

United States Department of Agriculture  
Forest Service



## **Golden Crest Exploration Drilling Project Decision Notice and Finding of No Significant Impact**

Northern Hills Ranger District, Black Hills National Forest, Lawrence County, South Dakota

April 2024



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## **ACRONYMS AND ABBREVIATIONS**

BA	biological assessment
BE	biological evaluations
BHNF	Black Hills National Forest
BMP	best management practices
CEQ	Council on Environmental Quality
DN	decision notice
EA	environmental assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FP	Federal Project
FWS	US Fish and Wildlife Service
MHA	Mandan, Hidatsa and Arikara (also known as the Three Affiliated Tribes)
MVUM	motor vehicle use map
NEPA	National Environmental Policy Act
NFS	National Forest System
NFSR	National Forest System Road
NFST	National Forest System Trails
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
PO	Plan of Operations
SHPO	State Historic Preservation Office
SPCC	spill prevention control and countermeasure
THPO	Tribal Historic Preservation Offices
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
UTV	utility terrain vehicles
WCP	watershed conservation practices
WIZ	water influence zone

# 1. Introduction

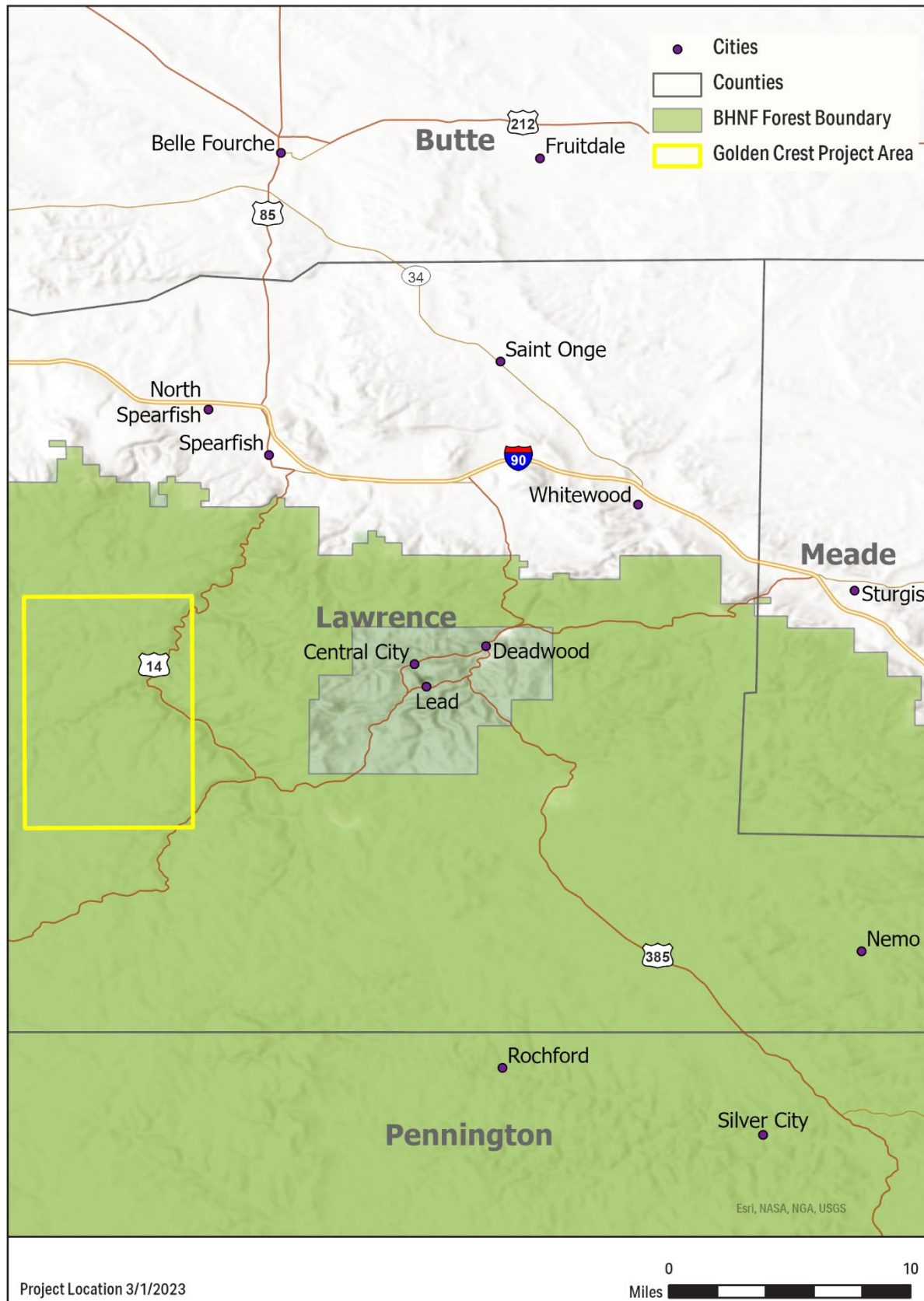
This document contains a Decision Notice (DN) and Finding of No Significant Impact (FONSI) for the Golden Crest Exploration Drilling project (Project) proposed by Solitario Resources (Solitario) for mineral exploration drilling on National Forest System (NFS) lands. The purpose of this document is to explain my decision and the management and environmental reasons I used to select which alternative to implement. The FONSI presents why I find this action will not significantly impact the human environment and why an Environmental Impact Statement (EIS) is not necessary. The completed Golden Crest Exploration Drilling Project Environmental Assessment (EA) documents the analysis of the alternatives developed to meet the purpose and need of the project (USFS, 2023). The EA and project record is incorporated by reference and contains the detailed data, methodologies, analysis, references, and other technical documentation used to support this decision.

The U.S. Forest Service (USFS) Black Hills National Forest (BHNF), Northern Hills Ranger District received a Plan of Operations (PO) from Solitario Resources (Solitario) on April 29, 2022, proposing to explore for gold, which falls under the locatable mineral regulations at 36 Code of Federal Regulations (CFR) 228 Subpart A (Solitario, 2022). The statutory right of Solitario to explore mineral resources on federally administered lands is recognized by the General Mining Law of 1872 and is consistent with the BHNF Land and Resource Management Plan as amended by the Phase II Amendment (Forest Plan) (USFS, 2006).

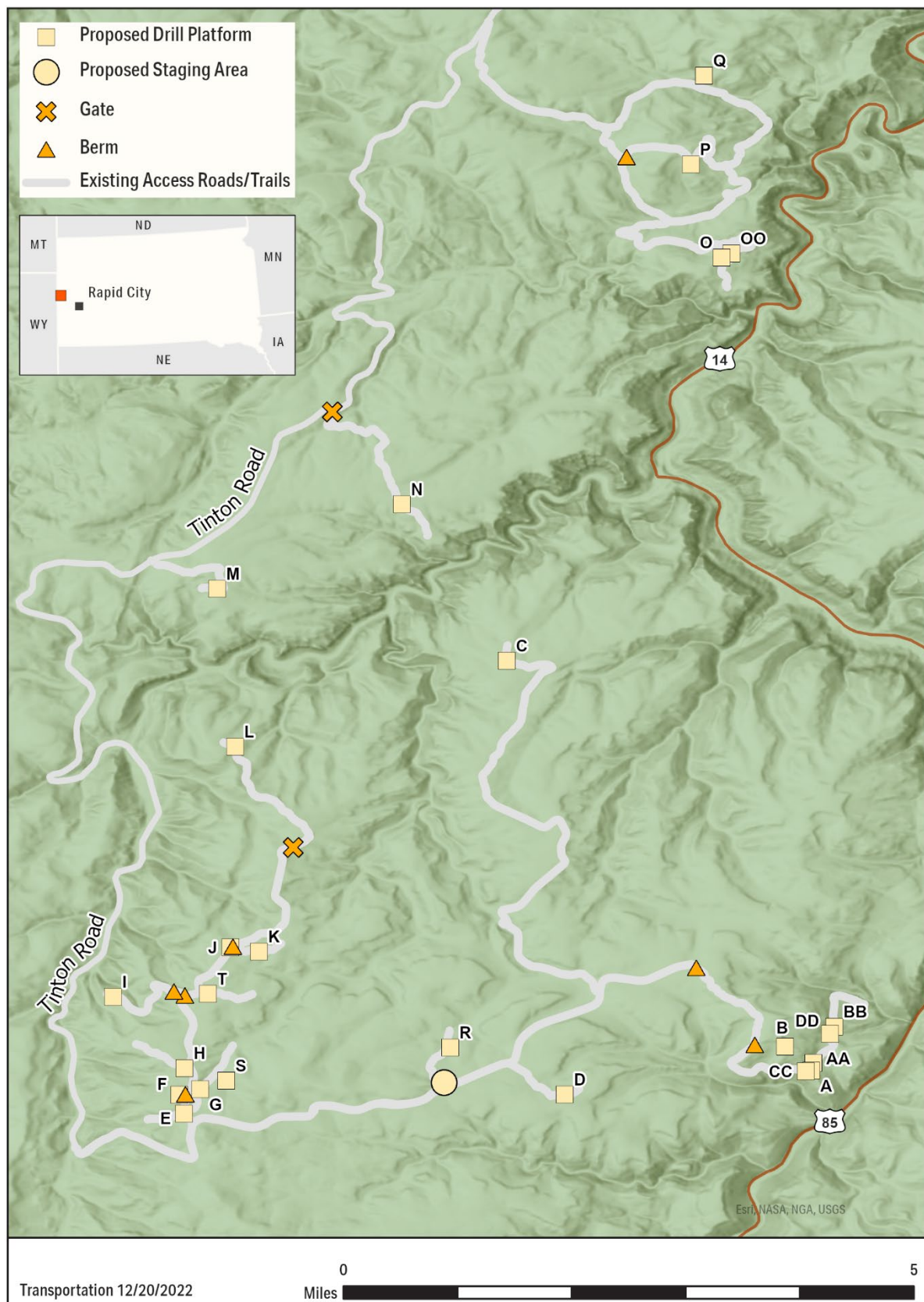
The project site is located in the Limestone Plateau and Big Hill areas of the northern Black Hills, southwest of Spearfish and west of Lead, South Dakota (Figure 1-1). Proposed drilling platforms are in the following sections:

- T4N, R1E, Sections 1, 3, 10, 21, 22, 25, 26, and 27
- T4N, R2E, Section 29
- T5N, R1E, Section 35
- T5N, R2E, Sections 7, 18, and 19.

