



May 2016

2015 Nevada Abandoned Mine Lands Report



Commission on Mineral Resources
Division of Minerals

State of Nevada

Commission on Mineral Resources

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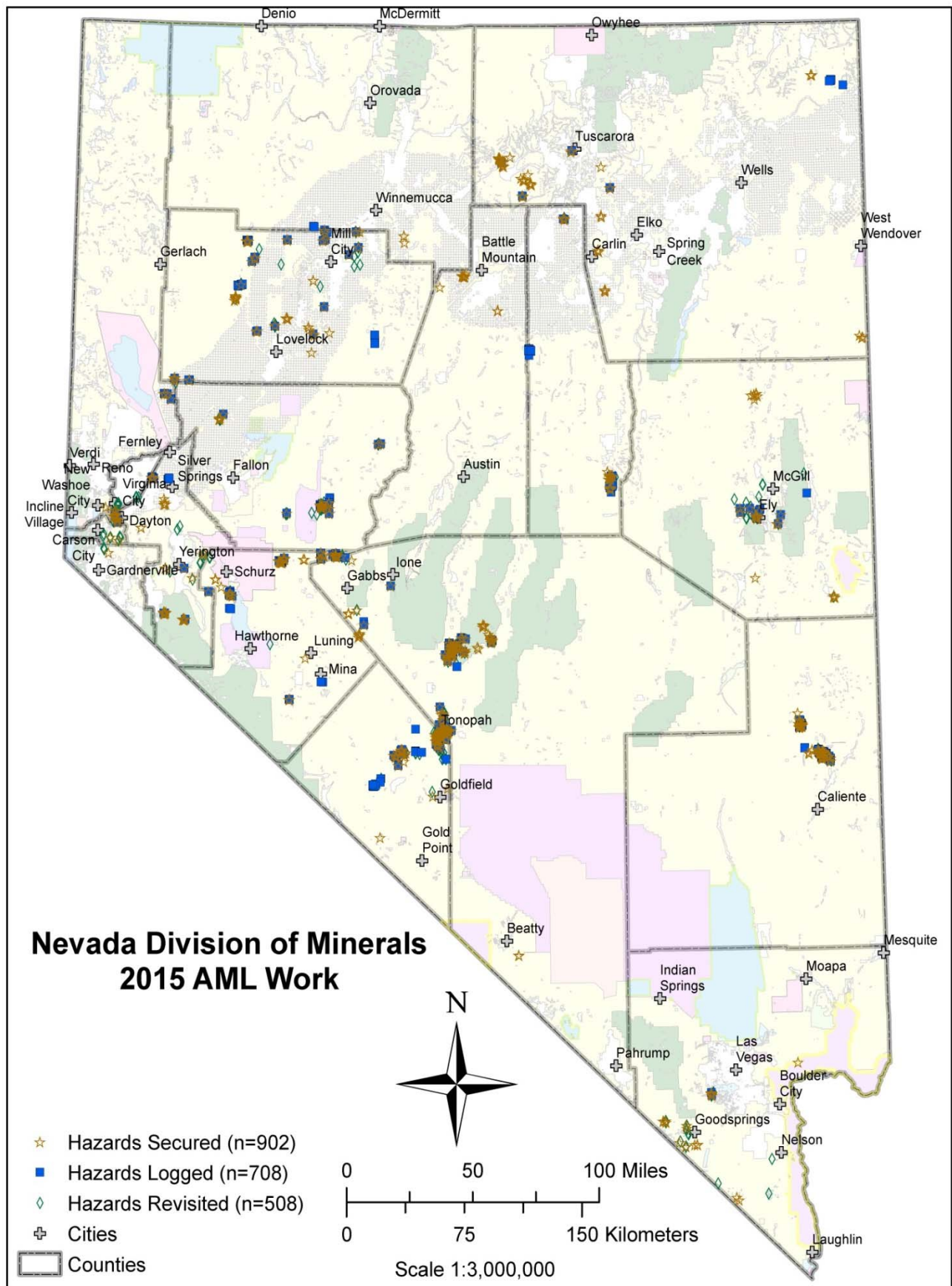


1. Executive Summary

The State of Nevada's Abandoned Mine Lands (AML) program finished its 29th year in 2015. Key points for the program in 2015 include the following:

- There were NO reported abandoned mine accidents or fatalities.
- 902 hazards were secured in 2015. Mining claimants and private property owners secured 330 hazards. 266 orphan hazards were recorded as secured, and 172 of the 266 were secured by Nevada Division of Minerals (the Division) staff, contractors and volunteers. See Figure 1.
- 708 hazards were discovered and ranked.
- Permanent AML closure projects took place in 11 of the 17 Nevada counties.
- 508 hazards were revisited.
- Six summer interns secured 190 hazards.
- NDOM converted its AML database from Microsoft Access to a web-implemented SQL database funded by the US Army Corps of Engineer's Restoration of Abandoned Mine Sites (RAMS program).
- 11 Eagle Scout projects were completed during which 44 hazards were secured and 12 previous securing's were repaired. Since 1992, 165 Scout projects have been completed resulting in 740 hazards secured and 148 hazards repaired.
- The Division surpassed both of the AML performance indicators approved by the State Legislature. Total secured hazards divided by total discovered hazards was 81.1% (70% required) and total public awareness presentations averaged 17 per staff member (12 required).
- Dedicated funding for the AML program includes: mining claim filing fees, fees on permitted surface disturbance associated with new mining operations on public lands, and Bureau of Land Management (BLM) and United States Forest Service (USFS) Assistance Agreements. No state general funds are used in the program.
- The total number of AML hazards discovered and ranked since the beginning of the program reached 19,468 hazards. The total number of hazards currently recorded as secured reached 15,757.
- In 2015 the Division reached over 93,000 citizens through AML & minerals education presentations and the annual brochure mail-out campaign to all 4th and 7th grade students in Nevada public and private schools.

Figure 1:





2. The Commission on Mineral Resources

The Nevada Division of Minerals (the Division), a part of the Commission on Mineral Resources (CMR), is charged by statute to encourage and assist in the responsible exploration for and the production of minerals, oil, gas, and geothermal energy which are economically beneficial to the State. The seven-member CMR is a public body appointed by the Governor which adopts regulations, formulates administrative policies for the Division, and advises the Governor and Legislature on policy relating to mineral

resources. The Division focuses its efforts on four main areas: Industry relations and public affairs, abandoned mine lands, regulation of oil, gas, and geothermal drilling activities and well operations, and minerals education.

The Division's AML program provides for public safety by identifying and ranking dangerous conditions at mines that are no longer operating, and by securing dangerous orphaned mine openings. The program continually urges the public to recognize and avoid hazardous abandoned mines.

3. Background

Nevada's geology provides ideal conditions for a large variety of valuable and useful minerals, and has attracted the attention of miners and prospectors for over 150 years. The prospectors who traveled across the state exploring for this vast mineral wealth left behind a legacy of shafts, adits, glory holes, stopes, mill sites and other features that are potentially dangerous to people and animals alike. It is estimated that over 200,000 of these mining-related features exist in the state. Of these, the Division estimates that 50,000 are significant hazards that require some type of securing.

The State of Nevada AML program was created by the Nevada Legislature in 1987 in response to incidents, both fatal and nonfatal, that had occurred at abandoned mines. The legislation placed the AML program with the Division and mandated two primary functions:

- 1) Establish a program to discover dangerous conditions that result from mining practices which took place at a mine that is no longer operating, identify if feasible the owner or other person responsible for the condition and apply a hazard ranking based on the location and type of feature
- 2) Develop an aggressive public awareness campaign to educate the public about dangerous conditions that exist as a result of historic mining activities. The statutes governing the AML program can be found in Appendix C.

