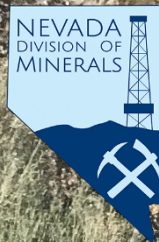


# NEVADA ABANDONED MINE LANDS PHYSICAL HAZARD REPORT 2023

Commission on Mineral Resources - Nevada Division of Minerals



<https://minerals.nv.gov>

# State of Nevada

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*Picture 1 – View from Candelaria Mountain summit with historic AML (foreground).*

Written By: Sean Derby

Cover Photo: Headframe and ore hopper at historic AML site in Humboldt County, NV.  
Additional copies of this report may be obtained from the Division of Minerals office or

may be downloaded from the Division's website at  
<https://minerals.nv.gov/Programs/AML/AML/>

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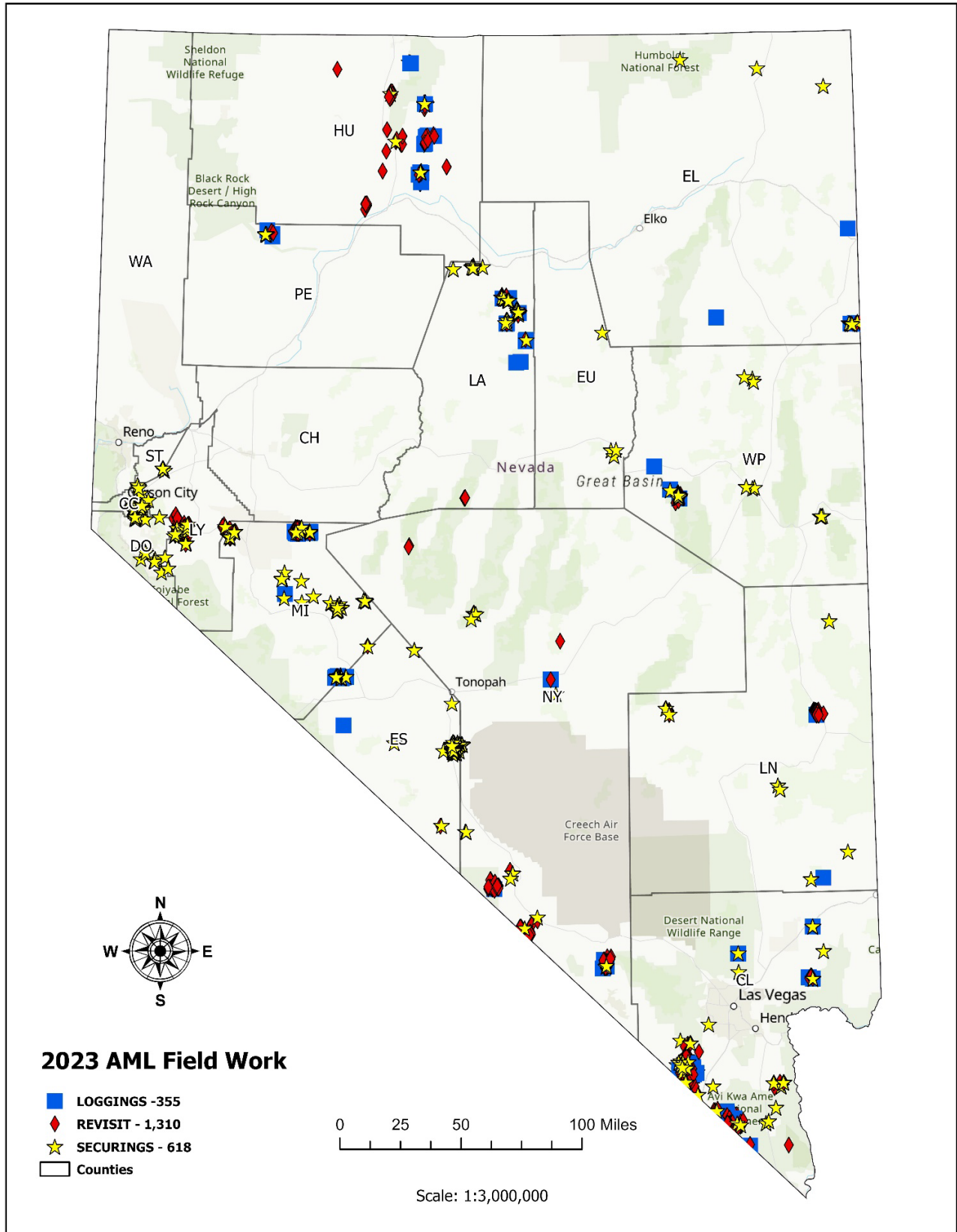
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Map 1 – Hazards logged, secured, and revisited in the 2023 calendar year.