The project proposes 25 core drill platforms, a staging area, access road maintenance (as needed), and reclamation activities. Drill locations are primarily along existing roads and motorized trails in past timber sale areas on previously disturbed sites (Figure 1-2). Primary access to the project vicinity would be along National Forest System Road (NFSR) 134 (Tinton Road). Access to individual drill sites would be along NFSRs and motorized trails branching off NFSR 134. No new road or trail construction is proposed. No mining, milling, or processing is proposed as part of the project. Any water used for drilling would be sourced from an approved municipal or privately owned water supply in the Lead-Deadwood area. The proposed project duration is a total of 27 months of active drilling, excluding inactive periods, over a total of 5 calendar years. This proposal is guided by the Forest Plan (USFS, 2006) and evaluated in accordance with the National Environmental Policy Act (NEPA). In addition to the Proposed Action, the EA considered the No Action Alternative. Mitigation measures were developed to address the key project effects identified during the EA analysis (Table 3-1).



**Figure 1-1.** Project Vicinity.



**Figure 1-2. Proposed Action Overview.**

## **1.1 Purpose and Need**

The purpose of this analysis is for the USFS to decide whether to approve Solitario's April 2022 Golden Crest Exploration Drilling PO for surface use of NFS lands in connection with operations authorized by the United States mining laws (30 U.S.C. 21-54). The proposed PO is included as Appendix A of the EA.

The USFS' need for action is established by the agency's responsibility under the General Mining Law of 1872, as amended, and the agency's locatable mineral regulations at 36 CFR 228 Subpart A. In accordance with 36 CFR 228.5, the USFS must analyze and provide timely response to the submittal of a PO. Furthermore, the USFS must assess whether the proposed operations will be conducted so as, where feasible, to minimize adverse environmental impacts on National Forest surface resources in accordance with 36 CFR 228.8.

After evaluating the PO, the USFS determined that the decision for whether to approve use of NFS lands would be a major Federal action subject to NEPA provisions as defined in 40 CFR 1508.1. Accordingly, the USFS prepared an EA to determine whether the potential effects of the proposed activities may be significant and require the preparation of an EIS. The Golden Crest Exploration Drilling EA identified key issues associated with the PO, considered and assessed reasonable alternatives, evaluated and disclosed potential environmental effects, proposed mitigation necessary to minimize adverse impacts, and ensured compliance with applicable laws, regulations, and policy. Therefore, the USFS has fulfilled statutory requirements and agency policy and direction to comply with NEPA and other relevant authorities.

## **1.2 Agency and Public Engagement**

Opportunities for agency and public engagement have been ongoing throughout project development. These efforts are summarized in the following text and described in detail in Section 4 below and Appendix E of the EA. Engagement efforts included the following:

- Preparation of a public involvement plan at the onset of the project to identify and document collaborative efforts made to involve, interact with, and cooperate with interested stakeholders.
- Project scoping letters were distributed on August 2, 2022, to 134 tribal contacts, stakeholders, and adjacent landowners, which initiated a 30-day public scoping period. A total of 285 scoping comment letters were received in response to these efforts. Comments were reviewed and cataloged based on resource issues, and issues identified in the scoping comment letters were used to help inform the development of the project's EA. Responses to scoping comments are included in Appendix F of the EA.
- A public open house meeting was held on August 17, 2022, in Spearfish, SD, with USFS personnel and representatives from Solitario in attendance to provide information on the project and to allow the public to bring forward questions or comments. The open house was attended by 62 people.
- The USFS contacted 16 tribal leaders to invite them to engage in government to government consultation in a scoping letter on August 2, 2022. That was followed up with another

standalone consultation invitation sent on January 25, 2023, and a third invitation that was included with the notification of availability of the draft EA on May 9, 2023. No tribal leaders responded to the requests for consultation. The National Historic Preservation Act, Section 106 Cultural Resources Inventory was provided to Tribal Historic Preservation Officers as identified per 36 CFR 800.3, to provide comment on the USFS' determination of the proposed undertaking's effect to cultural resources.

- A legal notice was published in the Rapid City Journal on May 9, 2023, to formally initiate the 30-day Draft EA comment period. All parties who submitted a scoping comment or requested to be added to the project mailing list received a letter notifying them of the availability of the Draft EA and the opportunity to comment on it. Approximately 1,175 comment letters were received. All comments were reviewed and cataloged based on resource issues, and the USFS responded to each comment. Responses to Draft EA comments are included in Appendix G of the EA.
- A legal notice was published in the Rapid City Journal on December 12, 2023, to formally initiate the 45-day objection period. The Final EA and Draft Decision Notice and Finding of No Significant Impact (DNFONSI) were made available on the BHNF public website on that date. All parties who had previously commented on the project during the scoping or Draft EA comment periods were notified by mail or e-mail of the opportunity to object. A total of 383 objections were received. Issues raised in eligible objections were identified and reviewed by a regional administrative review team to determine if the issues were addressed in the project record. The reviewing officer issued a response to the objections on April 9, 2024. Details on the objection process and findings are detailed in Section 4.5 of this document.

## **2. Project Summary**

An overview of the issues and alternatives is presented below to provide a better understanding in the context of the decision disclosed in this document. A more detailed description of the project can be found in Chapters 1 and 2 of the EA.

### **2.1 Issues**

Comments received during the public scoping process were used to help define the issues and evaluation criteria for analysis in the EA, develop alternatives and mitigation measures, and analyze effects. A total of 285 scoping comments were received via email, mailed letters, or personal delivery during the scoping process (see Appendix F of the EA). Through review and analysis of scoping comments and agency input, the following issues were evaluated in detail in Chapter 3 of the EA:

- Access and Transportation
- Air Quality and Climate
- Cultural and Tribal Resources
- Soils and Geology
- Groundwater Hydrology
- Surface Water Hydrology
- Recreation
- Vegetation
- Wildlife and Fisheries
- Public Health and Safety
- Socioeconomics and Environmental Justice

### **2.2 Alternatives Considered**

Two alternatives were considered in detail in the EA. These are briefly discussed below. Chapter 2 of the EA contains a more detailed description of the alternatives.

#### **2.2.1 No Action**

NEPA (40 CFR 1502.14) encourages a study of the No Action Alternative as a basis for comparing the effects of the Proposed Action and other action alternatives. Under the No Action Alternative, the USFS would not approve Solitario's PO to conduct exploration drilling activities. There would be no change to the existing condition associated with the No Action Alternative. However, the USFS is only authorized to regulate, but not prohibit, lawful locatable mineral operations conducted on NFS lands to ensure the objects of such reservations, namely, to regulate their occupancy and use and to preserve the forests thereon from destruction.

#### **2.2.2 Proposed Action**

The Proposed Action includes core drilling at up to 25 drill sites, access road maintenance (as needed), staging area vegetation clearing (as needed), and reclamation activities (Figure 1-1). The project would result in approximately 2 acres total of temporary surface disturbance, including all 25 proposed drill sites and the staging area. The proposed project duration is approximately 27 months

of active drilling and reclamation, excluding inactive periods, over a total of 5 calendar years, plus noxious weed spraying for 1 year after final reclamation.

As part of the PO, Solitario has also requested use for drilling equipment and support vehicles over 62 inches on National Forest System Trails (NFSTs) 8101 and 8051, which are Special Designation Trails with vehicle width restrictions of up to 62 inches. No widening of these trails would be required, only a temporary exemption of the width restrictions.

#### **2.2.2.1 Drilling and Staging**

Each drill site would have a maximum footprint of approximately 25 feet (ft) by 75 ft (1,875 square ft or 0.043 acre each), where the drilling rig, rods, support vehicles, water truck, and sump would be placed. Drillholes would average 1,300 feet in depth, dependent on the results of each hole. Although depths up to 1,640 ft are proposed, very few holes are planned to extend to this depth. Exploration drilling involves drilling holes vertically and at an angle from the surface. That angle can vary between –90 degrees (vertical) and –45 degrees. The number of holes drilled on each drill pad would depend on the findings in the field, with the average drill pad having one to two holes and some having up to four holes. Depending on the results of preceding drillholes, some drill sites may not be required and would ultimately not be constructed.

Up to three drill rigs may be onsite at any point in time, therefore up to three platforms may be constructed with concurrent drilling. The maximum number of unreclaimed platforms at any point in time would be eight. Drilling operations would take place during one or two 12-hour shifts per day (up to 24 hours per day). One staging area (approximately 1.0 acre in size) would be used to store equipment and tools. Drill platforms and staging areas would result in approximately 2 total acres of temporary surface disturbance. Drill platform locations were selected based on local geology, subsurface target concepts, and surface conditions that allow Solitario to test its scientific theories best while minimizing surface disturbance.

The drilling process proposed by Solitario would use water mixed with industry-standard drilling additives such as bentonite clays and muds or other natural or biodegradable additives to more efficiently and safely drill and seal boreholes. No other chemicals or solvents would be used in drilling. Any water used for drilling would be sourced from an approved municipal source; no water would be sourced from Spearfish Creek or other local surface waters on NFS lands. As Section 2.2.3.2 of the EA summarizes, water would be trucked from the municipal source to storage holding tanks at a drill site or the staging area. Approximately 5,000 to 10,000 gallons of water would be used per day per drill rig, with a maximum of 24,000 gallons per day. During drilling activities, water would be recirculated using a water pump with water lines transporting water from the sump.

Drill cuttings and used water would be recovered and collected in sumps at the drill site. Settlement would be used to separate the cuttings, allowing the water to be reused in the drilling process. Upon completion of a drill hole, the cuttings would be buried, mulched, and seeded (the industry standard for low-sulfur cuttings management in the western U.S.), as described in Section 2.2.3.4 of the EA.

