STANDARD FORM 299 (05/2009)
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P.L. 96-487 and Federal
Register Notice 5-22-95

APPLICATION FOR TRANSPORTATION AND UTILITY SYSTEMS AND FACILITIES ON FEDERAL LANDS

FORM APPROVED
OMB Control Number: 0596-0082
Expiration Date: 1/31/2017

FOR AGENCY USE ONLY

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

Application Number

Date Filed

1. Name and address of applicant *(include zip code)*

Homestake Partners (Colorado Springs Utilities and Aurora Water)

2. Name, title, and address of authorized agent if different from item 1 *(include zip code)*

Kevin Lusk, Principal Engineer
Colorado Springs Utilities
1521 South Hancock Expressway
Colorado Springs, CO 80903

3. Telephone (area code)

Applicant
N/A

Authorized Agent
(719) [redacted]

4. As applicant are you? *(check one)*

a. ☐ Individual
b. ☐ Corporation*
c. ☒ Partnership/Association*
d. ☐ State Government/State Agency
e. ☐ Local Government
f. ☐ Federal Agency

* *If checked, complete supplemental page*

5. Specify what application is for: *(check one)*

a. ☒ New authorization
b. ☐ Renewing existing authorization No.
c. ☐ Amend existing authorization No.
d. ☐ Assign existing authorization No.
e. ☐ Existing use for which no authorization has been received *
f. ☐ Other*

* *If checked, provide details under item 7*

6. If an individual, or partnership are you a citizen(s) of the United States? ☒ Yes ☐ No

7. Project description (describe in detail): (a) Type of system or facility, *(e.g., canal, pipeline, road);* (b) related structures and facilities; (c) physical specifications *(Length, width, grading, etc.)*; (d) term of years needed: (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction *(Attach additional sheets, if additional space is needed.)*

The Homestake Partners (Colorado Springs Utilities and Aurora Water) are conducting a fatal-flaw level reservoir siting study in support of the Eagle River Memorandum of Understanding (ERMOU). The project area is along Homestake Creek about 6 miles southwest of Redcliff, Colorado. The work is proposed for summer 2019 and comprises subsurface exploration to evaluate feasibility of dam construction on lower Homestake Creek. Please reference Appendix 1 for a description of the ERMOU project and additional work plan details including a project vicinity map for #8 below (Figure 1).

8. Attach a map covering area and show location of project proposal

9. State or Local government approval: ☐ Attached ☐ Applied for ☒ Not Required

10. Nonreturnable application fee: ☐ Attached ☐ Not required

11. Does project cross international boundary or affect international waterways? ☐ Yes ☒ No *(if "yes," indicate on map)*

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

The Homestake Partners commit to necessary financial resources for the temporary occupation of NFS lands to complete the work tasks outlined in Appendix 1. The Homestake Partners have secured the full-time services of technical expertise responsible for completing the work tasks outlined in Appendix 1.

13a. Describe other reasonable alternative routes and modes considered.

Several alternative routes were evaluated to make best use of existing established roadways. In order to minimize affects on environmental and cultural resources, the preferred routes outlined in Appendix 1 were selected.

b. Why were these alternatives not selected?

Please reference 13a above.

c. Give explanation as t o why it is necessary to cross Federal Lands.

The project area for the study is located in part on Federal Lands.

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency. *(Specify number, date, code, or name)*

N/A

15. Provide statement of need for project, including the economic feasibility and items such as: (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative; and (c) expected public benefits.

The objective of this investigation is to evaluate opportunities to construct reservoir storage to develop a portion of the yield contemplated in the 1998 ERMOU. Specifically, the subsurface explorations outlined in Appendix 1 would provide valuable information regarding the suitability of the area for development.

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

There are no predicted effects on the population in the area including the social and economic aspects, and the rural lifestyles associated with the temporary occupation of NFS lands to complete the work tasks outlined in Appendix 1.

17. Describe likely environmental effects that the proposed project will have on: (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability.

There are no long-term adverse environmental affects associated with the temporary occupation of NFS lands to complete the work tasks outlined in Appendix 1. Please reference Appendix 1 for detailed environmental review and analyses completed, including proposed BMPs to be implemented to minimize or avoid any affects to the environment.

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

There are no long-term adverse wildlife affects associated with the temporary occupation of NFS lands to complete the work tasks outlined in Appendix 1. Please reference Appendix 1 for detailed local habitat (fish, plants, etc) review and analyses completed, including proposed BMPs to be implemented to minimize or avoid any affects to the local habitat.

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCIA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

No hazardous materials will be utilized to complete the work task outlined in Appendix 1. However, based on previous discussions with the U.S. Army Corps of Engineers, it is our understanding there may be unexploded ordnances (UXOs) in the vicinity of the project area. Accordingly, a project-specific mitigation plan is outlined in Appendix 1 in the event field personnel identify any UXOs within the project area.

20. Name all the Department(s)/Agency(ies) where this application is being filed.

USDA, Forest Service, White River National Forest
Eagle/Holy Cross Ranger District
PO Box 720, Eagle, CO 81631

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant	Date
	6-25-19

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

GENERAL INFORMATION
ALASKA NATIONAL INTEREST LANDS

This application will be used when applying for a right-of-way, permit, license, lease, or certificate for the use of Federal lands which lie within conservation system units and National Recreation or Conservation Areas as defined in the Alaska National Interest lands Conservation Act. Conservation system units include the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, and National Forest Monuments.

Transportation and utility systems and facility uses for which the application may be used are:

1. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.

2. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.

3. Pipelines, slurry and emulsion systems, and conveyor belts for transportation of solid materials.

4. Systems for the transmission and distribution of electric energy.

5. Systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communications.

6. Improved right-of-way for snow machines, air cushion vehicles, and all-terrain vehicles.

7. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

This application must be filed simultaneously with each Federal department or agency requiring authorization to establish and operate your proposal.

In Alaska, the following agencies will help the applicant file an application and identify the other agencies the applicant should contact and possibly file with:

Department of Agriculture
Regional Forester, Forest Service (USFS)
Federal Office Building,
P.O. Box 21628
Juneau, Alaska 99802-1628
Telephone: (907) 586-7847 *(or a local Forest Service Office)*

Department of the Interior
Bureau of Indian Affairs (BIA)
Juneau Area Office
Federal Building Annex
9109 Mendenhall Mall Road, Suite 5
Juneau, Alaska 99802
Telephone: (907) 586-7177

Department of the Interior
Bureau of Land Management
222 West 7th Avenue
P.O. Box 13
Anchorage, Alaska 99513-7599
Telephone: (907) 271-5477 (or a local BLM Office)

U.S. Fish & Wildlife Service (FWS)
Office of the Regional Director
1011 East Tudor Road
Anchorage, Alaska 99503
Telephone: (907) 786-3440

National Park Service (NPA)
Alaska Regional Office, 2225
Gambell St., Rm. 107
Anchorage, Alaska 99502-2892
Telephone: (907) 786-3440

Note - Filings with any Interior agency may be filed with any office noted above or with the Office of the Secretary of the Interior, Regional Environmental Office, P.O. Box 120, 1675 C Street, Anchorage, Alaska 9513.

Department of Transportation
Federal Aviation Administration
Alaska Region AAL-4, 222 West 7th Ave., Box 14
Anchorage, Alaska 99513-7587
Telephone: (907) 271-5285

NOTE - The Department of Transportation has established the above central filing point for agencies within that Department. Affected agencies are: Federal Aviation Administration (FAA), Coast Guard (USCG), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA).

