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? How much ore/mineral for a nuclear power plant?

PLAN OF OPERATIONS
NOTICE OF INTENT

CANYON MINE

October, 1984

Energy Fuels Nuclear, Inc.
Executive Offices
Three Park Central
Suite 900
1515 Arapahoe
Denver, Colorado 80202

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I. INTRODUCTION

The Canyon Mine Project, for which this Plan of Operations was prepared, is located on unpatented lode mining claims located by Energy Fuels Exploration Company ("EFEX") an affiliate of the operator Energy Fuels Nuclear, Inc. ("EFN"). As shown on Plate 1, the claims are located in Section 20, Township 29 North, Range 3 East, Gila & Salt River PM, Cochino County, Arizona. The site is located approximately 6 miles southeast from Tusayan, Arizona.

EFN submits this Plan of Operations for approval pursuant to the requirements of 36 C.F.R. § 228.1, et. seq.

The name and legal mailing address of the entity for which the operation will be conducted is: Energy Fuels Nuclear, Inc., Three Park Central, Suite 900, 1515 Arapahoe Street, Denver, Colorado 80202, (303) 623-8317. The person who will be in charge of the operation is: Roger B. Smith, Manager of Mining Operations, Energy Fuels Nuclear, Inc., P. O. Box 36, Fredonia, Arizona 86022, (602) 643-5823. The name and legal mailing address of the record owner of the mining claims upon which the operation will be conducted is: Energy Fuels Exploration Company, Three Park Central, Suite 900, 1515 Arapahoe Street, Denver, Colorado 80202, (303) 623-8317.

EFN is active in the natural resource industry with holdings in uranium. The company built and is part owner of a 2,000 ton-per-day uranium ore processing mill at Blanding, Utah. As part of its activity as a uranium producer, EFN currently operates three mines in northern Arizona--the Hack Canyon Mine, the Pigeon Mine and the Kanab North Mine.

The objective of this operation is to recover, by underground mining methods, a uranium ore deposit occurring within the Project Area. The discovery of this ore deposit was made during an exploratory drilling program undertaken by EFEX pursuant to plans approved by the National Forest Service ("NFS"). The proposed mining activities will require surface facilities within the Area of Operations encompassing approximately 17.4 acres, installation of a 1.7 mile electric power line by Arizona Public Service Company to provide power to the Project Area, and utilization of roads for access and haulage.

Access to the Canyon Mine Project Area is achieved by turning east off State Highway 64 to National Forest Road 305, eight miles south of the Grand Canyon Airport. After following Forest Road 305 two miles, the north fork of Forest Road 305A is taken nearly due north for four miles past Owl Tank, where a side road is taken due west one-half mile to the Canyon Mine Project site.

The mining claims making up the Project Area consist of three unpatented lode claims, which are identified by the following Bureau of Land Management ("BLM") serial numbers and claim names:

<u>Claim Name</u>	<u>BLM Number</u>
Canyon 73-75	A MC 22642-22644

Plate 1 shows the relationship of the individual mining claims to the Project Area and the Area of Operations.

Upon approval of this Plan of Operations by the NFS, EFN intends to proceed as quickly as practicable to begin activities at the Project Area. In this regard, because the required surface facilities are minimal and because of their similarity to those at other mines operated by EFN, the final

design and construction activities are expected to be achievable in a relatively short period of time. Specifically, assuming this Plan of Operations is approved by the NFS in early 1985, EFN anticipates that all surface facilities and initial shaft sinking will be in place by the end of 1985.

II. GENERAL DESCRIPTION OF PROJECT AREA

The Project Area is located in that portion of Arizona known as the Coconino Plateau. This 4,000 square mile region extends from the Little Colorado River and San Francisco Mountain northwest to the Grand Canyon. Much literature has been written on this region and on the Grand Canyon to the north.

Relief is flat-lying across the several square miles surrounding the Project Area. Elevation at the mine site is 6,500 feet above sea level with a down slope toward the south at an average rate of 100 feet per mile. Two major topographical features, some distance from the Project Area, have much greater relief and different elevations. Red Butte, a lava capped mesa, 4.5 miles south of the Project Area reaches 7,234 feet in elevation and the Colorado River, 15 miles due north, is 2,500 feet above sea level.

The drainage from the Project Area is toward the south for seven miles, where it curves west for 15 miles and then back north for 50 miles until it reaches the Colorado River. Only in the last several miles of this drainage is there any consistent flow.

Because of the high elevation of the area, annual rain fall is somewhat higher than for the region as a whole, averaging about 13 inches per year since 1931. The winters are cold enough to hold precipitation as snow, but only to freeze the soil to a few inches in depth. The annual temperatures will rarely fall outside of the 20° to 90° F range.

With the moderate temperatures and more than 12 inches of rain fall, the growth of Ponderosa, Pinyon and other species of pine are common in the area. Timber rarely exceeds 100 feet in height or 30 inches in diameter. Typically, Scrub Oak and Juniper are abundant at the edges of the dominating stands of pines. The actual Project Area is in a natural clearing of approximately one-half mile in diameter. The only vegetation in this clearing are native grasses and plants. No threatened or endangered plant species are known to occur in the Project Area.