#### **2.2.2.2 Site Access**

The main access to the project would be from Tinton Road (NFSR 134) via U.S. Highway 14A and Roughlock Falls Road (NFSR 222). Additional NFSRs and NFSTs anticipated to be used for access include the Limestone Road network (NFSRs 734, 734.1, 734.1A, 734.1D, and 734.2A), Timber Gulch Road network (NFSRs 733, 733.1C, 733.1E, and 733.1H), and NFSTs and NFSRs 8101, 8051, 134.2Y, 222.2G, 222.2F, 735.1B, and 736.1. The project would include use of approximately 47.5 linear miles of existing USFS access roads and motorized trails (excluding Tinton Road, which is an additional 26 miles). No new access roads or trails would be constructed to access drill sites or the staging area.

NFSTs 8101 and 8051 are Special Designation Trails with a vehicle width restriction of 62 inches. As part of the PO, Solitario has proposed a temporary waiver of the vehicle width restriction to allow access for drilling equipment and support vehicles. NFST 8101 is the only numbered NFST in poor condition; the trail is currently rutted out in one spot, making it difficult for travel. Solitario would improve and maintain the existing roadbed by blading the road to fill the ruts and smooth the surface and may add additional gravel if necessary. If Solitario's use of a road or trail results in the degradation of road conditions as determined by the USFS, Solitario would perform maintenance in consultation with the USFS to return the road or trail to pre-operational condition. See Section 2.2.1 of the EA for additional information on access and transportation.

#### **2.2.2.3 Proposed Equipment**

Solitario proposes to use the following equipment to complete drilling and associated restoration of the project:

- One to three drill rigs
- Two to five four-wheel drive pickup trucks for access to drill sites
- One water truck, up to 5,000 gallons, to fill water storage tanks
- One small dozer, skid steer, or backhoe for repositioning skid-mounted rig or drill rods
- Two utility terrain vehicles (UTVs) for access to drill sites
- One portable toilet per site
- Drill rod racks with drill pipe and casing pipe per site
- One freshwater storage tank per site
- Two or three water recirculation tanks or sumps per site
- Water line/hose and water supply pumps
- Mud pump and mixing tanks for grouting or cementing drillholes.

One or two drill rigs would typically be used on the project at a single point in time. However, if there are delays in the drilling program, then Solitario indicated it may be necessary to use three drills to minimize drilling during seasonal wet periods. In addition to the equipment required for drilling operations, other equipment, such as the dozer and skid-steer, would be used as needed to facilitate access, maintenance, and reclamation. When not in use at the drill site, this equipment would be stored at the staging area. See Section 2.2.2.2 of the EA for additional information on equipment.

#### **2.2.2.4 Drillhole Plugging and Abandonment**

Upon completion of drilling at each hole, the hole would immediately be capped, sealed, and plugged per Administrative Rule of South Dakota (ARSD) 74:11:08 and South Dakota Codified Law

(SDCL) 45-6C-28 through 45-6C-30. If an aquifer is penetrated, the completed exploration drillholes would be plugged from bottom to top using bentonite grout, which complies with the requirements of ARSD 74:11:08:05 and ARSD 74:11:08:05:01 (i.e., requirements for plugging exploration drillholes that penetrate single unconfined aquifers and confined or multiple aquifers). If a confined aquifer is penetrated, the weight of the bentonite grout column would need to be sufficient to overcome formation pressure, or the hole would be plugged using cement grout. See Section 2.2.4 of the EA for additional information on drillhole plugging and abandonment.

#### **2.2.2.5 Reclamation**

Drillholes would be plugged immediately upon completion; however, the drill platform reclamation itself would not be completed until after the assay results on the core are complete, which can take approximately 3 to 4 months. The maximum number of unreclaimed platforms at any point in time would be eight. If a hole is finished in November, assays may not be returned until January or February, and reclamation could not be done until the roads reopen in May; therefore, sites may remain disturbed for a maximum of 6 months before being reclaimed.

Drill platforms and staging areas would be reclaimed by re-grading the platforms to pre-project contours and reseeding with a Black Hills appropriate reclamation seed mix, as noted in the PO. Safety signage along with all equipment and supplies would be removed from the area. The complete reclamation plan for the project is provided in Section 2.2.5 of the EA.

#### **2.2.2.6 Monitoring and Implementation**

Solitario would be required to comply with any environmental compliance requirements issued by the USFS as part of the decision. In addition, Solitario must comply with all environmental requirements of other regulatory agencies, such as the South Dakota Department of Agriculture and Natural Resources (SDDANR) and obtain any other required permits before initiating the project. Solitario is also responsible for submitting a financial assurance for reclamation to the USFS for the project, with the bond amount determined by the USFS. Solitario's PO would be administered by the USFS Minerals Specialist, and other governmental entities with permitting authority, including SDDANR, will be responsible for enforcing their permit conditions as they deem appropriate. Sites will be monitored for weeds for one year after reclamation.

#### **2.2.2.7 Applicant-Proposed Design Features**

Table 2-1 summarizes design features Solitario intends to implement as part of their PO.

**Table 2-1. Summary of Applicant-Proposed Design Features (Page 1 of 2)**

Issue	Applicant-Proposed Impact Minimization Measures
Ground Water Hydrology	<p>Solitario's proposed capture and recycling system for drill fluids allows for reduced amounts of water consumption. Drill fluids would be contained in the recirculation tanks or a sump system, which would contain water and drill solids, allow the solids to settle, and recirculate (i.e., reuse) all the water that is not lost in the hole.</p>
Groundwater Hydrology	<p>All of the solid wastes generated on-site would be transported, as needed, to approved solid waste facilities for disposal, except for the drill cuttings recovered by gravity separation in settling tanks (i.e., sumps). These cuttings consist of crushed/pulverized rock from the drillhole with a consistency of mud or sand. When separated from the drill water by settling, these solids will reside in a lined sump at the site and would be buried, mulched, and seeded during final reclamation.</p> <p>Human waste would be managed by using portable toilets at the drill sites under contract with a commercial provider. The disposal of this waste would be undertaken as needed by the contractor at a licensed and permitted facility.</p> <p>Upon completion of drilling at each hole, the hole would be capped, sealed, and plugged per ARSD 74:11:08 and SDCL 45-6C-28 through 45-6C-30. If an aquifer is penetrated, the completed exploration drillholes would be plugged from bottom to top using bentonite grout, which complies with the requirements of ARSD 74:11:08:05 and ARSD 74:11:08:05:01 (i.e., requirements for plugging exploration drillholes that penetrate single unconfined aquifers and confined or multiple aquifers). If a confined aquifer is penetrated, the weight of the bentonite grout column would need to be sufficient to overcome formation pressure or the hole would be plugged using cement grout. Solitario also stated that the collar elevations of the planned holes are higher than the static water level to be encountered in the exploration holes; therefore, they do not anticipate any natural artesian discharge from drillholes.</p>
Surface Water Hydrology	<p>Temporary erosion control logs or diversion structures would be installed upgradient and downgradient of drill platforms at the five sites that are on slopes greater than 8 percent (A, AA, BB, CC, and DD); . The proposed design feature to minimize erosion on these sites will include using erosion control logs up- and downgradient from the drill site to prevent onflow and runoff of surface water. As necessary, water diversion structures may alternatively be used to divert surface water away from the work site.</p> <p>Twenty proposed drill sites are located on flat ground with permeable sandy soils. Solitario has proposed that no mitigation for erosion control be applied for these flat sites where permeable soils and lack of slopes will naturally prevent uncontrolled runoff. However, if erosion is observed at a site, Solitario has proposed that diversion ditches or erosion control logs be emplaced to eliminate onflow of water.</p>

**Table 2-1. Summary of Applicant-Proposed Design Features (Page 2 of 3)**

Issue	Applicant-Proposed Impact Minimization Measures
Surface Water Hydrology (cont.)	<p>Solitario also proposed that, during seasonal or temporary closures, the surface water hydrology of the drill site be reverted to preoperational conditions where no surface water is present near the work areas. However, temporary mitigation measures such as erosion control logs or diversion structures may be left in place during short-term closures as needed for areas with side slopes.</p> <p>Secondary road areas occupied by the drill sites or staging area would be modified by installing water bars or diversion structures, as necessary, and depending on the slope of the existing topography, so that post-use erosion is not promoted. Sites would be monitored by Solitario throughout the drill program and any ruts or irregularities in the surface may be modified to minimize erosion.</p> <p>Solitario will prepare a spill prevention control plan describing protocols for avoiding and controlling any spills that could occur on-site under this plan. Training of on-site personnel in the response protocols would be mandatory. The plan will include a list of quantities and locations of any hazardous materials that would be on-site (primarily petroleum products such as diesel fuel hauled in Department of Transportation (DOT)-approved fuel cells, daily use lubricants, and oil sealed in buckets and containers).</p>
Vegetation	<p>Drill sites and the staging area would be reclaimed upon completion of drilling by re-grading the platforms to pre-Project contours and reseeding as noted in the PO (Solitario, 2022). Reclamation of a drill site would occur after drilling is completed at a particular site; reclamation of the staging area would be completed after the entire drilling program is completed. Drillholes would be plugged immediately upon completion; however, the drill platform reclamation itself would not be completed until after the assay results on the core are back, which can take approximately 3 to 4 months. The maximum number of unreclaimed platforms at any point in time would be eight.</p> <p>If a hole is finished in November, assays may not be returned until January or February, and reclamation could not be done until the roads reopen in May; therefore, sites may remain disturbed for a maximum of 6 months before being reclaimed. Therefore, the PO contains a provision for interim (temporary) reclamation.</p> <p>If a drill site will not be needed after completion of the initial drilling, Solitario would close the site reclamation as soon as possible so that there is no need to return and revegetation can begin.</p>

**Table 2-1. Summary of Applicant-Proposed Design Features (Page 3 of 3)**

Issue	Applicant-Proposed Impact Minimization Measures
Vegetation (cont.)	<p>Stockpiled soils would be spread over the drill platform area. Overly compacted areas at the drill sites, turnarounds, and staging areas not located on an active roadbed would be roughed manually or mechanically to enhance seeding viability and minimize erosion. Areas to be enhanced by reseeding would initially be mulched with locally derived, stockpiled organic-rich amendments or with commercially available certified weed-free mulch. Seeding would be applied in accordance with USFS guidance. The proposed seed mix is provided in EA Table 2-2.</p> <p>Solitario would spray for weeds for 1 year after the final reclamation of each site.</p>
Wildlife and Fisheries	<p>Lights used during night operations would be shielded and downward facing to minimize ambient light pollution to the surrounding area.</p>
Public Health and Safety	<p>Solitario has proposed safety measures that include using portable light plants if drilling occurs during nighttime hours and requested the ability to perform maintenance to improve the road condition before entry to permit safe passage of drill equipment. Directional lights with side and upward shielding would be used to reduce light pollution during nighttime operations. Maintenance would be restricted to the existing roadbed and no new construction or widening of the roadbed would be required.</p> <p>Solitario has proposed that open burning is not proposed as part of the Project.</p>

## 3. Decision

This DN documents my decision and rationale with respect to the proposed project as presented in the EA.

