



**P. Dominant Soils:** Sandy Loam

**Q. Geologic Types:** granite, andesite, rhyolite

**R. Miles of Stream Channels by Order or Class:** 19.6 intermittent

**S. Transportation System**

**Trails:** 0 miles

**Roads:** 3.5 miles

### **PART III - WATERSHED CONDITION**

**A. Burn Severity (acres):** 1246 (low)      2481 (moderate)      98 (high)

**B. Water-Repellent Soil (acres):** 2920

**C. Soil Erosion Hazard Rating (acres):** 0 (low)      1377 (moderate)      2753 (high)

**D. Erosion Potential:** 4.13 tons/acre

**E. Sediment Potential:** 4500 cubic yards / square mile

### **PART IV - HYDROLOGIC DESIGN FACTORS**

**A. Estimated Vegetative Recovery Period, (years):** 5

**B. Design Chance of Success, (percent):** 80

**C. Equivalent Design Recurrence Interval, (years):** 5

**D. Design Storm Duration, (hours):** 5.5

**E. Design Storm Magnitude, (inches):** 1.28in

**F. Design Flow, (cubic feet / second/ square mile):** .3

**G. Estimated Reduction in Infiltration, (percent):** 50

**H. Adjusted Design Flow, (cfs per square mile):** .52

## **PART V - SUMMARY OF ANALYSIS**

- A. Describe Critical Values/Resources and Threats (narrative):** beginning August 18, 2013 the Chestnut fire burned approximately 4172 acres of Federal and private land in the North Western portion of Nye County.

The majority of the fire area is in moderate to high burn severity (89%) with minimal residual seed bed in the burned areas to offer natural recovery and soil retention within the Chestnut fire area. Additionally the fire uncovered several previously unmapped and unassessed historic mining areas within the fire area.

The fire is in close proximity to the town of Gabbs NV, one of the six main economic hubs of Nye county. In 2011 the Associated Press named the county one of the top five economically disadvantaged counties in the country (as cited in <http://www.nyecounty.net/DocumentCenter/View/20861>). The fire burned the majority of the Goldyke pasture of the two pasture South Shoshone Allotment. The allotment permittee is the Yomba Shoshone tribe, whose membership is listed as 187 on their tribal website. The Ellsworth Fire burned a large portion of their northern pasture in the same allotment. The Ellsworth Fire and it's subsequent recovery were used for estimating the no action alternative and costs.

The Ellsworth fire area was briefly assessed to determine the recovery potential of the Chestnut area if a no action alternative was chosen. The fire area was surveyed for vegetative recovery, composition and soil productivity retention. There is limited mormon tea and sage brush regeneration within the fire area and no PJ. Small relect groupings of rice grass and squirrel tail were noted (groups of 5-10 clumps). The majority of the regrowth in the fire area was a cheatgrass monoculture (90%). Pedestaling was evident throughout the Ellsworth fire area indicating soil loss of 1-2 inches depending on the slope. The burn severities, based on the residual snags and staubs, appear to be identical from the Chestnut Fire to the comparison Ellsworth Fire. The Ellsworth Fire area has been heavily harvested for firewood with the wood gatherers utilizing fire lines and traveling cross country to gather their wood.

The assessment team identified three key Values at Risk within the Chestnut Fire, they are discussed in the table below.

<b>Color Scheme Legend</b>	
	<b>Risk Level</b>
	Very High
	High
	Intermediate (Where Treatments Are Recommended)

Value At Risk	Value Life (L), Property, (P), Resources (R)	Probability of Damage or Loss	Magnitude of Consequences	Risk	Discussion
Safety of staff and fire area visitors due to AML uncovered by the fire	L	Possible	Major	High	Newly detected mine shafts and adits were made visible by the fire rendering them an attractive nuisance to fire area visitors. The largest shaft is 15ft x 15ft x 40-50ft and is nearly vertical rendering it impossible for someone to self-rescue out of it. The smaller pits are large enough and close enough to the road to get a truck or dozer stuck in and would require significant effort to remove either. The two smaller features were mitigated during the assessment phase.
Soil Productivity and Hydrologic function	R	Likely	Major	Very High	The fire area is a Mojave border ecotype with very slow soil generation (eg 1 inch in 1000 yrs). The top soil in the area is highly erosive due to its texture. Observations made in an adjacent fire area indicate that left untreated the area will go to a cheatgrass monoculture with minimal native plant regeneration. This fire area has the potential to be habitat for 18 regional forester listed plant species. The soil burn severity depleted the seed bank on site further reducing the potential for native/desired plant regeneration on the site. The root structure of the native/desired plant community provides the best opportunity for soil retention within the fire area.