In 1989, the Nevada Legislature expanded the program to include the responsibility of securing hazardous conditions on open public lands where no claimant or property owner could

be identified. These are "orphan" mine openings. 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 Appendix C).

The AML program is administered under Nevada Administrative Code (NAC) 513. Chapter 513 can be found in Appendix D. Sections 513.320 through 513.360 provide for the openings or structures to be given a hazard ranking based on the location and type of feature. In compliance with NRS 513.094.2, the Division notifies claimants and property owners of hazardous conditions on their claims or property, and their responsibility to secure the hazards. The Division also notifies county commissions of hazardous conditions discovered within their respective counties at least once a year. The appropriate county commission is notified if a claimant fails to notify the Division of completion, or of their intention to secure hazards within the timeframe specified in NAC 513.380. The county is authorized per NRS 455.030 and 455.040 to take appropriate enforcement action, which may include warnings issued by the county sheriff, securing work performed under direction of the county at the owner's expense, and possible fines of up to \$250 per violation.

3.a Abandoned Mine Incidents in 2015

There were NO reported abandoned mine injuries or fatalities in 2015. Appendix A shows a 54-year history of reported incidents related to abandoned or idle mines.

4. Inventory and Securings

From inception of the AML program in 1987 through 2015, 19,448 hazards have been discovered and ranked, and 15,756 hazards are recorded as secured. Figure 2 is a graph of hazards discovered and ranked and hazards secured from 1987 through 2015. Table 1 is a county-by-county listing of hazards discovered and secured since the beginning of the program. The number of hazards listed as secured at the end of 2015 represents 81.1% of all hazards discovered to date. Figure 3.a shows all secured hazards by rank and Figure 3.b shows the current securing methods.

In 2015, 7,718 historic mining features were visited in Nevada. Of the 7,718 features investigated, 1,803 were ranked as hazards and 5,915 were determined to be non-hazards. The 1,803 hazard site visits consisted of loggings, securings, revisits, or logging and securings. During 2015, 708 hazards were discovered and ranked. Of the 708 hazards discovered, 227 were determined to be orphans, 584 were determined to be on Federal claims or private property, and 12 require additional ownership research. Of the 708 discovered hazards, 19 were ranked high, 143 moderate, 358 low, and 188 minimal (see Figure

3.e).

The total number of hazards secured during 2015 was 902. Figure 3.d shows the distribution of securing work by group or agency, as recorded by the Division for 2015. Of 902 hazards secured in 2015, 191 were orphans. Figure 3.c shows the amount of orphan hazards secured by rank.

Table 1: Hazards Discovered and Hazards Secured as of December 31st, 2015 by County

| COUNTY | SITES DISCOVERED | SITES SECURED | % SECURED |
|---------------------------|------------------|---------------|--------------|
| Carson | 76 | 76 | 100.0% |
| Churchill | 749 | 571 | 76.2% |
| Clark | 2,177 | 1,767 | 81.2% |
| Douglas | 204 | 197 | 96.6% |
| Elko | 818 | 651 | 79.6% |
| Esmeralda | 2,868 | 2,446 | 85.3% |
| Eureka | 845 | 735 | 87.0% |
| Humboldt | 815 | 714 | 87.6% |
| Lander | 594 | 524 | 88.2% |
| Lincoln | 885 | 719 | 81.2% |
| Lyon | 1,075 | 998 | 92.8% |
| Mineral | 1,679 | 1,426 | 84.9% |
| Nye | 2,723 | 2,081 | 76.4% |
| Pershing | 1,704 | 1,233 | 72.4% |
| Storey | 197 | 189 | 95.9% |
| Washoe | 453 | 399 | 88.1% |
| White Pine | 1,586 | 1030 | 64.9% |
| TOTAL (Since 1987) | 19,448 | 15,756 | 81.1% |

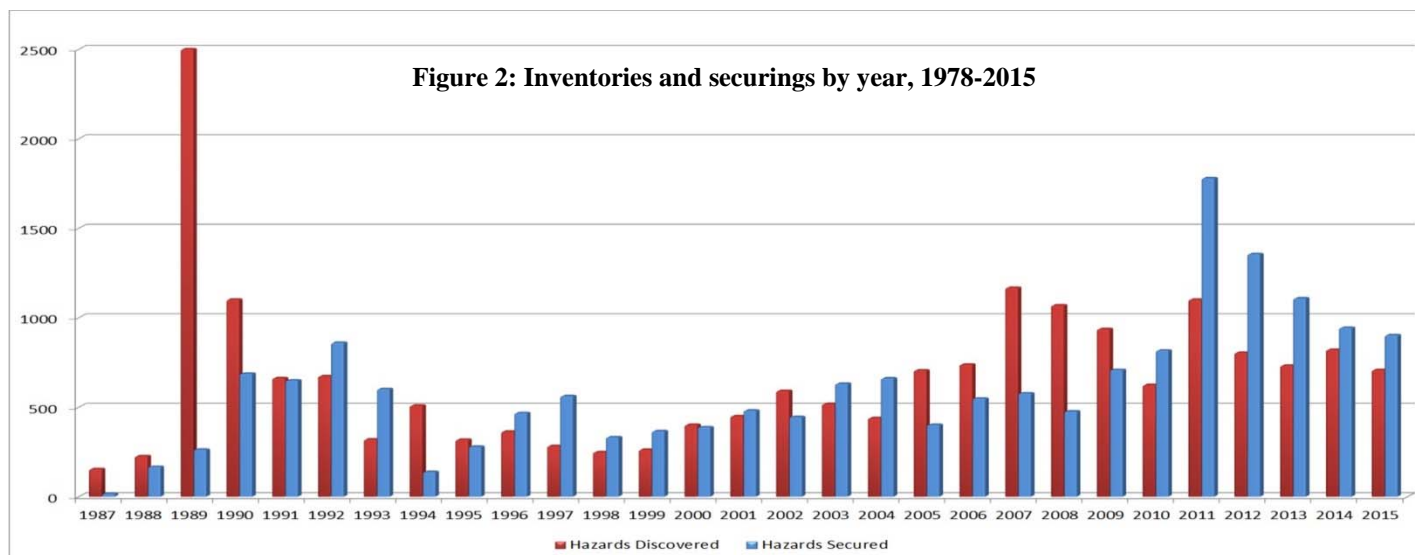
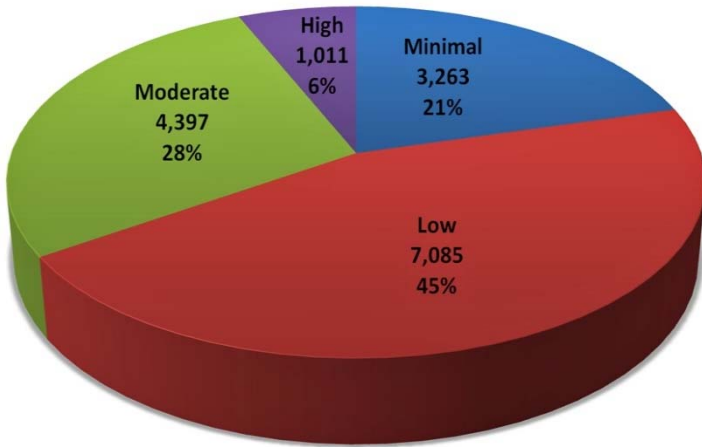
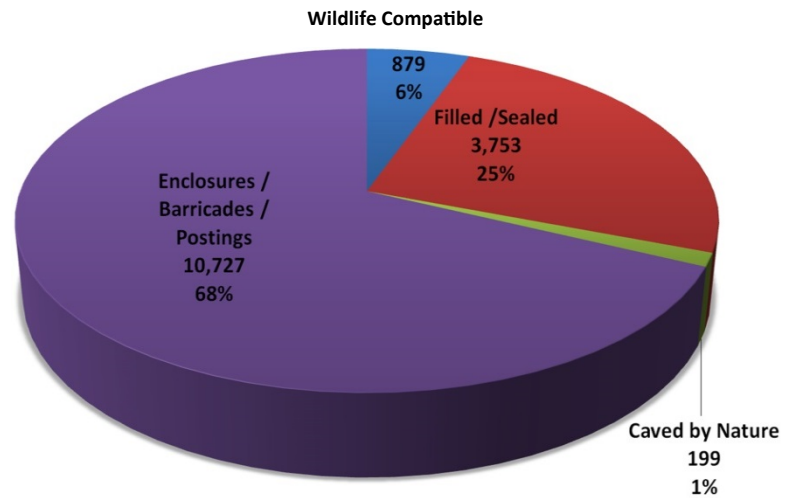


