

December 22, 2022

Salmon-Cobalt District Ranger
Bobbi Filbert
311 McPherson Street,
Salmon, ID 83467

RE: Iron Creek Exploration Drilling Project

Comments submitted to:

comments-intermtn-salmon-challis-salmon-cobalt@usda.gov

Dear Forest Service,

Here are comments of WildLands Defense, Alliance for the Wild Rockies, Native Ecosystems Council and Yellowstone to Uintas Connection on the Iron Creek Exploration Drilling Project.

This project will result in large-scale new habitat and ecosystem disturbance and degradation in a remote wild land area of great importance for rare native carnivores like Wolverine, Fisher and Gray Wolf, many native raptor species including potentially Bald and Golden eagles, Northern Goshawk, rare forest owls, and vital habitat for a wide variety of rare and declining native migratory songbirds and resident birds. See Rosenberg et al. 2019, describing loss of 3 billion birds in North America. The Iron Creek watershed contains occupied Bull Trout, Chinook Salmon and Steelhead habitat. All of these species are jeopardized by the array of human disturbances including agency vegetation treatments, wildfire, a cobalt, gold and other mining boom, and chronic levels livestock of grazing disturbance in this area of the SCBF.

IDFG data at <https://idfg.idaho.gov/ifwis/fishingplanner/water/1139684448873> shows”

“Species Observed in Surveys

- [Bull Trout](#) *Salvelinus confluentus* observed in 2016
- [Chinook Salmon](#) *Oncorhynchus tshawytscha* observed in 2016
- [Cottus](#) *Cottus* observed in 2016
- [Cutthroat Trout](#) *Oncorhynchus clarkii* observed in 2016
- [Fry](#) *Oncorhynchus* observed in 2016
- [Rainbow Trout](#) *Oncorhynchus mykiss* observed in 2016
- [Brook Trout](#) *Salvelinus fontinalis* observed in 2011
- [Steelhead](#) *Oncorhynchus mykiss* pop 13 observed in 2010
- [Golden Trout](#) *Oncorhynchus mykiss aguabonita* observed in 2004
- [Rainbow x Cutthroat Trout](#) *Oncorhynchus mykiss x clarkii* observed in 2002” .

For these aquatic species, and all terrestrial species, full and complete integrated baseline habitat and population surveys must occur and be provided to the public for comment as part of this process.

The legal notice shows this is large, and very prolonged drilling proposal – it states:

“ICC will drill from an average of 10 drill pads per year and up to 20 drill pads per year. The maximum total area of disturbance under this 10-year plan is 11.6 acres and 92 drill pads. However, the maximum annual disturbance will be limited to 3 acres to construct 20 drill pads and 1 mile of temporary roads.

The project would be accessed from county and Forest System Road, approximately 11.4 miles of existing roads temporarily, and 3.2 miles of new temporary roads. New temporary roads would be up to 15 feet wide and planned to maintain grades of less than 10 percent, where possible. Temporary roads and closed roads used for more than one year will be barricaded with large boulders and/or gates to prevent public entry and stabilized with erosion control measures during periods of non-usage”.

This appears to be a major federal action that warrants an EIS.

What does ICC stand for? The Scoping Notice and minimal FS info provided provides insufficient baseline environmental information for the public to effectively comment, and does not even reveal what these mining entity initials stand for.

The Scoping Notice demonstrates the prolonged period of time this significant habitat and landscape disturbance “exploration” would take place, Ecological conditions and the environmental baseline could change dramatically over this time due to serious losses of habitats and viable populations due to other drilling/treatment/logging projects and/or fire; the effects of climate change stress; the effects of megadrought; mining activities: potential wildlife or other diseases impacting local and/or regional populations and many other factors.

“ICC will conduct exploration drilling for solid minerals containing copper and cobalt on its unpatented mining claims.

The project schedule is proposed for 10 years. Operations may be conducted throughout the year, except during periods in the spring when road conditions are soft and susceptible to damage. Final reclamation will be completed by November 30, 2034 (2 years after cessation of drilling operations”.

