill tails CYTY CN TK	Soil	N 36° 40.573' W 116° 55.648' 1216 12:19
013	KEANE MILL	Soil	13:56 N 36° 40.172' W 116° 54.540' 1398'
014	KEANE Hg Process Area	Soil	14:02 N 36° 40.166' W 116° 54.548' 1410'
015	Water filled Shaft upslope on S. side of canyon below mill KEANE WATER FILLED	Water	14:11 N 36° 40.144' W 116° 54.519' 1355'
016	Nevares Springs - water supply for Cow Creek NEVARES	Water/ Location	15:41 N 36° 30.738' W 116° 49.316' 889'
017	Texas Springs - water supply for Furnace Creek TEXAS	Water/ Location	16:13 N 36° 27.444' W 116° 50.316' 283'

Appendix E
Agency Correspondence and Reports

Keane Wonder Mine – Mill Samples

Samples Collected on 4/11/08

Analysis completed by XRF

Results of the sediment samples from the Keene Wonder Mill Site were compared to the Human Risk Management Criteria and Wildlife and Livestock Risk Management Criteria as outlined in the publication Risk Management Criteria for Metals at BLM Mining Sites Technical Note 390 rev. (2004). Camper and ATV driver Human Health Receptors were used as these are the likely users of this area and are consistent with EPA regulation and guidance. The camper human health receptor is considered a conservative measure for people walking around the buildings at the Keene Wonder Mill Site. Medium/exposure routes for a camper are *ingestion* of groundwater; surface water; sediments; surface soils; and fish in addition to *inhalation* of surface soils. The ATV driver human health receptor is considered a conservative measure for people driving to and from the Keene Wonder Mill Site. Medium/exposure routes for an ATV driver are *ingestion* and *inhalation* of surface soils.

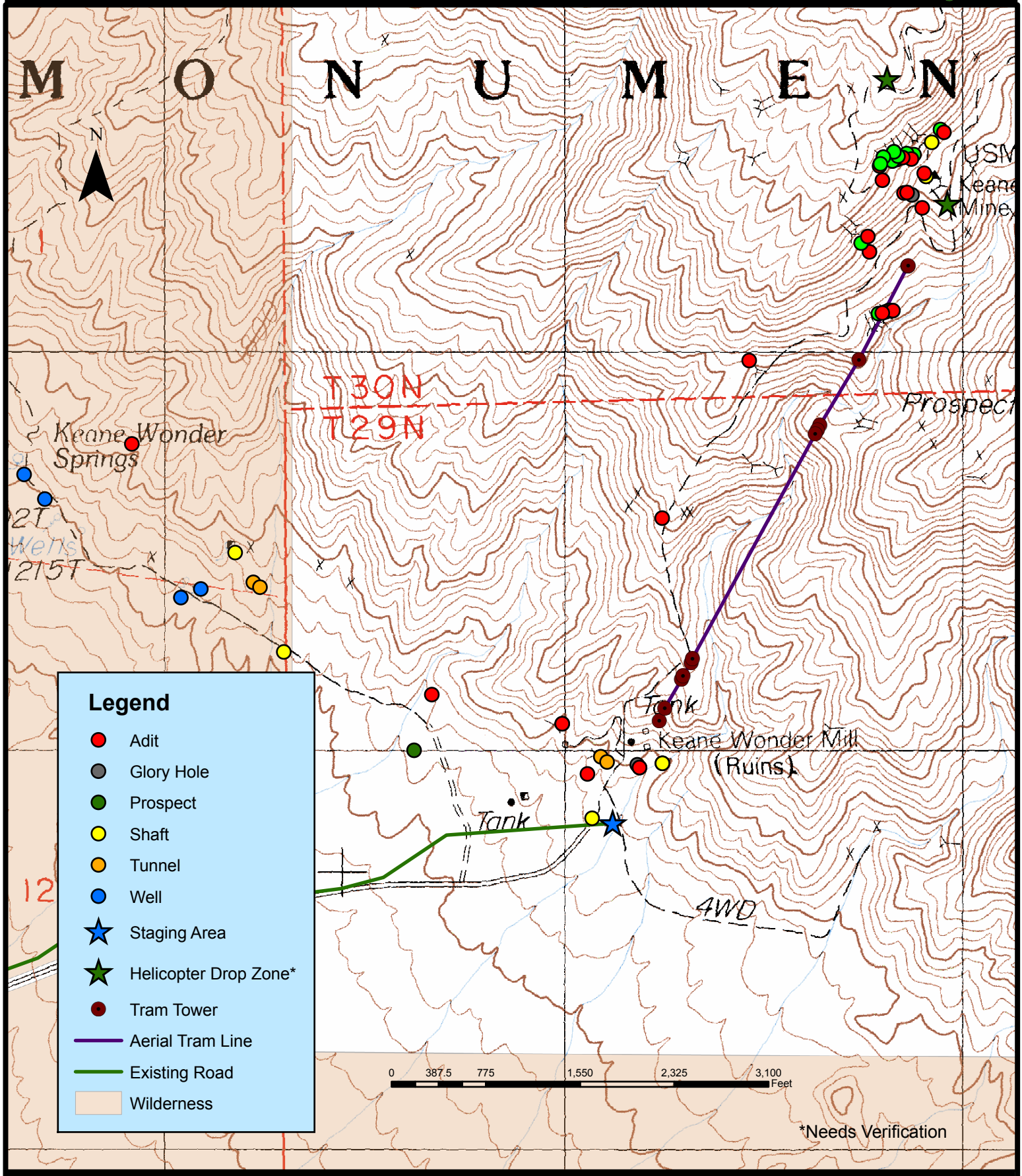
Chemical Constituent (all units are mg/kg)		**Site Number**		**Human Health Receptor (mg/kg)**	
		Keene Wonder 1	**Keene Wonder 2**	**Camper**	**ATV Driver**
Mercury	**Hg**	<lod	22.39	40	550
Arsenic	**As**	<lod	<lod	20	300
Cobalt	**Co**	<lod	<lod	n/a	n/a
Copper	**Cu**	93.01	173.55	5000	70000
Lead	**Pb**	3636.18	4716.19	1000	1000
Molybdenum	**Mo**	<lod	<lod	n/a	n/a
Nickel	**Ni**	<lod	<lod	2700	38000
Selenium	**Se**	<lod	<lod	700	9600
Thallium	**Tl**	51.79	57.39	n/a	n/a
Zinc	**Zn**	316.98	480.82	40000	550000

Death Valley National Park
CA AML PA Reporting
Keane Wonder Mine Closures
FY 2011

Keane Wonder Mine

Death Valley National Park
California

National Park Service
U.S. Department of the Interior



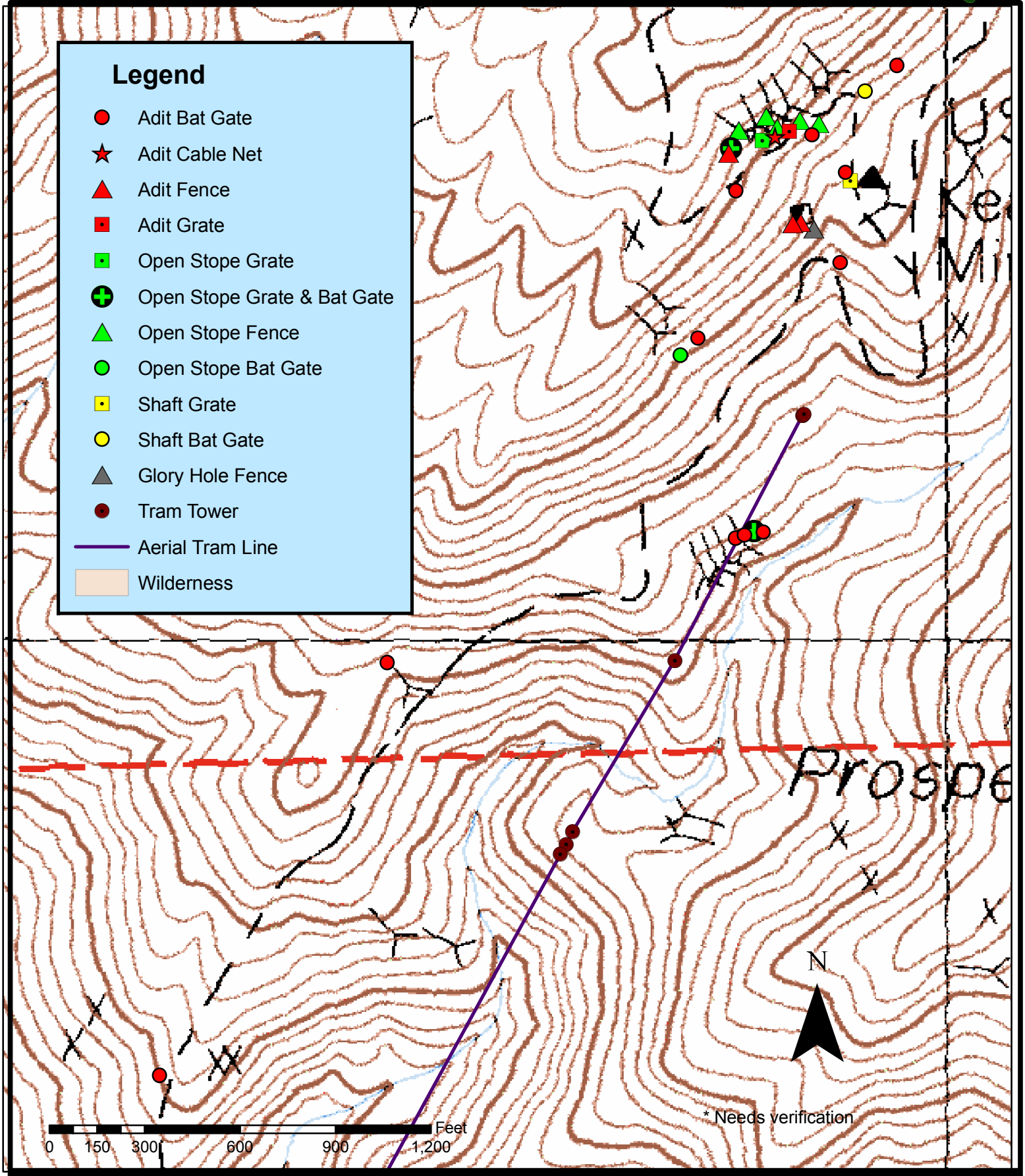
Produced by Resource Management Division

February 2010

Upper Keane Wonder

Death Valley National Park
California

National Park Service
U.S. Department of the Interior



Produced by Resource Management Division

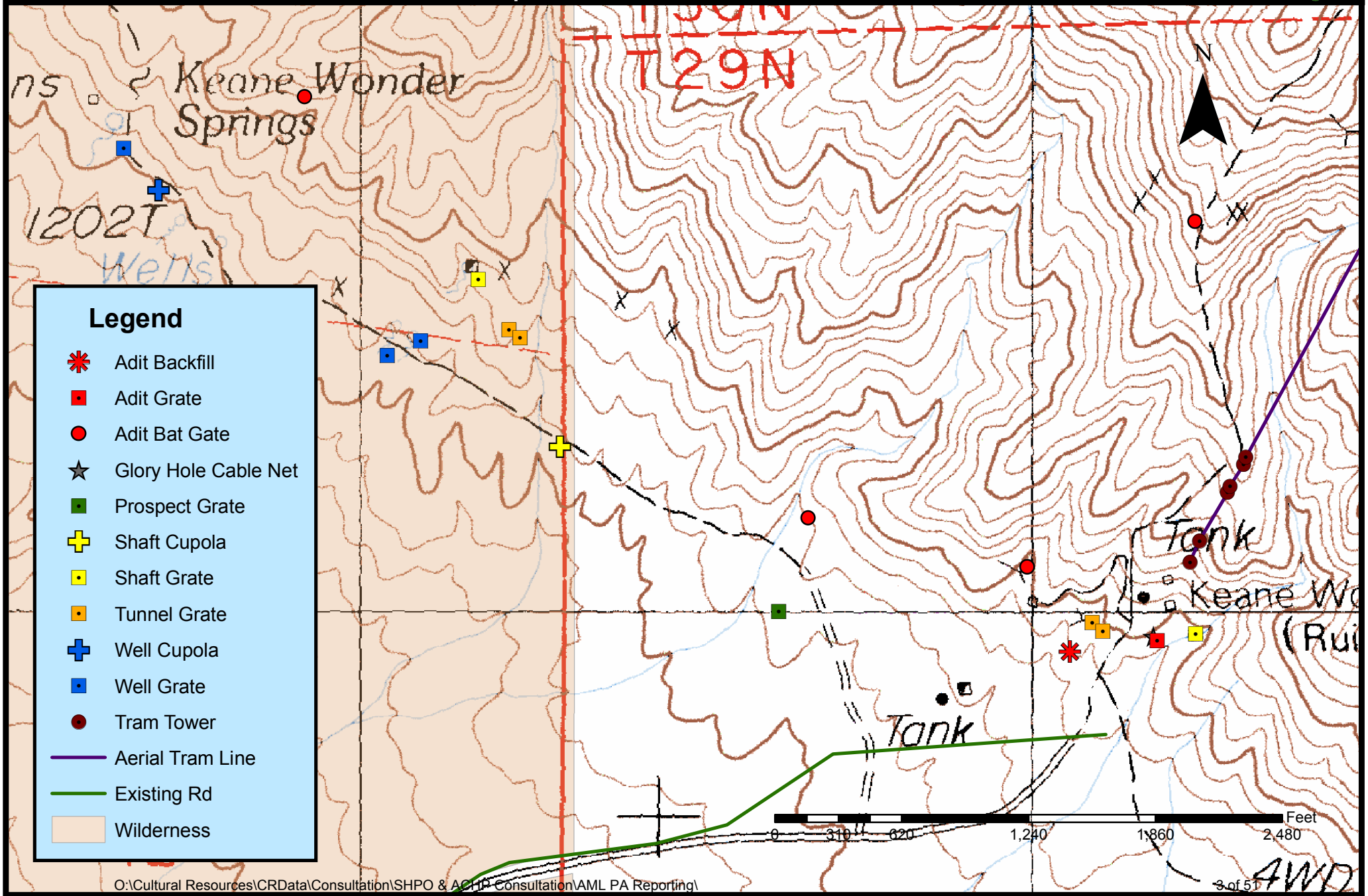
February 2010

AML PA FY2011complete_Keane Wonder

Lower Keane Wonder

Death Valley National Park
California

National Park Service
U.S. Department of the Interior



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Produced by Resource Management Division

February 2010

Site Name	Resource Number	Resource Type
AD-01	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508776	4059593

Width Feature (ft): 3 Length Feature (ft): 6 Depth Feature (ft): 15

Closure Information

C-18 Fence w/AD-02 and 0T-01

Comments

Open adit, appears stable, Z+ dimension

Before Photo

Before Photo caption

Upper AD-01, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-01.bmp).

After Photo

After Photo caption

Upper AD-01, after closure (3/31/2011) (Photo: AD-01 P3312424.bmp)

Site Name	Resource Number	Resource Type
AD-02	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508768	4059592

Width Feature (ft): 3 Length Feature (ft): 6 Depth Feature (ft): 10

Closure Information

C-18 Fence w/AD-01 and 0T-01

Comments

Open adit, Z+ dimension

Before Photo

Before Photo caption

Upper AD-02, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-02.bmp).

After Photo

After Photo caption

Upper AD-02 after closure (4/12/2011) (Photo: KW UP AD-02 Final (2).bmp).

Site Name	Resource Number	Resource Type
AD-03	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508819	4059641

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 50

Closure Information

Replace Cable Net with CO-6 Angle Iron Bat Gate

Comments

Open adit, stable, cablenetting and 2 warning signs 30' in, this is adit where a fatality occurred in 1984, Z+ dimension

Before Photo

Before Photo caption

Upper AD-03, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-03.bmp).

After Photo

After Photo caption

Upper AD-03, after closure (3/31/2011) (Photo AD-03 P3312416.bmp).

Site Name	Resource Number	Resource Type
AD-04	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508814	4059554

Width Feature (ft): 4 Length Feature (ft): 5 Depth Feature (ft): 40

Closure Information

CO-6 Angle Iron Bat Gate

Comments

Horizontal opening, unstable, timbers at portal with rock on timber, bat rank B; Z+ dimension

Before Photo

Before Photo caption

Upper AD-04, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-04.bmp).

After Photo

After Photo caption

Upper AD-04 after closure (4/8/2011) (Photo AD-04 KW_UP_AD-04_Final.bmp).

Site Name	Resource Number	Resource Type
AD-07	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508677	4059482

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 40

Closure Information

CO-6 Angle Iron Bat Gate

Comments

Horizontal opening, stable, mine waste 20' in, appears to go left, Z+ dimension

Before Photo

Before Photo caption

Upper AD-07, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-07.bmp).

After Photo

After Photo caption

Upper AD-07, after closure (3/17/2011) (Photo AD-07 P3171753.bmp).

Site Name	Resource Number	Resource Type
AD-08	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508765	4059680

Width Feature (ft): 6 Length Feature (ft): 6 Depth Feature (ft): 10

Closure Information

CO-10 Grate in adit

Comments

Horizontal opening, unstable, timbers inside, may have had raised at end, appears rocks have fallen onto timbers, bat rank D

Before Photo

Before Photo caption

Upper AD-08, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-08.bmp).

After Photo

After Photo caption

Upper AD-08, after closure (3/17/2011) (Photo AD-08 P3171704.bmp).

Site Name	Resource Number	Resource Type
AD-09	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508714	4059623

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 60

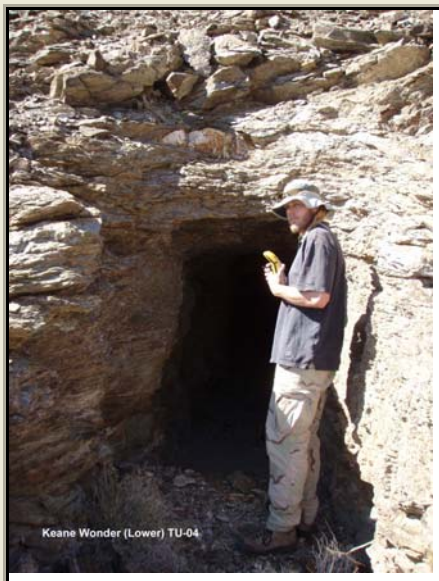
Closure Information

CO-6 Angle Iron Bat Gate

Comments

Horizontal opening, stable, bird scat on ledge, bat rank B; Z+ dimension

Before Photo



Before Photo caption

Upper AD-09, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-09.bmp).

After Photo

After Photo caption

Upper AD-09, after closure (3/17/2011) (Photo AD-09 P3171690.bmp).

Site Name	Resource Number	Resource Type
AD-10	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508707	4059659

Width Feature (ft): 10 Length Feature (ft): 5 Depth Feature (ft): 30

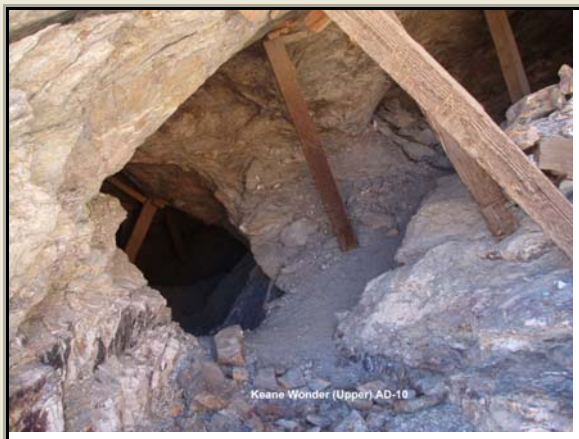
Closure Information

C-18 Fence as part of fencing around open stopes ###

Comments

Horizontal opening, unstable with stulls & timbers, opening forms irregular "Y" 10' in, Z+ dimension

Before Photo



Before Photo caption

Upper AD-10, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-10.bmp).

After Photo

After Photo caption

Upper AD-10, after closure (4/8/2011) (Photo: AD-10 KW_UP_AD-10_Final_(4).bmp).

Site Name	Resource Number	Resource Type
AD-17	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508868	4059744

Width Feature (ft): 3 Length Feature (ft): 6 Depth Feature (ft): 40

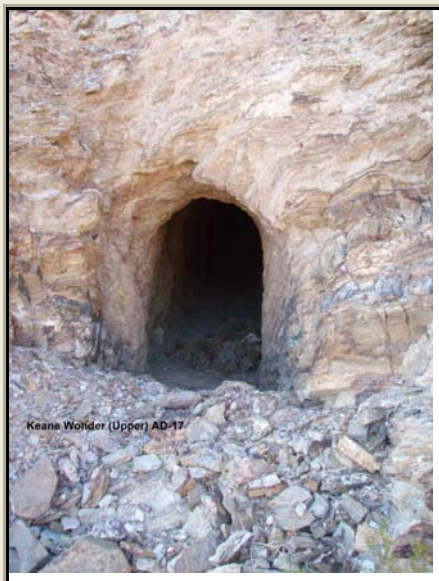
Closure Information

CO-6 Angle Iron Bat Gate

Comments

Horizontal opening, stable, Z+ dimension

Before Photo



Before Photo caption

Upper AD-17, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-17.bmp).

After Photo

After Photo caption

Upper AD-17 after closure (3/17/2011) (Photo: AD-17 P3171728.JPG).

Site Name	Resource Number	Resource Type
AD-18	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508380	4059172

Width Feature (ft): 4 Length Feature (ft): 7 Depth Feature (ft): 35

Closure Information

CO-6 Angle Iron Bat Gate

Comments

Horizontal opening, stable, wooden door at portal, bat rank D

Before Photo

Before Photo caption

Upper AD-18, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-18.bmp).

After Photo

After Photo caption

Upper AD-18 after closure (3/31/2011) (Photo: AD-18 P3312464.bmp).

Site Name	Resource Number	Resource Type
AD-19	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508751	4059676

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 40

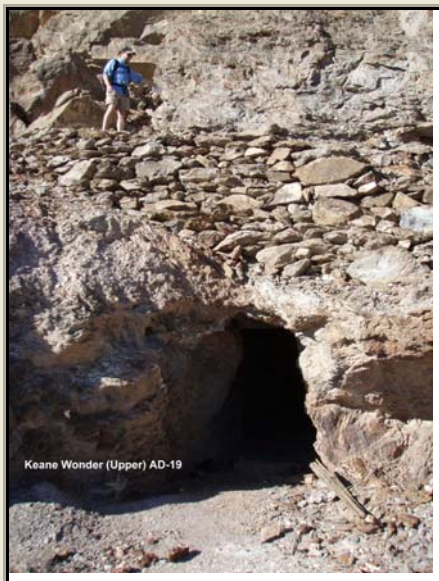
Closure Information

C-17 Cable Net

Comments

Horizontal opening, unstable, entire opening is supported by timbers, timbers are collapsing starting 15' to end, opening daylights at end

Before Photo



Before Photo caption

Upper AD-19, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-19.bmp).

After Photo

After Photo caption

Upper AD-19 after closure (3/17/2011) (Photo: AD-19 P3171701.bmp).

Site Name	Resource Number	Resource Type
AD-20	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508162	4058777

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 30

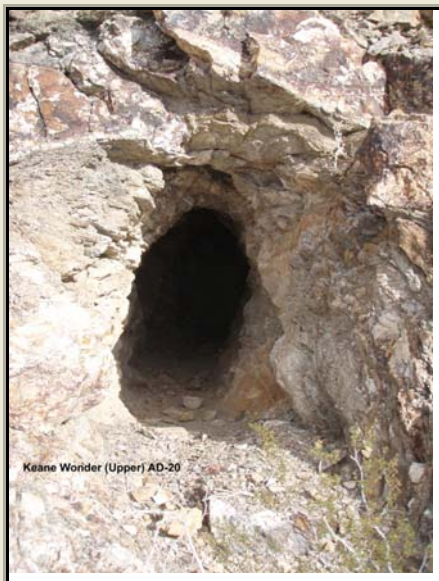
Closure Information

CO-8 Round Bar Bat Gate

Comments

Horizontal opening, stable, several phoebe perches, bat rank D

Before Photo



Before Photo caption

Upper AD-20, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-20.bmp).

After Photo

After Photo caption

Upper AD-20 after closure (4/8/2011) (Photo: AD-20 KW_UP_AD-20_Final_(2).bmp).

Site Name	Resource Number	Resource Type
AD-23	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508786	4059677

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 40

Closure Information

CO-8 Round Bar Bat Gate

Comments

Horizontal opening, partially collapsed, unstable, portal is partially collapsed with some timbers remaining at portal, bridge 10' in, followed by glory hole, Z+ dimension

Before Photo

Before Photo caption

Upper AD-23, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-23.bmp).

After Photo

After Photo caption

Upper AD-23 after closure (4/8/2011) (Photo: AD-23 KW_UP_AD-23_Final_(1).bmp).

Site Name	Resource Number	Resource Type
AD-24	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508713	4059291

Width Feature (ft): 6 Length Feature (ft): 4 Depth Feature (ft): 100

Closure Information

CO-8 Round Bar Bat Gate

Comments

Horizontal opening, unstable, opens to stope, cracking stull inside & spalling, bat rank B, Z+ dimension

Before Photo

Before Photo caption

Upper AD-24, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-24.bmp).

After Photo

After Photo caption

Upper AD-24 after closure (3/17/2011) (Photo: AD-24 P3171763.JPG).

Site Name	Resource Number	Resource Type
AD-25	Keane Wonder (Upper)	Adit
Resource Location E	Resource Location N	
508740	4059297	

Width Feature (ft): 9 Length Feature (ft): 6 Depth Feature (ft): 90

Closure Information

CO-8 Round Bar Bat Gate

Comments

Horizontal opening, stable, portal unstable, opens to "Y", left drift daylights 40' inside & appears to connect to another opening to the W

Before Photo

Before Photo caption

Upper AD-25, before closure (Photo: Keane Wonder (Upper) AD-25.bmp).

After Photo

After Photo caption

Upper AD-25 after closure (3/31/2011) (Photo: AD-25 P3312448.bmp).

Site Name	Resource Number	Resource Type
AD-26	Keane Wonder (Upper)	Adit

Resource Location E	Resource Location N
508722	4059294

Width Feature (ft): 15 Length Feature (ft): 8 Depth Feature (ft): 90

Closure Information

C-10 Grate w/C-08 Round Bar Bat Gate

Comments

Horizontal opening, unstable, leads to stope, Z+ dimension

Before Photo

Before Photo caption

Upper AD-26, before closure (2/19/2010) (Photo: Keane Wonder (Upper) AD-26.bmp).

After Photo

After Photo caption

Upper AD-26 after closure (

Site Name	Resource Number	Resource Type
AD-27	Keane Wonder (Upper)	Adit
Resource Location E	**Resource Location N**	
508681	4059444	

Width Feature (ft): 4 Length Feature (ft): 6 Depth Feature (ft): 150

Closure Information

C-06 Angle Iron Bate Gate

Comments

Horizontal opening, unstable, based on BCI internal survey: back 20' in a winze, likely a small ore chute; back 15' to the right is an unstable stope

Before Photo

Before Photo caption

Upper AD-27, before closure (2/20/2010) (Photo: Keane Wonder (Upper) AD-27.bmp).

After Photo

After Photo caption

Upper AD-27 after closure (3/17/2011) (Photo: AD-17 P3171728.bmp).

Site Name	Resource Number	Resource Type
OT-01	Keane Wonder (Upper)	Glory Hole

Resource Location E	Resource Location N
508788	4059587

Width Feature (ft): 20 Length Feature (ft): 25 Depth Feature (ft): 35

Closure Information

C-18 Fence w/AD-01 and AD-02

Comments

Very large vertical opening, stable, may have served as catchment for debris coming down wash, two adits just above to NW, fall hazard

Before Photo

Before Photo caption

Upper OT-01, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OT-01.bmp).

After Photo

After Photo caption

Upper OT-01 after closure (3/17/2011) (Photo: OT-01 P3171737.bmp).

Site Name	Resource Number	Resource Type
OS-02	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508661	4059466

Width Feature (ft): 20 Length Feature (ft): 8 Depth Feature (ft): 50

Closure Information

C-10 Grate w/C-08 Round Bar Bat Gate

Comments

Horizontal opening, unstable, based on BCI internal survey: back 20' is a winze, probably a small ore chute; back 15' to the right is an unstable stope, Z+ dimension

Before Photo

Before Photo caption

Upper OS-02, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-02.bmp).

After Photo

After Photo caption

Upper OS-2 after closure (3/17/2011) (Photo: OS-02 P3171747.bmp).

Site Name	Resource Number	Resource Type
OS-03	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508775	4059690

Width Feature (ft): 35 Length Feature (ft): 15 Depth Feature (ft): 30

Closure Information

C-18 Fence w/OS-4

Comments

Horizontal opening, unstable, large open stoped area, large unstable overhang, left end appears to daylight to upper right opening, Z+ dimension

Before Photo

Before Photo caption

Upper OS-03, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-03.bmp).

After Photo

After Photo caption

Upper OS-03 after closure (3/31/2011) (Photo: OS-03 P3312386.JPG).

Site Name	Resource Number	Resource Type
OS-04	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508793	4059688

Width Feature (ft): 5 Length Feature (ft): 5 Depth Feature (ft): 15

Closure Information

C-18 Fence w/OS-3

Comments

Horizontal opening, partially collapsed, stope opening, portal smaller, bat rank B, Z+ dimension

Before Photo

Before Photo caption

Upper OS-04, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-04.bmp).

After Photo

After Photo caption

Upper OS-04 after closure (3/31/2011) (Photo: OS-04 P3312404.bmp).

Site Name	Resource Number	Resource Type
OS-05	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508859	4059751

Width Feature (ft): 10 Length Feature (ft): 3 Depth Feature (ft): 50

Closure Information

C-17 Cable Net

Comments

Horizontal opening, partially collapsed, unstable, opens at a decline to a large stope; collapsed shallow opening to W, main opening central and small, Z+ dimension

Before Photo

Before Photo caption

Upper OS-05, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-05.bmp).

After Photo

After Photo caption

Upper OS-05 after closure (3/17/2011) (Photo: OS-05 P3171724.bmp).