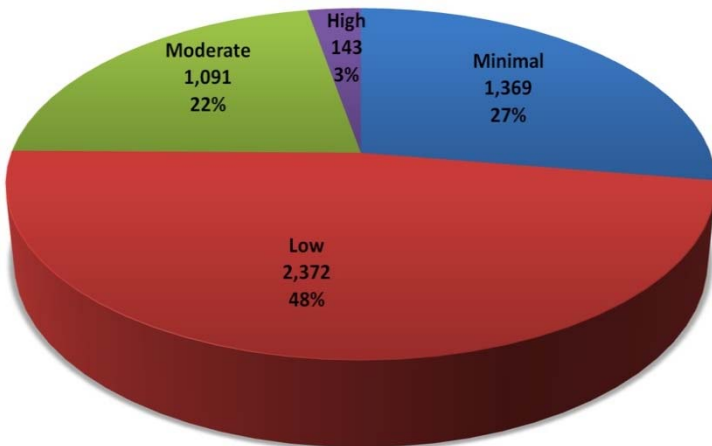
Figure 3: Hazards Securings by Rank, Method and Organization



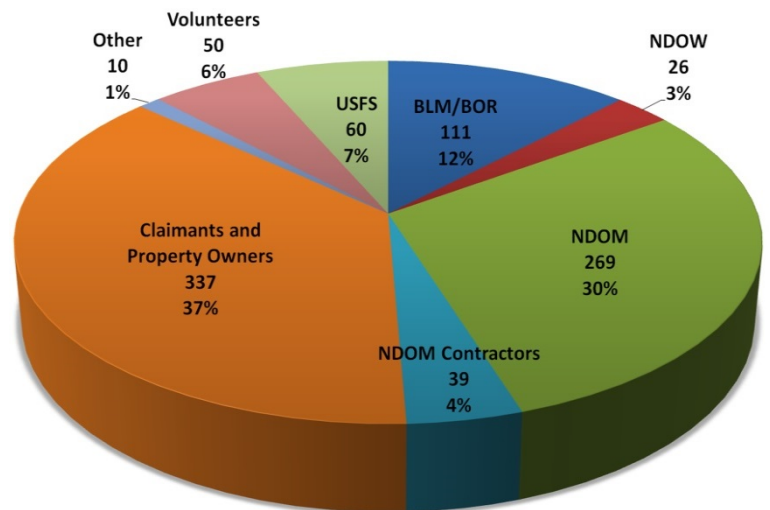
3.a 1987-2015 Hazards secured by rank



3.b 1987-2015 Hazards securing by method

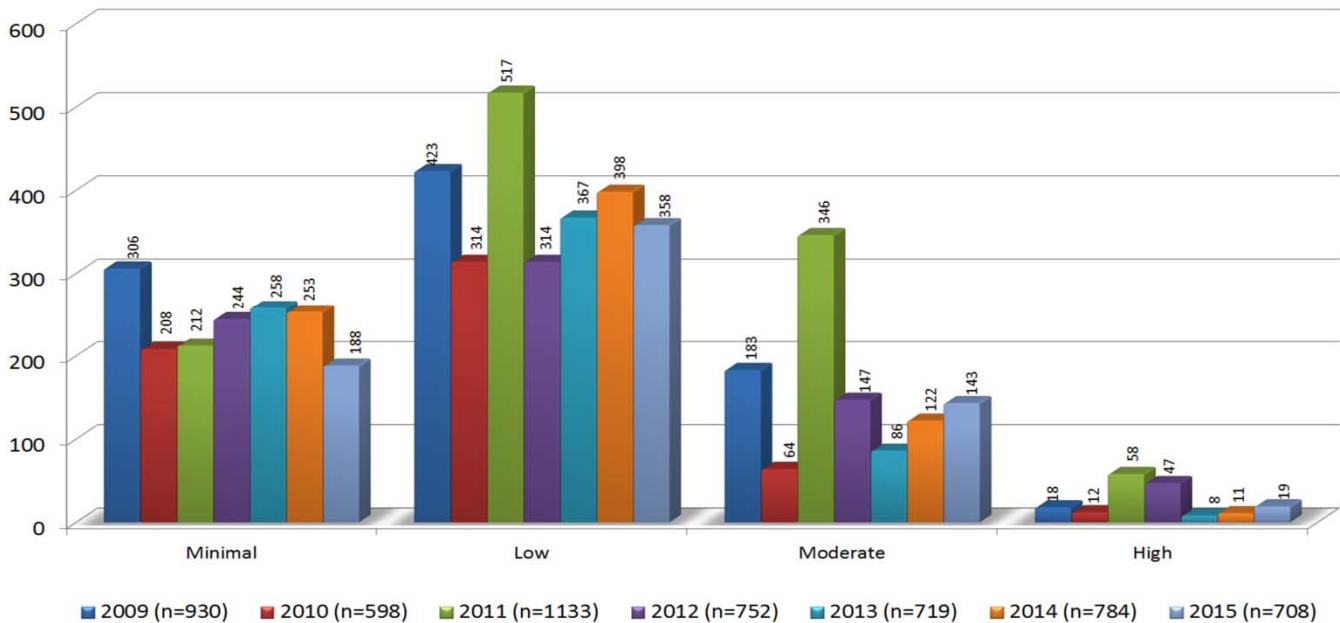


3.c 1987-2015 Orphans secured by rank (n=4,975)



3.d 2015 Securings by agency or group (n=902)

3.e Inventories by rank, 2009-2015



5. Permanent Closure Projects

When there is an incident at an abandoned mine site, or if the ranking of a hazard is high, or if a hazard is close to public or recreation sites, and exclusionary fencing or barricading are determined to not be a suitable securing method, the hazard will be evaluated for the permanent closure process. The permanent closure of abandoned mine hazards may employ methods such as backfilling with suitable fill material, the construction of bat-compatible closures, the use of polyurethane expansive foam (PUF) plugs, or a combination of these methods. Unlike fence or barricade construction, permanent closure of an abandoned mine opening may result in alteration of the landscape and character of the site. Under the guidelines of the National Environmental Policy Act (NEPA), all mine openings proposed for permanent closure on Federal lands must be evaluated for cultural and biological resource potential. Closure methods are determined based on the outcome of the resource surveys and the public-safety-hazard potential.