Value At Risk	Value Life (L), Property, (P), Resources (R)	Probability of Damage or Loss	Magnitude of Consequences	Risk	Discussion
Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts.	R	Very Likely	Moderate	Very High	Recent data on post fire recovery in pinyon-juniper communities indicates that as canopy closure increases the understory plant community resilience (the ability to recover naturally after a fire) rapidly decreases (Huber and Goodrich, 2011). Beyond 30% canopy cover there is a substantial loss of shrub and herbaceous cover. The entire Chestnut burn area was dominated by pinyon or pinyon-juniper mix. The canopy cover on slopes greater than 30% and ridgelines were estimated to have 20-30% canopy cover of pinyon-juniper with some curl leaf mountain mahogany. Areas B and C were estimated to have 40% and higher canopy cover of nearly pure pinyon stands. With a depleted seed bank and shrubs with a weak ability to re-sprout, resilience is extremely low and natural recovery before the invasion of annual weed species is unlikely. Whereas the plant community, soils, and hydrologic function were stable before the fire, they are now at extreme risk for loss and severe degradation. Without additional seeding in these areas, the risk of developing a cheatgrass monoculture is extreme. This would negatively alter the native plant communities for decades. It would also decrease the functional condition of watersheds1606000204 Lodi Valley and 1606000301 Upper lone Valley by increasing the fire return interval from a 40yr median return interval to a 2-4 yr return interval.

Value At Risk	Value Life (L), Property, (P), Resources (R)	Probability of Damage or Loss	Magnitude of Consequences	Risk	Discussion
Hazard trees	L,P	Possible	Major	High	During the course of our assessment multiple trees (12 inches dbh +) fell over the fire area roads. A significant number of still standing hazard trees were identified along the road ways, which will continue to fall during wind and storm events.

This part of the Austin District received significant historic mining but has not been surveyed for Abandoned Mine Land hazards. During the assessment of the fire multiple unmapped mine features were detected, several of them poses a threat to human safety. Two are a pit with a collapsed adit in the bottom of it. Parts of both of the exposed adit support beams were burned during the fire. Both of these smaller features were mitigated during the assessment phase. The third is a nearly vertical shaft that is 15x15x40-50ft deep with unstable opening edges. There are no fences or other forms of warning surrounding these openings. All of these mine features are in an area that would be prime fire wood gathering due to their proximity to the state highway on the northern border of the fire, the amount of fire killed trees and the two track leading to the general area having received moderate fire fighter use, making it more visible to the motoring public.

**B. Emergency Treatment Objectives (narrative):** The first objective of the proposed actions is to protect forest visitors from physical safety hazards such as a vertical mine shaft detected during the BAER assessment and hazard trees. The next objective is to protect soil productivity and hydrologic function and secure the native plant community by replenishing the seed bank within the fire area as well as allowing the planted seed time to become established before resuming normal forest activities on the fire area. The third objective is to retain the native plant communities and the ecologic functions that they provide.

These objectives will be met by implementing the following activities:

- Seed 1,100 acres of the fire area by hand or atv.
- Temporary area closure due to hazard trees and to allow the seed time to become established.
- Fence the vertical mine shaft to reduce the risk of someone falling into it.
- Repair a small portion of fence to prevent cattle from trespassing as easily and allow better area closure delination.
- Early Detection and Rapid Response for expanding weed populations (EDRR)

Soil productivity within the fire area was determined to be at very high risk of loss. This is due to: the highly erosive nature of the soil, the lack of vegetation to retain it on site and the lack of seed bed for recruitment of new vegetation to retain the soil on site. There is also a very high risk of losing the native plant community and developing a cheatgrass monoculture in this place which would deplete soil nutrients, disrupt the carbon-nitrogen cycle, and increase the fire return interval. This loss of thousands of acres of native plant communities and their soil retention capabilities would greatly reduce the site's potential for recovery. There is the added risk of sedimenting the streams within the fire area through soil loss and causing the streams to avulse creating large cut banks increasing the sediment

production and soil loss from the fire area. The forest is proposing to ground based seed and drag areas B and C in the attached map. Utilizing the drag increases the chance of success by 90% for the seeding. The forest recognizes that there will still potentially be cheatgrass and other nondesirable species that populate the fire area, but is willing to accept a manageable population of cheat grass and weeds (up to 35% ground cover) as opposed to a monoculture that the site has the potential to become if it is not seeded with desired species as indicated by the response in the adjacent and contemporary Ellsworth Fire.