Site Name	Resource Number	Resource Type
OS-06	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508704	4059289

Width Feature (ft): 8 Length Feature (ft): 3 Depth Feature (ft): 90

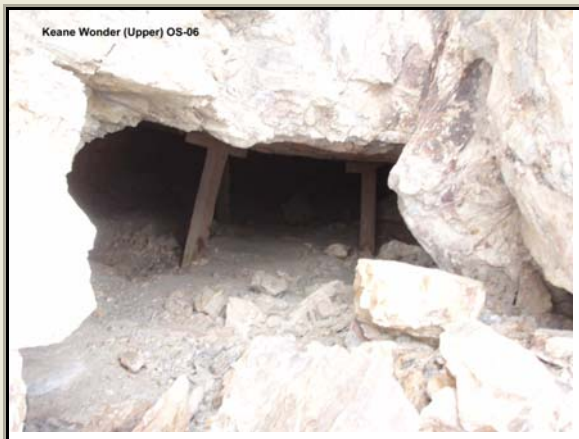
Closure Information

C-17 Cable Net

Comments

Horizontal opening, partially collapsed, large collapse volume at portal, part of larger stope, portal 8'X3'X90'+, opening slopes 20' downward, Z+ dimension

Before Photo



Before Photo caption

Upper OS-06, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-06.bmp).

After Photo

After Photo caption

Upper OS-06 after closure (3/17/2011) (Photo: OS-06 P3171758.bmp).

Site Name	Resource Number	Resource Type
OS-07	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508731	4059298

Width Feature (ft): 10 Length Feature (ft): 15 Depth Feature (ft): 90

Closure Information

C-10 Grate w/C-08 Round Bar Bat Gate

Comments

Horizontal opening, stable, very large opening into large stoped area, appears that one central pillar supports the main room, Z+ dimension

Before Photo

Before Photo caption

Upper OS-07, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-07.bmp).

After Photo

After Photo caption

Upper OS-07 after closure (3/31/2011) (Photo: OS-07 P3312451.bmp).

Site Name	Resource Number	Resource Type
OS-08	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508709	4059665

Width Feature (ft): 15 Length Feature (ft): 18 Depth Feature (ft): 40

Closure Information

C-10 Grate w/C-08 Round Bar Bat Gate

Comments

Horizontal opening, unstable, two lower drifts, left is partially collapsed with small opening, lower right has cross member timber, large rocks on floor, Z+ dimension

Before Photo

Before Photo caption

Upper OS-08, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-08.bmp).

After Photo

After Photo caption

Upper OS-08, after closure (3/31/2011) (Photo: OS-08 P1140690.bmp).

Site Name	Resource Number	Resource Type
OS-09	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508716	4059681

Width Feature (ft): 70 Length Feature (ft): 20 Depth Feature (ft): 40

Closure Information

C-18 Fence

Comments

Horizontal opening, unstable, wide opening with pillars inside, stull towards left side, decline drift left of base of central pillar, collapses in opening; Z+ dimension

Before Photo

Before Photo caption

Upper OS-09, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-09.bmp).

After Photo

After Photo caption

Upper OS-09, after closure (3/31/2011) (Photo: OS-09 P1140684.bmp).

Site Name	Resource Number	Resource Type
OS-10	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508743	4059695

Width Feature (ft): 45 Length Feature (ft): 5 Depth Feature (ft): 20

Closure Information

C-18 Fence

Comments

Horizontal opening, partially collapsed, unstable, continuation partially filled with collapsed boulders

Before Photo

Before Photo caption

Upper OS-10, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-10.bmp).

After Photo

After Photo caption

Upper OS-10 after closure (3/31/2011) (Photo: OS-10 P3312397.bmp).

Site Name	Resource Number	Resource Type
OS-11	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508753	4059684

Width Feature (ft): 15 Length Feature (ft): 12 Depth Feature (ft): 30

Closure Information

C-18 Fence

Comments

Horizontal opening, unstable, lower left is a short decline, upper right is a stoped opening and tunnel (daylight at eastern edge); Z+ dimension

Before Photo

Before Photo caption

Upper OS-11, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-11.bmp).

After Photo

After Photo caption

Upper OS-11 after closure (4/8/2011) (Photo: OS-11 KW_UP_OS-11_Final_(2).bmp).

Site Name	Resource Number	Resource Type
OS-12	Keane Wonder (Upper)	Open Stope

Resource Location E	Resource Location N
508739	4059672

Width Feature (ft): 4 Length Feature (ft): 5 Depth Feature (ft): 20

Closure Information

Exclude bats and CO-10 Grate

Comments

Horizontal opening, partially collapsed, inside is open but material from above has collapsed around opening, portal 2'x2', Z+ dimension

Before Photo

Before Photo caption

Upper OS-12, before closure (2/19/2010) (Photo: Keane Wonder (Upper) OS-12.bmp).

After Photo

After Photo caption

Upper OS-12 after closure (3/17/2011) (Photo: OS-12 P3171696.bmp).

Site Name	Resource Number	Resource Type
SH-01	Keane Wonder (Upper)	Shaft
Resource Location E	Resource Location N	
508823	4059633	

Width Feature (ft): 6 Length Feature (ft): 6 Depth Feature (ft): 30

Closure Information

Replace Cable Net with C-10 Grate

Comments

Open shaft, mitigated with cablenet, few timbers at the collar

Before Photo

Before Photo caption

Upper SH-01, before closure (2/19/2010) (Photo: Keane Wonder (Upper) SH-01.bmp).

After Photo

After Photo caption

Upper SH-01 after closure (3/17/2011) (Photo: SH-01 P3171733.bmp).

Site Name	Resource Number	Resource Type
SH-03	Keane Wonder (Upper)	Shaft

Resource Location E	Resource Location N
508837	4059719

Width Feature (ft): 7 Length Feature (ft): 7 Depth Feature (ft): 160

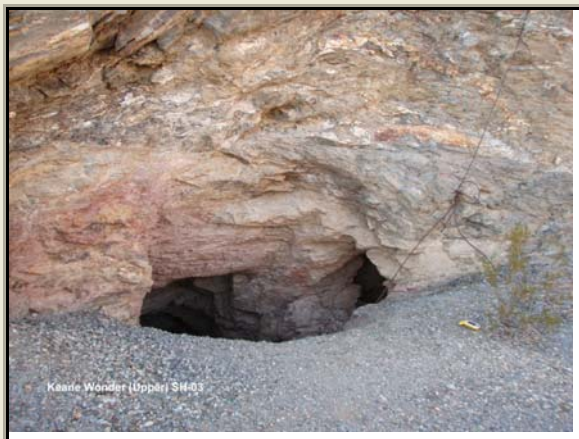
Closure Information

C-06 Angle Iron Bate Gate

Comments

Vertical opening, 50' decline, open, stable, horizontal drift at the opening to the east, drift 4'X5'X30'+. Fall hazard, may have hoise foundation below, Z+ dimension

Before Photo



Before Photo caption

Upper SH-03, before closure (2/19/2010) (Photo: Keane Wonder (Upper) SH-03.bmp).

After Photo

After Photo caption

Upper SH-03 after closure (3/17/2011) (Photo: SH-03 P3171714.bmp).

Site Name	Resource Number	Resource Type
AD-01	Keane Wonder (Lower)	Adit

Resource Location E	Resource Location N
507585	4058334

Width Feature (ft): 4 Length Feature (ft): 5 Depth Feature (ft): 50

Closure Information

Exclude bats and CO-10 Grate

Comments

Adit with lots of debris in front of portal, warning sign, goes straight back

Before Photo

Before Photo caption

Lower AD-01, before closure (2/20/2010) (Photo: Keane Wonder (Lower) AD-01.bmp).

After Photo

After Photo caption

Lower AD-01, after closure (12/17/2010) (Photo: AD-01 PC179790.bmp).

Site Name	Resource Number	Resource Type
AD-03	Keane Wonder (Lower)	Adit

Resource Location E	Resource Location N
507975	4058135

Width Feature (ft): 3 Length Feature (ft): 4 Depth Feature (ft): 30

Closure Information

C-01 Backfill

Comments

Possibly a collapsed adit; the feature has multiple pairs of short, wooden posts with loose timber congregated along both sides of the posts

Before Photo

Before Photo caption

After Photo

After Photo caption

Lower AD-03, after closure (11/30/2010) (Photo: AD-03 PB301677.bmp).

Site Name	Resource Number	Resource Type
AD-04	Keane Wonder (Lower)	Adit

Resource Location E	Resource Location N
508105	4058152

Width Feature (ft): 8 Length Feature (ft): 15 Depth Feature (ft): 8

Closure Information

C-10 Grate

Comments

An open, unstable adit with a pile of sediment that has fallen in from a glory hole or the ceiling

Before Photo

Before Photo caption

Lower AD-04, before closure (2/19/2010) (Photo: Keane Wonder (Lower) AD-04.bmp).

After Photo

After Photo caption

Lower AD-04, after closure (11/30/2010) (Photo: AD-04 PB301657.bmp).

Site Name	Resource Number	Resource Type
AD-05	Keane Wonder (Lower)	Adit

Resource Location E	Resource Location N
507911	4058261

Width Feature (ft): 5 Length Feature (ft): 6 Depth Feature (ft): 40

Closure Information

CO-6 Angle iron Bat Gate

Comments

An open, unstable adit with loose rock located at portal and further in; bat rank D; Z+ dimension

Before Photo

Before Photo caption

Lower AD-05, before closure (2/19/2010) (Photo: Keane Wonder (Lower) AD-05.bmp).

After Photo

After Photo caption

Lower AD-05, after closure (12/17/2010) (Photo: AD-05 PC17977.bmp).

Site Name	Resource Number	Resource Type
GH-01	Keane Wonder (Lower)	Glory Hole

Resource Location E	Resource Location N
508100	4058159

Width Feature (ft): 4 Length Feature (ft): 5 Depth Feature (ft): 20

Closure Information

C-17 Cable Net - Repair as needed

Comments

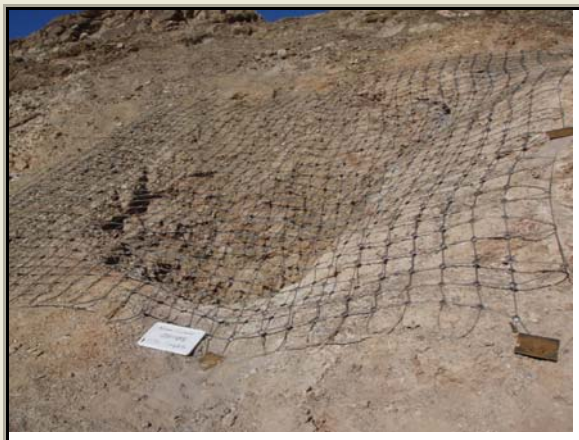
An unstable, open, cablenetted, vertical opening, possibly a glory hole, bat rank C; Z+ dimension

Before Photo

Before Photo caption

Lower GH-01, before closure (2/19/2010) (Photo: Keane Wonder (Lower) GH-01.bmp).

After Photo



After Photo caption

Lower GH-01, after closure (11/30/2010) (Photo: GH-01 PB301663.bmp).

Site Name	Resource Number	Resource Type
PR-15	Keane Wonder (Lower)	Prospect (Adit-like)

Resource Location E	Resource Location N
507540	4058195

Width Feature (ft): 4 Length Feature (ft): 4 Depth Feature (ft): 10

Closure Information

C-10 Grate

Comments

Adit-like prospect in wash, next to hiking trail, debris covering much of portal

Before Photo

Before Photo caption

Lower PR-15, before closure (2/19/2010) (Photo: Keane Wonder (Lower) PR-15.bmp).

After Photo

After Photo caption

Lower PR-15, after closure (11/30/2010) (Photo: PR-15 PB301720.bmp).

Site Name	Resource Number	Resource Type
SH-02	Keane Wonder (Lower)	Shaft

Resource Location E	Resource Location N
507092	4058690

Width Feature (ft): 5 Length Feature (ft): 5 Depth Feature (ft): 20

Closure Information

C-10 Grate w/1X1 hatch for water sampling

Comments

Shaft with cablenet attached to metal frame, cablenet may be starting to slip, wood cribbing around collar, running water visible at bottom, strong sulfur smell and warning sign about dangerous fumes present

Before Photo

Before Photo caption

Lower SH-02, before closure (2/19/2010) (Photo: Keane Wonder (Lower) SH-02.bmp).

After Photo

After Photo caption

Lower SH-02, after closure (12/17/2010) (Photo: SH-02 PC179802.bmp).

Site Name	Resource Number	Resource Type
SH-03	Keane Wonder (Lower)	Shaft

Resource Location E	Resource Location N
507214	4058441

Width Feature (ft): 10 Length Feature (ft): 12 Depth Feature (ft): 50

Closure Information

C-12 Square Tube Cupola

Comments

Water-filled shaft, wood collar collapsing in, opening has eroded and widened, wood blockage 5' down, but shaft should be very deep judging by size of waste rock pile

Before Photo

Before Photo caption

Lower SH-03, before closure (2/19/2010) (Photo: Keane Wonder (Lower) SH-03.bmp).

After Photo

After Photo caption

Lower SH-03, after closure (11/30/2010) (Photo: SH-03 PC179790.bmp).

Site Name	Resource Number	Resource Type
SH-05 SH-04???	Keane Wonder (Lower)	Shaft

Resource Location E	Resource Location N
508163	4058162

Width Feature (ft): 5 Length Feature (ft): 7 Depth Feature (ft): 30

Closure Information

C-10 Grate

Comments

An unstable, cablenetted, open mine shaft with cribbing; the SE corner of the shaft has sloughed off, a metal pipe stabilizes the SW corner

Before Photo

Before Photo caption

Lower SH-05, before closure (2/20/2010) (Photo: Keane Wonder (Lower) SH-05.bmp).

After Photo

After Photo caption

Lower SH-05, after closure (12/17/2010) (Photo: SH-05 PC179768.bmp).

Site Name	Resource Number	Resource Type
TU-01	Keane Wonder (Lower)	Tunnel

Resource Location E	Resource Location N
507154	4058604

Width Feature (ft): 3 Length Feature (ft): 4 Depth Feature (ft): 20

Closure Information

C-10 Grate both ends

Comments

Short tunnel in middle of 50' trench, caked mud on floor, bighorn droppings all along trench

Before Photo

Before Photo caption

Lower TU-01, before closure (2/19/2010) (Photo: Keane Wonder (Lower) TU-01.bmp).

After Photo

After Photo caption

Lower TU-01, after closure (12/17/2010) (Photo: TU-01 PB301711.bmp).

Site Name	Resource Number	Resource Type
TU-02	Keane Wonder (Lower)	Tunnel

Resource Location E	Resource Location N
507138	4058616

Width Feature (ft): 3 Length Feature (ft): 4 Depth Feature (ft): 20

Closure Information

C-10 Grate both ends

Comments

Short tunnel in middle of 50' trench, caked mud on floor, bighorn droppings all along trench, warning sign posted

Before Photo

Before Photo caption

After Photo

After Photo caption

Lower TU-02, after closure (11/30/2010) (Photo TU-02 PB301707.bmp).

Site Name	Resource Number	Resource Type
TU-03	Keane Wonder (Lower)	Tunnel

Resource Location E	Resource Location N
508024	4058166

Width Feature (ft): 5 Length Feature (ft): 6 Depth Feature (ft): 45

Closure Information

C-10 Grate both ends

Comments

An open, unstable tunnel that has been well-visited; from the southern portal, the tunnel turns left, heading NWl; bat rank D

Before Photo

Before Photo caption

Lower TU-03, before closure (2/19/2010) (Photo: Keane Wonder (Lower) TU-03.bmp).

After Photo

After Photo caption

Lower TU-03, after closure (11/30/2010) (Photo TU-03 PB301707.bmp).

Site Name	Resource Number	Resource Type
TU-04	Keane Wonder (Lower)	Tunnel

Resource Location E	Resource Location N
508008	4058179

Width Feature (ft): 5 Length Feature (ft): 6 Depth Feature (ft): 45

Closure Information

C-10 Grate both ends

Comments

Northern entrance to a tunnel; bat rank D

Before Photo

Before Photo caption

Lower TU-04, before closure (2/19/2010) (Photo: Keane Wonder (Lower) TU-04.bmp).

After Photo

After Photo caption

Lower TU-04, after closure (11/30/2010) (Photo TU-04 PB301671.bmp).

Site Name	Resource Number	Resource Type
WE-01	Keane Wonder (Lower)	Well (Shaft-like)

Resource Location E	Resource Location N
507006	4058599

Width Feature (ft): 10 Length Feature (ft): 15 Depth Feature (ft): 5

Closure Information

C-10 Grate

Comments

Probable well, framed with timbers, some of which have rotted from being in water, bottom of opening has about a foot of water and lots of vegetation growing

Before Photo

Before Photo caption

Lower WE-01, before closure (2/19/2010) (Photo: Keane Wonder (Lower) WE-01.bmp).

After Photo

After Photo caption

Lower WE-01, after closure (11/30/2010) (Photo WE-01 PB301682.bmp).

Site Name	Resource Number	Resource Type
WE-02	Keane Wonder (Lower)	Well (Shaft-like)

Resource Location E	Resource Location N
506956	4058578

Width Feature (ft): 3 Length Feature (ft): 5 Depth Feature (ft): 20

Closure Information

C-10 Grate

Comments

Deep well with wood collar, lots of algae on and in the water, depth dimension is a minimum, probably much deeper, dropped a white rock in water and watched it disappear out of sight, five small waste rock piles in vicinity

Before Photo

Before Photo caption

Lower WE-02, before closure (2/19/2010) (Photo: Keane Wonder (Lower) WE-02.bmp).

After Photo

After Photo caption

Lower WE-02, after closure (11/30/2010) (Photo WE-02 PB301682.bmp).

Site Name	Resource Number	Resource Type
WE-03	Keane Wonder (Lower)	Well (Shaft-like)

Resource Location E	Resource Location N
506563	4058886

Width Feature (ft): 5 Length Feature (ft): 12 Depth Feature (ft): 20

Closure Information

C-12 Square Tube Cupola

Comments

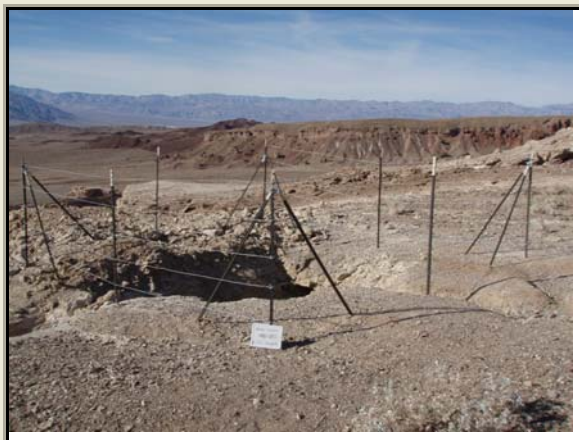
Deep well at the end of a 200' trench, well is at least 20' deep, probably deeper

Before Photo

Before Photo caption

Lower WE-03, before closure (2/19/2010) (Photo: Keane Wonder (Lower) WE-03.bmp).

After Photo



After Photo caption

Lower WE-03, after closure (11/30/2010) (Photo WE-02 PB301688.bmp).

Site Name	Resource Number	Resource Type
WE-04	Keane Wonder (Lower)	Well (Shaft-like)

Resource Location E	Resource Location N
506615	4058824

Width Feature (ft): 7 Length Feature (ft): 7 Depth Feature (ft): 7

Closure Information

C-10 Grate

Comments

Shallow well or catch basin collecting water from seep, 3' of water, some pipes and pieces of wood sticking out

Before Photo

Before Photo caption

Lower WE-04, before closure (2/19/2010) (Photo: Keane Wonder (Lower) WE-04.bmp).

After Photo

After Photo caption

Lower WE-04, after closure (11/30/2010) (Photo WE-04 PB301696.bmp).

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name: Keane Wonder Mine

other name/site number: Keane Wonder Mine Historic District

2. Location

street & number: Death Valley National Park **not for publication: n/a**

city/town: Furnace Creek **vicinity:** X

state: CA **code:** 06 **county:** Inyo **code:** 27 **zip code:** 92328

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this _X_ nomination __ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property __ meets __ does not meet the National Register Criteria. I recommend that this property be considered significant __ nationally __ statewide __ locally. (__ See continuation sheet for additional comments.)

_____ _____
Signature of certifying official/Title Date

_____
State or Federal agency or bureau

In my opinion, the property ____ meets _____ does not meet the National Register criteria.

_____ _____
Signature of commenting or other official Date

_____
State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:	Signature of the Keeper	Date of Action
_____ entered in the National Register _____ see continuation sheet		
_____ determined eligible for the National Register _____ see continuation sheet		
_____ determined not eligible for the National Register _____ see continuation sheet		
_____ removed from the National Register _____ see continuation sheet		
_____ other (explain)		

5. Classification

Ownership of Property
(Check as many boxes as apply)

___	private
___	public-local
___	public-State
X	public-Federal

Category of Property
(Check only one box

___	building(s)
X	district
___	site
___	structure
___	object

Number of Resources within Property
(Do not incl. previously listed resources in the count.)

Contributing	Non-Contributing	
		buildings
2		sites
3		structures
		objects
5		Total

Name of related multiple property listing:
(Enter "N/A" if property is not part of a multiple property listing.)

Historic Mining Properties in Death Valley National Park

Number of contributing resources previously listed in the National Register

None

6. Function or Use

Historic Functions:
(Enter categories from instructions)

Industry/Extraction/Processing: extractive facility, processing site, mill

Domestic: single dwelling/institutional housing

Commerce/Trade: business, department store

Current Function:
(Enter categories from instructions)

Other: National Park Service interpretive site

7. Description

Architectural Classification
(Enter categories from instructions)

N/A

MATERIALS:
(Enter categories from instructions)

foundation: concrete

walls:

roof:

other: wood, metal

Narrative Description:
(Describe the historic and current condition of the property on one or more continuation sheets.)

The Keane Wonder Mine Historic District is located on the west slope of the Funeral Mountains in the Amargosa Range, on the east side of Death Valley. The ghost town of Rhyolite is located roughly 10 miles from the mine. Mining related appurtenances occur in two clusters, one associated with the main mine development level and one associated with the mill. The two clusters are linked by the remains of a mile-long aerial tramway once used to transport ore from the mine entry, located at about 2500 feet above sea level, to the mill site roughly 1200 feet below. Although most of the buildings and structures historically associated with the mine have been removed, the results of mining-related activities are still visible in landscape features such as mine entries, rock dumps and tailings, terraced areas, and archaeological deposits.

(See continuation sheets)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- ☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- ☐ **B** Property is associated with the lives of persons significant in our past.
- ☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- ☐ **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- ☐ **A** owned by a religious institution or used for religious purposes.
- ☐ **B** removed from its original location.
- ☐ **C** a birthplace or grave.
- ☐ **D** a cemetery.
- ☐ **E** a reconstructed building, object, or structure.
- ☐ **F** a commemorative property.
- ☐ **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)
Industry
Commerce
Engineering

Period of Significance
1903–1912

Significant Dates
1903 (Discovery)

Significant Person
(Complete if Criterion B is marked above)
N/A

Cultural Affiliation
N/A

Architect/Builder
N/A

Narrative Statement of Significance
(Explain the significance of the property.) **See Continuation Sheet**

9. Major Bibliographic References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey #
- ☒ recorded by Historic American Engineering Record # HAER CA-291

Primary Location of Additional Data:

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☒ Federal agency
- ☐ Local government
- ☐ University
- ☒ Other

Name of Repository: Death Valley National Park

10. Geographical Data

Acreage of Property: **600** acres

UTM References
(Place additional UTM References on a continuation sheet.)

	Zone	Easting	Northing
1	11	508775	4059920
2	11	507080	4058720
3	11	509510	4059912
4	11	508970	4057795

☐ See continuation sheet

Verbal Boundary Description
The boundary for the Keane Wonder Mine Historic District corresponds to the polygon shown on the accompanying topographic map.

Boundary Justification The boundary corresponds to the group of patented claims controlled by the operators of the Keane Wonder Mine, including both lode and mill site claims. At the southwest edge of the district, the boundary line expands outside the patented claims to incorporate a developed spring and the pipeline that leads to the vicinity of the mill site.

11. Form Prepared By

name/title: John Latschar (NPS); Derek Beery (HRA)
organization: Historical Research Associates, Inc. **date:** August 26, 2010
street & number: 125 Bank Street, Suite 500 **telephone:** 406 721-1958
city or town: Missoula **state:** MT **zip code:** 59802

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps
A **USGS map** (7.5 or 15 minute series) indicating the property's location — see continuation sheets.

A **Sketch map** for historic districts and properties having large acreage or numerous resources — see continuation sheets.

Photographs
Representative **black and white photographs** of the property — see continuation sheets.

Additional items
(Check with the SHPO or FPO for any additional items.)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name/title: Death Valley National Park
street & number: **telephone:**
city or town: **state:** **zip code:**

7. Narrative Description (continued)

Historic Conditions[1]

Historically, mining appurtenances occurred in two principal clusters, at the main discovery and development level of the mine, at an elevation of roughly 2500 feet, and at the mill site, located 1200 feet below. Initial improvements included the construction of an assay office and a general office building, as well as a road across the lower hill slopes of the Funeral Mountains, which provided access to the mill site. By 1907 the mine complex included twenty- two claims, two mining camps, and the Keane Wonder Mill. One of the mining camps was located at the mine's development level, while the other was established at the valley floor to receive shipments via the desert road. Once the construction of the mill was complete, work began on a tramway connecting the development level with the twenty-stamp mill.

The aerial tramway consisted of an upper and lower tram terminal and associated ore bins. Between the terminals, twelve timber towers supported the cable. Twelve towers and a breakover station supported the tramway. The highest tower was thirty feet and the lowest was eighteen. The longest span between the towers was 1280 feet long and 500 feet above the valley floor. Each bucket on the tramway carried 600 pounds and was uncoupled after loading and then re-coupled automatically to the traction cable. The material for the tramway included 95,000 board feet of timber, fifty tons of wire rope, and terminal equipment. The tramway rose on a grade of 1000 feet per mile. The ore buckets dumped automatically into the mill bin at the lower tramway terminal. Power from the gravity pull on the tram's traction cable was used to operate a preliminary ore crusher at the upper terminal, through which the rock passed before descending to the mill. In addition, a supplementary 13-horsepower gas engine was installed on the upper tramway terminal so that the ore crusher could be operated when the tramway was idle.

The lower tramway terminal fed a 200-ton capacity ore bin. From this bin the ore passed into suspended Risdon feeders and under the Golconda batteries whose twenty stamps weighed 1000 pounds each and dropped 100 times per minute. Amalgamation was on back plate and chock blocks inside the mortar of the stamp battery with the ore passing through screens onto the lip plate and then falling into distribution pots and onto the mercury-treated apron plates. From the plates the pulp passed into the amalgam trap. Sands from a primary slurry separator were classified, with the coarse sands sent to two Wifley vanners and the fine sands to four Johnson vanners for removal of heavy remaining minerals. Tailings were pumped into four Callow dewatering tanks, each eight feet in diameter, where 75 percent of the water was recovered and pumped back into the tanks for use in the stamps. The tailings were impounded in dams and allowed to settle, with decanted water also recycled back through the mill. The mercury was retorted from the amalgam and the residue melted into gold bullion.

Water for the mill was drawn from a well shaft 285 feet from the mill and was pumped into a tank above the mill. The mill itself was powered by a Corliss steam engine with steam generated in a 126-horsepower Sterling boiler. The exhaust from the engine was used to heat a 100 horsepower Cochrane feed water heater, which heated the water to 210 degrees, recovering waste here and reducing scale formation in the boiler. Crude oil was used to fire the boilers, and the works were lighted by electricity generated at the mill site. The mill building was framed and covered with galvanized iron. All the floors were concrete with concrete foundations, mortar blocks, and retaining walls. To support the additional miners and millmen, a boarding house was added to the mill complex.

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[1] Adapted from a nomination originally prepared by John Latschar in December 1979 for the National Park Service, Denver Service Center. For a more detailed historical account of the Keane Wonder district refer to Volume 1 of Linda W. Greene, and John A. Latschar, *Historic Resource Study: A History of Mining in Death Valley National Monument*, 2 Vols. (Denver: National Park Service, 1981).

In 1908 a cyanide plant was constructed at the mill site. The plant contained eleven tanks including: six 25 foot diameter cyanide leaching tanks; two 12 x 10 foot leaching tanks, each 5 feet tall; two 18 by 10 foot solution tanks, two 12 by 10 foot settling or clarification tanks, and one wash water tank. Zinc boxes were also installed. The plant had the capacity to process 100 tons of stamp mill discharge per day. By 1909 the mill area also contained an ice plant to give miners relief from the desert heat as well as a new hoisting plant, bringing the number of power plants at the mine and mill to twelve. In 1910 a new 75-horsepower steam and air compressor plant was added to power advanced machine rock drills at the mine.

The mine ceased all operations in September of 1912. After reassessment work conducted between 1935 and 1936, it was determined that the tramway was beyond repair; in consequence, the mill complex was sold for salvage in 1937. At that time almost everything on the site except the heavy foundation timbers of the tramway terminals and the tramway towers was hauled away. A photograph taken sometime in 1938 shows the entire mill and all its support buildings removed with only the lower tramway terminal building and some decaying tanks and structures of the cyanide plant still intact.

Existing Conditions

Although the majority of the buildings and structures present during the historical period have been removed from both the mine's development/extraction level and from the mill site, the function and organization of mining operations may still be read in the extant cultural landscape features. Archaeological and landscape features are clustered in two locations, one corresponding to the development and extraction level of the mine and one to the mill site. The remains of the aerial tramway (Structure 1) that historically linked these two areas represent a third organizational component and continue to connect the two main activity areas (See attached sketch maps). Extant resources associated with the three components are described in detail below. Note that the upper and lower tramway terminals are discussed as components of that structural system even though they lie within the development/extraction level and mill site respectively.

Keane Wonder Mine development and extraction level (See Map 1)

The development/extraction level of the mine is located high on the mountain slope roughly 1200 vertical feet and a little over a mile above the mill site. Evidence of mine development is extensive, including numerous adits and stopes (with associated leveled platforms and waste rock piles) scattered over the hill slope. The rails from interior tramways remain visible at the mouth of at least two of the mine entries. In some places entire sections of the mountain have collapsed into the underground workings—likely as a result of the removal of the supporting ore pillars during final cleanup operations that occurred towards the end of mining operations. A timber ore chute extends to the remains of the ore bin located adjacent to the upper terminal. Two concrete machinery foundations (Structure 2), one of which has an engine and hoist drum still attached, are located in the vicinity of the remains of the upper tramway terminal, which is described more thoroughly below.

Evidence of habitation is less apparent, but includes several leveled tent platforms, dry-laid stone foundations believed to be indicative of living quarters, and a collapsed wooden privy. A small metal water tank, one of the few intact structures within the district, is perched on the hillside above the building ruins.

A system of pedestrian footpaths connects the various entries and activity areas and a few lead to other nearby mines such as the Big Bell and Chloride Cliff. These paths vary in width; many are supported on the down-slope side by dry-laid stone retaining walls.