In 2015, 233 hazards were recorded as permanently secured in Nevada, including 111 by

the BLM, 60 by the USFS, 59 by the State contractor and three by owners or claimants. The strong working relationship by state and federal agencies continued in 2015 by permanently eliminating the physical safety hazard these features presented to the public.

5.a Wildlife Compatible Closure Projects

Prior to any permanent closure, pre-closure surveys are performed to confirm that the closure will not negatively impact significant biological habitat. These surveys are conducted by biologists working for the Nevada Department of Wildlife, Bureau of Land Management, or US Forest Service. During 2015, a total of 75 bat compatible closures were constructed. Figure 4 represents the closure by agency.

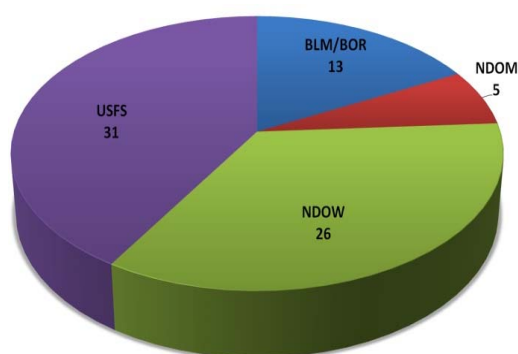
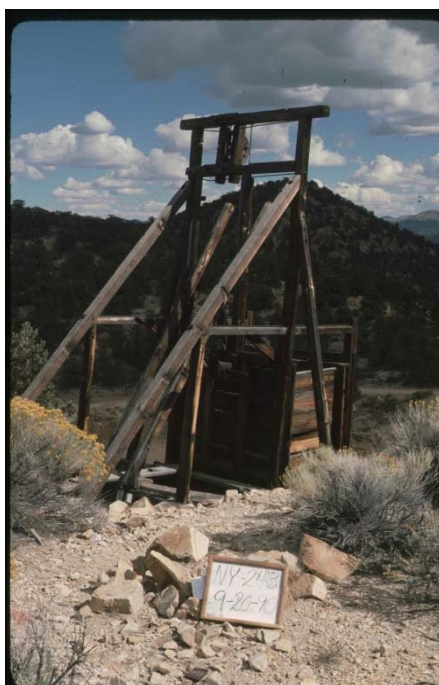


Figure 4:
2015
wildlife
compatible
closures by
agency



Before, during and after photos of a bat compatible closures performed by the USFS while preserving the cultural resources (Nye County)





A bat culvert gate fashioned by the USFS inside an HDPE culvert that provides a lighter and cheaper alternative to the corrugated metal culverts used to protect at-risk portals. (Nye County)

Before, during, and after of a backfill (Mineral County)



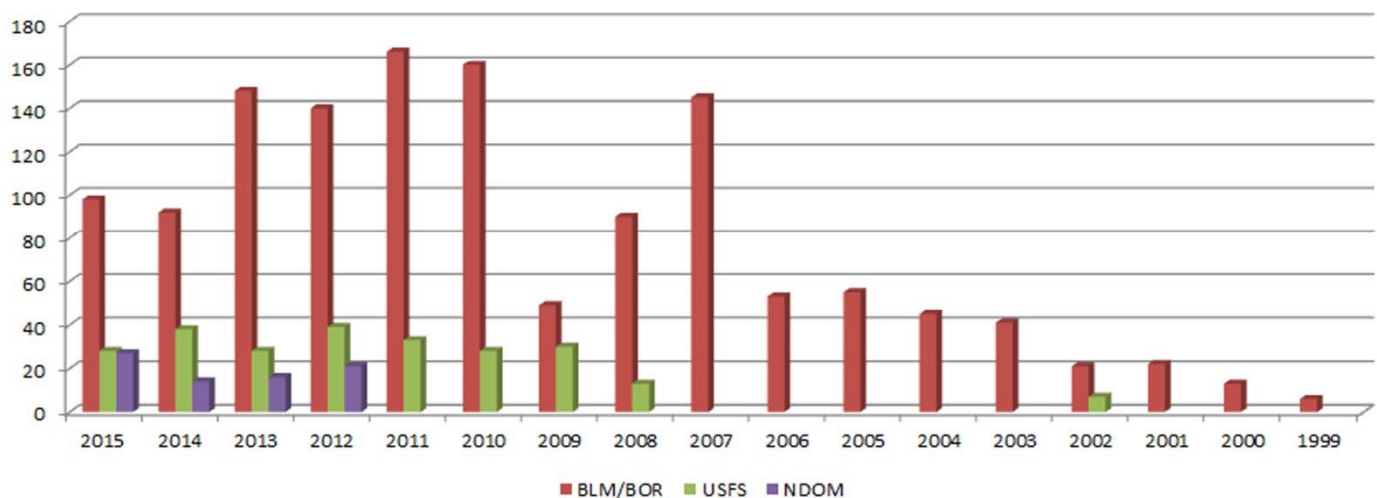
5.b Backfill and Polyurethane Foam (PUF) Plug Closures

For those hazards determined to have no significant wildlife habitat potential, backfill or PUF plug closures are employed. In 2015, a total of 158 hazards were recorded as backfilled or PUF plugs. Figure 5 summarizes backfill and PUF closure projects from 1999 through 2015.

Photos of a Polyurethane Foam Plug closure (Clark County)



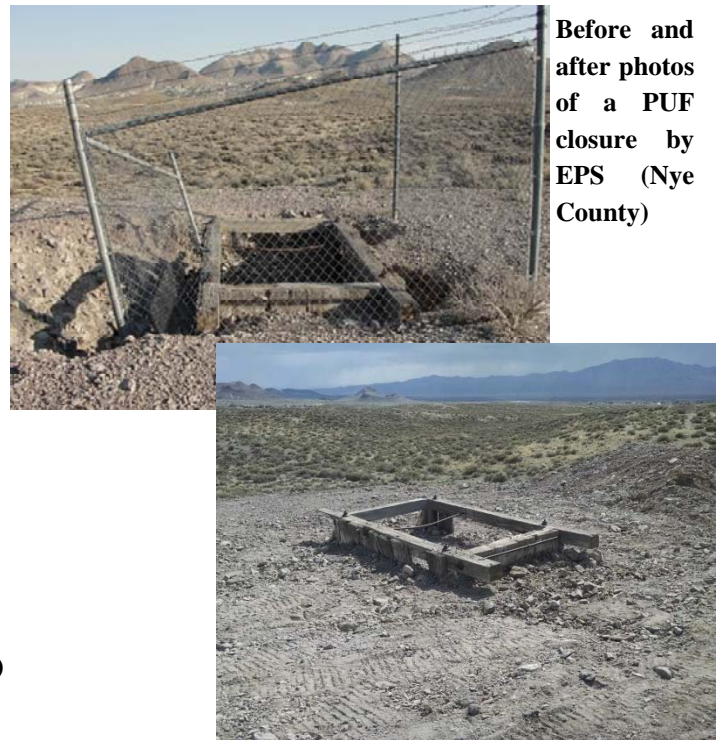
Figure 5: Backfill and PUF closures by agency, 1999-2015



6. Contracted AML Work

Environmental Protection Services (EPS), worked as the contractor for the Division performing general inventory and securing work throughout Nevada. During 2015, EPS inventoried 147 new AML hazards, revisited 121 previously secured hazards and secured 88 hazards (81 for the Division and 7 for NDOW). EPS also is Nevada's statewide contractor for wildlife compatible and other permanent closures. EPS built 31 bat-compatible closures and backfilled or PUF-plugged 28 closures in 2015.

