

PLAN OF OPERATIONS

SAN ANTONIO EXPLORATORY DRILLING PROJECT, SANTA CRUZ COUNTY, ARIZONA



Prepared for:



U.S.D.A. Forest Service
Coronado National Forest
300 West Congress Street
Tucson, Arizona 85701

Prepared by:

IC Exploration, LLC
P.O. Box 1155
Patagonia, Arizona 85624

Project ID Number: 2810-030503-POO-2020-001

Date: Revised 06/03/2020

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

USE OF THIS FORM IS OPTIONAL! 1st TIME USERS SHOULD DIRECT QUESTIONS REGARDING THIS FORM OR REGULATIONS (36 CFR 228A) TO THE FOREST SERVICE DISTRICT OFFICE NEAREST YOUR AREA OF INTEREST.

Submitted by: _____ **Senior Project Manager** **06/03/20**
Brad Norling Title Date
(mm/dd/yy)

Plan Received by: _____ **Geologist** **06/04/20**
Rick Goshen Title Date
(mm/dd/yy)

I. GENERAL INFORMATION

- A. Name of Mine/Project: **San Antonio Exploration Drilling Project**
- B. Type of Operation: **Lode Mineral Exploration**
(lode, placer, mill, exploration, development, production, other)
- C. Is this a (X new/continuing) operation? (check one). If continuing a previous operation, this plan (replaces/modifies/supplements) a previous plan of operations. (check one)
- D. Proposed start-up date (mm/dd/yy) of operation: **[DATE ISSUED] 2020**
- E. Expected total duration of this operation: **50 days**
- F. If seasonal, expected date (mm/dd/yy) of annual reclamation/stabilization close out: **N/A**
- G. Expected date (mm/dd/yy) for completion of all required reclamation: **[DATE OF ISSUED], 2020**

II. PRINCIPALS

- A. Name, address and phone number of operator: **IC Exploration, LLC, P.O. Box 1155**
Patagonia, Arizona; Phone (520) 394-5374
- B. Name, address, and phone number of authorized field representative (if other than the operator).
Attach authorization to act on behalf of operator. **Brad Norling**
7900 East Union Ave., Suite 1100, Denver, Colorado 80237. Phone (303) 357-3236
- C. Name, address and phone number of owners of the claims (if different than the operator):
IC Exploration LLC, P.O. Box 1155, Patagonia, Arizona. Phone: (520) 394-5374
- D. Name, address and phone number of any other lessees, assigns, agents, etc., and briefly describe their involvement with the operation, if applicable:
N/A

III. PROPERTY OR AREA

The proposed Project is located within the Sierra Vista Ranger District of the Coronado National Forest (CNF) where surface use is administered by the U.S. Forest Service (USFS). The Project, which includes all proposed drilling areas and temporary low-standard access roads on CNF lands, is located approximately 15 miles east of the town of Nogales, in Santa Cruz County, Arizona within Sections 1, 2, 35 and 36; Township 22 and 23 South; Range 16 East (**Exhibit 1**).

The Project is located on a contiguous block of land comprising 31 federal unpatented lode mineral claims, which cover an area of approximately 651 acres in size (Project Area) (**Exhibit 2**). The surface rights are managed by the Forest Service. Detailed claim information on the exploration program proposed under this Plan is provided in **Table 1** below.

Table 1: Claim Areas and Legal Description for Project Facilities within the Project Area

AMC No.	Claim Name	Section	Township	Range
AMC439098	BL 79	2	24 South	16 East
AMC439099	BL 80	2	24 South	16 East
AMC439100	BL 81	2	24 South	16 East
AMC439101	BL 82	2	24 South	16 East
AMC439186	BL 167	1	24 South	16 East
AMC439187	BL 168	1 & 2	24 South	16 East
AMC439188	BL 169	1	24 South	16 East
AMC439189	BL 170	1 & 2	24 South	16 East
AMC439190	BL 171	1	24 South	16 East
AMC439191	BL 172	1 & 2	24 South	16 East
AMC439192	BL 173	1	24 South	16 East
AMC439193	BL 174	1 & 2	24 South	16 East
AMC439194	BL 175	1	24 South	16 East
AMC439195	BL 176	1 & 2	24 South	16 East
AMC439196	BL 177	1	24 South	16 East
AMC439197	BL 178	1 & 2	24 South	16 East
AMC439198	BL 179	1	24 South	16 East
AMC439199	BL 180	35 & 36	23 South	16 East
AMC439200	BL 181	36	23 South	16 East
AMC439201	BL 182	35 & 36	23 South	16 East
AMC439202	BL 183	36	23 South	16 East
AMC439203	BL 184	35 & 36	23 South	16 East
AMC439204	BL 185	36	23 South	16 East
AMC439205	BL 186	35 & 36	23 South	16 East
AMC439206	BL 187	36	23 South	16 East
AMC439207	BL 188	35 & 36	23 South	16 East
AMC439208	BL 189	36	23 South	16 East
AMC439209	BL 190	35 & 36	23 South	16 East
AMC439210	BL 191	36	23 South	16 East
AMC439211	BL 192	35 & 36	23 South	16 East
AMC439212	BL 193	36	23 South	16 East

IV. DESCRIPTION OF THE OPERATION

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

Access Route to the Project

Primary access to the proposed Project will be from Arizona State Route (SR) 82/East Patagonia Highway in the Town of Nogales and then northeasterly toward Beyerville for approximately 4.4 miles. The route continues easterly along County Road (CR) 61/Duquesne Road for approximately 14.6 miles to the intersection with Forest Road (FR) 4707 (**Exhibits 3a and 3b**).

Access to Exploration Drill Areas

Initial routes of travel to the proposed drill sites will be accessed from FR 4707 at the intersection with CR 61. From FR 4707, three drill sites (Drill Areas A, B, and C) would be accessed by traveling approximately 1.5 miles north on a non-system 2-track legacy spur road that branches off FR 4707 approximately 0.25 miles east/northeast from the intersection with CR 61. Two additional drill sites (Drill Areas D and E) would be accessed via FR 5500, which connects to a non-system 2-track legacy spur road to the west (**Exhibit 4**). It is expected that both FR 4707 and 5500 will be used by a drill rig and support vehicles and will remain open for public use during ongoing drilling activities.

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

Exhibit 1: Project Location Map

Exhibit 2: Mining Claim Boundaries

Exhibit 3a: Regional Access Roads (Sheet 1 of 2)

Exhibit 3b: Regional Access Roads (Sheet 2 of 2)

Exhibit 4: Local Access Road and Drill Sites

Exhibit 5: Generalized Schematic of a Reverse Circulation (RC) Drilling System

Exhibit 6: Diagram of a Typical Drill Pad Layout Parallel to the Existing Access Road

Exhibit 7: Mapped 100-Year Floodplain

Exhibit 8: Jaguar Designated Critical Habitat

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

Overview

IC Exploration's proposed San Antonio Drilling Project is designed to evaluate the location, concentration, quality, and type of mineralization in the area, and to help establish the feasibility of future mining operations. The Project proposes exploration work only, including drilling, and is designed to be a short duration (approximately 50 days) program operated with a daytime schedule. No mining, milling, or permanent facilities are being proposed. The schedule for the proposed drilling program is shown in **Table 2** below.

Table 2: Schedule for the Proposed Drilling Program

Activity	Days to Complete	Timeline
Tree Limb Removal and Mowing	1	
Mobilize Equipment at Project Area	1	
Mobilize Drill Rig at Drill Site A and Construct Sump	1	
Drilling on Drill Site A	6	
Mobilize Drill Rig at Drill Site B and Construct Sump	1	
Drilling on Drill Site B	6	
Mobilize Drill Rig at Drill Site C and Construct Sump	1	
Drilling on Drill Site C	6	
Mobilize Drill Rig at Drill Site D and Construct Sump	1	
Drilling on Drill Site D	6	
Mobilize Drill Rig at Drill Site E and Construct Sump	1	
Drilling on Drill Site E	6	
Demobilize and Remove All Equipment from Project Area	1	
Reclamation of All Drill Sites and any Legacy Access Roads	5	
Contingency for Drilling	7	
TOTAL	50	

As shown in **Table 2**, exploration drilling will be undertaken over an approximately 30-day period, with an additional 20 days used for mobilizing and demobilizing equipment and final reclamation activities.

IC Exploration will abide by all applicable state and federal regulations to properly permit the sites. IC Exploration believes this plan provides the minimum possible amount of disturbance of system and non-system roads. IC Exploration is proposing to utilize the road prism of an existing roads for drilling and avoid grading, blading, and clearing of surface vegetation, which will result in minimizing the amount of new disturbance.

The following outlines the steps of the proposed Project:

- A single reverse circulation (RC) drill rig would be utilized for the proposed drilling program.
- Brushing and limb removal where necessary along access roads and drill sites to allow safe access of drill rigs and other support equipment.
- Trimming of grasses around drill sites to limit fire hazards
- Exploration drilling will be undertaken at up to five (5) drill sites over an approximately 30-day period, with an additional 20 days used for mobilizing and demobilizing equipment and final

reclamation activities.

- Operating hours are proposed to occur on a daytime schedule between the hours of sunrise and sunset daily. No nighttime activities or lighting is proposed.
- For each drill hole, drill cuttings will be logged, sampled, and removed from the drill site.
- All drill holes will be completed and abandoned as described herein.
- All equipment will be removed from the Project Area upon completion of drilling activities.

The specifics of each of these activities are discussed below.

Access Roads

A network of system and non-system roads already exists within the Project Area (see **Exhibit 4**). These roads would be used as is for access to the proposed drill sites. No, blading, grading, or road updates are being proposed. Access roads may be closed for short periods of time (i.e., several hours) to accommodate mobilization and demobilization of the drill rig at the start and end of the drilling program, respectively. A Supervisor's Order will be required for road closures greater than one hour in duration. Traffic control will be provided by representatives from IC Exploration during all this phase of the operation.

Drilling Areas

IC Exploration will employ a drilling contractor to conduct exploratory drilling at up to five (5) individual drill sites as part of the San Antonio Exploration Program. The drill sites (A through E) have been identified in the field and are shown in **Exhibit 4**. It is anticipated that drilling will proceed sequentially from Drill Site A to E.

The drill rig and all other large equipment will be brought in on a lowboy tractor trailer using the proposed access route until they reach FR 4707. From there, the drill rigs will self-propel to the individual drill sites. The remaining support equipment will also be brought into the site along the proposed access. All vehicle traffic, including the drillers' daily travel, will use this route, as well.

Traffic control near each of the drill sites will include a sign warning of heavy equipment posted both at either end of the drill site, at increments of 250 and 2,000 feet from the site in either direction. In addition, a safety fence will be built to separate the drill site from the traffic lane where public access is preserved and roads are not closed. If needed, such as in the event of the movement of a large piece of equipment near the drill site, a spotter will direct traffic for safety as appropriate. The drill rig and other support equipment, when not in use at the end of each day, would remain overnight at the drill site with a security guard.

Drilling Methods and Procedures

A dual tube reverse-circulation (RC) drill rig would be used to drill all holes to a depth of up to approximately 1,500 feet under the proposed drilling program. RC drilling employs a downhole pneumatic reciprocating piston known as a downhole hammer, which drives a drill bit (typically 4.5 to 5.75 inches in diameter) with round protruding tungsten-carbide buttons that can cut hard rock. The drill bit is mounted at the end of a

hollow, dual wall drill pipe, through which compressed air is pumped down the hole in the outer chamber of the dual wall drill pipe to power the drill bit. Rock cuttings are then returned to the surface via the inner chamber of the dual wall drill pipe, propelled upward by air pressure (**Exhibit 5**).

At the initiation of a new hole, surface collar casing may be installed to prevent unconsolidated material from collapsing into the hole. Surface collar casing may extend to approximately 100 feet deep, depending on the stability of the surface rock formations. Where bedrock is exposed at surface, collars may not be required for hole stabilization.

The air compressors used to drive the drill bit will be mounted to the drill rig and will provide up to 900 cubic feet per minute of air at pressures of approximately 350 pounds per square inch. The RC drilling process generally produces dry rock cuttings, as the compressed air that drives the drill bit is also pumped ahead of the advancing drill bit, thus drying the rock. When the cuttings reach the surface, they are directed through a hose into a cyclone that acts as both a dust and sample collector. The rock cuttings are then sampled using a sample splitter and all the sampled and unsampled cuttings are appropriately bagged and transported offsite for geochemical analysis or are disposed of at an appropriately licensed off-site disposal facility. Although RC drilling is air-powered, water, or drilling mud may also be injected when collaring a new hole, to reduce dust, stabilize the drill hole, and to assist in lifting cuttings to the surface.

Typically, an RC drill can complete from 100 to 500-feet per drill shift depending on rock conditions, depth, and the amount of water that may be encountered during drilling. Multiple days can be spend drilling each hole depending on penetration rates and target depths. At the end of each drill shift the drill rods will be removed from the hole and stored on-site overnight. At the beginning of each drill shift, the drill rods will be lowered back into the hole and drilling will recommence.

Each drilling interval would return several kilograms of drill cuttings to surface, depending on the density of the material, which would be collected, bagged, and removed from site at the completion of each hole.

Upon completion of sample collection and the drilling of each hole, the hole would be filled with “Wyoming grade” bentonite mud (with a permeability of no more than 1×10^{-9} cm/s) which would serve as a permanent seal, the surface steel casing removed, and a surface cement plug (up to 20 feet in depth) installed as a permanent drill hole cap. These borehole abandonment procedures would conform to Arizona Department of Water Quality (R 12-15-811, 816 and 817) regulations, and ASTM Designation: D5299/D5299M – 18 *Standard Guide for Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities (as revised)*.

Proposed Design Features

Drill sites will be situated within the road prism of existing access roads in order to minimize the amount of disturbance. Dimensions, orientation, and equipment layouts for each drill site may vary slightly depending on the terrain and other surface requirements. However, most of the drill sites would be constructed to dimensions of approximately 50 feet wide by 50 feet long. A typical drill site layout is shown in **Exhibit 6**.

At each drill site, minor grubbing and tree limb removal may be necessary to accommodate proper orientation of the drill rig and provide for safe operation and access. No trees are proposed to be removed nor would there be any blading, grading, or large-scale removal of vegetation. Each drill site will be mowed/trimmed prior to the beginning of drilling to cut back dry grasses, if present, within 20 feet of the drill equipment in

order to prevent fire. For purposes of analysis in this Plan, it is assumed that up to 80 percent of each drill site (or 0.05 acres) will need to be reclaimed and reseeded for a total of approximately 0.25 acres of disturbance.

At each drill site an in-ground sump measuring approximately 4 feet wide by 8 feet long by 4-foot-deep would be dug adjacent to the drill rig for the purpose of collecting groundwater encountered during drilling. Topsoil and subsoil from each sump would be placed along the edge of the drill site for later distribution upon completion of drilling at each site. This material will be appropriately stored and protected with plastic lining to prevent erosion during any rainfall events.

If significant groundwater is encountered, a second plastic-lined sump may be constructed adjacent to the first sump in order to prevent release. Temporary high-visibility safety fencing will be erected around the sump(s), to prevent accidental entry by humans and cattle, until the sumps are reclaimed. A hydrovac truck will be utilized on an as-needed basis to remove the water and transport it for disposal at a location outside of the CNF.

After drilling at each site is completed, the plastic liner for each sump will be removed and the sump reclaimed by backfilling with previously stockpiled soil. In the event a sump cannot be constructed as a result of shallow bedrock, IC Exploration may elect to use portable tanks to contain and manage the drill cuttings along with fluid recirculation instead of in-ground sumps. If portable tanks are used, all stored groundwater will be removed with a hydro-vac and transported off-site for disposal.

In addition to the sumps, each drill site will include the borehole location(s), a drill rig, a pipe/drill rod trailer, water storage tanks, fuel spill prevention supplies, fire prevention supplies, personal supplies and gear, tools, spare parts, and a portable toilet.

The drill sites will be maintained in a neat, orderly fashion with fuel and oils stored in a dedicated containment area to prevent accidental release (**Exhibit 6**). During decommissioning, all materials, supplies, and associated items transported to the drill sites for use will be removed. IC Exploration will provide the CNF a complete list and safety data sheets for all fuels and lubricants to be used on the drill sites.

Water Requirements for Drilling

Water will be used mainly for dust suppression, fire prevention, as well as during the drilling process, and during hole abandonment, and will be stored in up to two (2) 500-gallon plastic containers at each drill site. Water needed for use in drilling the exploration drill holes will be obtained from the City of Nogales (Kino Springs) and transported in a water trucks by a licensed hauler to each of the drill sites. Water tanks will be filled on an as-needed basis, depending on drilling conditions.

Workforce Requirements

It is IC Exploration's intent to operate a single reverse-circulation drill rig which will be operated 12 hours per day (one 12- hour shift), 7 days a week requiring up to 11 people per day. The night shift would be staffed by a single security guard that would ensure security of the equipment. A workforce breakdown of personnel required during drilling operations is shown in **Table 3**.

Table 3: Estimated Workforce Requirements for Drilling Operations (Single Drill Site)

Labor Category	Frequency Required	No. Personnel per Shift	No. Personnel per 24-Hour Day
Drilling Supervisor	Periodic	1	1
Safety Supervisor	Periodic	1	1
Drilling Crew	Daily	3	3
Drilling Equipment Mechanic	As Needed	1	1
Geologist	Daily	1	1
Security Guard	Daily; Overnight	1	1
Water Truck Operator	Daily	1	1
Hydrovac Operator	As Needed	1	1
Backhoe Operator	Periodic	1	1
TOTAL	--	11	11

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

Table 4 below provides a detailed list of possible and likely vehicles and equipment to be used during the proposed drilling program and an expected frequency and period of use. All equipment will be cleaned prior to arrival and departure from the site, removing all soil, plant parts, seeds, vegetative matter, or other debris that could contain seeds in order to prevent the spread of noxious weeds into or out of the Project Area.

Table 4: Types and Number of Equipment and Vehicles for the Proposed Drilling Program

Vehicles/ Equipment	Max No.	Frequency of Use	Period of Use
Pick-up truck (4 x 4) 1/2 ton to 1-ton capacity	3	Daily – two (2) trucks approximately one round trip per day during daylight hours for drilling crew and geology staff and one (1) truck at one round trip per day during twilight hours for security personnel.	Entire drilling program – 24-hours per day, seven days per week for a period of up to 1 month for all five drill sites.
Reverse-circulation (RC) drill rig mounted on truck, track, or rubber tired reticulated chassis	1	During daylight hours only.	Entire drilling program – seven days per week for a period of approximately 30 days for all five (5) drill sites.
Water truck	1	As needed during drilling, operating during daylight hours only.	Entire drilling program – seven days per week for a period of up to 30 days for all five (5) drill sites.
Hydrovac truck	1	As needed during drilling, operating during daylight hours only.	Entire drilling program – seven days per week for a period of up to 30 days for all five (5) drill sites.

Vehicles/ Equipment	Max No.	Frequency of Use	Period of Use
Pipe trailer to carry drilling rods	1	Used throughout drilling.	Entire drilling program – seven days per week for a period of up to 30 days for all five (5) drill sites.
Small backhoe	1	1-2 hours per day during sump construction and site reclamation.	Entire drilling program – seven days per week for a period of up to 30 days for all five (5) drill sites.
Chainsaw	1	1 day at the beginning of the Project to clear all brush and limbs from access roads and drills sites as appropriate.	During initial mobilization.
Trimmer/mower	1	1 hour per day prior to mobilization of drill rig and equipment at each new drill site.	During mobilization of drill rig and equipment at each new drill site.
Tractor w/ disking attachments	1	As needed for soil ripping, decompaction, and seedbed preparation.	During reclamation.
Water storage tanks with up to 500- gallon capacity each	2	Used throughout drilling.	Entire drilling program – seven days per week for a period of up to 30 days for all five (5) drill sites.

If changes to the equipment are needed, the District Ranger will be notified in writing in advance with an explanation for the change, even if the proposed change is minor. The revised equipment will not be used without the approval of the District Ranger or the CNF Authorized Representative.

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

No permanent structures will be built. A temporary portable sanitary toilet facility will be placed at active drill sites and will be serviced weekly by a contractor who would transport the waste to an approved off-site facility for disposal. All temporary equipment will be removed upon completion of work.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

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

The Project is not located in an air quality “non-attainment area”. The nearest EPA designated non-attainment area is located near Nogales approximately 6 miles to the west of the Project Area. The Nogales area classified as a non-attainment area for PM₁₀ (particulate matter 10 microns or less in diameter) and PM_{2.5} (particulate matter 2.5 microns or less in diameter), which are criteria pollutants above the National Ambient Air Quality Standards (NAAQS) of the Clean Air Act (CAA).

Air quality regulations implemented by ADEQ include provisions applicable to construction projects which

are considered “temporary sources.” A temporary source is defined in the Arizona Administrative Code (AAC), Title 18, Chapter 2, Article 1, Section 101, as a source that is portable and does not qualify as an affected source under the acid deposition rules of the federal CAA. It should be noted that items of equipment (specifically generators and equipment engines) used during construction and drilling activities are generally not subject to State air permitting requirements.

Minimal impacts to air quality are expected due to light travel along the existing dirt roads; avoiding grading, blading, and clearing of surface vegetation; and slow travel speeds. The following environmental protection measures will be implemented to avoid impacts to air quality:

- Timber slash generated as a result of the Project will be minimal. As such, rather than burning, timber slash will be lopped and scattered across disturbed sites after they are reclaimed to prevent erosion, facilitate reclamation, and provide microsites for re-vegetation.
- Drilling-related vehicle traffic will be limited to the required access roads relevant to active drilling locations and related activities.
- All staff and contractors will adhere to a maximum speed of 10 mph on all CNF roads and as signed on other roads, such as county roads.
- All engines used in the operations will be equipped with the pollution-control equipment provided by the manufacturer (i.e., catalytic converters, mufflers, and/or spark arrestors). To the extent possible, IC Exploration will attempt to secure Tier III and Tier IV Engines for all equipment.
- Small amounts of water will be used on the surface of the drill site for dust prevention.

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

- 1. State whether water is to be used in the operation, and describe the quantity, source, methods and design of diversions, storage, use, disposal, and treatment facilities. Include assumptions for sizing water conveyance or storage facilities.*

As previously described, water needed for use in drilling will be obtained from one or more regulated public water sources located outside of the CNF and transported to a primary water storage tank located at the drill site. Obtaining water from a regulated public source would generally ensure that it meets both federal and state water quality standards prior to being used.

Water will be stored in up to two storage tanks, at the drill site, each with a 500-gallon capacity (total 1,000 gallons). An 1,800-gallon water truck will be parked on site and will periodically fill the storage tanks, when and if required. The water truck will periodically refill outside of the CNF and is unlikely to make more than one roundtrip per day, except for during hole abandonment when a second roundtrip may be needed in order to mix the necessary amount of bentonite and cement required. The tanks would be connected by a 1-inch diameter rubber suction hose to the sample splitter, where it will be periodically sprayed on the ground surface for dust prevention purposes. Actual water consumption may be less depending on actual need, days of drilling required, and actual duration of drilling each day.

- 2. Describe methods to control erosion and surface water runoff from all disturbed areas, including*

waste and tailings dumps.

IC Exploration will operate the proposed Project in accordance with the requirements of an AZPDES General Permit for Stormwater Discharges Associated with Industrial Activity – Mineral Industry (MSGP). Per the ADEQ’s MSGP program, IC Exploration will implement a Stormwater Pollution Prevention Plan (SWPPP) to minimize and manage stormwater within the Project Area (**Appendix D**). The SWPPP will describe the BMPs to be implemented by IC Exploration, including sediment/erosion control, good housekeeping, maintenance, inspections, and any required monitoring. SWPPP requirements will be incorporated into all phases of the Project and a copy of the SWPPP will be maintained at each drill site during the course of the proposed drilling program.

Environmental protection measures that will be implemented to avoid impacts to water quality include:

- Retain and preserve existing vegetation, where practicable.
- All drilling activities would occur outside the 100-year floodplain (**Exhibit 7**).
- Spillage containment and clean up kits or materials will be provided at each drill site. In addition, each vehicle will carry a spill kit.
- All fuels and lubricants will be stored in appropriate containers and all refueling will be completed using spill prevention pads.

3. Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.

The drilling methodology proposed for this Project, reverse circulation, enables the addition of bentonite slurry through the drill rods to readily seal off any high-pressure regions of groundwater, should they be encountered in the drilling process. Bentonite clay powder and Portland cement will be kept nearby so that if an artesian aquifer is encountered the borehole can be quickly abandoned. Additionally, an erosion control BMPs (silt fence and certified weed-free straw waddles) would serve to filter run off associated with artesian water.

4. Describe the measures to be used to minimize potential water quality impacts during seasonal closures, or for a temporary cessation of operations.

Seasonal closures due to weather are not expected, as all drill sites would be located outside the mapped 100-year floodplain (**Exhibit 7**). However, should short-term cessation of operations due to weather or other circumstances, implementation of the BMPs outlined above will ensure site stability and minimize erosion during short-term temporary closure periods. All hazardous materials and fuels will be removed to one of IC Exploration’s permanent facilities off CNF lands and all storm water BMPs would be reevaluated to ensure adequacy. Monitoring and inspections will continue on a regular basis during temporary short-term cessation of operations until the Project resumes.

5. If land application is proposed for waste water disposal, the location and operation of the land application system must be described. Also describe how vegetation, soil, and surface and groundwater quality will be protected if land application is used.

Land application of excess wastewater is not anticipated for the Project. However, if excess water is encountered during drilling operations the hole will be immediately sealed by the addition of bentonite slurry and/or expansive grout through the drill rods.

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

IC Exploration will minimize the amount of solid waste generated during project activities. Good housekeeping practices, such as daily removal of waste and unused materials, maintenance of all equipment and vehicles, and immediate cleanup of any spills, will be required of all personnel working on the Project.

Additional solid waste from packaging, food products and other materials will be stored in an animal-proof trash bin located at each drilling site and staging areas and hauled to an appropriate landfill in Nogales, Arizona, or other nearby landfill(s) outside of the CNF at the end of each working day.

A portable toilet will be located at each active drill site which will be serviced weekly by a licensed contractor.