OTHER THAN ALASKA NATIONAL INTEREST LANDS

Use of this form is not limited to National Interest Conservation Lands of Alaska.

Individual department/agencies may authorize the use of this form by applicants for transportation and utility systems and facilities on other Federal lands outside those areas described above.

For proposals located outside of Alaska, applications will be filed at the local agency office or at a location specified by the responsible Federal agency.

SPECIFIC INSTRUCTIONS
(Items not listed are self-explanatory)

7 Attach preliminary site and facility construction plans. The responsible agency will provide instructions whenever specific plans are required.

8 Generally, the map must show the section(s), township(s), and range(s) within which the project is to be located. Show the proposed location of the project on the map as accurately as possible. Some agencies require detailed survey maps. The responsible agency will provide additional instructions.

9 , 10, and 12 The responsible agency will provide additional instructions.

13 Providing information on alternate routes and modes in as much detail as possible, discussing why certain routes or modes were rejected and why it is necessary to cross Federal lands will assist the agency(ies) in processing your application and reaching a final decision. Include only reasonable alternate routes and modes as related to current technology and economics.

14 The responsible agency will provide instructions.

15 Generally, a simple statement of the purpose of the proposal will be sufficient. However, major proposals located in critical or sensitive areas may require a full analysis with additional specific information. The responsible agency will provide additional instructions.

16 through 19 Providing this information is as much detail as possible will assist the Federal agency(ies) in processing the application and reaching a decision. When completing these items, you should use a sound judgment in furnishing relevant information. For example, if the project is not near a stream or other body of water, do not address this subject. The responsible agency will provide additional instructions.

Application must be signed by the applicant or applicant's authorized representative.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, the application may be rejected.

DATA COLLECTION STATEMENT

The Federal agencies collect this information from applicants requesting right-of-way, permit, license, lease, or certification for the use of Federal lands. The Federal agencies use this information to evaluate the applicant's proposal. The public is obligated to submit this form if they wish to obtain permission to use Federal lands.

SUPPLEMENTAL

NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
I - PRIVATE CORPORATIONS	ATTACHED	FILED*
a. Articles of Incorporation	☐	☐
b. Corporation Bylaws	☐	☐
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	☐	☐
d Copy of resolution authorizing filing	☐	☐
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	☐	☐
f. If application is for an oil or gas pipeline, describe any related right- of-way or temporary use permit applications, and identify previous applications.	☐	☐
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	☐	☐
II - PUBLIC CORPORATIONS		
a. Copy of law forming corporation	☐	☐
b. Proof of organization	☐	☐
c. Copy of Bylaws	☐	☐
d. Copy of resolution authorizing filing	☐	☐
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	☐	☐
III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY		
a. Articles of association, if any	☐	☐
b. If one partner is authorized to sign, resolution authorizing action is	☐	☐
c. Name and address of each participant, partner, association, or other	☐	☒
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	☐	☐

*****If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information *(e.g., number, date, code, name)*. If not on file or current, attach the requested information.

NOTICES

Note: This applies to the Department of Agriculture/Forest Service (FS)

This information is needed by the Forest Service to evaluate the requests to use National Forest System lands and manage those lands to protect natural resources, administer the use, and ensure public health and safety. This information is required to obtain or retain a benefit. The authority for that requirement is provided by the Organic Act of 1897 and the Federal Land Policy and Management Act of 1976, which authorize the secretary of Agriculture to promulgate rules and regulations for authorizing and managing National Forest System lands. These statutes, along with the Term Permit Act, National Forest Ski Area Permit Act, Granger-Thye Act, Mineral Leasing Act, Alaska Term Permit Act, Act of September 3, 1954, Wilderness Act, National Forest Roads and Trails Act, Act of November 16, 1973, Archeological Resources Protection Act, and Alaska National Interest Lands Conservation Act, authorize the Secretary of Agriculture to issue authorizations or the use and occupancy of National Forest System lands. The Secretary of Agriculture's regulations at 36 CFR Part 251, Subpart B, establish procedures for issuing those authorizations.

BURDEN AND NONDISCRIMINATION STATEMENTS

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 8 hours hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720- 2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

APPENDIX 1 – TECHNICAL REPORT
WHITNEY RESERVOIR SITING STUDY
WHITE RIVER NATIONAL FOREST
EAGLE COUNTY, COLORADO

Prepared by—

ERO Resources Corporation
1842 Clarkson Street
Denver, Colorado 80218
303-830-1188

RJH Consultants, Inc.
9800 Mt Pyramid Court, Suite 330
Englewood, CO 80112
303-225-4611

June 21, 2019

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TABLES

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Background

The cities of Aurora and Colorado Springs (Cities); Climax Molybdenum Company (Climax) (previously Cyprus Climax Metals Corporation); the Colorado River Water Conservation District (River District); and the Vail Consortium (Eagle River Water and Sanitation District, Upper Eagle Regional Water Authority, and Vail Associates, Inc.) (collectively, the River District and the Vail Consortium comprise the Eagle Park Reservoir Company) are parties to the 1998 Eagle River Memorandum of Understanding (ERMOU) to develop a joint use water project in the Upper Eagle River basin. The cities of Aurora and Colorado Springs (Cities) are conducting a fatal-flaw level reservoir siting study. The objective of this study is to evaluate opportunities to construct reservoir storage to develop a portion of the yield contemplated in the ERMOU. Specifically, the subsurface explorations described below would provide valuable information regarding the suitability of the area for reservoir development.

The ERMOU parties entered into the ERMOU to develop a joint use water project to provide critical water supplies to both East and West Slope water users, and for environmental purposes. The ERMOU allows for the development of a project or projects with an annual yield of 30,000 acre-feet (AF), from which the Cities would receive an average annual supply of 20,000 AF, Climax would receive 3,000 AF of reservoir storage space, and the Reservoir Company would receive 10,000 AF of firm annual water yield to meet critical West Slope water supply needs and provide water to enhance streamflow for environmental and recreation uses. It is contemplated that the Cities would forego development of Homestake II project infrastructure in the Holy Cross Wilderness in reliance on the joint use project; to that end, the Cities have relocated all Homestake II water rights to locations outside the wilderness.

The proposed siting study and subsurface exploration to evaluate feasibility of dam construction on lower Homestake Creek is planned for summer and fall 2019.

Proposed Action

The project area is along Homestake Creek about 6 miles southwest of Redcliff, Colorado. Access to the area is along existing Forest Road (FR) 703 (Homestake Road) about 5 miles south of the intersection with State Highway 24. The proposed action for

the feasibility study is limited to geologic mapping, geophysical survey, and subsurface exploration as described below. Subsurface exploration activities would not occur within designated Wilderness or Roadless areas. Geophysical survey activities would not occur within designated Wilderness areas and may occur within designated Roadless areas. Geologic mapping activities may occur within designated Wilderness and Roadless areas.