### 3.1 Decision Authority

The District Ranger of the Northern Hills Ranger District of the BHNF is the delegated lead agency's responsible official for this NEPA review of the Golden Crest PO. The District Ranger's decision space is in accordance with USFS regulations that govern locatable mineral activities on NFS lands (36 CFR 228, subpart A) and other applicable laws and regulations. These regulations require that the USFS respond to parties who submit a proposed PO for approval to conduct operations authorized by the United States mining laws on NFS lands for part or all their planned actions including mining, mineral processing, and uses reasonably incident thereto.

The USFS' consideration of operations authorized by the United States mining laws on NFS lands are governed by the General Mining Law of 1872 as amended, the Organic Act of 1897, and the Surface Resources Act of 1955, among other statutory authorities. The USFS regulations at 36 CFR 228, subpart A set forth the rules through which use of the surface of NFS lands in connection with mining and mineral process operations shall be conducted to minimize adverse environmental impacts on surface resources where feasible.

### 3.2 Selected Alternative: Proposed Action with Mitigation

Given the project's purpose and need, I have reviewed all actions, including the Proposed Action, the No Action Alternative, the issues identified during the scoping and comment periods, the environmental consequences of implementing each alternative disclosed in the EA, and mitigation measures developed in the EA. Based on this review, **I have decided to implement the Proposed Action with additional mitigation measures (Selected Alternative)**, which would approve Solitario to conduct mineral exploration activities on NFS lands for the Golden Crest Project while minimizing effects on the environment.

Per 40 CFR 1506.1(c): *The finding of no significant impact shall state the authority for any mitigation that the agency has adopted and any applicable monitoring or enforcement provisions. If the agency finds no significant impacts based on mitigation, the mitigated finding of no significant impact shall state any enforceable mitigation requirements or commitments that will be undertaken to avoid significant impacts.* The authority for mitigation of projects of this nature is provided by the locatable mineral regulations at 36 CFR 228.8: *All operations shall be conducted so as, where feasible, to minimize adverse environmental impacts on National Forest surface resources.* The applicant-proposed design features listed in Table 2-1 along with the Forest Service-developed mitigation measures listed in Table 3-1 are incorporated into the Selected Alternative to minimize impacts to resources and to meet the direction set forth by 40 CFR 1506.1(c), 36 CFR 228.8, and the Forest Plan.

Project mitigation measures, best management practices (BMPs), and monitoring requirements were developed based on standard operating procedures, Forest Plan standards and guidelines, and other procedural directions to eliminate or mitigate potential impacts during project implementation (see EA Appendix B). As a condition of my PO approval, I am requiring the incorporation of all the USFS's proposed mitigation measures listed in Table 3-1. These measures would be required along with the proponent's design features noted in Table 2-1. If a USFS proposed mitigation measure conflicts with the proponent's design features, then the USFS mitigation applies.

**Table 3-1. U.S. Forest Service-Developed Mitigation Measures (Page 1 of 6)**

Issue	Mitigation Measures
Access and Transportation	<ul style="list-style-type: none"> <li>• ACC-01: Drilling would occur from approximately May 15 through October 15 for most drill sites to protect roads and prevent rutting. Operations can continue on a site-specific basis until access road conditions are such that a 1-inch rut in the road is formed and only where trail grooming for winter recreation activities has not begun. Operations must end no later than December 15 because of winter road closures. Road conditions must be inspected regularly by Solitario and the USFS staff will ensure compliance. Solitario shall inform the USFS in advance of when they plan to start and stop drilling each season.</li> <li>• ACC-02: Solitario must develop and submit a sign plan to the USFS prior to PO approval. Signage would be placed on any roads or trails adjacent to drill locations when drilling operations are under way. Safety signage regarding heavy equipment use of the road would be posted throughout the work area to ensure the public is aware of temporary site work. Signage will be required where rock and soil berms are temporarily removed to inform the public that the road is closed to motorized use and is accessible by permit only.</li> <li>• ACC-03: Any road gates that are normally locked should remain locked unless vehicles or equipment are actively passing through them. If a gate is locked upon entry, Solitario would be required to lock the gate behind them during operations to reduce public access and ensure public safety.</li> <li>• ACC-04: Solitario would be required to double lock access gates with their own locks alongside the USFS locks. All locks would be removed at the completion of the Project. Solitario must coordinate installation of double-locks with the USFS.</li> <li>• ACC-05: Rock and soil berms would be replaced with a similar closure method during short breaks in work, such as winter shutdown or whenever operations cease for more than 30 days. This would prevent the public from accessing roads that are usually closed to motorized vehicles.</li> <li>• ACC-06: Any non-gate road closures (e.g., berms, boulders) that are removed as part of Project implementation would be replaced as soon as possible after project operations behind those closures are complete.</li> <li>• ACC-07: Any unexpected road or trail damage would be repaired as soon as possible. The USFS would be consulted with to approve the proposed maintenance and inspect the repair.</li> <li>• ACC-08: Contractor equipment would not exceed local road weight restrictions without prior approval by applicable authorities.</li> </ul>

**Table 3-1. U.S. Forest Service-Developed Mitigation Measures (Page 2 of 6)**

Issue	Mitigation Measures
Access and Transportation (cont.)	<ul style="list-style-type: none"> <li>• ACC-09: Materials used for the project would be stored either at the staging area or individual drill sites; materials would not be stored along trails or roads or at other locations. All materials would be removed upon completion of drilling at a particular drill site.</li> <li>• ACC-10: All existing USFS-authorized improvements, including but not limited to fences, roads, trails, water tanks, gates, and utility lines are considered protected improvements and should be protected during project implementation. Should any improvement be damaged, the Northern Hills Ranger District must be contacted, and it must be returned to its original condition as soon as possible.</li> <li>• ACC-11: All access routes for equipment and/or water haulage that are not defined in the POO shall be provided to the USFS for review and approval.</li> </ul>
Air Quality and Climate	<ul style="list-style-type: none"> <li>• AIR-01: Should conditions warrant, the USFS may require dust abatement measures such as reduced speeds or water spraying.</li> </ul>
Cultural/ Heritage Resources	<ul style="list-style-type: none"> <li>• CUL-01: Solitario will avoid all archaeological sites that have previously been recorded during surveys of the Project vicinity.</li> <li>• CUL-02: If Solitario encounters cultural resources (e.g., bones, artifacts, foundations, or other indications of past human occupation of the area) during operations, work in the vicinity of the discovery must cease immediately. The Northern Hills Ranger District must be contacted within 24 hours so the agency can take steps to avoid, minimize, or mitigate possible adverse effects. Within 48 hours of notification of the discovery or disturbance, the Northern Hills Ranger District would also notify the State Historic Preservation Office (SHPO) and Tribal Historic Preservation Offices (THPOs) that have requested to be on the USFS's mailing list within 48 hours of the discovery or disturbance, as outlined in 36 CFR 800.13.</li> <li>• CUL-03: A National Register of Historic Places (NRHP) eligible cultural site occurs under an existing access road to one of the drill sites. Solitario would cap a segment of access road defined by the USFS with additional gravel for the length of road that passes through the cultural site. A minimum of 4-inches of gravel shall be maintained on the road. The final depth of gravel and determination of need for additional geotextile would be approved and reviewed for compliance by the USFS. This mitigation would prevent impacts to eligible cultural resources from vehicles.</li> </ul>

**Table 3-1. U.S. Forest Service-Developed Mitigation Measures (Page 3 of 6)**

Issue	Mitigation Measures
Soils and Geology	<ul style="list-style-type: none"> <li>SOL-01: Plastic liners must be removed from the sump, though biodegradable liners may remain in the sump and be buried.</li> </ul>
Groundwater Hydrology	<ul style="list-style-type: none"> <li>GWH-01: During active drilling operations, Solitario shall continuously monitor and manage sump fluid levels and available freeboard closely, especially if the boring is beginning to make excessive water, if artesian conditions are encountered, and during precipitation events. Solitario shall report any release of drilling water, fluids, or cuttings outside the authorized drill platform area to the Forest Mineral Administrator. The USFS may specify additional assessment or monitoring requirements to assess and remediate any adverse effects resulting from any unplanned discharge.</li> <li>GWH-02: The USFS requires plugging reports be submitted within 7 days post-closure. Drillholes would be sealed within 24 to 48 hours of drilling completion before moving the drill rig.</li> <li>GWH-03: Secondary containment shall accommodate 110 percent capacity to ensure any potential leak is contained and that there is adequate freeboard to accommodate a small precipitation event.</li> </ul>
Surface Water Hydrology	<ul style="list-style-type: none"> <li>SWH-01: One drill site (Platform O) would be relocated southeast to Modified O location (see Figure 3-8 in the EA). The original Platform O location is approximately 80 ft from a wetland. This mitigation moves the drill site 140 ft away and downgradient from a small wetland, thereby removing the potential for direct effects on and maintaining the integrity of that wetland. This mitigation measure was previously discussed with the Proponent and they agree the Modified O location meets their purpose and need.</li> <li>SWH-03: To prevent silt and debris from entering streams, springs, wetlands, and other waterbodies, the Proponent would maintain a 100-ft buffer in the WIZ. No wheeled or tracked equipment is allowed in the WIZ unless on existing access roads or approved by the District Ranger (Forest Plan Standards 1301-1305).</li> <li>SWH-04: In the emergency event that excess drilling water or precipitation fills the lined sumps, an unlined sump immediately downhill from the lined sump(s) would be constructed as approved by the Northern Hills District Ranger. This would allow for infiltration or evaporation in the unlined sump versus land application or overland flow.</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>REC-01: Drilling operations would be prohibited on the following holidays (as well as weekend days immediately following or proceeding said holiday) because of high traffic and recreational usage: Memorial Day, Fourth of July, and Labor Day. During these pauses in drilling, equipment may remain at the drill sites and staging area.</li> </ul>

