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OMB NO. 0596-0022 USDA, Forest Service  
Expires 01/31/2002

South Park  
Ranger District

**PLAN OF OPERATIONS FOR MINING ACTIVITIES  
ON NATIONAL FOREST SYSTEM LANDS**

Submitted by: [Signature] Owner 12-24-14  
Signature Title Date  
Plan Received by: [Signature] Geologist 1/6/15  
Signature Title Date

**I. GENERAL INFORMATION**

- A. Name of Mine/Project: QUIST MINING
- B. Type of Operation: Lode exploration and development  
(lode, placer, mill, exploration, development, production, other)
- C. Is this a (new/continuing) operation? (circle one). If continuing a previous operation, this plan (replaces/modifies/supplements) a previous plan of operations. (circle one)
- D. Proposed start-up date of operation: 1 June 2015
- E. Expected total duration of this operation: 5 years until 2020
- F. If seasonal, expected date of annual reclamation/stabilization close out: 15 Nov
- G. Expected date for completion of all required reclamation: 15 Nov 2020

**II. PRINCIPALS**

- A. Name, address and phone number of operator: George L. Quist, 1849 Trail Creek Road  
Lake George, Colorado 80827, (719) 748-3009
- B. Name, address, and phone number of authorized field representative (if other than the operator).  
Attach authorization to act on behalf of operator. Joseph L. Dorris, 2920 Cedar Heights Drive  
Colorado Springs, Colorado 80904, (719) 685-4479
- C. Name, address and phone number of owners of the claims (if different than the operator):

*(If more space is needed to fill out a block of information, use additional sheets and attach to form)*

- D. Name, address and phone number of any other lessees, assigns, agents, etc., and briefly describe their involvement with the operation, if applicable:

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### III. PROPERTY OR AREA

Name of claim, if applicable, and the legal land description where the operation will be located.

MC#	Name	Section	Township	Range
242083	Four Point	11	12 S	71 W
242084	Hilltop	10 & 11	12 S	71 W
242085	Silver Microcline	10	12 S	71 W
242086	Sugar Loaf	10	12 S	71 W
242087	Suzie Blue	02	12 S	71 W
242088	Three Point	10 & 11	12 S	71 W

### IV. DESCRIPTION OF THE OPERATION

- A. **Access.** Show on a map (USGS quadrangle map or a National Forest map, for example) the claim boundaries, if applicable, and all access needs such as roads and trails, on and off the claim. Specify which Forest Service roads will be used, where maintenance or reconstruction is proposed, and where new construction is necessary. For new construction, include construction specifications such as widths, grades, etc., location and size of culverts, describe maintenance plans, and the type and size of vehicles and equipment that will use the access routes.

See attached USGS map. All access is by established 4WD roads. F.S. Rd 201 (primary), Rd 752, Rd 753, Rd 754, and Rd 752A. All access to prospect sites within 400 feet is by "walking in" the machinery. Service trucks will be left on established 4WD roads. There will be no new construction. A John Deere 690 or 992 track hoe will be using the access roads. Additionally, standard 4WD private trucks will be used. Excavation and reclamation will be accomplished with the trackhoe.

Proposed prospect sites have been photographed and flagged. Photographs are previously attached.

*(If more space is needed to fill out a block of information, use additional sheets and attach to form.)*



- B. **Map, Sketch or Drawing.** Show location and layout of the area of operation. Identify any streams, creeks or springs if known. Show the size and kind of all surface disturbances such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.

This operations plan is for mechanized prospecting only. Should valuable deposits be located, an updated operations plan will be submitted along with a mining permit application to the state of Colorado. As such, all excavations will be prospects limited to 1,600 square feet including temporary storage of topsoil and waste rock. All proposed prospects are indicated with a red dot. Exceptions: The current excavation site at 004 is approximately 0.5 acre. Three prospects will be placed here, each approximately 1,600 square feet. When finished, this area will be reclaimed unless determined suitable for a mining operation. All excavations will be shallow pits or short trenches across the designated prospect site. Minor timber will be removed at site 016 since this site is an existing trench in a wooded area. All other sites may have minor timber removal of a few trees. Most are open sites and not covered with timber. Sites 017 through 022 are in a burned area from the Hayman fire. Any removed timber will be buried or hauled off site. None of the sites are near water or located in gullies or other runoff sites.