Keane Wonder Mill Site (See Map 2)

The mill site is located about a mile southwest from the development/extraction level. The foundation for the old mill building (Structure 3), consisting of a series of concrete slabs, foundation walls, and piers that formerly supported the stamp mill and the enclosure, is one of the most prominent features at the mill site. It is located at the end of a pedestrian

trail that leads from the NPS-built parking lot, where a modern interpretive sign summarizes the history of the mine. The lower terminal for the aerial tram is located adjacent to the west. Most of the improvements associated with the cyanidation plant have been removed. Other site features include some leveled platforms, and the collapsed remains of several steel tanks, located below the platforms.

The area below the terminal and the stamp mill foundation contains numerous archaeological features such as building ruins, dry-laid stone retaining walls, and leveled platforms. A terrace excavated into the base of the hill slope above a seasonal wash formerly contained several buildings—as indicated in historical photos of the area. Only the terrace remains, and even the edge of this has eroded. The only standing structure (Structure 4) is a single-hole privy constructed with a timber frame and galvanized metal panels and supported on a wood foundation.

The remains of an elevated pipeline, consisting of six-inch pipe supported by wooden posts, extends about 1000 feet southwest from the area below and west of the lower tramway terminal to the vicinity of the footpath to the Keane Wonder Mine Spring. Another pipeline leads into the site from a developed spring located roughly 3400 feet northwest of the mill site.

Feature Name	Description
Feature 1, retaining wall	The wall is constructed of irregularly coursed stacked stone and serves as a water diversion dam along a creek and trail retaining wall. The structure is approximately 30' across and 12' high. It is several feet thick. There is a central opening in the wall that may be the result of a collapse. The opening measures about 10' at the top and 4' at the bottom.
Feature 2, adits	The adits are located across a drainage. In addition to three adit entrance areas, there are three retaining walls.
Feature 3, trail	The trail provides access to upper mine from the upper terminal area. The trail is narrow, accommodating a single person at a time. The trail is supported with stone retaining walls on the creek side. There is a scatter of debris along the trail that includes cans bottles, and glass fragments.
Feature 4, retaining wall	The retaining wall measures 50' long by 12' high. There is a scatter of debris near the retaining wall that includes scrap iron pieces, milled 2 by 8" lumber, cans, bins, and an ore cart.
Feature 5	Ruins of a frame privy, roughly 6' by 6'. Dry-laid stone foundation, corrugated galvanized metal on exterior walls; two holes in bench.
Feature 6	Building ruins, frame on dry-laid stone foundation, galvanized metal walls.
Feature 7	Structural ruins; frame with 1 by 6" planks, dry-laid stone foundation. Barben wire scattered in area
Feature 8	Possible prospect, 10' by 5' across, 2½' deep. Small, 3' by 4' frame structure inside the depression.
Feature 9	Footpath leading to the upper-most entries to the mine. Roughly 2' wide with dry-laid stone and timber retaining walls. A portion of the trail has wood treads.
Feature 10	The dugout and material scatter has a retaining wall, coil of cable, and a rectangular equipment platform foundation. The equipment platform is constructed with "P" shaped concrete blocks and is supported by outer walls with 4 by 4" beams. The concrete blocks support 1" pipe and anchor bolts.

Feature Name	Description
Feature 11, adit	The adit has two holes. The lower portion of the adit has a collapsed frame constructed of 4 by 4" beams and 2 by 6" lumber. The upper portion of the adit extends vertically before entering into the hill to the west inside of the larger hole.
Feature 12, mine opening	The mine opening is very large and collapsed.
Feature 13, test excavation pit	The excavation pit has an interior triangular timber frame. The frame is constructed of 2 by 4" and 4 by 4" pieces of lumber. It measures approximately 5' across at the bottom. There is a stacked stone retaining wall above the pit opening.
Feature 14, adit	The adit is framed with 4 by 6" and 2 by 6" timber ceiling supports. There is also a stacked stone retaining wall within the adit. There is a upward extending vertical shaft at the back of the adit. There is a small staging area in front of the adit opening. It is constructed with 12 by 12" posts. The adit was serviced by a light rail system that extends to F20, an ore bin and chute. On site debris includes numerous machine cut nails.
Feature 16, mining opening	The mine opening is complex with numerous adit openings. Two of the most prominent openings are located in the southern most portion of the site. These tow openings have doors constructed with 4 by 4" posts and 2 by 6" pieces of lumber. The doors are partially collapsed. There is stacked stone pathway that extends from the adit openings through a talus slope. There is a light rail system on site. An ore cart or sled remains. The entire mine opening measures almost 250' long and at least 20' high. The mine was serviced by an ore chute that measures about 30' long, 10' high, and 6 to 8' across.
Feature 17, bin	The bin is constructed of corrugated metal and anchored to boulders with heavy gauge wire. It is fixed with steel rivets and has 2" hose fittings at the top and bottom of the east side. The bin is circular with a cone shaped roof. The bin is connected to a 2" pipe running up slope from the parking area. The bin sits on a platform constructed of 1 by 8" lumber. It has an "L" shaped pipe structure located above and to the south of the bin. Directly downslope from the bin are two groups of collapsed frames. The frames are constructed of 6 by 6" and 4 by 4" posts. The frames may have supported another bin or a mill. The east side of bin reads "National Tank and Manufacturing Company, L.A., Cal." stenciled in large black print.
Feature 18, adit	The adit has a collapsed opening with very large boulders at the front. There appears to have been a timber support frame inside the adit. The adit was serviced by a light rail system that extends to F20, an ore bin and chute.
Feature 19, light rail system	There is very little left of the light rail system. Evidence of the small railway includes buried ties and stacked stone retaining walls. The rails no longer remain.
Feature 20, ore bin and chute	The ore bin and chute are collapsed. The bin and chute were accessed by a light rail system (F19). The rail system is "Y" shaped and constructed with 1 by 4", 4 by 4", and 1 by 12" pieces of lumber and braided cable.
Feature 21, test excavation	The excavation area is located within a talus slope and includes collapsed retaining walls and a collapsed timber frame. The timber frame is constructed of 4 by 4" posts. There are numerous pieces of scrap metal, timber fragments, and coiled wire hose segments scattered around the site.

Feature Name	Description
Feature 22, adits and trail	The site includes two adits and a trail that links with the main upper trail, F9. The trail has low retaining walls and some wood beam supports. The wood supports are located on the outer edge of the trail. The southern-most adit is large and deep. It has a braided cable anchored to the side of a cliff. There is a staging are allocated in front of the adit. There is also a substantial stone retaining wall with a cable. F10, a dugout, lies directly below the retaining wall.
Feature 23, retaining wall	The retaining wall contains buried fragments of crushed 10" pipe. The pipe leads into the hillside beneath the stone retaining wall. There are 2 pieces of decayed timber on the south side of the feature.
Feature 24, adit	The adit entrance is flanked with a stacked stone retaining wall. There is 4" pipe on site.
Feature 25, vertical shaft	The vertical shaft has a timber frame constructed of 1 by 6" planks and 12 by 12" beams. The shaft is secured with heavy netting for safety concerns. There is a 4" metal pipe that crosses over the top of the shaft and extends to an adit (F24).
Feature 26, retaining wall	There is segment of 4" metal pipe at the base of the small retaining wall.
Feature 27, structure	The collapsed structure has a rectangular 15 by 20' stacked stone foundation. The foundation is 2 to 3' high on three sides and open to the hillslope on the west side. There are collapsed timbers inside the structure. They include various sized 1 by 4", 2 by 4", 2 by 6" boards and several irregular beam pieces. In particular, there are two beams with braided cable at the northeast and southeast corners. There are many large and small machine cut nails extruding from the boards. It appears that the structure may have had a wood plank floor.
Feature 28, stone slab	The stone slab lies in front of F27, a collapsed structure. The slab stands 1 ½' upright and reads "USLM No. 1 133."
Feature 29, structure	The collapsed structure measures 20 by 15'. It has timber framing and a low stone foundation. There may have been a pipe support structure. On site debris includes 4" pipe segments, rail segments, 4 by 6" beams, and 1 by 6" planks. Some of the 1 by 6" planks had sawed notches. There is a retaining wall that is less than 1' high around the structure.
Feature 30, dugout	The collapsed dugout was constructed in a test pit. The site has a collapsed timber frame comprised of 2 by 4", 1 by 6", and 2 by 6" boards. There are also grooved boards in the rubble. There is a wood bed frame and corrugated tin panels buried under the debris. There are also purple glass fragments on site.
Feature 31, dugout	The collapsed dugout measures about 8 by 10'. It was constructed in a test excavation with stacked stone, 2 by 6" beams, and corrugated tin. The walls are constructed of rhyolite slabs stacked two courses across and 4' high. There are numerous 2 by 12" and 2 by 16" panels collapsed inside the dugout. There appears to have been a doorway on the west elevation. There may have been a window on the east elevation. There are several pieces of stacked olive, aqua, clear, purple, and brown glass bottle fragments outside the doorway. There is a single piece of a porcelain cup. The only maker's mark is an "AL" on a brown glass bottom.
Feature 32, staging area	The staging area is located on the leveled portion of a hillside. There is a stacked stone wall measuring 6' high on the west side in a test excavation. Debris on site includes nails, glass fragments, 1 by 16", 2 by 4", 1 by 6" boards on the leveled area. There is also a stone retaining wall on the south side that supports the leveled surface.
Feature 33, retaining wall	The small stone retaining wall is located in a test area between a dugout (F31) and the retaining wall of Feature 32. (not shown on map)

Feature Name	Description
Feature 34, retaining wall and staging area	The site is a machinery staging area with a stone retaining wall. The retaining wall is constructed in a single course and measures 3 to 4' high on the south edge of the leveled area. On site machinery and debris includes a massive iron works, beams, couplers, belts, and hoops. There is also timber and tin panels on site. An upright 2 by 6" board is located in the southeast corner.
Structure 1 (Feature 35), upper tramway terminal	The timber tramway terminal and associated ore bin is a massive timber structure located at the main development level of the mine, slightly below the mine entries. The 4" X 4", 6" X 6" and 6" X 8" timbers in the support structure are bolted together. A plank-covered platform is excavated into bedrock on the south side of the structure. Cable guides and take-up wheels remain in place.
Feature 36, adit	The adit site includes a series of stone retaining walls. The adit is located above the upper tramway terminal (F37). The opening has a timber frame. There are rails extending from the adit entrance to near the tramway terminal. On site debris includes discarded logs.
Feature 37, collapsed structure	The amorphous collapsed timber structure measures about 20 by 20'. The structure was constructed with 1 by 8" planks and 2 by 12" beams.
Structure 2 (Feature 38)	A gasoline-powered engine, bolted to a 12 by 6' concrete slab is located slightly up slope from Structure 1.
Feature 39, structure	The support structure lies below a trail and is constructed of two 2 by 6" beams on the east side and corrugated metal panels on the west side. The corrugated metal is rusted. There is an excavated foundation. The structure may have been a privy. (not shown on Map)
Feature 40, adit	The adit has a timber support structure and a unique door. The door is constructed of three 1 by 6" panels and a single 1 by 4" panel. There are large metal barn hinges bolted into the frame. (Not shown on Map)

Aerial Tramway

The remains of the aerial tramway (Structure 1) connect the development/extraction level and the mill site. The lower tramway terminal, constructed with large-dimension timbers bolted together, is located adjacent to the mill foundation and measures about 25 feet by 70 feet. A large ore bin stands adjacent to the terminal. All of the hardware associated with the cable mechanism has been salvaged. In contrast, the upper tramway terminal remains mostly intact. It measures approximately 30 by 60 feet. The hoisting drum and wire cable as well as a small electric motor, added some years after the original construction, remain in association with the upper terminal.

Most of the tramway's 12 support towers are still standing, the exception being the tower nearest the upper tramway, which has collapsed. All the tramway towers have a base measuring twelve feet on each side; the height of the towers varies, with some as high as 30 feet. The framing timbers are anchored with bolts fastened directly to bedrock or to concrete piers. The two main carrier cables of the tramway are still strung from the upper to lower terminal, but the traction cables have fallen to the ground between most of the towers. Where the traction cables are still in place, the ore buckets can be seen hanging from the line.

In addition to the tramway, the original trail used during the construction of the tramway in 1907 is in very good condition and is currently used as a recreation/interpretive trail by tourists hiking to the extraction level of the mine.

Table of Small Scale and Archaeological Features – Keane Wonder Mill

Feature Name	Description
Structure 1 (F1), tramway and upper and lower tram terminals	See text
Feature 2, concrete and wood structure	The elevated and collapsed structure measures 15 by 20 inches and is 4 feet deep. The concrete foundation while remaining intact, is fractured vertically in two places on both the north and south walls. On site debris includes numerous portions of wood fragments within the structure.
Structure 3 (F3), stamp mill.	see text
Feature 4, water tank	The tank is constructed of riveted panels. It holds 1,000 gallons and has elongated cylinder shape. The tank is place horizontally on the ground.
Feature 6, water or cyanide tank	The large tank, placed on a steep hillside, is constructed of riveted steel panels. A pipe segment exits the tank and leads to the tramway.
Feature 7, concrete remains	The site is fragmented concrete on slope beneath.
Feature 5, timber table	Feature 5 is a timber table located near the mill.
Feature 6, adit	The opening measures 8 by 5 feet and is framed with 4 by 6 inch beams and 2 by 12 inch panels. A 5 inch pipe ascends to the opening from inside. The opening is protected with netting and inaccessible.
Feature 8, tent platform	The tent platform measures 6 by 6 feet across. The platform is placed on the hillside and is constructed of 2 by 12 inch timbers. The platform is somewhat disarticulated, no longer retaining its original form.
Feature 9, vertical shaft	The vertical shaft opening is supported by a now collapsing timber and corrugated sheet metal siding structure.
Feature 10, collapsed structure	The remains are likely a structure that stood on a ridge below a tank. The debris pile includes numerous nails and window glass fragments.
Structure 4 (F11), privy	See Text
Feature 12, adit	The adit opening measures 4 by 6 feet and extends back 30 to 40 feet. The adit opening is in a wash west of F11.
Feature 13,	Dry-laid stone foundation (30 by 30 feet), with architectural debris. The stacked stone platform measures approximately 30 by 30 feet across.
Feature 14, tunnel	The tunnel beneath water pipeline. (Opening in rock measures 5' by 4' across).
F15, tank and retaining wall	The collapsed tank is riveted and set on 6 by 6 inch beams and a platform constructed of 2 by 12 inch boards. There are cone tops for four tanks located in the wash below. There is also a substantial scatter of wood debris also located in the wash below the tank structure.
Feature 16, two building pads	The lower pad measures 6 by 10 feet across, while the upper pad measures 15 by 12 feet across. A stacked stone wall is to the east side of the platforms.
Feature 17, path	The path has a few areas with stacked stone retaining walls (F22). It extends from the lower mill area to the main path.
Feature 18, artifact concentration	The artifact concentration containing mostly structural debris (wood, metal and concrete), washed down slope into the drainage.
Feature 19, tent platform	The platform measures 50 by 30 feet across. The platform is located midway down the slope. There is metal and wood debris located on the pad.
Feature 20, anchor	The anchor for a bolt is a very large metal piece sunk into a rock formation. It is located in the bottom of a wash. The anchor has two vertically placed bolt holes more than 1 inch thick. Cable debris is located nearby.

Table of Small Scale and Archaeological Features – Keane Wonder Mill

Feature Name	Description
Feature 21, building platform with an anchor and cable.	The platform is located in the west wall of the canyon. Some stacked stone retaining wall areas remain on the south and east sides. The anchor is an eye bolt placed into a rock slope. Debris on the platform surface includes hundreds of nails and wood debris. A single wooden stake is near the northwest corner.
Feature 23, platform and staging area	The platform and staging area measures 60 by 30'. The platform likely served as a staging area for a nearby adit (F24). The platform is bisected by a trail (F22). On site debris includes a large number of nails, plate glass fragments, and other building debris. Other debris includes a metal safe located on the south corner of the platform and a concrete and rebar anchor located on the north side of the platform.
Feature 24	This feature consists of a small room excavated into the hill slope. The opening to the room is 6 by 5 feet. A buried 55-gallon drum is located near the entrance, and may have serving as a stove. A netted ventilation shaft is located near the rear of the room and provides some light to the interior. A canvas tarp covers the entry.
Feature 25, structure	The collapsed framed structure was constructed of 2 by 4 inch lumber and is located on the north wall of the canyon. The structure is located just north of the stamp mill (F2) and may have been part of that structure.
Feature 26, tank	The 50-gallon tank is buried in slope wash between a foundation (F2) and the stamp mill (F3).
Feature 27, pipeline	Feature 27 is a pipe extending from the upper cyanide tanks to lower tanks.
Feature 28, retaining wall	The retaining wall measures 20 to 30 feet long and 3 to 5 feet high. The wall, constructed of irregularly coursed stone, is located on a footpath extending from the parking lot to the lower mill area.
Feature 29, disturbed ground with exposed 2" pipe	The collapsed ground is located in the bottom of a wash.
Feature 30, rail line structure and platform	The only standing portion of the structure measures 15 feet long and 4 feet wide and is constructed of 2 by 12 inch boards on a frame constructed of 4 by 6 inch beams. The frame extends up the wash at ground level to the north, then down the wash at ground level to the south. There are indications that tracks may have extended farther down the wash. On site debris includes two round wood pieces just west of the structure. Both wood pieces are constructed of plywood and have 4' diameters. The circular wood pieces are slightly different with one having rows of nails around the circumference, while the other has 1 inch holes surrounding the center. The platform is located in a wash along with a substantial scatter of wood debris.
Feature 31, foundations	The wood post foundations are located in the side of a wash. The lumber pieces are mostly 4 by 6 inch portions of wood.
Feature 32, series of posts	The feature is located on the west sides of a slope that extends to the cyanide tanks. It consists of a line of ten 6 by 6 inch posts with metal pipe supports.
Feature 33, trail	The trail extends from a collapsed structure (F10).
Feature 34, cyanide tank	The cyanide tank has a wooden post and beam structure with timber supports along the edge corners on the inside. The tank is constructed of a series of two vertically placed panels measuring a total of 8' high. The tank has a diameter of approximately 20 feet and lacks a cover. It is likely that there was electricity at the site as evidenced by the power pole, metal electrical conduit, and breaker box located on the south side of the tank.
Feature 35, well	The well's vertical shaft is secured with heavy netting and is inaccessible. The shaft has a collapsed timber structure and is located in the bottom of a wash, is surrounded on all sides by waste rock. The shaft opening measures approximately 8 by 10 feet across and extends at least 40' down.
Feature 36, water pipeline	The water pipeline consists of disjointed 6" pipe running between a developed spring and the mill site.

Table of Small Scale and Archaeological Features – Keane Wonder Mill

Feature Name	Description
Feature 37, developed spring	Developed spring protected by a metal grate, water flowing from timber box. A pipeline (Feature 36) extends from the spring box to the vicinity of the mill.
Feature 38, trail	The trail leads to Cyty's Mill and Keane Wonder springs.
Feature 39, water tank platform and depression	The platform and depression are located at 2nd spring site. The feature contains three main parts; to the north is a platform constructed of railroad ties, in the center is a depression, and to the south is a second platform also constructed of railroad ties. The depression measures 8 by 8 feet across and 6 feet deep. Numerous portions of wood fragments are located in the bottom. The southern platform may have served as a foundation for a water tank, now collapsed in the wash below.
Feature 40,	Dry-laid stone rubble retaining wall and platform, roughly 10 by 10 feet.
Feature 41, adit	The test adit was dug into the side of a wash near a retaining wall. The test excavation measures 4 by 4 feet across and 10 feet deep. The site is located near a National Park Service trail.
Feature 42, artifact concentration	The large concentration includes braided cable, wood, and rusted sheet metal. The site is surrounds F43, F44, F45, F46, and F47.
Feature 43, platform and collapsed structure	The graded portion of platform measures approximately 10 by 15 feet. The collapsed structure is composed of large pieces of milled wood.
Feature 44, tank and concrete pad	The collapsed corrugated tank has a diameter of 10 feet.
Feature 45, tank and concrete pad	The collapsed tank measures 10 feet in diameter and had a wood platform in front of it. On site debris includes numerous portions of wood fragments.
Feature 46, tank platform and concrete pad	The tank platform and concrete pad are located between collapsed tanks (F44 and F45).
Feature 47, platform	The tank area consists of two upright wooden supports and a flattened circular platform area. The area measures approximately 20 by 30 feet. The posts have braded cable strung through them.
Feature 48, tent platform	The platform measures 8 by 10 feet. On site debris includes an anchor stake and wire-bound rock both located on the east side of the platform.
Feature 49, tank	The tank measures 4 feet high and 20 feet in diameter. The tank is supported by a concrete platform.
Feature 50, platform	The platform area is located in a wash. A retaining wall constructed of irregular courses of stone is located on the south side. On site debris includes metal and wood fragments.
Feature 51, building platform and retaining wall	The boundaries between buildings are difficult to discern and indeterminate. The stacked rock retaining wall is constructed of irregular courses.
Feature 52, waste dirt pile	The waste pile has timbers protruding from the base.
Feature 53, retaining wall and building platform	The stacked stone retaining wall is constructed of irregular courses and is collapsing. The building platform measures 20 by 15' feet On site debris includes railroad ties located on the south side.
Feature 54, artifact concentration	A concentration of mining-related debris within a depression, debris includes three sets of rectangular boxes.
Feature 55, driveway	The driveway entry leads to a building platform (F51). The entry includes a retaining wall located on the south side. The building platform is on the east side.
Feature 56, tank platform, wood foundation, and stacked stone walls	The stacked stone walls are located to the south and west. Metal tank debris, such as panels, grated covers, and pipes, are scattered about the site.

Table of Small Scale and Archaeological Features – Keane Wonder Mill

Feature Name	Description
Feature 57, platform and retaining wall	The platform and stone retaining wall are located above a tank platform (F56). The platform is excavated into a bank on the northeast side. The retaining wall, constructed of irregular courses, is located to the south and west. Except for the mentioned elements, here is no evidence of a built structure at the site.
Feature 58 and Feature 59, two side-by-side tanks	The upper or north tank (F58) is constructed of corrugated metal. It measures 10 feet in diameter and 3 feet high. There is no evident foundation. The lower tank (F59) is constructed of riveted metal pans and measures 20 feet in diameter and 2 feet high. A wood structure on the inside of the tank is connected to F58 via a 2 inch pipe. The tank sits on a wood foundation. The tank is full of slurry.
Feature 60, debris scatter	Feature 60 is a 10 feet high pipe with an associated debris scatter.
Feature 61, tent platform	The platform measures 15 by 25 feet across.
Feature 62, platform and artifact concentration	The artifact concentration area measures 40 by 40 feet. The area is bordered by timbers and barbed wire. A rock pile is located at the center of the south end. On site debris includes tank fragments and wood panels scattered across the area.

8. Statement of Significance (continued)

Summary Statement of Significance

The Keane Wonder Mine Historic District is eligible for listing in the National Register of Historic Places under criteria A and C. Under criterion A, areas of significance include *exploration and settlement*, *industry* and *commerce*; the mine represents the initial discovery in what eventually was known as the Bullfrog Mining District. Prospectors flooding into the area in response to the news of the Keane Wonder discovery were responsible for the great Bullfrog boom. The Keane Wonder went on to become one of the two most productive gold mines in the region (the other being the Skidoo) and the longest running gold mine of the entire Bullfrog boom region. With a production of over $1,000,000, the Keane Wonder was important to the economies of both Nye County, Nevada, and Inyo County, California, during the early 19010s. Under criterion C (*engineering* area of significance) the Keane Wonder Mine and Mill had several unique features, including its mile-long aerial tram that linked the development/extraction levels of the mine with the mill site and a cyanidation plant incorporated in its milling process. The latter facilitated the more complete recovery of gold, thus raising profits.

Historic Context[2]

In December 1903, two prospectors wandered into the Funeral Mountains on the east side of Death Valley. Like so many others, these two men were among the horde of prospectors scanning the deserts and mountain ranges of southern Nevada for gold, spurred on by the fabulous riches discovered shortly before at Tonopah and Goldfield. What brought them to this particular area is unknown, but perhaps they had heard about the old Chloride Cliff Mine, which had operated briefly in the Funeral Range in the 1870s.

At any rate, the two prospectors, named Domingo Etcharren and Jack Keane, found an outcropping of silver ore in the northern Funeral Range in December 1903. The two men worked their discovery for several months, attempting to trace the outcropping to a silver lode, but they were unsuccessful. Then, quite by accident, Jack Keane discovered an immense ledge of free-milling gold ore a short distance from the original silver location. The discovery was aptly named the Keane Wonder, and represented Keane's first major strike after eight years of desert prospecting.

Like the 1870 operators of the Chloride Cliff Mine, Etcharren and Keane depended on Ballarat for supplies. Unlike the earlier strike however, by 1904 eastern California and southern Nevada miners were prepared for a gold rush. When the two men came into Ballarat in May of that year, for a rest and to reequip, news of their strike touched off a genuine gold rush. Other prospectors rushed to the Funeral Mountains to get in on the strike, and promoters began to negotiate with Keane and Etcharren for the purchase of their locations. By late May, the strike was confirmed—that is, other prospectors and experts in the employ of mining promoters had examined the site—and Keane and Etcharren began to receive offers to sell their eighteen claims.

The two men, however, knew that they had something big and decided to wait until the right offer came along. It did not take long, for within a few weeks the Keane Wonder was bonded to a well-known California mining operator, Captain J. R. Delamar. The terms of the bond called for Delamar to pay the locators $10,000 in cash immediately, for which Delamar obtained the rights to develop the locations for one year, with an option to purchase the mine at the end of that time for $150,000. The bond agreement was signed, sealed, and placed in the Inyo County Recorder's office on June 24,

[2] The following context has been adapted from Linda W. Greene and John A. Latschar, *Historic Resource Study: A History of Mining in Death Valley National Monument*, 2 vols. (Denver: National Park Service, 1981); and the original National Register nomination prepared by John Latschar in December 1979.

1904, even though no one seemed to know for sure whether the mine was located in California or Nevada—a telling indication of the great lack of knowledge about the Death Valley region.

Delamar at once went to work and shipped machinery and supplies to the mine. By the end of July 1904, he had thirty men working on the property. In the meantime, a decided rush was on to the Funeral Mountains and several other important discoveries had been made. By the end of July, one paper estimated that there were five hundred prospectors in the general vicinity of the new discovery. Two of these were Frank "Shorty" Harris and Ed Cross, who were soon to discover the Original Bullfrog Mine.[3]

During the remainder of 1904, Delamar's men feverishly worked the Keane Wonder Mine, racing against the one-year deadline to determine if it was worth the purchase price of $150,000. An assay office and a general office building were built at the site, and a wagon road was cut across the desert to within a mile of the mine. By early 1905, their efforts to develop the mine were frustrated by the beginnings of the great rush to Bullfrog, which made horses and wagons almost impossible to obtain, and development work slowed. Nevertheless, enough teams were found to make the sixty-mile haul from Ballarat, and fifteen men were still employed in driving two exploratory tunnels in March 1905. The results of this work made the Keane Wonder look like a truly great prospect. "There is," reported the papers, "enough quartz in this mountain, and float, if it carries sufficient value, to run a 100-ton-a-day plant for twenty years."

By then, strikes were popping up all around the Keane Wonder. Stimulated both by it and the even greater Bullfrog strikes, literally hundreds of prospectors were swarming through the Funeral Mountains. In an effort to maintain some order and to record the numerous locations being made, the South Bullfrog District was soon created, encompassing within its boundaries the Keane Wonder Mine. Just to its north, the Chloride Cliff Mine had been reopened, the Big Bell had been discovered between the Keane Wonder and the Chloride Cliff, and numerous other mines began operations. Inevitably, these peripheral mines included one incorporated as the Keane Wonder Extension Mining Company.

As May 15 approached, when Delamar's bond on the Keane Wonder would expire, he started negotiations with Keane and Etcharren. In late April, he offered to buy the mine, but at less than the $150,000 stated in the bond agreement. Unfortunately for him, Keane and Etcharren had closely watched the development work done by his men during the past year, and they fully realized that they had a real mine on their hands. Such a thing happens only once in a lifetime, and they refused to accept a penny less than $150,000. Delamar either could not or did not want to pay that sum, and his option expired.

After Delamar's men left the property, Keane and Etcharren performed only sporadic work during the excessive heat of Death Valley's summer, while awaiting a new purchaser. They knew that their mine was too big for them to develop properly on their own, but all available investment money was being poured into the booming Bullfrog mines, and the Keane Wonder was all but forgotten for a time. The two men, however, were patient.

With the advent of cooler weather in September, Keane and Etcharren resumed work on their own. A small shipment of high-grade ore was sent to the smelter, and with the $28,000 they received for it (which amounted to $1,867 a ton), they employed half a dozen miners. Costs were comparatively low, since the mine could be worked through tunnels, thus avoiding the expenses of sinking and timbering shafts and hoisting the ore. With a bit of good luck, the shipment of occasional high-grade batches of ore would pay for the development of the mine on a small scale. With this plan in mind, the two men continued to work on their own through the remainder of 1905, employing five or six men and waiting for the dust to settle around the Bullfrog boom, after which men with money would be able to see that their mine also had great potential.[4]

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[3] *Inyo Register*, 19 May, 30 June, and 4 August 1904; *Inyo Independent*, 20, 27 May, 24 June, 29 July 1904, and 3 March 1905.

[4] *Engineering & Mining Journal*, 17 April 1905, 837; *Inyo Independent*, 16 June, and 3 November 1905; *Inyo Register*, 27 July 1905; *Rhyolite Herald*, 15, 22 September, 3 November, and 15 December 1905.

In early 1906, the prospectors' patience won out, as offers for the purchase of the mine were again made. L. L. Patrick obtained a bond for the property similar to Delamar's of the previous year, with an option to purchase. Patrick immediately announced grand plans for the mine, including the erection of a twenty-stamp mill at the foot of the Funeral Range, a mile from the mine and two thousand feet below it. Patrick and his men worked the mine for several months, while his engineers prepared surveys for an ore tram from the mine down to the mill site. But for an unknown reason Patrick decided not to exercise his option to purchase, and his bond expired in early March.

By that time, promoters were standing in line for a chance at the mine. As soon as Patrick's bond expired, John F. Campbell and his associates jumped in, buying the Keane Wonder Mine outright for a reported price of $250,000, $50,000 of which was paid to Etcharren and Keane in cash, and the rest given in form of stock in a company to be organized to develop the mine. The new company was incorporated in late March, with a capitalization of 1,500,000 shares. Jack Keane, who held a controlling stock interest, was elected president of the new company, with Campbell serving as vice president and Etcharren as secretary. The new company claimed to have forty to eighty thousand tons of gold ore on its twenty claims, and within a week, full-page ads began to appear in the Rhyolite newspapers, offering stock for sale to the public. The initial response was quite favorable, with Keane Wonder stock selling for 42¢ on May 4 and 50¢ a week later.