**Table 3-1. U.S. Forest Service-Developed Mitigation Measures (Page 4 of 6)**

Issue	Mitigation Measures
Recreation (cont.)	<ul style="list-style-type: none"> <li>• REC-02: The USFS may impose blackout dates to prohibit drilling project-wide or at specific sites before or during certain permitted recreation activities (i.e., Dakota 5-0) and would provide Solitario no less than 6 weeks' advance notice of drilling blackout dates. The maximum number of days would be 3 days per event, though the number of events that are occurring could fluctuate from year to year. During these pauses in drilling, equipment may remain at the drill sites and staging area.</li> <li>• REC-03: Drilling operations at platforms within 1-mile of established campgrounds (e.g., platforms L, M, and N) will be limited to operating during daylight hours and shall not operate 24 hrs/day.</li> </ul>
Vegetation	<ul style="list-style-type: none"> <li>• VEG-01: Before Project implementation, Solitario would be required to submit a financial assurance for reclamation to the USFS, with the amount of the bond determined in accordance with the 36 CFR 228.13 and the USFS 2004 Bond Guide. This bond would not be released until satisfactory reclamation and revegetation of the drill locations has occurred; including pads recontoured back to a natural landform and established ground cover that matches surrounding terrain.</li> <li>• VEG-02: Retain all snags that are not considered a hazard to property or life.</li> <li>• VEG-03: The project Proponent must coordinate yearly with the USFS to determine which timber sales, if any, are active in the Project vicinity and to coordinate project implementation to avoid conflicts between exploratory drilling and logging operations.</li> <li>• VEG-04: Initiate revegetation as soon as possible (i.e., not to exceed 6 months) after termination of ground-disturbing activities. Revegetate all disturbed soils with native species in seed/plant mixtures that are noxious weed free. On areas needing immediate establishment of vegetation, non-native, non-aggressive annuals (e.g., wheat, oats, rye), or sterile species may be used while native perennials are becoming established, or when native species are not available (e.g., during drought years). Aggressive, non-native perennials (e.g., smooth brome, timothy) would not be used.</li> <li>• VEG-05: Seed would be tested for noxious weeds and evidence of such provided to the USFS prior to use on NFS lands. If mulches are used, they are to be noxious weed free with certification provided to the USFS prior to use. Weed-free alfalfa seed may be used only when native legume seed is not available and only when there is extensive disturbance associated with road construction or mine reclamation where topsoil is no longer available (Forest Plan Standard 1110).</li> </ul>

**Table 3-1. U.S. Forest Service-Developed Mitigation Measures (Page 5 of 6)**

Issue	Mitigation Measures
Vegetation (cont.)	<ul style="list-style-type: none"> <li>• VEG-06: The Proponent will monitor and assess the progress of reclamation activities, including revegetation and erosion control, for a minimum of 3 years. Depending on the success of the reclamation efforts, additional seeding, weed treatment, or installation of erosion control structures may be required by the Proponent.</li> <li>• VEG-07: All drill rigs, excavators, and equipment entering NFS lands must be washed and inspected before entry to reduce the potential for spread of noxious weeds onto NFS lands.</li> <li>• VEG-08: All straw wattles used on site to reduce soil erosion would be composed of certified weed-free straw and wrapped in biodegradable material (not plastic or photodegradable material). All natural fibers can be left on site. Weed-free certification tags must be shared with the USFS prior to use on NFS lands.</li> </ul>
Wildlife and Fisheries	<ul style="list-style-type: none"> <li>• WIL-01: Any threatened/endangered species, R2 sensitive species, or Species of Local Concern located within the project effects area during project implementation would be appropriately managed through coordination with the USFS.</li> <li>• WIL-02: If any newly discovered hibernacula are identified within 0.25 mile of a drill site, or if a maternity roost is discovered within 150 feet of a drill platform, before or during the Project, drilling activities would only occur between May 31 and October 1 or at the direction of the USFS. This restriction would protect any hibernacula or roost that might be located in the future.</li> <li>• WIL-03: To protect any newly discovered bat roost, any locations/trees where bats are found (alive or dead) near proposed drill platforms would be avoided. Flag off the area and report the location immediately to the USFS to determine if a roost or hibernacula is nearby that may be impacted by the drill site. Work will cease in the 0.25 mile area around the bat until cleared by the USFS. The USFS will evaluate the site within 2 business days.</li> <li>• WIL-04: Tree removal will not occur as part of the project. Drill platforms would be located as such that tree removal is not necessary. In addition, boulder removal during the northern long-eared bat pup season should be avoided (June 1 through August 31).</li> <li>• WIL-05: Any newly discovered cave or underground mine locations would be provided to the USFS for further evaluation as potential bat habitat.</li> </ul>

**Table 3-1. U.S. Forest Service-Developed Mitigation Measures (Page 6 of 6)**

Issue	Mitigation Measures
Wildlife and Fisheries (cont.)	<ul style="list-style-type: none"> <li>• WIL-06: To protect any newly discovered goshawk nests within 0.50 mile of a drill platform, the Proponent must minimize additional human-caused noise and disruption beyond that occurring at the time of nest initiation (e.g., road traffic, construction activities) from April 1 through August 15, or up until the nest has failed or fledglings have dispersed (FP Standard 3111).</li> <li>• WIL-07: If any permitted activity results in the discovery of a new raptor nest or defensive behavior by a raptor that suggests a nest may be nearby, the Proponent shall vacate the area immediately and notify the USFS as soon as possible. Implementation of timing restrictions may be necessary if an active raptor nest is located (FP Standard 3204).</li> <li>• WIL-08: Open sumps at drill locations would have a barrier around them (e.g., hurricane fencing or something similar) sufficient to prevent cattle and big game from walking into the sump.</li> <li>• WIL-09: Open sumps should be covered to the maximum extent possible with material to discourage birds or bats from entering the sumps. This material should be something other than nylon or mesh netting to prevent birds and bats from becoming entangled in the covering.</li> </ul>
Public Health and Safety	<ul style="list-style-type: none"> <li>• PHS-01: Residences within 1 mile of drill sites would be notified by Solitario before Project implementation to increase their awareness and safety around drilling equipment and traffic on local roads and trails.</li> <li>• PHS-02: Solitario would develop an emergency response plan for the Project and the plan would be provided to local first responders in advance of Project initiation. This plan would be developed in coordination with local first responders and would address a number of emergency situations (e.g., fire, injury). Protocols would be included in this plan to direct on-site contractors' actions if they start a fire or a fire starts on USFS land within the vicinity of the drill sites.</li> <li>• PHS-03: All vehicles, drill rigs, and other on-site equipment would be inspected as part of daily safety checks and would be equipped with a fire extinguisher, which would also be inspected routinely. Fire tools (e.g., shovels, buckets) shall also be maintained in each vehicle or staged appropriately onsite.</li> <li>• PHS-04: To reduce fire risk, vehicles shall not sit idle more than 5 minutes and shall not be over vegetation while doing so.</li> <li>• PHS-05: A site security plan would be developed and implemented by the Proponent to maintain site safety and limit risk of public interference.</li> <li>• PHS-06: Solitario's spill prevention plan shall be reviewed and accepted prior to PO approval.</li> </ul>

### 3.3 Decision Rationale

The Selected Alternative and associated mitigation measures were developed to minimize project impacts across evaluated environmental issues. The Selected Alternative includes mitigation measures, as noted in Table 3-1, that maintain the project's intent, but also meet the agency's requirement to minimize adverse environmental impacts to the extent feasible (36 CFR 228.8). I have determined that my decision is consistent with all laws, regulations, and agency policy identified in Section 1.3 of the EA. I have also considered potential environmental consequences of the alternatives and cumulative effects (see EA Chapter 3). I believe the Selected Alternative provides the best balance of responding to the project's purpose and need (Section 1.1) while also minimizing impacts to NFS lands. I also considered agency and public input and review of information in the project record when making my decision.

This project has generated a high level of public interest, as evidenced by nearly 1,200 comments received during the Draft EA comment period and 383 objections received during the objection period. The area where the project is proposed is highly valued by the residents of, and visitors to, the Black Hills. Most of the comments and subsequent objections raised concerns on how the project would impact cultural resources, water quality, recreation, wildlife, and public safety, among other concerns. Projects of this nature are unique in that the proponent, Solitario Resources, has a statutory right to explore their mineral claims, as they have proposed to do in the Golden Crest PO (30 USC § 22). The responsibility of the USFS is to identify and evaluate the potential impacts to natural resources and to develop mitigation measures to minimize those impacts (36 CFR 228.8). The intent of this decision is to strike a balance between the rights of the proponent to explore their claims and the values held by the public who live and recreate in the Black Hills. In making this decision, I considered all comments received on the Draft EA and all issues raised in the objections. Responses to each comment are found in Appendix G of the EA. While the number of comments received was large, the concerns raised in the comments generally fit into the following categories:

- Objection to project: Many commenters expressed that they did not want the PO approved. This standpoint was represented by the No Action Alternative in the EA. As described previously in this decision notice, the No Action Alternative does not meet the purpose and need of the project as defined by law, regulation, and policy governing mineral claims and the proponent's right to explore those claims.
- Concerns about mining: Many commenters expressed concerns about the impact that a mining operation would have on the landscape. No mining is proposed in the PO submitted by Solitario for the Golden Crest Project. As described in the PO and the EA, only exploratory drilling would occur as part of this project. Any additional exploratory drilling or mineral extraction would require Solitario to submit a new PO, which would undergo a separate NEPA review process.
- Concerns about mining/drilling in Spearfish Canyon: None of the proposed drill sites are located within management area 4.2A (Spearfish Canyon) as defined by the Forest Plan. As described in Chapter 3 of the EA, impacts of the Selected Alternative are expected to be localized and not extend to Spearfish Canyon.