- C. **Project Description.** Describe all aspects of the operation including mining, milling, and exploration methods, materials, equipment, workforce, construction and operation schedule, power requirements, how clearing will be accomplished, topsoil stockpile, waste rock placement, tailings disposal, proposed number of drillholes and depth, depth of proposed suction dredging, and how gravels will be replaced, etc. Calculate production rates of ore. Include justification and calculations for settling pond capacities, and the size of runoff diversion channels.

Exploration and mining will be small, open pits and minor trenching in mineralized areas as indicated on the attached maps and photos. Areas are irregular and unpredictable on any given claim.

During the life of this prospecting project, approximately 25 prospects on 120 acres may be opened.

Approximately 5 prospects (approx. 0.18 acre) may be opened during a given season. All will be refilled and reclaimed at the end of the season. Total disturbance under this plan will be less than one acre. Exception: Nearby open excavations from previous digging will also be reclaimed.

Materials include shovels, picks, hammers, chisels, safety hats and goggles, water canisters, claim posts, silt fencing, and reclamation seed.

Equipment is both wheeled and track hoes and four-wheel drive vehicles. A John Deer 690 or 992 trackhoe or a small backhoe will be used to excavate areas, approximately 30 feet by 30 feet to a depth of approximately 15 feet. The excavation will be investigated for any pegmatite bodies and possible cavities and then refilled.

No construction is proposed. No power is needed.

Operations will be intermittent and based on weather and seasonal conditions. Prospecting will usually begin in early May and will continue through late July. Close-out will be 15 Nov.

Mechanized equipment will be used for a maximum of 15 days in any one season of approximately 8-hours per day. Other hand digging and mineral exploration will take place all season until winter.

Two to four people will compose the workforce. One person will be the machine operator; other personnel will conduct mineral recovery and supervise operations.

Clearing- No significant clearing is proposed or expected. Most of the timber has been fire-killed.

Trees over 8 inches in diameter will not be disturbed if possible. Lesser diameter trees will be felled and buried in the reclamation of pits. Others will be laid cross slope to help stabilize the hillsides and slow erosion.

*(If more space is needed to fill out a block of information, use additional sheets and attach to form.)*



After completion of each excavation, it will be refilled, recontoured, and reseeded with approved native grass seed.

Topsoil will be segregated and used to top-off backfills to the original depth in those areas where topsoil still remains.

Waste rock will be used as part of the backfill. None is removed from site.

There will be no tailings and no milling. All rock and gravel is used as backfill when reclaiming.

There will be no drill holes and no drilling operations.

There will be no blasting. If in the future, this becomes necessary, a proper change will be submitted.

Excavations will penetrate in-situ granite to the maximum depth allowed by the decomposing granite.

This will average about 10 feet in any given prospect, but may reach 15 feet.

There will be no suction dredging. It is not applicable to this operation.

Production rates are highly speculative and unpredictable. Based on historical production, we expect about 100 pounds of material per prospect. This material will be removed from site.

Mechanized equipment is used to expose the pockets only. Following discovery, all crystals are carefully collected by hand, wrapped in paper, and transported from site.

Settling ponds are not applicable to this operation.

There are no runoff channels. All excavations which could experience run-off are bermed.

All excavations on slopes greater than 15 degrees will have berms or silt fences installed below. These will remain in place until 80 % vegetation is achieved. (Usually 3 years.)

Up to 20 gallons of water, brought from off site, may be used daily in mineral extraction to wash dirt from the minerals.

**D. Equipment and Vehicles.** Describe that which is proposed for use in your operation (Examples: drill, dozer, wash plant, mill, etc.). Include: sizes, capacity, frequency of use, etc.

No mills or washing plants will be used.

Wheeled and track hoes approximate to a medium weight rubber-tired back hoe and a John Deere 690 or 992 excavator will be used, similar to equipment used in ordinary construction projects.