The company seeks to conduct many very damaging environmental disturbance actions with minimal controls during very harmful periods for wildlife. The FS must consider a full range of actions to reduce, minimize and pare ICC’s wish-list to a greatly reduced and much more controlled project with mandatory environmental safeguards. Project activity should only be allowed in fall during daylight hours. Activity in winter will disturb and displace wintering wildlife, and in spring and summer will “take” numerous migratory bird and other native wildlife species. There is not an iota of information in the scoping notice about species of concern that will be harmed here; habitats that would be altered/disturbed/destroyed; whether the Forest is meeting its goals and objectives in the Forest plan for these species and their habitats; and goals for protection of wild land areas, visual values and many other critical attributes. Winter activity will disturb and displace wintering wildlife from critical habitats which are not even referenced

here again depriving the public of basic info needed to provide³ informed comment – and that will suffer vehicle and motorized travel disturbance by workers to and from this remote site.

Exploration activity in spring and summer must be restricted, as the destruction of vegetation, bulldozing, noise night lights, constant human traffic, etc.; will disturb and displace habitat; will destroy birds nests, eggs and young; will displace raptors from nests; and disrupt fawning/calving big game and other mammals during birthing and young rearing periods.

The SN states:

“Drilling equipment will be mobilized and demobilized from the project once per year. Up to 4 core drilling rigs and 2 reverse circulation (RC) drilling rigs may be operational at a time”.

How much noise will this generate? What will be the noise frequencies generated? How will these types and levels of noise impact wildlife habitats and animal use of forest lands including during critical reproductive and nesting and other periods? Please provide detailed predecisional noise studies and analysis of wildlife species and recreational use disturbance from this drilling activity under all weather conditions over all periods of the year when this would take place.

The FS must consider a range of alternatives that sharply reduce the amount, decade-long length and seasonal time period of any exploration activity here.

The SN states:

“Drilling will be conducted in 2, 12-hour shifts per day, 7 days per week”.

The FS must consider a range of alternatives to cut this back to mid-morning to only late afternoon drilling allowed – as the noise will interfere with wildlife during periods when animals are most active. No night-time activity should be allowed.

The SN states:

“However, there would be 8 crossings of intermittent, non-fish-bearing streams, which includes 7 crossing on existing closed roads and 1 on a proposed new temporary road. When possible, use of these crossings will be scheduled during periods of minimum flow (could be dry). If streams must be crossed when water is flowing, ICC will engineer and install crossings according to guidance and/or requirements of the Forest and Army Corps of Engineers”.

Full detailed current surveys and detailed mapping of and measurement of flows, and full data on current aquatic and riparian habitat quality and quantity across all lengths of the affected streams must be prepared as part of the basis for any meaningful consultation under the ESA.

The FS must consider a range of alternatives that eliminates drilling in the area that require a bulldozing in yet another “temporary” road – especially since the SCNF lands are rife with unauthorized routes and the failure of the SCNF to effectively control unauthorized route proliferation - as shown in its Moose Fire Report.

The SN states:

“ICC will conduct exploration in a systematic manner that will subdivide the project into smaller phases based upon priorities. ICC will submit an annual operations and reclamation plan for each exploration phase to the Forest Service ...”.

The FS must require new public comment and analysis at the level of a minimum an EA, before any more of the proposed series following “phase” of exploration activity occurs, and analyze direct, indirect and cumulative impacts in a series of alternatives.

Why is there not a POO provided for this significant forest land disturbance project?

The FS claims “avoidance” of harms but the scoping material proposes loose and weak actions and would allow extremely harmful 24 hour a day year-long drilling and a huge number of drill holes and new route bulldozing disturbance in a remote area- but without necessary systematic multi-season pre-decisional surveys, cannot ensure that any promised avoidance will be feasible and/or effective. The FS states:

“Temporary road locations and drill sites will be proposed based on avoidance of the following:

- *_Eligible cultural resources*
- *_Wetlands, springs, and streams, including wet meadows where soil is saturated throughout the growing season.*
- *_Avoid known populations of sensitive plant species.*
- *_Riparian Habitat Conservation Areas (RHCAs)”.*

But there is not even a smidgen of baseline data and information provided on cultural and historical resources; no mapping and analysis of water quality and quantity including flows and any changes in flows over time or of ecological conditions in all riparian zones; no analysis of ecological conditions in all terrestrial and aquatic systems; and many other gaping information deficiencies.

It is critical that spring, seep and stream flows be monitored over the course of multiple years and that all historical data be used to determine trends in flows and to establish a pre-drilling baseline as there is a significant concern that drilling, road construction, and other exploration activity will impair or alter groundwater and surface expression of water flows.

We are dismayed that the FS fails to provide any necessary seasonal and spatial avoidance for habitats of importance for all terrestrial animals of importance, all sensitive species, all EDA-listed species.