The new owners immediately resumed development on the property, and new ore strikes were soon made. Prospects looked extremely favorable for the company, for both wood and water were available within a reasonable distance from the mine, and the ease of tunnel mining indicated that development and extraction costs at the Keane Wonder would be relatively low. Within a short time the company had two mining camps established, one at the mine high on the side of the Funeral Mountains and the other located on the floor of Death Valley below.[5]

The Keane Wonder was receiving attention from newspapers as far away as Denver, Colorado. The mine had grown to twenty-two claims, comprising 240 acres of land, but even with the expenditure of $35,000 over the past year in development work, still only five of those twenty-two claims had been explored. Just when things looked brightest, however, disaster struck. The great San Francisco earthquake and fire of April 1906 effectively wiped out Campbell's fortune, which had an immediate effect upon the finances of the Keane Wonder Company. Development abruptly slowed, and within a month reports were printed that Campbell was meeting in California with parties interested in buying the mine.

Campbell and his associates had no difficulty in finding a buyer. In late June, Homer Wilson, president of the Sildman Consolidated Mines Company of San Francisco, was in the Bullfrog District looking at various investment possibilities. On August 10, it was announced that Wilson and his associates had purchased the Keane Wonder Mine. Local newspapers heartily approved the sale. Wilson, who owned a string of mines in the Mother Lode country of California, was extolled as "one of the boldest and most successful operators" in California. The sale price was not released to the newspapers.

After several disappointments arising from previous sales, Keane and Etcharren were now ready to sell out all their interests in the Keane Wonder, and this time they accepted full payment in cash, thus terminating their interests in the Keane Wonder Mine, which they had discovered. Etcharren dropped completely out of sight and was never heard from again, but Keane's subsequent career can be sketchily traced. With the money from the sale of the Keane Wonder, Keane, "who recently joined the ranks of those living on Easy street," invested in almost fifty claims in the Skidoo District on the west side of Death Valley. Within a few months, however, Keane's luck turned sour. In September, he was involved in a shooting affair in Ballarat, California, where after a night of drinking he wounded two local peace officers. Shortly after,

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[5] *Bullfrog Miner*, 12 January, 30 March, 6, and 27 April 1906; *Rhyolite Herald*, 26 January, 23 February, 2, 30 March, and 6 April 1906; *Inyo Independent*, 23 February 1906; and *Inyo Register*, 15 March 1906.

he disappeared, to surface in Ireland in fall 1907, where it was reported that he was sentenced to seventeen years in jail for killing a man. The Rhyolite papers sadly commented upon this tragic end for one of the region's few lucky prospectors, but noted that when "drinking he usually resorted to his gun on very slight provocation."[6]

In the meantime, Homer Wilson and his associates went to work. The Homer Wilson Trust Company was incorporated as a holding company for the Keane Wonder and other Wilson interests, and the new Keane Wonder stock was offered to the public. Advertisements in December 1906 claimed that the first allotments of stock offered for sale at 50¢ per share had been oversubscribed in forty-eight hours and that stock was now for sale from the company at 65¢ per share. Work was resumed at the mine in early November, and the company immediately ordered a twenty-stamp mill and auxiliary equipment. The milling plant, announced Wilson, would consist of crushing by stamps, with amalgamation, concentration, and cyanidation, and was expected to cost between $75,000 and $100,000. Wilson promised that his mill would be the first in the Bullfrog region to begin operations.

Ten men started preliminary grading work for the mill buildings in early December, and plans were drawn for a gravity tram to bring the ore down from the mine on the mountain to the valley mill site. By late December, mill machinery began to arrive over the new railroad, including an 85-horsepower Corliss oil-burning steam engine, which would be used to power the mill. The aerial tramway from the mine to the mill was surveyed, and the company decided to install a Riblet gravity tram, 4,700 feet long, wherein the loaded ore buckets coming down the mountain would pull the empty ore buckets and supplies back up to the mine. By the end of December, construction on both mill and tramway was underway, with twenty men still employed in the mine. The company announced that it had $650,000 worth of ore blocked out, which would suffice to feed the mill for several years.[7]

As 1907 began, luck stayed with the Keane Wonder Mine, sometimes in almost unbelievable proportions. The mine continued to look good—the more tunnels were driven, the more ore was found. Then, when some men began sinking a well near the mill site below the mine, they struck another gold ledge instead of water. The well was immediately turned into another working shaft. Twenty-five men were employed by the company in early January, and the foundations for the mill buildings were excavated.

During February, more mill machinery and equipment arrived over the Las Vegas & Tonopah Railroad. The machinery contract had been let to the Risdon Iron Works of San Francisco, and Walter Lyons, formerly employed by the rival Union Iron Works of the same city was hired as construction superintendent. The Porter brothers of Rhyolite, after intense competition, won the contract to haul some 255 tons of machinery, timber, and supplies from Rhyolite over Daylight Pass to the mill site, twenty-six miles away. As February and March progressed, machinery and supplies continued to arrive with regularity, and the Keane Wonder Mill took shape. As the framework for the main mill building began to rise above the desert in early April, the price of Keane Wonder stock rose with it, for investors were impressed by the quality of the ore and by the energetic management of Homer Wilson. Keane Wonder stock sold for 75¢ in early April and 80¢ late in that month.

As equipment arrived, mill construction took priority over development of the mine, and all available labor was put to work at the mill site. The framework for the mill building was finished in April, the ore bins were built, and the mortar blocks set. More men were added to the payroll, which reached $3,000 per month. Final costs for the mill were estimated at $85,000. At the same time, a group of men were put to work on the water supply for the mill, which was being developed in several different spots. As a hedge, the Keane Wonder Company purchased Keane Springs, toward the top of the Funeral Range, as well as the young town site at the springs. The company also bought up several claims adjoining its

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[6] *Rhyolite Herald*, 27 April, 4 May, 8, and 29 June 1906; *Bullfrog Miner*, 4, 11 May, 17 August 1906, and 14 September 1907; and *Inyo Independent*, 14 September 1906.

[7] *Rhyolite Herald*, 28 September, and 21 December 1906; *Bullfrog Miner*, 2 November, and 7 December 1906.

own, in order to obtain a right of way for its aerial tramway between the mine and the mill, bringing its total holdings to twenty-six claims, comprising some 450 acres. Arrangements were made to extend a telephone to the mill site from the Rhyolite-Skidoo line. As construction proceeded, stock demand rose, but few shares were offered for sale. "The holders of this stock are evidently willing to wait for the dividends which seem sure to come within a few months," surmised the *Rhyolite Herald*.

By mid-May, all the mill equipment and machinery had arrived, and most had been installed. In addition, the company had finished construction of a new boarding house at the mill site to accommodate the construction crew and future mill employees. Then, in July, with the mill essentially completed, the construction crews were shifted to the building of the aerial tramway. This would prove to be a long and laborious task, especially with the intense heat of summer, but the Keane Wonder Company pressed on, for it was in a decided race with the Montgomery Shoshone Company of Rhyolite to see who would have the first running mill in the Bullfrog region. The Keane Wonder was at a disadvantage in the race, for in addition to building a mill, it was also required to complete a tramway and many other auxiliary features. For example, in mid-July, a huge 25,000-gallon galvanized iron tank was built beside the railroad tracks in Rhyolite to be used as a storage tank for the crude oil that would be hauled to the mill site to fuel the plant. According to the *Bullfrog Miner*, it was the largest tank of the kind in the country.

But construction proceeded apace; by late July the tramway towers were beginning to arise along the ridge side, and the company predicted that the mill and tramway would be completed by September 1. In the meantime, some miners had been put back below ground, and another strike of ore almost immediately resulted. Delays on the delivery of the huge tramway timbers slowed construction for a while in July and August, but other construction continued. The water and crude oil tanks at the mill were completed in early August, and the timbers for the tramway were laboriously dragged up the mountainside. Twenty-one-thousand board feet of lumber were required for the upper tramway terminal, 28,000 for the lower, and 25,000 for the intermediate towers. The tramway had thirteen towers, with the longest span between them being 1,200 feet; and the vertical fall from top to bottom was 1,500 feet. During the height of tramway construction, the Keane Wonder Company employed no fewer than five millwrights for framing the timbers for the terminals and tramway towers. Each tower rested upon a foundation measuring twenty-four feet square, in many cases blasted out of solid rock.

Despite the 105-degree temperature at the construction site in mid-August, workers toiled on, with most work being accomplished during early morning and late evening hours. Finally, on September 14, the last load of equipment for the towers was hauled out to the mill site, making a total of 1,500,000 pounds of freight that had been hauled from Rhyolite during the course of construction, at a cost of $11,000.

Work was delayed somewhat in mid-September, when several men quit, stating that the food served at the Keane Wonder boarding house was "absolutely the worst ever put before a crew of working men on the desert." Mrs. Hull, the company cook, took exception to the accusation and replied that "the provender is good and the parties making complaints are soreheads." Nevertheless, new men were found, and construction continued. In early October, the tramway cable was stretched and only the hanging of the buckets remained for the tramway to be completed. Homer Wilson arrived in town to witness the first days of the mill tests and also to award a contract to the Porter brothers of Rhyolite for the transport of crude oil from the storage tank in Rhyolite to the mill. Two tank wagons, holding twenty-one and twenty-seven barrels respectively, would make nine trips each per month in order to satisfy the demands of the big steam engine. The tank wagons, which were owned by the Keane Wonder Company, were special heavy-duty Studebaker models.

Finally, in late October, everything was ready for the machinery to be turned on for the first time. Homer Wilson, in an understandably pleased mood, told reporters that he hoped the 80-ton-capacity mill would turn out $1,000 worth of gold per day when running at full speed. All mill tailings, he said, would be impounded, for the company expected to add cyanide tanks within a year in order to rework the tailings and thus extract the utmost in gold savings. In the meantime, the miners had 2,000 tons of ore broken down in the mine, ready to feed the mill. Because of the Panic of 1907, however,

the results of which had just hit the Nevada mining fields, Wilson was forced to make an emergency trip to Goldfield on October 27, the day that the Keane Wonder Mill began to operate.

For the next month, everyone involved held their breath, waiting to see if the huge investment in labor and equipment would pay off. The equipment was turned on slowly at first, as constant checks were made for defects in the machinery, and only forty tons were treated per day. But everything was running well, and soon the tonnage was increased. On November 11, the first bars of gold bullion were brought into Rhyolite, the result of the first three weeks' run, and were estimated by one local paper to be worth $40,000. That figure was undoubtedly exaggerated, however, for the Keane Wonder Company did not announce its production figures, and another paper estimated the total output for all of November at only $25,000. Regardless of figures, the tramway and mill were up and running, and the company formally invited reporters and interested miners to visit the site and take a ride in its tramway.

In early December, a *Rhyolite Herald* reporter made such a visit. The mill was now running twenty-four hours a day, he reported, and was treating seventy to seventy-five tons daily. The ore averaged $18 to $20 per ton, and the mill equipment was saving 65 percent of the gold content. The tailings, which were being saved for later cyanidation, assayed at $3.95 per ton. Homer Wilson estimated the known ore reserves at 100,000 tons, and development work in the mine was increasing that figure faster than the mill could reduce it.

The ore bin at the upper tramway had a capacity of 100 tons and an especially unique feature. Power from the gravity pull on the tramway was used to operate a preliminary ore crusher at the upper terminal, through which the rock passed before descending to the mill. In addition, a supplementary 13-horsepower gas engine was installed on the upper tramway terminal so that the ore crusher could be operated when the tramway was idle. The tramway was supported by twelve towers and one breakover station. The highest tower was thirty feet tall, the lowest eighteen. The longest span between towers was 1,280 feet and was 500 feet above the floor of the canyon below. Each ore bucket on the tramway carried 600 pounds and was loaded automatically. The material for the tramway included 95,000 board feet of timber and fifty tons of wire rope and terminal material, and the tramway rose on a grade of 1,000 feet per mile.

The ore buckets dumped automatically into the mill bin at the lower tramway terminal, which had a capacity of 200 tons. From there, the ore passed onto suspended Risdon feeds, and under the Golconda pattern batteries, whose twenty stamps weighed 1,000 pounds each and dropped 100 times per minute. Inside, amalgamation was by back plate and chock block with the ore passing from the screens onto a lip plate and then falling into distributing pots and onto the apron plates. From the plates, the pulp passed into the amalgam trap, and the sands went to the original classifier, with the coarse sands sent to two Wilfleys vanners and the fine sands to four Johnson vanners. Tailings were pumped into four Callow tanks, each eight feet in diameter, where 75 percent of the water was secured and pumped back into the tanks for use in the stamps. The tailings were impounded in dams and allowed to settle, with remaining water again recycled back through the mill. The amalgam was retorted and melted at the mill and finally converted into gold bullion.

Water for the mill was drawn from a well shaft 285 feet from the mill and was pumped into a tank above the mill by an artesian pump. The mill itself was driven by a Corliss steam engine, with steam generated in a 126-horsepower Sterling boiler. The exhaust from the engine was used to heat a 100-horsepower Cochrane feed-water heater, which heated the water to 210 degrees, thereby driving off the soda and other minerals that would have clogged the boiler. Crude oil was used to fire the boilers, and the works were lighted by electricity generated at the mill site.

The mill building was framed and covered with galvanized iron. All floors were concrete, with concrete foundations, mortar blocks, and retaining walls. The tramway materials were from Leschen Brothers & Company, a St. Louis outfit specializing in aerial tramways. Over forty different designs and combinations, said Wilson, were studied before the company finally decided upon this arrangement. Finally, the reporter concluded, the Keane Wonder Company had a fine camp established at the mill site, where Mr. and Mrs. Wilson lived. Other families included those of Vice-President and

Mrs. Rogers and Mill Superintendent and Mrs. Lyons. Kimball Brothers had established a bi-weekly stage line between Rhyolite and the mill to satisfy transportation demands.[8]

Despite the excellent success of the Keane Wonder Mill, all was not well with the company. The Panic of 1907 hit the Nevada mining community quite hard, and one of the earliest casualties was the State Bank and Trust Company of Goldfield and its president, Thomas B. Rickey. When the State Bank and Trust failed and went into receivership in November 1907, the effects upon the future of the Keane Wonder Company were made evident when the newspapers reported that the bank had loaned the company $200,000 for the construction of its mill and tramway. Rickey promised that the loan would be made good, but as the *Inyo Register* pointed out, "The Keane Wonder is now practically owned by the State Bank and Trust Company," and the future of the company's finances was much in doubt.

While waiting for the financial picture to clear, the Keane Wonder Mill continued to produce. It is difficult to give a reasonable estimate of mill output, since Homer Wilson was not in the practice of announcing bullion figures, but the mill was working steadily. Wilson brought in a bar of gold bullion to Rhyolite on December 7, the result of twelve days' run, and the papers estimated its worth at around $16,000. Another gold brick was brought in on December 21st, estimated at $6,000. As a unique feature of the Keane Wonder operation, the gold bullion was shipped to the mint, which processed it and shipped back gold coins to the company, which were used to pay the Keane Wonder employees. The mill was still not running at full capacity by the end of 1907, due to difficulties in obtaining enough of a water flow to satisfy mill demands. Average daily runs through the latter part of 1907 averaged seventy-five tons per day. Still, based upon a compilation of the more conservative newspaper estimates, the Keane Wonder Mill produced around $36,000 in gold bullion in 1907.[9]

As 1908 opened, the Keane Wonder Mill continued to produce, although the lack of an adequate water supply kept the mill from running at full capacity. Bullion estimated at $15,000 was brought in on January 9, and another shipment estimated at $8,000 was sent to Rhyolite on February 5. Even without being able to run full time, the mine and mill seemed to be operating most efficiently, for the entire costs of mining, tramming, and milling the ore was put at a mere $3 per ton. This efficiency, of course, was greatly helped by the fact that the soft rock being mined at the Keane Wonder was being pulled out of horizontal tunnels and stopes, which alleviated the costly necessity of sinking and timbering shafts and of installing and operating hoisting machinery.

As could be expected, the troubles of the State Bank and Trust Company, which received wide publicity, caused a number of rumors to circulate concerning the Keane Wonder Company. The *Inyo Register* reported on February 13, 1908, that the mine and mill would close due to those complications, but Homer Wilson hotly denied the rumor, stating that the mine had ore reserves sufficient to supply the mill for two more years. Two days later, as if to prove his point, Wilson brought in another gold brick estimated at $4,000.

By late February, the newspapers were able to begin untangling the affairs of the Keane Wonder Company and the State Bank and Trust. The *Rhyolite Daily Bulletin* reported that Rickey had personally taken over the debt of the Keane Wonder Company to the bank, which amounted to $195,000. Since Rickey was also a heavy stockholder in the Keane Wonder Company, this seemed to bolster the future of the mine, for such a move would enable the Keane Wonder to avoid the long drawn-out receivership settlement affecting the bank and all those connected with it. Further good news followed, for the discovery of an additional water source enabled the mill to begin running around the clock in late February. It

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[8] *Rhyolite Herald*, 4, 18 January, 8 February, 29 March, 5, 12 April, 25 October, 1, 15, 29 November, and 6 December 1907; *Bullfrog Miner*, 1 February, 8 March, 5 April, 10 May, 6, 13, 27 July, 10, 17 August, 7, 14, 28 September, 12, 26 October, and 16 November 1907; *Inyo Independent*, 10 May 1907; *Mining World*, 20 July 1907, 121; *Rhyolite Daily Bulletin*, 27 September, 14 October, and 12 November 1907.

[9] *Bullfrog Miner*, 7, and 21 December 1907; *Rhyolite Herald*, 27 December 1907; *Rhyolite Daily Bulletin*, 12 November 1907; and *Inyo Register*, 14 November1907.

immediately began to treat almost 80 tons per day, near full capacity, and Homer Wilson brought in another gold brick on March 5, estimated at $7,500, bringing February's production to an estimated $15,000.

Further bullion shipments were made later in March, as an estimated $5,000 was brought in on March 19 and another $1,700 on March 28. A short time was lost for minor repairs, but the mill continued to function well. In late March, Wilson, realizing that the continued rumors connecting the State Bank and Trust Company with his mine were having a detrimental effect, granted a long interview to a reporter from the *Rhyolite Daily Bulletin*. The Keane Wonder, he said, had two years of ore supplies already blocked out, and further development work would undoubtedly increase those known ore reserves. The average ore in the mine, like that which had already been run through the mill, was around $16 per ton. The company would soon begin the construction of a cyanide plant to treat the mill tailings. At present the mill, without cyanidation, was saving about 62 percent of the ore content, and the addition of a cyanide plant would increase that savings ratio to 92 percent. When the plant was completed, Wilson hoped for a monthly production of $25,000 from the combined works.

Water shortages, however, were continuing to plague the company. Even with the addition of a new water supply, and with the unusual recycling arrangements built into the mill, full-time operation was impossible. Thus the mill had settled into a schedule of twenty-four-hour operation for four days, followed by sixteen hours for the next three, while the water supply was built back up.

Concerning the rumors connecting the mine and the bank, Wilson was most specific. The finances of the Keane Wonder Company, in his opinion, were in good shape. In the three months prior to his interview, Wilson reported, the company had paid off every cent of its indebtedness and would be able to begin paying dividends the next month—unless, of course, such profits were put back into the expansion of the facilities, such as a new cyanide plant. The Keane Wonder Company, said Wilson, had absolutely no connections or entanglements with the State Bank and Trust Company. The mine did not owe the bank a penny, and whatever troubles Rickey was having involved only his personal stock in the Keane Wonder and not the company itself. Rickey and Wilson together owned 875,000 of the 1,500,000 shares in the Keane Wonder, and whatever happened to Rickey's portion of those shares would have no effect upon the mine itself. In addition, the company still had 350,000 shares of treasury stock. These shares, which the company had never put on the market, could be sold at any time when the company faced financial difficulties. In summary, Wilson quite candidly put his mine into perspective: "We have not got what may be called a big mine or a high grade mine," he said, "but a nice little proposition that will clear good and dependable money every month in the year, and from the looks of things, for many years hence."[10]

April proved to be another good month for the Keane Wonder. Wilson brought in three gold bricks worth an estimated $30,000. The output for future months looked even better, for during April yet another source of water was located, which the company said was sufficient to supply a sixty-stamp mill. Pipeline and pumping machinery were ordered, for the new water supply was 3,500 feet from the mine and 100 feet below it. Work on the cyanide plant, the company announced, would begin after the new pipeline was laid.

In addition, new ore bodies were discovered in the mine, which increased the company's ore reserves. Some of the new ore was high grade and was called the best discovery in the history of the mine. Wilson essentially agreed with that assessment and stated that there "is perhaps enough ore in sight to wear out the 20-stamp mill that we now have in operation on the property." Even the announcement that a disgruntled stockholder named E. H. Widdekind had filed suit in the Esmeralda County district court, asking for a receiver to be appointed to the Keane Wonder Company, failed to

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[10] *Rhyolite Daily Bulletin*, 9 January, 5,15, 20, 28 February, 20, and 31 March 1908; *Bullfrog Miner*, 11 January, 8 February, 7, and 28 March 1908; and *Inyo Register*, 13 February 1908.

dampen the enthusiasm surrounding the mine. Widdekind alleged "all kinds of crooked work," chiefly that Wilson had appropriated large amounts of the company funds for himself, but no one seemed inclined to believe the accusations.

During May, the mine and mill continued to produce, with an estimated total of $21,600. The decrease in bullion was due to continuing water difficulties as the summer heat cut down on the available water supply. Material for the new pipeline, however, was delivered in late May, and the company hoped to solve that problem shortly. But delays began to plague the company in June. Leaks in the new pipeline delayed its utilization, although pumps and even a windmill were installed at different water sources. Still, the twenty-five employees of the mine and mill managed to produce an estimated $15,200 during the month, with the mill running only about half time. The long-awaited cyanide plant was not yet started because of water shortage problems.

In July, the extreme heat of Death Valley's summer began to take its toll. At the end of that month, the company announced that the temperature had not been below 90 degrees for weeks and was often above 124 even at midnight. Daily temperatures were usually up to 112 by breakfast and 124 by noon. Most men slept out of doors, and even eating was difficult because the silverware was often too hot to handle. The boarding house cook flatly refused to allow a thermometer near his kitchen. The hot weather kept the water at near boiling temperatures, which made mill operation difficult. Still, over $11,000 was produced that month, and the ore reserves were enlarged. In addition, three new buildings were added to the camp, including a sixteen-by-forty-two-foot residence for Homer Wilson and his family, a two-room office building, and a new cookhouse.[11]

In August, a peculiar side effect of the labor struggles currently running through Nevada hit the Keane Wonder. Early that month, the Rhyolite Miners Union adopted the Tonopah scale of wages, designed by the Nevada miners' unions to set standard pay scales across the state. The Keane Wonder Company soon announced that it would honor the new scale. Unfortunately for its employees, the Keane Wonder had formerly been paying higher wages than the scale called for, and the move meant that the average miners' wages were cut from $5.00 to $4.50 per day. When the company announced the new rates, along with only a 25¢ reduction in the daily room and board charges, twenty men quit the mine. Wilson, however, had no trouble hiring additional men, and even the former foreman of the Keane Wonder Mine, who quit on principle, told the papers that the Keane Wonder was "unquestionably one of the greatest mines in this section of the country."

Thus production and development went on, and in late August, Wilson announced that the "biggest strike in the history of the Keane Wonder has just been made," when over eighteen feet of high-grade gold ore was uncovered. In addition, some of the water problems were resolved, and in spite of the continued heat, average mill days of twenty hours were possible. Partly to alleviate the heat and discontent of his miners, Wilson arranged for installation of a small ice plant at the mill. Production in August was estimated at $14,000 worth of gold bullion.

In late August, the Mining & Scientific Press, the esteemed San Francisco mining journal, printed a quite reasonable assessment of the Keane Wonder Mine, although it was not one designed to endear that paper to local boosters. "Death Valley has one actual mine," wrote the paper. "It is the Keane Wonder, a wonder if for no other reason than that it is the only producing property of the region. While not a bonanza, it is paying. Forty miners are busy supplying $20 ore for a 20-stamp mill. Now and then a gold bar finds its way to Rhyolite, and figures in the press dispatches."

A week later, the Keane Wonder found itself in yet another national magazine, when the Engineering & Mining Journal printed an assessment of Widdekind's suit against Wilson. In essence, Widdekind claimed that he had once held an option on the mine and that Wilson had illegally maneuvered him out of the deal. In addition, he charged that through complicated and shady stock transactions, Wilson had pocketed some $100,000 of the mine's money. He asked that a

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[11] *Rhyolite Daily Bulletin*, 4, 6 April, and 4 May 1908; *Bullfrog Miner*, 4, 18 April, 2, 9 May, 6, 13, and 27 June 1908; *Rhyolite Herald*, 29 April, 6, 20 May, 3, 24 June, 8, 29 July, and 5 August 1908.

receiver be appointed while the case was heard and he also asked for half of Wilson's stock, which he claimed was due according to their original agreement.

Wilson ignored the allegations and continued to supervise work at the mine and mill. The easing of the summer heat helped with the water problems, although they were still not completely solved, and the *Rhyolite Herald* estimated September's production at $13,000. In the meantime, the stockholders of the company met in Phoenix and ratified several actions of the board of directors, among which were the election of two members of the Thomas Rickey family to positions on the board.[12]

In October, the full extent of the financial troubles of the Keane Wonder Mining Company in relation to Rickey and his defunct bank became apparent. The Rhyolite newspapers had attempted to stay clear of the turmoil, but the much more aggressive Goldfield papers gave them full coverage. According to the *Goldfield Chronicle*, Rickey was a financial manipulator of the first order. Even today, sifting through the papers' accusations and statements about the individuals involved, it is difficult to piece together the financial puzzle. Someone evidently had borrowed money for the Keane Wonder from the State Bank and Trust Company and had pledged several hundred thousand shares of Keane Wonder stock against the note. When the bank failed, Rickey had personally taken over the responsibility for that debt, suggesting either that he had borrowed the money from his own bank in the first place or that he was trying to protect the Keane Wonder Company, of which he was a heavy stockholder, from the results of his bank's failure. Along with the debt, Rickey had also taken from the bank vaults the Keane Wonder stock that the bank had held as a lien against the debt.

But other interests claimed to have had first call on the Keane Wonder stock, such as D. Mackenzie, president of the Francis Mohawk Company of Goldfield. Mackenzie's company had lost a large amount of its deposits when the State Bank folded, and he claimed to have exchanged his company's claims against the defunct bank for the bank's claims against the Keane Wonder. Mackenzie argued that the Francis Mohawk Company had first rights to the Keane Wonder stock left in the State Bank as security for its loan. Mackenzie wanted to hold that stock, which would force Keane Wonder either to repay its debts to Francis Mohawk or come under the latter's control.

According to the *Goldfield Chronicle*, however, Rickey had played yet another trick.

> Rickey and his ubiquitous and peripatetic attorney, J. F. Peck, put their heads together. They conceived the idea of having the company make a short time note for some of its indebtedness and mortgage the company's mines and mill as security for its payment. So they called the stockholders together at Phoenix, Ariz., on August 22 last. A note for $43,000 was made to the Rickey Land and Cattle company, and to secure it a trust deed conveying all of the company's magnificent holdings to Peck was delivered to that individual. This note will fall due on Sunday, the 25th day of this month, and on that day Peck can, under the terms of a trust deed, for the comparatively paltry sum of $43,000, sell the mine, the aerial tram, the mill, Keane Springs—in a word, gut the Keane Wonder Mining company to its last farthing.

Wilson denied the "sensational story from Goldfield," but did little to clear up the confusion, since he refused to comment on the details of the Keane Wonder's financial picture. He did, however, intimate that a reorganization of the company was imminent and pledged to protect the interests of everyone concerned. "You can say for me," he told the *Rhyolite Herald*, that if I don't get killed in this matter, every stockholder in the Keane Wonder Mining Company will be fully protected." Wilson also stated that he knew for sure that Rickey had no intention of foreclosing on the company and with that, left for San Francisco to try and straighten out the mess.

In the meantime, the Keane Wonder Mine and Mill continued to hum along, and October's production was estimated at $15,000. Although the company was continuing to try to find a solution to the water problem, the mill was still unable to run full time. But even with good production figures, uneasiness about the various suits involving the company had a

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[12] *Rhyolite Herald*, 5, 26 August, 23 September, and 7 October 1908; *Bullfrog Miner*, 15, 29 August, 5 September, and 3 October 1908; *Mining & Scientific Press*, 29 August 1908, 298; *Engineering & Mining Journal*, 5 September 1908, 487-88.

disastrous effect upon its stock, which plummeted to 8¢ per share by mid-October. Stockbrokers, even when taking into account the various rumors concerning the mine's future, could not understand this precipitous fall. How, asked one, could stock in a mine that is producing an average of almost $20,000 per month fall to such a ridiculously low figure?

Despite these financial questions, Wilson seemed sure that his property would survive intact, and work proceeded normally. Gold bullion was regularly brought into Rhyolite during November 1908, and production for that month was estimated between $16,000 and $25,000 by the Rhyolite newspapers. In the meantime, the Nevada-California Power Company began negotiations with the Keane Wonder to extend a line to its property, and the company finally began preliminary grading work for the future cyanide plant. Payroll increased to fifty miners and mill men. A well-respected mining engineer made a thorough examination of the mine for Wilson and reported that the Keane Wonder was "one of the greatest mines in the state, and one capable of much better results than even the great showing it has already made."

But at the same time, the various lawsuits surrounding the Keane Wonder and the State Bank and Trust grew more complicated. Early in November, Mackenzie was granted a temporary injunction preventing Rickey from foreclosing on the Keane Wonder for his $43,000 trust deed. A week later, Mackenzie and F. L. Wildes brought joint suit against Rickey and Wilson, charging that they were using the mine to further their personal interests. The suit asked for a restraining order and that the company be put in the hands of a receiver in order to protect the stockholders of the Keane Wonder as well as the stockholders and creditors of the State Bank and Trust Company. Wildes, who was the bank examiner for the state of Nevada and also the appointed receiver of the State Bank and Trust, claimed that Rickey's large stock holdings in reality belonged to the assets of the bank and thus should be returned to it for division among the bank's creditors and stockholders.