Drill cuttings will be removed upon final completion of each drill hole. All materials will be transported to an approved off-site disposal facility outside of the CNF in accordance with federal, state, and local regulations.

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

The proposed drill sites and access roads are not located in the viewshed of any nearby (i.e., within 5 miles) CNF trailheads, campsites, natural areas, or wilderness areas. Drilling equipment on each of the five drill pads and the roads connecting those pads may be visible from a short segment of road adjacent to drilling activities, but these activities will be temporary and of short duration.

Visual impacts from the Project will be reduced by the use of the existing road network, avoiding blading, grading, and removal of vegetation at drill sites to the greatest extent practicable, requirements for good housekeeping practices, and implementation of timely reclamation as appropriate.

Specific activities to minimize the visual impacts of the Project include the following:

- Any slash generated during operations will be used for erosion mitigation or visual screening. At the completion of operations, slash will be lopped and scattered on disturbed areas.
- The dust-control measures discussed above will prevent the generation of dust.
- The BMPs implemented for stormwater control will reduce erosion and sedimentation, and minimize dust generation.
- Individual drill sites will be concurrently reclaimed as appropriate once final drilling activities at each site are completed. No more than one surface drill holes will be active at any given time.

- Lighting for the overnight security guard will be limited to personal LED headlamps and flashlights.

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

Impacts to federally Threatened or Endangered species, CNF Sensitive Species, and wildlife in general, will be minimized to the greatest extent practicable by drilling during daylight hours only, using the road prism of an existing roads for drilling, avoiding grading, blading, and clearing of surface vegetation, and avoiding aquatic and riparian habitats wherever possible.

Species Evaluations

The Project Area was evaluated for the presence of federally listed species and their habitat and the potential for the proposed Project to affect such species. Based on information from the U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website, eight federally listed species have the potential to occur within the Project Area. These include the jaguar (*Panther onca*), ocelot (*Leopardus pardalis*), Mexican spotted owl (*Strix occidentalis lucida*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Northern Mexican gartersnake (*Thamnophis eques megalops*), Chiricahua leopard frog (*Rana chiricahuensis*), Sonoran Tiger Salamander (*Ambystoma tigrinum stebbinsi*), and Gila topminnow (*Poeciliopsis occidentalis*). These species, their status, and general habitat requirements are listed in **Table 5** and briefly described below.

Table 5: Federally Listed Species with the Potential to Occur within the Project Area

Common Name <i>Scientific Name</i>	Status	Range and General Habitat Requirements	Potential for Occurrence
Mammals			
Jaguar (<i>Panthera onca</i>)	FE	Occur in a variety of vegetation communities including lowland wet communities, including thornscrub, desertscrub, lowland desert, mesquite grassland, Madrean oak woodland, and pine-oak woodland communities of northwestern Mexico and southwestern U.S. The more open, dry habitat has been characterized as marginal in terms of providing suitable water, cover, and prey densities. Within Arizona, jaguars have documented in the Baboquivari Mountains of southern Arizona and in south-central Arizona, near the Mexico border. In the U.S. they are thought to be part of a population, or populations, that occur largely in Mexico.	Low: No known records occur within or near the Project Area. Project Area is within the species range. Marginally suitable habitat for this species exists within the Project Area.
Ocelot (<i>Leopardus pardalis</i>)	FE	Occurs in a wide range of habitats throughout its range including thornscrub and semi-arid vegetation coastal grasslands and coastal tropical forests, tropical dry forests, tropical rain forests, oaks and grasslands piedmont/montane scrub, cloud forest, pine-oak forests, and fir forests. In Arizona and Sonora, ocelots in are generally associated with tropical or subtropical habitat, namely subtropical thornscrub, tropical deciduous forest, and tropical thornscrub.	Low: No known records occur within or near the Project Area. Project Area is within the species range. Marginally suitable habitat for this species

Common Name <i>Scientific Name</i>	Status	Range and General Habitat Requirements	Potential for Occurrence
		In Arizona, five individual ocelots have been detected between 2009 and 2015. In addition to these sightings, ocelots have been documented in Sonora, Mexico.	exists within the Project Area.
Birds			
Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	FT	Occurs in varied habitat, consisting of mature montane forest and woodland, shady wooded canyons, and steep canyons. In forested habitat, uneven-aged stands with a high canopy closure, high tree density, and a sloped terrain appear to be key habitat components. They can also be found in mixed conifer and pine-oak vegetation types. The species generally nests in older forests of mixed conifer or ponderosa pine/Gambel oak. Populations in Arizona are patchily distributed and occur where appropriate habitat is present throughout all but the arid southwestern portion of the state. No designated critical habitat occurs on within the Project Area. The nearest critical habitat occurs approximately 0.4 miles to the north of the Project Area.	Low: No known records occur within or near to the Project Area. Project Area is within the species breeding range, but marginally suitable nesting or feeding habitat for this species exists within the Project Area.
Western Yellow-Billed Cuckoo (<i>Coccyzus americanus occidentalis</i>)	FT	On the breeding grounds, YBCUs occur in large blocks of riparian woodland (at least >50 acres but often >200 acres) along low-gradient surface waters at elevations below 7,000 feet. Typically, occur in cottonwood-willow-tamarisk vegetation associations that often possess a mesquite component. Some habitats utilized by breeding YBCUs in southeastern Arizona differ substantially from those utilized in other areas. Such habitats occur in higher elevation drainages within Madrean Evergreen Woodlands in the Sky Island mountain ranges. Vegetation found in these habitats consists of oaks (<i>Quercus</i> spp.), junipers (<i>Juniperus</i> spp.), and mesquite interspersed with individuals or thin stringers of mesic species. Within Arizona, they have been documented along 25 drainages, with the majority occurring along the San Pedro, Agua Fria, and Verde rivers and Sonoita and Cienega creeks.	Low: No known records occur within or near the Project Area. No nesting habitat for this species exists within the Project Area, as riparian habitat is lacking.
Reptiles & Amphibians			
Northern Mexican Gartersnake (<i>Thamnophis eques megalops</i>)	FT	Occurs at elevations from 130 to 8,497 feet and is considered a riparian obligate (generally found in riparian areas when not engaged in dispersal, gestation, or hibernation behaviors) and occurs chiefly in the following general habitat types: (1) Small, often isolated wetlands (e.g., cienegas); (2) large river riparian woodlands and forests; and (3) streamside gallery forests (as defined by well-developed broadleaf deciduous riparian forests). Five known populations occur in Arizona and include: (1) The Page Springs and Bubbling Ponds State Fish Hatcheries along Oak Creek, (2) lower Tonto Creek, (3) the upper Santa Cruz River in the San Rafael Valley, (4) the Bill Williams River, and (5) the upper and middle Verde River.	Low: No known records occur within or near the Project Area. Suitable riparian and terrestrial habitat for this species is lacking within the Project Area.

Common Name <i>Scientific Name</i>	Status	Range and General Habitat Requirements	Potential for Occurrence
Chiricahua Leopard Frog (<i>Rana chiricahuensis</i>)	FE	Occurs in montane and river valley cienegas, springs, pools, cattle tanks, lakes, reservoirs, streams, and rivers. The species also requires permanent or semi-permanent pools for breeding. Chiricahua leopard frogs were observed at 87 sites in Arizona from 1994 to 2001, including 21 northern localities and 66 southern localities. In Arizona, the species is known to presently occur in seven of eight major drainages of historical occurrence (Salt, Verde, Gila, San Pedro, Santa Cruz, Yaqui/Bavispe, and Magdalena river drainages).	Low: No known records occur within or near the Project Area. Suitable aquatic habitat for this species in the form of cienegas, springs, pools, cattle tanks, streams, and rivers is lacking within the Project Area.
Sonoran Tiger Salamander (<i>Ambystoma tigrinum stebbinsi</i>)	FE	Requires standing water for breeding from January through June. Cattle ponds or tanks are the primary habitat for Sonoran tiger salamanders. Aquatic breeding habitats are used by all life stages; however, upland habitats are also used by terrestrial adults when not at the breeding ponds. The subspecies has been found in 53 ponds in the San Rafael Valley in Santa Cruz and Cochise counties in southeastern Arizona and in the most northern parts of Sonora, Mexico.	Low: No known records occur within or near the Project Area. Suitable aquatic habitat for this species in the form of cienegas, springs, pools, cattle tanks, streams, and rivers is lacking within the Project Area.
Fish			
Gila Topminnow (<i>Poeciliopsis occidentalis</i>)	FE	Habitat requirements for the species are broad. They prefer shallow, warm springs or slow-moving waters, but can tolerate a wide range of temperature and current regimes. Both lentic habitats and lotic habitats with moderate current are easily tolerated. Eleven of the naturally occurring locations currently supporting Gila topminnows are in the Santa Cruz River system: Redrock Canyon, Cottonwood Spring, Monkey Spring, upper Sonoita Creek, Fresno Canyon, Coal Mine Canyon, lower Sonoita Creek, Santa Cruz River north of Nogales, Cienega Creek, Sharp Spring, and the upper Santa Cruz River.	Absent: No known records occur within or near the Project Area. No suitable aquatic habitat for this species exists within the Project Area.

Jaguar

The Jaguar (*Panthera onca*) was listed as endangered in 1997, and in 2014, the USFWS designated more than 764, 207 acres of southern Arizona and New Mexico as critical habitat for the jaguar (USFWS 2014a). The designation includes mountain ranges in Pima, Santa Cruz, and Cochise counties.

Jaguars occur in a variety of vegetation communities (Seymour 1989). At middle latitudes, they show a high affinity for lowland wet communities, including swampy savannas or tropical rain forests (Seymour 1989). However, jaguars have been documented in arid areas, including thornscrub, desertscrub, lowland desert, mesquite grassland, Madrean oak woodland, and pine-oak woodland communities of northwestern Mexico and southwestern U.S. (Boydston and López González 2005, McCain and Childs 2008). The more open, dry habitat of the southwestern U.S. has been characterized as marginal in terms of water, cover, and prey densities (Rabinowitz 1999).

Jaguars historically occurred in California, Arizona, New Mexico, Texas, and possibly Louisiana (USFWS 1997). While jaguars have been documented as far north as the Grand Canyon, Arizona, occurrences in the U.S. since 1963 have been limited to south-central Arizona and extreme southwestern New Mexico. Within Arizona, jaguars have been documented in the Baboquivari Mountains of southern Arizona (Childs 1998, Brown and López González 2001) and in south-central Arizona, near the Mexico border (USFWS 2014a). Jaguars in the U.S. are thought to be part of a population, or populations, that occur largely in Mexico.

Surveys for the jaguar have not occurred. Designated critical habitat for this species extends across the western portion of the Project Area. However, when looking at critical habitat it is important to note the context and scale at which critical habitat was created and delineated. For example, as shown in **Exhibit 8**, the scale of the Map is at 1:12,000, which is much more detailed than the scale at which the jaguar habitat model, and critical habitat units are delineated, which is typically at 1:24,000 or even 1:100,000 in some instances. In addition, there is little difference between habitats in the eastern and western portions of the Project Area, yet the western half of the Project Area is designated as critical habitat, which presumably provides the primary constituent elements for jaguar. These factors are important considerations in assessing Project impacts at the macro level.

There are no current or historical records of Jaguars occurring within the Project Area. Thus, any future occurrences of jaguars within the Project Area would be highly unlikely and would be limited to an occasional transient individual if such an occurrence were to occur. Disturbances to an individual jaguar probably would not displace it from habitats that are key to its survival, since habitat for this species is marginal at best within the Project Area and other better quality or equally suitable habitats are available elsewhere. In addition, there will be no permanent impacts to vegetation within the Project Area and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the jaguar.

Ocelot

The ocelot (*Leopardus pardalis*) was listed as endangered in 1982 due to a variety of factors including commercial exploitation; illegal hunting; and habitat conversion, fragmentation, and loss. In the 1982 final rule (47 FR 31670), the USFWS made a determination that the designation of critical habitat was not prudent because such a designation would not be in the best interests of conservation of the species (USFWS 2016b). As such, no critical habitat has been designated for the species.

The ocelot uses a wide range of habitats throughout its range. Ocelots have been observed in thornscrub and semi-arid vegetation (Shindle and Tewes 1998, López González *et al.* 2003), coastal grasslands and coastal tropical forests (Caso 2013), tropical dry forests (Fernandez *et al.* 2002, López González *et al.* 2003), tropical rain forests (Cuarón 2000, Ávila-Nájera *et al.* 2015), oaks and grasslands (Ávila-Villegas and Lamberton-Moreno 2012, Culver *et al.* 2016), piedmont/montane scrub, cloud forest (Cuarón 2000), pine-oak forests (Iglesias *et al.* 2009), and fir forests (Bárceñas and Medellín 2010). In Arizona and Sonora, little is known about ocelot habitat use. Lopez Gonzalez *et al.* (2003) found 27 of the 36 records (75%) of ocelots in Sonora were associated with tropical or subtropical habitat, namely subtropical thornscrub, tropical deciduous forest, and tropical thornscrub. Only males (11.1% of the total records) were recorded in temperate oak and pine-oak woodland.

Currently, the ocelot ranges from extreme southern Texas and southern Arizona through the coastal lowlands of Mexico to Central America, Ecuador and northern Argentina. In Arizona, five individual ocelots have been detected between 2009 and 2015 (Ávila-Villegas and Lamberton-Moreno 2013, Culver *et al.* 2016). Prior to

these five recently known individuals the last documentable ocelot in Arizona was a male that had been killed by a vehicle near the town of Oracle in 1967 (López González *et al.* 2003). In addition to the recent Arizona sightings, ocelots have been documented in Sonora, Mexico (López González *et al.* 2003).

Surveys for the ocelot have not occurred. There are no current or historical records of ocelots occurring within the Project Area. Thus, any future occurrences of ocelots within the Project Area would be highly unlikely and would be limited to an occasional transient individual if such an occurrence were to occur. Disturbances to an individual ocelot probably would not displace it from habitats that are key to its survival, since habitat for this species is marginal at best within the Project Area and other better quality or equally suitable habitats are available elsewhere. In addition, there will be no permanent impacts to vegetation within the Project Area and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the ocelot. There is no designated critical habitat for this species, thus none would be affected.

Mexican Spotted Owl

The Mexican spotted owl (*Strix occidentalis lucida*) was federally listed as threatened throughout its range in 1993 due primarily to alteration and fragmentation of their habitat and the threat of catastrophic forest fire events. Critical habitat was first designated on June 6, 1995 but revoked on March 25, 1998 after several Federal courts ruled that FWS had not correctly followed the National Environmental Policy Act (NEPA) process (USFWS 2004). Critical habitat was again designated in 2003, but again nullified through litigation. The most recent critical habitat designation for the species was published in 2004 and remains in effect (USFWS 2004).

Typically, Mexican spotted owls occupy a variety of habitats for breeding and foraging. They breed in dense old growth mixed-conifer forests along steep slopes and ravines. Within this habitat, the trees are dense, forming a closed canopy, a high basal area, and contain numerous downed logs and snags (USFWS 2012). The large trees provide suitable nest cavities, whereas the numerous smaller trees in combination with large trees provide roosting and foraging habitat (AGFD 2005).

In Arizona, Mexican spotted owls do not build their own nests. They use cavities or abandoned platform nests about 80 feet (24 m) up in coniferous trees, and also will utilize ledges on cliffs or potholes and mistletoe clusters in areas where these features are present (AGFD 2005). Spotted owls are typically active at night (nocturnal) but will forage during the daylight hours when they are raising young.

Populations in Arizona are patchily distributed and occur where appropriate habitat is present throughout all but the arid southwestern portion of the state. Designated critical habitat for the Mexican spotted owl includes 3,983,042 acres statewide, most of which occur on Forest Service lands (USFWS 2012). Critical habitat is designated in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Maricopa, Mohave, Navajo, Pima, Pinal, Santa Cruz, and Yavapai counties (USFWS 2012). No designated critical habitat occurs on within the Project Area. The nearest critical habitat occurs approximately 0.4 miles to the north of the Project Area.

There are no current or historical records of Mexican spotted owls occurring within the Project Area. Suitable nesting habitat for this species in the form of dense old growth mixed-conifer forests along steep slopes and ravines is lacking within the Project Area. Suitable habitat for roosting and foraging is also lacking within the Project Area. Thus, any occurrences of Mexican spotted owls within the Project Area would be highly unlikely and would be limited to an occasional transient individual if such an occurrence were to occur. Disturbances to an individual probably would not displace it from habitats that are key to its survival, since

habitat for this species is marginal at best within the Project Area and other better quality or equally suitable habitats are available elsewhere. In addition, there will be no permanent impacts to vegetation within the Project Area and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the Mexican spotted owl. There is no designated critical habitat for this species within the Project Area, thus non would be affected.

Yellow-Billed Cuckoo

The yellow-billed cuckoo (*Coccyzus americanus*) was federally listed as threatened throughout its range in 2014 due primarily to habitat loss associated with manmade features that alter watercourse hydrology so that the natural processes that sustained riparian habitat is greatly diminished. This species is a neotropical migratory species that breeds in the U.S. and Canada and winters in South America (USFWS 2014b). Currently, the range of the yellow-billed cuckoo is limited to disjunct fragments of riparian habitats from northern Utah, western Colorado, southwestern Wyoming, and southeastern Idaho southward into northwestern Mexico and westward into southern Nevada and California.

On the breeding grounds, yellow-billed cuckoos occur in large blocks of riparian woodland (at least >50 acres but often >200 acres) along low-gradient surface waters at elevations below 7,000 feet (USFWS 2014b). Typically, yellow-billed cuckoos occur in cottonwood-willow-tamarisk vegetation associations that often possess a mesquite component (USFWS 2014b). Some habitats utilized by breeding yellow-billed cuckoos in southeastern Arizona differ substantially from those utilized in other areas. Such habitats occur in higher elevation drainages within Madrean Evergreen Woodlands in the Sky Island mountain ranges. Vegetation found in these habitats consists of oaks (*Quercus* spp.), junipers (*Juniperus* spp.), and mesquite interspersed with individuals or thin stringers of mesic species (MacFarland and Horst 2015).

Within Arizona, the yellow-billed cuckoo is found along rivers in southern and central Arizona, as well as extreme northeast portions of the state (AGFD 2011). Statewide surveys have been conducted in Arizona at historical YBCU locations during 1998 and 1999. During these surveys, cuckoos were documented along 25 drainages, with the majority occurring along the San Pedro, Agua Fria, and Verde rivers and Sonoita and Cienega creeks (Corman and Magill 2000).

No designated critical habitat occurs on within the Project Area. The nearest critical habitat occurs approximately 10 miles to the northwest of the Project Area. There are no current or historical records of yellow-billed cuckoos occurring within the Project Area. Suitable nesting habitat for this species in the form of riparian woodland or dense stands of Madrean Evergreen Woodlands along the drainages is lacking within the Project Area. Thus, any occurrences of yellow-billed cuckoos within the Project Area would be highly unlikely and would be limited to an occasional transient individual if such an occurrence were to occur. Disturbances to an individual probably would not displace it from habitats that are key to its survival, since habitat for this species is marginal at best within the Project Area and other better quality or equally suitable habitats are available elsewhere. In addition, all riparian and aquatic habitat will be avoided and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the yellow-billed cuckoo. There is no designated critical habitat for this species within the Project Area, thus non would be affected.

Northern Mexican Gartersnake

The northern Mexican gartersnake (*Thamnophis eques megalops*) was federally listed as threatened throughout its range in 2014 due primarily to habitat loss associated with manmade features that alter watercourse hydrology so that the natural processes that sustained riparian habitat is greatly diminished. Throughout its rangewide distribution, the northern Mexican gartersnake occurs at elevations from 130 to 8,497 feet (Rossman *et al.* 1996) and is considered a “terrestrial-aquatic generalist” (Drummond 1983). The northern Mexican gartersnake is a riparian obligate (generally found in riparian areas when not engaged in dispersal, gestation, or hibernation behaviors) and occurs chiefly in the following general habitat types: (1) Small, often isolated wetlands (e.g., cienegas); (2) large river riparian woodlands and forests; and (3) streamside gallery forests (as defined by well-developed broadleaf deciduous riparian forests with limited, if any, herbaceous ground cover or dense grass) (Hendrickson and Minckley 1984, Rosen and Schwalbe 1988).

Although considered a highly aquatic species, the northern Mexican gartersnake uses terrestrial habitat for hibernation (Young and Boyarski 2012), gestation, seeking mates, and dispersal. This habitat includes open, grassland-dominated landscapes with scattered livestock tanks.

Currently, there are only five northern Mexican gartersnake populations in the United States, where the subspecies remains reliably detected and is considered viable, and all are located in Arizona. The five known populations are: (1) The Page Springs and Bubbling Ponds State Fish Hatcheries along Oak Creek, (2) lower Tonto Creek, (3) the upper Santa Cruz River in the San Rafael Valley, (4) the Bill Williams River, and (5) the upper and middle Verde River (USFWS 2014c).

Surveys for the northern Mexican gartersnake have not occurred. While designated critical habitat for this species extends across the entire Project Area, suitable riparian and terrestrial habitat for this species is lacking. Madrean Encinal woodlands occur throughout much of the Project Area and are dominated by Madrean evergreen oaks along a low-slope transition below Madrean Lower Montane Pine-Oak Forest and Woodland and Madrean Pinyon-Juniper Woodland. Lower elevation stands are typically open woodlands or savannas where they transition into desert grasslands, chaparral or in some cases desert scrub.

There are no current or historical records of northern Mexican gartersnake occurring within the Project Area. Suitable riparian and terrestrial habitat for this species is lacking within the Project Area. Thus, any occurrences of northern Mexican gartersnake within the Project Area would be highly unlikely. In addition, the limited riparian habitat within the Project Area will be avoided and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the northern Mexican gartersnake.

Chiricahua Leopard Frog

The Chiricahua leopard frog (*Rana chiricahuensis*) was federally listed as threatened throughout its range in 2002. A special rule to exempt operation and maintenance of livestock tanks on non-Federal lands from the Section 9 take prohibitions was included in the listing. In 2012, the USFWS designated more than 10,346 acres of critical habitat for the species in Arizona and New Mexico (USFWS 2012b).

The Chiricahua leopard frog is an inhabitant of montane and river valley cienegas, springs, pools, cattle tanks, lakes, reservoirs, streams, and rivers. It is a habitat generalist that historically was found in a variety of aquatic habitat types but is now limited to the comparatively few aquatic systems that support few or no non-native predators (e.g. American bullfrogs, fishes, and crayfishes) (USFWS 2007). The species also requires

permanent or semi-permanent pools for breeding.

Chiricahua leopard frogs were observed at 87 sites in Arizona from 1994 to 2001, including 21 northern localities and 66 southern localities. In Arizona, the species is known to presently occur in seven of eight major drainages of historical occurrence (Salt, Verde, Gila, San Pedro, Santa Cruz, Yaqui/Bavispe, and Magdalena river drainages) (USFWS 2007).

No designated critical habitat occurs on within the Project Area. The nearest critical habitat occurs approximately 16 miles to the northeast of the Project Area. There are no current or historical records of Chiricahua leopard frogs occurring within the Project Area. Suitable aquatic habitat for this species in the form of cienegas, springs, pools, cattle tanks, streams, and rivers is lacking within the Project Area. Based on the lack of suitable habitat and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the Chiricahua leopard frog.

Sonoran Tiger Salamander

The Sonoran tiger salamander (*Ambystoma tigrinum stebbinsi*) was federally listed as endangered throughout its range in 1997 due primarily to the disappearance of natural standing water habitat and predation by non-native fish, bullfrogs, and crayfish. The most important habitat requirement for Sonora tiger salamanders is the availability of standing water for breeding from January through June (USFWS 2002). This gives the salamanders enough time to breed, grow as larvae, and metamorphose before the pond dries. Permanent bodies of water can be good breeding sites, except they often contain introduced fish and bullfrogs (Snyder1998). Cattle ponds or tanks are the primary habitat for Sonora tiger salamanders. Aquatic breeding habitats are used by all life stages; however, upland habitats are also used by terrestrial adults when not at the breeding ponds (USFWS 2002).

The subspecies has been found in 53 ponds in the San Rafael Valley in Santa Cruz and Cochise counties in southeastern Arizona and in the most northern parts of Sonora, Mexico (USFWS 2002). About half of the 53 known populations have been discovered within the last 10 years, and only within the last 10 years were ponds with salamanders sampled consistently, making it difficult to determine trends in the proportion of ponds occupied by salamanders and suitability of those ponds for salamander breeding habitat (USFWS 2002).

Surveys for the Sonoran tiger salamander have not occurred. There is no designated critical habitat for this species. There are no current or historical records of Sonoran tiger salamanders occurring within the Project Area. Suitable natural water habitat for this species is lacking within the Project Area. Thus, any occurrences of Sonoran tiger salamanders within the Project Area would be highly unlikely and would be limited to an occasional terrestrial adult in upland habitat if such an occurrence were to occur. Disturbances to an individual probably would not displace it from habitats that are key to its survival, since habitat for this species is marginal at best within the Project Area and other better quality or equally suitable habitats are available elsewhere. In addition, all riparian and aquatic habitat will be avoided and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the Sonoran tiger salamander. There is no designated critical habitat for this species, thus non would be affected.

Gila Topminnow

The Gila topminnow (*Poeciliopsis occidentalis*) was federally listed as endangered throughout its range in 1967 due primarily to habitat alteration and destruction, and introduction of predaceous nonnative fish. Habitat requirements of the Gila topminnow are broad. They prefer shallow, warm springs or slow-moving

waters, but can tolerate a wide range of temperature and current regimes (USFWS 1998). Both lentic habitats and lotic habitats with moderate current are easily tolerated.