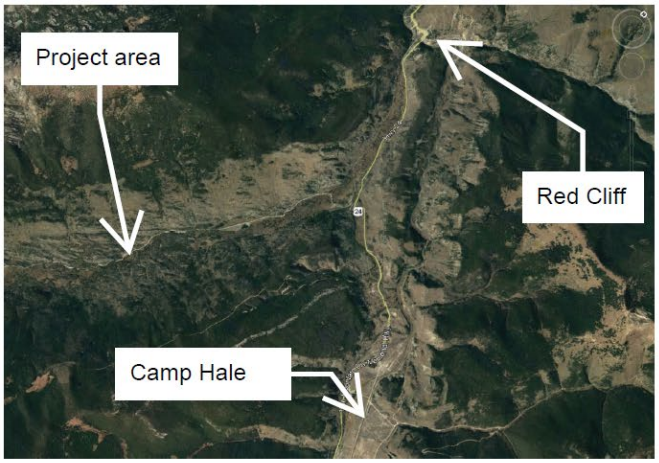
Geologic Mapping

Geologic mapping would be performed to improve our understanding of the geology and refine the locations of borings. This work would be conducted by two individuals traversing the area on foot for about one to two weeks in summer 2019. Vehicles would not be taken off designated public roads and parking areas. This work primarily consists of observing, describing, and mapping different bedrock and soil units; using a handheld compass to measure the orientations of bedrock fractures; and collecting soil and bedrock samples. A manual rock hammer would be used to test surface rock hardness and weathering characteristics. Rock fragments, typically less than the size of a baseball, may be broken off boulders or bedrock outcrops.

Soil and bedrock samples would be collected from the site. Approximately six samples each of soil and bedrock type are anticipated. The soil samples would be obtained from the ground surface. Soil samples would be approximately 1/2 gallon. Bedrock samples would be obtained from boulders and cobbles on the ground surface. The maximum size of sampled bedrock would be about the size of a basketball.

Geophysical Survey

The geophysical survey would be performed approximately along the exploratory dam alignments for alternatives B and C as shown on Figure 1. Each of the geophysical survey lines would be about 2,500 feet long. This work is anticipated to take about one to two weeks in summer 2019, after completion of or concurrent with the geologic mapping. The survey would be conducted by four individuals on foot. There would be no use of off-road vehicles. The geophysical survey consists of a seismic survey using geophones to record a seismic response from a shot point. Geophones would be located at approximately 20-foot intervals along the survey alignments at lengths up to about 940 feet at a time. Figure 2 shows a typical geophone.



Project Vicinity
(not to scale)

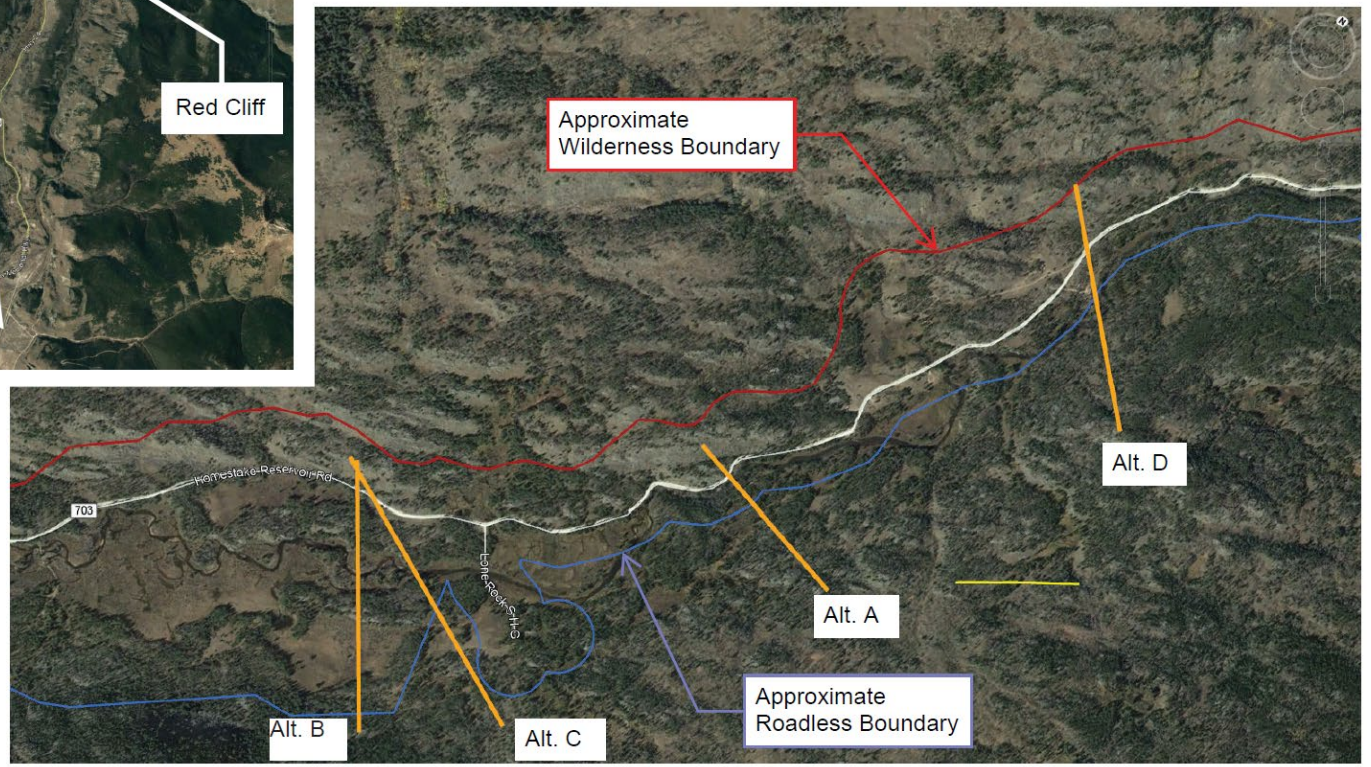


Figure 1. Project area. North (downstream) is towards the upper right and the yellow scale bar is 1000 feet long. Orange lines represent approximate alternative dam alignments.

Multiple shot points spaced along the survey lines would be used. Each shot point would consist of a small explosive charge attached to a wooden stake about 1 to 2 feet above the ground surface, which minimizes the potential for ground disturbance. The shot point would generate an instantaneous burst of noise (sound like a gunshot) of approximately 170 decibels, which would diminish to about 110 decibels at a 0.50-mile distance. Approximately 10 shot points per day would occur during the fieldwork. Herbaceous vegetation near the shot point may be temporarily matted down, but not permanently damaged. Homestake Road traffic will be monitored and may be momentarily detained on the roadway a safe distance from the shot point when shot points are performed near the road. Minimal short-term surface disturbance from foot traffic and shot points would occur with geophysical survey work.

Figure 2. Typical geophone.

Subsurface Exploration

The subsurface exploration would consist of drilling up to 13 borings along the four exploratory dam alignments shown on Figure 1. The approximate boring locations for each dam alternative are shown on Figures 3 through 5. Table 1 includes the approximate coordinates of the proposed boring locations. The borings are anticipated to extend up to about 150 feet below the ground surface. Subsurface exploration is anticipated to be performed in fall 2019 after or concurrent with the geophysical survey. Up to five days would be required for each boring. It is possible that the work could be completed in multiple periods that are months apart. Work would be limited to daylight hours. Field personnel would generally consist of one or two engineers and two drillers.

Table 1. Approximate locations of proposed borings.