But in mid-November, when the case was heard, the decision was decidedly in favor of Wilson and Rickey. The complaints were ruled out of order, and the judge remarked that he "failed to see wherein a receivership would be justifiable, when the Keane Wonder company is doing business, meeting its bills and making a profit upon its operations." In reporting this decision, the *Rhyolite Herald* continued to extend its sympathy toward Wilson and printed his version of the complications. The Keane Wonder Company, according to Wilson, was not indebted to State Bank and Trust. Its only indebtedness was to Rickey, in the form of the trust deed for $43,000, which had been extended to help cover the costs of mill construction. The complications surrounding the 875,000 shares of stock Rickey and Wilson were merely personal matters between Rickey and Mackenzie, and Wilson hoped that Rickey would resolve these soon so that those treasury shares could be returned to company control. Other people, however, were not so trusting of Rickey, especially after the *Inyo Register* printed a rumor that Rickey was selling out his real-estate interests in the Reno area and transferring his funds to Germany.[13]

Whatever the case, the legal complexities settled down for several months, and Wilson was able to return his attention to mine and mill production and the construction of the new cyanide plant. In early December, Wilson announced that the machinery for that plant had been assembled at Los Angeles and was being shipped. Construction, with good luck, would be completed by February 1, 1909. The plant would have eleven tanks, including six 25 foot diameter leaching tanks, each five feet tall, two 18 by 10 foot solution tanks, two 12-by-10-foot settling tanks, and one wash-water tank. Zinc boxes would also be installed, with the equivalent capacity of another tank. When completed, the plant would be able to process at least 100 tons of tailings per day, although the company hoped capacity would reach 200 tons. With a capacity of at least 100 tons at the cyanide plant, compared with the maximum 80-ton daily capacity of the mill, the cyanide plant would spend the rest of its time processing the 20,000 tons of tailings impounded from the mill during the previous years of mill operation. It would be several years before the cyanide plant ran out of work.

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[13] *Rhyolite Herald*, 14, 28 October, 11, 18 November, and 2 December 1908; *Bullfrog Miner*, 17, 31 October, 7, and 21 November 1908; *Inyo Register*, 12, and 19 November 1908; *Rhyolite Daily Bulletin*, 5 December 1908; and *Goldfield Chronicle* quoted in *Rhyolite Herald*, 14 October 1908.

In the meantime, development in the mine continued apace. Although Wilson rarely gave out ore reserve figures, one of his shift foreman told the *Bullfrog Miner* in early December 1908 that the Keane Wonder now had three years of ore reserve in sight. Production at the mill proceeded smoothly during December, despite a rare snowfall in the middle of the month, accompanied by a temperature of 36 degrees, the lowest anyone could remember. Final production figures for that month were $12,000, an estimate for once agreed upon between the *Rhyolite Herald* and *Bullfrog Miner*. Total 1908 production, according to figures Wilson released, amounted to $140,092.37. Average monthly production, based upon Wilson's calculations, was $11,674, indicating that both Rhyolite newspapers had been overestimating production figures throughout the year. One hundred forty thousand dollars was enough, however, to mark the Keane Wonder Mine as the largest producer of gold in Inyo County, California, during 1908.

With the lawsuits thrust to the background through the early months of 1909, the Keane Wonder Mine and Mill continued to grind out ore and bullion. Wilson announced on March 24 that the mill had produced $35,000 during the first three months of the year alone. Mine development continued, and "though nothing of a sensational nature has been uncovered, yet the steady and consistent advancement made in the showing of mineral wealth justifies the official statement that the property never looked so good."

The first carload of machinery for the cyanidation mill arrived in early January, and more supplies and equipment followed. By the end of February, the plant was virtually completed, and test runs began. Delays in the delivery of some equipment, however, kept the new mill from entering full production runs until March 18, 1909. Although Wilson admitted that it would take several months to determine the full capacity of the plant, which depended upon the always-unreliable water supply, he hoped that the addition of cyanide treatment would increase the company's production by 80 percent, to around $20,000 worth of bullion per month. With the cyanide mill in operation and the stamp mill and mine looking good, Wilson again extended open invitations to reporters and miners to visit and inspect his complex. The visitors were also invited to take a ride over the aerial tramway, "provided they assert that they are not afflicted with heart disease."[14]

But in April, the complicated financial affairs of the Keane Wonder Company again spilled into the courts. Sometime during the early part of 1909, former antagonists Rickey and Mackenzie had made a deal, whereby Mackenzie dropped his claims against the 975,000 shares of Keane Wonder stock. In return, Mackenzie received a new joint trust deed with Rickey for nearly $195,000. The new trust deed also replaced Rickey's older trust deed of $43,000. The deal enabled Wilson to regain control of the commanding block of Keane Wonder stock, if he could meet the interest obligations of the new trust deed.

But due to financial demands for the construction of the cyanide mill, Wilson failed to meet the interest payments, and Rickey and Mackenzie advertised the entire property of the Keane Wonder Company for sale in order to satisfy their demands. *Rhyolite Herald* publisher Earl Clemens then entered the fray on behalf of minority stockholders of the Keane Wonder Company, asking for a restraining order on the sale of the Keane Wonder property and for a thorough accounting of the finances of the company. Clemens's motive was to protect the minority stockholders, who would be left holding worthless stock if the mine were sold to satisfy the trust deeds, and also to help clear up the tangled affairs of the Keane Wonder, since the continued active production of the mine was important to the prosperity of Rhyolite and the Bullfrog mining area.

Clemens's first moves were successful, with the Superior Court at San Francisco granting an injunction forbidding the sale of the mine under the terms of the new trust deed until full accounting could be produced before the court. Apparently the judge tended to agree with Clemens that the personal indebtedness of Homer Wilson and the Homer Wilson Trust

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[14] *Bullfrog Miner*, 5, 19 December 1908, 2, 23 January, 6 February, 6, and 20 March 1909; *RhyoliteHerald*, 16, 30 December 1908, 6 January, 10, 24 February, 10, 17, 24 March 1909, and pictorial supplement, March 1909; *Inyo Register* 24 December 1908; *Engineering & Mining Journal*, 9 January 1909, 120; *Mining World*, 30 March 1909, 190; and *Rhyolite Daily Bulletin*, 1 March 1909.

Company, which had originally promoted the Keane Wonder Mine, should be entirely separated from the legal debts of the Keane Wonder Mining Company itself. Clemens claimed that although the personal debts of Wilson and his trust company could amount to as much as $150,000, the only legal debt of the Keane Wonder Company itself was the $43,000 owed to Rickey. The picture was extremely complicated, for it was very difficult to sort out the personal and the public debts of Homer Wilson vis à vis the Homer Wilson Trust Company and the Keane Wonder Mining Company. Likewise, it was just as difficult to delineate between Rickey's personal and public debts, since he was a major stockholder of the Keane Wonder and also the former president and major stockholder of the State Bank and Trust Company. The key to the puzzle was whether the trading between Wilson, Rickey, and Mackenzie for the famous 975,000 shares of Keane Wonder stock was done by private individuals or by company officials. Clemens, at least, was certain that all the dealing had been done by the three men acting as private individuals, and if the court accepted his interpretation, then the Keane Wonder Mining Company itself would emerge from the entire affair virtually debt free.

Later in April, another favorable aspect appeared when F. L. Wildes, receiver of the State Bank and Trust Company, entered the suit with a motion to force both Rickey and Mackenzie to return their stock to the bank, from which he said it was illegally obtained. This suit, if successful, would require Wilson to return the 975,000 shares of treasury stock to Mackenzie and Rickey, which would void the new trust deed held by those men. Mackenzie and Rickey would then in turn be forced to return the Keane Wonder stock to the bank, which would parcel it out among all the former shareholders and depositors of the failed bank. Rickey and Mackenzie would be left with no claims upon the Keane Wonder Mine.

Although the rest of the story is unclear, since much of the private maneuverings and court proceedings did not reach the ears of newspaper reporters, final settlements were made in late May. Apparently, the accounting Clemens requested resulted in a favorable decision for the Keane Wonder Company, and the court found that all the dealings involving the 975,000 shares of treasury stock were private contracts between individuals, for which the Keane Wonder Company could not be held responsible. As a result, Wildes dropped his suit to obtain those shares of stock, and Wilson retained them in trust for the company. Mackenzie, as a result of this suit, lost all his claims toward the Keane Wonder stock, and Rickey's original trust deed, which was reinstated by the court decision, was paid in full by an affluent Keane Wonder stockholder. Thus it appeared that the Keane Wonder Company was free and clear of any outstanding debt. As the *Rhyolite Herald* happily wrote, the "honesty of Homer Wilson" had been upheld, since he had made good on his promise to protect the company's stockholders.

In the meantime, the mine and mill had continued producing. On April 19, Wilson brought in bullion worth $25,000, the result of one month's cleanup at the mill and new cyanide plant. The production was the largest ever in the Bullfrog region for one month, with the exception of the Montgomery-Shoshone Mill at Rhyolite. On May 19, Wilson brought in more bullion estimated at $18,000, the result of twenty-one days' work, as the mill pushed toward the magic figure of producing $1,000 per day.

Other developments kept pace. A new body of ore was found in the mine on May 22, and the long-awaited ice plant was completed that month, giving the miners and mill men access to free ice to help alleviate the heat of summer. A new hoisting plant was put to work on another shaft. The Keane Wonder Company had twelve power plants ranging in size from the 150-horsepower steam boiler and the 126-horsepower steam engine down to one 25-horsepower , two 13-horsepower, two 10-horsepower, two 5-horsepower, and three 2½-horsepower gas engines.[15]

As summer 1909 progressed, it seemed that the Keane Wonder had only been awaiting the settlement of all its financial difficulties before making great surges forward. May's production continued to push towards the $1,000 per day mark, as bullion worth $22,000 was brought in, the result of a millrun of twenty-five days. The continuing water shortages had

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[15] *Rhyolite Daily Bulletin*, 13, 14 April, and 22 May 1909; *Rhyolite Herald*, 14, 21 April, 5, 19, 26 May, and 2 June 1909; *Bullfrog Miner*, 24 April, and 22 May 1909.

caused the mill to lie idle the remainder of the month. The payroll of the mine reflected its prosperity, as it was estimated by the *Bullfrog Miner* to be $7,800 per month.

The demands for supplying the men and the mill machinery began to exceed the capabilities of the Porter brothers, who held the hauling contract, especially as the heat of summer began to take its toll on the horses. To solve this problem, one enterprising individual named J. R. Lane bought an old traction engine from the Tonopah & Tidewater Railroad and brought it up to Rhyolite. The engine was a Best Traction Engine, with 110 horsepower, and it burned crude oil. The engine was slow but powerful, and after improving the road to the mine, Lane hoped to be able to make one trip per week, carrying out up to fifty tons of supplies and equipment per trip. The Keane Wonder Company was interested and promised to buy the engine from Lane if he could demonstrate its practicality through several demonstration runs.

Then, on June 3rd, more good news came from the mine, with the location of, as local headlines proclaimed, a "new ore body of such immensity that big production is assured for years to come." The mill immediately shifted over to begin milling ore from the big new discovery, which was located 150 feet below ground in a new shaft. On July 7, Wilson brought in the bullion returns from the new ore body, which totaled $10,000 as the product of eleven days' run. A second shipment brought July's production to $22,000, but August's dropped slightly to $18,000, as increasing amounts of time were lost due to water shortages intensified by the summer's extreme heat. July's payroll amounted to $8,000, paid to forty-five men. Lane's traction engine completed its first test run on July 31, despite the poor shape of the road, and hauled in a cargo of twelve tons. Impressed, the Keane Wonder Company began to negotiate a two-year hauling contract with Lane.

By mid-September, the traction engine had completed several more successful test runs, and the Keane Wonder Company ordered an oil storage tank for emplacement at the mill site as a refueling source for the big traction engine. The storage tank was a necessity, for when loaded the engine required over fifty gallons of fuel to make one trip to the mine. Mill returns for August were estimated at $17,000, and the company announced that its ore reserves were still sufficient for two more years of production at the least. All of the company's property, Wilson pointed out, was still not explored.

As the fall progressed, Lane's traction engine continued to demonstrate its worth. After more test runs, the first true trip to the mill was made in late October, with four trailers hauling twenty tons of freight. The engine made the twenty-six-mile trip to the mill in seven hours and returned to Rhyolite the next day. Two trips per week were planned, which would be sufficient to satisfy the demands of the mine and mill and would also make the enterprise profitable for Lane. Lane, in turn, was so satisfied with the prospects that he began to organize the Keane Wonder Traction Company in order to sell shares of his business. But on November 13 the business ground to a halt when the boiler of the engine burst while climbing over Daylight Pass.

Lane blamed the accident on the age of the machinery and the poor quality of the water he was forced to use and left for California to purchase a new gasoline engine to install in the tractor. Apparently, however, his resources were not adequate to the task, and the traction engine was never again used. The engine stood idle on Daylight Pass for many years, until two employees of the Pacific Coast Borax Company hauled it from Daylight Pass to Furnace Creek Ranch in 1932.

In the meantime, the mine and mill continued to produce. October's gold production reached $20,000, and ten more miners were added to the work force in early November. New strikes were found in the mine, which, although not as big as the summer's discovery, maintained the company's ore reserves. Minor accidents shut down the cyanide plant for a week, but such interruptions were not unusual for a desert mining operation, and production continued. November's output was estimated at between $24,000 and $25,000, the second largest amount produced in a month since the mill had begun operations in 1907. December's yield was somewhat smaller, being $20,000, due to water pipes which froze and broke. The Keane Wonder's total production for 1909 was announced by Wilson to be $220,000, nearly double the previous year, and the average monthly output was $18,333.

The success of the mine and mill was largely due to the very efficient methods used to extract and process the ore. The costs of mining were only two dollars per ton, mostly due to the ease of stoping directly from the side of the mountain. Milling costs, for both the stamp mill and the cyanide plant, were calculated at $3.10 per ton. When the costs of fuel, transportation, and supplies were added up, total production costs at the Keane Wonder Mine and Mill were about $10 per ton, indicating that the company could make a profit upon any ore assaying above $10 to the ton. On November 27, 1909, Wilson reported that since the mill had opened in 1907, it had treated 25,000 tons of ore, with an average value of $12 per ton, and that the mill and cyanide plant had extracted 94 percent of the ore content. Based upon Wilson's figures, the total net profit for over two years of production at the Keane Wonder was about $47,000.

With the mine and mill looking very successful, and with the financial complications finally resolved, investors once again began to buy the limited amounts of Keane Wonder stock that found their way to the trading boards. Stock, which had fallen to as low as 9¢ per share when it appeared that the mine would be sold to satisfy the trust deeds, had risen to 25¢ by the middle of December and to 30¢ by the end of 1909.[16]

As the Keane Wonder Mill began its third year of operation in 1910, conditions remained optimistic. In early February, the company applied for U.S. patents for twenty-seven of its claims, totaling over 413 acres of land. February bullion returns were $20,000, and for the first time the mill reached the magical figure of $1,000 production per day, as only twenty days' run was possible that month due to water freeze-ups. March production was even better, as the mill turned out $25,000, and April was again over $20,000. After Wilson made several trips to Los Angeles, the *Rhyolite Herald* discovered more about the financial settlements that had been made the previous year. As the dust settled, it appeared that the Keane Wonder Company did indeed owe money to the receiver of the State Bank and Trust Company. But the debt was being paid off steadily, and the Herald concluded that the Keane Wonder would soon be out of debt.

May's production figures were somewhat less than $20,000, and no figures were given for June. The mine and mill continued to operate through the hot summer months, though, and the Tadich brothers of Rhyolite, who had established a general store at the mine and another one at the mill site, reported continued good business. The high number of miners employed by the company resulted in one of their number being chosen as a delegate to the Inyo County Democratic convention in August, and the Keane Wonder boarding house was listed as a polling place for Inyo County during the general elections the following fall. On September 1, 1910, seventy-five men were employed at the mine and mill.

In September, the company announced that the water supply had finally been improved enough to support the mill full time. This was due to the clearing out of several stoping areas, which enabled the company to pump more underground water than before. In addition, Wilson purchased and installed a 75-horsepower steam engine and compressor to drive a new set of machine drills. This soon resulted in a short-lived labor dispute, as twenty-four miners quit in a protest against the cutback in jobs brought about by automation. The Keane Wonder Company, however, had no trouble replacing the striking miners, especially since the majority of mines around the Rhyolite area were dead or dying by fall 1910, and unemployed miners were easy to find.

In the meantime, the bullion shipments continued. Perhaps ironically, the arrival of bullion from the Keane Wonder was no longer a striking news item, and the Rhyolite papers printed bullion estimates only sporadically. August's returns were reported to be "about usual," and October's were merely assessed as "large." November's shipment was estimated at $20,000, which was said to be close to the average monthly yield throughout 1910. Although no accurate production

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[16] *Rhyolite Herald*, 23 June, 7, 31 July, 14 August, 2, 23, 30 October, 13, 20, 27 November, 18, 25 December 1909, 8 January, 12, and 26 February 1910; *Bullfrog Miner*, 12, 19 June, 10, 31 July, 14 August, 4, and 17 September 1909.

estimates are available for 1910—one paper reported $350,000 for the year, which is obviously much too high—the Keane Wonder Mine once again was listed as the largest producing gold mine in Inyo County, California.[17]

The Keane Wonder entered 1911 as one of the only two surviving and producing mines of the Bullfrog region and ended the year as the only one, for the big Montgomery-Shoshone Mill shut down in May. Thus the Keane Wonder, which had preceded the great Bullfrog rush, had succeeded in outliving the rise and fall of Rhyolite and the Bullfrog boom. As the sole surviving paper in the Bullfrog District in 1911, the *Rhyolite Herald* continued to cover the Keane Wonder Mine, but as the paper shrank from the twelve-page spread of balmier days to four pages, half-filled with canned material, coverage of the Keane Wonder grew sparser.

Still, we do know that Homer Wilson reported average bullion yields of $18,000 to $20,000 during January, February, and March 1911, and that on April 15, he stated that "general conditions at the Keane Wonder mine are the best in the history of the property." The mill processed about 75 tons per day during that time, near its peak capacity of 80 tons, but profits were not large because overhead was high. The air compressor and other equipment installed late in 1910 had cost the company $20,000, and the expense of hauling fuel oil and distillate was the company's heaviest fixed expense. Still, said Wilson, the "Keane Wonder will be a notable little producer for many years to come."

For a few months during the summer of 1911, George Wingfield, the famous Goldfield mining promoter and politician, held an option to purchase the Keane Wonder property, but the option was allowed to expire. Although no one knew for sure, the *Rhyolite Herald* speculated that Wingfield had been discouraged due to the manner in which the stock in the company was dispersed. He probably was not discouraged by the mine's output, however, for production figures soared during that summer. April's cleanup netted the company $25,000, and May totaled an estimated $22,600. Then, during the first two weeks of June, the Keane Wonder broke all its previous records, producing nearly $30,000 during a fifteen-day run, or almost $2,000 per day. Total production for June was estimated at almost $50,000.

The mill was disabled for a week in July when a cylinder head was blown, but it was soon fixed and running again, and on August 5, the *Rhyolite Herald* quite properly called the property the "King of the Desert." Privately and quietly, the paper reported, "Keane Wonder stock is increasing in demand and value." Production figures were not listed for the fall months of 1911, although the papers inferred that the monthly averages were around $30,000. The force of miners was maintained, and the Porter brothers found themselves unable to satisfy the supply demands of the company, so another hauling contract was let. Once again, the number of miners employed at the property was sufficient for the Keane Wonder office building to be designated as a polling place for the Inyo County general election.

In October 1911, the estate of the Keane Wonder was greatly increased by the purchase of the Big Bell property, situated to the north, between the Keane Wonder and Chloride Cliff. The Big Bell Mine, which had fallen into bankruptcy, was sold at auction by the receiver of the First National Bank at Rhyolite, for the bank had also closed, and Wilson purchased its claims for a mere $1,600. A force of miners was soon dispatched to the property for exploration work.

October's production run was estimated at $30,000, which was said to be slightly less than September's, and November's was estimated again at $30,000. No final production estimates for 1911 were listed by the Rhyolite newspaper, although the averages mentioned throughout that year by the Herald would total approximately $326,000 for the year, if valid. The Herald's natural tendency to exaggerate is emphasized by a 1938 report in the *California Journal of Mines and Geology*, wherein 1911's production was conservatively estimated at $161,000. The true figures are probably somewhere in between those two estimates, and only Wilson knew what they were. The totals were enough, however, for the Keane

[17] *Rhyolite Herald*, 5 February, 5 March, 9, 23 April, 7 May, 4, 11 June, 23 July, 10 September, 1, 29 October, and 17 December 1910; *Inyo Register*, 11 August, and 20 October 1910; and *Mining World*, 21 January 1911, 152.

Wonder to tie with the Skidoo Mine, on the west side of Death Valley, as the leading gold producers of Inyo County in 1911, the fourth year in a row wherein the Keane Wonder had appeared at the top of the list.[18]

The mine and mill continued production in 1912, but the end was near. The *Rhyolite Herald* reported in January that the mine had only three months of ore reserves in sight, and development work was being pushed on the unworked claims of the company, some of which had not been explored since early 1905. Ore was discovered on one claim, the Whipsaw, and the company began to shift operations around the ridge toward it. Surface tramway tracks were laid to take the Whipsaw ore to the upper aerial tramway terminal. In addition, development work was continued on the Big Bell claims purchased by Wilson the previous year.

In late January 1912, the cyanide plant was temporarily shut down, as it had finally finished processing all the accumulated tailings that had been collected before the construction of the plant. The cyanide works would be idle, said Wilson, until another such accumulation had been gathered, since it was not economical to run it on a part-time basis. In the meantime, the twenty-stamp mill kept crushing ore at such a rate that another freight team was started between Rhyolite and the mill to supply the engines with oil. January production once again reached an estimated $30,000 worth of bullion, and February almost reached that figure. Fifteen thousand dollars of that sum was reported to be pure profit for the company.

Then, on February 24, disaster struck. The mile-long cable of the aerial tramway snapped and several ore buckets fell into the ravines below. All work on the mine and mill was stopped while the old cable was taken down and a new one restrung and the ore buckets placed back on line. The new cable weighed 26,000 pounds and cost $7,280. Railroad freight to get the cable to Rhyolite amounted to $780, with additional wagon freight charges of $350 just to haul it from Rhyolite to the mine. Total costs and delays set back the Keane Wonder Company almost $10,000 before the tramway was again operating in late March.

In the meantime, the Keane Wonder Company received its patent for twenty-eight claims, which constituted "the largest territory comprised in one title that has been issued by the land department for many years." With the new patent on hand and the cable restrung, the mine and mill began running again at full capacity, and the *Rhyolite Herald* was fulsome in its praise for Wilson, who had operated the Keane Wonder for so long. "Mr. Homer Wilson is entitled to all the credit, and for having struggled against adverse conditions for several years, never losing faith in the property, but steadily forging ahead and overcoming difficulties, and now his efforts are being crowned with deserved success." The accolades seemed warranted. As an example of Wilson's economical management, he had used the downtime caused by the cable misfortune to rework and retool all the machinery in both the mine and mill.

With the mine and mill running at full capacity again, but with the ore reserves dropping rapidly, the Keane Wonder Company began to think of selling its property. T. B. Rickey, who still held a large interest in the company, negotiated with a group of Philadelphia capitalists in early April, and the sale was made toward the end of that month. The purchase price was reported to be $600,000. Half the payment was made immediately, and all the company's stock was placed in escrow, and the resignations of the company officers and directors were placed on hold, until the second half of the sale price was received, or before May 5, 1912. According to the agreement, Wilson would stay on the property as supervisor while the new owners investigated the feasibility of several capital improvements, such as the addition of twenty more stamps to the mill and the conversion from oil to electric power. Once these improvements were made, Wilson was to turn over the property and end his long association with the Keane Wonder. As news of the sale and the anticipated infusion of new capital into the mine spread, a corresponding rise in the price of Keane Wonder stock was recorded on the trading boards, rising from 16¢ to 35¢ in a few days.

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[18] *Rhyolite Herald*, 15 April, 13, 20 May, 3, 24 June, 1, 8, 15 July, 5, 12 August, 2, 16, 30 September, 21, 28 October, 11 November 1911, and 6 January 1912; *Inyo Register*, 25 May, 28 September 1911, and 8 February 1912; *Mining World*, 27 January 1912, 207; and *California Journal of Mines & Geology* (October 1938): 402-3.

As May turned into June, no improvements were made, although the mine and mill continued to operate. Wilson was forced to leave the mine for a month to attend his sick daughter in San Francisco, thus delaying the expansion plans. But upon his return in late June he assured the *Rhyolite Herald* that plans were being perfected, and that the improvements at the Keane Wonder would soon take place. In the meantime, production continued. May's bullion returns were said to be satisfactory, although no figures were given, and June's was reported as slightly smaller than May's.

Then, on August 22, the end came. The *Inyo Register* headline proclaimed that the noted mine's days were over as the "Keane Wonder has worked out its ore bodies." The Keane Wonder Mine and Mill, after running successfully since November 1907, finally shut down. The paper reported that the operations had been closed for an indefinite period, "and doubt is expressed whether it will ever resume production. It is said that for some time past the operations of the company have failed to yield a profit, and that development of the Whipsaw claim have [sic] not been successful." The final cleanup had been made, which netted $10,000, and the ore pillars had been broken down to save their contents. This was a sad sign, for with the removal of the ore pillars from areas that had been stoped so long, large portions of the underground workings of the mine complex would soon collapse. The Keane Wonder, said the paper, had exhausted all the ore in sight and had no prospects of finding any more.

Four men were retained from the large work force to treat the remaining tailings in the cyanide plant, and Wilson said that when cooler weather returned in the fall, development and exploration work would be done under contract in hopes of finding new deposits. "The news of the suspension of operations comes as a great surprise to mining men here," wrote the *Inyo Register*, "as reports from the property have been highly encouraging for a long time past." Remembering the past dealings of Rickey, the paper went on to accuse him of dumping a gutted mine upon a group of poor dimwitted Philadelphia capitalists. "Persons who have taken an interest in the matter declare that some one has been handed a lemon" and that "Thomas B. Rickey is not that individual but more probably the one who disposed of the fruit." It is doubtful, however, if the paper's suspicions were true. The *Rhyolite Herald* had stated several months earlier that the known ore reserves of the mine consisted only of three months' supply. Such a published report would have been impossible to keep from the eyes of any businessman who knew what he was doing. In addition, the subsequent actions of the new Philadelphia owners, who retained the services of Wilson, quite decidedly indicate that they did not feel deceived when their new mine shut down.[19]

The first segment of the Keane Wonder's history had ended. The mine, which had first been located in 1904, had been consistently worked for over eight years, and the mill had steadily produced gold bullion from November 1907 to August 1912, longer than any other mill in the surrounding Bullfrog territory or any mill on the east side of Death Valley. Final production figures for these years are necessarily unreliable, but can be estimated. The mill probably produced about $75,000 in 1912, which when coupled with the *California Journal of Mines and Geology's* conservative estimate of $682,000 for the years 1907-1911, would bring total production to at least $750,000.

But although the major period of production at the Keane Wonder was over, the mine and mill were not yet finished. Unfortunately, the subsequent history of the property is poorly documented, for the death of Rhyolite and its newspapers leaves us without the weekly coverage of the early years. In addition, as the Keane Wonder became less important to the economy of Inyo County, its newspapers concerned themselves less and less with the several subsequent attempts to revive the mine.

What is known is that the first attempt to revive the mine came less than a year after it had closed down, in June 1913. At that time, the new owners of the Keane Wonder held a meeting in Philadelphia, and a new board of directors was elected. Reports released to the Inyo newspapers indicated that the new company was in relatively good financial condition and

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[19] *Rhyolite Herald*, 27 January, 10, 24 February, 9, 16, 23 March, 6, 13, 27 April, 18, 25 May, 1, 8, and 22 June 1912. Happily, the *Rhyolite Herald* did not survive to see the closure of the Keane Wonder Mine, for the *Herald* had itself closed on June 22, 1912. *Mining World*, 24 February 1912, 471; and *Inyo Register*, 25 April, and 22 August 1912.

that the company had some new ore blocked out in the mine. In a rather confusing statement, Wilson, who had been elected president of the Philadelphia company, stated that the mine had over 3,000 tons of ore blocked out and that ten stamps and cyanide equipment would be added to the mill.

In July 1913, another mining journal stated that the new management had perfected a plan to put in ten additional stamps and other equipment. Foundations were in place and installation of the machinery was about to start. In addition, a new shaft was being sunk on the property. No further mention of the mine appeared until January 1914, when Wilson told the *Inyo Register* that a new water supply had been developed. The capacity of the stamp mill was still given as eighty tons per day, however, which indicates that no new stamps had been added. But the mill was evidently active, from the tenor of Wilson's statements, for he claimed that the Keane Wonder had produced over $1,000,000 through the end of 1913. Then, the case of the State Bank and Trust Company reared its head, as the newspapers reported in February 1914 that the Keane Wonder was still paying off its debt to the receiver of the bank. Evidently the mill was running in order to produce the bullion to make those payments.

If it was operating, profits evidently were not very large, for the Keane Wonder Company failed to pay $503.23 in taxes to the Inyo County treasurer in June 1914. Then, evidently, the mill again shut down, for the company was forced to quit making payments to the State Bank and Trust Company. As a result, the Keane Wonder Mine and Mill were sold at a sheriff's auction in about November 1914 in order to satisfy the debt due to bank. The purchaser of the property was the Francis Mohawk Mining Company, whose president, D. Mackenzie, had been one of the original litigants in the 1908-1909 suits revolving around the ownership of Keane Wonder stock. Wilson, as usual, landed on his feet and was named superintendent of the mine and mill by its new owners, and the Francis Mohawk Company began to operate the complex once again. The new owners had a distinct advantage over their predecessors, for they were operating without any debts hanging over the company. To a mining concern operating on the fringe of profitability, as the Keane Wonder now was, this was important. This time, the new owners made improvements to the property, chiefly an addition to the cyanide plant, which brought its capacity up to 300 tons per day.

Production runs at the Keane Wonder began again in earnest in the fall of 1915, as did development work on some of the unexplored claims of the company. A new superintendent was appointed at that time, as Homer Wilson finally ended his long association with the Keane Wonder Mine. The new ore bodies lasted only about six months, however, for the mill was again closed in May 1916. The cyanide plant continued to run through July that year before exhausting the tailings piles, after which the entire Keane Wonder complex lay quiet. The Francis Mohawk Company announced in July that a new reorganization was underway and that endeavors would soon be made to open a large tonnage of ore, which they believed lay beneath the present workings. But the new plans were never carried through, and in 1917 the mine was still reported to be idle and the company to be considering reorganization plans. The California state mineralogist, in 1917, reported that all known ore bodies were worked out and estimated that the mine and mill had produced a total of $1,100,000 in gold bullion through the end of 1916. If his figures were accurate, total production between 1912 and 1916, when the mill was operated sporadically, amounted to about $87,500 per year.[20]

After the revival efforts at the Keane Wonder failed in 1916, the mine and mill lay idle for many years. Edna Perkins, a writer of Western lore, visited the complex in 1922. She described the mill site as a mass of deteriorating buildings, half blown down, with broken water pipes and other debris scattered around the area. The superintendent's house, she wrote, was obviously a fine residence at one time, but she and her companions preferred to sleep outside.