The SN states:

“ICC would prepare 92 drill pads, each to accommodate up to 6 drill holes, along existing Forest System roads (open and closed) and temporary roads. Drill pads will be approximately 40 feet by 60 feet each. Drill pads will be constructed within existing road disturbance to the

extent possible, except where traffic passage, topography and drilling targets require additional disturbance to achieve objectives safely. Drill pads proposed on steep hillsides may be constructed with timber and wood to reduce grading and deposition of soil to build earthen pads”.

The FS must apply specific dimensional size limits to drill site disturbance at each site showing on the mapping, and ICC must be required to comply with this. How steep are all hillsides impacted? The FS must examine a full range of alternatives including large-scale reduction in the areas explored/drilled, the number of drill pads, and the number of drill holes - by avoiding sensitive habitat areas for native biota, erosion-prone steep slopes, RHCAs, etc.

We are very concerned that the drilling activity cutting down trees and road maintenance, bulldozing and other activity will scar and injure trees so they produce copious sap that will attract forest insects and foster forest pathogens – creating large-scale new “forest health” problems that the SCNF then will use as justification to “treat” vast areas of the SCNF. Full baseline inventories of forest ecological conditions across this landscape must take place. Where are there currently forest pathogens as a baseline.

We fully incorporate the ecological concerns raised in the attached series of our comments on the SCNF Prescribed Fire EA, the Stormy logging Project, the Bayhorse logging/treatment Project and other attached comments and documents into these comments.

The large-scale losses of habitats that the massive treatment projects the FS is proposing must be assessed for indirect and cumulative effect, and so must the effects of the moose Fire and other recent wildfires.

There are a host of mining exploration projects. We fully incorporate our comments on BTAC and other recent SCNF mining explo “boom” projects.

The FS states:

“Sumps will be constructed with escape ramps, flagged, and barricaded with fencing to prevent accidental falls, deter wildlife and prevent cattle entry until each is backfilled to the original surface grade. [It is highly likely cows and/or weather will break down this flimsy fencing, and heighten risk of wildlife drowning. See photo of
Typical state of orange drowning-prevention netting after its bene up a little while - such this on WLD observed on Vale BLM lands Lithium drilling exploration project in 2022.





Also note vile discolored drill site water. As we describe below, the FS must fully analyze alternatives requiring all waste water be placed in an enclosed tank and hauled to suitable disposal site NOT on USFS lands, is a reasonable and prudent wildlife minimization and avoidance action.

The FS states:

Drilling procedures will be managed to control cuttings and prevent the discharge of drill fluids off the drill site with the use of berms and sumps. [Haul this vile water away to a proper disposal site]. The duration of drilling at each site could vary by location and range between several days and one or two months. Drill sites may be utilized in more than one phase and will be reclaimed when drilling is complete. [This all must be clearly defined pre-decisionally – and a specific sequence of actions put in place].

ICC would operate as follows:

1. Locate drill pads outside of sensitive areas such as riparian areas or wetlands except in 4 instances where effective mitigation measures will be used. [There is no information provided to date on baseline rare species, cultural and historical site, visual values, wild land values, water quality, historic mining impacts and potential site contamination, potential toxic minerals, etc.] yet there is a map of sites already proposed – the FSA must go back to the drawing board and FIRST conduct baseline studies].