Before and after photos of bat gates by EPS (White Pine County)



Before and after photos of a PUF closure by EPS (Nye County)

7. Summer Intern Program

The Division completed its 16th summer intern program in 2015. The program is intended to continue inventory and closure work during the summer months and provide field training for Nevada college students pursuing degrees in natural resources. The Division appreciates the work they completed during the 13 weeks of the program. The intern program advances the AML program in a cost-effective manner, as well as provides the students with valuable field experience in map reading, data collection, and GPS skills, along with valuable group and leadership experience. Working in 14 counties with over 19,000 miles traveled, the interns identified, secured or repaired fencing and signage at 4,966 historic mining features.

2015 marked the start of the first winter intern program. Four interns were selected from the previous two years. They worked one week in northern Nevada in December 2015, and two weeks in Clark County in early January 2016.

Nevada Division of Minerals Abandoned Mine Lands 2015 Summer Intern Program



2015 Accomplishments

Alain Nowakowski



Conor Ostling



Logged:

4,233 Non-Hazards

Identified:

329 New Hazards

Secured:

190 Hazards

Emma Baker



Brett Maur



Griffin Kilroy



Revisited/Repaired:

214 Hazards

Ed Probst



**Thank You
Interns!!!**



**Thank You
Interns!!!**

8. Scout Projects

In 1992, a young Eagle Scout candidate presented the Division with a proposal to secure mine openings for his Eagle Scout Service Project in Washoe County. Since the initial scout in 1992, 154 Eagle Scout projects have been completed resulting in 696 orphan hazards secured and 125 previously secured hazards re-built or restored. In 2015, 11 Eagle projects were completed in Clark, Lincoln, Lyon and Storey counties resulting in 49 mine openings secured and 7 repairs made to previously existing fences. Table 2 lists the accomplishments of Scouts in the Nevada AML program and the photos below show several Eagle Scout AML securing projects in Nevada. The Division would like to thank the Boy Scouts of America for their assistance in Nevada's AML Program

2015 Eagle Scout projects: top left Simon Solaegui; bottom left, Kyle Lutes; bottom middle, Riley Houston; bottom right, Chase Horlacher.

| Year | # of Projects | # of Sites Secured | # of Sites Repaired |
|--------------|---------------|--------------------|---------------------|
| 1992 | 2 | 13 | 0 |
| 1993 | 2 | 12 | 0 |
| 1994 | 1 | 4 | 0 |
| 1996 | 2 | 13 | 0 |
| 1998 | 5 | 25 | 0 |
| 1999 | 3 | 15 | 0 |
| 2000 | 2 | 14 | 0 |
| 2001 | 6 | 39 | 0 |
| 2002 | 4 | 35 | 0 |
| 2003 | 7 | 61 | 3 |
| 2004 | 7 | 47 | 4 |
| 2005 | 11 | 50 | 8 |
| 2006 | 16 | 78 | 5 |
| 2007 | 10 | 21 | 24 |
| 2008 | 16 | 61 | 5 |
| 2009 | 14 | 57 | 8 |
| 2010 | 8 | 34 | 6 |
| 2011 | 8 | 21 | 19 |
| 2012 | 9 | 20 | 25 |
| 2013 | 8 | 27 | 11 |
| 2014 | 13 | 49 | 7 |
| 2015 | 11 | 44 | 12 |
| Total | 165 | 740 | 137 |



9. Public Awareness

In the area of public awareness, the theme is “Stay Out and Stay Alive.” This message is carried to the public through several mediums, including a 11-minute video titled “Stay Out, Stay Alive” along with informational brochures, and mini-unit curriculum guides targeting 4th and 7th grade students that have been distributed to every school and library in Nevada. At presentations, conferences and other statewide events “Stay Out, Stay Alive” handouts, bumper stickers, hard hat stickers, squeeze bats, magnets, pencils, temporary tattoos and coffee mugs are distributed. These materials reach thousands of Nevada school children and adults each year.



Teachers on a tour of a local cement plant

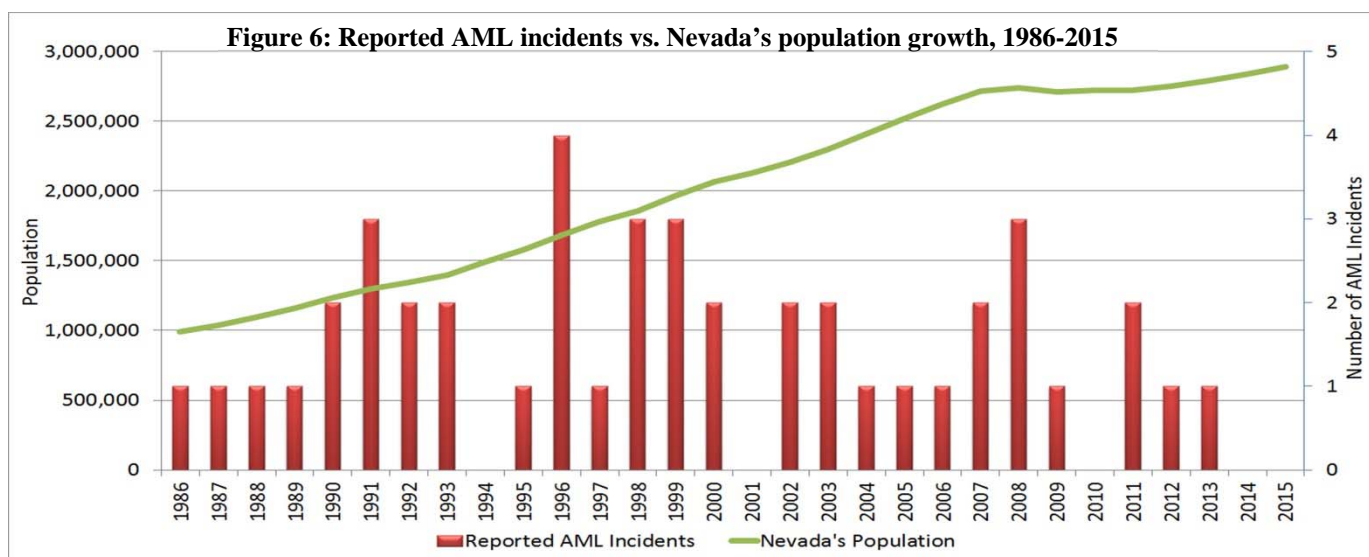
In 2015, the Division staff gave 192 presentations in Carson, Clark, Douglas, Elko, Lincoln, Lyon, Nye, Storey and Washoe counties to more than 18,482 students, teachers and

members of the public. The presentations target K-12 student science nights, student career fairs, prospector club meetings, county commissions, professional association meetings, outdoor recreation events and the annual Earth Science Education workshops for teachers, co-sponsored by the Division and the Nevada Mining Association. The Education Workshops reach on average over 200 teachers in both northern and southern Nevada, covering topics like: general geology, mining, reclamation, AML, geothermal, and minerals education. The teachers are also taken on tours of local mining operations or localities of geologic interest.

Figure 6 shows the population growth in Nevada versus the reported AML incidents by year since the inception of the AML program by the Division. The efforts of the Division’s AML program have clearly helped save lives and decrease AML incidents in Nevada.



Teachers using their new hand lenses examining rock properties



10. Performance Indicators

The Legislature requires state agencies to have performance indicators in place for all of their major programs. For the AML program, the Division has two performance indicators:

1. Maintain the percentage of secured hazardous mine openings relative to the number of hazardous mine openings investigated and ranked at a minimum of 70%.
2. Maintain the number of public awareness and education presentations concerning the Nevada mineral industry and abandoned mines at a minimum of 12 per year per staff member.