The original recovery plan for Gila topminnow listed 10 extant natural populations; Monkey Spring, Cottonwood Spring, Sheehy Spring, Sharp Spring, Santa Cruz River near Lochiel, Redrock Canyon, Cienega Creek, Sonoita Creek (presumably including localities above and below Patagonia Lake), Salt Creek, and Bylas Springs (USFWS 1984). Since 1984, Gila topminnows have been discovered or rediscovered at four additional locations; North Fork of Ash Creek in 1985 (Jennings 1987), Fresno Canyon in 1992, Santa Cruz River north of Nogales in 1994, and Coal Mine Canyon in 1996 (Weedman and Young 1997). Eleven of the naturally occurring locations currently supporting Gila topminnows are in the Santa Cruz River system: Redrock Canyon, Cottonwood Spring, Monkey Spring, upper Sonoita Creek, Fresno Canyon, Coal Mine Canyon, lower Sonoita Creek, Santa Cruz River north of Nogales, Cienega Creek, Sharp Spring, and the upper Santa Cruz River. The other two remaining localities, Bylas Springs, Middle Spring, and Salt Creek, are next to the Gila River on the San Carlos Apache Indian Reservation (USFWS 1998).

Surveys for the Gila topminnow have not occurred. There is no designated critical habitat for this species. There are no current or historical records of Gila topminnow occurring within or near the Project Area. Suitable natural water habitat for this species is lacking within the Project Area. Thus, any occurrences of Gila topminnows within the Project Area would be highly unlikely. In addition, all riparian and aquatic habitat will be avoided and proposed drilling activities would take place over a very short time period (i.e., 1 to 2 months). Based on these factors and the low likelihood of occurrence of the species in the Project Area, it is unlikely that the proposed Project would affect the Gila topminnow. There is no designated critical habitat for this species, thus non would be affected.

Summary of Mitigation

The proposed Project will be conducted in a manner that minimizes disturbance to habitat and wildlife species to the extent practicable while allowing for safe access and completion of drilling operations in accordance with the Project purpose. Environmental protection measures that will be implemented to avoid or minimize potential adverse impacts to federally Threatened, Endangered, and CNF Sensitive Species include the following:

- Impacts to wildlife habitat from the proposed Project will be reduced by the use of the existing road network; avoiding blading, grading, and removal of vegetation at drill sites to the greatest extent practicable; requirements for good housekeeping practices, and implementation of timely reclamation of all disturbed areas as appropriate.
- A brief Worker Environmental Awareness Program (WEAP) will be implemented for construction and drilling crews prior to the commencement of Project activities. Training materials and briefings will include but not be limited to, discussion of the federal Endangered Species Act (ESA), the consequences of noncompliance with the ESA, identification and values of wildlife and natural plant communities, hazardous substance spill prevention and containment measures, and review of all required and recommended mitigation measures.
- Trash and food items will be disposed of promptly in predator-proof containers with resealable lids. Trash containers will be removed regularly (i.e., daily or every other day). This effort will reduce the attractiveness of the area to opportunistic predators such as coyotes, kit foxes, and common ravens.

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

The Project is not expected to adversely impact any cultural resources that would be considered eligible for inclusion in the National Register of Historic Places. Class I and Class III cultural resources surveys to determine the presence and/or absence of cultural resources (prehistoric, historical, and tribal considerations) within the proposed drill pads and adjacent access roads will be conducted in spring of 2020. The results of this effort will be presented to the Forest Service Archeologist for review.

As necessary, Arizona Standard will implement the necessary mitigation measures to protect historical or archeological sites if they are identified and/or recommended by the Forest Service Archeologist. Based on these surveys, all cultural resources in the vicinity of the Project would be avoided and thus no impacts to cultural resources are expected from proposed Project activities.

All personnel involved in any surface disturbance operations will be instructed on site-avoidance requirements and procedures. This training will be conducted for all personnel prior to initial site mobilization and will be provided to new personnel on their first day of work.

Should cultural resources be identified during the course of the proposed Project, IC Exploration shall immediately cease operations at that location and notify the CNF Archaeologist. IC Exploration and their contractors will also be reminded that all ground-disturbing activities have the potential to result in the inadvertent discovery of human remains and other cultural items. Pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (Public Law 101-601; 25 U.S.C. 3001-3013), if Native American human remains, associated funerary objects, unassociated funerary objects, objects of cultural patrimony, or sacred objects are encountered anywhere in the Project Area during ground-disturbing activities, all activity shall cease in the area of the discovery and the CNF Archaeologist shall be immediately notified. All ground-disturbing activities in the immediate vicinity of the discovery shall cease until a qualified archaeologist assesses the significance of the remains. Work in and around the area shall not resume until so directed by the CNF Archaeologist.

G. Hazardous Substances.

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

The drill rigs and support vehicles use several petroleum products, including diesel fuel or gasoline, motor oil, anti-freeze, hydraulic oil, and deck engine oil. Many of the sealants used for downhole equipment and tooling will be bentonite clay-based products, and the liquid oils or lubricants such as fish oil are considered “environmentally friendly.” Thus, while some of the materials may contain components that, under special circumstances, may be hazardous to human health, no materials—other than petroleum products—pose a significant threat to the natural environment.

Gasoline, diesel fuels, oils, and greases are necessary to successfully operate the drill and associated equipment. To prevent spills and releases, these substances and other potentially hazardous materials necessary for operations will be stored within a plastic lined secondary containment structure with a minimum 110 percent of the capacity of the total volume of all liquids stored. Covers or tarps will be utilized to prevent accumulation of rain or snow within the secondary containments to limit management of additional waters.

All fueling of equipment will be completed over absorbent materials or within secondary containment areas.

Potential hazardous substances to be used during this Project include the following:

- #2 Diesel
- Regular unleaded gasoline
- Gasoline and diesel engine oil
- Antifreeze
- Hydraulic fluid
- Joint grease
- Lithium grease
- Cement
- Bentonite

A limited amount of fuel will be contained in the fuel tanks of the equipment used on site. In addition, no more than a total of 10 gallons of fuel will be stored in gear boxes of equipment on site. The total estimated volume of fuel contained in the tanks and gear boxes of the equipment on site is outlined below and will be less than 150 gallons.

- Pickup Trucks – 50 gallons
 - Drill Truck – 90 gallons
 - Motor Oil (1 can) – 5 gallons
 - Supplemental Fuel Cans (2) – 5 gallons each
2. *For each material or substance, describe the methods, volume, and frequency of transport (include type of containers and vehicles), procedures for use of materials or substances, methods, volume, and containers for disposal of materials and substances, security (fencing), identification (signing/labeling), or other special operations requirements necessary to conduct the proposed operations.*

No fuel or lubricants will be permanently stored on site. All fuel will be brought to the site in proper petroleum storage containers, via pickup truck. Fuel will be brought to the site on a daily basis. Fueling will not occur in or immediately adjacent to water sources and spill pads will be placed on the ground under any fueling operations. Empty fuel containers will be disposed of properly by an authorized agent to a certified disposal area outside of the CNF.

Fire extinguishers will be kept in pickup trucks, on drill rigs, and near the drilling area. These fire extinguishers will be inspected regularly, as recommended by the manufacturer and applicable laws.

Materials and Substances

The following summarizes the volume and frequency of hazardous materials and substances transported:

- Diesel and gasoline transported in OSHA/MSHA approved containers - up to 50 gallons of each hauled daily
- Engine oil, hydraulic fluid and other lubricants up to five - 5- gallon containers for each product
- Lubricants located on service vehicles; hauled as needed
- Antifreeze within radiators and hauled in 2.5-gallon containers as needed

- Grease tubes located on service vehicles; hauled as needed
- Bentonite and cement - up to (20) 50-pound bags each
- Drilling materials transported on service vehicles and drill rig: hauled as needed

All hazardous materials and substances will be delivered to and stored at each of the drill sites (**Exhibit 6**). The materials will arrive in small (i.e. 5-10-gallon containers) and will be stored on wooden pallets in a secure enclosure to prevent theft, vandalism, and accidental spillage. The enclosures will be equipped with a secondary containment curb or berm such that the volume of containment is equivalent to the capacity of the largest container plus the quantity of rainfall resulting from a 100-year, 24-hour rainfall event (**Exhibit 6**). These measures will prevent any spilled material from leaving the drill site.

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

IC Exploration has developed Spill Response Procedures in order to address spill prevention, containment, notification, and cleanup measures. A summary of these procedures is provided below. More detailed information pertaining to the implementation of these procedures is provided in **Appendix B – Spill Response Procedures**.

To prevent incidental releases, equipment tanks and gear boxes will be inspected daily prior to operations and daily upon completion of operations. If a piece of equipment is found to be leaking or seeping fuel or lubricants, the equipment will be immediately taken out of service and corrective measures instituted to prevent a release. All vehicles will be equipped with a Spill Prevention Control and Counter-measure (SPCC) kit consisting of absorbent sites and a shovel. All fuel will be transported to and from the site using proper fuel containment. Whenever moving fuel from one container to another or fueling a piece of equipment, spill sites will be placed on the ground under the operation. In addition, spill sites will be placed under the drill equipment to catch any leaks during operations. Spill sites or leak proof metal or plastic trays with at least 110 percent capacity will also be placed under fuel cans if these cans are not stored inside leak proof containers.

During interim shutdown periods or periods of inactivity lasting less than 3-days, all equipment stored onsite will be parked with slippage prevention tire chocks, away from steep slopes and all fuel tanks and gear boxes containing chemicals will be underlain with absorbent sites. Plastic sheets and/or absorbent sites may be used under equipment to contain any spillage of lubricants or fuels.

Any spill of a hazardous material listed above will be immediately reported to the Arizona Department of Environmental Quality (DEQ) at (602) 390-7894 and/or National Response Center at (800) 424-8802. Straw wattles (containing certified weed-free straw) and kitty litter would be used to contain and absorb fluid spills. Contaminated soils would be placed in large drums and delivered to an agent authorized to haul such materials in compliance with federal, state, and local regulations.

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

Completion and Closure

Drilling and drill hole abandonment will be conducted in accordance with Arizona Administrative Code (AAC) R12-15 and Arizona Revised Statutes (ARS) Title 45, Chapter 2, Article 10, as administered by the Arizona Department of Water Resources (ADWR). Drill holes will be plugged/abandoned in accordance with the ADWR well abandonment handbook and AAC regulations 12-15-816 and 817 using bentonite clay then followed with a 20-foot surface cap of neat cement at least 2 feet below the reclaimed surface (ADWR Well Abandonment Handbook). The specific mixing and emplacement procedures will be conducted according to manufacturer's specifications, and this information, as well as geologist and/or engineer logging and verification of slurry QA/QC volume calculations, will be documented and provided to the CNF and ADWR as requested. A minimum 48-hour notification will be given to the CNF prior to commencing final drill-hole abandonment procedures.

Following the completion of drilling activities at each drill site, all materials will be removed from the site and disposed of at an off-site disposal facility. Drilling sumps will remain fenced until the end of the drilling program at which time any remaining water will be removed with a hydrovac truck. Drill cuttings and plastic liners will be removed for offsite disposal.

In accordance with 36 CFR (Code of Federal Regulations) §228 and the policies of Forest Service Manual (FSM) 2840, IC Exploration has prepared a Restoration and Revegetation Plan which outlines the initial engineering design, construction procedures, and general environmental mitigation measures for the proposed Project on CNF-managed lands. This Plan is presented in **Appendix E** and describes the overall procedures, techniques, and resources that would be employed for reclamation of those areas utilized or disturbed by exploration activities.

As discussed in the Plan, IC Exploration will conduct concurrent reclamation by reclaiming drill sites as associated activities are completed. Disturbed areas will be kept to the minimum size necessary to accommodate drilling activities. Where ground leveling or clearing activities are needed, vegetation and soil layers will be separated, stockpiled, and finally returned in the same order they were excavated.

Areas that have become compacted due to drilling activities will be ripped, roughened, and/or scarified to allow for infiltration of precipitation and to prevent erosion using a mini excavator. Compacted soil areas will be ripped to an approximate depth of 6 inches in areas where the soil is exposed and/or little vegetative cover remains. Ripping may be waived as directed by the CNF Representative when abundant rock fragments are present in surface soil layers. Additional woody debris and forest litter, when available for salvage from adjacent areas, may be placed on the surface of highly compacted areas. Ripping will not be required in other less seriously compacted areas where substantial bare ground is not exposed and where an acceptable amount of live vegetative cover has been retained on the site as determined by the CNF Representative. Other stormwater Best Management Practices (BMPs), such as erosion-control features, will be repaired or removed, as necessary.

Revegetation will primarily rely on natural revegetation from seeds and roots in salvaged topsoil material. In the event that this is not practical, disturbed areas will be reseeded in accordance with CNF guidelines using approved seed mixes of certified native weed-free species. Soil on areas to be seeded will be left in a roughened, de-compacted condition favorable to the retention and germination of the seed. For purposes of analysis in this Plan, it is assumed that up to 80 percent of each drill site (or 0.05 acres) will need to be reclaimed and reseeded for a total of approximately 0.25 acres of disturbance.

Noxious weeds will be monitored by IC Exploration and treated in compliance with CNF recommendations.

If any noxious weeds are found on site at any time, proper actions will be taken to remove the plants and prevent the spread of their seeds. IC Exploration will work with the CNF to establish treatment methods to reduce or eliminate the spread of noxious weeds within the drilling areas.

Reclamation Monitoring

IC Exploration will conduct annual field inspections of drill sites and other areas disturbed under this PoO to monitor for reclamation effectiveness and noxious weed infestations for a period of not less than three (3) years. Each of the field inspections will be documented with photographs or written descriptions and provided to the CNF Botanist/Biologist.

In the event that any of the above reclamation efforts do not meet with the established criteria as stated below, IC Exploration will collaborate with CNF representatives and make modifications to the reclamation and revegetation strategy, incorporating such changes and additional procedures necessary to achieve the stated standard.

Reclamation Bond Release

Release of the reclamation bond for these activities will be requested when:

- Monitoring indicates that reclamation measures have effectively prevented or controlled onsite and off-site damage to the environment and CNF surface resources for a period of one (1) year and such prevention is expected to continue into the future.
- Revegetation of reclaimed areas is adequate. Revegetation will be deemed adequate when: 1) species composition is similar to or on a growth trajectory toward that of adjacent areas; 2) reclaimed vegetation has a uniform vegetation cover with a density of 70 percent of the native background vegetation cover on all disturbed areas not covered by structures; and 3) the vegetation community established on the reclaimed areas is capable of persisting without continued intervention, excluding noxious weed or invasive species management.

VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. Required Changes/Modifications/Special Mitigation for the PoO.

Authorized activities are limited to those permitted by this plan of operations. Any future proposal for further exploration, development or mining which may cause significant disturbance of surface resources must be proposed in a separate application for a PoO and is subject to further analysis, review and approval by the Forest Service under 36 CFR Part 228.

The operator will be required to adhere to the CNF document “*Invasive Plant Prevention Guidelines.*” which requires a visual inspection of the equipment and vehicles entering the Forest. If the equipment or vehicles are dirty, e.g. have attached soil, seeds, or vegetative matter, they will need to be cleaned before entering CNF lands. These inspections should be recorded and provided to the Forest Service. Also, equipment should also be inspected before moving from areas of infestation to areas free of infestation within the Project work area. After work is completed, the Forest Service specialists will survey the Project Area again, and if any invasive species are found, the operator will be responsible for re-treatment.

- B. Bond.** Reclamation of all disturbances connected with this plan of operations is covered by Reclamation Performance Bond No. XXX, dated (*mm/dd/yy*), signed by (Principal) and (Surety), for the penal sum of \$XXX. This Reclamation Performance Bond is a guarantee of faithful performance with the terms and conditions listed below, and with the reclamation requirements agreed upon in the PoO. This Reclamation Performance Bond also extends to and includes any unauthorized activities conducted in connection with this operation.

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

Acceptable bond securities (subject to change) include:

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

VII. TERMS AND CONDITIONS

- A. If a bond is required, it must be furnished before approval of the Plan.
- B. Information provided with this Plan marked confidential will be treated in accordance with the agency's laws, rules, and regulations.
- C. Approval of this Plan does not constitute certification of ownership to any person named herein and/or recognition of the validity of any mining claim named herein.
- D. Approval of this Plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.
- E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, those operations will not proceed until notification is received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800 have been complied with.
- F. This Plan has been approved for a period of **1 year** or until (*mm/dd/yy*). A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart A, if operations are to be continued after that time period.

VIII. OPERATING PLAN ACCEPTANCE

I/We have reviewed and agreed to comply with all conditions in this Plan including the required changes, modifications, special mitigation, and reclamation requirements.

I/We understand that the bond will not be released until the Authorized Officer in charge gives written approval.

Operator (or Authorized Representative)

(Date)
(mm/dd/yy)

IX. OPERATING PLAN APPROVAL

(Name)

(Title)

(Authorized Officer)

(Date)
(mm/dd/yy)

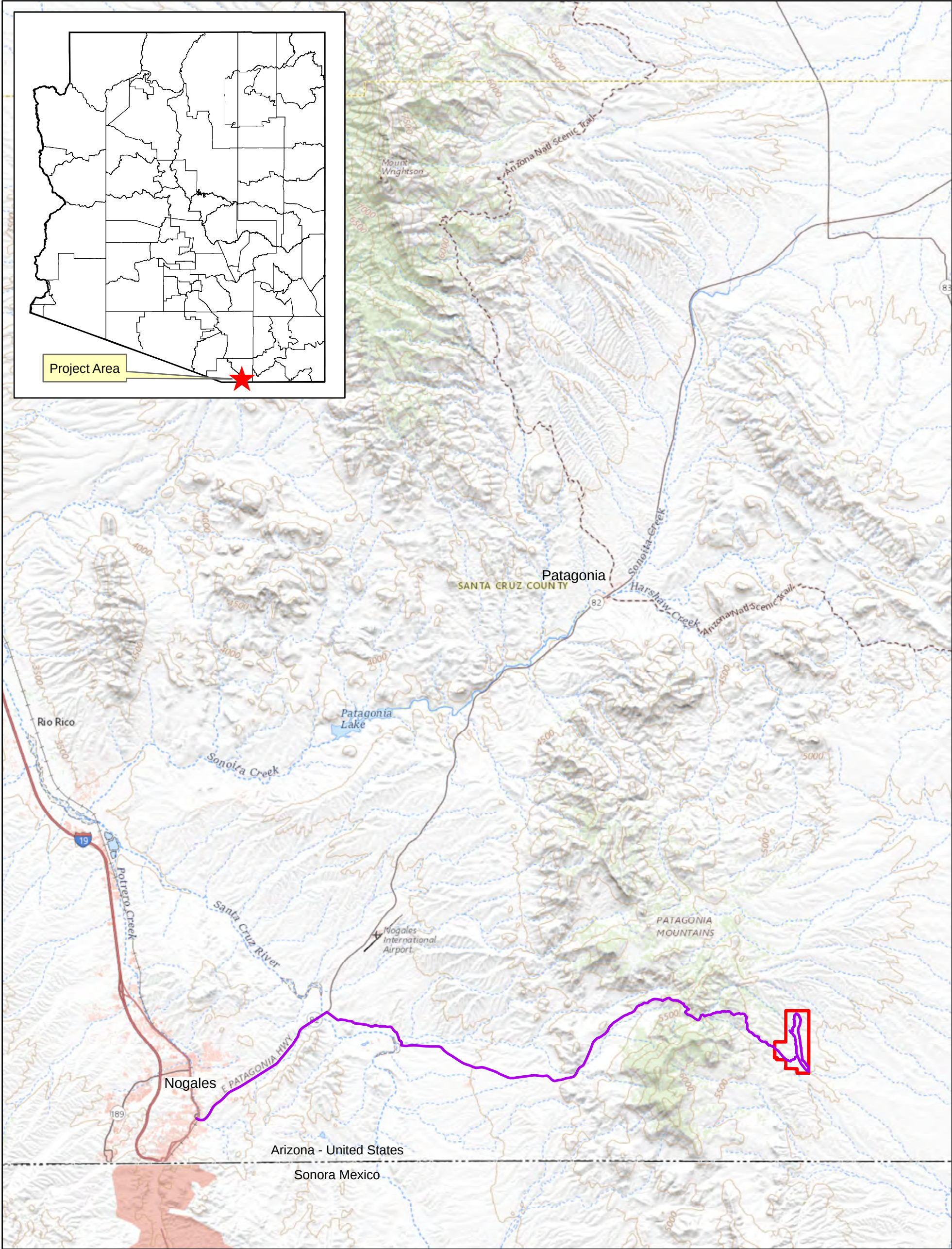
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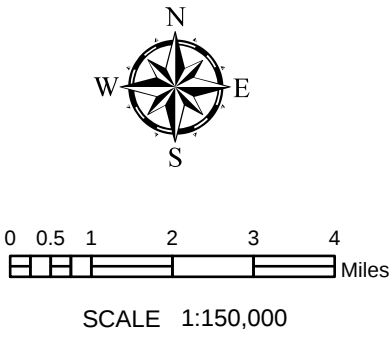
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Exhibits



LEGEND

-  Project Area
-  Proposed Access Route

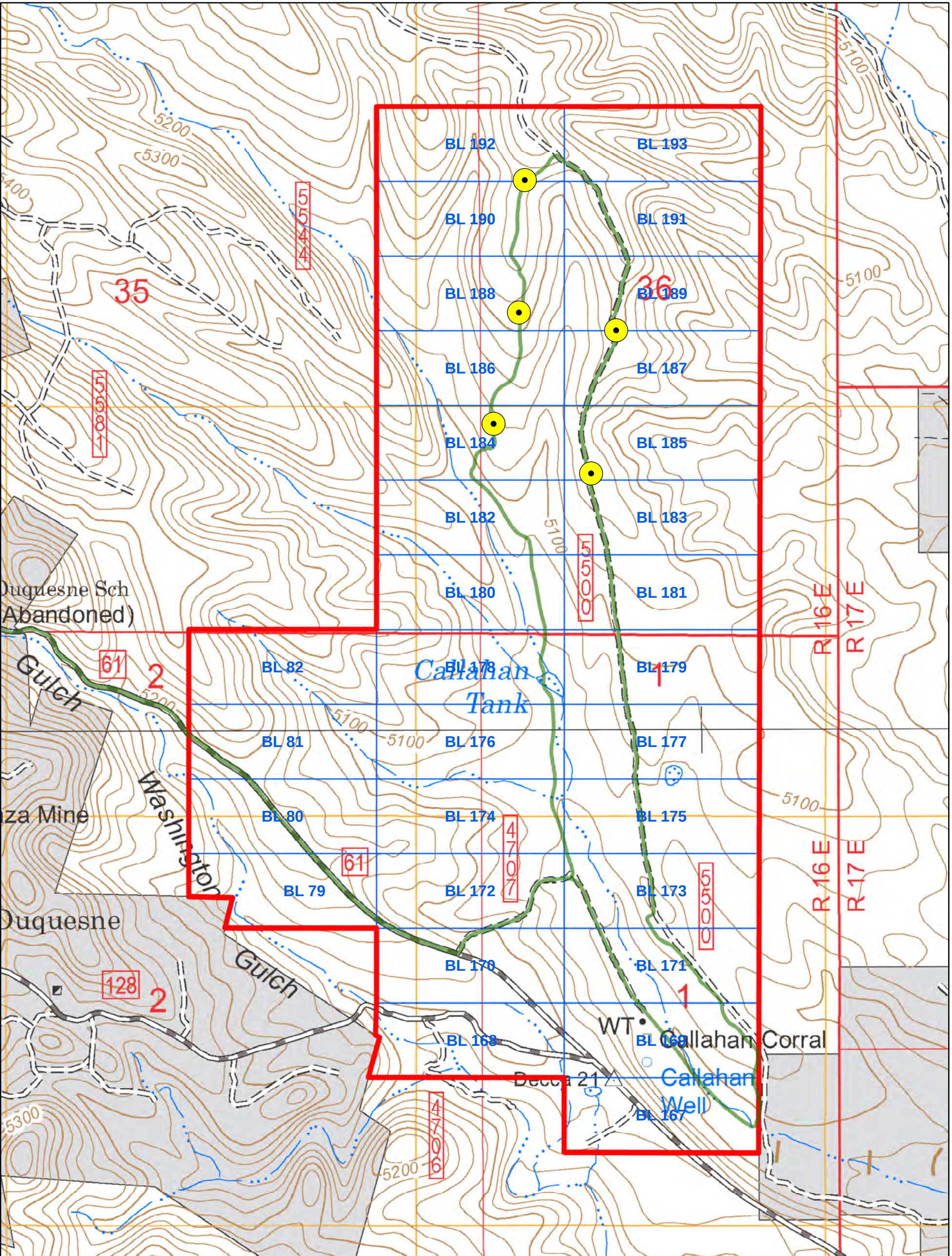


San Antonio Mineral
Exploration Project

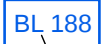
Exhibit 1
Project Area Map

01/25/2020

Sheet 1 of 1



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  BL 188 Mining Claim Boundary
-  Claim ID