Wildlife in the general region appears to be limited as evidenced by the fact that during the implementation of the exploration drilling program at the Project Site little, if any, wildlife was observed. No unique, threatened or endangered animal species are known to exist in the Project Area.

Very limited archeological and cultural resources have been previously identified in the examinations which were undertaken prior to commencing drilling activities at the Project Site. However, the entire Project Area is currently being surveyed by Abajo Archeology, USDI-Antiquities Permit No. 83-AZ-212 to confirm the absence of any significant cultural resources. EFN expects Abajo Archeology to submit its report on the archeological and cultural resources within the Project Area to the NFS by mid-December, 1984.

The entire Project Area is covered by Mid-Permian Kaibab and Toroweap limestones that dip a few degrees to the south. This formation extends to approximately the 600 foot depth. Below this depth is Coconino sandstone approximately 300 feet in thickness. This is the formation exposed at the canyon rim just north of the visitor center at the Grand Canyon National Park. Minor mineralization is noted in the Coconino

and some mining is expected in this formation. The next formation, from depths of 900 to 1,200 feet, is the Hermit Shale formation. This formation is the bright red unit that is viewed and takes its name from Hermit's View, eight miles west of the headquarters of the Grand Canyon National Park. Because the Hermit Shale is a dense, clay-cemented siltstone under the much coarser Coconino sandstone, some water, springs or seeps, are noted at outcrop contacts between these units. In the whole area, 35°-45' to 36°-00' north by 111°-45' to 112°-20' west only five water wells are on record by the U.S. Geological Survey, Water Resource Division, Tucson, Arizona. Average discharge from these wells is a few gallons per minute according to existing records. The next formation below the Hermit Shale is the Supai formation which extends from 1,200 to 2,300 feet below the surface. This is the deepest formation tested in the exploration program at the Project Area. The upper few hundred feet of the Supai formation is the resistant sandstone that causes the intergorge of the Grand Canyon to form. It is the main host to the ore deposits that are the object of this mining project. With greater depth, the Supai formation changes from a sandstone to a limestone, resting on the older limestones of the Redwall formation.

The geology of the Project Area is very similar to that of the Grand Canyon. In fact, the similarity of the Project Area to Maricopa Point located just a few miles from the Grand Canyon National Park Headquarters provided the impetus for the initial exploration of the area. At Maricopa Point, a uranium mine known as the Orphan Mine operated on a patented mining claim pre-dating the establishment of the Park. Active from 1956 to 1964, the Orphan produced significant quantities of uranium, copper, silver and gold. The headframe and surface buildings at the Orphan Mine still exist at the site, largely unnoticed by the millions of park visitors who have driven the main rim road passing near the mine.

Uranium mineralization in the Project Area occurs in a breccia pipe structure that cuts vertically through the flat-lying sedimentary rocks. Cavities formed millions of years ago by water dissolving the deeper Redwall limestone created space into which the overlying rock collapsed. The collapsed zone worked its way up hundreds of feet in the form of a cylinder or narrow cone. This broken rock, or pipe, created a favorable environment for mineral deposition:

III. PLANNED OPERATIONS

During the next several years, EFN will develop and mine the uranium deposit located in the Project Area by underground methods.

Access to the deposit will be by a vertical shaft located northeast of the deposit in the Area of Operations as shown on Plate 2. This shaft will be sunk utilizing either a surface drill rig or by conventional sinking using drilling and blasting methods. Although each method offers EFN certain advantages and disadvantages in terms of time of completion and flexibility, the potential environmental impacts which may result from sinking the shaft utilizing conventional shaft sinking methods will be no greater than the potential environmental impacts which may result from drilling the shaft utilizing a large drill rig. Consequently, final selection of the sinking method will be made by EFN after competitive bids have been received from qualified contractors.

After the vertical shaft has been sunk to a depth of approximately 1,400 feet below the surface, at various levels off of the shaft, workings will be driven toward the deposit. The highest level of the mine is expected to be located approximately 900 feet below the surface in the Coconino

*Intensify
blasting
local
blasting
local mine
monitored by
seismic
equip -
local seep
springs -
proximity to
water whether
seismic
activity may
start spring
flow -*

formation and the lowest level is expected to be approximately 1,400 feet below the surface in the Supai Formation. At present, EFN does not expect significant economic ore reserves below the 1,400 foot. However, since surface drilling has disclosed limited mineralization to a depth of 2,100 feet, further drilling from underground stations will be undertaken after the shaft is driven to the 1,400 foot depth to further define and delineate the uranium ore deposit. If economic reserves are found at these lower depths, the shaft may be deepened or a decline from the 1,400 foot depth driven in order to permit recovery of these reserves. In any event, if mining is justified below 1,400 feet, no changes in the surface facilities described in this Plan of Operations will be necessary other than perhaps to increase the waste disposal areas by a fraction of an acre. At all times the decision to deepen the shaft or to drive a decline from the lowest shaft level will be to assure access to all economically recoverable ore with haulage drifts that do not have restrictive grades.