2. Manage surface water run-off by utilizing BMPs such as silt fencing, straw waddles, water bars, rolling dips, and sumps. [Sumps fail, wattles fail, water bars can cause additional problems – a specific set of actions for each of the drill sites must be identified and mandated if adverse impact minimization is to occur]. These BMPs will be utilized on new construction areas and field fit based on topography, landscape, and the vicinity to surface water. Use erosion control products made from 100% biodegradable non-plastic materials that either does not contain netting, or netting is non-plastic and loose weave.
3. Allow water collected in sumps to infiltrate or evaporate prior to reclaiming the excavated sump. [Why isn't water required to be hauled away under an alternative action? That would reduce disturbance, pollution/contamination of soil/air/water and conflicts with wildlife exposure or drowning].
4. In the event of a potential overfilling of the sump of excessive drill water, contingency plans will be in place to address and mitigate the sump water balance. Drilling will cease until containment conditions in the sump improve. Contingency actions would include excavating another sump, adding one or more portable sumps, and/or using a portable water treatment system to recycle water back into the drill hole. [Solve this by requiring all water/liquid muck to be hauled away].
5. Avoid removing snag trees during drill site construction, when possible. [How many snag trees will be removed, how large are they and where are they located at each drill site? Simply shift drill site locations a bit to preserve snag trees – the FS can't just sit back and let the mining company get everything they want. Why can't this be solved with adjustment of site location, and no removal of snag trees be allowed?? Please overlay the blank background scoping map with aerial photos of forest, shrub or other cover and also please provide detailed mapping analysis of vegetation cover and forest types across the surrounding landscape, and assess how much fragmentation of all vegetation communities currently exists here. How many sites of mature or old growth forested and/or shrub veg will be disturbed, and can any drill sites 9inbcluding by reducing the number of sites be located in existing disturbed areas? Given the massive treatments the FS has authorized and/or is proposing, the FS must establish a baseline of the current degree of forest loss and loss of snag and mature and old growth forest habitats. What are the avian species, bats, native carnivores – that may use snag or hollow trees?].
6. Avoid drilling locations that impact known populations of sensitive plant species. [This must be mandatory – and the FS must use mandatory language. Full and detailed current inventories for all sensitive plant and animal species, as well as all exotic plant infestations at present must be conducted and presented to the public in a report in this process so the public can effectively comment on this action, and so the agency can determine the significance of this disturbance. How will this project expand noxious and flammable weeds in this landscape, and where do these species currently exist and in what density – for example, along or near access routes and drill sites and in the vicinity of sensitive species habitats. Note that many weeds are likely to increase under climate stress, and climate stress is also likely to make lands less resilient and less able to recover and be properly rehabbed- thus bond amounts must be increases, and disturbance minimized to the maximum extent possible].
7. Notify the Forest Service if rare or sensitive plants including pink dandelion (pink agoseris), are encountered. The Forest Service will work with the Operator to avoid impacts to sensitive plant populations. [Do the necessary thorough pre-decisional surveys and prohibit mining disturbance activity in pink agoseris habitats].

8. Locate staging areas in an area free of weeds and minimize travel through weed-infested areas. [The Fs documents lack basic information on the current and foreseeable extent of weed species - noxious, exotic flammable annuals, etc. How will all site disturbance activity impact weed proliferation spread, and site dominance, and what will the ecological effects of all this prolonged 10 year road use and drilling disturbance actually be?]
9. Lighting would be shielded and angled downward. [Again, a full range of alternatives including no night time drilling, must be assessed in this wild Dark Sky area. Lights will lure in and kill insects, and potentially lure rare bats to lighted areas near sumps where they may drown in sumps – including as bats attempt to forage on drowning insects].
10. Use environmentally friendly, non-toxic to aquatic organisms, drilling fluids. [WHAT are these? Specify in detail what specific fluids will be used, and all chemical components the specific drilling fluid to be used contain. Will any underground explosives or fracking-type actions take place?].
11. Cease all operations in the event a terrestrial or avian wildlife sensitive species or ESA species active den, nest, or maternity colony or individual is found in or near the Project Area during implementation and report to the Forest Service. [Thorough multi-year surveys must be conducted over all periods of the year must be undertaken prior to any authorization and must be incorporated into an EIS-level NEPA analysis here. Full analysis of species current habitat occurrence, quality, quantity and degree of existing fragmentation in this landscape must occur as part of this NEPA process].
12. Notify the Forest Service, within 24 hours, if a Threatened, Endangered or Sensitive wildlife species, large carnivore, or large raptor including dens and nests is found in or near the Project Area”. [Again, intensive pre-decisional inventories must take place and exploration disturbance activity must be limited to fall day time activity only to protect rare species. How much could activities listed in Scoping Notice Table 2 be reduced if helicopter drilling was authorized?]

The Scoping document also states:

“ICC will draft surface water according to the following requirements:

2. Use withdrawal rates that will not remove more than 25% of stream flow to reduce the possibility of stranding fish.
3. Conduct water drafting activities in such a way that they do not physically block fish migration or reduce stream flows to the point that the activity prevents fish migration.
4. Use water for drilling from the approved locations. Placed pumps in approved containment with absorbent pads.
5. Adhere to National Marine Fisheries Service (NMFS) requirements for screening of water drafting equipment. The intake hose will be screened at 3/32-inch diameter and approach velocities will not exceed 0.2 feet per second according to NMFS fish screen criteria (NMFS 1996). Submerge intake screens to a depth of at least one screen radius. Attach screens to all pumps in Salmon-Challis National Forest waters even if listed fish are absent. Screen mesh must be in good condition and present a sealed, positive barrier effectively preventing entry of fish into the intake
6. Place pump intake screens in locations with sufficient velocity to sweep away debris. Intake screens should be submerged to a depth of at least one screen radius (NMFS 1996). Larger surface areas are recommended where debris buildup is anticipated, and where stream depth is inadequate to fully submerge the screen.