Boring ID	Latitude (decimal degrees)	Longitude (decimal degrees)
A1	39.435009	-106.401119
A2	39.435055	-106.400336
A3	39.434746	-106.399460
A4	39.433375	-106.402785
A5	39.433153	-106.403802
B1	39.429687	-106.408967
B2	39.429307	-106.408670
C1	39.428009	-106.402357
D1	39.444538	-106.397105
D2	39.444216	-106.395564
D3	39.443334	-106.396503
D4	39.442247	-106.398329
D5	39.440775	-106.397997

Notes:
- Horizontal datum is WGS 84.
- Final locations may be modified based on local access conditions, geologic mapping, or geophysical survey data.

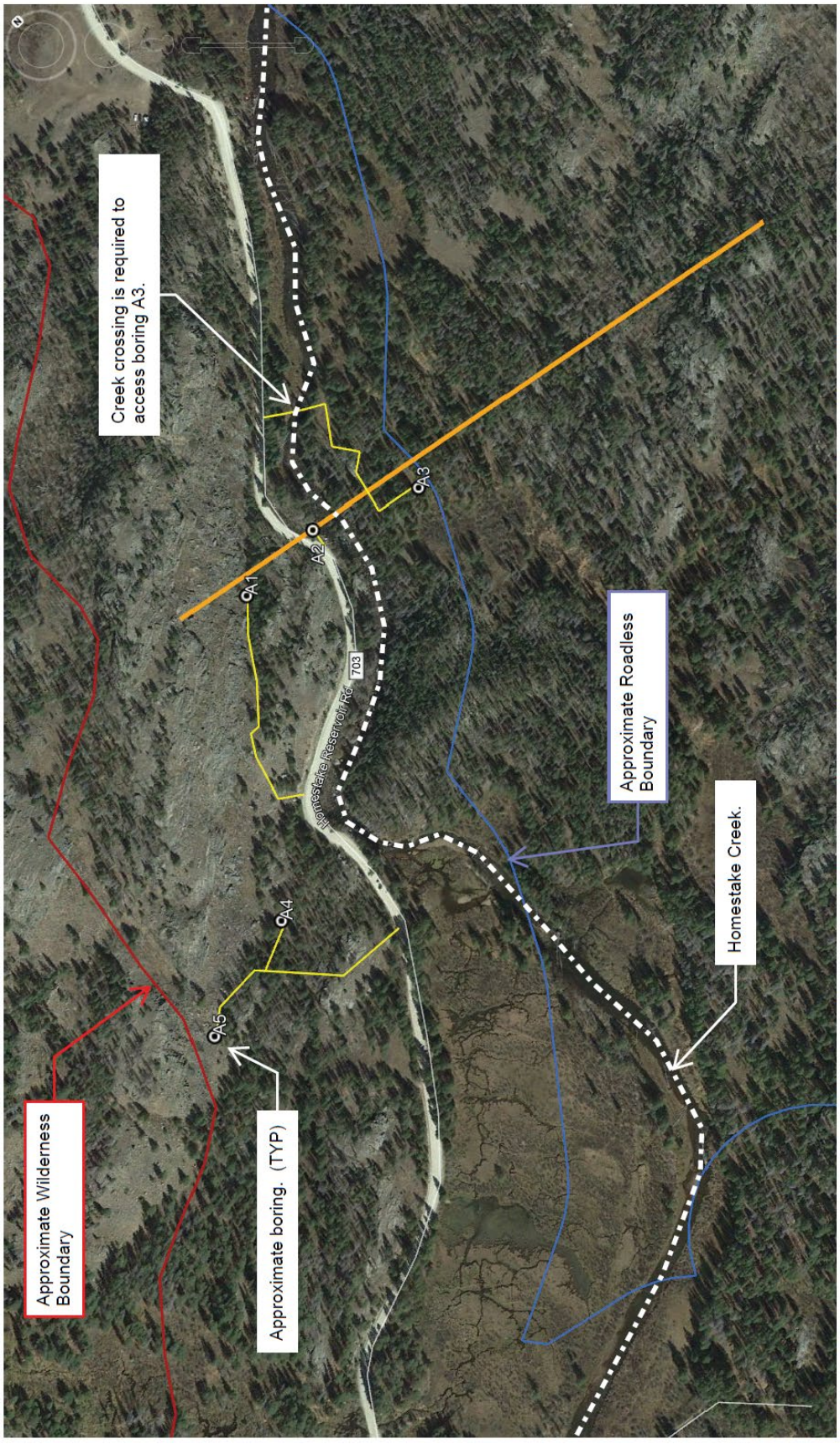


Figure 3. Approximate proposed boring locations (white circles) and access routes (yellow lines) for Alternative A.