The Division surpassed these goals in 2015 with an 81.1% securing rate and average of 17 presentations per staff member.

11. Funding

No state general funds are used to operate this program. The AML program is funded from these three sources

1. For every unpatented mining claim filed on Federal land, a County fee is collected by the recorder and \$2.50 of that fee is dedicated to the Division's AML program (NAC 513.315).
2. The Division collects a one-time fee of \$20 per acre for every acre of permitted disturbance associated with new or amended mining or exploration operations on public lands (NRS 519A.250).
3. The Division has cooperative agreements in place with both the BLM and the USFS which provide financial assistance to enhance and accelerate both field investigation activities and work performed by staff, contractors, and volunteers to secure hazards.

AML revenues are used to pay salaries, travel expenses, required office supplies/software, the summer intern program, vehicle expenses, and field supplies such as fence posts, signs and barbed wire. The revenue is also used to support the AML public awareness program through school presentations, videos, brochures, magnets, pencils, bumper stickers, hard hat stickers, and other means of outreach. Table 3 shows the revenues received by the Division from the three sources for the State of Nevada fiscal years 2007 through 2015.

| Table 3. Dedicated Revenue to the AML program for the fiscal years 2007 through 2015. | | | | |
|--|--------------------------------|-------------------|------------------|-----------|
| Year | BLM/USFS Assistance Agreements | Mining Claim Fees | Disturbance Fees | Total |
| 2015 | \$110,000 | \$466,335 | \$106,320 | \$682,655 |
| 2014 | \$92,002 | \$487,585 | \$125,300 | \$704,887 |
| 2013 | \$69,031 | \$546,018 | \$228,220 | \$843,269 |
| 2012 | \$31,670 | \$561,930 | \$9,800 | \$603,400 |
| 2011 | \$0 | \$481,584 | \$139,360 | \$620,944 |
| 2010 | \$75,000 | \$463,236 | \$41,008 | \$579,244 |
| 2009 | \$110,000 | \$455,223 | \$148,180 | \$713,403 |
| 2008 | \$50,000 | \$317,625 | \$4,080 | \$371,705 |
| 2007 | \$10,000 | \$278,493 | \$34,126 | \$322,619 |

12. Future Program Goals

In 29 years the Division has inventoried 19,446 AML hazards, leaving an estimated 31,000 hazards left to be inventoried. The Division will continue to focus field efforts in areas with orphan hazards and prioritize field work areas.

In 2011, the introduction of a biannual AML notification campaign to claimants and property owners effectively doubled the amount of securings from the previous year. The success of

this campaign is shown graphically in Figure 2. Cooperation between the Division, claimants and property owners is essential to maintain the greatest level of public safety. Over the last decade, technological advancements in areas like remote sensing, unmanned aerial vehicles (UAVs) with high-resolution aerial photography and 3-D mapping, along with LIDAR surveys have become more and more economical to use, aiding in our efforts now and in the near future. Digital field data was collected using handheld field devices for the first time in 2015. In 2016 the summer interns will digitally collect field data. This will increase field and office data entry productivity for the AML program.

12.a Restoration of Abandoned Mine Sites (RAMS)

In 2014, the US Army Corps of Engineers awarded the Division a project to develop a new web implemented AML database. This database was launched in May of 2015 and has since greatly increased the productivity of the AML program. The web database, integrated with our field units will soon enable us to complete our digital data entry in the field. Once the ability to perform digital field work is fully introduced, it will increase efficiency by readily allowing us to access data in the field, and reducing the amount of redundant data entry. The digital field application has been developed and will be field tested in the summer of 2016. RAMS funding will continue to further expand the capabilities of the AML web database and is expected to continue through 2018. In 2015, RAMS awarded a UAV demonstration project to be flown in the spring of 2016 to help with the Division's and the Nevada Department of Environmental Protection's AML programs.

12.b Nevada Abandoned Mine Lands Environmental Team (NAMLET)

In 2014 biannual NAMLET meetings were organized which are designed to bring all stakeholders involved with AML throughout the state together and discuss the ongoing issues and current projects and/or future projects. The Division is a key player in NAMLET which has been a platform for prioritizing both environmental and physical safety AML projects. NAMLET has also strengthened relationships throughout the Nevada AML community.

13. Summary

The Nevada Division of Mineral's Abandoned Mine Lands program continues to have success in the discovery and securing of abandoned mine hazards due to the combined efforts of the federal land management agencies, the summer intern program, the Division contractors, the Nevada mining industry, and numerous volunteers.

The public awareness program reached over 93,000 people in 2015 through the Division's annual brochure mail-out, directly through personal interaction with students, teachers, parents, members of civic groups, professional organizations, and the media. The Division provides the public with the ability to report any AML hazard with the Report of an Abandoned Mine Hazard form in Appendix B, which is also available online.

Despite the large and growing number of citizens that recreate in Nevada, there has been no significant increase in the number of injuries or fatalities related to abandoned mine hazards in Nevada. Figure 6 shows a comparison table of

AML incidents vs. population growth. It is clear that awareness brought to people through the “Stay Out and Stay Alive” message has helped reduce the incident rate in abandoned mine lands.

The Commission on Mineral Resources and the Nevada Division of Minerals will continue to aggressively support the AML program through fieldwork and public awareness. The only satisfactory number of abandoned mine injuries or fatalities is **ZERO!**

13.a Acknowledgements

The authors would like to draw attention to the many efforts of those at the Division’s staff, EPS, and volunteers for their efforts involved in the AML program.

We are grateful for our federal and state government partners who provide integral support to the AML program. We would like to recognize: John Callan and the entire Nevada BLM AML program for their commitment and assistance; Ken Maas, Humboldt-Toiyabe

National Forest, for all of his inventory and closure work on USFS land; the AML closure crew of the Bureau of Reclamation for their closure work throughout the state; and the entire Nevada Division of Wildlife AML survey crews for their statewide efforts.

To all who have contributed to the success of Nevada’s AML program in 2015, a sincere **THANK YOU!**



14. Appendix A

Table 1: History of Nevada AML Incidents Since 1961

| Date | Incident | County |
|--------|---|-------------|
| Sep-13 | 17 year old male received minor injuries in fall down 60-foot deep mine shaft (rider on motorcycle) | 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 Pine |
| 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 | Esmeralda |
| 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 | Esmeralda |
| 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 Virginia City | 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 Tonopah, | Esmeralda |
| 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 millsite | 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 Under | 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 Mountains. | 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 Malachite | 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 City |
| 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 |

14. 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

400 W. King St. #106

Carson City, NV 89703

Phone: 775-684-7040

Fax: 775-684-7052

Email: ndom@minerals.nv.gov

or

or

or

2030 E. Flamingo Rd. #220

Las Vegas, NV 89119

702-486-4343

702-486-4345

ndomlv@minerals.nv.gov

15. Appendix C

Nevada Revised Statutes (NRS) pertinent to the AML Program

NRS 455.010 Erection of fence or other safeguard around excavation, hole or shaft required. Any person or persons, company or corporation, who shall dig, sink or excavate, or cause the same to be done, or being the owner or owners, or in the possession under any lease or contract, of any shaft, excavation or hole, whether used for mining or otherwise, or whether dug, sunk or excavated for the purpose of mining, to obtain water, or for any other purpose, within this State, shall, during the time they may be employed in digging, sinking or excavating, or after they may have ceased work upon or abandoned the same, erect, or cause to be erected, good and substantial fences or other safeguards, and keep the same in good repair, around such works or shafts, sufficient to guard securely against danger to persons and animals from falling into such shafts or excavations.