7. Configure water impoundments to allow for upstream and downstream aquatic vertebrate (i.e. fish and amphibian) passage around the structure”.

The FS must identify exact specific areas in streams with no sensitive or ESA-listed aquatic species present. Which streams are these?

The FS states that there will be 4 drill sites will be in RHCAs. There is no essential “need” for drilling in RHCAs. This will also result in veg clearing as well as contamination of ground water or surface water. Simply prohibit any RHCA drilling. The SCNF increasingly treats RHCAs - including in its “fuels” treatments – as disposable and subjects them to serious disturbance, Plus this area also suffers a significant amount of deleterious cattle grazing whose impacts must be fully assessed, and a full current ecological assessment of cattle impacts on both upland and riparian areas must take place.

While the FS refers to plugging drill holes – please conduct detailed analysis of the full range of environmental risks associated with the proposed actions in this very earth-quake prone region and how seismic activity may impact drill holes, impacts to water tables, foreseeable reductions or loss in surface flows – including from the combined effects, etc.

A bond amount of several million dollars must be specified – including one that relies on worst-case scenarios and accidents, and this must be posted prior to any final decision under NEPA.

Where are all active cobalt and other mining claims in the Salmon-Challis Forest? Please provide detailed mapping and analysis.

Where all historical mine sites?

Where are all authorized and/or foreseeable cobalt, gold and other mining exploration projects in the Salmon-Challis Forest?

How close is this site large-scale new disturbance to the greenwashed current cobalt mining activity taking place? How has that activity already deviated from plans laid out in the POO and NEPA documentation?

See for example:

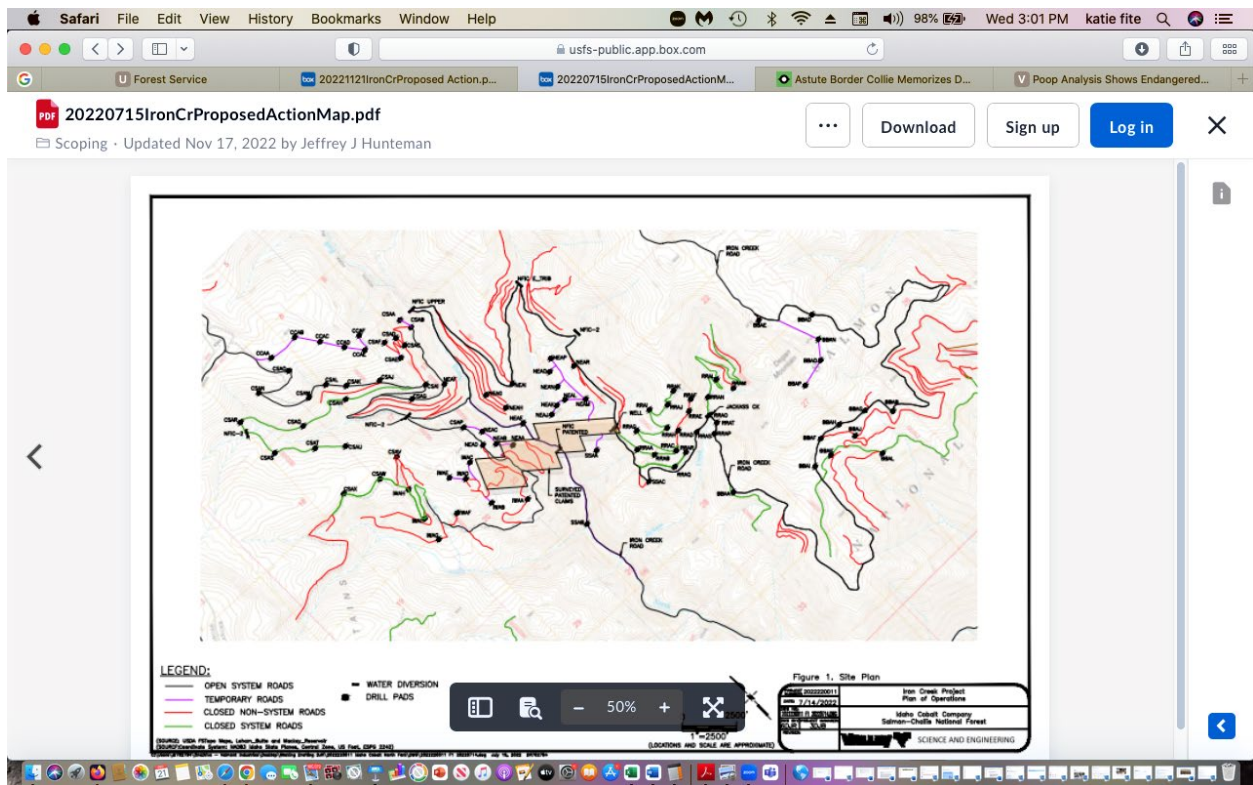
Cobalt mine located near Blackbird toxic mine and superfund site:

<https://www.ktvb.com/article/news/local/idaho/cobalt-mine-officially-opening-in-salmon-challis-national-forest-on-friday/277-97754b09-5fe2-4fd0-b1a4-83d274234e9d>

Where will all gravel and other material from roads leading to, or associated with, the project area come from? How much disturbance will that entail? What will be those adverse impacts on sensitive and important species habitats and populations, watersheds, clean water, public recreational uses and safety, visual setting, etc.? Will ugly new permanent scaring “borrow pits” and gravel pits be developed? Where? And where is the NEPA analysis of these sites and their impacts?

How much energy will this project consume? What will be the carbon footprint of this extreme amount of exploration activity?

This mapping shows the activity will massively tear up, de-stabilize soils and expose soils to extensive erosion in wind and water over a large land area. These impacts will be permanent and irreversible.



In the above mapping from the FS, the reddish colors are very difficult to distinguish. Please provide much clearer mapping, and detailed information on the current status of all routes – new, old, closed, not closed.

The FS documents are silent on past mine harms in this region. See for example:

<https://www.idahogeology.org/pub/Staff Reports/2014/S-14-4 Intro Summary.pdf>

Mitchell and Bennett Idaho abandoned mines Report.

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panthr creek map iron creek sa... X Site Inspection Report for the Abanc... X

https://www.idahogeology.org/pub/Staff_Reports/2014/S-14-4_Intro_Summary.pdf

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Table 1-1 (continued). High priority mines in the Region IV forests.

Forest	Site No.	Name	Section in Report	Problems at Site and/or Comments
Payette	EC 827	Snowshoe Mine	5Di	open decline, tailings.
Sawtooth	HA 276	June Day Mine	8Aiii	open shaft.
Salmon	DI 140	Harmony Mine	6Bii	tailings.
Payette	GR 298	Copper Cliff Mine	5Ai	reclamation in progress; this should be monitored carefully.
Sawtooth	HA 108	Solid Muldoon Mine	8Avii	acid drainage.
Salmon	CH 1135	North Fork Iron Creek	6Biii	mine waste.
Challis	CH 840	Springfield Scheelite Mine	4Ai	acid drainage, mine waste, tailings.

iron creek Highlight All Match Case Match Diacritics Whole Words 1 of 5 matches

This massive disturbance will also fragment and destroy wildlife habitats, and provide copious surfaces for invasive weeds. Forest clearing and other project disturbance activity will also result in hotter, drier, windier, weedier and more fire-prone sites – and fire danger is another reason that this drilling and all parts of exploration activity must be limited to fall.

The FS must fully consider alternatives to limit any activity to the fall time period only and to require helicopter drilling for all areas not immediately adjacent to/touching existing improved routes.

Full scale visual, biological and other analyses must be undertaken, and given the scale and scope of this activity, an EIS is necessary to assess all direct, indirect, cumulative, additive and synergistic environmental impacts, and to take a careful and hard look at the combined effects of the plethora of cobalt, copper, gold and other mining explo and development proposals that are authorized and/or foreseeable in this region.

Again, there is a tremendous absence of even the most basic information required for soliciting public scoping comments – such as IRAs, ESA-listed species watersheds, current surveys for native terrestrial carnivores and nesting migratory birds, current information on the visual setting and visual qualities, current amount of grazing disturbance and degradation to these watersheds and species habitats, etc.

Full and detailed hydrogeological studies must take place:

Is the groundwater system replenished annually through snowmelt with precipitation and run-off

infiltrating through porous rock where it finds flow pathways through geological contacts and/or structural features? What are the characteristics of all springs, seeps, intermittent and ephemeral drainages in the affected watershed areas? What are the soil and rock types, and how porous are these materials? Is there waste from previous mining activity in this area or affected watersheds?