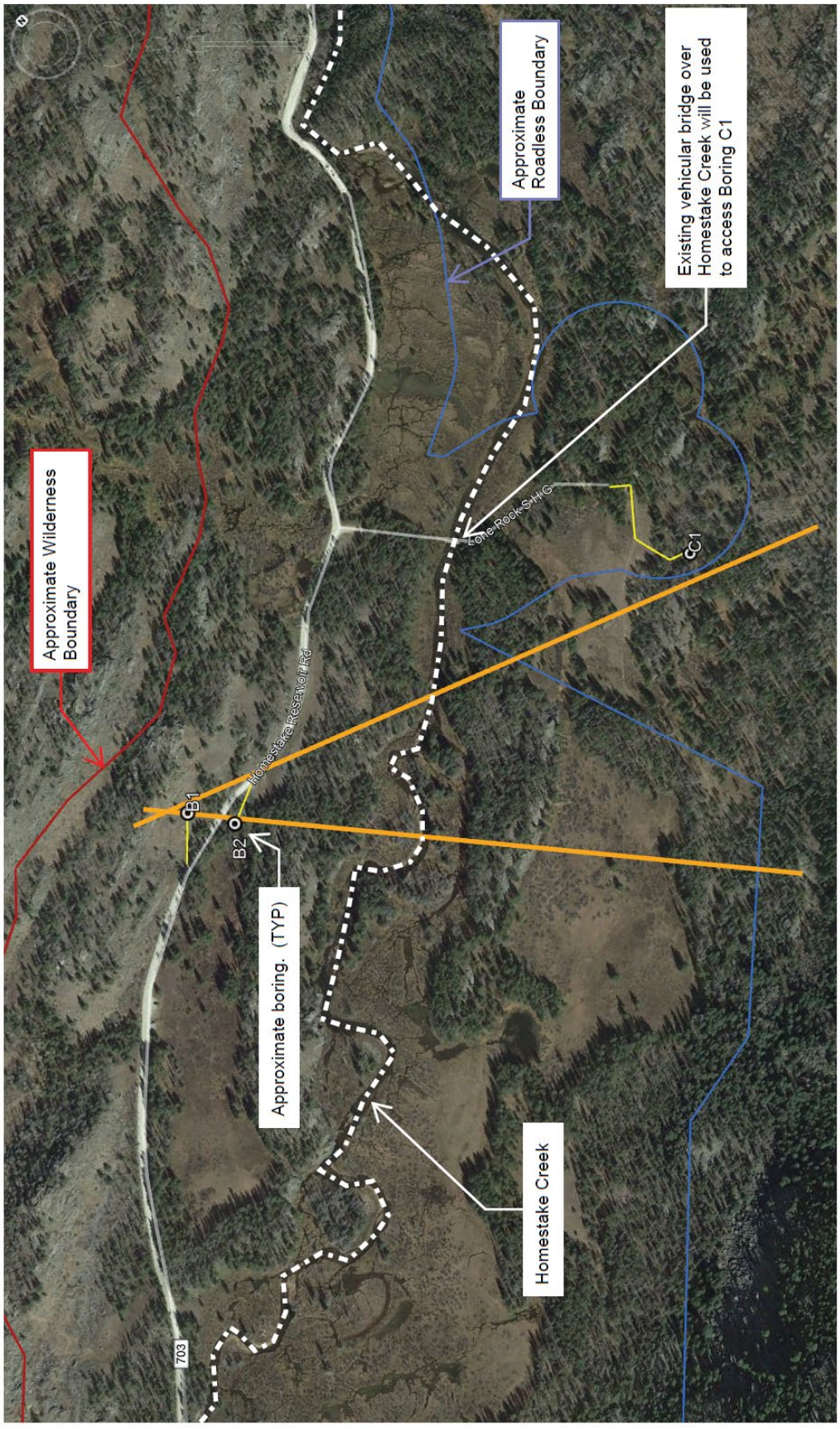


Figure 4. Approximate proposed boring locations (white circles) and access routes (yellow lines) for Alternatives B and C.

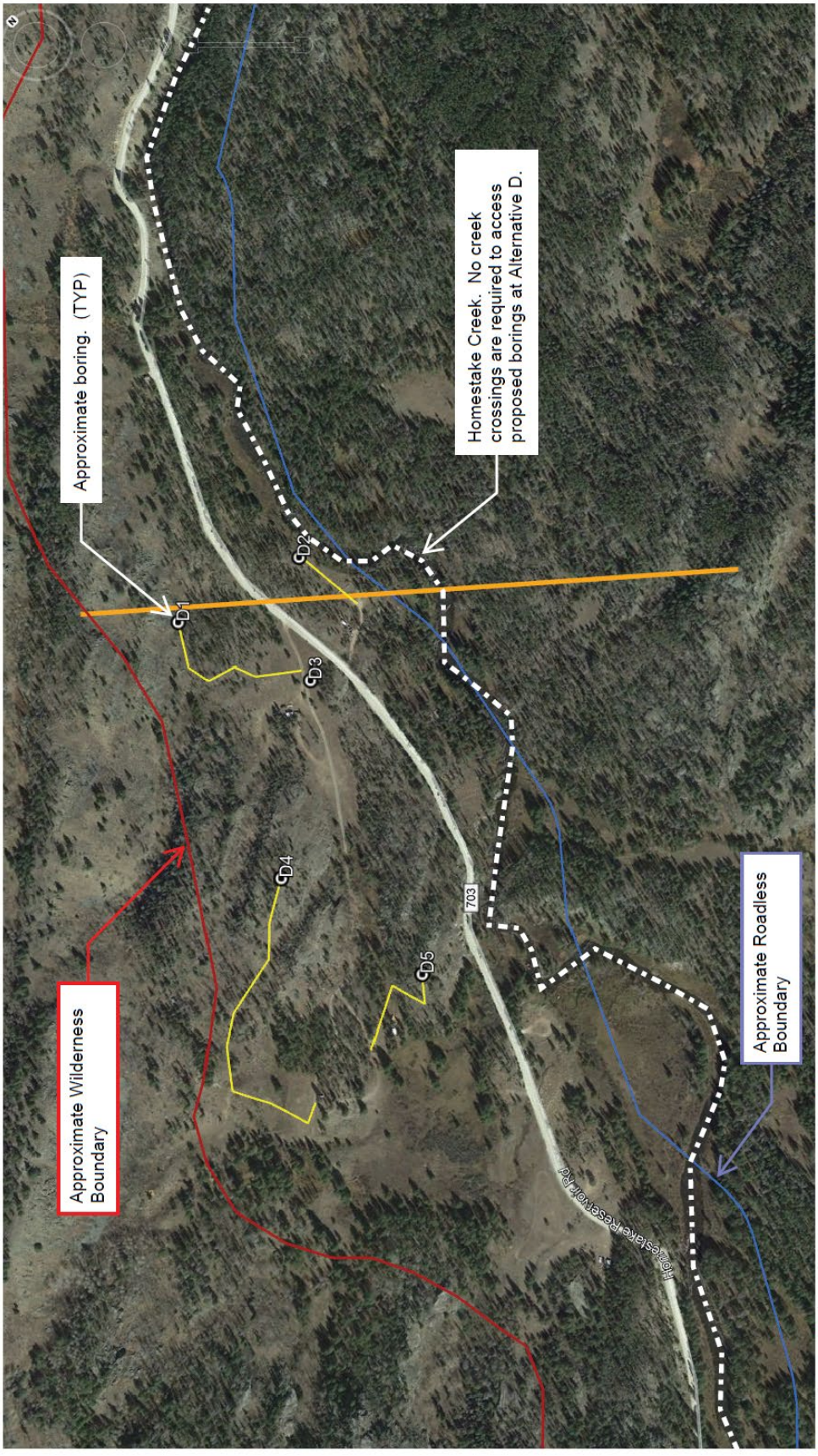


Figure 5. Approximate proposed boring locations (white circles) and access routes (yellow lines) for Alternative D.

The equipment needed for this work includes a standard pickup truck, a heavy-duty pickup pulling a flatbed trailer, and a semi-tractor and trailer. These vehicles would remain on designated roads and parking areas. Equipment that would be taken off-road to access boring locations consist of a track-mounted drill rig (Figure 6) or a buggy-mounted drill rig (Figure 7), a utility vehicle (UTV) (Figure 8) pulling a small trailer, and a track-mounted skid steer (Figure 9). The drill rigs are about 8 feet wide, 22 feet long, and 8 feet high. The mast on the drill rigs extends about 30 feet above the ground surface when it is raised.

Figure 6. Track-mounted drill rig.

Figure 7. Buggy-mounted drill rig.

Figure 8. Typical UTV proposed for boring access.

Figure 9. Typical track-mounted skid steer for boring access.

Access Routes

To accommodate vehicle access, approximately 10-foot-wide temporary access routes would be required from existing roads to the boring locations. The approximate alignments of temporary access routes for the proposed borings are shown on Figures 3, 4, and 5 for Alternatives A, B/C, and D, respectively. These are approximate and it is possible that localized site conditions may require modification to these alignments.

Traffic on Homestake Road would be controlled for borings located near the road. Borings will not be located within the roadway. To provide a safe work area on all sides of the drill rig for borings located near the road, traffic cones, or other marking equipment, and traffic control, consisting of caution signs, would be placed several hundred feet from the work area to warn approaching traffic in both directions and placed on the road at the boring site to direct traffic into one lane around the work area. The traffic control measures are expected to be necessary for up to five days for each boring located near the road.

Access routes will be selected to reduce surface disturbance and vegetation removal, and to avoid identified or potential unexploded ordnances (UXOs) discovered during

field surveys; however, some vegetation clearing and some tree removal may be required. The objective is to reduce tree cutting to the least number possible and to cut dead trees where possible. We would identify access roads and where tree cutting is necessary in the field prior to cutting any tree and would propose a joint site visit with the USFS prior to cutting any trees. Cut trees and vegetation would be left on-site. Shrubs and low-growing vegetation up to about 3 feet high would be driven over rather than removed where possible.