To enable the seedings to be as successful as possible, the forest is proposing to rest the pasture for the 2 growing season minimum outlined in the forest plan plus additional time until two adaptive management trigger points are met. The two adaptive management triggers that would have to be met before the permittee could begin using the pasture again are: well anchored grass species and 50% of the desired species being able to reproduce or reproducing. In order to enforce this extended rest the forest proposes to repair the fence along the northern boundary of the pasture and fire in order to prevent cattle from migrating into the new growth from the pasture to the north.

In order to mitigate the risk from hazard trees falling on people or their vehicles, including employees, the forest proposes a temporary two year closure of the fire area to allow the winter weather and high wind events to knock down the majority of the unstable trees. This will also limit the amount of woodcutter traffic in the fire area introducing additional weed seeds and limit the amount of cross country travel occurring in the fire area from individuals traveling to the trees they are interested in harvesting as opposed to carrying the rounds to their vehicles at the road. By limiting the cross country travel additional soil disturbance and loss would be mitigated. The forest is not proposing additional Law Enforcement Officer (LEO) presence to enforce the closure as the falling hazard trees are blocking the roads limiting the ingress and egress of the area and would present a safety risk to the employee. There will likely be individuals who do not follow the closure order, but it will be a greatly reduced risk of exposure as compared to not closing the area (high to low).

The vertical shaft presents a high risk of visitor injury/death and entrapment. This is due to the nearly vertical walls and the depth that inhibit someone from being able to self rescue out of the shaft. The forest proposes to fence the vertical shaft to prevent someone from falling into the shaft and becoming trapped. The proposed treatment would not eliminate the risk as the fence could be removed or bypassed by vandals or spelunkers and they could be injured due to their actions. However this is a risk that is present at all agency closed Abandoned Mine Lands (AML) sites. This would lower the risk to "moderate" by reducing the likely hood of injury/impact to the individual but would not eliminate the risk. There were several shallow pits (up to 10 feet in depth) along the roads within the fire which the forest was able to mitigate during the assessment phase with the tools and personnel on hand for the assessment.

Early Detection Rapid Response (EDRR) weed surveys of the fire area is to allow the early detection of weed populations expanding due to the fire. By detecting potential expansions early and being able to get the weed crew into the area, the forest is hoping to reduce the expansions by 80-100% in the first year (Glover, personal communication). The forest recognizes that expansions could occur for several years after the fire and is prepared to continue to survey the area and treat priority areas within the fire area for weed expansions.

Several alternatives were considered for the proposed treatments to the fire area but were not brought forward for several reasons. They are discussed below.

In regards to the mine closure proposal, the forest initially considered fencing the deeper pit on the north end of the fire area and the pit within the chestnut mine area in addition to the proposed shaft closure. This was not developed further as the fence would present a maintenance workload. There are several hazard trees that could fall on the considered fence in the first few years after the fire and render the treatment moot. The forest AML coordinator indicated that the pits presented a low enough potential hazard to be left with no additional treatment from what he did at the time of assessment (Maas, personal communication).

Various seed mixes were considered for the seeding of the burn. Likewise the idea of arially seeding the entire fire area with one seed mix and then over seeding the ground seeding units with a supplemental seed mix and dragging both seed mixes into the soil surface. Due to the cost of the more diverse "Prima Electio" seed mix a more scaled back economically feasible seed mix was developed. The forest also looked at leveraging partnerships to get a portion of the seed mix paid for and/or additional seed mix applied for us so as to further increase the potential for succes of this treatment.

Various means of resting the pasture and delineating the temporary closure area were considered. Stringing temporary fence along the damaged northern fence section was considered, but it has the double cost of having to be removed once the funding for repairing the fence is obtained. A blanket 2yr rest was considered, but not carried forward as it did not accommodate potentially less productive growing years (continued drought, etc) and the delay in reaching the desired conditions on the treatment units. A full time range rider was considered but was not carried forward due to the cost of employing the individual for multiple seasons and equipping them (\$24,000 for 3 seasons). Multiple fencing configurations were considered including stringing temporary fence between topographic barriers to isolate the fire area from the rest of the pasture so that the permittee could continue to graze the unburned portions (this solution included the Stokes/boundary temporary fence – 15,521 feet @ \$2/linear ft. ≈ \$31,042; South fire perimeter temporary fence – 13,486 feet @ \$2/linear ft. ≈ \$26,972; and Northern Burned fence repair – 1,935 feet @ \$1/linear ft. ≈ \$1,935 for a total of \$59,949 for installation alone)