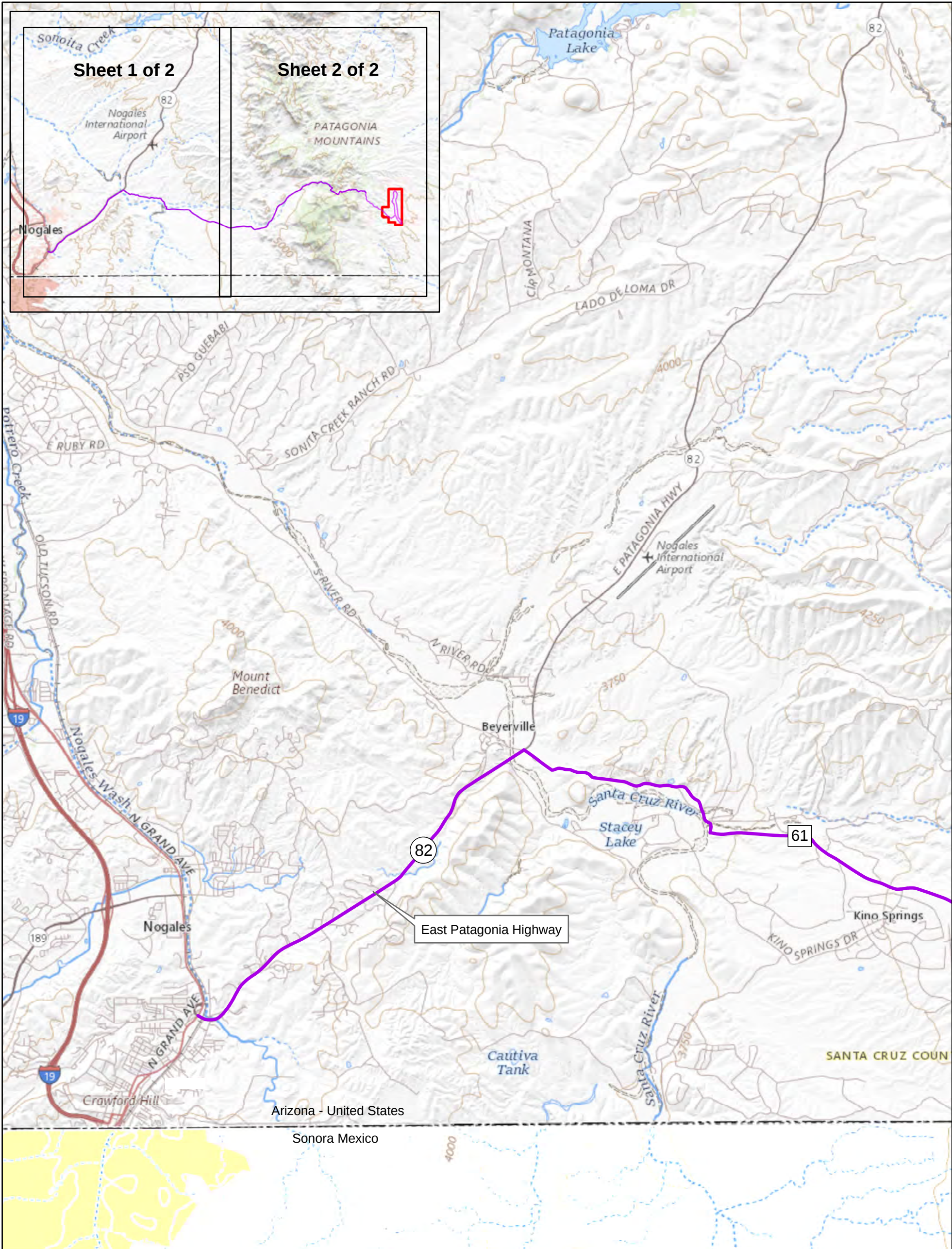
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San Antonio Mineral
Exploration Project

Exhibit 2
Mining Claims Area Map

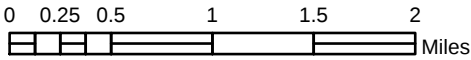
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Sheet 1 of 1



LEGEND

-  Project Area
-  Proposed Access Route



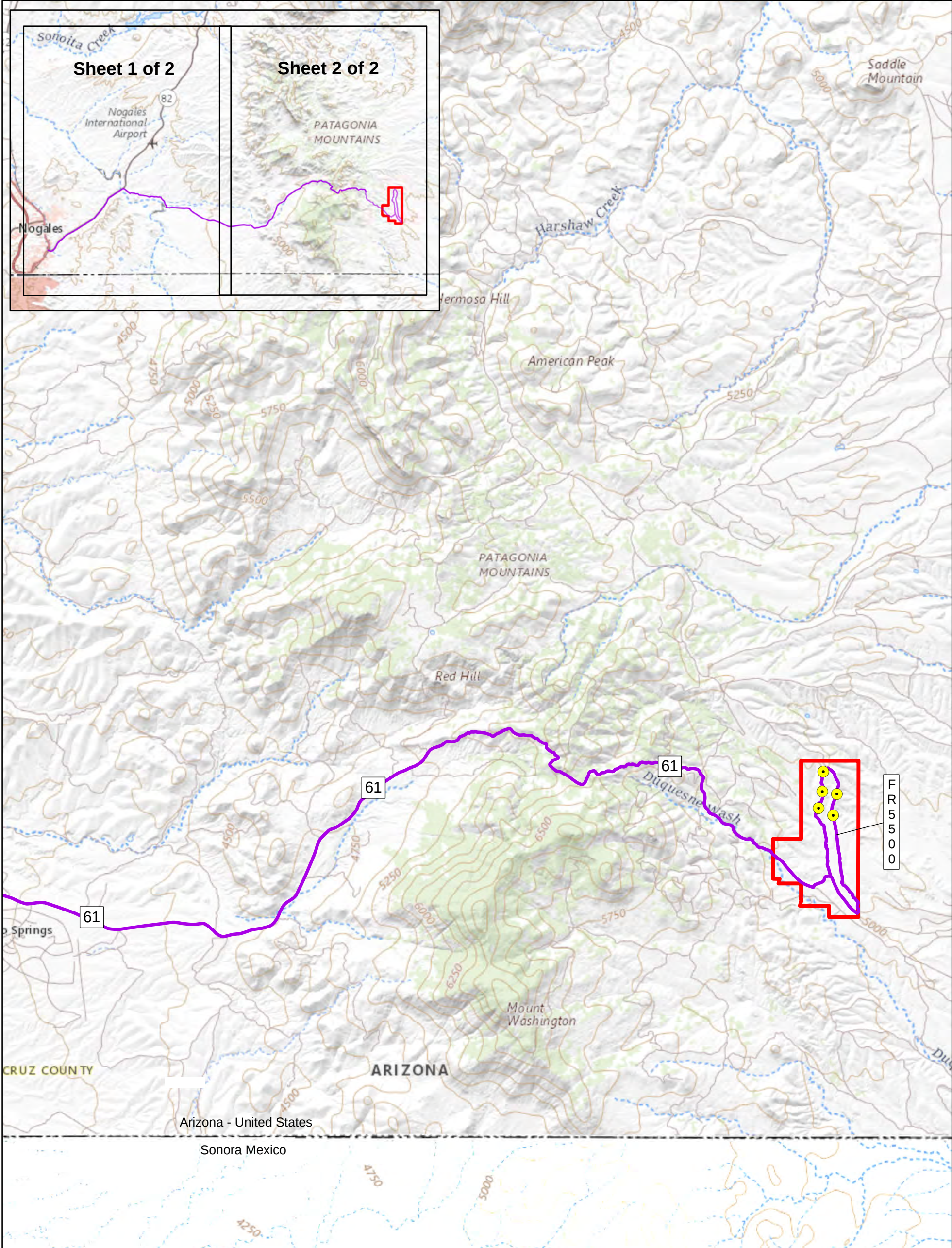
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San Antonio Mineral
Exploration Project

Exhibit 3a
Regional Access Road Map

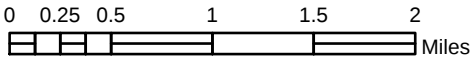
01/25/2020

Sheet 1 of 2



LEGEND

-  Project Area
-  Proposed Access Route
-  Proposed Drill Site



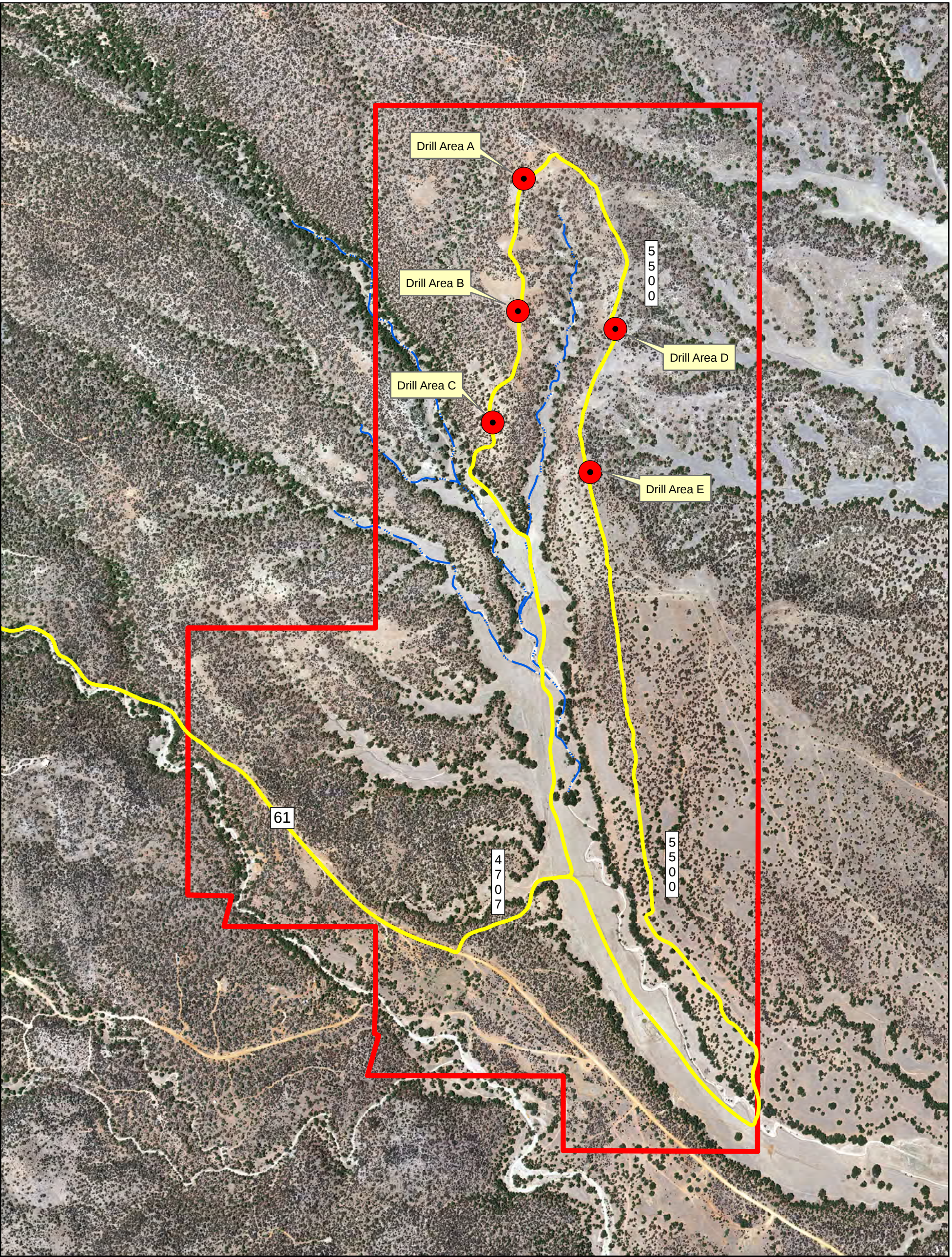
SCALE 1:60,000

San Antonio Mineral
Exploration Project

Exhibit 3b
Regional Access Road Map

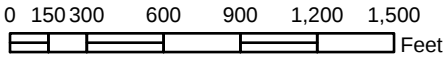
01/25/2020

Sheet 2 of 2



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Low Flow Channel



SCALE 1:9,000

San Antonio Mineral
Exploration Project

Exhibit 4

Local Access Roads and Drill Areas Map

01/25/2020

Sheet 1 of 1

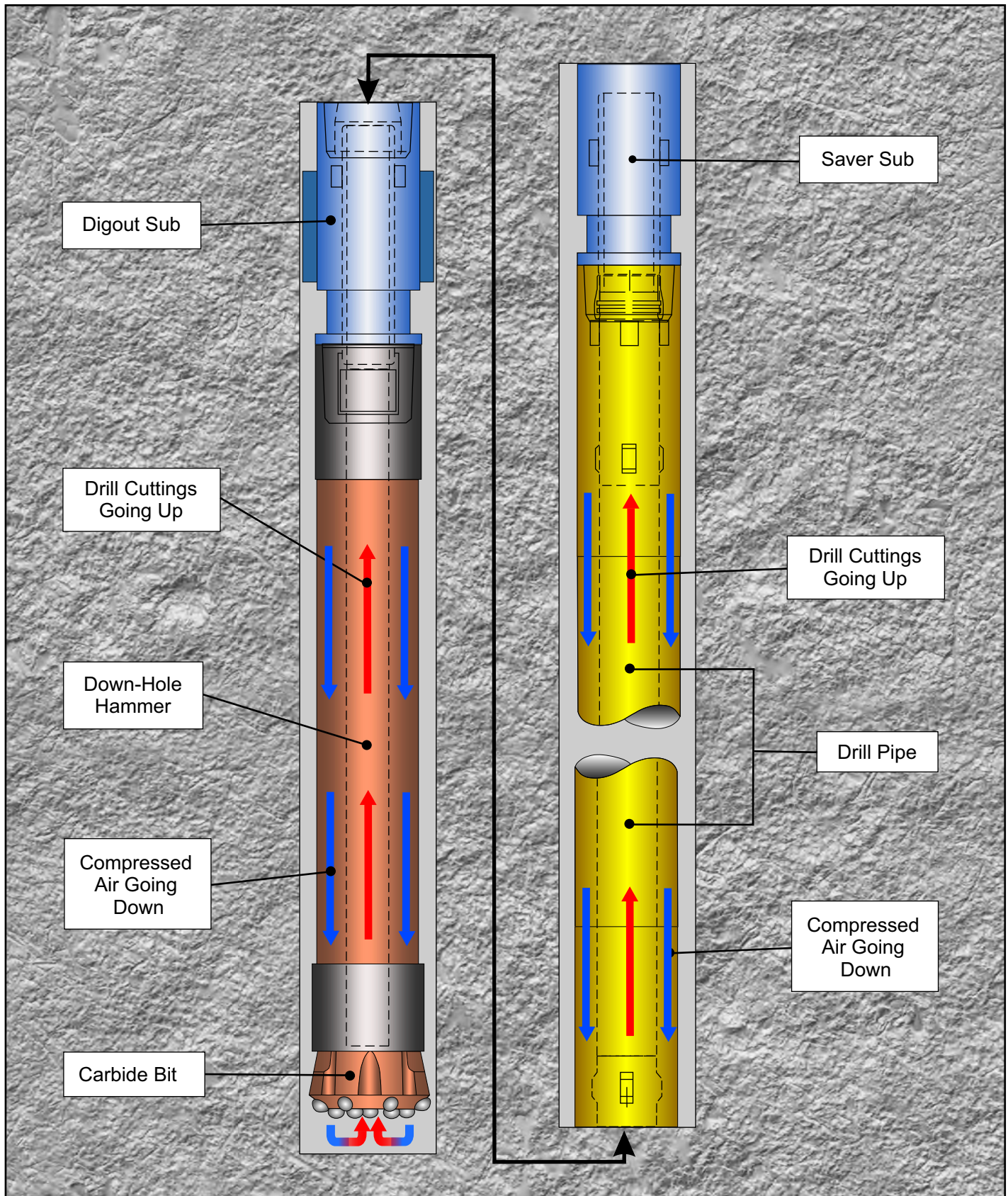


Exhibit 5: Generalized Schematic of a Reverse Circulation (RC) Drilling System

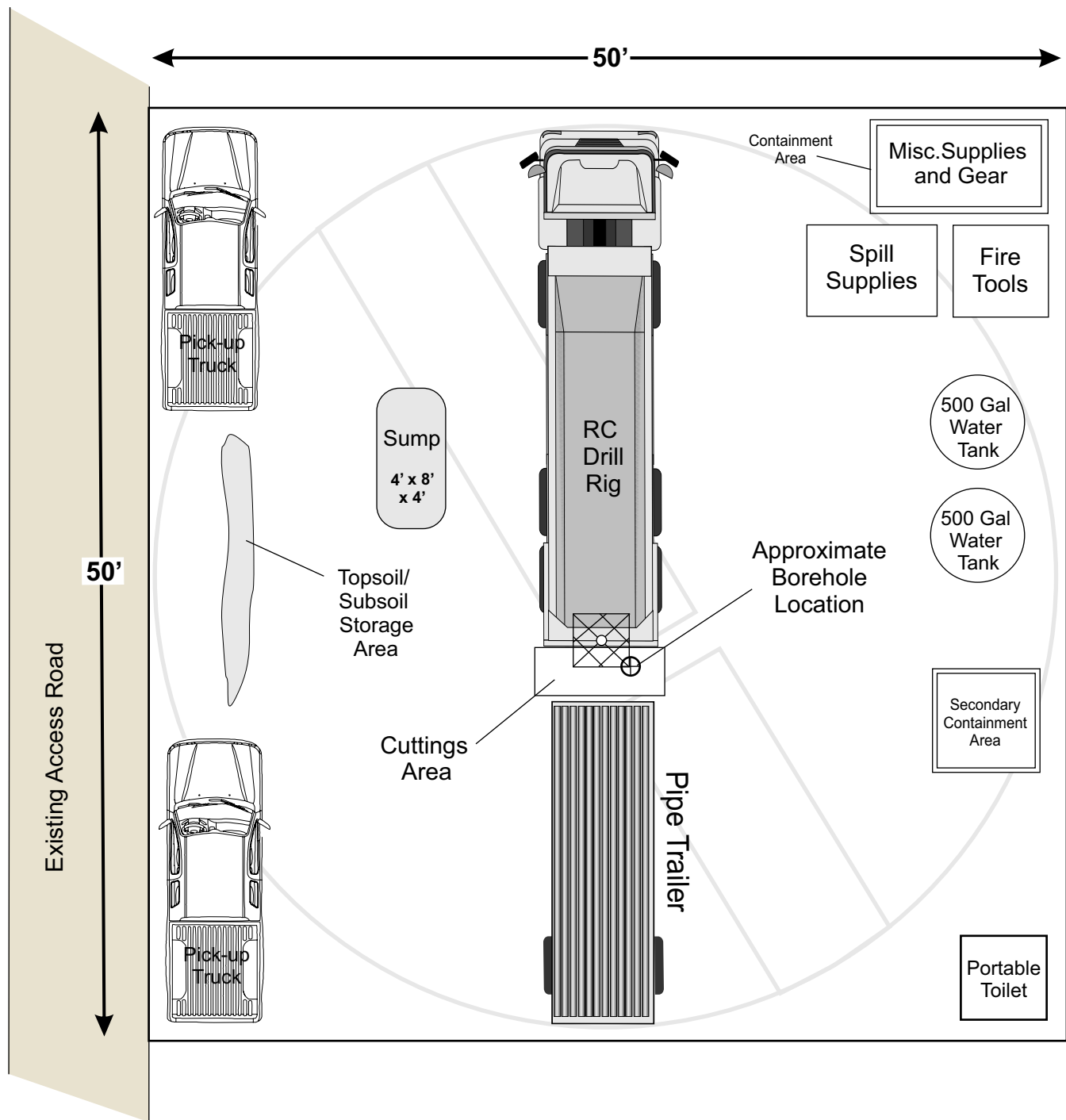
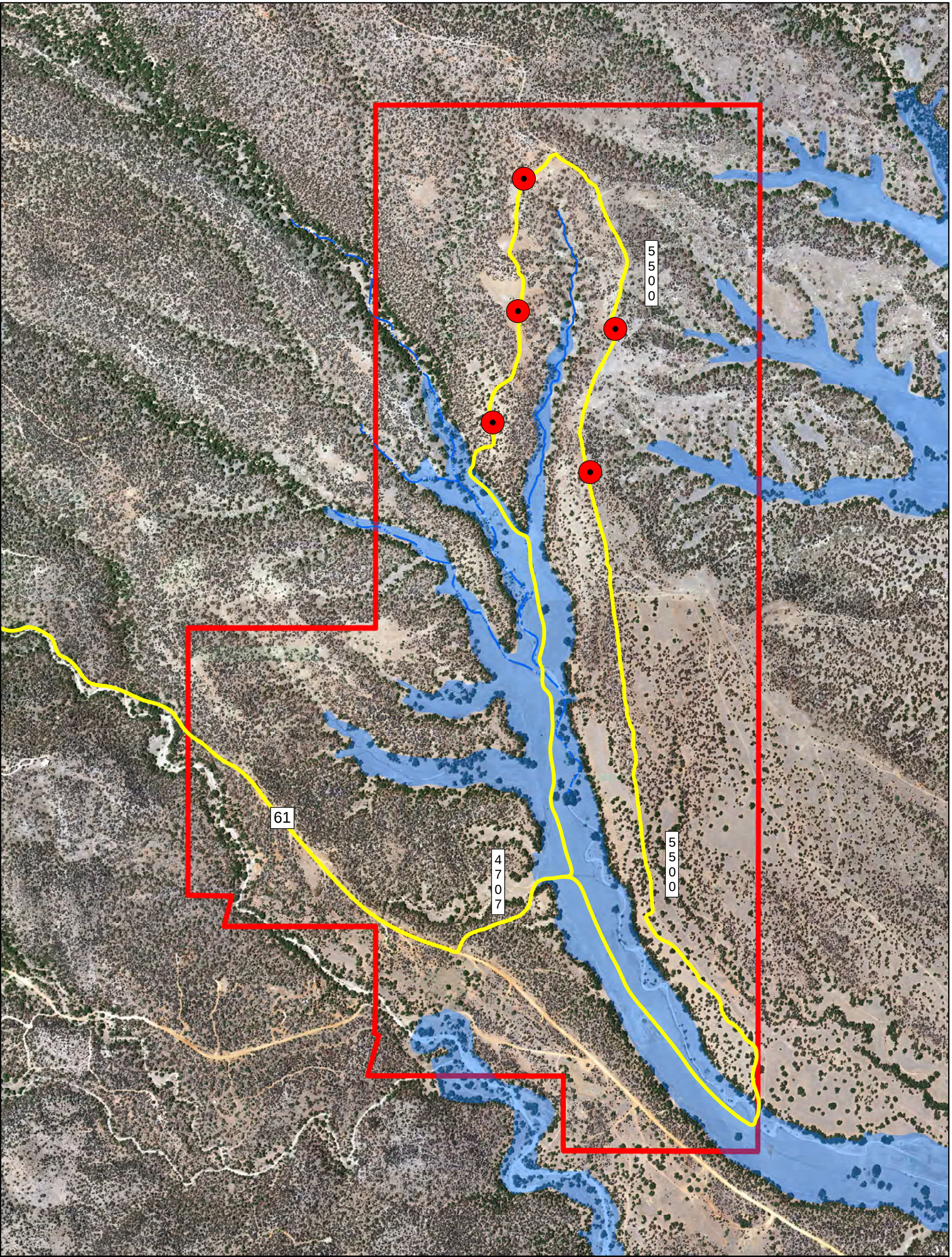
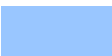
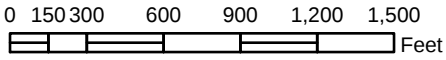


Exhibit 6: Diagram of a Typical Drill Pad Layout Parallel to the Existing Access Road



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Low Flow Channel
-  FEMA 100-Year Floodplains



SCALE 1:9,000

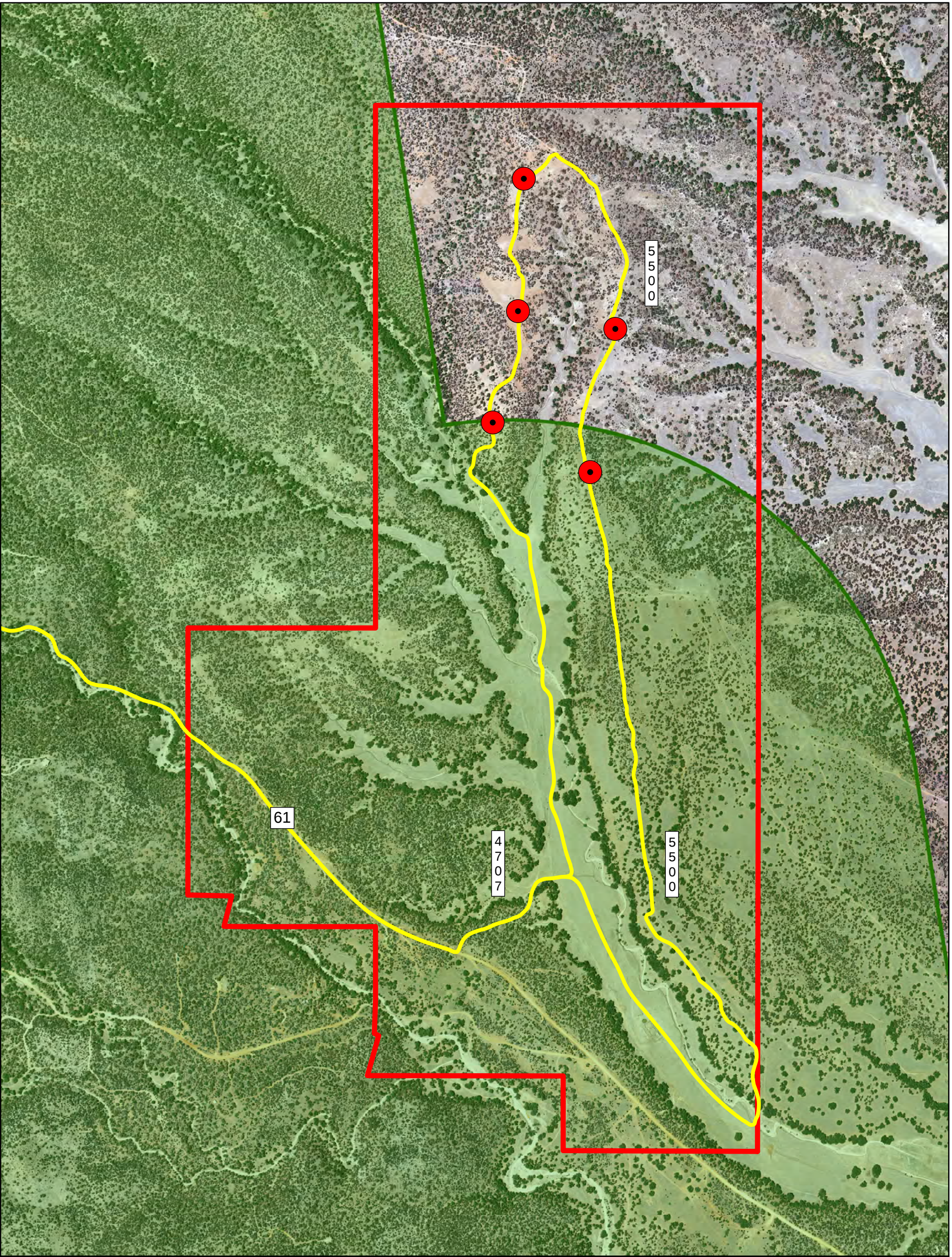
San Antonio Mineral
Exploration Project

Exhibit 7

Mapped 100-Year Floodplains

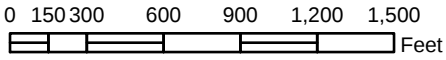
01/25/2020

Sheet 1 of 1



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Jaguar Critical Habitat



SCALE 1:9,000

San Antonio Mineral
Exploration Project

Exhibit 8

Jaguar Designated Critical Habitat

01/25/2020

Sheet 1 of 1

Appendices

Appendix A – Fire Prevention and Control Plan

**SAN ANTONIO EXPLORATORY DRILLING PROJECT,
SANTA CRUZ COUNTY, ARIZONA**

FIRE PREVENTION AND CONTROL PLAN

Prepared for:

**UNITED STATES DEPARTMENT
OF AGRICULTURE FOREST SERVICE**

CNF

300 West Congress
Street Tucson, Arizona
85701

Prepared by:

IC Exploration, LLC

P.O. Box 1155, Patagonia, Arizona 85624

January 2020

1. FIRE PREVENTION AND CONTROL

The Operator will implement the following measures for the prevention and control of fires during the course of the Project:

- 1) Firefighting equipment shall be on site, ready and available at all times.
- 2) Drill sites are depicted on Exhibit 4 of the PoO.
- 3) All combustion engine equipment will be equipped with spark arrestors installed by the manufacturer.
- 4) All vehicles will be equipped with a working fire extinguisher and a shovel. Drill rigs will be equipped with a filled water tank during periods of operation.
- 5) All smoking will be prohibited.
- 6) Campfires or uncontained fires of any kind will be prohibited.
- 7) The crew contingency plan will include a fire communications protocol for contacting firefighting personnel, by contacting the CNF Tucson Interagency Fire Center (520) 202-2700
- 8) The Project will comply with fire restrictions and/or red flag warning day guidelines.