## 1. Executive Summary

The State of Nevada's Abandoned Mine Lands (AML) program, operated by the Nevada Division of Minerals (the Division), celebrated its 37th year in 2023. Key details and milestones include:

- No reported abandoned mine deaths in 2023.
- Over 160,000 historic mining-related features cataloged since the AML program's inception in 1987.
- 24,989 total hazards discovered and ranked since the program began, with 20,740 hazards currently recorded as secured.
- In 2023, 355 new hazards were discovered, and 618 hazards were secured.
- 1,310 known hazards were revisited to confirm securing status and evaluated to make necessary repairs.
- Completed four hard closure projects in Clark County, Carson City, Douglas, Lander, Lyon, and Nye for a total of 128 hazards closed.
- Received \$544,317 in partner funded for closure work by partner organizations.
- Collaborated with the Bureau of Land Management, Nevada Department of Wildlife, Nevada State Parks, Nevada State Historic Preservation Office, Nevada Department of Transportation, the National Park Service, and the US Forest Service to secure abandoned mine land hazards throughout the state.

## 2. The Commission on Mineral Resources

The Nevada Division of Minerals, a part of the Commission on Mineral Resources (the Commission), is charged by statute to encourage and assist in the responsible exploration for, and the production of, minerals, oil, gas, and geothermal energy that are economically beneficial to the State; to provide for public safety by identifying, ranking and securing dangerous conditions at mines that are no longer operating; and to collect and disseminate information on exploration, production, and related topics. The seven-member commission is a public body appointed by the Governor to adopt regulations, formulate administrative policies for the Division, and advise the Governor and Legislature on policy relating to mineral resources. The Division focuses its efforts on four main areas: collection and dissemination of educational information; inventory and securing of abandoned mine hazards; regulation of oil, gas, geothermal drilling activities and dissolved mineral resource exploration; and a Reclamation Performance Bond Pool.

## 3. Background

Nevada's unique geology and tectonic landscape have fostered diverse mineral resources, attracting miners and prospectors for over 150 years. Early

prospectors left behind hazardous mining shafts, adits, and mill sites, with an estimated 300,000 historic features in the state. The Division estimates that at least 40,000-50,000 pose significant safety hazards needing mitigation.

The Nevada Legislature established the Division's Abandoned Mine Lands (AML) program in 1987 due to incidents at abandoned mines. Nevada Revised Statute (NRS) chapter 513, outlines the three main functions of the program. Find NAC and NRS details at <https://www.leg.state.nv.us/>.

- 1) Inventory and rank dangerous conditions that result from mining practices that took place at a mine that is no longer operating; and identify and notify the owner or other person responsible for the condition, if feasible.
- 2) Secure hazardous conditions on open public lands where no claimant or property owner could be identified.
- 3) Develop a public awareness campaign to educate the public about dangerous conditions that exist as a result of historic mining activities.

In 1989, the Legislature also provided an opportunity for companies, individuals, and civic groups to voluntarily assist the program in the construction of a fence or other safeguard around a dangerous condition at an abandoned mine opening under a designated Good Samaritan law. (NRS 41.0331)

The AML program is administered under Nevada Administrative Code (NAC)

Chapter 513. No state general funds are used to operate this AML program. It is funded from the following three sources:

- 1) A \$4 fee collected by county recorders and remitted to the Division for each unpatented mining claim filing, (NAC 513.315).
- 2) A one-time fee of \$20 per acre for every acre of permitted disturbance associated with new or amended mining or exploration plans of operation on public lands (NRS 519A.250).
3. Assistance agreements with partnering organizations including the Bureau of Land Management (BLM), the United States Forest Service (USFS), and the National Park Service (NPS), which provide financial and planning assistance to enhance and accelerate both field investigation activities and securing work performed by staff and contractors.