Based on the amount of wood gathering observed in the Ellsworth Fire, a slightly longer drive for woodcutters than the Chestnut fire, the team considered an open season on wood cutting in the fire area prior to implementing the remainder of the treatments. This was not carried forward as there are signifigant numbers of hazard trees in the fire area that are actively falling. Additionally the dozer lines could easily be mistaken for roads and used to access portions of the fire area where vehicle traffic was not previously able to access. There was also the concern of cross country travel to more easily load cut wood causing additional soil loss and potentially introducing additional weeds into the fire area.

### **C. Probability of Completing Treatment Prior to Damaging Storm or Event:**

**Land 85%   Channel na%   Roads/Trails na%   Protection/Safety 90%**



**D. Probability of Treatment Success**

	Years after Treatment		
	1	3	5
<b>Land</b>	90	95	98
<b>Channel</b>	na	na	na
<b>Roads/Trails</b>	na	na	na
<b>Protection/Safety</b>	90	90	90

**E. Cost of No-Action (Including Loss):**

Aerial herbicide application EIS \$ 100,000 (Glover, personal communication)  
 Pre emergent and post emergant herbicide applications \$ 820,000 for both  
 Reseeding the treated area \$374,700 seed + \$63,000 for aircraft + dragging accessible areas \$15,000= \$ 452,700  
 Repair burned out fence \$2,000 (COTR, fencing, mileage, per diem)  
 Total measureable costs: \$1,374 ,700

Unmeasurable items: loss of life due to hazard tree or AML exposure (NDOT prices loss of life at \$6 million/life), soil productivity, forage production due to lost soil productivity for wildlife and livestock.

**F. Cost of Selected Alternative (Including Loss): \$ 119,624**

**G. Skills Represented on Burned-Area Survey Team:**

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS

A=adjunct members consulted but not ordered to the incident

**Team Leader:** Robin J Wignall

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**FAX:** 775-778-6167

**H. Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

**Land Treatments:**

**Seeding to protect BAER values Soil Productivity/Hydrologic Function and Native Plant Community**

Species	lbs./acre	acres	total lbs. needed	Granite Seed Company (estimated price/bulk #)	Granite Seed Company seed cost	Granite Seed Company seed cost/acre
sand dropseed ( <i>Sporobolus cryptandrus</i> )	0.5	1,100	550	\$7.50	\$4125	\$3.75
Slender wheatgrass ( <i>Elymus trachycaulus</i> )	1	1,100	1,100	\$4.50	\$4,950	\$4.50
Idaho fescue ( <i>Festuca idahoensis</i> )	1	1,100	1,100	\$7.50	\$8,250	\$7.50
Sandberg bluegrass ( <i>Poa secunda ssp. sandbergii</i> ) vns	1	1,100	1,100	\$4.88	\$5,368	\$4.88
Indian Ricegrass ( <i>Achnatherum hymenoides</i> )	1	1,100	1100	\$5.63	\$6,193	\$5.63
silvery lupine ( <i>Lupinus argenteus</i> )	0.25	1,100	275	\$58.50	\$16,088	\$14.63
Rocky Mountain Bee Plant ( <i>Cleome serrulata</i> )	0.5	1,100	550	\$16.50	\$9,075*	\$8.25
Western yarrow ( <i>Achillea millefolium var. occidentalis</i> ) v. Yakima	0.08	1,100	88	\$14.25	\$1,254	\$1.14
<b>Total</b>	5.33	1100	6,413	N/A	\$55,303	\$50.28

\*Nevada Department of Wildlife has committed to purchasing this for us

The following species discussions were derived in large part from the USDA plant database.

***Sporobolus cryptandrus*** – Sand dropseed grows well in association with other grass species. It is a prolific self-seeder, has high drought, and is best suited for the soil types found within the burned area.

***Elymus trachycaulus*** – Slender wheatgrass is quick to establish and has high seedling vigor in the first year. Because of its ability to tiller and has short rhizomes it reproduces easily. Because of its early emergence in the spring and mid-summer senescence, slender wheatgrass competes well with cheatgrass but gives way to other native species later in the growing season.

***Festuca idahoensis*** – because Idaho fescue begins growth early in the spring, it suppresses annuals such as cheatgrass more effectively than grasses which initiate growth later in the spring. It also produces an extensive, deep root system that develops a root-mycorrhizal association that helps this species to tolerate adverse soil conditions.