We are concerned that groundwater will be impacted by the disposal of drilling wastes in the drill pits/sumps. As the USFS admitted in its Caribou-Targhee Kilgore Exploration Project EA: “A common concern is the potential for high-sulfide drill cuttings contained in the mud to generate acid rock drainage and/or leach metals which might then migrate into shallow groundwater ...”.

The FS must conduct detailed aquifer and runoff analyses to determine the effects of dumping drill waste and also of potential hazardous substances exposed by all components of this mining exploration disturbance to soils, veg, biocrusts and watersheds. Then it must use this information to reduce and/or eliminate any sumps and drill sites in contamination-susceptible soils, riparian soils, or other vulnerable sites. Drilling/sumps/explo disturbance must be prohibited in these areas.

Impacts from the dumping of drill wastes on the surface have been documented. There is no research to definitively demonstrate that sumps either do or do not contaminate groundwater supplies. The USFS must take a hard look to see if the material in the drill pits may contaminate surface or groundwater.

A FS Kilgore EA also noted, “Fluids in the sumps would be permitted to evaporate and infiltrate prior to closure and reclamation. Water monitoring of the project area streams would continue, providing regular checks on surface water quality.” This ignores that summer thunderstorm or other extreme storm events, winter snowmelt including rain-on-snow events, and other extreme weather events that are predicted to increase under climate change stress may cause contamination and pollution in surface and/or ground waters.

Rainfall/snow/snowmelt will perpetually infiltrate this material. Some leaching of the material in these pits is inevitable. The FS must fully assess and act to require taking drill cuttings for offsite disposal, as has been employed at many exploration drill sites over the years. Covered water storage containers must be used instead of sumps, particularly in areas with steep hillsides where sumps could compromise hillside integrity or where accidental sump overflows could result in drilling fluids reaching streams, and all water hauled to a toxic material disposal site.

Baseline Water Quality and Quantity Studies must be conducted. Mineralized areas often contain naturally occurring contaminants of concern such as arsenic. These contaminants may be securely bound within the surrounding rock matrix/material or may be leaching into groundwater.

Exploration drilling can affect groundwater resources. Aquifers can be vulnerable to degradation during and following exploration drilling in many ways:

- Contamination through open boreholes by run-off water from the surface
- Separate aquifers could become interconnected through drillholes
- Cross-flow between aquifers may be induced by natural pressure differences or pressure

differentials induced by pumping

- Contamination by certain types of drilling fluids.

The pressure from a water column in deep drill holes may be sufficient pressure to cause hydraulic fracturing, especially with fractures already present in the rock. If water loss occurs in the lower part of the hole, it is unclear which aquifers it contaminates.

Comments on the SCNF BTAC EA included "... high pressurized drilling activities in the vicinity of the Glory Hole at the Stibnite area on the Payette National Forest resulted in at least one case in drilling fluids moving laterally through fractured bedrock, exiting the sides of the abandoned mine pit, and entering the East Fork South Fork Salmon below. The close proximity of the Salmon River to the drill sites and steep terrain raises concerns that a similar event could occur here and the Forest Service should incorporate additional design features to address this".

The SCNF must ensure no adverse changes or impacts to groundwater as a result of drilling operations and, as a result, that there is a need for a groundwater baseline study.

Please require detailed analysis of the depth all drill holes will be drilled to, and potential strata, water tables, aquifers, mineral types (including potentially toxic minerals like arsenic), etc. that may be encountered, and please deny any drill sites in areas of concern for degradation and/or contamination.

Please require drill logs tracking the depth to bedrock, the water table and losses in drilling fluid from bedrock fractures.

Is the USFS assuming that well closing would eliminate groundwater contamination issues? If so, how has the FS factored earthquake effects in this very seismically active area into its assumptions? Note that the SCNF has claimed that past earthquakes have significantly altered surface expression of springs – and some have dried up entirely. Earthquake activity could wreak havoc on separation of drill holes, cause seepage through strata, harms to aquifers, and ultimately adverse effects to springs, seeps, streams and habitats they provide in this ESA-listed species watersheds.

Further the crazy year-round activity will also result in snow plowing and further disruption of precipitation infiltration, and so will new "temporary" route construction.

Note that the SCNF released an initial Moose Fire report, and there are a huge number of unauthorized routes in that fire area - and this comports with our observations across much of the SCNF. This bodes poorly for the FS being able to close routes and gashes bulldozed as part of the exploration project – and is another reason why helicopter drilling must be conducted.