No formal road surfacing (e.g., gravel) would be used. Earthwork with a bulldozer or excavator is expected to be necessary adjacent to Homestake Road near Alternative A, where the road embankment grade is approximately 1 horizontal to 1 vertical (1H:1V). A ramp with a grade of about 2H:1V would be constructed from the road grade to the adjacent ground surface about 6 feet below.

Borings

Boring sites would be located within the access routes, where possible, to reduce the area of disturbance. At each boring location, a working area of about 20 feet by 40 feet would need to be cleared of vegetation that is more than about 6 inches high, and overhead clearance of about 30 feet is needed for the drill rig mast.

The borings would be conducted using either augers, ODEX, and rotary techniques. Drill rigs would operate continuously during the day and would emit noise at the source of drilling from about 80 to 100 decibels. If used, an auger or ODEX casing would create an 8-inch-diameter hole with soil brought to the ground surface around the boring. Rotary techniques would produce a boring that is less than about 4 inches in diameter. Rotary techniques involve pumping water down hollow drill rods that are used to advance the boring. The water flows out into the boring around a bit at the end of the drill rods and returns to the ground surface in the annular space between the drill rods and boring wall. The circulating water carries the cuttings (soil and bedrock material) out of the boring. The circulating water and cuttings are collected in a mud tank (approximately 200-gallon steel tank) at the ground surface. The cuttings settle out of the water in the tank and the drill rig recirculates the water from the mud tank.

Packer testing would be performed within the bedrock portion of the borings. This involves inflating a rubber seal near the bottom of the boring to isolate the bottom section of the boring. Water is then injected into the isolated section of the boring under pressure and the rate of injection is used to calculate the permeability of the bedrock.

Water for rotary drilling techniques and Packer testing would be obtained from Homestake Creek or other nearby bodies of surface water. Water would be pumped from the source and conveyed to the boring location in hoses or in tanks. The amount of water would depend on the permeability of the bedrock but is anticipated to range from a few hundred gallons to a few thousand gallons per day. Most water would be recharged into the ground water via the bore hole. Incidental water discharge would occur on the surface from spillage and drainage of the mud tank. Drill cuttings that accumulate at the ground surface or in the mud tank would be disposed of at each boring location by spreading them out on the adjacent ground surface. The anticipated quantity of cuttings is a few cubic feet per boring. The bore hole would be filled from the bottom to about 2 feet below the ground surface with cement-bentonite and the remaining 2 feet backfilled with native earth material from the boring.

Best Management Practices

Best management practices (BMPs) will be implemented throughout planned geotechnical work to minimize impacts on environmental and cultural resources.

General Measures

The work area limits would be clearly defined to keep ground disturbance and vegetation removal to a minimum. No disturbance would occur beyond these limits. Work would be limited to daylight hours.

Unexploded Ordnance

Unexploded ordnances (UXOs) may be present within the work area from previous military training activities performed at Camp Hale. UXO surveys will be performed by field personnel to ensure the safety of the field personnel.

During geologic mapping, field personnel will perform a visual surface clearance for UXOs as they are traversing the work area. However, we do not intend to perform a comprehensive search for UXOs throughout the area identified on Figure 1. If

UXOs are identified, their locations will be avoided during fieldwork. The UXO locations would be documented by flagging in the field, recording GPS coordinates, etc., and the locations would be reported to the USFS or another appropriate agency. Field personnel will avoid activities that intrude beneath the ground surface.

A geophysical magnetic survey would be performed along the proposed alignment of the geophysical seismic survey prior to placing any stakes or geophones to investigate for UXOs for the safety of field personnel. The magnetic survey would be performed using an all-metals detector, which proved successful during an earlier phase of investigation at differentiating between rocks that emit a magnetic response and anthropogenic metallic debris. Site information will be reviewed by geophysical specialists who have experience with UXO detection and a Site-specific Health and Safety Plan will be developed with requirements for the extent of the magnetic survey. At a minimum, we anticipate that the magnetic survey would be performed at the location of each geophone and within a 50-foot radius of each geophysical shot point. If any magnetic anomalies are identified by the magnetic survey their locations will be avoided during the seismic survey. The locations of the magnetic anomalies and any identified surface UXOs would be documented by flagging in the field, recording GPS coordinates, etc. The locations of magnetic anomalies and identified surface UXOs will be reported to the USFS or another appropriate agency.

During the layout of temporary access routes and boring locations, field personnel will perform a visual surface clearance of UXOs as they traverse the work area. Before constructing the temporary access routes or drilling a boring, a metallic debris survey would be performed using an all-metals detector to identify potential subsurface UXOs. It is anticipated that the survey will encompass a 15- to 20-foot-wide swath along the temporary access routes and a 50-foot radius around each proposed boring location. Any metallic debris detected during the UXO survey will be flagged and the GPS coordinates recorded and reported to the U.S. Forest Service (USFS). The alignment of the access route and boring locations would be moved as necessary to avoid the UXO locations. No metallic debris would be unearthed or investigated further.

Revegetation and Erosion Control

Best management erosion-control and revegetation measures would be implemented during and following completion of boring. The track-mounted drill rig, UTV, and other equipment used off-road would be pressure washed and/or steamed cleaned before entering the national forest to prevent the introduction of nonnative plant species. No work would be conducted when soils are excessively wet and driving the UTV or track-mounted drill rig would create ruts deeper than 2-inches to reduce compaction, rutting, and impacts on vegetation cover. All equipment would be maintained in a clean and well-functioning state to avoid or reduce the risk of contamination from fluids or fuels. All disturbed ground would be reclaimed using USFS-approved BMPs including reseeding with native plant species.

Wildlife

Trees would be removed outside of the breeding season (March 15 to August 1 or as defined by the USFS) if feasible, or nest surveys would be conducted prior to tree removal to avoid impacts on migratory birds. All proposed activities would occur outside of the elk calving season.

Wetlands

Wetlands would be avoided during construction of temporary access routes to the extent possible and boring sites would be located outside of wetlands. Where avoidance of a wetland is not possible, wood mats made from trees, plywood, or other temporary structures may be used to protect wetlands during the short period of travel. The drill rig, UTV, and skid steer would drive across Homestake Creek in areas where the streambank is gradual and water is low enough for safe travel. If a gradual streambank approach is not present, the streambank would be pulled back using an excavator or other equipment to create a suitable gradient for the vehicles to cross the creek. Any required earthwork would avoid fill into waters of the U.S. or wetlands. Where temporary wetland or waters disturbance is unavoidable, applicable 404 permitting would be secured from the U.S. Army Corps of Engineers (Corps).

Cultural Resources

A Class III cultural resource field survey would be conducted in the area of potential effect (as identified in coordination with the USFS archaeologist) prior to disturbance for the temporary access route and borings, or a cultural resources monitor would be employed during site access as required by USFS. Survey or monitoring results would be used to modify the location of boring sites and the access route or implement appropriate mitigation measures. The results of the survey would be provided to the Colorado State Historic Preservation Office (SHPO) for concurrence. Should previously unknown cultural resources be encountered during proposed activities, work would be halted in the discovery area and the White River National Forest archaeologist would be consulted according to 36 CFR 800.13.

Potential Resource Effects

Federally Listed Threatened or Endangered Species

Several federally listed threatened or endangered species potentially occur in or downstream from the project area based on the U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation website (Table 2). Only Canada lynx has potential habitat in the vicinity of the project area. Colorado River endangered fish species are located downstream from the project area. There is no critical habitat for lynx or other federally listed species in the project area.