*Poa secunda* (syn. *P. sandbergii*) – Sandberg’s bluegrass is a pioneer species, one of the first grasses to colonize on disturbed sites. It is small in stature, early to establish, and quick to mature. It is also a “self-seeder” and often produces viable seeds within the first growing season.

*Achnatherum hymenoides* - Indian ricegrass is drought tolerant and has a fibrous root system, which makes it desirable for erosion control and reclamation in many arid and semiarid areas in the western United States. Indian ricegrass is very winter hardy and can be found at elevations from 3,300 to 9,500 feet above sea level. Although it prefers sandy, coarse textured soils, it often does well on a wide range of soils between rocky shale and fine, clay loams.

*Lupinus argenteus* - Silver lupine is critical to this seed mix as it is a nitrogen fixer. Because it establishes within the first year and spreads rapidly to form colonies, it has the ability to replenish declining nitrogen in the soil as the rest of the species in this mix flourish. This will ensure the success of the plant community past the first year.

*Cleome serrulata* – Rocky Mountain Beeplant is a self-seeding annual that establishes early in the spring. It is most often found on recently disturbed soils where its rapidly developing root systems help stabilize soils. This species does well on medium to coarse soils on dry upland sites. It performs well for two to three years after a disturbance and persists in the seedbed for many years as a plant community recovers.

*Achillea millefolium* var. *occidentalis* - Western yarrow is highly variable and displays wide ecological amplitude to diurnal temperature, altitude, latitude, and climatic conditions. Western yarrow initiates growth in early spring and is an early successional species that readily establishes on disturbed sites, and thrives in droughty conditions. These characteristics often allow it to compete well against invasive species.

Many alternative seed mixes were considered. These included an aerial mix for the entire burn area (\$374,700), a mix applied by hand on just the high risk “B” and “C” areas (\$199,856), the mix applied by atv and hand crews of the original proposal (\$84,356), to the currently proposed (\$59,428). All of which follow the Forest Service policy on plant material use (FSM 2070). This latest was developed through a deeper level of scrutiny of the burn area conditions, other suitable species that were more cost effective, and focused on just the areas at very high risk for losses to soil productivity, hydrologic function, and loss of native plant communities due to low resilience and high likelihood of conversion to a cheatgrass/invasive annual monoculture.

Line Item	Unit Cost	Total
Seed	\$59,428	\$55,303
2 person application team	\$350 x 2 x 15 days	\$ 10,500
Implementation team leader	\$400 x 5 days	\$ 2,000
Archeologist	\$350 x 20 days	\$ 7,000
Mileage (including atvs)	.61 per mile x 9000 miles	\$ 5,490
Supplies and materials	\$400	\$ 400
Per diem	\$123 x 55 days	\$ 6,765
	<b>Total Cost</b>	<b>\$ 87,458-9,075</b>

**Noxious Weed Early Detection Rapid Response (EDRR) to protect BAER values Soil Productivity and Hydrologic Function:** EDRR will concentrate on determining if the weed

sites are expanding and determine if extra treatments are necessary. No effort will be made to EDRR existing weed infestation areas but surveys will be conducted to determine if these sites are expanding. The data gathered from this EDRR will be used to determine if and what treatment will be needed. During the course of this EDRR survey the district will be notified of any areas that need additional actions and a summary report will be developed at the end of the summer.

The work would be completed by multiple trips to the fire area totaling 11 days of time, but totalling up to 20 visits to determine phenology and monitor effectiveness of treatments applied by others. The mileage includes the atvs for the crew to access the area as well as the milage to travel to the site from the office. The fire area is a 90 minute to 120 minute oneway drive depending which office the crew is working out of.

Cheat grass was the only weed detected within the Chestnut fire area . Haligeton and whitetop were detected adjacent to the fire area along access routes used by the fire suppression crews.