NRS 41.510 Limitation of liability; exceptions for malicious acts if consideration is given or other duty exists.

1. Except as otherwise provided in subsection 3, an owner of any estate or interest in any premises, or a lessee or an occupant of any premises, owes no duty to keep the premises safe for entry or use by others for participating in any recreational activity, or to give warning of any hazardous condition, activity or use of any structure on the premises to persons entering for those purposes.

2. Except as otherwise provided in subsection 3, if an owner, lessee or occupant of premises gives permission to another person to participate in recreational activities upon those premises:

(a) The owner, lessee or occupant does not thereby extend any assurance that the premises are safe for that purpose or assume responsibility for or incur liability for any injury to person or property caused by any act of persons to whom the permission is granted.

b) That person does not thereby acquire any property rights in or rights of easement to the premises.

3. This section does not:

(a) Limit the liability which would otherwise exist for:

(1) Willful or malicious failure to guard, or to warn against, a dangerous condition, use, structure or activity.

(2) Injury suffered in any case where permission to participate in recreational activities was granted for a consideration other than the consideration, if any, paid to the landowner by the State or any subdivision thereof. For the purposes of this subparagraph, the price paid for a game tag sold pursuant to [NRS 502.145](#) by an owner, lessee or manager of the premises shall not be deemed consideration given for permission to hunt on the premises.

(3) Injury caused by acts of persons to whom permission to participate in recreational activities was granted, to other persons as to whom the person granting permission, or the owner, lessee or occupant of the premises, owed a duty to keep the premises safe or to warn of danger.

(b) Create a duty of care or ground of liability for injury to person or property.

4. As used in this section, "recreational activity" includes, but is not limited to:

(a) Hunting, fishing or trapping;

(b) Camping, hiking or picnicking;

(c) Sightseeing or viewing or enjoying archaeological, scenic, natural or scientific sites;

(d) Hang gliding or paragliding;

(e) Spelunking;

(f) Collecting rocks;

(g) Participation in winter sports, including cross-country skiing, snowshoeing or riding a snowmobile, or water sports;

(h) Riding animals, riding in vehicles or riding a road or mountain bicycle;

(i) Studying nature;

(j) Gleaning;

(k) Recreational gardening; and

(l) Crossing over to public land or land dedicated for public use.

NRS 455.030 Board of county commissioners to transmit information concerning dangerous condition at mine no longer operating to sheriff or constable; service of notice upon owner or responsible person.

1. If a board of county commissioners receives information from the division of minerals of the commission on mineral resources that there is in the county a dangerous condition that results from mining practices which took place at a mine that is no longer operating, if the information identifies a person responsible for the condition, the board shall transmit this information to the sheriff or the constable of the township where the condition exists.

2. Upon receipt of information pursuant to subsection 1 or upon the filing of the notice, as provided for in NRS 455.020, the sheriff or constable shall serve a notice, in the same manner and form as a summons, upon each person identified as owner or otherwise responsible.

[3:16:1866; B §§ 111; BH §§ 292; C §§ 273; RL §§ 3235; NCL §§ 5632]—(NRS A 1983, 905; 1987, 1869; 1993, 1625; 1999, 3624)

NRS 455.040 Contents of notice; judgment; criminal penalty.

1. The notice served pursuant to subsection 2 of NRS 455.030 must require the person or persons to appear before the justice of the peace of the township where the hole, excavation, shaft or other condition exists, or any municipal judge who may be acting in his place, at a time to be stated therein, not less than 3 days nor more than 10 days from the service of the notice, and show, to the satisfaction of the court, that the provisions of NRS 455.010 to 455.180, inclusive, or the standards established by the commission on mineral resources for the abatement of dangerous conditions have been complied with, or if he or they fail to appear, judgment will be entered against him or them for double the amount required to abate the condition.

2. All proceedings had therein must be as prescribed by law in civil cases.

3. Such persons, in addition to any judgment that may be rendered against them, are liable and subject to a fine not

exceeding the sum of \$250 for each violation of the provisions of NRS 455.010 to 455.180, inclusive, which judgments and fines must be adjudged and collected as provided for by law.

[4:16:1866; B § 112; BH § 293; C § 274; RL § 3236; NCL § 5633]—(NRS A 1979, 1476; 1987, 1869; 1993, 881)

NRS 513.094 Additional fee; administrator to establish program to discover dangerous conditions of nonoperating mines; employment of qualified assistant; regulations.

1. An additional fee, in an amount established pursuant to subsection 4, is imposed upon all filings to which NRS 517.185 applies. Each county recorder shall collect and pay over the additional fee, and the additional fee must be deposited in the same manner as provided in that section.

2. The administrator shall, within the limits of the money provided by this fee, establish a program to discover dangerous conditions that result from mining practices which took place at a mine that is no longer operating, identify if feasible the owner or other person responsible for the condition, and rank the conditions found in descending order of danger. The administrator shall annually during the month of January, or more often if the danger discovered warrants, inform each board of county commissioners concerning the dangerous conditions found in the respective counties, including their degree of danger relative to one another and to those conditions found in the state as a whole. In addition, the administrator shall work to educate the public to recognize and avoid those hazards resulting from mining practices which took place at a mine that is no longer operating.

3. To carry out this program and these duties, the administrator shall employ a qualified assistant, who must be in the unclassified service of the state and whose position is in addition to the unclassified positions otherwise authorized in the division by statute.

4. The commission shall establish by regulation:

(a) The fee required pursuant to subsection 1, in an amount not to exceed \$4 per claim.

(b) Standards for determining the conditions created by the abandonment of a former mine or its associated works that constitute a danger to persons or animals and for determining the relative degree of danger. A condition whose existence violates a federal or state statute or regulation intended to protect public health or safety is a danger because of that violation.

(c) Standards for abating the kinds of dangers usually found, including, but not limited to, standards for excluding persons and animals from dangerous open excavations.

(Added to NRS by 1987, 1867; A 1993, 298, 1683; 1995, 579; 1999, 890, 3627; 2001, 66)

NRS 513.103 Account for the Division of Minerals: Creation; sources, lapse and use of money in Account.

1. The Account for the Division of Minerals is hereby created in the State General Fund.

2. The following special fees and money must be deposited in the Account:

(a) All fees collected pursuant to [NRS 513.094](#), [517.185](#) and [chapter 522](#) of NRS.

(b) All money collected pursuant to [NRS 235.016](#).

(c) Any money received by the Division from a county pursuant to [NRS 513.108](#).

(d) All fees collected pursuant to [NRS 534A.080](#).

(e) Any money appropriated to the Division from the State General Fund.

3. No money except that appropriated from the State General Fund lapses to the State General Fund.

4. The money in the Account is appropriated to the Division. The money deposited in the Account pursuant to paragraph (a) of subsection 2, and the interest earned thereon, must be expended for the purposes of administering [chapter 522](#) of NRS and the provisions of this chapter, except for [NRS 513.108](#). The money deposited pursuant to paragraphs (b) and (c) of subsection 2, and the interest earned thereon, must be distributed to the counties pursuant to [NRS 513.108](#), except that portion required to pay the cost of administering the provisions of that section. All interest earned on the Account must remain in the Account.

(Added to NRS by 1983, 2070; A 1985, 303; 1987, 1868; 1989, 141; 1991, 1779; 1993, 111, 1684; 1995, 509)

NRS 513.108 Abatement of dangerous condition of non-operating mines; reimbursement of Division.