Collected revenues from mining claim fees are used for contracted closures, fencing, and inventory work; field and office supplies. The revenue is also used to support the AML public awareness program through school presentations, videos, handouts, classroom exercises, and other means of outreach.

#### 4. Abandoned Mine Incidents in 2023

This marks the eleventh consecutive year without an abandoned-mine-related death in Nevada. Incidents date back to the early 1860s during the Bonanza era at the

Comstock Lode. The first recorded fatality was reported in 1861. Appendix A lists a modern history of reported incidents.

#### 5. Inventory, Securings, and Permanent Closures

As of 2023, the Division's AML program inventoried over 160,000 historic mining-related features. By year's end, 24,989 hazards were discovered and ranked, with 20,740 (83%) secured (See Figure 1. & Table 1) To efficiently prioritize locations for field work, the Division leverages its AML database alongside U.S. Geological Survey (USGS) information on

<b>Nevada Abandoned Mine Lands Program County Summary Statistics, December 2023</b>			
<b>COUNTY</b>	<b>SITES DISCOVERED</b>	<b>SITES SECURED</b>	<b>PERCENT SECURED</b>
Carson	85	82	96.5%
Churchill	905	820	90.6%
Clark	2,441	1,982	81.2%
Douglas	241	224	92.9%
Elko	1,057	844	79.8%
Esmeralda	3,765	3,254	86.4%
Eureka	1,230	1,007	81.9%
Humboldt	1,096	902	82.3%
Lander	778	675	86.8%
Lincoln	1,096	969	88.4%
Lyon	1,255	1,150	91.6%
Mineral	2,515	1,910	75.9%
Nye	3,459	2,820	81.5%
Pershing	2,054	1,757	85.5%
Storey	227	212	93.4%
Washoe	467	435	93.1%
White Pine	2,318	1,697	73.2%
<b>TOTAL (Since 1987)</b>	<b>24,989</b>	<b>20,740</b>	<b>83.0%</b>

Table 1 – Statewide hazards logged v. secured including hazard ranking level.

the locations of mining features. Topographic maps are ranked by incorporating several sets data including suspected hazards, age of currently secured hazards, known unsecured hazards, proximity to public and other critical elements. Inventory data is collected digitally via tablets, drones, and limited helicopter surveys have increased efficiency. Collaboration with partner agencies is crucial for identifying new hazards, and planning closure projects. In 2023, the Division and its contractors conducted visits to 1,665 known hazardous sites with the aim of confirming securing status of previously identified hazards, performing securings and repairs to existing hazards, and cataloging new hazards in the surrounding areas. Among these visits, 618 hazards were secured to enhance public safety. Securings were completed through

various methods, including fencing, barricades, and posting warning signs. The Division and its contractors accounted for 95% of all hazards inventoried and 76% of all securings in Nevada during 2023. Immediate securing of moderate or high hazards, regardless of ownership, is prioritized to ensure public safety.

Permanently secured hazards on public lands are based on risk assessments, which may include incidents, hazard rank, and proximity to public areas. Closure methods, determined by the National Environmental Policy Act (NEPA) biological and cultural surveys, include backfills, bat-compatible closures (BCC), and polyurethane expansive foam (PUF or foam plugged), plugs. The 128 permanent closures completed in 2023 were a combination of backfills, PUFs, or BCCs with