Line Item	Unit Cost	Total
Salaries two GS 4	\$135 per day x 2 x 11 days	\$2,970
District plant specialist	\$350 per day x 5 days	\$1,750
GIS/FACTS specialist	\$321 per day x 5 days	\$1,605
Vehicle mileage	\$ .60 per mile x 4400 miles	\$2,640
Implementation team leader	\$400 per day x 1 day	\$ 400
	<b>Total Cost</b>	<b>\$9,365</b>

**Temporarily Rest the pasture to protect BAER values Soil Productivity and Hydrologic function:** The forest proposes to temporarily rest the Goldyke pasture of the South Shoshone Allotment in order to allow the proposed seedings to take hold and become established. In order to make the rest more efficient to implement the forest is proposing to repair a portion of the northern pasture fence. Repairing the fence is cheaper than stringing a temporary fence in the same cooridor, maintaining it and then removing it. The northern fence along the highway improves driver safety and reduces the chances of the cattle finding their way from the northern pasture south into the burn area. By having the northern fence it also reduces the need for a range rider by 50%. The fence repair will also make it more efficient to delineate and enforce the temporary area closure (BAERCAT, page 153).

Line Item	Unit Cost	Total
Range Rider for 1 year Specialist	\$350 per day x 25 days	\$8,750
Fence repair*	\$1 per linear foot x 1,935 ft	\$1935
COTR	350 per day x 2 days	\$ 700
	<b>Total Cost</b>	<b>\$11,385</b>

\*the fence repair helps with the Temporary Area Closure by providing a northern boundary to the closure area.

**Channel Treatments:** na

**Roads and Trail Treatments:** na

**Protection/Safety Treatments:**

**Temporary area closure to protect BAER values Life and Soil Productivity:** The forest proposes to temporarily close the fire area for 2 years to protect forest visitors from falling

hazard trees and to protect the natural regeneration as well as protect the seeding treatment to allow it to become well established.

Line Item	Unit Cost	Total
Closure/press release authoring	\$400 per day x 2 days	\$ 800
Area closure signs	4 x \$350	\$1,600
Posts for signs	8 x \$12	\$ 96
Sign installation	2 x \$350 per day x 1 day	\$ 700
Arch clearance for post holes	350 per day x 1 day	\$ 350
Perdiem	123 per day x 2	\$ 246
Hole auger rental	\$ 100 per day x 2	\$ 200
	<b>Total Cost</b>	<b>\$3,992</b>

**Fence the vertical mine shaft to protect BAER value Life:** The fire exposed 3 hazardous abandoned mine features (one inclined shaft, one nearly caved decline and one nearly caved adit) that require safety mitigation, in addition to numerous non-hazard trenches, pits and waste rock dumps. Two of these features are located in the NE quarter of section 22, T12N R37E MDM, the other in the NE quarter of section 28. The fire effectively burned off the vegetative cover surrounding these features, making them clearly visible from the system and non-system roads in the watershed. The two partially collapsed features were fully mitigated during the reconnaissance effort and do not require further attention. Mitigation of the safety hazard related to the inclined mine shaft (logged as NY -2444) is necessary to minimize the dangerous condition it poses to unsuspecting visitors. The shaft dimensions are roughly 17-foot diameter at the collar, extending 40-45 at depth at an angle between 75 and 80°. The shaft collar is comprised of unconsolidated colluvium, saprolite and fractured bedrock.

**Recommendation:** Logistical constraints limit the type of closure that can be constructed to address the inclined shaft. Although accessible by cross-country travel using ATVs, the hillside slope is such that transporting steel and equipment poses a significant risk to the personnel involved. Similarly, the dimensions and nature of the collar are problematic to constructing a permanent steel grate. For these reasons, the preferred alternative is to construct a wood and t-post, barbed wire enclosure surrounding the opening.

*Mine Feature Presenting Public Safety Hazard*

<i>CH-1 shaft, dimensions 17' x 17' x 45' deep, barbed wire fence, ATV support</i>
<i>CH-2 adit, partially caved, dimensions 1'h x 3'w x 25' deep, earthen backfill complete</i>
<i>CH-3 decline, partially caved, dimensions 1.5' h x 3.5' w x 30' deep, earthen backfill complete</i>

AML Preferred alternative. See table below

*Preferred Alternative 1 costs (wood and t-post barbed wire enclosure)*

Item	Units	Cost per Unit	Cost Total
Personnel Time	3		1,500
Misc Supplies: barbed wire, posts, hooks, tools, signs, etc.	1	250	150
Travel and Per diem	1	500	500
<b>Total Cost</b>			<b>2,150</b>

**I. Monitoring Narrative:**

**(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)**

na

## Interim # 1

## **PART VII - APPROVALS**

1.             
*/s/William A. Dunkelberger*  
WILLIAM A. DUNKELBERGER

\_\_\_\_\_  
Forest Supervisor (signature)

09/19/2013  
Date

2. Chris Iverson (for) \_\_\_\_\_ 9/26/13 \_\_\_\_\_  
Regional Forester (signature) Date