1. The board of county commissioners in each county may apply to the Division for money to abate a dangerous condition resulting from mining practices which took place at a mine that is no longer operating.

2. The Division shall, within the limits of the money available pursuant to paragraphs (b) and (c) of subsection 2 of [NRS 513.103](#), provide counties with money to abate such dangerous conditions based on the relative degree of danger of those conditions.

3. If a county which receives money from the Division subsequently receives monetary compensation from the mine owner or other person responsible for the existence of the dangerous condition, it shall reimburse the Division to the extent of the compensation received. Any money received by the Division pursuant to this subsection must be deposited in the Account for the Division of Minerals created pursuant to [NRS 513.103](#). (Added to NRS by 1989, 141; A 1991, 1780; 1993, 1684)

16. Appendix D

Nevada Administrative Code (NAC) pertinent to the AML Program

DANGEROUS CONDITIONS CREATED BY ABANDONMENT OF MINES

NAC 513.200 Definitions. (NRS 513.094) As used in NAC 513.200 to 513.390, inclusive, unless the context otherwise requires, the words and terms defined in NAC 513.205 to 513.290, inclusive, have the meanings ascribed to them in those sections.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88; A by R069 -99, 8-19-99)

NAC 513.205 “Administrator” defined. “Administrator” means the administrator of the division.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88) (Substituted in revision for NAC 513.250)

NAC 513.210 “Animal” defined. “Animal” means any member of the bovine, equine, porcine or caprine species as well as dogs, cats or other animals under the restraint or control of a person.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.220 “Commission” defined. “Commission” means the commission on mineral resources.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.230 “Dangerous condition” defined. “Dangerous condition” means a condition resulting from mining practices which took place at a mine that is no longer operating or its associated works that could reasonably be expected to cause substantial physical harm to persons or animals.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.240 “Division” defined. “Division” means the division of minerals of the commission on mineral resources.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.260 “Fence” defined. “Fence” has the meaning ascribed to it in subsection 5 of NRS 207.200.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.270 “Owner” defined. “Owner” means the owner of real property who is shown to be the owner on records located in the courthouse of the county in which the real property is located.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.280 “Person” defined. “Person” means a natural person.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.290 “Responsible person” defined. “Responsible person” means the owner of a patented claim or the claimant of an unpatented claim.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.300 Scope. The provisions of NAC 513.200 to 513.390, inclusive, apply to all owners or other responsible persons for dangerous conditions on private or public land.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.310 Waiver of provisions. Upon the approval of the administrator, the division may grant a waiver from any provision of NAC 513.200 to 513.390, inclusive, if the waiver does not defeat the purpose of NRS 513.094.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.315 Additional fee. (NRS 513.094) The amount of the additional fee that is imposed on filings pursuant to subsection 1 of NRS 513.094 is \$2.50 per claim.

(Added to NAC by Commission on Mineral Resources by R069 -99, eff. 8-19-99; A by R199-08, eff. 8-14-2008)

NAC 513.320 Assignment of points to dangerous condition. The administrator or his representative shall assign a dangerous condition one to five points for the location of the condition and an additional one to five points for the degree of danger associated with the condition. The condition must then be ranked according to the total number of points for location and degree of danger.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.330 Rating of location. The location of a dangerous condition must be rated in the following manner:

1. One point must be assigned to a dangerous condition located at least 5 miles from an occupied structure or a public road maintained by some governmental entity.
2. Two points must be assigned to a dangerous condition located between 1 and 5 miles from an occupied structure or a public road maintained by some governmental entity.
3. Three points must be assigned to a dangerous condition located ½ to 1 mile, inclusive, from a town.
4. Four points must be assigned to a dangerous condition located not more than ½ mile from a town or not more than 1 mile from an occupied structure or a public road maintained by some governmental entity.

5. Five points must be assigned to a dangerous condition located within a town or within 100 feet of an occupied structure or a public road maintained by some governmental entity.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.340 Rating of degree of danger. The degree of danger for a dangerous condition must be rated in the following manner:

1. One point must be assigned to a dangerous condition consisting of:

- (a) A vertical or near vertical hole 8 to 20 feet, inclusive, in depth and highly visible upon approach;
- (b) An inclined hole less than 50 feet deep from which a person could climb out;
- (c) A horizontal hole with no associated stopes, winzes or raises; or
- (d) A high wall of an open pit.

2. Two points must be assigned to a dangerous condition consisting of:

- (a) A vertical or near vertical hole 8 to 20 feet, inclusive, in depth which is not visible upon approach;
- (b) Any vertical or near vertical hole 20 to 50 feet, inclusive, in depth; or
- (c) Any inclined hole greater than 50 feet deep from which a person could climb out with no associated stopes, winzes or raises.

3. Three points must be assigned to a dangerous condition consisting of:

- (a) Any vertical or near vertical hole 50 to 100 feet, inclusive, in depth; or
- (b) Any horizontal or inclined hole with associated stopes, winzes or raises with less than a 20 -foot vertical opening.

4. Four points must be assigned to a dangerous condition consisting of:

- (a) Any vertical or near vertical hole which is at least 100 feet deep and visible upon approach; or
- (b) Any horizontal or inclined hole with associated stopes, winzes or raises with a vertical opening greater than 20 feet.

5. Five points must be assigned to a dangerous condition consisting of any vertical or near vertical hole which is at least 100 feet deep and not visible upon approach.

The administrator or his representative may assign a higher degree of danger to a dangerous condition if other factors such as loose ground or the presence of water increase the danger, but the degree of danger for a single dangerous condition may not be scored higher than five points.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.350 Dangerous condition causing fatality or injury. Any dangerous condition that has been the cause of a documented fatality or injury must be ranked as a high hazard, regardless of its numerical score.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.360 Rating of dangerous condition. Dangerous conditions must be rated as follows:

- 1. A dangerous condition with a total number of 2 or 3 points is a minimal hazard;
- 2. A dangerous condition with a total number of 4 or 5 points is a low hazard;
- 3. A dangerous condition with a total number of 6 or 7 points is a moderate hazard; and
- 4. A dangerous condition with a total number of at least 8 points is a high hazard.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.370 Posting warning sign. A dangerous condition regardless of its ranking must be posted with an orange warning sign mounted on a post. The sign must be posted within 30 days after the responsible person is notified by the county sheriff of the existence of the condition.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.380 Period after notification to secure dangerous condition. Upon notification of the existence of a dangerous condition, the responsible person shall:

- 1. Secure within 180 days a dangerous condition rated as a low hazard;
 - 2. Secure within 120 days a dangerous condition rated as a moderate hazard; and
 - 3. Secure within 60 days a dangerous condition rated as a high hazard,
- in the manner prescribed in NAC 513.390.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

NAC 513.390 Methods for securing dangerous condition. A dangerous condition must be secured by one or more of the following:

- 1. A barricade made of wood, metal or plastic, set in place in a solid manner with an orange warning sign attached.
- 2. A fence constructed to prevent a person or animal from accidentally exposing himself to the dangerous condition.
- 3. Permanently anchored seals constructed of material not subject to rapid decomposition and, if used to secure a vertical opening, strong enough to support the weight of any person or animal.
- 4. Backfilling so that no void spaces remain.

(Added to NAC by Commission on Mineral Resources, eff. 12-21-88)

FEE FOR FILING PLAN OF OPERATION

NAC 519A.634 Amount of fee. (NRS 519A.250) The amount of the fee that an operator must pay pursuant to subsection 1 of NRS 519A.250 is \$20 per acre or part of an acre.

(Added to NAC by Commission on Mineral Resources by R069 -99, eff. 8-19-99)