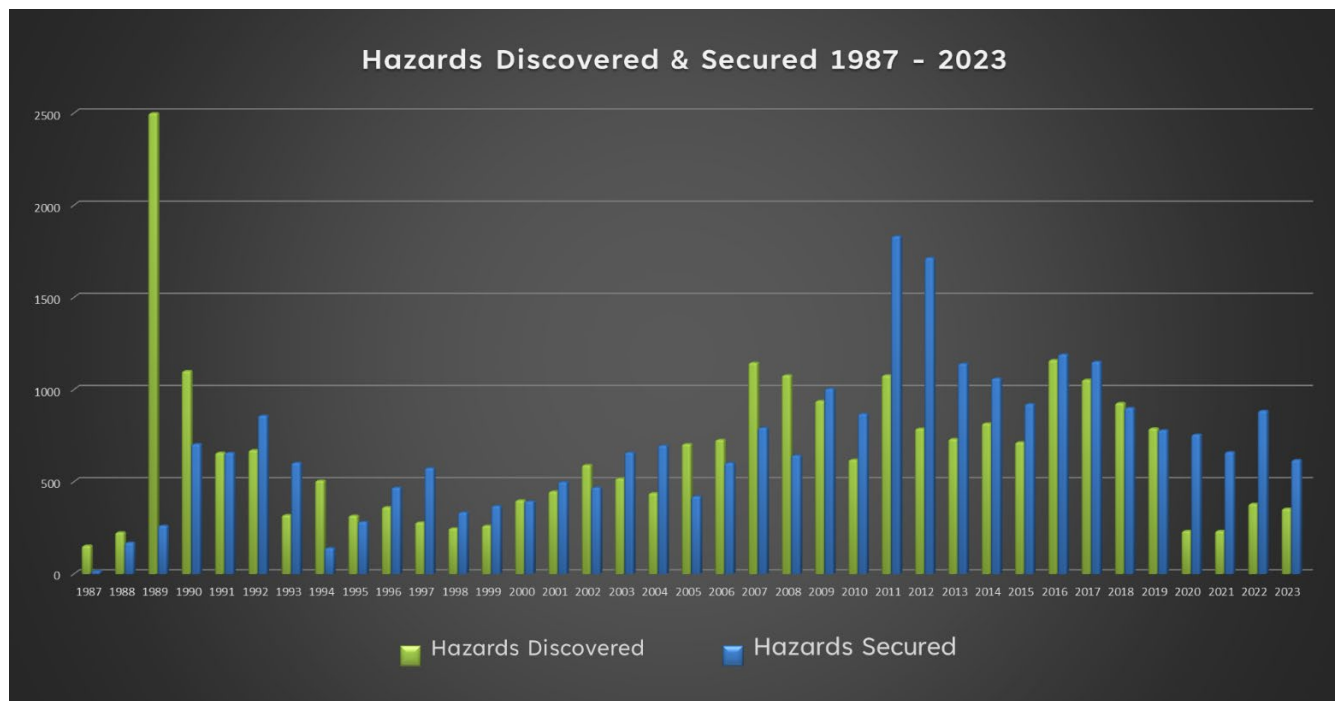


Figure 1 - Progression of hazards logged v. hazards secured over the past 38 years.



Environmental Protection Services handling all closure work.

## 6. Intern Program

The Division employs undergraduate students from geoscience programs to assist with AML work both in the summer and their winter break. The program, starting in 2000, now involves up to 8 summer and 6 winter interns. They develop relevant fields skills for careers in land management and geoscience career paths and assists the Division to drastically increase labor capacity. In 2023, the interns performed 155 securings, logged 110 hazards, revisited 512 hazards, and documented 1,815 non-hazardous features.

## 7. Public Awareness

The Division continued digital marketing / social media outreach, in-person presentations, and billboard campaigns. Digital media marketing efforts carrying over from 2022 reached 1.9 million viewers by the end of February 2023. The Division invested resources to develop the JimmyKing.net digital marketing campaign and successfully demonstrated how public agencies can reach new audiences with PSA messages through digital strategies.

## 8. Performance Indicators

The AML public safety program has two performance indicators: maintaining a 70% securing rate and conducting 24 public

awareness presentations per staff member annually. In 2023, the Division maintained a secured rate of 83% for all known hazards and averaged 24.5 presentations per staff member.

## 9. Cultural, Geological, and Wildlife Surveys:

Permanent closures on public land or closures using federal funding require the NEPA process. To assist our federal partners in the NEPA reporting process, the Division has partnered with state and federal agencies who are managing increased recreational activity and experiencing staffing shortfalls. Cultural and biological surveys have been delegated to contractors with direct oversight from the Division and reporting directly to the federal agency. Broadbent and Associates of Reno was tasked with cultural surveys, while NDOW and West Consultants Inc. managed biological and wildlife surveys. The Division continued its contract with McGinley and Associates for geological assessments. McGinley conducted six geologic characterizations at projects locations within historical mining districts in 2023.