- Concerns that the proposed drilling operations would impact cultural resources, wildlife, water, recreation, botany, or scenery: Many comments stated that the proposed action would impact one or all the resources present in the area. The EA completed for the project acknowledges that some impacts would occur, and Chapter 3 of the EA describes those impacts. Most comments expressed general concerns without identifying a deficiency in the analysis presented in the EA, but some commenters did raise specific concerns that they felt were not adequately addressed in the EA. As mentioned above, responses to all comments can be found in Appendix G of the Final EA. In some cases, clarifications were made in the EA in response to specific comments. Applicant-proposed design features (Table 2-1) and Forest Service-designed mitigation measures (Table 3-1) are incorporated as part of the Selected Alternative to minimize the impacts to resources. In addition to the design features and mitigation measures, some aspects of the project were designed in a way to minimize impacts. For example, the PO pre-emptively addressed potential impacts to scenic values by locating drill sites in areas that are not in view of paved roads, permanent structures, dwellings, or developed campgrounds. Drill sites were also located in areas near established roads and motorized trails that are already disturbed by past USFS actions or natural disturbances and would therefore have less impact to resources such as botanical or wildlife habitat. Proposed drill sites were evaluated by USFS specialists before the initial PO was accepted to ensure that known resource concerns would not be directly impacted. Prior to development of the Draft EA, additional wildlife, botany, and cultural resource surveys were conducted to identify any previously unknown occurrences that should be protected.
- Concerns regarding impacts to infrastructure and public safety: The proposed project would take place in an area of the BHNH that is heavily used by the public. As described in Chapter 3 of the EA, a maximum of three drill sites would be operational at any one time. The vehicle traffic associated with those drill sites would be small in comparison to the amount of traffic that the Tinton Rd. corridor experiences on a typical day. Solitario would be required to repair any damage to roads or motorized trails that occurs because of project activities and would be responsible for reclaiming drill sites to USFS and South Dakota Department of Agriculture and Natural Resources (SDDANR) standards once operations are complete. Solitario is also responsible for developing a sign plan so that the public is aware of where operations are occurring. In addition, the mitigation measures listed in Table 3-1 give the USFS the discretion to pause drilling activities during busy summer holiday weekends or weekends when permitted special events are occurring.
- Concerns regarding impacts to property values: As documented in Section 3.12 of the EA, the proposed drill sites are not located immediately adjacent to private property. Available data does not show that ongoing mining activities have impacted property values adjacent to the Wharf Mine near Lead, SD. Because the exploratory drilling activities proposed under this project would be much smaller in scale than the mining operation at Wharf, and because the proposed drilling activities would be short-term, this project is not expected to have a noticeable effect on property values.
- Belief that an EIS should be completed for this project: Many comments and objections stated the belief that an EIS is required for this project. NEPA regulations at 40 CFR 1501.6(a) define the process for analyzing actions that have the potential to have significant impacts on

the environment. Per NEPA regulations at 36 CFR 220.7(b)(3)(i), the intent of an EA is to determine if significant impacts exist that would necessitate further analysis under an EIS. As described in the Finding of No Significant Impact below, the anticipated effects of this proposal do not rise to the level of significance that would require completion of an EIS.

The EA and project record demonstrate a thorough discussion of significant aspects of probable environmental consequences and examination of relevant and best available scientific information, consideration of responsible opposing views, and acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. I have also considered the degree to which the applicant-committed environmental design features and the mitigation measures required by the USFS will reasonably reduce potential impacts on the environment and the predicted effects of the Selected Alternative on resources considered in the EA.

This decision under NEPA does not approve or initiate implementation of the PO. Approval of a PO is a separate action regulated under 36 CFR 228, subpart A. Refer to Section 5.0 in this document, "Plan of Operations Implementation," for additional information on the process for minerals PO approval and implementation.

## 4. Finding of No Significant Impact

The Golden Crest EA was completed in accordance with the Council on Environmental Quality's (CEQ) 2022 regulations for implementing the procedural provisions of NEPA (40 CFR §§1500-1508, as amended). The CEQ issued revised regulations for implementing the procedural provisions of NEPA, effective May 20, 2022.

CEQ regulations define a FONSI as a document by a federal agency briefly presenting the reasons why an action, not otherwise excluded (§1508.1), will not have a significant effect on the human environment and for which an EIS will not be prepared. It shall include the EA or a summary of it and shall note any other environmental documents related to it (§1501.6(b)). The FONSI incorporates the EA by reference; as such, a summary of the effects that were described in the EA are not included in the DN.

As the responsible official, I am responsible for evaluating whether the effects of the project are significant through analysis of the potentially affected environment and degree of effects (40 CFR 1501.3(b)). I have reviewed and considered the EA and documentation included in the project record. I have determined that the Selected Alternative will not have a significant impact on the quality of the human environment. As a result, no EIS will be prepared. The rationale for this finding is as follows, organized by subsection of the CEQ definition of significance cited above.

### 4.1 Potentially Affected Environment

The context of the environmental effects is based on the environmental analysis in the Golden Crest EA. Areas of project impact are limited in size, and project activities are limited in scope and duration. The context is limited to the project area with minimal disturbance (up to two acres) and project activity being short-term in nature, occurring for approximately 27 months of active drilling and reclamation over a 5-year span. For the Selected Alternative, the context of the environmental impacts is based on the analysis in the EA. This project is not of international, national, region-wide, or statewide importance.

### 4.2 Degree

Degree is a measure of the severity, extent, or quantity of effects and is based on information from the effects analysis in the EA and the references in the project record. The effects of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised through scoping and Draft EA review. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. My finding of no significant impact is based on the context of the project and the degree of effects using the factors identified in 40 CFR 1501.3(b)(2).

(i) Both short- and long-term effects.

Both short- and long-term project impacts of this decision are addressed in Chapter 3 of the EA, and no significant impacts were identified. As is acknowledged in the individual

resource sections in Chapter 3 of the EA, some direct, indirect, and cumulative effects would occur. Design features and mitigation measures (Tables 2-1 and 3-1) would be implemented to reduce the overall effects of project activities. Those measures were considered by resource specialists while analyzing the effects on their respective resources, and it was determined that none of the effects to rise to the level of significance.

For example, one of the primary concerns raised regarding this project was potential impacts to water quality. Section 3.6.5 of the EA analyzes the effects to water quality and finds that, because the drilling slurry used would be non-toxic and because design features and mitigation measures would be followed if a drill hole penetrates an underground aquifer, that no contamination of groundwater would occur.

Another concern raised was impacts to recreation and tourism and the resulting economic impact to the area. Sections 3.8.5, 3.11.5, and 3.12.5 address these concerns and find that because the project impacts are small in scale (two total acres of disturbance) and of limited duration (27 months of active drilling over 5 years), the impacts would not result in long-term significant impacts. Mitigation measures are in place to limit drilling activities during holiday weekends or during recreation special events and to rehabilitate sites following drilling activities, further reducing impacts.

Analysis of impacts to wildlife and botanical habitat is described in Sections 3.9.5 and 3.10.5 of the EA. The analysis states that the proposed drill sites are in areas that offer limited habitat value due to previous disturbance, and that surveys conducted for plant and wildlife species did not identify any previously unknown populations of species of concern. The primary impact identified was short-term disturbance of wildlife in areas adjacent to drill sites. No long-term impacts were identified. Implementation of mitigation measures would further minimize impacts to plants and wildlife.

The Project is not unlike other exploratory drilling projects or similar well drilling activities that have occurred in the BHNF or elsewhere. Exploratory drilling projects like this one are routinely approved on NFS lands across the nation, and the resulting impacts from this project are not expected to be different or outside the effects of previous and similar projects. The environmental analysis, including the EA, biological assessment (BA) and biological evaluations (BEs) (all available in the project record), determined that the selected alternative will not involve any highly uncertain or unknown risks. Based upon my knowledge of past actions and the professional and technical knowledge and experience of the project interdisciplinary team, I am confident that we understand the short- and long-term effects of these activities on the human environment. There are no unique or unusual characteristics about the area or the proposed action that will lead to an unknown risk to the human environment.

(ii) Both beneficial and adverse effects.

Both adverse and beneficial project impacts of this decision are addressed in Chapter 3 of the EA, and no significant impacts were identified. Adverse effects were evaluated for each resource, and mitigation measures were developed to minimized adverse effects. Chapter 3 of the EA discloses all adverse effects that are expected. As described in the

individual resource sections of the EA, impacts from the project would be short-term and localized, with up to 27 months of active drilling and two total acres of disturbance. No long-term adverse effects are anticipated based on the analysis. No adverse effects could be considered significant even if considered separately from any beneficial effects. The EA notes minor beneficial economic impacts related to revenue added to the local economy during project implementation, but this impact is also short-term in nature. My decision is not biased by any beneficial effects of the Selected Alternative. This decision is based on design features and mitigation measures that have been established for the Selected Alternative (see Section 3.2, Tables 2-1 and 3-1).

(iii) Effects on public health and safety.

There will be no significant impacts on public health and safety as no significant public health and safety issues were identified during the analysis process (see Section 3.11 of the EA). All applicable state and federal laws, policy, and regulations will be followed. The Selected Alternative implements measures to minimize public health and safety effects, and all related effects will be temporary in nature. As noted below, Solitario is required to submit a public safety sign plan prior to ensure that the public is aware of project activities.

(iv) Effects that would violate Federal, State, Tribal, or local law protecting the environment

The Selected Alternative will not violate federal, state, or local laws or requirements for protection of the environment. Applicable laws and regulations disclosed in Chapter 1 of the EA were considered for compliance. All state and federal requirements and applicable permit conditions will be met. Environmental effects are documented in the EA, and mitigation measures were developed to minimize project-related effects. No violations of laws and regulations were identified in the environmental effects analysis. The Selected Alternative is consistent with the Forest Plan. Documentation associated with the Golden Crest Project meets the requirements of NEPA. As a result, I have determined that the Selected Alternative does not violate Federal, State, or local laws related to protection of the environment.