Approximately 80 % of the work will be completed by a John Deere 690 or 992 hoe or equivalent.

The remaining 20 % will be completed by a rubber-tired back hoe.

Operations will normally be continuous for one session a season, approximately 15 days, but not to exceed 120 operating hours.

Equipment may be brought out a second time to complete reclamation approximately in October.

Otherwise, hand-collecting and mineral extraction may continue throughout the season without use of mechanized equipment.

**E. Structures.** Include information about fixed or portable structures or facilities planned for the operation. Show locations on the map. Include such things as living quarters, storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipelines, water diversions, trailers, sanitation facilities including sewage disposal, etc. Include engineering design and geotechnical information for project facilities, justification and calculations for sizing of tanks, pipelines and water diversions, etc.

No structures will be built. No powder magazines will be used. No fuel will be stored on site.

No tanks, pipelines, or water diversions will be needed, nor used.

Mining activity will be conducted during the daylight hours. Personnel will remain on site only during the active phase of mining when equipment is on site, up to 15 days a season.

*(If more space is needed to fill out a block of information, use additional sheets and attach to form.)*



Personnel may camp on, or near the site. All personnel will practice minimal-impact camping.

All refuse will be removed from site to a sanitary landfill.

Personnel will leave the site daily to take care of personal sanitation needs; otherwise, human waste will be disposed by following the "Leave No Trace" guidelines. A portable restroom will also be brought to a nearby site. Between active operation phases, nothing will remain on site. The site will be clean. Nothing will be present nor stored.

## ***V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)***

- A. **Air Quality.** Describe measures proposed to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.

Impact will be minimal. No slash will be burned. No open fires will be used.

No haulage will occur. Due to the nature of the granitic soil and small excavations, no significant dust is generated. After the first foot of topsoil is scrapped and piled, generated dust is minimal; the deeper granitic soils are damp and do not generate much dust.

Daily travel will amount to about 15 days per year for two vehicles during active mining operations.

Equipment will be roaded in once and removed once, unless brought in for a second time to complete reclamation.

- B. **Water Quality.** State how applicable state and federal water quality standards will be met. Describe measures or management practices to be used to minimize water quality impacts and meet applicable standards.

1. State whether water is to be used in the operation, and describe the quantity, source, methods and design of diversions, storage, use, disposal, and treatment facilities. Include assumptions for sizing water conveyance or storage facilities
2. Describe methods to control erosion and surface water runoff from all disturbed areas, including waste and tailings dumps.
3. Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.
4. Describe the measures to be used to minimize potential water quality impacts during seasonal closures, or for a temporary cessation of operations.
5. If land application is proposed for waste water disposal, the location and operation of the land application system must be described. Also describe how vegetation, soil, and surface and groundwater quality will be protected if land application is used.

No wastewater is produced nor is any appreciable amounts of water used in this operation.

A maximum of 20 gallons of water, brought in from off site, will be used per day to help in crystal extraction and cleaning. Cleaning is used only to remove mud or to reveal crystal pockets.

No runoff is produced. All rain is quickly absorbed into the excavations or small pits.

All drinking water is brought in from off site.

Excavations are not located near any open water or intermittent streams. None will penetrate the water-table at any point. All sites are well above and away from wet lands.

Excavations will be bermed, as needed, to prevent runoff during heavy rain.

Excavations on slopes exceeding 15 degrees will have silt fencing to further prevent any erosion.

*(If more space is needed to fill out a block of information, use additional sheets and attach to form.)*

- C. **Solid Wastes.** Describe the quantity and the physical and chemical characteristics of solid waste produced by the operation. Describe how the wastes will be disposed of including location and design of facilities, or treated so as to minimize adverse impacts.



All solid wastes will be reincorporated and re-counteracted into the backfills.

All minerals being extracted are silicates. No secondary, harmful substances, such as oxides, acids, etc. are produced through exposure to weathering and no chemical characteristics of these minerals are damaging to the environment.

All garbage and refuse will be hauled off site to a sanitary land fill.