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[20] *Inyo Register*, 5 June 1913, 1, 29 January, 19 February, 4 June 1914, and 25 November 1915; *Mining World*, 12 July 1913, 74; 2 January 1915, 34; 13 November 1915, 786; 27 November 1915; 868; 18 December 1915, 990; 5 February 1916, 296; and 29 July 1916, 205; *Fifteenth Report of the California State Mineralogist* (December 1917): 79; and *California Journal of Mines & Geology* (October 1938): 402-3.

The large boarding house was almost completely ruined. The mill building, however, was still in relatively good shape, as it was locked and guarded. The watchman was John Cyty, who had been identified with the Funeral Range area ever since the Bullfrog boom, and he kindly unlocked the mill building for them and showed them an extensive array of machinery still intact inside.

The Keane Wonder Mine and Mill lay idle through the rest of the 1920s and the first half of the 1930s. W. R. McCrea of Beatty, who owned the Chloride Cliff Mine, tested the old tailings of the Keane Wonder Mill in 1930 but decided that their contents were not valuable enough to reprocess. Then, in 1935, the Keane Wonder complex underwent another attempt at revival.

During 1935 and 1936, the Coen Company bought and leased mining rights to the Keane Wonder and Big Bell mines and carried out several testing programs. Most of the work was done on the Big Bell claims, but the company did employ eight men for some time in reworking the old mill tailings of the Keane Wonder by cyanide. Since the old Keane Wonder tramway was described as being deteriorated beyond repair, the company established its camp at the Big Bell site, which was its center of operations. The operations at the Big Bell were successful for several years, but no attempt was made to reopen the Keane Wonder Mine, beyond the reprocessing of the mill tailings. By November 1937, the Coen Company had ceased operations, and the Keane Wonder Mill and its contents were sold to George Ishmael, who dismantled the old stamps and hauled them to Los Angeles. Thus ended the proud history of the Keane Wonder Mill, for with the exception of the heavy foundation timbers of the tramway terminals, almost all the mill complex was salvaged.

In 1938, the Keane Wonder Mine was sold to E. L. Cord, the automobile manufacturer, who in turn leased it to two Denver miners, W. D. Leonard and George Schriber. In April 1940, the Mining Journal reported that five men were employed at the mine in reconditioning the machinery and repairing the camp buildings in preparation for active development work. The aerial tramway was refurbished that fall, and preparations were made by ten employees to put in a new mill on the site of the old one. Camps were erected at both the mine and the mill site. By June 1941, a new 150 ton mill was under construction and it was nearly completed by July. But the new mining effort was short-lived, for the operation was closed down in March 1942, when all the machinery, with the exception of the new aerial tramway, was hauled away to another site.

From 1942 to the present, the Keane Wonder Mine has been idle. Cord held title to the estate until 1969, when it was sold to the Title Insurance and Trust Company of Los Angeles for $25,000. The Title Insurance Company, in turn, sold the property to the National Park Service in the early 1970s.

Total production at the Keane Wonder Mine and Mill has been estimated by several different sources at $1,100,000. Of this figure, most agree that between $625,000 and $682,000 was produced in the years between 1907 and 1911, during the greatest years of prosperity for the Keane Wonder Mining Company.[21]

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[21] Edna Brush Perkins, *The White Heart of Mojave: An Adventure with the Outdoors of the Desert* (New York: Boni and Liveright, 1922), 101; *22nd Report of the California State Mineralogist* (October1926): 470; *Mining Journal*, 30 August 1930, 36; 30 April 1940, 20; 30 September 1940, 22; 15 June 1941, 22; and 30 March 1942, 21; M. J. Brown, *Mining Activities in Central and Southern Nevada* (Los Angeles: Los Angeles County Chamber of Commerce, Domestic Trade Report #56, 1935), 8; Coen correspondence, June 1935 to November 1937, Death Valley National Monument, Mining Office Files; Nolan, "Nonferrous-metal Deposits," USGS *Bulletin* #871 (1936), 36; *Inyo independent*, 18 March 1938, 17 May 1940, 20 June, and 25 July 1941; *California Journal of Mines & Geology* (October 1938): 402-3; and July-October 1957, 481; *Desert Magazine* (May 1942): 5-7; Superintendent of Death Valley National Monument to Director, National Park Service, memorandum, 6 April 1960; and David Jones, "Appraisal of Mineral Interest Inherent in the Keane Wonder Patented Mining Property," National Park Service, April 1971.

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Bullfrog Miner

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Desert Magazine

Engineering & Mining Journal

Greenwater Times

Inyo Independent

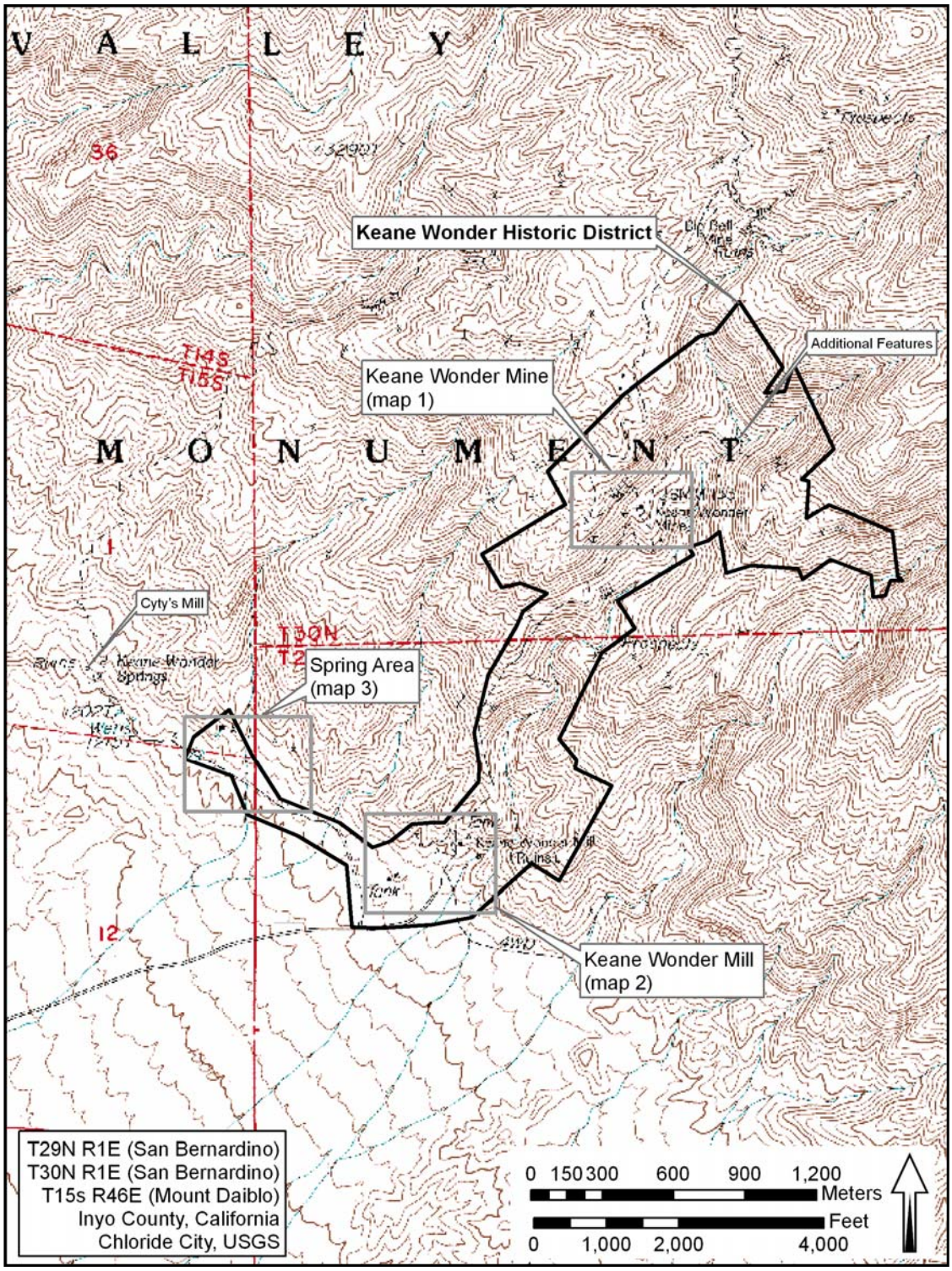
Inyo Register

Mining & Scientific Press

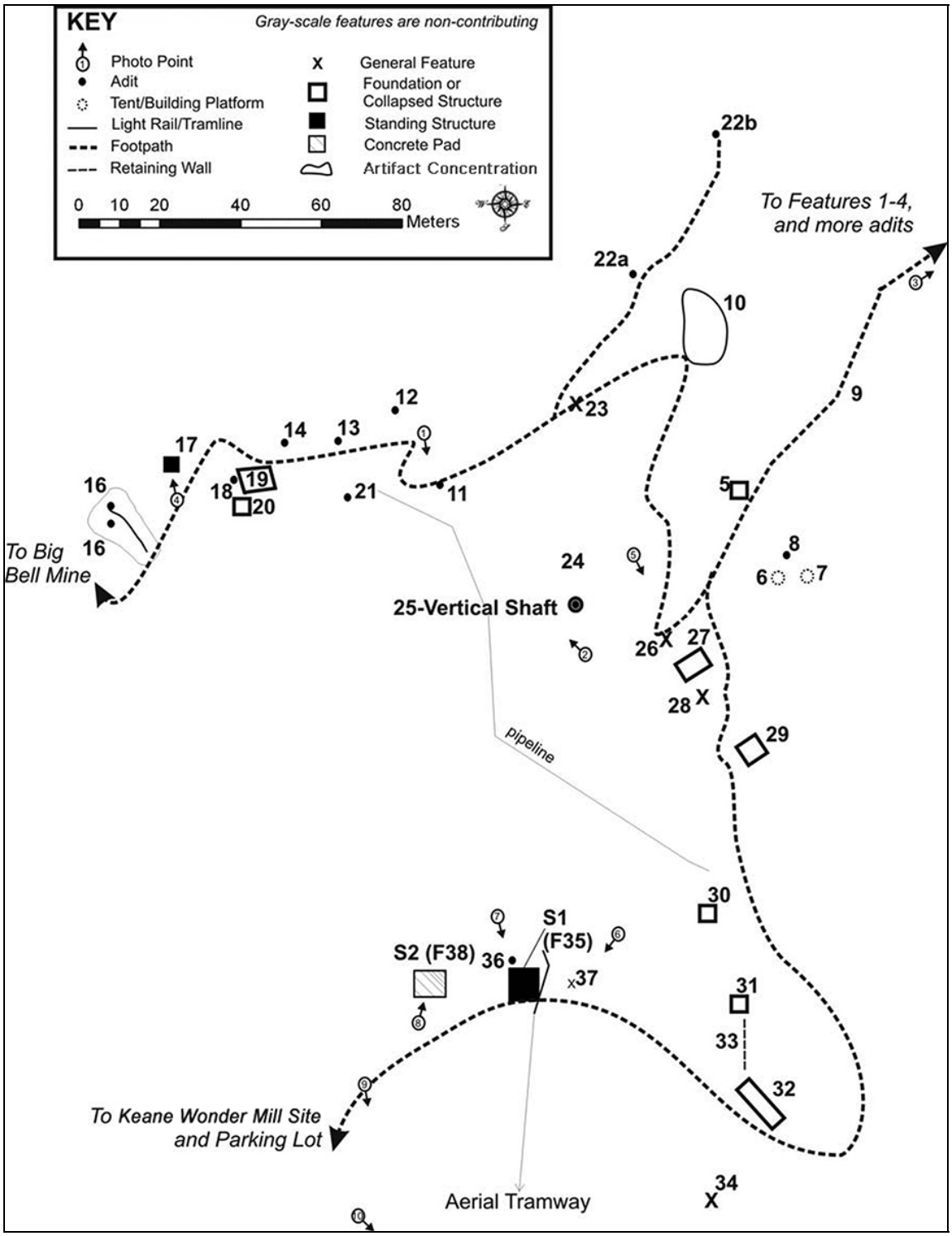
Mining World

Rhyolite Daily Bulletin

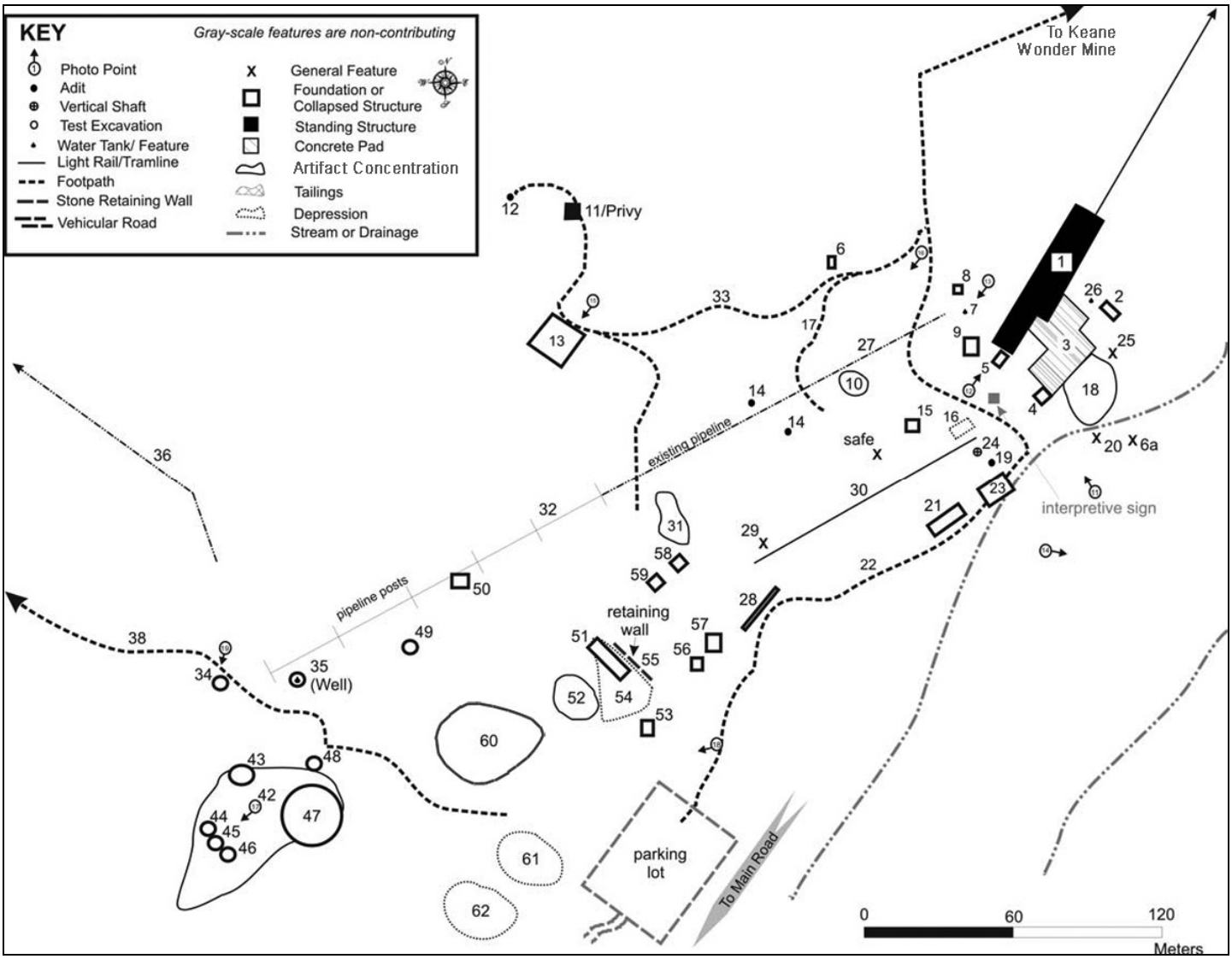
Rhyolite Herald



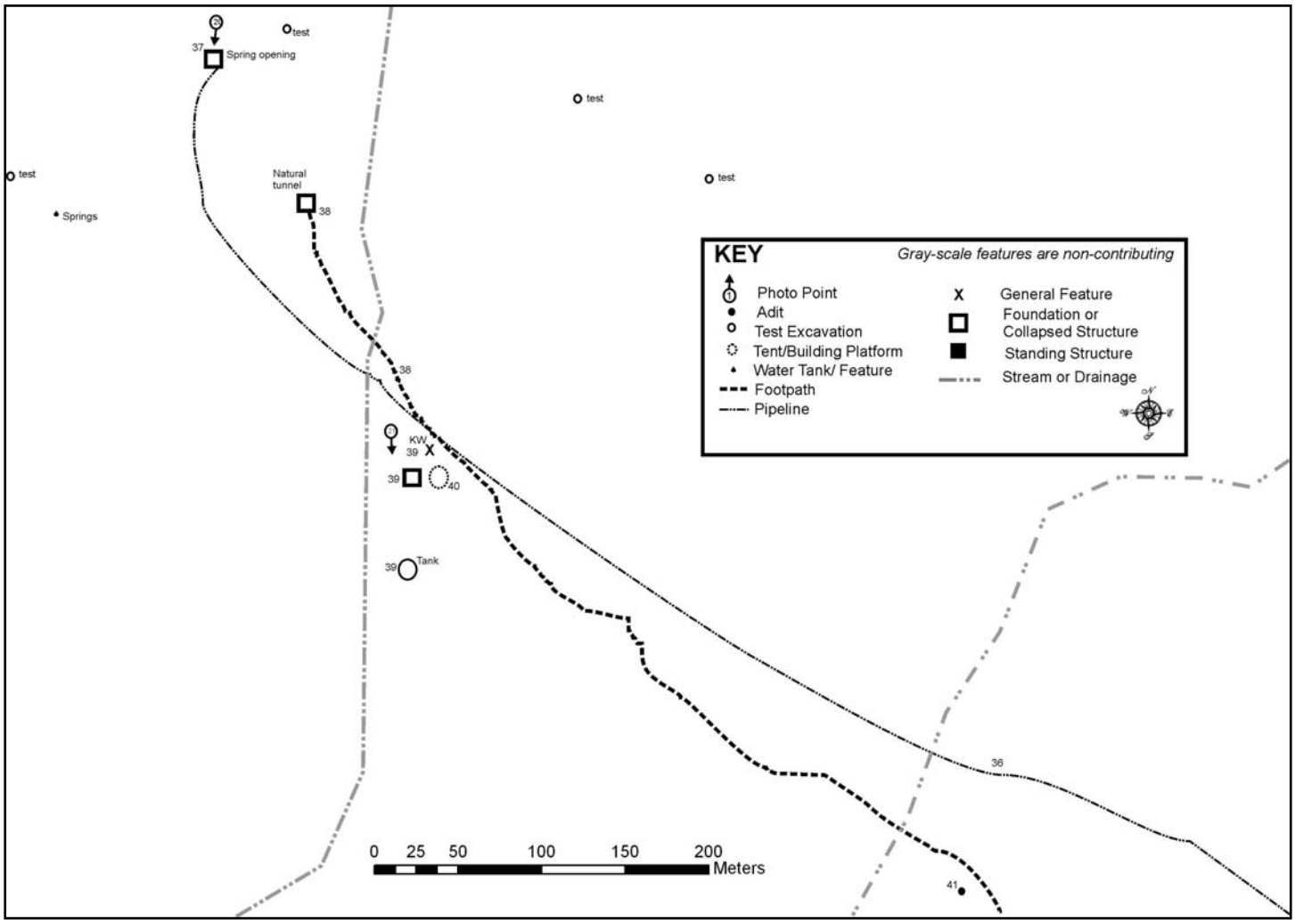
Topographic Map of Keane Wonder Mine and Mill.



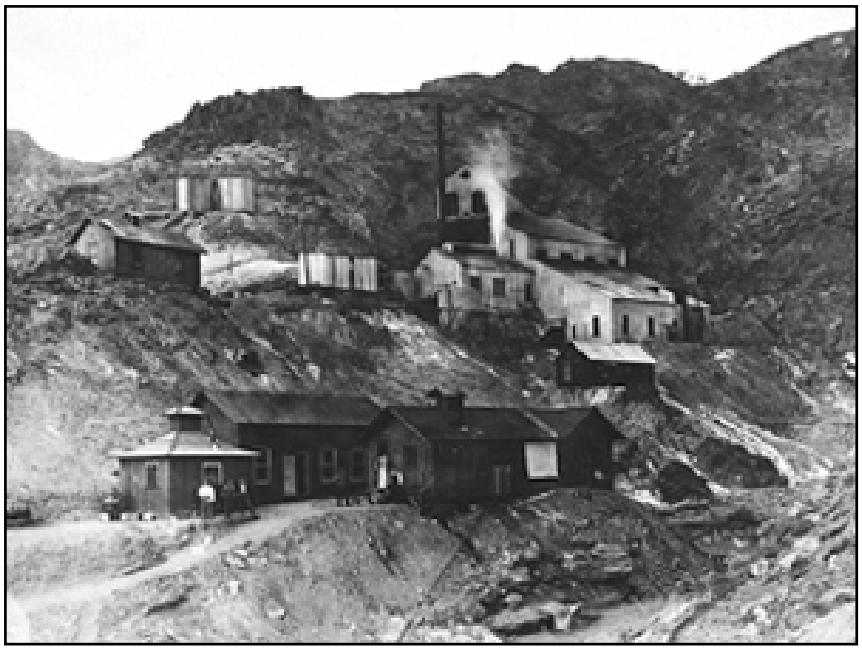
Map 1. Keane Wonder Mine Development and Extraction Level.



Map 2. Main Keane Wonder Mill Site.



Map 3. Sketch Map of Keane Wonder Springs.



Historic Photo of Keane Wonder Mill.

Photo 1. Overview of Keane Wonder Mine Area with Upper Tram Terminal looking southeast.

Photo 2. Overview of slopes above Tram Terminal at Keane Wonder Mine, looking northwest.

Photo 3. Stone retaining wall lined path to upper adits north of main Keane Wonder Mine area, looking north.

Photo 4. Main extraction area at Keane Wonder Mine (Feature 9).

Photo 5. Overview of Feature 25, collapsed structure, looking southeast.

Photo 6. Overview of Structure 1, upper tramway terminal at Keane Wonder Mine, looking west.

Photo 7. Detail of top of upper tram terminal looking south toward valley floor.

Photo 8. Hoisting engine and cable drum, a component of Structure 2 at Keane Wonder Mine (HRA 2006).

Photo 9. Overview of mid-section of Structure 1 at longest span between Keane Wonder Mine and Mill. Note the ore bucket (HRA 2006).

Photo 10. Detail of timber support towers associated with Structure 2, looking south.

Photo 11. Overview of Keane Wonder Mill (Structure 3) location and lower tram terminal (Structure 1), looking west.

Photo 12. Detail view of lower tramway terminal (Structure 1) at Keane Wonder Mill, looking north.

Photo 13. View of Feature 7 at Keane Wonder Mill looking southwest (HRA 2006).

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Photo 14. Unnumbered shaft located across wash to east of Structures 1 and 3 at Keane Wonder Mill.

Photo 15. Feature 13, collapsed building with stacked stone foundation at Keane Wonder Mill, looking southwest (HRA 2006).

Photo 16. Overview of cyanide tank area at Keane Wonder Mill looking south. (HRA 2006).

Photo 17. View of cyanide tanks (Features 42-48) at Keane Wonder Mill, looking south. (HRA 2006)

Photo 18. Overview of debris, tailings, and platforms (Features 60-62) near parking lot at Keane Wonder Mill. (HRA2006)

Photo 19. Standing cyanide tank (Feature 34) at Keane Wonder Mill, looking southwest. (HRA 2006)

Photo 20. Feature 37, developed area at Keane Wonder Spring, looking south toward valley floor. (HRA 2006)

Photo 21. Overview of Features 39 and 40 near Keane Wonder Spring, looking south. (HRA 2006)

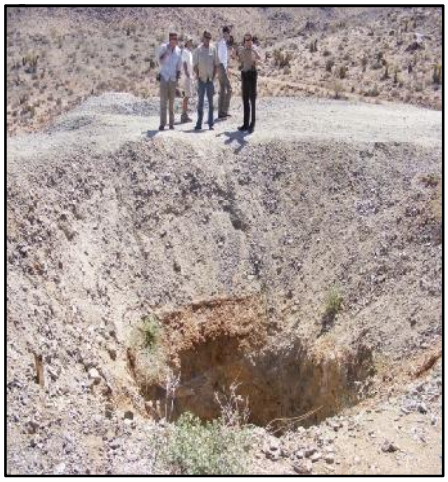
Photo Log

Original digital files of selected printed photos are located on CD-R. All photos are from 2006 and courtesy of Historical Research Associates.

File Name	Photo Description	View
CA_InyoCounty_KeaneWonderCyanideTank.tif	Feature 34 at mill	SW
CA_InyoCounty_KeaneWonderEngine&Drum.tif	Component of Structure 2 at mine	Detail
CA_InyoCounty_KeaneWonderMillOverview.tif	Structure 3 and lower tram terminal	W
CA_InyoCounty_KeaneWonderOverview.tif	Mine area with upper tram terminal	SE
CA_InyoCounty_KeaneWonderTramway.tif	Structure 1 lower tramway	N

U.S. Department of the Interior
Office of Inspector General

Audit Report



Abandoned Mine Lands in the Department of the Interior

C-IN-MOA-0004-2007 **July 2008**

United States Department of the Interior

OFFICE OF INSPECTOR GENERAL
Washington, D.C. 20240

July 22, 2008

Memorandum

To: C. Stephen Allred
Assistant Secretary, Land and Minerals Management

Lyle Laverty
Assistant Secretary, Fish, Wildlife and Parks

From: Earl E. Devaney
Inspector General

Subject: Final Audit Report, Abandoned Mine Lands in the Department of the Interior (C-IN-MOA-0004-2007)

This final report presents the results of our audit of abandoned mine lands managed by the Bureau of Land Management (BLM) and National Park Service (NPS). We visited approximately 45 areas with abandoned mines from March 2007 through April 2008 and talked to over 75 employees from 13 BLM offices and 5 national parks.

We concluded that BLM and NPS are putting the public's health and safety at risk by not addressing hazards posed by abandoned mines on their lands. Although NPS has been more effective at protecting the public, there are still many more sites that need to be mitigated. Mines located on BLM and NPS lands primarily in the western states of California, Arizona, and Nevada have dangerous physical safety and serious environmental hazards. We identified abandoned mines where members of the public had been killed, injured, or exposed to dangerous environmental contaminants. Growth of the population and use of off-road vehicles in the West will increase the likelihood of additional deaths or injuries.

We received responses on the draft audit report from BLM and NPS. BLM stated that it accepted the recommendations and would work diligently to implement them. However, BLM disagreed with our overall conclusion that BLM has an ineffective abandoned mine land program that has been undermined, neglected and marginalized. After considering the response, our overall conclusion concerning BLM's program remains the same. NPS generally accepted our findings and recommendations and indicated that it would implement the recommendations. Where necessary, we made changes to the report to address BLM's and NPS' specific comments. Detailed analyses of the responses are included in Appendices E and F of the report.

Please provide us with your written response to this report by August 21, 2008. The response should provide the information required in Appendix G. Please address your response to:

Mr. Robert Romanyshyn
Assistant Inspector General for Audits
U.S. Department of the Interior
Office of Inspector General
1849 C Street, NW, MS 4428
Washington, D.C. 20240

The legislation, as amended, creating the Office of Inspector General requires that we report to the Congress semiannually on all audit report issued, actions taken to implement our recommendations, and recommendations that have not been implemented.

If you have any comments or questions regarding this report, please call me at (202) 208-5745.

Attachment

Table of Contents:

RESULTS IN BRIEF

We are gravely concerned that the Department of the Interior (DOI or Department) has put the public's health and safety at risk by not addressing hazards posed by abandoned mines on federal lands. Mines located primarily in the western states of California, Arizona, and Nevada have dangerously dilapidated structures, serious environmental hazards, and gaping cavities – some capable of swallowing an entire vehicle.

During our audit, we identified serious environmental and safety hazards where members of the public had been killed, injured, or exposed to dangerous environmental contaminants. A number of adults and children have fallen to their deaths over the past several decades due to hazards associated with abandoned mines. The potential for more deaths and injuries is ominous. Growth of the population and use of off-road vehicles in the West will increase the likelihood of additional deaths or injuries.

We focused our audit of abandoned mines on Bureau of Land Management (BLM) and National Park Service (NPS) lands because the majority of abandoned mines are located there. We visited approximately 45 areas with abandoned mines from March 2007 through April 2008 and talked to over 75 employees from 13 BLM offices and 5 national parks.

At several BLM sites we visited, we found dangerous levels of environmental contaminants, such as arsenic, lead, and mercury – easily accessible to visitors and local residents, often without their knowledge. We also found instances of trespassing at abandoned BLM mine sites, including residential and commercial development on the land.

Vehicle being hoisted from a mine shaft on BLM land. (BLM Photo)

Even more disturbing, we found that BLM supervisors told staff to ignore these problems, and employees were criticized or received threats of retaliation for identifying contaminated sites. One employee stated that adding sites to an inventory list and declaring them unsafe was more detrimental to BLM because doing so acknowledged a hazard and a potential liability.

While BLM has the clear majority of abandoned mine sites on DOI lands, we found that it has an ineffective program to address them. BLM's abandoned mines program has long been undermined, neglected, and marginalized by poor management practices and insufficient staffing and resources.

We found that NPS has mitigated many of its high-risk, easily accessible abandoned mine sites; however, there are hundreds, if not thousands, of sites that still need to be addressed. At one park, the abandoned mine inventory includes over 600 sites, and NPS officials have inspected less than half of the sites on the 1.4 million acres comprising the park. While NPS has a more effective program, current funding for NPS' abandoned mines program is inadequate to address these hazards, and NPS has failed to develop a credible estimate of the total cost of mitigation.

We believe that working in consort, BLM and NPS would make greater strides toward a solution for abandoned mines than doing so independently. The agencies should explore opportunities to share resources, expertise, and best practices to improve their programs.

While the expense of cleaning up abandoned mine sites is a concern, with figures estimated in the billions, we believe simple precautions can easily be taken at the most dangerous sites, including posting warning signs and building fences. At environmentally contaminated sites, staff can reduce air and water-borne contamination through dust control with sprinklers and temporary covers.

The overall solution for cleaning up abandoned mines is not simple. It calls for a complex and concerted effort on the part of the Department, including the immediate mitigation of known hazardous sites, a calculated effort to identify and inventory unknown sites, a methodical design to address abandoned mines comprehensively, and a strategy to secure the necessary funding for this costly endeavor.