Table 2. Federally listed, candidate, and proposed species potentially occurring in the proposed project area.

Common Name	Scientific Name	USFWS Status	State Status	Suitable Habitat and Potential to Occur in the Project Area?
Mammals				
Canada lynx	*Lynx canadensis*	T	SE	Yes
North American wolverine	*Gulo luscus*	PT	SE	No
Birds				
Greater sage-grouse	*Centrocercus europhasianus*	C	SC	No
Mexican spotted owl	*Strix occidentalis lucida*	T	ST	No
Yellow-billed cuckoo	*Coccyzus americanus*	C	SC	No
Fish				
Bonytail chub*	*Gila elegans*	E	SE	No
Colorado pikeminnow*	*Ptychocheilus lucius*	E	ST	No
Greenback cutthroat trout	*Oncorhynchus clarki stomias*	T	ST	No
Humpback chub*	*Gila cypha*	E	ST	No
Razorback sucker*	*Xyrauchen texanus*	E	SE	No
Plants				
Ute ladies'-tresses orchid	*Spiranthes diluvialis*	T	-	No

E = Federal Endangered; T = Federal Threatened; C = Federal Candidate; P = Federal Proposed; PE = Federal Proposed Endangered; PT = Federal Proposed Threatened; SE = State Endangered; ST = State Threatened; SC = State Special Concern.
*These fish species may be affected by water depletions in the Colorado River Basin.
Source: USFWS 2013; Colorado Natural Heritage Program (CNHP) 2012.

Canada Lynx. Work areas are located primarily in lynx summer foraging habitat and non-habitat. Surrounding lands provide areas of winter foraging, denning habitat and non-habitat. Human activity and noise during the summer associated with the reservoir siting study could temporarily deter lynx activity near the project area. Proposed boring operations and vegetation clearing for access would have minimal impacts on vegetation communities used by lynx prey species such as snowshoe hare. No impacts on lynx are anticipated from the proposed work because much of the activity would occur near Homestake Road, a well-traveled recreation access road, work would be conducted over a short period (approximately five to six weeks), and impacts on potential habitat would be negligible.

Colorado River Endangered Fish. Bonytail chub, Colorado pikeminnow, humpback chub, razorback sucker, and their designated critical habitat are located downstream of the project area on the Colorado River. Proposed use of Homestake Creek water for boring operations would be recharged back into the watershed with no

depletions to the Colorado River that would impact downstream Colorado River fish.

Forest Service Sensitive Species

Forest Service Sensitive Species potentially occurring in or near the project area are listed in Table 3. The project area and immediately surrounding area support vegetation communities and habitat characteristics that may be used by sensitive mammals, birds, and amphibians. Noise from boring operations could potentially affect bird foraging and nesting near the project area. Vegetation and tree clearing to provide access for boring could potentially affect nesting sites for birds. Boreal toads and northern leopard frogs potentially occur in small ponds, riparian areas, and streams.

Direct effects on bird habitat would be avoided by conducting nest surveys prior to vegetation removal or by removing trees outside of the breeding season, if feasible. Birds and mammals may avoid the project area as a result of human activity and noise. Reservoir siting activities may have short-term adverse effects on individuals, but the actions are not likely to cause a trend toward federal listing or a loss of species viability rangewide.

Table 3. Forest Service Sensitive Species potentially occurring in the project area.

Common Name	Scientific Name	Suitable Habitat and Potential to Occur in the Project Area?
Boreal owl	*Aegolius funereus*	Yes
Boreal toad	*Bufo boreas*	Yes
Brewer's sparrow	*Spizella breweri*	Yes
Marten	*Martes Americana*	Yes
Northern goshawk	*Accipiter gentilis*	Yes
Northern leopard frog	*Rana pipiens*	Yes
Olive-sided flycatcher	*Contopus borealis*	Yes
Purple martin	*Progne subis*	Yes
Mountain sucker	*Catostomus platyrhynchus*	Yes
Flammulated owl	*Otus flammeolus*	Yes

Wildlife

The project area contains suitable habitat for variety of mountain-dwelling wildlife species such as black bear, coyote, red fox, mountain lion, long-tailed weasel, porcupine, yellow-bellied marmot, vole, squirrel, and deer mouse. Noise and disturbances associated with the reservoir siting study may displace some wildlife from the project area, but disturbances would be short-term and no adverse impacts on habitat are anticipated.

The project area is located within the Forest Management Area designation 5.41 for deer and elk winter range. Forest and non-forest habitats are managed to provide forage, cover, and solitude for deer, elk, and other species for winter. The proposed action would not impact winter and early spring deer and elk use in the project area since all activities would occur during the summer and early fall. Limited vegetation clearing for boring access would not adversely impact foraging and cover habitat available for deer and elk. All proposed activities would occur outside of the elk calving season.

The project area also contains habitat for Forest Service Management Indicator Species (MIS). Potential MIS species occurring in the project area include elk, trout, and macroinvertebrate communities present in Homestake Creek. Potential impacts on elk from the proposed action would be limited as described above. Small water withdrawals from Homestake Creek for boring would have negligible impacts on trout and macroinvertebrate species. Driving the drill rig, UTV, and skid steer across the creek would likewise have minimal disturbance on aquatic resources.

Floodplains, Wetlands, Water Resources, and Municipal Watersheds

The project area is located along Homestake Creek downstream from Homestake Reservoir. Homestake Creek is a perennial drainage with peak flows occurring during snowmelt runoff during the spring and early summer. Homestake Creek, which is tributary to the Eagle River, provides water for municipal, irrigation, and other downstream water uses. No Federal Emergency Management Act defined floodplains are in the project area, but portions of the proposed access route and boring locations span Homestake Creek and any associated floodplain. Wetland mapping conducted by ERO Resources Corporation in 2016 and USFWS National Wetland Inventory mapping indicates there are scattered scrub-shrub and herbaceous wetlands along the Homestake Creek Valley.

The proposed siting study would have no impact on floodplain functions. Temporary off-road vehicle access for borings would not result in changes to the topography or introduce new structures in the floodplain that would change or increase the risk of flooding.

Potential impacts on wetlands would be avoided during construction of temporary

access routes to the extent possible and boring sites would be located outside of wetlands. For small wetlands, it may be possible for the drill rig, UTV, and skid steer to travel across wetlands with minimal vegetation and soil disturbance. Where avoidance of a wetland is not possible, wood mats made from trees, plywood, or other temporary structures may be used to protect wetlands during the short period of travel. The drill rig, UTV, and skid steer would drive cross Homestake Creek in areas where the streambank is gradual and water is low enough for safe travel. If a gradual streambank approach is not present, the streambank (above the ordinary high water mark and outside of wetlands) would be pulled back using an excavator or other equipment to create a suitable gradient for the vehicles to cross the creek. Any required earthwork would avoid fill into waters of the U.S. or wetlands.

All material would be removed following completion of subsurface exploration, and disturbed areas would be reseeded and restored using native plant species. The appropriate 404 permit would be acquired from the Corps prior to implementation of wetland protection measures or earthwork in wetlands or below the ordinary high water mark of Homestake Creek.