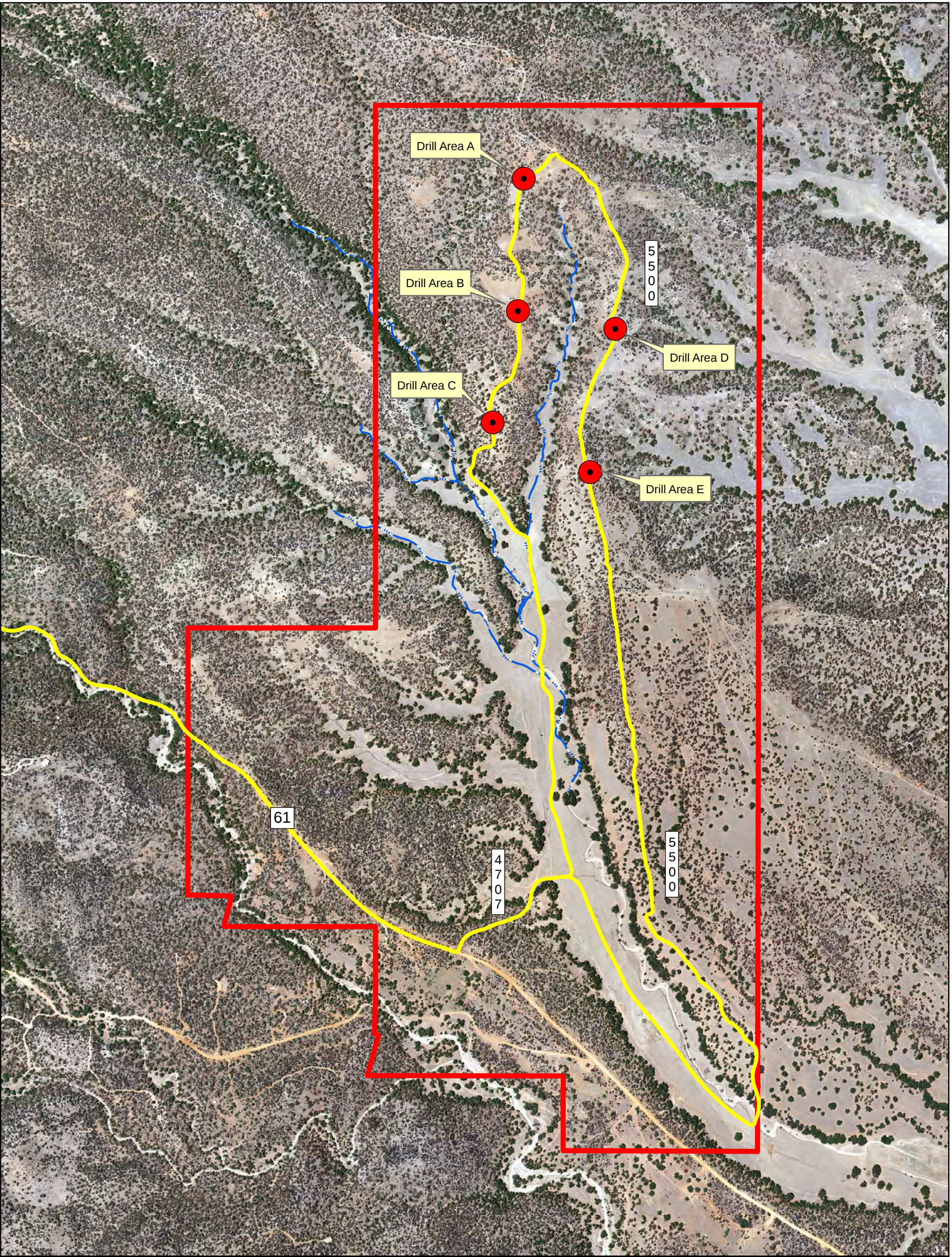
2. COMMUNICATIONS PROTOCOL

IC Exploration and its contractors have serviceable telephones for the area which can connect each site with the local Forest Service Dispatch Center within five (5) minutes of discovery of a fire in the Project Area. The communications system has been in operation continually for several years and has proven reliable during that time with no changes anticipated during IC Exploration's drilling activities.

3. EQUIPMENT

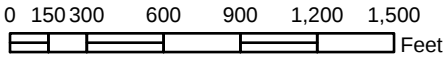
IC Exploration will require its contractors to furnish and have available for emergency use on each piece of equipment used in conjunction with performance of the work as listed below, hand tools and/or equipment as follows:

- 1) One shovel, one axe (or Pulaski) and a fully charged fire extinguisher U.L. rated at 2-A:10-B:C, or larger, on each truck, personnel vehicle, tractor, grader and other heavy equipment.
- 2) One shovel and one backpack 5-gallon water-filled tank with pump
- 3) During the use of chain saws or other gas-powered tools, one shovel and one pressurized chemical fire extinguisher will be provided for each tool, including but not restricted to chain saws, etc. Fire extinguishers shall be rated at 2-A: 10 B:C, or larger.
- 4) A shovel will be kept within 100 feet from each chain saw.
- 5) All tools and equipment are represented as being in good workable condition and meet the following principle Forest Service specifications for fire tools:
- 6) Axes (or Pulaski) shall have 2.5 pound or larger heads and be not less than 28 inches in overall length.
- 7) Shovels shall be size "O" or larger and be not less than 46 inches in overall length.
- 8) A water tank with water will be located on site during drilling activities. The tank will be located on or immediately adjacent to the drilling operations.



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Low Flow Channel



SCALE 1:9,000

San Antonio Mineral
Exploration Project

Exhibit 1

Local Access Roads and Drill Areas Map

01/25/2020

Sheet 1 of 1

Appendix B – Spill Prevention, Control, and Countermeasures Plan

**SAN ANTONIO EXPLORATORY DRILLING PROJECT,
SANTA CRUZ COUNTY, ARIZONA**

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

Prepared for:

**UNITED STATES DEPARTMENT
OF AGRICULTURE FOREST SERVICE**

CNF

300 West Congress
Street Tucson, Arizona
85701

Prepared by:

IC Exploration, LLC

P.O. Box 1155, Patagonia, Arizona 85624

January 2020

1.0 SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

1.1. PURPOSE AND GOAL

The purpose of these procedures is to prevent or reduce discharge of materials that may be considered pollutants to the environment. These procedures will result in increased safety and awareness of personnel; elimination or reduction of the potential of releases (regardless of size); and assurance that mitigation, storage, reporting, and disposal procedures are adequate for environmental protection and regulatory compliance.

Copies of the Spill Prevention, Control, and Countermeasure (SPCC) Plan and of the Safety Data Sheets (SDSs) will be located on site with the drill rig, along with copies of SDSs. Employees and contractors are responsible for becoming familiar with the SPCC and SDSs, consistent with the Occupational Safety Health Administration (OSHA) Hazard Communication Standard.

1.1.1. Specific Tasks and Procedures for Spill Prevention and Control

Specific tasks and procedures will be implemented to prevent and control spills of pollutants. Listed below are tasks and procedures to be implemented as part of this plan:

1. Storage areas will be maintained in a clean and well-organized manner. Storage areas will be properly equipped so maintenance and cleanup of leaks or spills of pollutants will occur quickly and as described in Section 1.1.6 of this document.
2. Information on proper storage, cleanup procedures, and reporting protocols will be posted at a visible and accessible location at all times.
3. As applicable, storage areas will have 5-gallon safety cans stored inside a portable trailer. Secondary containment berms and drum containment pans will be used for containment and control of unforeseen leaks and spills of pollutants. Any discharged will be quickly contained and cleaned up using sorbent sites and products.
4. Products and materials that are considered potential pollutants will be protected from rain.

1.1.2. Equipment Fueling

Fueling equipment will have an authorized shut-off nozzle to contain drips of fuel and to eliminate accidental overflow while fueling. The practice of “topping off” the fuel tank while filling will not be allowed. Hand-operated fuel dispensers are not subject to unintended overfilling. Operators will be trained in proper fueling operations and procedures to make sure that they are alert to the task and will not overfill the fuel tank. On work areas on CNF land, plastic sheets and/or absorbent sites will be used underneath equipment to capture and contain any potential spillage of fuels.

1.1.3. Material Storage and Disposal

Good housekeeping practices are designed to minimize amounts of materials stored and the potential release of these products. Listed below are good housekeeping practices to be followed:

1. The amount of product stored on individual drill sites will be limited to that amount required for the job at hand.

2. All materials will be stored in a neat and orderly manner in appropriate containers with approved lids or sealed and enclosed by water resistant covering, as needed.
3. Products will be kept in original containers with the original manufacturer's label.
4. Manufacturer's recommendations for proper storage, use, and disposal of each product will be followed.
5. The authorized field representative or designee will inspect the drill sites daily to ensure proper use and disposal of materials onsite. Inspection logs will be kept onsite and available. Inspection logs will document noticeable problems and outline a time frame for the correction of problems or issues identified.
6. All materials will be stored outside of the waterways.

1.1.4. Preventative Maintenance

Contractors will have preventative maintenance programs in place to ensure vehicles and equipment are utilized under optimum operating parameters and to ensure hoses and fittings are in good condition and leak-free. The operator, mechanic, tool pusher, or other designee will be responsible to execute the repairs or preventative maintenance tasks. Vehicle and equipment repair and maintenance will be documented through the use of maintenance logs. Vehicles and equipment in need of repair will not be put into service until repairs are fully completed.

1.1.5. Source Identification

Potential sources of pollutants include drill rigs, service vehicles, and other equipment. Potential pollutants include any of the substances listed below. These materials are not expected to come into contact with soils or surface waters. Nonetheless, BMPs will be employed to prevent release of pollutants to the environment.

All potential hazardous substances to be used during this Project include the following:

- #2 Diesel
- Regular unleaded gasoline
- Gasoline and diesel engine oil
- Antifreeze
- Hydraulic fluid
- Joint grease
- Cement
- Bentonite

1.1.6. Spill Contingency Plan

Materials and equipment necessary for spill cleanup will be kept in a service vehicle, which will be located at each of the active drill sites. Equipment and materials will include, but not be limited to, brooms, dust pans, rags, gloves, goggles, absorbent materials, and plastic/metal trash containers specifically for this purpose. Many of these materials will also be located on operational vehicles to mitigate releases or spills in the field during the program.

Well-maintained equipment will be used to perform the work required during this project. When practicable, equipment maintenance will be performed off-site. In the event of oil, fuel, and

lubricating grease leaks, cleanup will be conducted as soon as possible. If the leak is on compacted soil, an oil-absorbing product, such as Absorb®, may be applied. Once the cleanup product has absorbed the leak, the product will be removed and placed into watertight drums or bins, labeled, stored, and disposed of according to federal, state, or local regulations. If the leak occurs on uncompacted soil, affected soil will be removed to the depth required to capture the contaminated soils and/or materials. An authorized hazardous waste removal company located in Tucson, Arizona will be used for disposal of contaminated soils impacted from spills. TransChem Environmental of Tucson [(520) 829-5651], or another authorized company of equal ability will be contacted to remove the waste and haul it to the nearest hazardous waste facility depending on the type of spill.

In the case of a spill, procedures and BMPs will be adjusted to include measures that will mitigate reoccurrence and ensure that cleanup procedures are adequate. A description of the spill, cause, cleanup measures, and disposal method will be documented and reported as appropriate.

1.1.7. Spill Response

Spills will be treated as if hazardous. Employees will refer to the SDS and implement the appropriate human health and safety measures and spill cleanup procedures. Regardless of size, spills will be reported to the appropriate supervisor.

The following actions will be taken in the event of a hazardous spill:

1. The authorized field representative or designee will be notified immediately. The authorized field representative or designee will oversee the response and cleanup of hazardous materials releases.
2. If a hazardous material spill is suspected to be dangerous, Emergency Notification procedures provided in **Sections 1.1.7** and **1.1.8** will be implemented.
3. Proper Personal Protective Equipment (PPE) will be utilized.
4. As practicable the release of the material will be stopped or minimized.
5. Employees will avoid contact with the spilled material including avoidance of gases, fumes, and smoke.
6. A reputable, licensed company will be used to cleanup large spills and dispose of contaminated materials.
7. Contaminated materials will be stored in appropriate and approved containers. Containers will be properly labeled following federal, state, and local requirements.

1.1.8. Spill Reporting

For the purpose of establishing appropriate response procedures, this SPCC Plan classifies discharges as either “minor” or “major,” depending on the volume and characteristics of the material released.

A “minor” discharge is defined as one that poses no significant harm (or threat) to human health and safety or to the environment. Minor discharges are generally those where:

- The quantity of product discharged is small (less than 20 gallons of oil, hydraulic fluid or fuel);
- Discharged material is easily stopped and controlled at the time of the discharge;

- Discharge is localized near the source;
- Discharged material is not likely to reach water;
- There is little risk to human health or safety; and
- There is little risk of fire or explosion.

The following guidelines apply to a “minor spill”:

1. Immediately notify the Site Manager
2. Under the direction of the Site Manager, the discharge will be contained with discharge response materials and equipment. Place discharge debris in properly labeled waste containers.
3. The Site Manager will complete the discharge notification form (attached below) and attach a copy to this SPCC Plan.

If the discharge involves more than 20 gallons of oil, hydraulic oil, or fuel, the Site Manager will call the Arizona Department of Environmental Quality Emergency Response Specialist 520-770-3125.

A “**major**” discharge is defined as one that cannot be safely controlled or cleaned up by site personnel, such as when:

- The discharge is large enough to spread beyond the immediate discharge area;
- The discharged material enters water;
- The discharge requires special equipment or training to clean up;
- The discharged material poses a hazard to human health or safety; or
- There is a danger of fire or explosion.

In the event of a **major** discharge, the following guidelines apply:

- All workers must immediately evacuate the discharge site via the designated exit routes and move to the designated staging areas at a safe distance from the discharge.
- If the Site Manager is not present at the facility, the senior on-site person notifies the Site Manager of the discharge and has authority to initiate notification and response. Certain notifications are dependent on the circumstances and type of discharge.
- The Site Manager (or senior on-site person) must call for medical assistance if workers are injured.
- The Site Manager (or senior on-site person) must call the spill response and cleanup contractors listed in the Emergency Contacts listed below.
- The Site Manager (or senior on-site person) must immediately contact the Arizona Department of Environmental Quality (ADEQ) Emergency Response Specialist (520-770-3125) and/or the National Response Center (800) 424-8802.

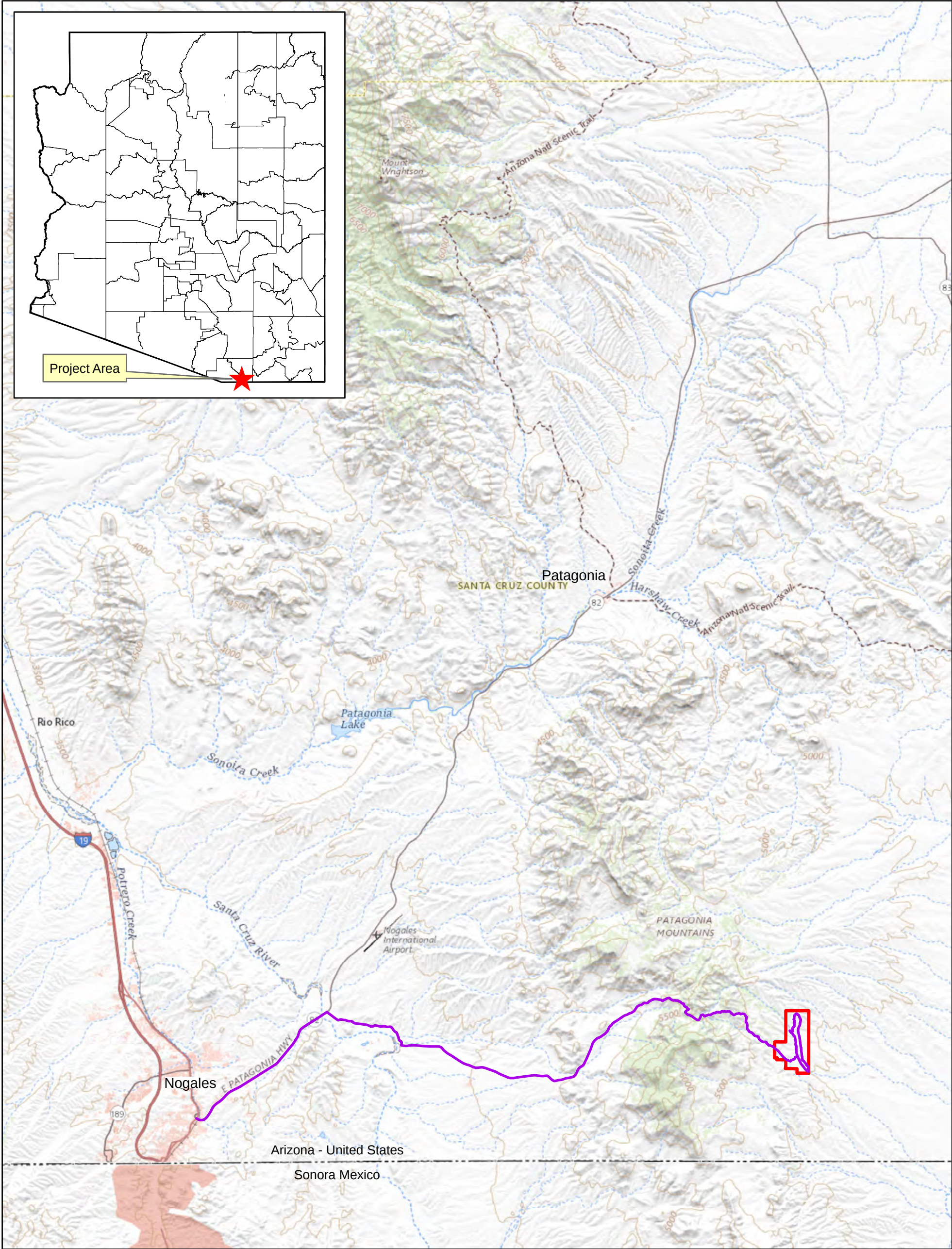
The Site Manager (or senior on-site person) must record the call on the Discharge Notification form and attach a copy to this SPCC Plan.

EMERGENCY CONTACTS

1. Sierra Vista Ranger District, CNF, (520) 378-0311

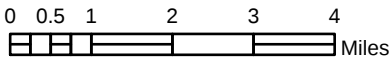
2. Arizona Department of Environmental Quality Emergency Response Specialist (520) 770-3125
3. National Response Center (800) 424-8802
4. TransChem Environmental Tucson (520) 829-5651

The Project is located in Sections 25, 26, 35, and 36, TWP 23 S, RNG 16 E. **Figure 1** depicts the general location of the Project along with regional access roads and **Figure 2** depicts the location of the proposed drill sites.



LEGEND

-  Project Area
-  Proposed Access Route



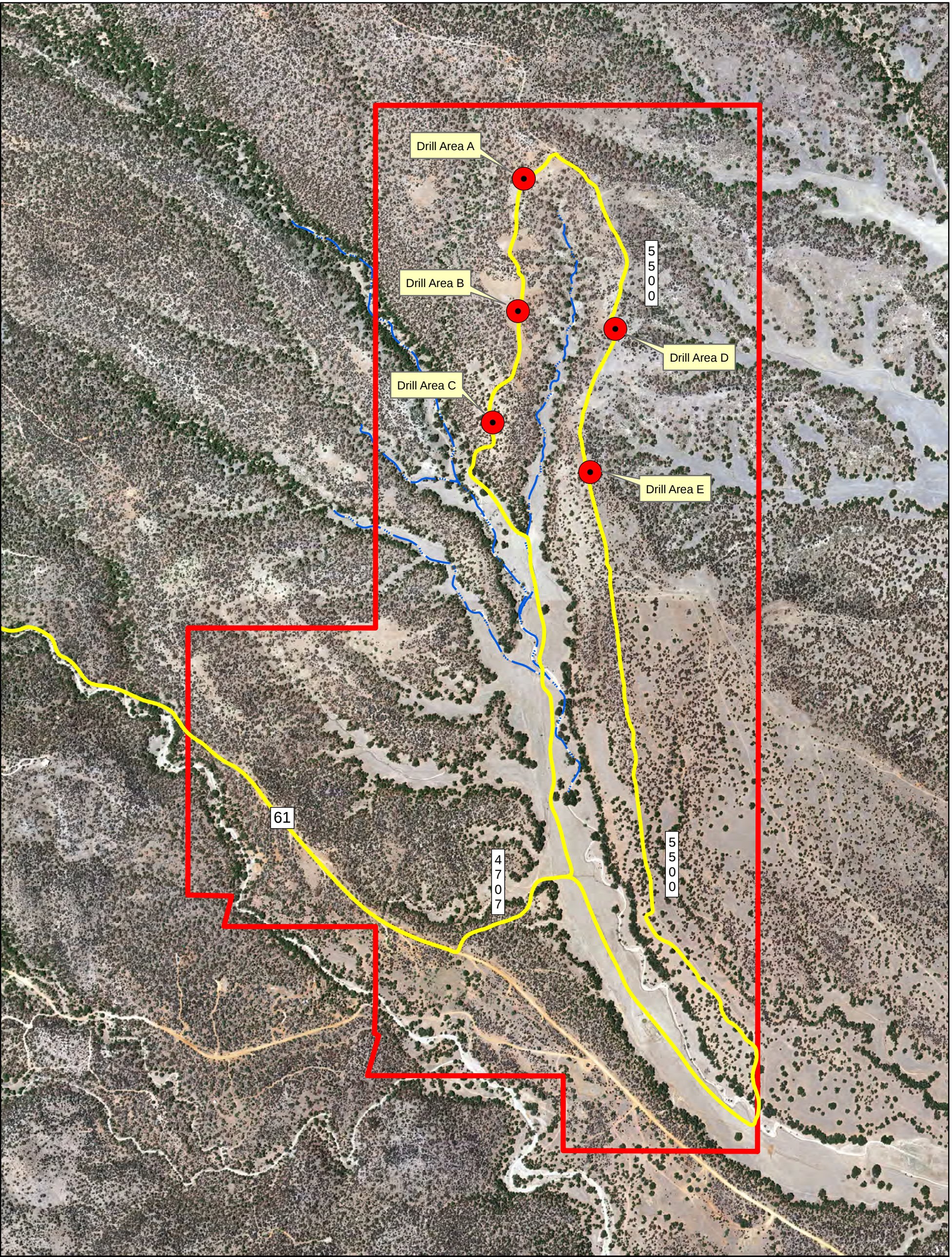
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San Antonio Mineral
Exploration Project

Exhibit 1
Project Area Map

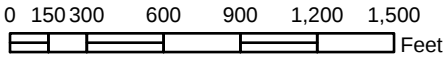
01/25/2020

Sheet 1 of 1



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Low Flow Channel



SCALE 1:9,000

San Antonio Mineral
Exploration Project

Exhibit 4

Local Access Roads and Drill Areas Map

01/25/2020

Sheet 1 of 1

Discharge Notification Form

<i>Part A: Discharge Information</i>		
General information when reporting a spill to outside authorities:		
Name:	IC Exploration LLC	
Address:	P.O. Box 1155 Patagonia, Arizona 85624	
Telephone:	(775) 738-9572	
Owner/Operator:	IC Exploration LLC P.O. Box 1155 Patagonia, Arizona 85624	
Primary Contact:	Site Manager TBD	
	Work:	(xxx) xxx-xxxx
	Cell (24 hrs):	(xxx) xxx-xxxx
Type of Oil:	Discharge Date and Time:	
Quantity Released:	Discovery Date and Time:	
Quantity Released to a Waterbody:	Discharge Duration:	
Location/Source:		
Actions taken to stop, remove, and mitigate impacts of the discharge:		
Affected media:		
G air	G storm water sewer	
G water	G dike/berm	
G soil	G other: _____	
Notification person:	Telephone contact:	
	Business:	
	24-hr:	
Nature of discharges, environmental/health effects, and damages:		
Injuries, fatalities or evacuation required?		
Part B: Notification Checklist		
	Date and time	Name of person receiving call
Discharge in any amount		

Site Manager: TBD (xxx) xxx-xxxx/ (xxx) xxx-xxxx		
Discharge in amount exceeding 20 gallons and <i>not affecting a waterbody or groundwater</i>		
Local Fire Department Patagonia Fire Dept. (520) 394-2435 or 911		
Arizona Department of Environmental Quality 520-770-3125		
<i>Discharge in any amount and affecting (or threatening to affect) a waterbody</i>		
Local Fire Department Patagonia Fire Dept. (520) 394-2435 or 911		
Arizona Department of Environmental Quality 520-770-3125		
National Response Center (800) 424-8802		
TransChem Environmental (520) 829-5651		

Appendix C – Signage Plan

**SAN ANTONIO EXPLORATORY DRILLING PROJECT,
SANTA CRUZ COUNTY, ARIZONA**

SIGNAGE PLAN

Prepared for:

**UNITED STATES DEPARTMENT
OF AGRICULTURE FOREST SERVICE**

CNF

300 West Congress
Street Tucson, Arizona
85701

Prepared by:

IC Exploration, LLC

P.O. Box 1155, Patagonia, Arizona 85624

January 2020

1.0 SIGN PLAN

1.1. PURPOSE AND GOAL

The purpose of the following procedures are to provide temporary fencing, gates and cautionary signs for public safety. These procedures will result in increased safety and awareness of personnel and the public during operations on site. Copies of this plan will be located on site with the drill rig.