**D. Scenic Values.** Describe protection of scenic values such as screening, slash disposal, or timely reclamation.

The mining sites are relatively remote and infrequently visited by other people. Most use is by recreational rockhounds who are digging for crystals and by 4-wheelers and motor cyclists who use the surrounding trails and roads. Visual impact is minimized by restricting the size of the excavations wherever possible and refilling excavations as soon as possible. Our prospects and completed prospects are normally reseeded by the end of next season.

Old, hand-dug prospects which are in and near our operations will also be filled and reclaimed.

Our goal is to protect the scenic values as much as possible and return the land to a scenic state.

**E. Fish and Wildlife.** Describe measures to maintain and protect fisheries and wildlife, and their habitat (includes threatened, endangered, and sensitive species) affected by the operations.

No threatened, endangered, or sensitive species have been identified within our areas of operation. I do not plan to operate in areas which might endanger fisheries or wildlife. I plan to protect as much of the diverse ecosystem and habitats as much as possible. Reclamation is carried out as quickly as possible to ensure the quick return to a productive wildlife habitat.

An environmental impact study and biological assessment was completed for Dorris mining on the adjacent and overlapping claims in 2006. No major impact was noted.

**F. Cultural Resources.** Describe measures for protecting known historic and archeological values, or new sites in the project area.

No known areas of historic value or archeological sites have been discovered or are known to exist in this area of operations. An inspection of surrounding areas and this area, particularly the Hilltop and Silver Microcline were inspected in conjunction with Glacier Peak operations during 2006. The mining district, itself, is the most historic location in the world for amazonite and smoky quartz. It has produced the world's finest specimens since the late 1800's and is considered an historic mining region.

**G. Hazardous Substances.**

1. Identify the type and volume of all hazardous materials and toxic substances which will be used or generated in the operations including cyanide, solvents, petroleum products, mill, process and laboratory reagents.

No hazardous substances will be used on site nor produced by this operation.

Diesel fuel will be brought on site for the track hoe every other day in a sealed, 50-gallon tank on a four-wheel drive truck for refueling. No fuel or lubricants will be stored on site. They will remain in the bed of a truck as much as practical while being used on site. The excavator will be returned to a level and safe area for refueling. No refueling will take place in the excavations.

*(If more space is needed to fill out a block of information, use additional sheets and attach to form.)*

2. For each material or substance, describe the methods, volume, and frequency of transport (include type of containers and vehicles), procedures for use of materials or substances, methods, volume, and containers for disposal of materials and substances, security (fencing), identification



(signing/labeling), or other special operations requirements necessary to conduct the proposed operations.

Diesel fuel is transported in an approved 50-gallon tank which is attached to the truck.

Refueling takes place approximately every other day.

3. Describe the measures to be taken for release of a reportable quantity of a hazardous material or the release of a toxic substance. This includes plans for spill prevention, containment, notification, and cleanup.

There will be no release of toxic materials due to this operation.

Additionally, the mined substances do not produce any toxic substances.

Should we have an accidental spill of diesel fuel, we will follow the spill reporting rule as outlined by the State Division of Reclamation, Mining, and Safety dated 2 August 2005. This includes notifying the division and the South Park Ranger District. It also includes treating with aeration and introducing oil-degrading bacteria.

- H. **Reclamation.** Describe the annual and final reclamation standards based on the anticipated schedule for construction, operations, and project closure. Include such items as the removal of structures and facilities including bridges and culverts, a revegetation plan, permanent containment of mine tailings, waste, or sludges which pose a threat of a release into the environment, closing ponds and eliminating standing water, a final surface shaping plan, and post operations monitoring and maintenance plans.

Each prospect will be closed and reclaimed as soon as possible after opening. Because this is a prospecting operation, any prospects opened during the season will be closed, recontoured, and reseeded during the season in which they are opened. Silt fencing (if any) will remain in place until 80% recovery is achieved. Specifically, each excavation will be refilled with the stored waste rock and regarded. The recontouring will be left rough to aid in trapping seed and eliminating any possible erosion. Stored topsoil will then be spread and the ground will be reseeded using the South Park District's approved dry/lower elevation seed mix. All sites will be monitored annually for growth. If reclamation should not be successful for any given site, the process will be repeated until 80% coverage or better is achieved.