Warning sign that could be used as a minimum precaution at abandoned mine sites. (OIG Photo)

The findings from this audit paint a picture of compelling urgency, which should trigger a swift call to action by both the Department and Congress. We are providing recommendations designed to help develop a comprehensive solution to this multi-faceted problem, not of DOI's making, but now, certainly, in the Department's realm of responsibility.

BACKGROUND

Since the 1850s, mining of hard rock minerals such as gold, silver, copper, and lead has been an important part of the economy of the Western United States. Congress passed the General Mining Law of 1872, which established a process to allow individuals to explore, claim, and mine public lands containing mineral deposits. The General Mining Law required little mitigation of physical and environmental hazards created by mining activities. In 1976, Congress passed the Federal Land Policy Management Act that enhanced federal management of mining activity and its safety and environmental effects. However, historical mining activity left hundreds of thousands of unmitigated abandoned mine sites.

Within DOI, the majority of abandoned mine sites are located on lands managed by BLM, primarily in Arizona, Nevada, and California. Typically, no mining operations have been conducted at these sites for many years, although valid mining claims may still exist. The vast majority of abandoned mine sites on NPS lands are located in the California desert area of the Pacific West Region. The California desert area, specifically Death Valley National Park, Mojave National Preserve, and Joshua Tree National Park, contains most of the mine hazards on NPS land.

Many abandoned mine sites present an immediate danger of physical injury or death due to open vertical shafts and horizontal adits (entrances to a mine) and mill sites with deteriorating buildings and equipment. Dangers include deadly gases and asphyxiation, collapsing mine walls, explosive and toxic chemicals, and rotting structures. Physical hazards require the least funding to fix or mitigate and the least expertise to identify and evaluate. Mitigation can range from temporary measures including fencing and signs to more costly permanent measures, including steel and concrete covers. The only permanent mitigation action is to fill in shafts and adits and demolish or remove buildings and structures.

Some sites also present long-term dangers to people from exposure to piles of waste rock or mine tailings (mine waste) containing hazardous materials such as arsenic, lead, and mercury. These sites can cost hundreds of millions of dollars to remediate and require extensive expertise to identify, evaluate, and mitigate. Potential sites must be sampled to identify hazardous contamination. Mitigation can include temporary measures such as reducing air and water-borne contamination through dust control with sprinklers and temporary covers. Other temporary measures that can be taken to protect the public at these sites include installing fencing and signs and taking appropriate steps to notify the public of the dangers. Permanent mitigation can include reprocessing of mine tailings to treat contaminants, removal of materials to safer locations, or onsite disposal in a properly designed facility. Clean-up of all significant sites with environmental hazards will cost billions of dollars.

DETAILS OF AUDIT

We visited approximately 45 areas with abandoned mines from March 2007 through April 2008 and talked to over 75 employees from 13 BLM offices and 5 national parks. We also reviewed hundreds of pages of related documents and traveled through California, Arizona, and Nevada for site visits and interviews. Our objective was to determine if BLM and NPS were effectively protecting the public from physical safety and environmental hazards at abandoned hard rock mine sites located on federal lands. The results of our audit are chronicled below.

Injuries and Deaths

Comprehensive records of abandoned mine accidents are not maintained by DOI or its bureaus. However, physical safety hazards continue to result in visitor injuries and deaths. The U.S. Mine Safety and Health Administration identified 33 abandoned mine fatalities between 1999 and 2007 on all public and private lands in the Western United States. We performed a limited search of accident records and found that between 2004 and 2007, at least 12 people were killed in accidents at abandoned mines. We also visited six abandoned mine sites on BLM and NPS land where 7 deaths had occurred since 1984.

Vandalized mitigation measure at the Keane Wonder Mine where a visitor died. (OIG Photo)

At the Keane Wonder Mine in Death Valley National Park, CA, a visitor fell 30 feet down a mine shaft in 1984 and died of massive head injuries. We found that NPS' visitor literature advertised the abandoned site and NPS had signs directing visitors to the area, which had a visitor parking lot. We also found that other mine openings in Death Valley National Park were easily accessible by visitors using park roads and trails. After the death at Keane Wonder, NPS did install a steel net across the opening, but during our visit, we noticed that the net had been vandalized and other nearby openings had no fences or signs.

In 1991, a visitor to the Goat Basin Mine, Barstow Field Office, CA, bypassed a fence around an open mine shaft and attempted to lower himself into the shaft using chains attached to the bumper of his truck. The chains slipped and he fell 200 feet to his death. This type of site is commonly called an "ant trap" because it has steeply sloping sides that prevent escape if a person begins to slide into the shaft. After the accident, BLM did install a barbed wire fence around the shaft; however, during our site visit, we saw only remnants of the fence and no warning signs. This site was not on BLM's abandoned mine inventory and was not effectively mitigated. According to a BLM official, there are many such openings in the area but BLM has not inventoried these sites and has no plans to mitigate the hazards. After our site visit, we made recommendations to BLM about the safety concerns at the Goat Basin Mine, and BLM took immediate action and erected a fence around the opening.

Open mine shaft at the Goat Basin Mine where a visitor died. (OIG Photo)

In 1996, at the American Flat Mill near Virginia City, NV, a teenager died while climbing stairs on his all-terrain vehicle inside the structure. This extremely dangerous, dilapidated structure, which was built in the 1920s, is easily accessible with few fences and is a popular hang-out site for teens. While not documented, a BLM official told us that many other serious injuries have occurred at the site requiring flight-for-life helicopter rescues. BLM has not permanently mitigated the site because of concerns about the mill's "historical value."

American Flat Mill where teen died riding an all-terrain vehicle. (OIG Photo)

We found that in Virginia City, NV, a local high school teacher and a friend were killed in 1996 after entering the New Savage Mine. The men ignored a large "Keep Out-Bad Air" warning sign at the mine entrance, bypassed a fence, and were asphyxiated. The site was subsequently more permanently fenced and closed. The New Savage Mine is one of hundreds of mines near Virginia City.

In 1999, near Beatty, NV, a young girl was killed after she fell into an open mine shaft while attending a BLM-authorized cross-country race. During the race, she wandered away from her family and fell into the mine. During our site visit, BLM staff told us that race organizers, not

BLM, were responsible for safety during the race. To expedite the mine closure, local residents back-filled the hole after the accident.

Site near Beatty, NV, where a young girl fell to her death in an open shaft. (OIG Photo)

More recently, in 2007, near BLM's Windy Point Recreation Area, Kingman, AZ, a young girl was killed after falling into an open abandoned mine. The girl and her sister were riding an all-terrain vehicle, ran off a trail, and fell into a 125-foot mine shaft. The sister was seriously injured and spent the night in the mine before being rescued. The shaft is on a small privately owned parcel surrounded by BLM property. BLM maintains a nearby campground and a road leading to the area where the death occurred. A barbed-wire fence, provided by BLM, and warning signs were erected around the abandoned mine shaft shortly after the accident.

BLM stated that "in light of the hundreds of millions of acres of public lands for which BLM is responsible, some accidents will inevitably take place." While this may be true, it does not relieve BLM from responsibility for taking reasonable steps to prevent injury or death from abandoned mine hazards, especially those hazards that are already known by BLM.

Observations and Hazards on BLM Land

During our site visits to abandoned mines on BLM lands, we observed alarming examples of dangerous mines that continue to pose a threat to the public and the environment. We have highlighted the most distressing examples below.

Rand Mining District

Off-road vehicle trail on contaminated tailings in Randsburg, CA. (BLM Photo)

In March and May 2007, we visited the Rand Mining District near Ridgecrest, CA, because soil samples taken by BLM in 2006 identified dangerous levels of arsenic contamination thousands of times higher than Environmental Protection Agency (EPA)-recognized safe levels. BLM had known about this potential contamination for decades but had never taken samples to assess the danger to the public. We confirmed these serious environmental hazards and also found numerous physical safety hazards. These hazards were endangering the residents of Randsburg and Red Mountain as well as thousands of off-road vehicle recreationalists who routinely visit the area. BLM estimates that costs to mitigate environmental and safety hazards in the District could exceed $170 million. Due to the potential risks to the public, we issued Flash Report No. C-IN-BLM-0012-2007, "Environmental, Health and Safety Issues at Bureau of Land Management, Ridgecrest Field Office, Rand Mining District, CA."

We found that arsenic contamination in the District is widespread in over 3,000 acres of mine tailings and 500,000 tons of additional mining-related waste rock. The area's dry climate and winds have routinely exposed residents to arsenic-laden dust. Contaminated tailings have also migrated onto residential properties in Red Mountain. Near Randsburg, a BLM-authorized trail crossed a 60-acre highly contaminated mine tailings dam and was used seasonally by thousands off-road riders as recently as April 2007.

The District includes about 480 open mine shafts and unstable mining structures. Many of the mine shafts are located in and around residential areas or near existing roads and trails. Some mine shafts are extremely dangerous due to their depth and location, and we found no fences or warning signs. A local BLM official told us that temporary mitigation measures could be delayed for up to a year while wildlife and archeological surveys are conducted.

Open shaft near road in Red Mountain, CA. (OIG Photo)

In response to our Flash Report, BLM reported that several safety hazards had been fenced and posted with warning signs. The off-road vehicle route on the tailings dam was closed and an alternative route was constructed. BLM also began a formal process to assess health risks to the public from environmental contamination at the site. Periodic public meetings are being conducted to inform residents of BLM's progress in mitigating site hazards. We are encouraged by the steps being taken as a result of our Flash Report to address hazards in the Rand Mining District. However, the disturbing fact remains that hazards in the District were suspected or known to BLM for many years before anything was done to evaluate and mitigate them.

American Flat Mill

In July 2007, we visited the American Flat Mill site, located near the town of Virginia City, NV, where a teenager died climbing the stairs on his all-terrain vehicle. The mill is a large, two-story, dilapidated concrete structure where ore was processed in the 1920s using cyanide. The site is an extremely dangerous physical safety hazard. It is easily accessible, with few fences, and is a popular "party" hangout for local teens. Most of the structure has no outside walls and there are large holes in the floors that could easily result in a serious injury or death.


Dilapidated mill building at American Flat Mill. (OIG Photo)

An adjacent mill site was demolished in 2006 after a visitor sustained a serious injury due to a fall. The potentially responsible party performed and paid for the demolition work. Concerning the site, a BLM official said, "This is a matter of physical safety. The buildings are a public

nuisance and have to be dismantled. There's no reason for this to remain a potentially dangerous site."

To the contrary, in 2006, another BLM official was quoted in the *Reno Gazette-Journal* saying, "Nothing is going to be disturbed at the older [remaining] site. People in the area have a strong connection to it and it's staying just as it is."

Despite the death at the remaining mill and a history of serious site accidents, BLM has not taken effective mitigation actions to protect the public. BLM provided various reasons for inaction, including the site's historical nature, local opposition to demolishing the structure, a lack of funding to perform demolition, and difficulty in restricting site access.

Longstanding hazardous conditions and excessive delays in mitigation at the American Flat Mill site present serious and unacceptable risks to the public health and safety.

Kingman

We visited the Kingman, AZ, BLM field office and adjacent areas in September 2007 after two sisters drove their all-terrain vehicle into a mineshaft over Labor Day weekend and one was killed. The mineshaft was on a small, privately-owned sliver of land within BLM's Windy Point Recreation Area. We visited the area because the mineshaft was reported to be easily accessible and the media reported thousands of unmitigated mineshafts in the vicinity.

Dangerous mine shaft next to BLM-maintained road near Kingman, AZ. This shaft was a short distance from a similar hazard where a young girl died in September 2007. (OIG Photo)

We saw no signs or warnings of abandoned mines on our drive through Windy Point. We identified a campground near the mine shaft and a road leading to the site. Nearby, we observed two 100- to 200-foot deep shafts on the side of the road that could easily have resulted in additional deaths or injuries to hikers or people using all-terrain vehicles, motorcycles, or mountain bikes. One shaft was partially fenced while the other was not.

After our visit, a BLM official told us the shaft where the young girl was killed had since been fenced using materials provided by BLM, and warning signs had been erected.

At another mine northeast of Kingman, the COD Mine, we found physical and potential environmental hazards. The private land owner who lived directly below the mine believed his well water was contaminated by the COD Mine. BLM contacted the mine claimant, who owned the mineral rights, several times in 2005 to notify him of site conditions, including abandoned

vehicles, theft, and vandalism, especially in dangerous areas of the property. In 2007, the claimant tack-welded a steel plate over an 800-foot deep mine shaft. BLM inspected the site in September 2007 and noted the reclamation (i.e. tack welding) had been completed. However, during our site visit, the plate had been removed. This is a potentially life-threatening situation because unknown individuals have been descending into the shaft from a dilapidated wooden ladder.

Barstow

In August 2007, we visited the Goat Basin Mine near Twentynine Palms, CA, on land administered by BLM's Barstow Field Office. Three visitors have died in abandoned mines within the jurisdiction of this office since 1976.

Open mine shaft at the Goat Basin Mine were a visitor died. (OIG Photo)

The Goat Basin Mine is identified on BLM maps, and a road leads visitors to the site. The opening at the mine is extremely dangerous and there was evidence that visitors were passing within feet of the opening on off-road vehicles. The edges of the opening have eroded, creating an "ant trap;" once a visitor goes over the edge, there is no way to stop falling into the hole.

Open shaft near Barstow. (OIG Photo)

Little had been done to mitigate the known hazards even where visitors had been killed. According to BLM, the area surrounding Barstow has many similar hazardous mine openings that are easily accessible. After we notified BLM of our observations, BLM informed us that it provided temporary mitigation of the physical safety hazards with the installation of fencing and warning signs at each of the sites.

Caselton Tailings

In August and September 2007, we visited the Caselton Tailings site. The site covers about 90 acres and is located in southeast Nevada about 6 miles north of the town of Panaca. The site is easily accessible from State Highway 320 and contains about 3 million cubic yards of mine tailings, or mine waste, from a nearby abandoned mill. The tailings contain potentially dangerous levels of heavy metals including arsenic, lead, and manganese.

Acidic pond at Caselton Tailings site (OIG Photo)

Visible mine tailings have migrated down the surface of Caselton Wash (a seasonal waterway that flows only during rains) toward Meadow Valley Wash to within about 3 miles of the town of Panaca and local water wells. An engineering evaluation conducted on the Caselton tailings stated that a catastrophic release of tailings could "severely and intensively impact water quality in Meadow

Valley Wash." BLM has indicated to us that the risk of groundwater contamination is very small; however, BLM has never sampled ground water at the wells downstream of the tailings.

The site includes nine ponds constructed to contain water on the tailings. BLM noted that the pond water is acidic and contaminated and poses "a severe health threat to humans if they consume it…and it may cause injury or death to wildlife." The water is acidic enough to seriously burn human skin on contact. There were off-road vehicle tracks on the tailings, and a local resident told us the site was routinely used by off-road vehicle riders. The site also contains a dilapidated operations area where a previous claimant left potentially dangerous abandoned buildings, hazardous waste, and piles of drums and other debris. BLM installed some fencing and a temporary cover over the tailings and constructed a diversion channel to minimize erosion. However, the site is still easily accessible with only two small "No Trespassing" signs posted. A BLM official also noted that the tailings cover needed to be replaced in the near future.

Over the last decade, BLM, with recent assistance from the DOI Office of the Solicitor, has negotiated without success with two parties interested in reprocessing the tailings. Reprocessing can help to reduce environmental contamination, and negotiations could provide additional resources to further mitigate the site. BLM has stated that it has made an informed decision that continuing with these negotiations is justified and in the best interests of the government and the general public. Having a third party perform the work would significantly reduce the cost to the government, currently estimated to be between $8 and $14 million if done unilaterally by BLM. Where practical, we support these efforts. However, public safety must be the first priority and we are concerned that the public has not been adequately protected from these environmental hazards for over a decade while these negotiations have taken place.

Observations and Hazards on NPS Land

During our site visits to abandoned mines on NPS lands, we observed examples of dangerous mines as well as mitigated sites where NPS took action to protect the public. We have highlighted examples below.

Death Valley National Park

Young boy exiting a mine adit with a collapsing roof in Death Valley National Park. (OIG Photo)

In March and May 2007, we visited Death Valley National Park, CA, where a visitor died in 1984 after falling down a mine shaft at the Keane Wonder Mine. The park has numerous historical mines within its boundaries and encourages site visitation by advertising on maps and maintaining roads and trails leading to the sites. Two of the sites we visited, the Keane Wonder Mine and the Greenwater

Mining District, contain extremely dangerous mine openings. At the Keane Wonder Mine, we observed a family exploring the dangerous openings, and at one point we witnessed the family's toddler exiting a collapsing mine opening. Subsequent to our site visit, NPS found elevated levels of lead and mercury and stated that it was closing the site.

We noted three open mine shafts at the Greenwater Mining District. Two of the shafts were well fenced; however, the third was easily accessible and posed a danger to park visitors. This shaft was several hundred feet deep and within close proximity to an area where visitors had been camping. A fence around this mine shaft was dilapidated and was not effective in keeping visitors away from the "ant-trap"-like opening.

Visitors camp near this mine opening in the Greenwater Mining District. (OIG Photo)

We visited other abandoned mine land sites within Death Valley where NPS mitigated hazards. Many mine openings have been temporarily sealed with steel netting, while others have more permanent closures in the form of steel gates. We also observed extensive stabilization work that has been performed at the Skidoo Mill site, as well as several signs posted in the area, warning the public to stay off the structure.

Grand Canyon National Park

In August 2007, we visited two abandoned mine sites located along hiking trails in the Grand Canyon National Park, AZ. The first site we visited was the Grandview Mine, which was located several miles into the canyon. Although it took over 3 hours to hike into this area, the trail is still popular and is used by visitors. Both the trail and the Grandview Mine are well marked on NPS maps. The Grandview Mine has a series of adits (horizontal mine entrances) connected by shafts. We found no signs in the area to warn visitors of the dangers at the mine, and all mine entrances were open to visitors.

In addition to the physical safety hazards we found at the Grandview Mine, there has been concern about visitor safety due to high levels of radiation that have been recorded at the site. Past assessments at the site have shown extremely high levels of radiation; however, during our site visit, NPS measured radiation at all of the mine openings and all readings showed low levels of radiation. We were told that the low levels may have been the result of recent weather patterns in the area and increased air movement in the adits.

The other site we visited was the Orphan Mine located on the popular South Rim Trail. This easily accessible site has both high levels of radiation and significant physical hazards; however, NPS has erected a fence around the site, posted signs warning of the environmental hazards, and diverted the trail further away than originally constructed. We see this as a successful temporary mitigation of the site.

Mojave National Preserve

In April 2008, we visited several dangerous abandoned mine sites within the Mojave National Preserve. Although several dangerous shafts in the area had been covered or fences had been installed, there were still many dangerous mine openings easily accessible to the public.

Dangerous mine shaft at the Johnny Shaft site. (OIG Photo)

At two sites, we found mine shafts on roads that were large enough to easily swallow entire vehicles. In both cases, there were no fences or signs warning the public of the danger. At the Gold Cycle site in the preserve, a ladder going into the mine provided easy access to the mine shaft. At the Johnny Shaft site, we observed that the road led directly to a mine with a 400-ft deep shaft.

At the Oro Fino site in the preserve, NPS personnel pointed out what they considered one of the most dangerous mine hazards in the preserve. The entrance to the mine was collapsing, the roof was caving in, and dangerous shafts inside the mine created the risk of people falling. There was also a dilapidated ladder in an open mine shaft at this site. There was vehicle access near the opening, and there were no signs warning the public of the dangers or fencing to prevent access.

BLM Abandoned Mine Lands Program

Field Office Management

Overall, we found that BLM's abandoned mine lands program has long been neglected, undermined, and marginalized by poor management practices. As a result, public health and safety have been seriously compromised. The program is decentralized, giving operational control and authority to field office managers. BLM has a national abandoned mine lands program coordinator who has developed many policies and procedures for implementing an effective program; however, this coordinator is rendered ineffective, as field office management and staff often ignore the guidance. We also noted many examples of serious unmitigated abandoned mine hazards that were tolerated because program managers discouraged identifying and mitigating these hazards. Specifically, we found the following:

- Employees were discouraged from identifying abandoned mine sites. An employee was told by a field office manager not to identify abandoned mine sites as it got in the way of other land management activities. Another employee stated that putting sites on an inventory was more detrimental to BLM than leaving them off because listing them acknowledged a hazard and therefore created a potential liability.

- Employees were criticized or received threats of retaliation for site identification. An employee who told DOI officials that there were thousands of dangerous abandoned mines within the employee's jurisdiction was subsequently criticized for making such a

statement. Several other employees told us management made threats against their careers for raising these issues.

- A BLM Field Office Manager stated that management had never asked him to take samples of potentially contaminated sites.

- Employees did not use warning signs and fences because they considered them ineffective or costly to maintain.

- A BLM official opined that fencing a site was an acknowledgement that BLM knew about the site; and therefore if someone was subsequently injured at the site, BLM could face increased liability.

- BLM management did not allow an employee to formally contact a claimant about dangerous physical hazards at a claim site.

- Employees did not identify and report residential and commercial trespassing at dangerous BLM abandoned mine sites.

BLM is in the process of developing and implementing several new program management initiatives that may enhance the effectiveness of the abandoned mine lands program. These include the Fix a Shaft Today (FAST) program, National Mine Land Inventory prototype, abandoned mine land distance learning program, and a project management handbook. We are encouraged by these efforts.

Staffing

Mitigating BLM abandoned mine sites and making them safe for the public is often neglected because the job is a collateral duty for field office personnel, and there are conflicts with the BLM surface management program responsible for regulating operating mines.

Collateral Duty

According to BLM records, 107 field office employees in California, Nevada, and Arizona charged time to the abandoned mine lands program in 2007. Because the abandoned mine lands program is a collateral duty for most employees, the total time charged to the program for labor accounted for only about 9 full-time employees. We found that many of these employees have never performed simple duties such as posting warning signs and fences, let alone identifying abandoned mine sites.

Conflicting Objectives

Many abandoned mine land field staff are funded primarily by the surface management program. This program is responsible for implementing surface management regulations 43 CFR 3809 concerning minerals exploration and mine operations. This includes approval of proposed mining operations, reclamation, bonding, and inspection and enforcement activities. Some BLM surface

management personnel (with collateral abandoned mine land duties) were reluctant to mitigate sites because of potential conflicts with mine claimants and operators who may oppose such mitigation. Mitigating abandoned mines may restrict a claimant's ability to mine minerals that are accessible from abandoned mine openings or located in mine waste piles.

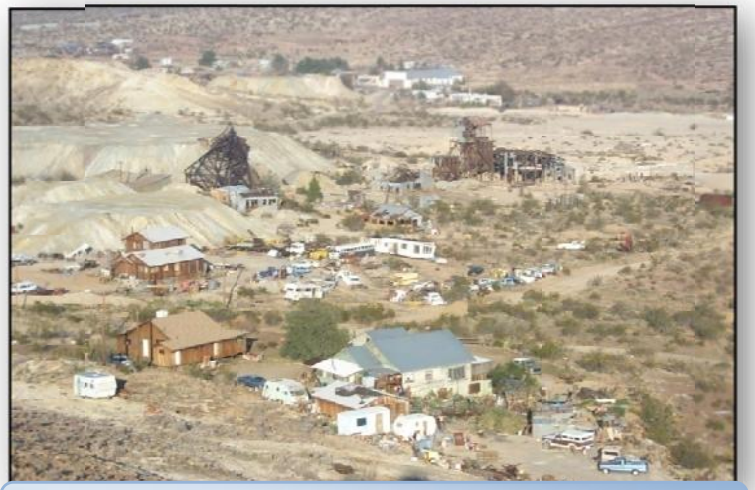
Program Budget and Funding

BLM does not have a dedicated line item identified in its budget for the abandoned mine lands program, and the program's funding needs receive little visibility. As a result, the program is not a priority and has not been allocated sufficient resources to mitigate dangerous abandoned mine sites.

BLM's abandoned mine lands program has been chronically and drastically under-funded. In its abandoned mine lands strategic plan, BLM identified funding needs of about $130 million through fiscal year (FY) 2013 for high-priority sites. Even the identified needs are drastically under-estimated. We found that clean-up of environmental hazards in California's Rand Mining District alone will cost over $170 million, and total costs to mitigate abandoned mine sites bureau-wide could ultimately be billions of dollars. Currently, BLM's abandoned mine lands program receives less than $10 million in annual funding from various sources including appropriations for soil, water and air; hazard management; and resource restoration. Significant progress to permanently address physical safety and environmental hazards at BLM abandoned mine sites will not be achieved unless substantial additional resources are made available.

Even with its current funding, however, BLM should be more effective in protecting the public. BLM could better use existing funds to identify and evaluate abandoned mine sites, post warning signs, and install fences.

Site Trespass



Residents and businesses in trespass in Red Mountain, CA, near mine tailings. (BLM Photo)

Historical trespass on BLM land is known to exist at many locations throughout the West, according to a BLM official. This trespassing includes commercial activities and residential development on abandoned mine sites on federal land. Two of the abandoned mine sites we visited had residential and commercial development in areas with safety and potential environmental hazards. This residential and commercial trespass hinders BLM's efforts to mitigate sites because of the regulatory and legal delays associated with evicting trespassers and physically removing homes and commercial facilities.

Rand Mining District

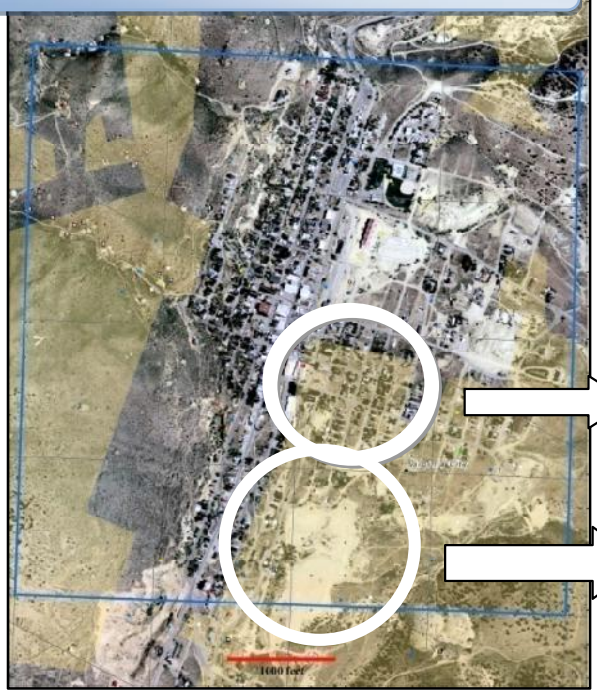
In California's Ridgecrest Field Office, the Rand Mining District towns of Red Mountain and Randsburg had residential trespass issues. BLM allowed residents to purchase titles to their properties in 1984 and 1997. In Randsburg, land titles were conveyed with clauses requiring the purchasers to indemnify (hold harmless) the government against residents' exposure to hazardous materials from mining and other activities. Such indemnification was required even though the appraiser noted that hazardous wastes were "very likely" present in the area due, in part, to many old mines. BLM officials did not take steps to assess the validity of the appraiser's concern. In addition, BLM environmental assessments performed prior to the conveyances were inadequate in that they did not assess the levels of arsenic contamination.

Virginia City, NV

We found recent residential and commercial development at abandoned mine sites in Virginia City, NV, identified as public land. Virginia City has a population of about 1,100 people and is a major tourist attraction in the area. BLM acknowledged that ownership of the land for most of Virginia City is in dispute and has been since about 1860. A 1991 letter from BLM NV State Director to a U.S. Senator identified land title issues in Virginia City and possible options for resolution. However, the issue remains unresolved.

We found commercial enterprises, including an operation that offered tours of a mill, recently built homes, and undeveloped residential lots offered for sale. The tour site included a large and dangerously dilapidated mill building and a mine adit where two residents exploring the mine in 1996 were killed by suffocation. The adit has been gated since that incident. Until BLM resolves the title disputes in Virginia City, trespass may continue on public lands that include abandoned mine sites with safety hazards and potential environmental contamination.

BLM aerial photo of Virginia City, NV, showing public land highlighted in yellow.



Long-established residential areas in trespass.

Abandoned mine site with more recent commercial and residential development in trespass.

Based on the existence of the Rand Mining District and Virginia City sites, it is very possible that other similar sites exist on public lands where safety or environmental hazards may endanger people in trespass. In these cases, there is an increased risk of injury or death due to safety hazards and environmental contamination. DOI's efforts to mitigate these sites will be more complicated because DOI has allowed this trespassing to continue for decades.

Lot for sale in trespass in Virginia City, NV. (OIG Photo)

Site Inventory

BLM's national abandoned mine land inventory is in poor condition. BLM has a national inventory of about 12,000 abandoned mine sites included in its Abandoned Mine Module. The inventory must include data necessary for budget justification and project monitoring, tracking, and management at the national level. We found that BLM's inventory was incomplete, inaccurate, and inconsistent. For example, much of the data in the inventory was derived from the U.S. Bureau of Mines over 10 years ago and was never validated by field surveys.

In addition, BLM field office abandoned mine staff are not identifying or entering known, high-priority abandoned mine sites into the inventory database. For California, the inventory lists only about 400 abandoned mine sites on public land while BLM estimates the California Desert District alone has as many as 20,000 sites. We also found that many BLM field office staff keep local lists of dangerous abandoned mine sites that are not being entered in the inventory database.

Further, BLM developed an abandoned mine strategic plan that contains a list of approximately 200 projects identified by the state offices for short-term funding; however, this list includes abandoned mine sites that are not in the inventory database. We found that the strategic plan includes more comprehensive site information than that in the inventory, and the data in the plan is more useful than the inventory for short-term planning and project management.

BLM staff also do not enter complete or consistent site data into the database needed to locate, evaluate, monitor, and track abandoned mine hazards. When mitigation is performed at abandoned mine sites, the data is often not entered.

Finally, we found that BLM's abandoned mine lands program does not identify, inventory, and mitigate hazards at sites abandoned after 1980. BLM's abandoned mine handbook defines abandoned mine sites as those abandoned prior to the implementation of the surface management regulations on January 1, 1981. This definition may unduly limit site identification in that all dangerous abandoned mine sites requiring mitigation may not be identified.

While a credible inventory of the most dangerous abandoned mine sites is needed to manage the BLM abandoned mine lands program, a comprehensive inventory of all abandoned mine sites may not be obtainable. Many of the existing sites are currently so remote or of minimum danger

that they might not justify mitigation at any abandoned mine funding level. Given the limited funds available, it is much more important that the inventory include current and credible information that is needed for program management of significant sites.

NPS Abandoned Mine Lands Program

During our audit, we found fewer problems within NPS' abandoned mine lands program. We attribute this to several factors, including the following:

- Significantly fewer abandoned mine land sites (thousands compared to hundreds of thousands).
- Few contaminated sites near populated areas.
- Greater control over visitor access and restricted use of off-road vehicles.
- A culture within NPS that does not hinder site identification and mitigation.