1.1.1. Sign Placement

Specific sign placement will be implemented to provide public safety. The safety signs identified below shall be approved and installed prior to the work being performed. Listed below are specific sign placements to be implemented as part of this plan:

1. Truck traffic warning signs at the entrance to FR 4707.
2. Heavy Equipment (drilling equipment) warning signs on FR 4707 within the Project Area.

1.1.2. Sign Specifications

Specifications for signs, markers, barricades, and other traffic devices will be in conformance with the latest revisions of the Manual of Uniform Traffic Control Devices (MUTCD) published by the U.S. Department of Transportation.

1.1.3. Traffic Control

When mechanized equipment is moved on or off public roads, a flag-person will be used to direct traffic and prevent accidents.

1.1.4. Road Closure Procedures

The Forest Service will be notified at least 45 days before drilling progresses on drill sites. The Forest Service will be responsible for ensuring the proper temporary closure order is in place prior to physical closing of roads. The road closure(s) will be properly signed as described above.

Appendix D – Stormwater Pollution Prevention Plan

**SAN ANTONIO EXPLORATORY DRILLING PROJECT,
SANTA CRUZ COUNTY, ARIZONA**

STORMWATER POLLUTION PREVENTION PLAN

Prepared for:

**UNITED STATES DEPARTMENT
OF AGRICULTURE FOREST SERVICE**

CNF

300 West Congress
Street Tucson, Arizona
85701

Prepared by:

IC Exploration, LLC

P.O. Box 1155, Patagonia, Arizona 85624

February 2020

1.0 INTRODUCTION

1.1 Background

This document has been prepared in accordance with the Arizona Department of Environmental Quality (AZDEQ) Arizona Pollutant Discharge Elimination System (AZPDES) General Permit for Stormwater Discharges Associated with Industrial Activity – Mineral Industry (AZMSG2010-003 [MSGP-2010]), pursuant to Arizona Revised Statutes, Title 49, Chapter 2, Article 3.1, the Arizona Administrative Code (A.C.C.), Title 18, Chapter 9, and the Clean Water Act as amended (33 U.S.C. 1251 et seq.). This document is IC Exploration's Storm Water Pollution Prevention Plan (SWPPP or Plan) for construction activities and has been developed to address associated ground disturbance with this Project.

The SWPPP identifies measures to be implemented by IC Exploration's contractor during construction activities with the goal of minimizing erosion on disturbed areas, minimizing the discharge of sediment and other pollutants in storm water runoff, and maintaining compliance with requirements of the Permit. This SWPPP also identifies a schedule for inspection(s) and maintenance of the proposed measures to ensure they are functioning properly and meet the requirements of the Permit. Additionally, the SWPPP outlines the final stabilization and termination design to minimize storm water impacts after construction is complete.

2.0 SITE DESCRIPTION

2.1 Project Type and Construction Activities

IC Exploration's proposed San Antonio Drilling Project is designed to evaluate the location, concentration, quality, and type of mineralization in the area, and to collect initial subsurface data that could be used should the Project advance, via an Environmental Assessment (EA), to a larger drilling program aimed at establishing the feasibility of possible future mining operations. There is no guarantee that the results of the proposed drilling program will justify further exploration. The Project proposes exploration work only, including drilling. No mining, milling, or permanent facilities are being proposed.

Three primary drill sites (Drill Sites A, B, C, D and E) have been identified in the field and are shown in **Exhibit 1 - Appendix A**. Each drill site will be constructed to dimensions of approximately 50 feet long by 50 feet wide.

A network of system and non-system roads already exists within the Project Area (**see Exhibit 1-Appendix A**). These roads would be used as is for access to the proposed drill sites. No, blading, grading, or road updates are being proposed. The drill rig and all other large equipment will be brought in on a lowboy tractor trailer using the proposed access route until they reach FR 4707. From there, the drill rigs will self-propel to the individual drill sites. The remaining support equipment will also be brought into the site along the proposed access. All vehicle traffic, including the drillers' daily travel, will use this route, as well.

A dual tube reverse-circulation (RC) drill rig would be used to drill all holes under the proposed drilling program. RC drilling employs a downhole pneumatic reciprocating piston known as a downhole hammer, which drives a drill bit (typically 4.5 to 5.75 inches in diameter) with round protruding tungsten-carbide buttons that can cut hard rock. The drill bit is mounted at the end of a hollow, dual wall drill pipe, through which compressed air is pumped down the hole in the outer chamber of the dual wall drill pipe to power the

drill bit. Rock cuttings are then returned to the surface via the inner chamber of the dual wall drill pipe, propelled upward by air pressure.

Upon completion of the drilling, the hole would be filled with “Wyoming grade” bentonite mud (with a permeability of no more than 1×10^{-9} cm/s) which would serve as a permanent seal, the surface steel casing removed, and a surface cement plug (up to 20 feet in depth) installed as a permanent drill hole cap. These borehole abandonment procedures would conform to Arizona Department of Water Quality (R 12-15-811, 816 and 817) regulations, and ASTM Designation: D5299/D5299M – 18 *Standard Guide for Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and Other Devices for Environmental Activities (as revised)*.

2.2 Project Area and Disturbance Estimate

The Project is located in Santa Cruz County, Arizona, on lands managed by the U.S. Forest Service, Coronado National Forest in Townships 23 & 24 South, Range 16 East. The Project will result in less than 0.25 acre of temporary ground disturbance.

2.3 Sequence of Activities

The following outlines the steps of the planned activities:

- A single reverse circulation (RC) drill rig would be utilized for the proposed drilling program;
- Brushing and limb removal where necessary along access roads and drill sites to allow safe access of drill rigs and other support equipment;
- Exploration drilling will be undertaken on each drill site over an approximately 15-day period, with one additional day at the beginning and end of the program used for mobilizing and demobilizing the all equipment;
- Operating hours are proposed to occur during sunrise to sunset hours daily;
- For each drill hole, drill cuttings will be logged, sampled, and removed from the drill site;
- All drill holes will be completed and abandoned as described herein;
- All equipment will be removed from the Project Area upon completion of drilling activities.

Installation of soil erosion and sedimentation control devices will occur prior to ground disturbance and/or site preparation as determined by a qualified IC Exploration representative. Erosion control device(s), installation and subsequent monitoring shall be conducted in accordance with the frequency specified in this Plan (See Section 5).

2.4 Project Soils

Soil mapping units within the Project Area are shown in **Exhibit 2 – Appendix A** and summarized in the **Table 1** below.

2.5 Receiving Waters

The receiving waters for possible stormwater discharges from the San Antonio Exploration Project are Finley and Adams Canyons (**Exhibit 3 - Appendix A**). Sediment and erosion control measures will be implemented to minimize potential impacts to the watershed during construction (see Section 3.2). Runoff from the proposed drill sites generally flows south and southwest into several unnamed drainages which are tributaries to Finley and Adams Canyons.

Table 1: Soil Types and Properties of the Project Area

Map Unit Symbol	Map Unit Name	Drainage Class	Hydric Rating	Area (Acres)	Percent Area
WgE	White House gravelly loam, 10 to 35 percent slopes	Well Drained	Not Hydric	309	47.4
WgC	White House gravelly loam, 0 to 10 percent slopes	Well Drained	Not Hydric	118	18.1
GaE	Gaddes very gravelly sandy loam, 5 to 30 percent slopes	Well Drained	Not Hydric	93	14.3
Ge	Grabe soils	Well Drained	Not Hydric	88	13.5
Mg	Martinez gravelly loam	Moderately Well Drained	Not Hydric	32	4.9
GbB	Grabe-Comoro complex, 0 to 5 percent slopes	Well Drained	Not Hydric	7	1.1
HaF	Hathaway gravelly sandy loam, 20 to 50 percent slopes	Well Drained	Not Hydric	3	0.5
Total				651	100.0

2.6 Site Map

Maps of the Project Area can be found in **Appendix A**. These maps depict the following features if present:

- Project location;
- Land ownership;
- Soils; and
- Wetlands, floodplains, waterbodies, and impaired waters.

3.0 CONTROLS

3.1 Personnel

The SWPPP Coordinator responsible for overseeing SWPPP implementation, inspection, and maintenance of erosion control Best Management Practices (BMPs) during construction and drilling activities associated with the proposed Project is:

TBD:

IC Exploration will implement their corporate Spill Prevention Containment and Countermeasure Plan (SPCC Plan). Project staff will be oriented to the SPCC Plan. IC Exploration will train responsible parties as to the fundamentals and principles of erosion control. This training will include a review of standard BMPs. IC Exploration's SPCC Plan is contained in **Appendix B** of the Plan of Operations.

A log will be kept tracking employee orientation and training (Appendix D).

3.2 Erosion and Sediment Controls

Prior to the commencement of construction activities, IC Exploration will clearly mark the boundaries of approved work areas, so they are easily identifiable by Project personnel. Project activities shall be confined to the approved work areas. Project activities are not permitted outside these areas.

3.2.1 Structural Practices

IC Exploration's contractor shall install temporary sediment barriers during drilling operations using silt fence and/or double-staked straw bales (see typical details found in Appendix C). Temporary sediment barriers shall be installed per manufacturer's specifications and maintained within the approved work area at the base of slopes adjacent to wetlands, waterbodies, ditches, drainage channels and other storm water conveyance systems; along the edge of the approved work area where wetlands, waterbodies, ditches, drainage channels, or other storm water conveyance systems are directly adjacent to the approved work area; where necessary to contain spoil and sediment within the approved work area (e.g., on steep side slopes or in saturated areas that straddle the border of the work site); and at other locations as directed by the SWPPP Coordinator, as applicable. If work is being conducted near a wetland, proper sediment and erosion control methods shall be installed and maintained along the edge of the wetland areas.

Sediment barriers such as temporary degradable rolled erosion control products or vegetative buffers will remain functional until permanent vegetation has become successfully re-established (i.e., 70 percent perennial vegetation cover as compared to adjacent undisturbed areas). If non-degradable devices such as silt fences are used, the barriers will be removed and disposed of properly once final stabilization has occurred. Final stabilization for the project area may be achieved by installing temporary erosion control measures with an appropriate seed base to provide erosion control for at least three years and achieve 70 percent vegetative coverage within three years without active maintenance since the Project Area receives on average less than 20 inches of rainfall annually.

No temporary or permanent drainage ditches may be constructed to drain water from the construction site. Temporary and permanent trench breakers will be installed as necessary.

Temporary slope breakers will be installed as necessary, typically on slopes that are 5 percent or greater. Slope breakers will be configured to divert water off the project site to reduce the volume and velocity of storm water runoff on slopes. Spacing of the breakers will be determined on site but will generally conform to the following guidelines:

<u>Slope (%)</u>	<u>Spacing (feet)</u>
5 – 15	300
>15 – 30	200
>30	100

Arizona Standard's contractor will control the tracking of debris onto public roads by installing a combination of crushed stone access pads, matting, and/or culverts at project access points that abut paved public roads. If sediment is tracked onto paved roads, the contractor will remove the debris in a timely manner, typically by the close of business.

Sediment barriers located in active portions of the work area may be removed during the day when work is being conducted but must be replaced each night or at the onset of inclement weather (e.g., rainstorm). Sediment barriers will be inspected daily in areas of active construction and repaired as needed throughout construction to maintain functionality. Sediment barriers shall be cleaned, repaired and/or replaced when sediment reaches one-third the height of the barrier and within 24 hours of discovery during active construction and within 24 hours thereafter.

3.2.2 Stabilization Practices

Upon completion of construction, IC Exploration's contractor shall make every effort to initiate stabilization measures on disturbed areas within 14 days of final grading activities. Initiation of final or temporary stabilization may exceed 14 days if earth-disturbing activities will be resumed within 21 days. Perennial herbaceous vegetation will be used to permanently stabilize the project site.

Prior to seeding, Arizona Standard's contractor will remove construction debris and grade the area to condition the site for seedbed preparation. The contractor will prepare the seedbed to a depth of 3 to 4 inches using appropriate equipment to provide a firm uniform seedbed. If the area will be hydro seeded, the seedbed shall be scarified to facilitate seed lodging and germination.

Permanent seeding of the area will be completed with a seed mix compatible with the soil and climate of the area and will be seeded within the recommended seeding dates as recommended by the Forest Service AO. Mulch shall be applied before seeding if final cleanup is not completed in an area within 10 days after the area has had final grading, or if construction or restoration activity is interrupted for extended periods as determined by the SWPPP Coordinator. If mulching before seeding, Arizona Standard's contractor will increase mulch applications on slopes within 100 feet of wetlands, waterbodies, ditches, drainage channels, or other storm water conveyance systems to a rate of three tons per acre.

Mulch typically consists of straw (not hay) or a paper-based biodegradable material. Mulch may also consist of erosion control fabrics. Erosion control fabrics usually consist of a geotextile mesh interwoven with large fibers, such as straw or wood strands. Jute thatching or bonded fiber blankets are two types of erosion control fabrics. If field conditions do not allow for timely reseeding or mulching (e.g., frozen ground), reseeding will take place at the earliest practicable date.

Final stabilization is complete when a 70 percent vegetative cover has been achieved throughout the project area as compared to the natural adjacent landscape. Because the project area receives an average of less than 20 inches of annual rainfall, final stabilization may be achieved by installing temporary, degradable erosion control measures along with an appropriate seed base to provide erosion control for at least three years and achieve 70 percent vegetative coverage within three years without active maintenance.

Temporary synthetic, structural, and non-biodegradable erosion and sediment control measures must be removed after restoration is complete and before permit coverage is terminated.

3.3 Storm Water Management

Permanent soil erosion and sediment controls will be put in place as soon as practicable and as necessary after final cleanup. Permanent erosion controls are addressed in more detail under Stabilization Practices in Section 3.2.2. Arizona Standard's contractor will restore the Project area to as close to preconstruction contours where possible. A small area will involve the addition of an impervious surface (e.g. structure roof); the Project will not generate a measurable increase in off-site storm water runoff into surface waters or wetlands.

In periods of heavy precipitation, sediment-laden storm water runoff will travel through temporary soil erosion and sediment control measures and/or established vegetation, thereby reducing pollutant transport. All runoff will be directed to these areas and via culverts when necessary to bypass site access roads.

3.4 Other Controls

Waste Disposal: Non-hazardous construction wastes generated will be containerized and properly disposed of off-site. Storm water contact with wastes will be minimized. Wastes not native to the construction site will be disposed of off-site. No hazardous wastes are anticipated to be generated during this Project. IC Exploration and its contractor will comply with applicable federal, state and local waste disposal, sanitary sewer or septic system regulations.

Spill Control and Response: To protect against accidental release of lubricant, coolant, or fuel, equipment will have catch pans and absorbing pads. The drilling contractor will have on-site equipment and materials needed to prevent and/or contain an accidental spill. Construction equipment will be inspected each morning before work starts and frequently during the workday to check for leaks and to repair or replace hoses or connections that are in danger of failure. IC Exploration and its drilling contractor will follow the procedures in its SPCC Plan (see Appendix D).

Other Practices: IC Exploration's drilling contractor will apply water as necessary to control excessive dust due to equipment travel on roadways and on the surface around each drill pad. No water will be used directly for RC drilling activities.

3.5 Record Keeping

It is recommended that a schedule is maintained of when interim and permanent stabilization practices have been implemented on the site. Examples of these practices may include:

- ☐ Dates when major grading activities occur;

- ☐ Dates when construction activities temporarily or permanently cease on a portion of the site; and
- ☐ Dates when stabilization measures are initiated.

SWPPP records will be maintained at the following locations as detailed below:

- ☐ During Active Construction: On-site or in the control of the responsible party or SWPPP Coordinator;
- ☐ During Restoration: Contractor's office; and
- ☐ After Termination: Contractor's office.

4.0 MAINTENANCE

The following inspection and maintenance practices will be used to maintain erosion and sediment controls:

- Silt fences will be inspected for:
 - Depth of sediment;
 - Tears in the fabric;
 - Proper attachment to fence posts; and
 - To see that the fence posts are firmly in the ground.
- Where silt fence is identified with sediment levels reaching one-third the height of the silt fence, the sediment will be removed from the silt fence, and if necessary, the silt fence repaired or replaced.
 - Straw bales will be inspected for proper installation and performance.
 - Temporary and permanent seeding will be inspected for bare spots, washouts, and unhealthy growth.
 - Ineffective or damaged erosion and sediment controls will be repaired on the following schedule:

Construction Phase	Project Area	Time from Discovery to Conduct Maintenance
Construction	Active Construction	Within 24 Hours
Restoration	30+ days Post Construction	Within 72 Hours
Restoration	Restricted Access	Within 72 Hours
Restoration	Highly Sensitive Areas	Within 48 Hours

Any delay in the replacement or maintenance of nonfunctional BMPs beyond seven (7) days shall be documented in the SWPPP with sufficient detail as to explain the reason for the delay. Inspections will be performed until the site is permanently stabilized. Installation of necessary erosion control measures or repairs to existing erosion control measures must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the SWPPP and alternative BMPs must be implemented as soon as possible.

5.0 INSPECTIONS

As required by the Permit, the Project area will be inspected for erosion and sediment control issues with the following frequency:

During active construction:

- At least once every 14 calendar days, and
- Within 24 hours of a 0.5 inch or greater rainfall event.

During restoration:

- A minimum of once per month.

Frozen conditions or dangerous elements:

- Inspections shall be temporarily suspended when ground disturbing activities are suspended due to frozen conditions, or if conditions pose a significant risk to project personnel.

Limited access:

- First growing season: Portions of the project area that have limited access and that would suffer damage due to access shall be monitored on a quarterly basis when not frozen.
- Second growing season: Limited access areas shall be inspected monthly in April, May, and June. Quarterly inspections resume in July through frozen conditions or final stabilization.

Visual inspections of all erosion and sediment control measures and other protective measures identified in the SWPPP will be performed for evidence of pollutants entering the drainage system. The inspection will verify that the structural BMPs are in good condition and are minimizing erosion and sediment migration. Construction entrances and exits will be inspected for evidence of sediment being tracked offsite. The inspection will also verify that the procedures used to prevent storm water contamination from the construction activities are effective. Inspections will continue until the site has reached final stabilization and a Notice of Termination has been submitted (Appendix C).

5.1 Identification of Potential Storm Water Contaminants

The primary pollutant sources are disturbed soils and subsequent surface water runoff within the construction area(s). Other potential pollutant sources include debris from brush and limb clearing operations and petroleum products (see below) needed for the construction equipment. The following practices will be followed during the course of the Project for spill prevention:

Fuels and Hazardous Materials Handling

- Refueling of equipment or hazardous material transfer will occur in designated areas only;
- No refueling or hazardous material transfer will occur within 100 feet of a wetland, waterbody, spring or water supply well; and
- Where conditions require that construction equipment (i.e., pumps used in trench dewatering) be refueled within 100 feet of wetlands or waterbodies, sufficient oil and fuel containment

booms and absorbent materials will be on-hand to allow for rapid containment and recovery of a spill.

In the event of a spill, IC Exploration will follow procedures outlined in its SPCC Plan (see Appendix B in the Plan of Operations).

5.2 Inspection Reports

An inspection report (see Appendix C) will be prepared after each inspection and will be maintained on-site during the entire construction project. Records of each inspection and of maintenance activities will include:

- Date and time of inspection;
- Name, title, and qualifications of person(s) conducting inspections;
- Scope and findings of inspections, including recommendations for corrective actions;
- Location(s) of discharges of sediment or other pollutants from the site;
- Location(s) of BMPs that need to be maintained;
- Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
- Location(s) where additional BMPs are needed that did not exist at the time of inspection;
- Corrective actions taken (including dates, times and party completing maintenance activities);
- Documentation of changes made to the SWPPP;
- Identify any incidents of non-compliance;
- Records will be maintained as part of the SWPPP for at least 3 years from the date an area has undergone final stabilization.

Based on the results of the inspection, the plan will be revised and implemented no later than seven (7) calendar days following the inspection. Where an inspection does not identify any incidents of non-compliance, the report will contain a certification that the site is in compliance with the plan and the Permit (see Appendix B). The report will be signed in accordance with the signatory requirements for the permit.

6.0 KEEPING PLANS CURRENT

Arizona Standard will amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the State. The plan will also be amended to improve observed deficiencies associated with treatment of storm water discharges. Changes will be tracked in the SWPPP Modification Log (Appendix F).

7.0 FINAL STABILIZATION

IC Exploration will be responsible for ensuring that final stabilization is accomplished on non-impervious surfaces prior to submitting the construction storm water Notice of Termination form. Coverage will be terminated when:

- Soil disturbing construction activity has been completed;
- Final stabilization is achieved by utilizing one of the following:

- A uniform perennial vegetative cover with a minimum density of 70 percent of the native background vegetative cover has been established on all non-impervious surfaces and areas not covered by permanent structures, or
- Equivalent permanent stabilization measures have been employed, or
- Temporary erosion control measures have been installed with an appropriate seed base to provide erosion control for at least three years and achieve 70 percent vegetative coverage within three years without active maintenance in areas that receive an average annual rainfall of less than 20 inches;
- All non-degradable temporary erosion protection and sediment control BMPs have been removed without compromising the permanent erosion protection and sediment control BMPs;
- All sediment build-up has been removed from conveyances and basins that are to be used as permanent water quality management BMPs. The cleanout of permanent basins used as temporary BMPs during construction shall be sufficient to return the basin to design capacity; and
- Responsibility for long-term maintenance of permanent BMPs must be assigned.