## 10. Summary and 2024 Outlook

Annual work for 2023 with respect to physical safety mitigation continued an overall 5-year downtrend in hazards secured and hazards inventoried totals. While the AML program maintained hazards

secured / hazards a securing ratio of 83%, respective totals reflect the logistical difficulties in documenting increasingly remote historical mining districts and the amount of effort spent refencing hazards, before permanent closures. Ultimately, the AML program goal is to have the best possible understanding of where hazards exist and what level of mitigation is required. A predictable downtrend in discovery of new hazards may also reflect the fact that there are simply fewer sites to document. However, recent enhancements with spatial software and high-resolution imagery are improving the AML programs reconnaissance and targeting capabilities. Increased funding from federal partnerships will allow the Division to intensify inventory efforts in the field. With these adjustments the AML program is expecting to see an increase in total hazards inventoried and total secured.

## 11. Acknowledgements

We would like to extend our appreciation and recognition to the following individuals and teams for their commitment and invaluable assistance to the State's AML program: Alex Jensen, John Callan, Kurt Miers, Nate Pepe, Sam Gomberg, and Alicia Jensen from the BLM whose dedication and support have

significantly contributed to the success of our program. David Risley, Susan Elliot, and Doug Powell from the Humboldt-Toiyabe National Forest, for their support with USFS-managed land and playing a vital role in our securing efforts. The AML crew of the Bureau of Reclamation, whose diligence and dedication in closure work will have long-lasting public safety impacts. Joey Danielson and Jenni Jeffers, along with the entire NDOW AML team, for their remarkable statewide biological survey efforts, greatly enhancing our program's environmental benefits. Our valued partners at NDEP, who contribute to AML documentation. The BLM archaeological team from at Medford, OR whose thoroughness in documenting, maintaining, and preserving our precious cultural resources has been invaluable. Lastly, we extend our gratitude and thanks to the numerous claimants and landowners who actively cooperate with the Division, playing an essential role in securing AML sites throughout the state. Their partnership is vital to the success of our mission, and we deeply appreciate their support.