All heavy-traffic areas, walk-ways for equipment, non-system roads, working pads, camp sites, and any other disturbed areas will also be reclaimed in a like fashion. Additionally, all pre-existing hand-dug pits, trenches, and excavations within the immediate area of operations will also be reclaimed.

## ***VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS***



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

The bond amount for this Reclamation Performance Bond was based on a bond calculation worksheet. The bond amount may be adjusted during the term of this proposed plan of operations in response to changes in the operations or to changes in the economy. Both the Reclamation Performance Bond and the bond calculation worksheet are attached to and made part of this plan of operations.

1. Negotiable Treasury bills and notes which are unconditionally guaranteed as to both principle and interest in an amount equal at their par value to the penal sum of the bond; or
2. Certified or cashier's check, bank draft, Post Office money order, cash, assigned certificate of deposit, assigned savings account, blanket bond, or an irrevocable letter of credit equal to the penal sum of the bond.

- A. If a bond is required, it must be furnished before approval of the plan of operations.
- B. Information provided with this plan marked confidential will be treated in accordance with the agency's laws, rules, and regulations.
- C. Approval of this plan does not constitute certification of ownership to any person named herein and/or recognition of the validity of any mining claim named herein.
- D. Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.
- E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, those operations will not proceed until notification is

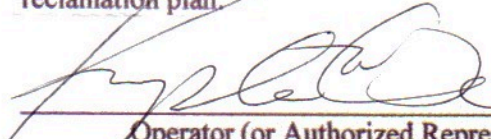


received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800 have been complied with.

- F. This plan of operations has been approved for a period of 5 years or until 12/31/2020. A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart A, if operations are to be continued after that time period.

### **VIII. OPERATING PLAN ACCEPTANCE**

I/We have reviewed and agreed to comply with all conditions in this plan of operations including the required changes, modifications, special mitigation, and reclamation requirements. I/We understand that the bond will not be released until the Authorized Officer in charge gives written approval of the reclamation plan.

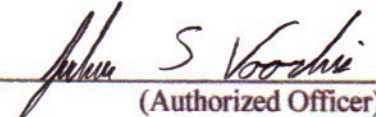
  
\_\_\_\_\_  
Operator (or Authorized Representative)

5-20-2015  
\_\_\_\_\_  
(Date)

### **IX. OPERATING PLAN APPROVAL**

Joshua Voorhis  
\_\_\_\_\_  
(Name)

District Ranger  
\_\_\_\_\_  
(Title)

  
\_\_\_\_\_  
(Authorized Officer)

5-27-2015  
\_\_\_\_\_  
(Date)



## 5. Location information (continued)

### III. PROPERTY OR AREA

Name of claim, if applicable, and the legal land description where the operation will be located.

[illegible]



7. B. SITE/CLAIM INFORMATION  
Prospecting Sites on Quist Mining Claims

Claim	Site No.	North 39°	West 105°	Status
Silver Microcline	001	1.556'	18.966'	
	002	1.585'	18.886'	
	003	1.603'	18.876'	
Three Point	004	1.369'	18.581'	
Silver Microcline	005	1.592'	18.657'	
	006	1.603'	18.687'	
	007	1.611'	18.691'	
	008	1.592'	18.716'	
	009	1.584'	18.709'	Reclaimed
Hilltop	010	1.695'	18.576'	
	011	1.667'	18.585'	
	012	1.656'	18.600'	
	013	1.656'	18.614'	Reclaimed
	014	1.674'	18.621'	Reclaimed
	015	1.688'	18.751'	Reclaimed
Suzie Blue	016	1.751'	18.721'	Delete
Hilltop	017	1.692'	18.489'	
	018	1.684'	18.499'	
	019	1.680'	18.499'	
	020	1.677'	18.494'	
	021	1.666'	18.491'	
	022	1.681'	18.471'	
Suzie Blue	023	1.756'	18.735'	