The effects analysis in the EA considered both the potentially affected environment and the degree of the action in determining its significance as outlined in 40 CFR 1501.3(b). Based upon the analysis, I have determined that the Selected Alternative will not significantly affect the human environment and that an EIS will not be prepared.

### **4.3 Findings Required by Other Laws and Regulations**

The proponent is responsible for compliance with all other federal, state, and local requirements. The USFS approval of the final PO does not relieve the proponent of their responsibility to comply with other applicable state or federal laws, rules, or regulations.

#### **4.3.1 National Forest Management Act**

This decision to approve Solitario to explore for mineral resources on federally administered lands is consistent with the intent of the Forest Plan's long-term goals and objectives. The project was designed in conformance with Forest Plan standards and incorporates appropriate plan guidelines for

mineral exploration. Specifically, this decision implements Forest Plan Standards and Guidelines 1501, 1502, 1505, 1506, 1507, and 1508 to minimize impacts of mineral exploration activities.

#### **4.3.2 National Environmental Policy Act**

The EA and DNFONSI document are in compliance with NEPA and the Council on Environmental Quality regulations (40 CFR 1500–1508) for implementing NEPA Compliance with this Act is achieved through documentation provided in the draft and final Golden Crest EA as well as this DNFONSI. Public participation was conducted appropriately through the scoping process initiated in August 2022, a public open house held in August 2022, the Draft EA comment period initiated in May 2023, and the pre-decisional objection period initiated in December 2023. Documentation of comments received on the Draft EA and the agency responses to those comments appears in Appendix G of the final Golden Crest EA. Documentation of objections submitted, the issues raised in those objections, and the reviewing official's response to those issues is found in the project record. The reviewing official's response to the objections is also available on the BHNH public website.

#### **4.3.3 Clean Water Act and State Water Quality Standards**

No adverse impacts to water resources are expected with the implementation of the Selected Alternative. The Selected Alternative would be in compliance with the Forest Plan's applicable hydrology-related standards and guidelines. This decision incorporates BMPs to ensure the protection of soil and water resources. The Selected Alternative also incorporates the mitigation measures identified in Table 3-1 to minimize impacts to soil and water resources.

As stated in Forest Service Manual 2817.23a, the USFS and the proponent have Clean Water Act requirements to meet. If the mining activity “may result in any discharge into the navigable waters” (Clean Water Act, Title IV, § 401(a) (1), 33 USC 1341(a), 1972), the mining operator must obtain a 401- certification from the designated Clean Water Act, federal, state, or tribal entity. This 401- certification from the designated entity certifies that the operator's mineral activities and associated best management practices, mitigation, or reclamation are in compliance with applicable provisions of state, federal or tribal water quality requirements of the Clean Water Act. If 401- certification is required, the proponent must provide a copy to the USFS before the agency approves the final PO. Pursuant to the Clean Water Act, the USFS cannot authorize a PO until the 401- certification has been obtained or waived by the designated entity.

#### **4.3.4 Wetland Executive Order 11990**

Executive Order 11990 requires the USFS to take action to minimize destruction, loss, or degradation of wetlands to preserve and enhance the natural and beneficial values of wetlands. In compliance with this order, USFS directives require that an analysis be completed to determine whether adverse impacts would result. A wetland was identified near proposed Platform O. Mitigation measure SWH-01 would relocate the drill platform downgradient from the wetland to mitigate potential effects. Implementation of the Selected Alternative with incorporation of mitigation measure SWH-01 would result in no direct disturbance on wetlands. The function and services of the wetland ecosystems would be unaffected. Therefore, the Selected Action complies with this executive order.

#### **4.3.5 Environmental Justice Executive Order 12898**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, and Departmental Regulation 5600-2 directs federal agencies to integrate environmental justice considerations into federal programs and activities. Environmental justice means that to the greatest extent practicable and permitted by law, all populations are provided the opportunity to comment before decisions are rendered, are allowed to share in the benefits of, and are not excluded from, and are not affected in a disproportionately high and adverse manner by, governmental programs and activities affecting human health or the environment.

Implementation of the Selected Alternative will be consistent with this order and will not have a discernible effect on minorities, American Indians, women, or the civil rights of any United States citizen. Nor will it have a disproportionate adverse impact on minorities or low-income individuals. No civil liberties will be affected. Public involvement and comment were sought and incorporated into this document. The USFS has considered all public input from individuals or groups regardless of age, race, income status, gender, or other social/economic characteristics.

Consultation with Federally Recognized Tribes, Section 4.3.7 of this document, describes the outcome of that notification and consultation. The FONSI summarizes effects to human health. The various resource sections in Section 3 of the EA cover the effects to individual resources. Motorized access to the area will remain open as guided by the BHNH Motorized Vehicle Use Map (MVUM) for motorized travel with no changes to the existing available access. During Section 106 consultation, the USFS was not made aware of known conflicts with needed access regarding the project area. Based on experience with similar projects in the Northern Hills Ranger District, the Selected Alternative would not substantially affect minorities, low-income individuals, women, or civil rights.

#### **4.3.6 National Historic Preservation Act**

The National Historic Preservation Act (NHPA) provides direction for protecting and preserving our heritage and archaeological sites that reflect our nation's history. A previously documented historical site is located under an existing access road. To minimize potential effects, mitigation measure CUL-3 would require Solitario to cap a segment of access road with additional gravel for the length of the road that passes through the cultural site. Cultural resource surveys were conducted in the areas of the proposed drill sites and access routes, and no additional historical sites were identified. The Selected Alternative, including mitigation measure CUL-03, would ensure that no historical sites will be adversely impacted.

Consultation under Section 106 of the NHPA was initiated on January 23, 2023, when the cultural resources report, with a finding of "No Adverse Effect", was submitted to the South Dakota State Historic Preservation Office (SHPO) and sixteen Tribal Historic Preservation Offices (THPO). The SHPO concurred with that finding in a letter dated February 8, 2023. The THPOs from the Spirit Lake and Northern Cheyenne tribes also concurred on January 26, 2023, and February 16, 2023, respectively. No other THPO responses were received during the 30-day consultation period. I have determined that the project will not significantly impact important cultural resources and is consistent with the NHPA.

#### **4.3.7 Consultation with Federally Recognized Tribes**

Tribal leaders were mailed the scoping package for the Golden Crest project on August 2, 2022. The cover letter included in that package solicited comments on the proposed action and invited the tribes to engage in coordination and consultation with the BHNF. A second letter was sent to tribal leaders on January 25, 2023, informing them that a Draft EA was forthcoming and again inviting them to engage in consultation. A third letter was sent to tribal leaders on May 9, 2023, announcing the availability of the Draft EA, soliciting comments on it, and once again inviting the tribes to engage in government-to-government consultation for the Golden Crest project. No requests to engage in consultation were received from any of the tribes contacted, though in previous interactions tribal governments have expressed general opposition to mineral exploration and development on the BHNF. On February 21, 2024, following the release of the draft DNFONSI for this project, the Forest Supervisor and Deputy Forest Supervisor for the BHNF met with the President of the Oglala Sioux Tribe to discuss the Golden Crest project. No formal consultation was initiated as a result of that meeting.

#### **4.3.8 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act of 1918 prohibits the killing, taking, or possessing of native birds, nests, or eggs. One of the nation's first environmental laws, its purpose was to prevent the killing of millions of birds annually to supply the fashion trade. The Selected Alternative is in compliance with direction to protect migratory birds as described in the EA, Section 3.0, and the biological assessment/biological evaluation completed for the project.

#### **4.3.9 Endangered Species Act**

This decision is consistent with the Endangered Species Act (ESA). Determinations of “*no effect*”, “*may affect, not likely to adversely affect*,” and “*not likely to jeopardize continued existence*” were made for listed species anticipated to be, or have habitat within, the analysis area as described in the BA/BE and EA, Sections 3.9 and 3.10. There are no known occurrences of red knot in the BHNF, and no suitable habitat for the red knot occurs within the project area. One endangered species (the northern long-eared bat) and one proposed endangered species (the tricolored bat) are known to occur in the BHNF. Hibernacula are not known to occur within five miles of the project area, and no known maternity roosts exist in the project area. As stipulated in the mitigation measures associated with the Selected Alternative, no tree removal would occur, so no loss of potential roost trees would occur. Informal consultation under Section 7 of the ESA was conducted for the northern long-eared bat and tri-colored bat.

Project information was entered into the US Fish and Wildlife Service's (FWS) Information for Planning and Consultation (IPaC) website on May 10, 2023, which made an initial determination of “*may affect*”. A biological assessment, with a finding of “*may affect, not likely to adversely affect*” for the northern long-eared bat and “*not likely to jeopardize continued existence*” for the tri-colored bat, was submitted to the South Dakota Ecological Services office via email on July 20, 2023, requesting concurrence with the findings described in the biological assessment. FWS concurred with the determinations in a letter dated December 8, 2023.

Two federally listed threatened plant species are known to occur in the BHNF: Leedy's roseroot and hooded lady's tresses (BKS, 2022). Neither species has known habitat on the Northern Hills Ranger District and neither species was observed during the July 2022 vegetation field survey (BKS, 2022).

#### **4.3.10 Regional Forester's Sensitive Species**

The project record includes evaluations for those terrestrial, aquatic, and plant species identified as Regional Forester's Sensitive Species known or expected to occur within the project area. The USFS identifies 31 Region 2 Sensitive Species with the potential to occur in the BHNF, though species not known to occur in the project area or without suitable habitat were determined to have *"no impact"* and were excluded from the analysis. As detailed in the BA/BE, a determination of *"may impact individuals but is unlikely to result in a loss of viability in the planning area, nor cause a trend toward federal listing or a loss of species viability range wide"* was made for northern leopard frog, American goshawk (previously known as the northern goshawk), Pacific marten (previously known as the pine marten), fringed myotis, hoary bat, Townsend's big-eared bat, and prairie moonwort.