How will the FS effectively monitor and prevent contamination that could occur during drilling operations and before bore holes are sealed?

The Forest Service is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The establishment of the baseline

conditions of the affected environment is a fundamental requirement of the NEPA process: NEPA clearly requires that consideration of environmental impacts of proposed projects take place before [a final decision] is made.” [LaFlamme v. FERC, 842 F.2d 1063, 1071 \(9th Cir.1988\)](#) (emphasis in original). Once a project begins, the “pre-project environment” becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. *Id.* Without establishing the baseline conditions which exist in the vicinity ... before [the project] begins, there is simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.

Half Moon Bay Fisherman’s Mark’t Ass’n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988) (emphasis added). “In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions.” *Western Watersheds Project v. BLM*, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008) (emphasis added). “The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.” Council of Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act* (May 11, 1999).

The Forest Service must: Conduct baseline surface and groundwater water quality sampling upgradient of, within and downgradient of the project area; determine and describe all monitoring locations; require frequent comprehensive testing; fully assess and vet the efficacy of any testing methods to be used; identify specific sideboards and triggers for additional actions and specific required steps and actions if triggers are tripped.

The FS must conduct baseline water quality sampling as part of this NEPA process. It must require comprehensive groundwater studies – and map and sample groundwater and springs/seeps/intermittent and perennial drainages and flow rates. The FS must require any changes in water chemistry, water quantity and water quantity be addressed and information provided to the public in a timely manner.

How will the FS ensure adequate and effective state of the art minimization and mitigation? What irretrievable and irreversible impacts could foreseeably result? What happens if a spring or springs dries up completely as a result of this drilling activity?

Please provide three or more years of this baseline sampling in all drainages where drilling is occurring, prior to proceeding any further with the NEPA analysis.

Fisheries, Wildlife, and Plants

The Forest Service should consult with the U.S. Fish and Wildlife Service and NOAA Fisheries to evaluate the effects of this exploration project on fish and amphibian species inhabiting this watershed, on impacts to Whitebark Pine (now listed under the ESA so full consultation must take place), and impacts to Wolverine and Canada Lynx, other rare native carnivores

What tributary streams may be potentially impacted? What is the potential for spills, for drilling contacting waters, or sediment to enter Iron Creek or the Salmon River? How will all impacts be effectively mitigated to eliminate harmful impacts to ESA-listed fish species?

We are very concerned about removal of water from stream segments under climate change stress, high temperatures, and drought conditions.

How will any water intake prevent incidental suction of aquatic organisms, fish eggs/disruption of redds, amphibian egg masses, etc. when acquiring water for this project? Full and detailed current inventories for all aquatic biota of concern, and full ecological studies of aquatic habitat conditions must be conducted as part of this NEPA process and provided to the public for comment.

How will any and all activities associated with this project impact sediment, cobble embeddedness, etc.? When has the FS monitored for sediment, cobble embeddedness, etc. in all drainages impacted by this exploration project and access routes? What has been found? How is grazing affecting sediment and other water quality parameters in these watersheds? What trampling, herbaceous stubble height, browse and other standards are in place in all project area streams? Where and when have these standards been monitored in recent decades, and what have the monitoring results been? Constructing new temporary routes, road improvements, RHCA drilling and other project activity will increase cattle access to drainages and increase destabilization of the watershed weed spread, and worsen water quality and quantity problems. The FS must fully consider removal of livestock from the affected watersheds for the duration of the project and until any project disturbance is recovered.

What have actual use Head Months/AUMs been in all units of the affected FS allotments, and how does this compare to active/permitted use/Head Months/AUMs?

Impacts to wildlife need to be avoided, minimized and mitigated to the maximum extent. We are concerned about displacement of wildlife due to traffic and drilling and other project activity noise, light, and an increase of human disturbance activity in the project area year round and around the clock.

Drilling must be limited to daylight hours to reduce impacts to wildlife.

It is our experience that sumps should be surrounded by low mesh nets is very prone to failure and is not effective to prevent ground animals from falling into the sumps and contain. Numerous escape ramps must be placed in each sump to facilitate the escape of any entrapped wildlife. But again, we urge the FS to require all drilling generated liquids be placed in closed tanks and hauled to a disposal site.

Please see Attached comments on the Stormy, Bayhorse, Forest-Wide Prescribed Fire, BTAC drilling and other documents for inclusion of all ecological concerns we raise in them related to ecological degradation, watershed integrity and important, sensitive and ESA-listed species habitats and populations.

Sincerely,