8.0 CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Name: _____

Title: _____

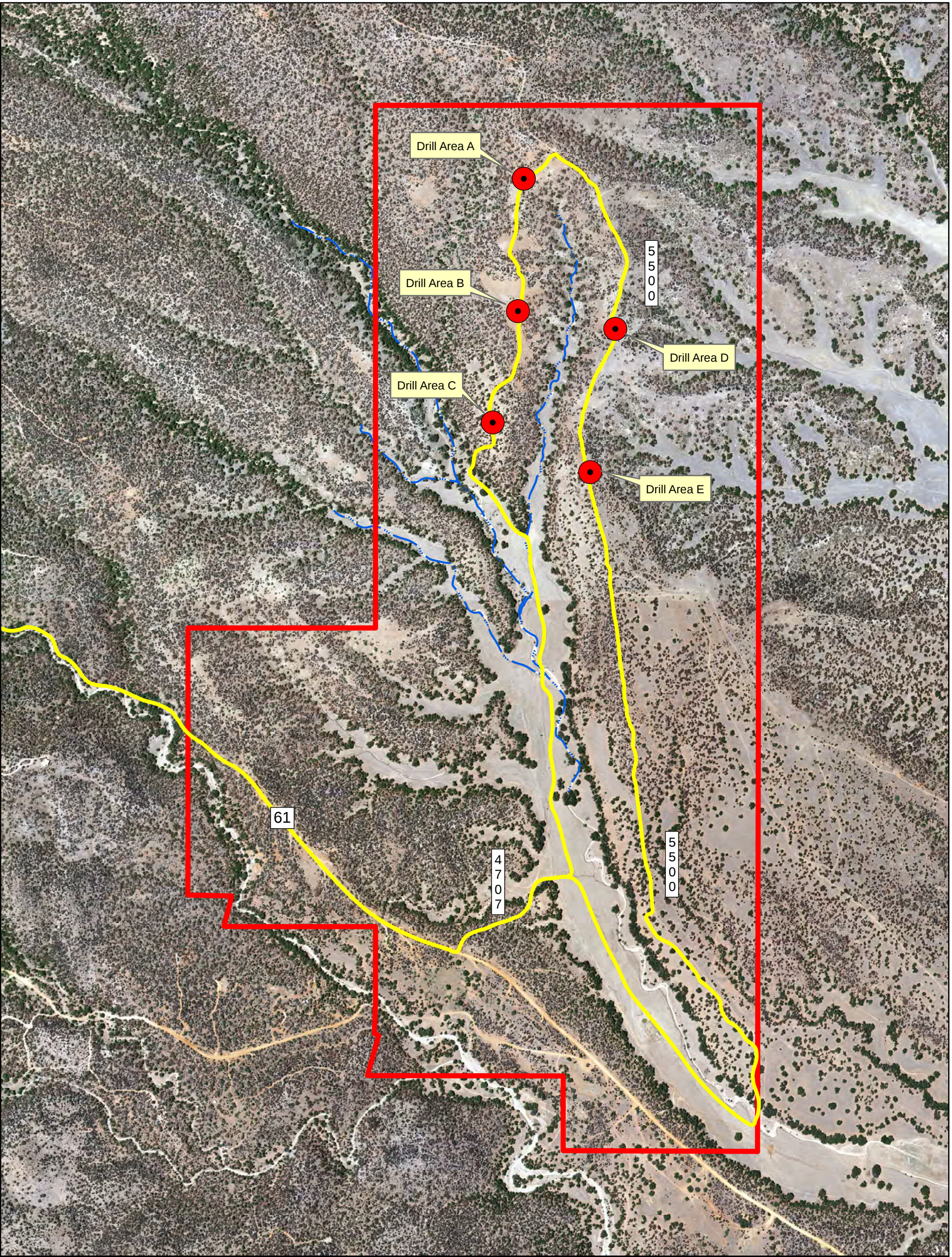
Signature: _____

Date: _____

APPENDICES

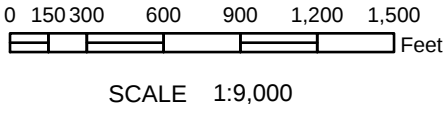
Appendix A

Exhibits



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Low Flow Channel



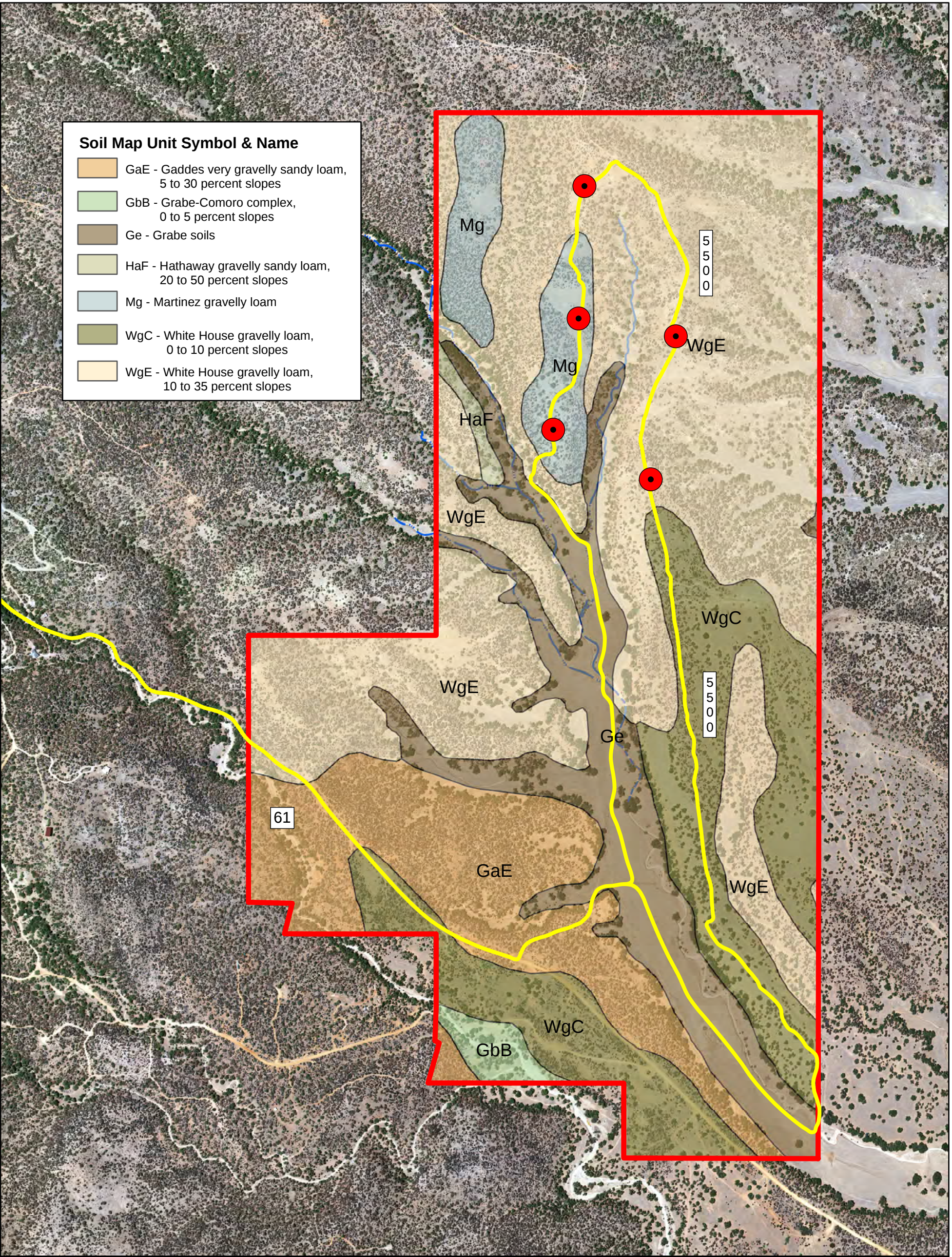
San Antonio Mineral
Exploration Project

Exhibit 1

Local Access Roads and Drill Areas Map

01/25/2020

Sheet 1 of 1



LEGEND

- Project Area
- Proposed Drill Site
- Proposed Access Road
- Mapped Soils
(See Inset Above for Soil Map Unit & Name)



0 150 300 600 900 1,200 1,500
Feet
SCALE 1:9,000

**San Antonio Mineral
Exploration Project**

Exhibit 2
Soil Mapping Units

Appendix B

General Permit for Storm Water Discharges Associated with Construction Activity

Appendix C

Inspection Report Form

Appendix D

Employee Training Log

SWPPP Training Log

Project Name: San Antonio Mineral Exploration Project

Location: Santa Cruz County, Arizona

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ☐ Erosion Control BMPs ☐ Emergency Procedures
☐ Sediment Control BMPs ☐ Good Housekeeping BMPs
☐ Non-

Stormwater

BMPs

Specific

Training

Objective:

Attendee Roster: (attach additional pages as necessary)

No.	Name of Attendee	Company
1		
2		
3		
4		
5		

6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Appendix E

Additional Owners/Operators

Additional Owners/Operators

This section is provided to include additional owners and operators that may be designated by the permit holder to perform activities on a project (i.e., subcontractor). The additional owners/operators must adhere to this Storm Water Pollution Prevention Plan.

Signatory:

“I certify under penalty of law that I have personally read, understood, and accepted all terms and conditions of this Storm Water Pollution Prevention Plan, and that I shall implement the Plan accordingly. I am also familiar with the NDPDES General Permit for Storm Water Discharges Associated with Construction Activity (NDR10-0000).”

Printed Name	Signature	Title	Company Name	Date

Appendix F

SWPPP Modification Log

Appendix F – SWPPP Modification Log

Project Name: San Antonio Mineral Exploration Project

SWPPP Contact: TBD

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix E – Reclamation and Revegetation Plan

SAN ANTONIO EXPLORATORY DRILLING PROJECT

SANTA CRUZ COUNTY, AZ

RECLAMATION AND REVEGETATION PLAN

Prepared for:

**UNITED STATES DEPARTMENT
OF AGRICULTURE FOREST SERVICE**

Coronado National Forest

300 West Congress Street
Tucson, Arizona 85701

Prepared by:

IC Exploration LLC

P.O. Box 1155
Patagonia, Arizona 85624

April 2020

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Exhibit 2: Local Access Road and Drill Areas

Exhibit 3: Diagram of a Typical Drill Pad Layout Parallel to the Existing Access Road

Exhibit 4: Soils Map

1.0 INTRODUCTION

IC Exploration, LLC (IC Exploration) is proposing an exploratory drilling project designed to evaluate the location, concentration, quality, and type of mineralization in the area, and to help establish the feasibility of potential future mining operations. The proposed San Antonio Exploratory Drilling Project (hereafter referred to as “Project” or “proposed Project”) is located within the Sierra Vista Ranger District of the Coronado National Forest (CNF) where surface use is administered by the U.S. Forest Service (USFS). The Project, which includes all proposed drilling areas and temporary low-standard access roads on CNF lands, is located approximately 15 miles east of the town of Nogales, in Santa Cruz County, Arizona within Sections 1, 2, 35 and 36; Township 22 and 23 South; Range 16 East (**Exhibit 1**). The Project includes ground-disturbing activities associated with exploratory drilling at up to five (5) individual drill sites as part of the proposed drilling program.

1.1 Purpose and Scope

This Restoration and Revegetation Plan (Plan) is an Appendix to the Plan of Operations (PoO) submitted by IC Exploration which outlines the initial engineering design, construction procedures, and general environmental mitigation measures for the proposed Project on CNF-managed lands. This Plan describes the overall procedures, techniques, and resources that would be employed for reclamation of those areas utilized or disturbed by exploration activities. Site reclamation activities would be conducted immediately after drilling is completed at all five drill sites, which is estimated to occur over an approximate 30-day period. IC Exploration will reclaim and revegetate all disturbed areas in a manner compatible with the land use selected and contained herein. Concurrent and final reclamation and revegetation practices will utilize best practicable established and acceptable technologies suitable to the vegetation, climate, and soils within the Project Area and surrounding region.

1.2 Statement of Responsibility

IC Exploration will have the overall responsibility for implementing, directing, and monitoring reclamation measures, revegetation, noxious and invasive weed management, and all other mitigation identified in this Plan. To best accomplish this, IC Exploration will retain the services of a Reclamation Contractor who specializes in reclamation to implement the protocols identified in this Plan during and following construction.

The Forest Service does not have specific technical requirements related to reclamation plans. However, the Forest Service requires reclamation bonds for all mineral activities that will potentially cause significant surface disturbance and require reclamation (Forest Plan Management Direction MIST06). IC Exploration will provide a reclamation bond to ensure compliance with the terms and conditions of the CNF special-use authorization and other applicable regulatory requirements, including reclamation and administrative costs to the CNF. The amount of the required bond will be determined by the Minerals Administrator during the special-use authorization process based on site-specific and project-specific factors, including measures identified in this Plan.

1.3 Schedule

Initial reclamation tasks, beginning with topsoil salvage for areas associated with the sump, will begin with construction of each of the five drill pads upon approval of the Project, presumed to be in late 2020 or early 2021. Reclamation and revegetation will commence upon completion of drilling of all five drill pads, which is estimated to occur over a 30-day period.

2.0 DESCRIPTION OF PROJECT-RELATED DISTURBANCES REQUIRING RECLAMATION

2.1 Access Roads

A network of system and non-system roads already exists within the Project Area (**Exhibit 2**). These roads would be used as is for access to the proposed drill sites. No, blading, grading, or road updates are being proposed.

2.2 Drill Sites

IC Exploration will employ a drilling contractor to conduct exploratory drilling at up to five (5) individual drill sites as part of the proposed Project. The drill sites (A through E) have been identified in the field and are shown in **Exhibit 2**. Drill sites will be situated within the road prism of existing access roads in order to minimize the amount of disturbance. Dimensions, orientation, and equipment layouts for each drill site may vary depending on the terrain and other surface requirements. However, most of the drill sites would be constructed to dimensions of approximately 50 feet wide by 50 feet long. A typical drill site layout is shown in **Exhibit 3**.

At each drill site, minor grubbing and tree limb removal may be necessary to accommodate proper orientation of the drill rig and provide for safe operation and access. No trees are proposed to be removed nor would there be any blading, grading, or large-scale removal of vegetation. Each drill site will be mowed/trimmed prior to the beginning of drilling to cut back dry grasses, if present, within 20 feet of the drill equipment in order to prevent fire.

At each drill site an in-ground sump measuring approximately 4 feet wide by 8 feet long by 4-foot-deep would be dug adjacent to the drill rig for the purpose of collecting groundwater encountered during drilling. Topsoil and subsoil from each sump would be placed along the edge of the drill site for later distribution upon completion of drilling at each site.

Areas that have become compacted due to drilling activities will be ripped, roughened, and/or scarified to allow for infiltration of precipitation and to prevent erosion using a mini excavator. Revegetation will primarily rely on natural revegetation from seeds and roots in salvaged topsoil material. In the event that this is not practical, disturbed areas will be reseeded in accordance with CNF guidelines using approved seed mixes of certified native weed-free species. Soil on areas to be seeded will be left in a roughened, de-compacted condition favorable to the retention and germination of the seed. For purposes of analysis in this Plan, it is assumed that up to 80 percent of each drill site (or 0.05 acres) will need to be reclaimed and reseeded for a total of approximately 0.25 acres of disturbance.

3.0 EXISTING ENVIRONMENT

3.1 Soils

Soils in the Project Area consist of igneous- and volcanic-derived cobbly loams with components of clay or sand that are interspersed with rock outcroppings and underlain by andesite and dacite (Ludington *et al.* 2005; USDA 2010). Seven primary soil map units are present within the Project Area. These seven soil map units are shown in **Exhibit 4** and summarized in **Table 1** below.

Table 1: Soil Types and Properties of the Project Area

Map Unit Symbol	Map Unit Name	Drainage Class	Hydric Rating	Area (Acres)	Percent Area
WgE	White House gravelly loam, 10 to 35 percent slopes	Well Drained	Not Hydric	309	47.4
WgC	White House gravelly loam, 0 to 10 percent slopes	Well Drained	Not Hydric	118	18.1
GaE	Gaddes very gravelly sandy loam, 5 to 30 percent slopes	Well Drained	Not Hydric	93	14.3
Ge	Grabe soils	Well Drained	Not Hydric	88	13.5
Mg	Martinez gravelly loam	Moderately Well Drained	Not Hydric	32	4.9
GbB	Grabe-Comoro complex, 0 to 5 percent slopes	Well Drained	Not Hydric	7	1.1
HaF	Hathaway gravelly sandy loam, 20 to 50 percent slopes	Well Drained	Not Hydric	3	0.5
Total				651	100.0

3.2 Vegetation

The Project Area is located within the Madrean evergreen woodland biotic community (Brown and Lowe 1980). The predominant vegetation community in the Project Area is Madrean Encinal, which occurs on foothills, canyons, bajadas and plateaus in the Project Area and surrounding region. These woodlands are dominated by Madrean evergreen oaks along a low-slope transition below Madrean Lower Montane Pine-Oak Forest and Woodland and Madrean Pinyon-Juniper Woodland. Lower elevation stands are typically open woodlands or savannas where they transition into desert grasslands, chaparral or in some cases desertscrub. Common evergreen oak species include Arizona white oak, emory oak, dwarf oak, scrub oak, and Arizona blue oak.

The second most common vegetation community in the Project Area is Apacherian-Chihuahuan Semi-Desert Grassland and Steppe. It is found on gently sloping alluvial fans and plains and on mesas and steeper piedmont and foothill slopes within the Project Area and surrounding region. This diverse grassland often includes scattered succulents, short and tall shrubs or small trees. Common grass species include grama grasses (black, blue, chino, hairy, Rothrock's, and sideoats), plains lovegrass, muhly (bull, bush, and curly-leaf), and James' galleta.

4.0 SITE RECLAMATION AND REVEGETATION PROCEDURES

4.1 Topsoil Stripping and Salvage

As previously mentioned, no blading, grading, or large-scale removal of vegetation is anticipated for each of the drill sites. However, at each drill site an in-ground sump measuring approximately 4 feet wide by 8 feet long by 4-foot-deep would be dug adjacent to the drill rig for the purpose of collecting groundwater encountered during drilling. Topsoil and subsoil from each sump would be placed along the edge of the drill site for later distribution upon completion of drilling at each site.

Topsoil would be windrowed along the perimeter of drill pad sites in a pile no higher than three feet for the duration of the drilling activities. Topsoil stockpiles would be located minimum of 50 feet away from concentrated flows of stormwater, drainage courses, and outside of riparian areas. Topsoil stockpiles would be protected from stormwater run-on using a temporary perimeter sediment barrier such as earthen berms, fiber rolls, or silt fences.

4.2 Woody Plant Removal and Storage

At each drill site and along temporary access roads, minor brushing and limb removal may be necessary to accommodate proper orientation of the drill rig and provide for safe operation and access. None of the trees or limbs proposed to be removed at drill sites and along access roads are anticipated to be equal to or greater than 5-inch diameter-at-breast-height (dbh) or 5-inch diameter root collar (drc). All woody debris removed at drill sites and along access roads would be stockpiled adjacent to the drill sites and along segments of the temporary access roads and later be shredded or scattered back across these areas during final reclamation.

4.3 Completion and Closure Activities

Following the completion of drilling activities at each drill site, all materials, including equipment, water tanks, lubricants and other products, cores, plastic sheeting, and solid wastes (trash, etc.) will be removed from the site and disposed of at an off-site disposal facility. Sumps will then be backfilled with the previously excavated material. Any remaining drill cuttings will be removed at the completion of drilling activities at each pad.

All drill holes will be plugged/abandoned in accordance with the ADWR well abandonment handbook and AAC regulations 12-15-816 and 817 using bentonite clay then followed with a 20-foot surface cap of neat cement at least 2 feet below the reclaimed surface (ADWR Well Abandonment Handbook). The specific mixing and emplacement procedures will be conducted according to manufacturer's specifications, and this information, as well as geologist and/or engineer logging and verification of slurry QA/QC volume calculations, will be documented and provided to the CNF and ADWR as requested.

4.4 Recontouring and Decommissioning Activities

IC Exploration will complete all reclamation activities at the completion of the proposed drilling program. If necessary, drill sites roads will be regraded and re-contoured to match approximately the surrounding topography. Emphasis during recontouring will be to return all disturbed areas to approximate original contour, to stabilize slope, as appropriate, control surface drainage, and to provide a more aesthetic appearance. Ruts and other scars will be filled and all drainages will be returned to their preconstruction condition as appropriate.

4.5 Scarification

Prior to topsoil replacement, all disturbed areas will be scarified by ripping or chiseling to loosen compacted areas from heavy equipment traffic. Scarifying the subsoil will also promote water infiltration and improve better soil aeration and root penetration. The surface will be ripped or scarified to a depth sufficient to achieve 10 to 15 inches of decompaction or to the depth of bedrock as appropriate. Ripping and chisel plowing will also occur when materials are dry to promote the shattering of compacted layers. The purpose of roughening the surface is to trap moisture, reduce wind shear, minimize surface erosion by increasing infiltration, and create micro habitats conducive to seed germination and development. After disturbed areas have been scarified, implements to smooth the rough surface and return it to its original contour (e.g., skid-steer with bucket and link-chain harrow) will be utilized.

4.6 Topsoil Replacement

All topsoil salvaged will be uniformly spread over portions of disturbed areas where the soil was salvaged. If compaction occurs during this operation that might not be relieved during seedbed preparation, all compacted areas will be scarified. Soil replacement will occur with a skid-steer outfitted with a flat bucket, which will be utilized to deposit and finish grade the areas to match the existing, undisturbed grade on each side of the temporary impact area(s). Hand raking of soils will provide the final grade where graded areas meet undisturbed soil surfaces. Topsoil spreading will not occur during wet periods when soils are easily compacted and all travel over re-topsoiled areas will be restricted. The Reclamation Contractor will be responsible for ensuring that all areas that are to be reclaimed are topsoiled appropriately.

4.7 Seedbed Preparation

After the topsoil has been re-spread and prior to seeding, the planting beds would be prepared to maximize success. Seedbed preparation will be conducted immediately prior to seeding to prepare a firm seedbed conducive to proper seed placement and moisture retention. Seedbed preparation will also be performed to break up surface crusts and to eliminate weeds that may have developed between initial reclamation and seeding.

Soils within the planting beds will be treated with a surface tiller (2 to 4 inches) to ameliorate compaction and incorporate any applied nutrients and to provide a seedbed that is firm, yet rough. A rough seedbed is conducive to capturing or lodging seed when broadcasted or hydroseeded, and it reduces runoff and erosion potential. The rough seedbed will retain soil moisture needed for seeding germination and establishment.

4.8 Seeding

4.8.1 Seed Mixtures

The selection of appropriate seed mixtures for revegetation is a critical process, which controls the overall success of the revegetation program. Seeds will be obtained from established seed supply companies which produce native seed adapted to the specific environmental conditions of the Project site. The seed mixture chosen for revegetation will be designed to provide a stable environment that will be capable of supporting pre-project land uses with an emphasis on optimum wildlife habitat development. All species selected for revegetation at the site will be adapted to arid, low fertility environments. Species that are adapted to low nutrient conditions are better suited to compete with aggressive weedy species during the critical plant establishment period. The utilization of adapted species will ultimately result in a plant community

composed of species that can survive lower nutrient conditions, yet out-compete aggressive weedy species that require higher nutrient conditions.

If at the time of procurement, inadequate supplies are available from seed supply companies, seed will be collected from local genetic sources in the area. The use of seed mixtures, which are adapted to local conditions, increases the likelihood that seedlings will be successful and maintains the genetic integrity of the local ecosystem. For widespread herbaceous species that are more likely to be genetically homogeneous, seed collection areas may include a broader geographic range. If seed is collected from the CNF, the collection areas will be determined by the CNF District Botanist in collaboration with the individual or entity responsible for seed collection. Collected seed will be labeled with collection location, date, and species, and stored in a cool, dry location until it is used during reclamation of disturbed areas.

The seed mixtures will be based on Pure Live Seed (PLS) seeding rates, not bulk seeding rates. The total amount of seed required (in pounds per acre) will be dependent on the level of ground disturbance and potential for natural regeneration but is estimated to be 15-20 pounds/acre based on PLS. The final seed mixture chosen will be based on consultation with, and approval from, the CNF District Botanist or Range Management Specialist.

4.8.2 Seeding Timing

All reclaimed areas will be seeded within one week of final grading, weather and soil conditions permitting. The combined seed blend will be broadcast during fall and early winter at the conclusion of regrading, placement of topsoil, and seedbed preparation. Seeding is most effective when completed prior to and immediately after the period of peak precipitation. If fall seeding is unsuccessful, areas will be re-seeded again the following spring.

4.8.3 Seeding Methods

Broadcast seeding where practicable and feasible is the preferred method for seeding to meet reclamation goals and objectives. Seed will be applied as soon as practicable after completion of the areas grading or use. In areas where seeding occurs, a drag or harrow will be used to cover the seed, where practicable and feasible. Broadcast seeding by hand will be used in areas that are not accessible by tractors and other equipment. The amount of seed applied in broadcast seeded areas will be based on the type of seed, disturbance level, soil type, and terrain for the area to be reclaimed. Seeding methods will be reviewed and approved by the CNF District Botanist or Range Management Specialist.

4.9 Slash and Mulch Application

Immediately after seeding, slash stockpiled from original brush and limb removal will be scattered on disturbance areas in a natural manner that is consistent with CNF visual resource management objectives. All slash greater than 2 inches in diameter will be cut into lengths not to exceed 4 feet and scattered over the seeded and finished soil surface. All remaining slash less than 2 inches in diameter will be cut with loppers into varying lengths and placed into small piles or distributed evenly over the seeded and finished soil surface. The slash may be combined with rocks, existing woody debris, and/or raked into the soil to prevent blowing or washing away during storm events. Alternatively, to cutting and lopping, slash may be chipped and the chips scattered over the seeded and finished soil surface.

Mulch, in the form of chopped weed-free straw or lightweight and biodegradable erosion control blanket, will be applied on all disturbed slopes greater than 25 percent grade areas to aid in stabilizing the area to

minimize or prevent erosion, as well as to promote revegetation. The mulch will be uniformly applied at a rate of approximately 1.5 tons/acre to cover the ground surface. Mulching will occur during seeding (where hydroseeded) or immediately after seeding where broadcast seeding occurs. All material utilized for mulch will be weed free straw. Mulch will be applied following seeding with a standard straw (or hay) blower mounted behind a truck or tractor. Where practical, mulch will be crimped into the seedbed using a cultipacker or shallow-set disk harrow to prevent wind-blow and increase microhabitat for seed germination.

4.10 BMP Erosion Control Procedures

The Restoration Contractor will monitor the reclaimed and reseeded areas at each monitoring visit for erosion. The Restoration Contractor will be responsible for preventing erosion through the installation and maintenance of best management practices (BMPs) where required. In addition to the establishment of native vegetation, which will minimize erosion, non-vegetative erosion control measures may be used as prescribed by the Restoration Contractor. Such erosion control measures, or BMPs, may include certified "weed-free" straw mulch application, jute netting, sandbags, soil binders, trenches, or dissipaters. Any such measures will preclude the introduction of infestations of invasive, non-native plant species and weeds listed on federal and state noxious weed lists into the seed bank of areas where native vegetation either occurs or is to be restored. Drainage and sedimentation control devices will be routinely cleaned, maintained, and repaired prior to and during the rainy season by the Restoration Contractor. All repairs to these systems will be executed immediately to offset any potential future erosion problems.

5.0 MAINTENANCE, MONITORING, AND REPORTING REQUIREMENTS

The maintenance, monitoring, and reporting period will begin with implementation of the site reclamation and revegetation work (as specified in Section 3 above) at each of the Project's temporary impact sites and will continue for a maximum of five years. The Restoration Contractor or other authorized IC Exploration representative will be responsible for providing annual monitoring and reporting, in addition to annual maintenance of site reclamation and revegetation areas as required.

5.1 Maintenance Activities and Schedule

Maintenance activities within the site reclamation and revegetation areas are expected to be minimal, consisting of control of infestations of invasive, non-native plant species and weeds listed on CNF and State noxious weed lists, installation or replacement of BMPs as necessary, and/or application of additional mulch on site reclamation and revegetation areas throughout the five-year maintenance, monitoring, and reporting period as needed.

Weed control measures (i.e., measures intended to control infestations of invasive, non-native plant species and weeds listed on CNF and state noxious weed lists) will be implemented in accordance with prescribed weed management procedures for the Project (as described Section 5.4 below). Additional maintenance items may include occasional repair, replacement, or installation of BMPs, and/or installation of additional slash or mulch. If any of these activities is required, the Restoration Contractor would specify the location and materials required. All maintenance activities would be performed consistent with the schedule shown in Table 2.

Table 2: Anticipated Maintenance Schedule

Period	Maintenance Frequency	Maintenance Activities	Remedial Actions
5-Year Long-Term Maintenance Period	Once per year in spring (February-April) as directed by the Restoration Contractor. One additional visit per year as conditions require.	Control of infestations of invasive, non-native plant species and weeds listed on CNF and State noxious weed lists in accordance with prescribed weed management procedures for the Project, replacement or installation of BMPs, collection and installation of additional vertical or horizontal mulch (all as required only).	Collection and installation of additional vertical or horizontal mulch in areas with off-road activity, hand seeding/raking of plant seeds in designated areas (all as required only).

5.2 Monitoring and Reporting Activities and Schedule

Annual qualitative maintenance and quantitative performance monitoring will be conducted by the Restoration Contractor to determine the effectiveness of reclamation, revegetation, and maintenance activities on the site and prescribe any additional maintenance activities that may be required. Performance monitoring will be completed by the Restoration Contractor to document the reclamation and revegetation site progress relative to the established performance criteria (e.g., target conditions), and prescribe any remedial measures that may be required to ensure that each restoration site meets the performance criteria within the five-year maintenance, monitoring, and reporting period. Both maintenance and performance

monitoring will be completed on the site reclamation and revegetation sites consistent with the schedule summarized in Table 3.