No other sensitive plant or animal species are known or expected to occur within the project area; therefore, it was determined there would be *"no impact"* to those species as a result of the Selected Alternative. I have reviewed the analysis and anticipated effects on all Regional Forester's Sensitive Species and concur with the findings and determinations summarized above.

#### **4.3.11 Pertinent Executive Orders**

The responsible official and applicable specialists have determined that the Selected Alternative complies with the following Executive Orders (EO), which were deemed pertinent based on the nature of the project:

- EO 11988 Floodplain Management: Implementation of the Watershed Conservation Practices Handbook would ensure compliance with EO 11988.
- EO 11990, Protection of Wetlands: Design criteria related to hydrology listed in Table 3-1 would ensure protection of wetlands through the implementation of 100 ft aquatic management zones surrounding streams, springs, and wetlands. Further, mitigation measure SWH-01 relocates Platform O to avoid potential wetland effects.
- EO 12898, Environmental Justice: See discussion in Section 4.3.5 above.
- EO 13007, Indian Sacred Sites: See discussion in Section 4.3.6 above.
- EO 13175, Consultation and Coordination with Indian Tribal Governments: See discussion under Section 4.3.7 above.
- EO 13112, Invasive Species: Mitigation measures identified in Table 3-1 would minimize the spread and impact of invasive species.
- EO 13186, Migratory Birds: See discussion in Section 4.3.8 above.

#### **4.4 Conclusion**

After considering the environmental effects described in the EA and the entirety of the project record, I have determined that the proposed action will not have significant effects on the quality of the

human environment considering the context and intensity of impacts (40 CFR 1500-1508). Thus, an EIS will not be prepared.

#### **4.5 Administrative Review**

Per 36 CFR 218, Subparts A and B, this decision was subject to the pre-decisional administrative review process (i.e., objection period). Individuals and entities, as defined in 36 CFR 218.2, who submitted timely, specific written comments regarding the proposed project during any prior designated opportunity for public comment were afforded the opportunity to file an objection per 36 CFR 218.5. A legal notice announcing the opportunity to object was published in the newspaper of record, the Rapid City Journal, on December 12, 2023, fulfilling the notification requirements at 36 CFR 218.8. On that same date, the Final EA and Draft DNFONSI were published to the BHNF public website and those individuals or groups who had eligibility to object were notified via mail or e-mail of the availability of the documents and the opportunity to object. Per 36 CFR 218.26(a), objections were accepted for 45 days following the publication of the legal notice.

A total of 383 objections were received. Each objection was reviewed for eligibility. Eligibility is defined as: *“Individuals and entities as defined in § 218.2 who have submitted timely, specific written comments regarding a proposed project or activity that is subject to these regulations during any designated opportunity for public comment may file an objection”* (36 CFR 218.5(a)). Of the 383 objections received, it was found that 123 of the objectors had standing. From those 123 objections, a total of 19 issues were identified for detailed review.

A regional administrative review team (RART) comprised of USFS resource specialists who are not affiliated with the BHNF and who had no previous association with this project reviewed the 19 issues raised. The purpose of their review was to determine if the issues were properly addressed in the project record as defined by law, regulation, and policy, or if additional documentation or analysis was required. The reviewing official for the objection review was Shawn Cochran, Black Hills National Forest Supervisor. Based on the RART’s review of the project record and consideration of the issues raised, the reviewing official developed instructions to the responsible official, Northern Hills District Ranger Steve Kozel. An official objection response, addressing each of the issues in detail, was developed and sent to all eligible objectors on April 9, 2024. The response was also posted to the BHNF public website on that date. The reviewing official identified three instructions that must be addressed before a decision notice can be signed, per 36 CFR 218.12. Those instructions were:

1. I instruct the responsible official to identify, per 40 CFR 1501.6 (c), the authorities for mitigation measures adopted for the proposed project within the final DN and FONSI.
2. I instruct the responsible official to require, within the signed and revised Plan of Operations, a wellbore casing and cement plan, to include approximate casing depth intervals.
3. I instruct the responsible official to require, within the signed and revised Plan of Operations, an Avoidance, Mitigation, and Contingency Plan for mineral exploratory wells in a karst and pseudo-karst landscape, to include any avoidance measures for karst features, mitigations measures, and contingencies in the event karst features are encountered.

These instructions have been addressed in this document. Instruction #1 is addressed in Section 3.2 above. Instructions #2 and #3 are addressed in Section 5.1.1 below. With the incorporation of these instructions, the pre-decisional administrative review requirements of 36 CFR 218.12 have been met and a decision may be rendered for this project.

## **5. Plan of Operations Implementation**

### **5.1 Forest Service Requirements**

The proposed operations outlined in the final PO cannot commence on NFS lands without written approval from the USFS as described in 36 CFR 228.5(a). Approval of the PO does not constitute recognition or certification of ownership to any person. Furthermore, approval of the PO does not constitute recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies. The USFS has sole authority to approve and administer the PO to standard. This DN does not approve the commencement of operations; rather, it indicates the intent of the agency to approve the final PO once required criteria have been met, as described below.

#### **5.1.1 Final Plan of Operations with Decision Requirements Incorporated**

Solitario will submit a signed, revised PO that incorporates all the requirements in this decision document. However, Solitario can choose to appeal my decision to approve their PO with Mitigations under 36 CFR 214. This includes the incorporation of mitigation measures outlined here that have been determined necessary to minimize potential adverse impacts on NFS surface resources, the financial assurance for reclamation, along with the Terms and Conditions found on the agency form FS 2800-05 section VII. Note that some of the USFS requirements include submitting and approving plans that outline additional details for the operation under the selected action. The required plans include:

- Spill prevention control and countermeasure plan.
- Sediment and erosion control plan.
- Public safety signage plan.
- Emergency response plan.
- Site security plan.
- Wellbore casing and cement plan.
- Avoidance, mitigation, and contingency plan for intrusions into karst or pseudo-karst.

The USFS will review all plans to ensure consistency with the EA and this DN and ensure they have been properly incorporated into the PO before approval.

#### **5.1.2 Financial Assurance**

USFS regulations (36 CFR 228.13) allow the agency to collect a financial assurance or guarantee of faithful performance with the terms and conditions outlined in the final PO, including the requirements of this DN. The financial assurance ensures the reclamation of surface disturbances to NFS lands to prevent or control environmental damage. All operations shall be conducted so that, where feasible, they minimize adverse environmental impacts on NFS surface resources, including the following (see 36 CFR 228.8): air quality, water quality, solid wastes, scenic values, fisheries and wildlife habitat, plant habitat, roads, and reclamation.

The financial assurance amount is the USFS' estimated cost to complete site reclamation on NFS lands if the proponent cannot or will not perform the required reclamation. The USFS has developed guidance for calculating the amount of financial assurance required for mining projects, and it must be developed or reviewed by a Certified Locatable Minerals Administrator (USFS, 2004). This guidance includes costs for the government to remove structures and equipment, regrade and recontour the surface, revegetate the reclaimed land, and accounts for long-term monitoring and maintenance costs if required to meet applicable laws and regulations. The financial assurance will also include necessary administrative and overhead costs, as described in the 2004 Forest Service Training Guide for Reclamation Bond Estimate and Administration (USFS, 2004), to complete the reclamation on NFS lands if the company were unable or unwilling to do so.

Financial assurance release is performance-based and is granted or denied based on the agency's evaluation. Performance criteria for activities and actions covered by the bond shall be developed and established in the PO and include pads recontoured back to a natural landform and established ground cover that matches surrounding terrain. These criteria must be met before the partial or full bond release unless otherwise agreed to by the USFS. There is no specific time frame for bond release once reclamation activities have been completed. When the USFS has accepted as complete any portion of the reclamation, the authorized officer shall notify the operator of such acceptance and adjust the amount of bond financial assurance thereafter to be required with respect to the remaining reclamation. When reclamation has been completed in accordance with 36 CFR 228.8(g), the authorized officer will notify the proponent that performance under the financial assurance bond has been completed (36 CFR 228.13(d)).

The USFS process does not require calculating the financial assurance bond before the publication of the final EA or completion of the NEPA process, as the financial assurance bond must reflect all activities and mitigations required under the selected action of this decision.

### **5.1.3 Implementation Schedule**

This project has completed the pre-decisional administrative review process as described in Section 4.5 above and as outlined in 36 CFR 218. This project may be implemented after the signing of this DN and once the USFS accepts the final PO with DN requirements incorporated and the proponent has posted the financial assurance bond as described above. Implementation is defined as the commencement of the ground-disturbing actions described in this notice.

## **5.2 Procedures for Change During Implementation**

### **5.2.1 Modification to a Plan of Operations**

Modifications to the PO may be proposed by the proponent or requested by the USFS for reasons such as unforeseen significant impacts on surface resources. If a modification is proposed, it will be reviewed by the USFS, and a determination will be made whether the actions would require additional review under the NEPA. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination.

### 5.2.2 Noncompliance With the Plan of Operation

Should the Proponent be noncompliant with the final PO, the USFS would take appropriate action, which could include enforcement or consultation with the appropriate entities, to determine whether further action may be needed. If the proponent fails to comply with the regulations or the approved PO and the noncompliance is unnecessarily or unreasonably causing injury, loss, or damage to surface resources, the authorized officer will serve a notice of noncompliance upon the operator in accordance with 36 CFR 228.7. Furthermore, if the proponent is notified of noncompliance by another permitting agency that could directly or indirectly impact NFS lands and resources, the proponent is responsible for notifying the USFS of the situation in a timely manner. Acting within its authority, the USFS will review the situation and determine whether and what action may be needed by the USFS.

### 5.2.3 Contact Information

For additional information concerning this decision contact Steve Kozel, District Ranger (email: [steven.kozel@usda.gov](mailto:steven.kozel@usda.gov), phone: (605) 443-3050) or Chris Stores, Natural Resources Planner (email: [chris.stores@usda.gov](mailto:chris.stores@usda.gov), phone: (605) 443-3081). Information can also be obtained at the Northern Hills Ranger District, 2014 North Main Street, Spearfish, SD 57783.

  
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Steve Kozel  
District Ranger, Northern Hills Ranger District  
Black Hills National Forest  
USDA Forest Service  
\_\_\_\_\_  
Date

## 6. References

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