Water pumped from Homestake Creek for subsurface exploration would be recharged to ground water through the bore hole or incidental spillage on the ground surface. As a result, there would be negligible consumptive use of the water that would impact downstream water rights or water for municipal or other uses. Projected pumping from Homestake Creek during the drilling period of up to several thousand gallons per day would have negligible impacts on streamflow or aquatic habitat. Streamflow in Homestake Creek, as measured at the Red Cliff gage downstream from the project area, averages about 75 cubic feet per second (cfs) in July, 36 cfs in August, and 21 cfs in September during months when the water would be used. Water pumped from Homestake Creek during drilling would amount to less than 0.01 cfs, a small fraction of average flows.

Vegetation

The Homestake Creek drainage consists of stands of mature pine-spruce forest with intermixed meadows, granite outcrops, and wetlands. The forest canopy is dominated by lodgepole pine with occasional aspen. The understory is generally open and consists of mountain brome, plantain, serviceberry, needlegrass, elk sedge, and kinnikinnick, among other species. Clearing a route for drill rig access and surface boring would require limited tree removal, tree limb pruning, and vegetation clearing of larger shrubs. Impacts on vegetation would be avoided to the extent feasible when locating the access route and boring locations. Cleared vegetation would be left in place and any exposed soil would be revegetated upon completion of actions. Crushed or trampled vegetation is expected to recover quickly. No significant impacts on vegetation are anticipated because of the limited clearing and planned revegetation efforts.

Congressionally Designated Areas – Wilderness, Wilderness Study Areas, Roadless, or National Recreation Areas

The project area is located southeast of the 113,841-acre designated Holy Cross Wilderness. No national recreation areas are in the vicinity of the project area.

Subsurface exploration activities would not occur within designated Wilderness or Roadless areas. Geophysical survey activities would not occur within designated Wilderness areas and may occur within designated Roadless areas. Geologic mapping activities may occur within designated Wilderness and Roadless areas. There would be no direct disturbance to wilderness or roadless areas. Noise from preparation of an access route and drilling operations would carry into the wilderness area for a short period. The effects on the wilderness character would be minimized because drilling activity near the wilderness would be conducted in a short amount of time. Noise from exploration-related activities would result in a short-term effect on wilderness values, such as solitude. However, because no trails or defined wilderness access points are near the project area, the effect on the quality of the wilderness experience from proposed activities would only be slightly diminished.

Research Natural Areas

No Research Natural Areas are near the project area.

Archaeological Sites, Historic Properties, or American Indian Cultural Sites

Colorado SHPO cultural files indicate the presence of several cultural resource sites near the project area. [ERO Resources online SHPO file search available upon request]. A Class III cultural resource field survey would be conducted for the temporary access route and boring sites prior to disturbance, or a cultural resources monitor would be employed during site access as required by USFS. Survey or monitoring results would be used to modify the location of boring sites and the access route or implement appropriate mitigation measures. The results of a survey would be provided to the Forest Service and Colorado SHPO. Should previously unknown cultural resources be encountered during proposed activities, work would be halted in the discovery area and the White River National Forest archaeologist would be consulted according to 36 CFR 800.13.

Recreation

Homestake Creek Road (FS 703) provides access to popular recreational activities including the Gold Park Campground, trailheads into the Holy Cross Wilderness, and Homestake Reservoir. Popular summer recreation in the area includes camping, hiking, fishing, and boating on Homestake Reservoir; wildlife viewing; and other recreational activities. The recreational opportunity spectrum for the project area is semiprimitive nonmotorized or semiprimitive motorized in the summer/fall.

Proposed activities associated with the reservoir siting study would have limited impacts on recreational access and activities. Homestake Road would remain open, although closure of a single lane for two to three days may cause short-term travel delays. Work would be completed during the week, avoiding the busier weekend times.

Access route clearing and borings would introduce elevated noise levels for short periods that may have a slight impact on the quality of the visitor experience. No trails or designated recreation sites are in the immediate project area vicinity; however, fishing may occur anywhere along Homestake Creek. The closest trail is about 3 miles west of the project area. The Gold Park Campground is about 3.5 miles from the Alternative B alignment and about 2.3 miles from the Alternative D alignment. Noise from drilling operations would attenuate to less than 50 decibels at the Gold Park Campground and would not be noticeable. It is anticipated that vegetation and terrain would attenuate noise to levels lower than estimated.

Geology and Soils

Clearing a path for drill rig access and boring would result in some surface disturbance to the soil from vegetation clearing and travel by a track-mounted drill rig, UTV, and skid steer. Earthwork requiring the use of a dozer would only occur where slopes greater than 2:1 are encountered. Borings would result in small areas of disturbance to subsurface geologic material from drilling. Bore holes would be filled from the bottom to within about 2 feet of the ground surface with cement-bentonite and the final 2 feet backfilled with native soil. Revegetation would be used to reclaim temporary soil disturbance from the proposed action. Minor removal of soil and geologic samples and continuous core samples of bedrock from subsurface borings would not adversely impact any important, scenic, or economic geologic features.

Scenic Quality

The scenery in the project area is managed to provide a range of scenic integrity objectives from low to moderate. The proposed action would result in selective vegetation clearing to allow access by the drill rig and conduct boring operations. Ground disturbance would be minimized to avoid exposing soils. All temporarily disturbed areas would be seeded with native species following operations. Vegetation clearing and disturbance, as well as equipment operations, may be observable near Homestake Road. No long-term impacts on scenic quality are anticipated upon completion of the proposed action and revegetation of any disturbed areas.

Findings Required by Other Laws and Regulations

The proposed action was developed to be consistent with the White River Forest Land Management Plan (Forest Plan). The project was designed in conformance with Standards and Guidelines for Management Area prescriptions. The project area is located in Management Area 5.41, with a prescription for deer and elk winter range. Vegetation composition and structure are managed to meet the needs of deer, elk, and other species on their winter range in this Management Area. The proposed action is consistent with resource standards and guidelines for Management Area 5.41 and should not require any revisions to the Forest Plan.

Clean Air Standards

The project area is currently in attainment with National Ambient Air Quality Standards. The proposed action would be in compliance with air quality statutes in the Forest Plan.

Clean Water Act

The proposed action would be in compliance with the Clean Water Act. Impacts on wetlands and waters of the U.S. would be avoided to the extent feasible. Where temporary disturbance is unavoidable, applicable 404 permitting/authorization would be secured from the Corps.

National Historic Preservation Act

In accordance with the National Historic Preservation Act, a cultural resource survey would be conducted prior to disturbance to identify any historic properties. The results would be provided to the National Forest and SHPO.

Endangered Species Act

Based on an analysis of potential effects to species protected under the Endangered Species Act, the proposed action would have no effect on Canada lynx, Colorado River endangered fish, or other federally listed threatened or endangered species. The project would result in minor vegetation disturbance and activity in lynx summer foraging range but is not anticipated to impact lynx. There would be negligible water depletions from Homestake Creek associated with drilling operations and, thus, no impacts are anticipated on bonytail chub, humpback chub, pikeminnow, and razorback sucker located downstream of the project area in the Colorado River.

References

Colorado Natural Heritage Program (CNHP). 2013. Personal Communication via email between Jenn McLeland, Office Manager – ERO Resources and Michael Menefee, Environmental Review Coordinator, Colorado State University. Communication included maps, GIS data, and letter. September 26.

United States Fish and Wildlife Service (USFWS). 2013. Information, Planning, and Conservation System. Available at: http://ecos.fws.gov/ipac/wizard/trustResourceList!prepare.action. Accessed: October 2013.

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