Following each annual qualitative maintenance inspection, the Restoration Contractor will submit a maintenance monitoring report to IC Exploration and CNF. A standardized qualitative monitoring report form will be utilized for maintenance monitoring and reporting. The ultimate purpose of the maintenance monitoring reports is to advise IC Exploration and the CNF of the reclamation and revegetation site conditions and any required maintenance items needing to be completed to ensure conformance with this Plan.

Table 3: Anticipated Monitoring and Reporting Schedule

Period	Monitoring Frequency	Submittals	Reporting Frequency
Pre-Construction	As needed to complete soil salvage in temporary impact areas.	Memo summarizing salvage activities and map showing storage locations.	Once per year.
Post-Construction	As needed to complete soil decompaction, recontouring, and vertical mulch installation.	Letter Report with photos summarizing the reclamation-restoration activities as installed.	Once per year.
5-Year Long-Term Maintenance and Performance Monitoring	One visit in spring (February - March) annually. One additional visit per year as conditions require ¹ .	Letter Report with photos summarizing the site conditions and recommending any maintenance or remedial work required.	Once per year for five years. Anticipated annual reports begin in 2021 and end 2026.

Any reclamation and revegetation site deficiencies will be noted in the monitoring report, with accompanying recommendations for maintenance and/or remedial actions. Maintenance monitoring and reporting will be performed annually during the five-year maintenance, monitoring, and reporting period as specified in Table 3. Annual quantitative performance monitoring will also be conducted by the Restoration Contractor to assess the effectiveness of the vertical and horizontal mulching efforts, the native plant vigor and development within the site reclamation and revegetation sites, document any seedling recruitment from natural sources, presence/absence of plant pests or diseases, presence/absence of nonnative or invasive plant species, and project erosion control BMP conditions.

Annual performance monitoring will be completed by the Restoration Contractor beginning one year after installation of vertical and horizontal mulch, and will continue annually throughout the five-year maintenance, monitoring, and reporting period. Performance monitoring will be documented within an annual report, which will be forwarded to IC Exploration and CNF. Any project deficiencies will be addressed by the Restoration Contractor and be noted in the annual report, with accompanying recommendations for maintenance or remedial actions. Quantitative performance monitoring will be conducted to determine total bare ground cover, total native species cover and composition, total non-native species cover and composition, vertical stratification of native herb, shrub, and tree species on each of the site reclamation and revegetation sites, and overall plant species diversity. Performance monitoring will include quantification of vegetative cover throughout the site reclamation and revegetation areas. All quantitative monitoring will be conducted using permanent vegetation quadrants and the establishment of a series of fixed photo-points, and the resulting data will be compared with performance criteria for the Project as described in Section 5.3 below.

5.3 Performance Criteria

The revegetation standard for vegetation cover in reclaimed areas of 70 percent of background native vegetation cover applies to Forest Service-administered lands. This reclamation success standard will be used to assess whether the reclamation requirements are being met. This plan is consistent with the Project SWPPP, which includes criteria for final stabilization requirements per Arizona Department of Environmental Quality (ADEQ) Arizona Pollutant Discharge Elimination System (AZPDES) requirements (ADEQ 2013). In accordance with these requirements, reclaimed vegetation should have a uniform vegetation cover with a density of 70 percent of the native background vegetation cover on all disturbed areas not covered by structures. When background native vegetation cover is less than 100 percent of the ground (e.g., arid areas), the 70 percent coverage success criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent ($0.70 \times 0.50 = 0.35$) requires 35 percent total cover for final stabilization.

The vegetation community established on the reclaimed areas must be capable of persisting without continued intervention, excluding noxious weed or invasive species management. Persistence of reclaimed vegetation will be determined through monitoring of reclamation areas as identified in Sections 5.1 and 5.2 above. If monitoring identifies reclaimed areas that may not meet reclamation success criteria, (e.g., seed germination or vegetation cover is lower than expected), the CNF and IC Exploration will discuss the use of adaptive management procedures to address these issues. The anticipated timeframe for achieving the success criteria is three years after initial seeding.

5.4 Noxious and Invasive Weed Management and Control

"Noxious weed" is a legal term, meaning any plant officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property. The more general term "invasive species" refers to species that are non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive plant species include those that are legally designated as noxious, as well as additional species that may be considered noxious in some areas but not others, and other non-native species that are already widespread.

The Reclamation Contractor will remove all noxious and invasive plants (hereafter referred to as weeds) from the reclamation areas in order to help establish the developing plant community by reducing the competition for natural resources, including water, nutrients, and sunlight. Reclamation sites will be subject to weed control efforts until the performance standards are met.

The amount of weeding required will be determined by the amount of weed seed in the soil, weather conditions, and the Reclamation Contractor's diligence in removing the weeds, thereby reducing the existing seed bank of weeds present. All weeds will be controlled through manual removal or by herbicide use. The control method used will depend on the weed species, location of weeds, and the time of year that weed operations occur.

During the first growing season of native grasses, forbs, and shrubs use of chemical herbicides will not be feasible. Until newly reseeded species reach a height of 3-6 inches, they are susceptible to damage from herbicides. Therefore, mechanical weed control is proposed for the first growing season if re-seeded species are not determined to be mature enough to withstand herbicide spray. Bush Hog mowers, weed-eaters, hoes, and/or hand pulling of weeds will be employed as mechanical control options. During subsequent years herbicide applications will be utilized when weed densities are determined to pose a threat to revegetation success or spread to surrounding lands.

The following measures will be implemented when using herbicides:

- Herbicide application will be limited to foliar or spot spray.
- Herbicide will be applied according to the label instructions.
- All herbicides used will be applied by a qualified, licensed individual.
- District Forester or Botanist approval of the Herbicide Use Plan will be necessary for the application of any herbicide, unless that authority is delegated to the Forest Supervisor.
- All applicable state and federal laws, including herbicide label requirements will be followed.
- Spraying will be overseen by a Forest Service Certified applicator who will insure safe handling, application and disposal of herbicide.
- Persons involved in mixing, loading and applying herbicides will be required to wear appropriate personal protective equipment as required on the label.
- Areas used for mixing herbicides and cleaning equipment shall be located where spillage will not run into surface waters or result in ground water contamination.
- All requirements of the Spill Prevention, Control, and Countermeasures Plan (SPCC) will be followed.
- Herbicide treatment of weeds will be tracked in an herbicide tracking table. The purpose of the table is to track the amount and efficacy of herbicide applied in each treatment area. As such, an entry will be made for each treatment area. For each entry, the date of treatment, amount and type of chemical applied, adjuvants included, target species and estimated number of individuals treated, size of treated area, weather conditions, name and herbicide license, number of applicators, method of application and other vital information will be provided. The herbicide applicator will also include details on the success/failure of previous applications in the area and recommended adaptive management strategies to guide future treatments of the target species or area. Documentation of herbicide use will be the responsibility of the Herbicide Contractor and shall be submitted to the CNF on a monthly basis. Herbicide contractors shall also keep records of herbicide applications in accordance with herbicide label requirements, local, state, and federal regulations, and permit requirements.
- Spraying will be conducted only when weather conditions are conducive to effective uptake of the herbicide by the targeted species (e.g., sunny, dry, and when plants are actively growing) and when wind conditions are such that herbicide drift is nonexistent. Applications of herbicide will not occur during or if a precipitation event is expected.
- During herbicide application, protection for non-targeted species is required. This is relevant to any native plants outside the restoration areas, as well as native plants within these areas.
- Only aquatically labeled herbicides and surfactants can be used within 30 feet of riparian areas.

5.5 Adaptive Management

Adaptive management will be implemented in the event of unforeseen or probable, but unpredictable circumstances. Adaptive management is defined, for the purposes of this Plan, as a flexible, iterative approach to the long-term management of the reclamation and revegetation sites that is directed over time by the results of ongoing monitoring activities and direct observation of environmental stressors that are producing adverse results within the reclamation and revegetation sites. Adaptive management will include the utilization of annual quantitative assessments and rapid qualitative assessment data gathered in the field to assess the health and vigor of all vegetation communities and reclamation and revegetation sites. Following an event that causes damage to all or part of the reclamation and revegetation sites, these data will be used in part to drive management considerations for repair of the damaged areas. Individual

environmental events are discussed below along with an anticipated range of management responses to correct any damage that may occur to the reclamation and revegetation sites.

5.6 Anticipated Events and Remedial Measures

5.6.1 Flooding

Flooding may periodically reduce overall plant cover within and adjacent to reclamation and revegetation sites near intermittent streams and dry washes, but with application of erosion control materials (BMPs) at all appropriate reclamation and revegetation sites in conformance with the Project SWPPP, seasonal flooding is not anticipated to reduce vegetation cover below a level in conformance with the Plan performance standards. If qualitative and/or quantitative monitoring of these areas indicate that cover is being reduced below acceptable levels, re-contouring of reclamation and revegetation sites within the first two years after initial vertical and horizontal mulch application, installation of addition erosion control materials (BMPs), and/or remedial seed imprinting may be recommended by the Restoration Contractor. These remedial measures would be subject to approval by IC Exploration and the CNF.

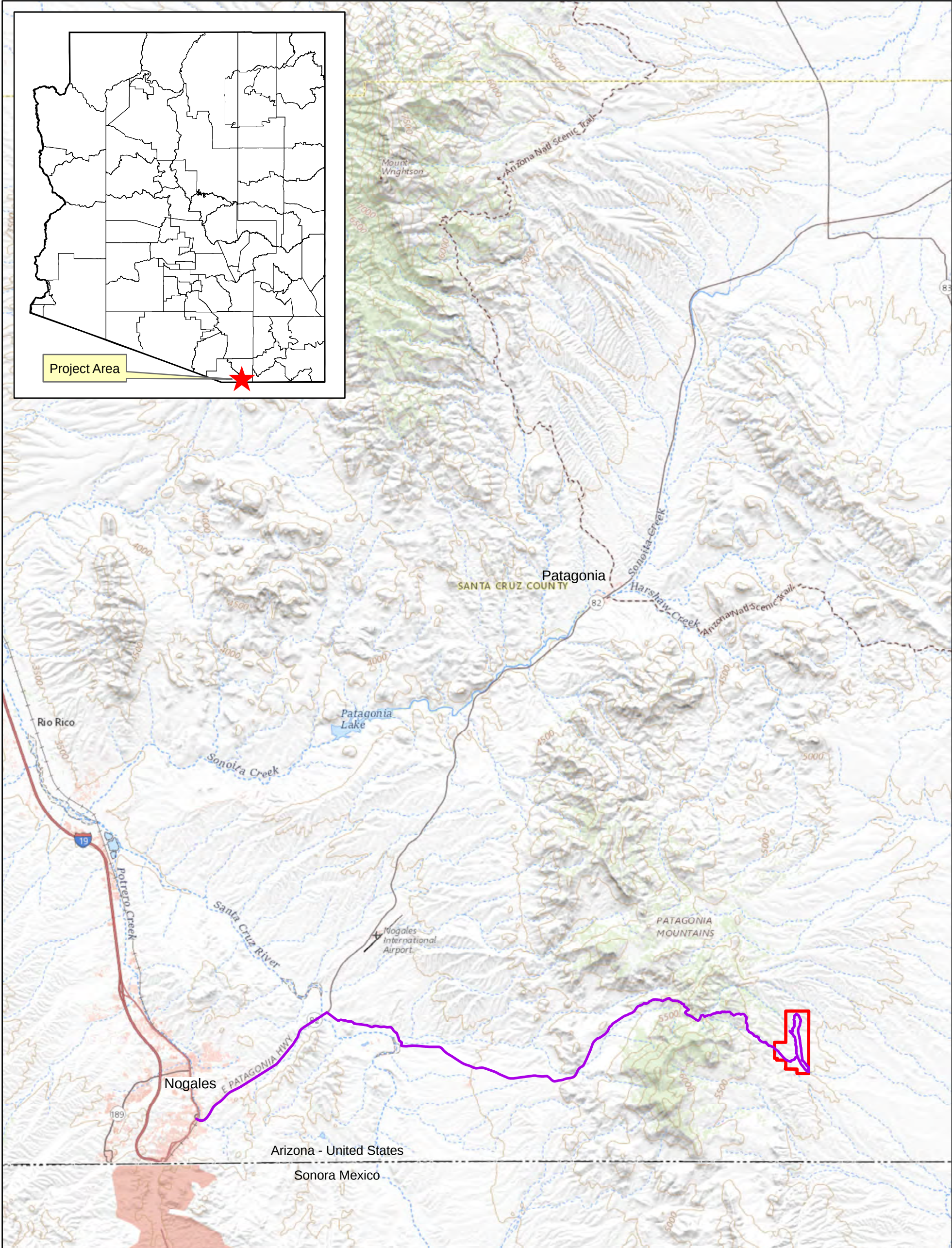
5.6.2 Prolonged Drought

Seasonal drought and/or periods of average to below-average precipitation is anticipated to occur within all of the reclamation and revegetation sites annually, and all vegetation communities are composed of drought-tolerant native plant species that are capable of withstanding drastic seasonal fluctuations in available moisture onsite. Performance criteria values for all vegetation communities have been adjusted based on the expected temporal development in each reclamation and revegetation site without supplemental seeding and irrigation. However, an extended drought could potentially occur during any portion or all of the long-term five-year maintenance, monitoring, and reporting period including below-average seasonal rainfall and prolonged high temperatures that may negatively affect any or all of the reclamation and revegetation sites (e.g., lower plant cover, higher plant mortality, increased potential for pest infestations onsite, etc.). Remedial measures for prolonged drought would be limited to remedial seed imprinting prior to any anticipated precipitation, extension of the five-year maintenance, monitoring, and reporting period, and/or coordination with the CNF to adjust the performance criteria for expected vegetation community development under extended drought conditions. These remedial measures will be recommended as required by the Restoration Contractor and would be subject to approval by IC Exploration and CNF.

6.0 REFERENCES

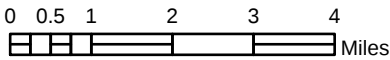
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EXHIBITS



LEGEND

-  Project Area
-  Proposed Access Route



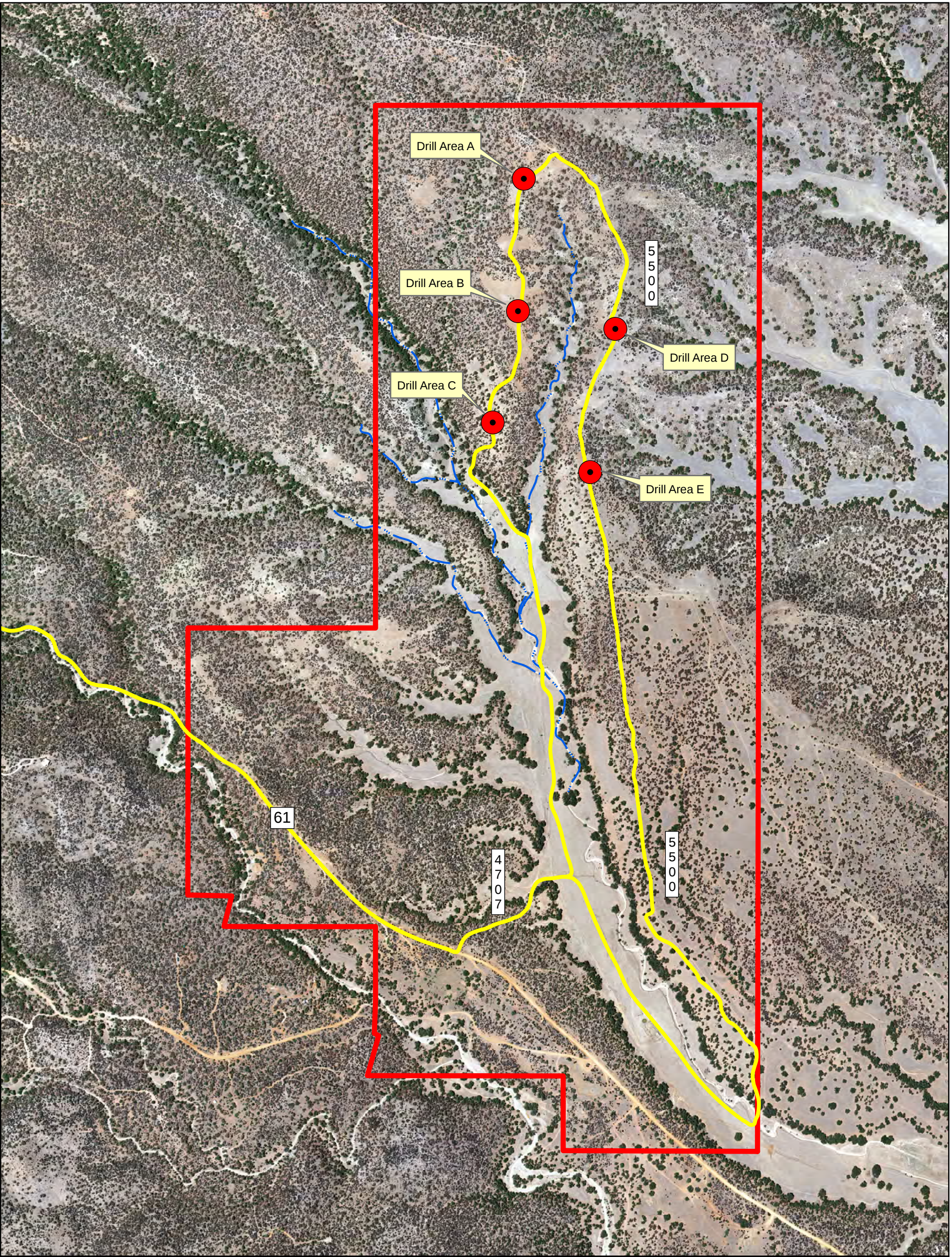
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San Antonio Mineral
Exploration Project

Exhibit 1
Project Area Map

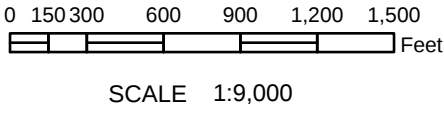
01/25/2020

Sheet 1 of 1



LEGEND

-  Project Area
-  Proposed Drill Site
-  Proposed Access Road
-  Low Flow Channel



San Antonio Mineral
Exploration Project

Exhibit 2

Local Access Roads and Drill Areas Map

01/25/2020

Sheet 1 of 1

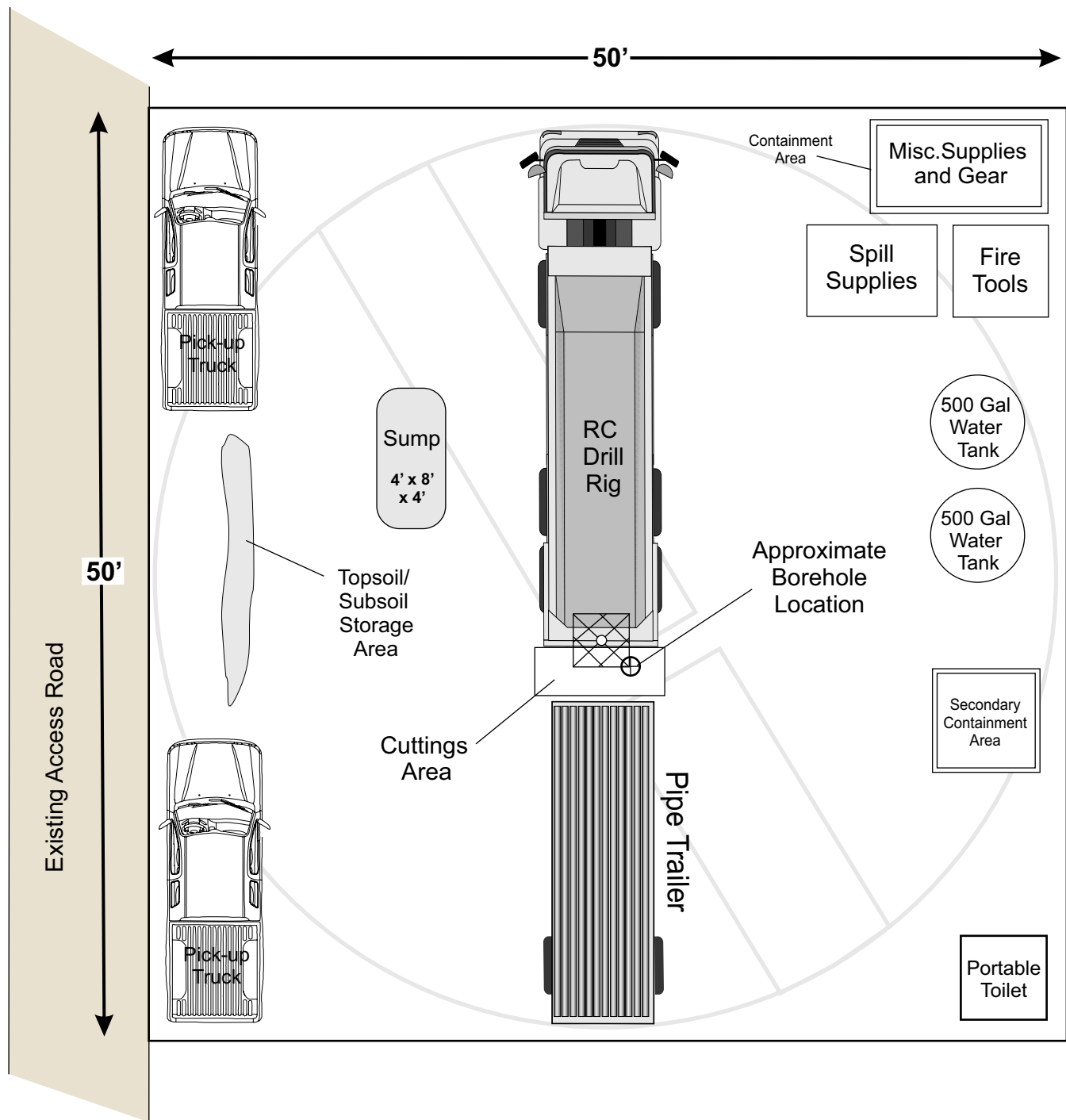
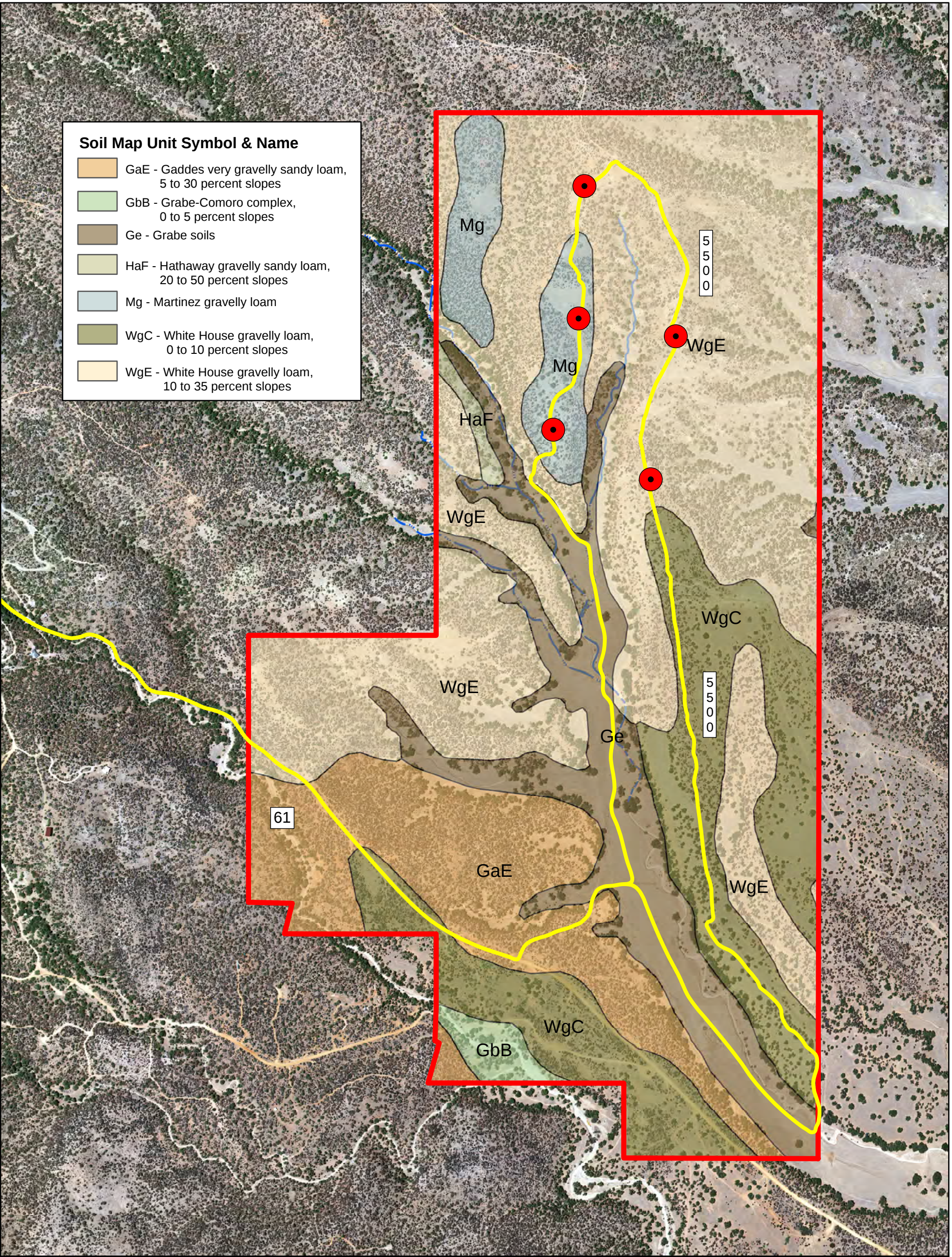


Exhibit 3: Diagram of a Typical Drill Pad Layout Parallel to the Existing Access Road



LEGEND

- Project Area
- Proposed Drill Site
- Proposed Access Road
- Mapped Soils
(See Inset Above for Soil Map Unit & Name)



0 150 300 600 900 1,200 1,500
Feet
SCALE 1:9,000

San Antonio Mineral Exploration Project

Exhibit 4

Soil Mapping Units

01/25/2020

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