## 12. Appendix A

<b>Date</b>	<b>Incident</b>	<b>County</b>
May '20	Dog fell down shaft, rescued two days later	Pershing
Sep. '13	17 year old male received minor injuries in fall down 60-foot deep mine shaft (rider on	Lyon
Nov. '12	Adult male (33) received moderate injuries after falling 35' down a winze	Clark
Jul. '11	Dog fell down shaft, rescued 8 days later	White
Mar. '11	Adult male (28) suffered fatal injuries after falling 190 feet down a shaft	Pershing
May. '09	Dog fell down inclined shaft, rescued 10 days later	Esmerald
Oct. '08	Adult male (62) suffered fatal injuries after falling 60' down a winze	Lyon
Sep. '08	Dog reportedly fell down 100' shaft, not recovered	Washoe
Aug. '08	Adult male (58) injured in 50' fall down inclined winze	Esmerald
May. '07	Adult male (mid-20's) injured in fall down ~200' inclined winze	Clark
May. '07	Adult male (63) suffered fatal injuries after rolling his jeep ~450' into the Loring Pit in	Storey
May. '06	Dog rescued from 22 foot-deep mine shaft	Washoe
May. '05	Woman of unknown age, received cuts and bruises from fall down a 35 ft. winze	Carson
Apr. '04	30 year-old man received moderate injuries from fall down 25 ft. winze near Las Vegas	Clark
Jan. '03	Dog fell down shaft	Humboldt
Jan. '03	62 year-old man received minor injuries from fall down 25 ft. winze (same as 10/2002)	Clark
Oct. '02	37 year-old CA male received severe injuries from fall down 25 ft. winze	Clark
Jul. '02	41 year-old male drowned swimming in open pit lake	Storey
Dec. '00	Dog rescued from fall down 60 ft. winze. Minor injury to hip	Pershing
Nov. '00	Dog rescued from fall down 40 ft. mine shaft. Moderate injury to hip	Storey
Oct. '99	Adult male (62) killed in mine cave-in	Lyon
Oct. '99	Female juvenile (11) killed in fall down 130 ft. deep mine shaft near Beatty	Nye
Jun. '99	Male juvenile (15) drowned swimming in open pit lake	Lander
Oct. '98	Two male adults seriously injured in fall down 50 ft. winze near Las Vegas	Clark
Sep. '98	Dog rescued from 20 ft. deep mine shaft	Douglas
Jul. '98	Male adult (20's) slightly injured in fall down mine winze in Brougner Divide Mine near	Esmerald
Apr. '97	Two male adults (50's) injured in fall down hand dug well in town of Luning	Mineral
Oct. '96	Male juvenile (16) injured in fall down 19 ft. deep hole in concrete at American Flats	Storey
Sep. '96	Two male adults (35) killed in mine adit near Virginia City by suffocation	Storey
May. '96	Male adult (44) fatally injured in fall off ATV at American Flats millsite	Storey
Mar. '96	Male adult (31) injured in fall down mine winze on west side of Las Vegas	Clark
Jun. '95	Male adult (30) killed scuba diving in mine shaft filled with water at the old Crown Copper	Humboldt
Nov. '93	Dog rescued from 30 ft. deep mine shaft near Iron Mtn. Estates	Storey
Jan. '93	Dog rescued from 25 ft. deep shaft	Humboldt
Oct. '92	Male adult (27) news reporter injured in dynamite blast at Happy Creek in the Jackson	Humboldt
Sep. '92	Female adult (28) injured (cuts and bruises) in fall down mine shaft Hot Springs Mtn.	Douglas
Dec. '91	Male adult (44) killed in fall down a mine winze at an abandoned copper mine in the	Lyon
May. '91	Male juvenile (13) injured (minor) in fall down 20 ft. deep mine shaft	Washoe
Feb. '91	Male adult (40) killed in fall down mine winze	Douglas
May. '90	Dog killed in mine shaft at the MGL Mine near Winnemucca Dry Lake	Pershing
Mar. '90	Male juvenile lost for 19 hours in mine shaft at Mizpah mine in Tonopah	Nye
Sep. '89	Male adult seriously injured in fall down a mine winze near Henderson	Clark
Sep. '88	Body of elderly male found at bottom of mine shaft	Lyon
May. '87	Female child (5) injured in fall down 35 ft. deep mine shaft	Washoe
Feb. '86	Young adult male (20) killed in fall down a mine winze	Lyon
Apr. '79	Two teenagers killed in fall down mine shaft at the Oest Mine	Lyon
Dec. '78	Juvenile killed in fall down mine shaft (Ninety-Nine Mine), body never recovered	Clark
Apr. '75	Two male juveniles killed when motorcycles fell into mine shaft near Searchlight	Clark
May. '71	Male juvenile (15) injured in fall down 200 ft. deep mine shaft on Duck Hill	Carson
Nov. '70	Male juvenile (12) injured in fall down 110 ft. deep mine shaft	Washoe
Jan. '61	Male juvenile (15) injured in 50 ft. fall down mine ventilation shaft	Storey

## 13. Appendix B

**State of Nevada**  
Abandoned Mine Lands  
**Report of Abandoned Mine Land Hazard**

Person Reporting the Hazard:

Name: \_\_\_\_\_

Please keep my name confidential:

Phone #: \_\_\_\_\_

E-mail: \_\_\_\_\_

---

Date Found: \_\_\_\_\_

County Hazard is Located In: \_\_\_\_\_

Hazard Location \_\_\_\_\_ UTM E/Long. \_\_\_\_\_ UTM N/Lat.

(Coordinate Type - Select One):  UTM NAD27  UTM NAD83 (WGS84)

Longitude/Latitude  Do Not Know

Photo or Image of Hazard is Enclosed/Attached

Additional Comments or Information (if desired):

Please send this form along with any photos (If available) to:

**Attention: Abandon Mine Lands**

**Nevada Division of Minerals**

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