We found that Death Valley, Grand Canyon, Joshua Tree, and Lake Mead had mitigated many of their high priority abandoned mine sites that posed the largest risks to visitors because they were easily accessible. In many cases, these parks had taken steps to permanently seal mine openings and stabilize mine structures. In other cases, they had taken temporary measures to install fencing and signs to protect and warn the public of mine hazards. Although these four parks had made progress in addressing their high-risk sites, there are hundreds of mine sites that still need to be addressed. The parks indicated that lack of funding prevented them from addressing the dangers at these other sites.

We found that the Mojave National Preserve had done little to mitigate abandoned mine hazards. Mojave was established in 1994 when approximately 1.4 million acres were transferred from BLM to NPS. At the time, the abandoned mine lands inventory included over 600 sites. These sites required field verification. Mojave staff has inspected, evaluated, and prioritized 274 sites; has continued to develop and refine an extensive and detailed targeted inventory of its most dangerous sites; and has pursued project funding from the Pacific Region. However, since Mojave was created, it has received little or no funding for site mitigation.

Program Funding

According to NPS, current funding is inadequate to address known abandoned mine issues within parks, and the process of "budget erosion" – no fund increases coupled with rising costs – has limited funds available for abandoned mine site mitigation. However, NPS does not have a good estimate of the total costs necessary to mitigate abandoned mine hazards. In 1995, NPS developed an estimate of unfunded abandoned mine land projects. This estimate totaled $165 million with immediate high risk needs of approximately $43 million. We found that NPS had not updated this estimate and did not have a current estimate of funding needed to address abandoned mine hazards. At the conclusion of our audit in April 2008, NPS updated this estimate to $233 million with $60 million for immediate high risk needs. However, this estimate simply adjusted the 1995 aggregate estimate for inflation to derive costs in 2008 dollars. This calculation did not consider any changes in conditions that occurred since 1995 and did not

reflect any updated inventory and risk information that could impact mitigation costs. NPS stated that it is creating a new, more detailed and accurate database of abandoned mine sites that will better identify specific mine features and proposed mitigation costs.

NPS' abandoned mine lands program is funded as part of the broader NPS Disturbed Land Restoration Program, which restores lands that have been affected by development or agriculture back to the unimpaired natural conditions. These funds can be used to address restoration activities resulting from camping, farming, grazing, timber harvest, or abandoned facilities such as buildings, roads, dams, and mines. Since 2000, specific abandoned mines funding within NPS has been inconsistent, ranging from a high of approximately $650,000 in FY 2001 to a low of $121,000 in FY 2003. These funding issues have prevented needed mitigation of abandoned mine hazards in Mojave and delayed mitigation of many hazards at the other four parks we visited.

In 2008, Congress appropriated approximately $2 million to address abandoned mine hazards in California; $600,000 was allocated to Mojave. Mojave has developed a plan to use these funds to mitigate high priority sites.

BLM AND NPS BEST PRACTICES

Dedicated Abandoned Mine Land Staff

We found that the BLM Arizona State Office had responded aggressively to address the issues identified in OIG Flash Report No. C-IN-BLM-0013-2005, "Public Safety Issues at Saginaw Hill Property," issued in March 2005. The office hired an abandoned mine lands program lead with significant experience in large environmental projects and a full-time abandoned mine lands coordinator with an environmental background who was assigned to the Phoenix District Office. This coordinator has responsibilities for abandoned mines and hazardous materials in the 10 field offices included in the Gila and Phoenix districts. BLM Arizona State Office officials stated that this approach was more effective than using collateral staff.

Targeted Environmental Site Inventory

The BLM California State Office implemented a multidisciplinary team approach in the California Desert District to identify and assess sites with serious environmental contamination. The team uses experts from BLM offices including the California State Office, the National Operations Center, and other agencies including the U.S. Geological Survey. The team is targeting sites in areas where residential and commercial development is occurring or is likely to occur in the near future. To date, the team has conducted site visits to one of the District's five field offices and has identified eleven sites with significant actual or suspected environmental contamination.

Partnerships with Other Organizations

BLM initiated the Nevada Abandoned Mine Land Environmental Taskforce in March 1999 to address environmental hazards associated with abandoned and inactive mines in Nevada. The taskforce includes 13 federal and state agencies that work together to (1) foster regulatory cooperation, (2) identify priority sites for cleanup, and (3) provide administrative oversight for funded projects. The taskforce allows several agencies to leverage their funding cooperatively to mitigate abandoned mine hazards.

In September 2007, a joint BLM and U.S. Forest Service report was issued titled, "Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines." The report addresses collaborative progress made in protecting and remediating three western watersheds and other environmental and physical safety hazards. Additionally, the report addresses future planned efforts to enhance site inventories, leverage resources, and share technological innovations. We believe this collaborative effort is another example of successful partnerships being utilized by BLM.

The Desert Manager's Group (http://www.dmg.gov) is a regional interagency partnership among federal, state, and local entities that manage California's 20-million-acre desert region. The desert region includes three national parks, 72 wilderness areas, and six military bases and has a large portion of the abandoned mine sites that are located in the Southwest. The Desert Manager's Group has recently kicked off a 5-year effort to form partnerships to leverage funding and mitigate the highest priority abandoned mine sites in the California Desert Region.

In 2006, the Desert Manager's Group began developing the list of abandoned mine sites in the desert region, identifying the capabilities of the different agencies within the Desert Manager's Group and prioritizing the mitigation of abandoned mine sites. The Desert Manager's Group's latest 5-Year Plan for FY 2007 through FY 2011 identifies goals to (1) form partnerships to leverage funding, (2) develop a central database of abandoned mine sites within the desert region, and (3) mitigate the highest priority environmental and physical safety sites.

This collaborative effort among agencies such as BLM, NPS, the Department of Defense, and the State of California could provide a benchmark for maximizing efficiency in mitigating abandoned mine sites.

Prefabricated Materials for Mitigation

At Joshua Tree National Park, NPS has the capabilities to mass produce prefabricated mine covers and gates. This enables a large number of sites to be mitigated economically and efficiently. We believe this approach is a good model that could be expanded within NPS and adopted by BLM.

NPS personnel from Joshua Tree National Park installing a prefabricated cover at Lake Mead. (OIG Photo)

Utilizing Volunteers to Address Abandoned Mine Issues

We learned that volunteers assist NPS and BLM in identifying and inventorying abandoned mine sites. For example, at Joshua Tree National Park, a retired sheriff helps locate and map abandoned mine sites within the park.

In Nevada, BLM is supported by the state's Division of Minerals, which uses college students to identify and inventory abandoned mine features. BLM has also developed a grassroots effort to mitigate physical hazards using volunteer labor and donated fuel, heavy equipment, and materials.

We believe using volunteers can be beneficial if they are properly trained and supervised.

Site Closures

In August 2006, BLM closed several environmentally contaminated abandoned mine land sites in California to protect the public. These closures included public lands at the Pond, Poore, Gold Run, Poison Lake, Davis, and Longfellow sites located in the California counties of Amador, Placer, Nevada, and Tuolumne. The closure included "all forms of entry by the public, including mineral access," and facilitated environmental remediation actions. We believe site closures could be used more often to protect the public.

CONCLUSION

As it stands, public safety is at risk because physical and environmental hazards at abandoned mine lands have been ignored by DOI for decades. Abandoned mine lands programs in DOI are in need of a firm commitment to protect the public, sustained funding, and dedicated staff.

RECOMMENDATIONS

This report makes 8 recommendations that, if implemented, should help the bureaus address these long-standing issues.

We recommend that the BLM Director do the following:

1. Issue a clear policy statement that:

    - Supports the abandoned mine lands program and its goals.
    - Forbids retaliation against employees for identifying or reporting abandoned mine sites.
    - Requires field-office management and staff to comply with all abandoned mine lands policies and procedures.

2. Employ experienced, trained, full-time staff dedicated to the abandoned mine lands program at the state- and field-office levels in California, Arizona, and Nevada and other states where appropriate.

3. Establish a specific line item in the budget for the abandoned mine lands program and request funding to accomplish project goals identified in the abandoned mine strategic plan.

4. Identify and resolve trespassing on abandoned mine sites and assess and mitigate hazards associated with these sites.

5. Validate existing inventory data and develop procedures for ongoing data collection to ensure that data in the inventory is complete, accurate, and consistent.

We recommend that the NPS Director do the following:

6. Request adequate funding to support program goals and to mitigate sites identified by the abandoned mine lands program.

We recommend that the BLM Director and NPS Director do the following:

7. Implement immediate temporary or permanent measures to mitigate known dangerous sites, including those identified in Appendix A of this report.

8. Explore and exploit opportunities for sharing resources, expertise, and best practices between the agencies to strengthen their abandoned mine lands programs.

Appendix A - OIG SITE VISITS - California

Rand Mining District (Red Mountain, Randsburg)

- Environmental contamination
- Safety hazards due to deteriorating structures and open shafts
- Inadequate fencing and signs
- Claimant negotiations could impact mitigation
- Land conveyances could present liability

Ruth Mine

- Open adit
- Deteriorating structures
- Inadequate signs
- Recent trespass in residence
- Erosion of tailings into streambed

El Paso Mountains

- Safety hazards due to "Adopt a cabin" program where active claim and many open shafts/adits exist adjacent to cabins used by visitors

Rademacher Hills

- Open adits and shafts
- Inadequate fencing and signs

Folsom Area (You Bet Mine, Upper You Bet Sluice Tunnel, Boston Tunnel, Starr Pit, Green Creek, Davis Stamp Mill, Kenebec Shaft, and the South Yuba River Campground)

- Open shaft near campground
- Inadequate fencing and signs

Appendix A - OIG SITE VISITS – California (cont.)

Barstow - Coolgardie

- Open shafts
- Minimal fencing
- No signs

Barstow - Goat Basin

- Death at one site, not fenced, not on inventory
- Two deaths at another site a short distance away
- A fence had been put up around the hole many years ago, but remnants remained when we visited
- A new fence was erected as a result of our Notice of Proposed Findings and Recommendations.
- Other dangerous openings in the area that were not mitigated and not on the inventory
- This site had a death and should have been a high priority, but it was not even on the inventory

Darwin

- Safety hazards due to deteriorating mill
- Inadequate sampling to assess environmental hazards

Spangler

- Open adits and shafts
- Inadequate fencing and signs
- Public invited to off-road vehicle events

Death Valley National Park

- Death at one site (Keane Wonder)
- Open adits and shafts
- Public invited to visit site
- Inadequate fencing and signs

Rosamond Area (Tropico, Cactus and Golden Queen mines)

- Environmental contamination of BLM land
- Growing urban interface near contaminated sites

Appendix A- OIG SITE VISITS – California (cont.)

Joshua Tree National Park

- Open shaft, compromised adits. The most dangerous site we saw. Was difficult to get to but does receive visitors.
- The high priority sites we visited are scheduled to be mitigated in 2008.
- A Park-wide environmental inspection of inactive historical mill sites was performed with no significant findings.

Mojave National Preserve

- Open shafts near roads
- Few fences or warning signs

Appendix A - OIG SITE VISITS – Nevada

Virginia City

- Two deaths in adit
- Safety hazards at mill tour business
- Inadequate sampling to assess environmental hazards
- New commercial and residential trespass

American Flat

- Death in mill building
- Safety hazards due to deteriorating structure
- Unrestricted access
- Inadequate warning signs

Caselton

- Inadequate groundwater sampling to assess environmental hazards
- Unrestricted access
- Inadequate warning signs
- Claimant dump site
- Claimant negotiations may hinder mitigation

Spruce Mountain

- Deteriorating structures
- Open adit

Tuscarora

- Safety hazards due to illegal dumping

Appendix A - OIG SITE VISITS – Nevada (cont.)

Tonopah

- Death in open shaft
- Lack of responsibility for abandoned mine lands assumed by local office. Local office stated that it was not its responsibility and that a race organizer was responsible for the accident.
- Local residents backfilled the mine shaft after the accident.

Lake Mead National Recreation Area

- Death at one site, but site was backfilled many years ago.
- LMNRA does not have a complete inventory.
- There have been many sites that have been mitigated.
- Teamed up with Joshua Tree to mitigate sites.

Cherry Creek

- Lack of recognition that King Midas mill may be on BLM land.

Ward

- Accessible adits

Appendix A (cont.) - OIG SITE VISITS - Arizona

Kingman Area (Windy Point Recreation Area, Antler Mine, Boriana Mine, COD Mine, Thumb Mine)

- Death on patented land near BLM road
- Open shafts
- Dangerous physical hazards on patented land
- Inadequate fencing and signs
- Inadequate sampling to assess potential environmental hazards (Boriana)
- Inadequate funding to mitigate known environmental projects (Antler)
- Lack of communication between district and field
- Lack of coordination between field and state

Wickenburg

- Unrestricted access
- Inadequate fencing and signs

Octave

- Inadequate sampling to assess environmental hazards

Vulture

- Inadequate fencing and signs

Quartzsite

- Safety hazards due to deteriorating structures
- Inadequate sampling to assess environmental hazards

Grand Canyon National Park

- Safety hazards due to accessible mine with high radon levels
- Two sites visited
- For the Orphan Mine, the trail was diverted around the contaminated areas. The site was fenced and signs were posted. However, visitors could still get in through a hole in the fence.
- The other site (Grandview) had no fencing or warning signs but was relatively difficult to get to. However, hikers in the area are using the mine features as shelter.

Appendix B - Objective, Scope, Methodology, and Internal Controls

Audit Objective:

To determine if the Department of the Interior and its bureaus are effectively protecting the public from physical safety and environmental hazards at abandoned hardrock mine sites located on federal lands.

Audit Scope:

Our audit focused on abandoned hardrock mine lands on federal property in the Western United States. We concentrated on lands in California, Nevada, and Arizona, three states with a significant mining legacy that receive no funds collected for reclamation of abandoned mines under the Surface Mining Control and Reclamation Act. This Act primarily supports reclamation of abandoned coal mines. In addition, population growth and wider recreational use of federal land in these states are increasing the risks from abandoned mine hazards. After reviewing abandoned mine issues and inventories for NPS, BLM, the U.S. Fish and Wildlife Service, and the Bureau of Indian Affairs, we limited our field work to lands managed by NPS and BLM. We also evaluated departmental programs and efforts to deal with abandoned mine lands.

Audit Methodology:

We conducted our audit between March 2007 and April 2008. To accomplish the audit objective, we:

- Conducted the audit in accordance with Government Auditing Standards issued by the Comptroller of the United States.
- Included tests of records and other audit procedures that were considered necessary.
- Gained an understanding of applicable laws and regulations and the Department's and bureaus' abandoned mine lands programs.
- Conducted a limited review of data to identify accidents resulting in fatalities or injuries at abandoned mine lands sites.
- Reviewed Department, bureau, and other systems used to report accidents at abandoned mine lands sites resulting in fatalities or injuries.
- Analyzed management processes for identifying, reporting, prioritizing, and mitigating physical safety and environmental hazards at abandoned mine lands sites.
- Interviewed departmental and bureau officials at the headquarters, regional, and field office levels.
- Visited selected bureau offices to review records and abandoned mine lands sites to assess the nature of safety and environmental hazards. We selected sites based on knowledge gained from bureau officials, prior accident locations, and priority of hazards as identified in bureau plans or by bureau officials.
- Identified best practices within bureaus and from outside entities for mitigation of abandoned mine lands hazards.

Appendix B (cont.) - Objective, Scope, Methodology, and Internal Controls

Internal Controls:

As part of the audit, we performed an evaluation of the Department and its bureaus' systems of internal controls related to the identification, prioritization, and mitigation of abandoned mine lands hazards. We did not assess the bureaus' internal controls applicable to financial reporting.

This evaluation of internal controls was conducted at departmental and bureau offices to the extent we considered necessary to accomplish the audit objective. We concluded that the BLM abandoned mine lands program lacks adequate internal controls to identify, prioritize, and mitigate abandoned mine hazards. These deficiencies are discussed in the "Results of Audit" section of the report. NPS generally had adequate internal controls.

We reviewed the Department of the Interior's Performance and Accountability Reports (PAR) for fiscal years 2006 and 2007 and noted that no material weaknesses were reported related to abandoned hard rock mines. Some Government Performance and Results Act goals in the 2007 Performance and Accountability Report did relate to the possible effects of abandoned hard rock mines (e.g., number of visitor injuries and fatalities, percent of physical and chemical hazards mitigated to protect public health and safety, and percent of contaminated sites remediated to protect watersheds) but were not specifically related to such sites. As reported in the PAR, all of these goals were met in 2007.

Our recommendations, if implemented, should improve the internal controls in the areas with identified weaknesses.

Appendix C - Related Reports

OIG Flash Report No C-IN-BML-0012-2007

Environmental and Safety Issues at Bureau of Land Management Ridgecrest Field Office, Rand Mining District, September 2007.

The OIG noted hazardous conditions at abandoned mine sites in California's Rand Mining District that required immediate action to protect the health and safety of the public and employees. Levels of arsenic thousands of times higher than safe levels were found in tailings piles located near residential properties. The cost of environmental site mitigation could exceed $170 million.

OIG Flash Report No. C-IN-BLM-0013-2005

Public Safety Issues at Saginaw Hill Property, Bureau of Land Management, March 2005.

The OIG found that BLM had not identified the abandoned hard rock mine safety hazards and environmental contaminants present at the Saginaw Hill property in Arizona. In addition, BLM had not taken appropriate measures to mitigate or remediate the hazards or limit public access to the hazards at this site.

GAO Report No. 05-377

Hardrock Mining: BLM Needs to Better Manage Financial Assurances to Guarantee Coverage of Reclamation Costs, June 2005.

The report concluded that the financial assurances may not fully cover all future reclamation costs as 48 hard rock operations on BLM land had not been fully and adequately reclaimed by operators. The report also found that BLM's LR2000, the system designated to manage BLM's financial assurances, was inadequate.

Appendix C (cont.) - Related Reports

GAO Report 96-30

Information on Efforts to Inventory Abandoned Hard Rock Mines, February 1996.

The report identified no definitive inventory available to identify the number of abandoned hard rock mines located on federal lands. Four major federal land-managing agencies, the BLM, NPS, the U.S. Fish and Wildlife Service, and the U.S. Forest Service were in various stages of inventorying the mine sites on the lands they manage; however, because the methodologies and assumptions used to develop their inventories differ, their results could not be meaningfully compared or combined. As a result, neither the number of sites identified, the physical/environmental hazards reported, nor the cost of remediation associated with each hazard could be presented as a consistent total for abandoned mine lands on federal property. Therefore, the potential harms and damage caused from abandoned mine lands, on federal property, remained difficult to assess and quantify.

OIG Report No. 92-I-636

Hardrock Mining Site Reclamation, Bureau of Land Management, March 1992.

The OIG identified that BLM had not implemented procedures for ensuring that abandoned hard rock mining sites on BLM managed lands were being reclaimed. BLM also failed to develop a comprehensive inventory of hard rock mining sites that required timely reclamation, and BLM was not fully aware of hazards and dangerous conditions at some abandoned mining sites.

Appendix D- Abbreviations

BLM…… Bureau of Land Management
CFR…… Code of Federal Regulations
Department and DOI…… Department of the Interior
FY…… Fiscal Year
NPS…… National Park Service
OIG…… Office of Inspector General

Appendix E- OIG Analysis of BLM's Response to Draft Report

BLM Response	OIG Analysis
Recommendations BLM stated that it accepted all of the recommendations and would work diligently to implement them.	We are encouraged that BLM is committed to implementing the recommendations provided in our report. However, BLM did not provide the detailed information requested on actions taken or planned to implement the recommendations, including target dates and the names of officials responsible for their implementation.
Conclusions Concerning Overall AML Program BLM was concerned with the "broad assertion" made in the draft audit report that BLM has an ineffective abandoned mine lands program and that the program has been undermined, neglected and marginalized. BLM felt that the audit focused on some "mega-AML" sites and hazardous materials sites that had not been addressed as quickly as BLM would have liked because the resources needed to address them exceed available funding. BLM agreed with the conclusion, however, that the program has been underfunded. BLM stated that it did not agree with our conclusion that the abandoned mine lands program has put the public's health and safety at risk. BLM stated that it has undertaken temporary or interim measures to mitigate health and safety hazards while seeking additional funding to complete the needed remediation. BLM discussed several new initiatives that it is pursuing at the national level including the Fix a Shaft Today (FAST) program, National Mine Land Inventory prototype, Inventory Project Change Board, AML Distance Learning and the Project Management Handbook.	After considering BLM's comments, we stand by our conclusions concerning the abandoned mine lands program. While we agree that BLM has taken steps to address some hazards within its budget constraints, we are concerned about the large number of unmitigated sites that still exist and pose risk to the public. Even more disturbing, we found that BLM supervisors told staff to ignore these problems, and employees were criticized or received threats of retaliation for identifying contaminated sites. We continue to conclude that BLM has put the public's health and safety at risk, based on our site visits to about 40 abandoned mine sites in California, Nevada and Arizona. These visits included large contaminated mine sites as well as areas with numerous physical safety hazards. The Rand Mining District is just one example. In this district, residents and off-road vehicle recreationalists were routinely exposed to high levels of arsenic and the district is littered with open mine shafts and other physical hazards that had not been mitigated. We are encouraged by the new initiatives that BLM is pursuing. Most of these initiatives were new and not fully implemented at the time of our audit.
Injuries and Deaths BLM took exception to our statement that "comprehensive records of abandoned mine accidents are not maintained," stating that BLM is not always notified immediately when a death or injury takes place on public land. BLM stated that when notified, it responds by verifying the location of the incident and assessing the site for emergency	We stand by our conclusion concerning the lack of records on abandoned mine accidents. BLM was unable to provide us with data on such accidents. While we agree that BLM will not be able to prevent all accidents, this fact does not relieve BLM from responsibility for taking reasonable steps to prevent injury or death from abandoned mine hazards, especially those hazards that

BLM Response	OIG Analysis
action. BLM also expressed concern that our including examples of abandoned mine accidents inappropriately suggested that BLM failed to address physical safety hazards on public lands. BLM insisted that it has an active program to identify and address such hazards. Finally, BLM stated that some accidents will inevitably take place in light of the hundreds of millions of acres of lands for which BLM is responsible.	are already known by BLM to exist. During our site visits, we observed numerous physical hazards that BLM had failed to implement even the most basic precautions, such as fences and signs.
Observations and Hazards on BLM Land BLM provided additional information regarding actions that it has taken at four sites included in our report: • Rand Mining District: Provided additional details on work that has been accomplished, including actions taken as a result of our Flash Report, "Environmental, Health and Safety Issues at Bureau of Land Management, Ridgecrest Field Office, Rand Mining District, CA." • American Flat Mill: Clarified facts surrounding the demolition of one structure and reiterated the strong local resistance to the demolition of the remaining structure. • Barstow: Described actions taken to address hazards that OIG notified BLM of during the audit. • Caselton Tailings. Clarified facts surrounding the expenditures for constructing a diversion channel and concerning the negotiations for reprocessing of the tailings piles. BLM asserted that the negotiations were in the best interest of the government and the public. Having a third party perform the work would significantly reduce the cost to the government, currently estimated to be between $8 -14 million if done unilaterally by BLM. BLM stated that it had removed all hazardous materials and resolved all chemical and physical safety issues at the "dilapidated operations area." Additionally, BLM stated that its scientists concluded that the risk of groundwater contamination was very small.	We made changes to the report to address the clarifications provided by BLM and to provide information on additional actions taken by BLM to address hazards. Where practical, we support efforts to negotiate with third parties to participate in the mitigation of abandoned mine sites. However, public safety must be the first priority and we are concerned that the public has not been adequately protected from the environmental hazards associated with the Caselton tailings for over a decade while these negotiations have taken place. Concerning the operations area at the Caselton tailings, we observed unlabeled barrels of unknown materials that had been abandoned and remained on the property. We also noted numerous physical safety hazards. An engineering evaluation conducted on the Caselton tailings stated that a catastrophic release of tailings could "severely and intensively impact water quality in Meadow Valley Wash." BLM has indicated to us that the risk of groundwater contamination is very small; however, BLM has never sampled groundwater at the wells downstream of the tailings.

BLM Response	OIG Analysis
Field Office Management BLM acknowledged that, as with almost all BLM programs, the abandoned mine lands program has been decentralized to the field office level. Accordingly, the success or failure of the program rests in a large part on the efforts of the Field Office and Field Office Manager. BLM reasoned that because there are well over 12,000 abandoned mine sites in the inventory database, then the vast majority of program managers and staff must be reporting abandoned mine sites. BLM expressed concern that our observations at specific sites were not representative of BLM's program as a whole and that some of the statements we quoted were taken out of context or misinterpreted. BLM stated that threats and intimidation of its employees will not be condoned or tolerated and when it is made aware of these allegations, it will act to investigate and address the matter.	We agree that given the decentralization, the success of the program rests with the field offices. We concluded that many field offices are not succeeding based on our interviews of approximately 65 BLM employees and questionnaire responses from almost all remaining BLM employees with significant abandoned mine lands responsibilities in California, Arizona, and Nevada. These states have more abandoned mine sites than the other western states combined. Our audit highlighted many examples of serious unmitigated abandoned mine hazards that were tolerated because program managers discouraged identifying and mitigating these hazards. We disagree with BLM's assertion that program managers and staff must be reporting sites since there are over 12,000 abandoned mine sites in the inventory. We found that many of the sites listed in the database were obtained from old Bureau of Mines data that was never verified by site visits. We found that many abandoned mine lands site coordinators had never used the database to enter or modify site information.
Staffing BLM acknowledged that staff are assigned abandoned mine lands as a collateral duty and that they have multiple and sometimes conflicting goals and objectives. BLM stated that it understood our concern that it use dedicated, full-time staff to deal with abandoned mines and that it would follow through on the staffing recommendations made in the report.	Employing experienced, trained, full-time staff dedicated to the abandoned mine lands program should improve performance and minimize the conflicting goals and objectives.
Program Budget and Funding BLM acknowledged that current funding sources, even in the aggregate, are insufficient to address the "mega-AML" sites identified in the report. BLM stated that it will follow through on the recommendations regarding program budgeting. The response provided additional details on the multiple sources of funding that are used for abandoned mines, including funds appropriated for: • Soil, Water, and Air • Hazard Management and Resource Restoration • Central Hazardous Materials Fund • Natural Resource Damage Assessment and Restoration • Southern Nevada Public Land Management Act	Establishing a specific line item in the budget for the abandoned mine lands program and requesting funding to accomplish project goals identified in the abandoned mine strategic plan should strengthen the program. We revised the report to identify the various sources of funding that were used for the abandoned mine lands program.

BLM Response	OIG Analysis
Site Trespass BLM stated that the occupancy and commercial trespass on BLM lands is a law enforcement and land and realty issue that cannot be resolved by the abandoned mine lands program. BLM acknowledged that the land for most of the town of Virginia City, Nevada, is under dispute. BLM stated that survey work was not done in areas we visited in Virginia City and it is not known whether trespass is occurring.	Our report discusses the issues associated with occupancy and commercial trespass on BLM lands that have abandoned mines and the added risks associated with that trespass. We agree that the trespass issues are outside the control of the abandoned mine lands program. Our recommendations are addressed to the Director, BLM who also has oversight of the BLM law enforcement and land realty programs. Concerning Virginia City, we amended the report to emphasize the disputed ownership of the land and the fact that BLM has not determined where trespassing is occurring.
Site Inventory BLM acknowledged that the inventory system is a known problem and that populating the database has not been a priority of the field office staff. Many field offices have their own lists of sites or "cuff records."	A credible inventory of the most dangerous abandoned mine sites is needed to manage the BLM abandoned mine lands program and to support funding requests to mitigate the hazards.
Best Practices BLM provided additional information concerning several of the best practices that we noted in our report.	Despite the problems that we noted in our audit, we did find best practices that BLM should consider for wider implementation.
Appendix A BLM clarified information concerning several sites included in Appendix A to the report. In some cases, BLM noted that the identified hazards were actually on private lands.	We evaluated the information and made changes to the Appendix as we saw necessary. The sites described in the Appendix were all on public land according to BLM field office personnel.

Appendix F- OIG Analysis of NPS' Response to Draft Report

NPS Response	OIG Analysis
Findings and Recommendations NPS stated that it accepted the findings and recommendations in the report. While NPS has mitigated many of its high-risk, easily accessible abandoned mine sites, it agrees that a substantial workload remains to address hazards and reclamation issues associated with abandoned mines in parks.	We are encouraged that NPS is committed to implementing the recommendations provided in our report. However, NPS did not provide the detailed information requested on actions taken or planned to implement the recommendations, including target dates and the names of officials responsible for their implementation.
Observations and Hazards on NPS Land NPS generally agreed with our observations at the parks we visited. However, the response provided additional information concerning the abandoned mine programs at the parks and additional actions that the parks have taken to address the hazards that we observed.	We considered the additional information provided and made revisions to the report where we considered necessary.
Program Funding NPS disagreed with our conclusion that it did not have a current estimate of the total costs needed to mitigate its abandoned mine hazards. It stated that it performed a detailed analysis in February 2005 which reported estimated total costs of $165 million with immediate needs of $43 million. NPS referred to an April 2008 estimate as a current estimate that quotes total needs of $233 million with immediate needs of $60 million.	We were aware of the 1995 estimate, however, we found during our audit that NPS had not updated this estimate or reestimated the costs since 1995. In April 2008, near the completion of our audit, NPS prepared the new estimate. However, this estimate simply adjusted the 1995 aggregate estimate for inflation to derive costs in 2008 dollars. This calculation did not consider any changes in conditions that occurred since 1995 and did not reflect any updated inventory and risk information that could impact mitigation costs. Because this estimate does not reflect the current inventory of abandoned mine hazards, we do not consider it to be a credible estimate of NPS' needs. NPS stated that it is creating a new, more detailed and accurate database of abandoned mine sites that will better identify specific mine features and proposed mitigation costs.
Other Comments NPS comments included a number of clarifications concerning its abandoned mine program as well as recommended report wording changes. Additionally, the response provided more detailed information concerning its program for our consideration.	We considered the additional information provided and made revisions to the report where we considered necessary.

Appendix G – Status of Recommendation

Recommendations	Status	Action Required
1 through 5	Unresolved BLM concurred, additional information needed	BLM should provide additional information on actions taken or planned, including target dates and titles of officials responsible for implementation.
6	Unresolved NPS concurred, additional information needed	NPS should provide information on actions taken or planned, including target dates and titles of officials responsible for implementation.
7 through 8	Unresolved BLM concurred, additional information needed NPS concurred, additional information needed	BLM and NPS should provide additional information on actions taken or planned, including target dates and titles of officials responsible for implementation.

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