specify amount of hauling goods near shaft and enlarge drifts
if 'x' amt surface pond needed for 1400' depth - seems that more needed for water level

Once the initial underground drilling program has fully delineated the extent of the ore deposit, the lower level from the main shaft will be driven underneath the deposit due south to a point just outside of the furthest extent of the ore reserve. At this point, a vertical ventilation shaft will be drilled from the surface to connect with the workings. This shaft will be drilled utilizing a one-foot diameter pilot hole from the surface to intersect the lowest elevation level. Thereafter, an eight-foot diameter upward reaming bit will be attached to the drill pipe and the vertical ventilation shaft drilled upward to the surface. The second (ventilation) shaft is used to exhaust air, thereby creating adequate airflow throughout the mine workings and, in addition, providing a second exit or escapeway from the mine in the event of an emergency.

Raises or vertical workings within the mine will connect the various mining levels within or very near the deposit. At various elevations from these raises, sublevel workings will then be driven off to extract ore from the deposit. The broken ore will then be dropped down raises, designed for such use, to draw points on the lower level. The ore will then be hauled to the shaft. At the shaft, the material is transferred to skips in the shaft which then hoist it to the surface. Waste rock generated during shaft sinking, development and mining will be removed and disposed of on the surface in the waste disposal areas, to the extent such material cannot be utilized for road maintenance or utilized in the construction of the mine yard. Ore will be stockpiled on the surface near the shaft until shipment to a mill takes place.

Sign of ore & susceptibility to become wind borne and added to soil as contaminant runoff?

After development work is completed in about three years, the mine will be operated at a 200 ton-per-day ore rate for approximately five years. It is hoped that planned underground drilling will increase the tonnage to be mined and consequently, will extend the operation's life by a number of years. The period of time required to exhaust the reserve is currently estimated to be 10 years. However, the duration of activities will ultimately be determined by the extent and mining grade of the deposit, as well as milling capacity and market conditions.

Employment at the mine during the first few years of development will range from 15 to 30 personnel. As production capacity grows, employment could reach a high of approximately 35 men at the 200 ton-per-day rate, working at least two shifts per day.

Most employees will be existing residents of the area. A few experienced miners and supervisors will be transferred from existing EFN operations, but the majority of the work force will be hired locally. Employees will be provided transportation to work with a mine van. Driving of individual

vehicles to the mine site will be discouraged. Management and technical staff support will be from the Fredonia office. Air travel will be used to provide staff movement between Tusayan and Fredonia.

IV. AREAS TO BE DISTURBED

There are three specific areas that will be temporarily used or disturbed during the mine's life: (1) the mine site made up of the Area of Operations (14.7 acres) and adjacent diversion drainage channels (2.7 acres); (2) 1.7 miles of electric powerline tying the mine to public power; and (3) the use of various federal, state and NFS roads for mine access and haulage.

The Area of Operations where all mining activities will take place is shown on Plates 1 and 2. This area is part of a naturally treeless area and, therefore, no significant tree cutting will be required to install the surface facilities necessary to the mining activities. In designing this Plan of Operations, EFN has minimized the size of the Area of Operations as much as practicable by clustering the various surface facilities. The design of the Area of Operations will ensure adequate working area during mining while minimizing the area disturbed. Moreover, having identified through surface drilling the precise location of the ore deposit, the Area of Operations needed for mining is less than the exploration area previously authorized under Special-Use Permit 84-14. The locations of the shafts, office, warehouse, shop, waste disposal and ore stockpiles will all be generally located in the areas shown on Plate 2. Of course, further engineering and unexpected problems encountered in the excavation of the mine yard, shafts or building foundations could cause the actual mine facility layout to differ in minor detail from that shown on Plate 2. A core hole at the proposed shaft is yet to be completed and

?
R.O. as by power line.
- Tusayan R.O. primitive roads -
- mgmt plan -

what about the importance of "part" to wildlife -
calling / feeding

conditions could be found that would cause the main shaft to be relocated up to 50 feet from the location noted on Plate 2. Once the mine plant is constructed, a detail plot of all structures and the yard will be forwarded to the NFS. In any event, the surface impacts from the proposed operations will be unaffected by any necessary minor relocation within the Area of Operations.

Prior to the construction of the mine yard, the six-inch topsoil layer within the Area of Operations will be removed and stored at the northern edge of the Area of Operations. The placement of the topsoil stockpile in this location will assure that it will not be disturbed during mining activities. In addition, after construction of the water diversion facilities discussed below, the topsoil stockpile will be protected from erosion from surface runoff. At the end of mining, this topsoil will be reapplied over the Area of Operations and reseeded as part of final reclamation activities.

The main building will be built to near existing grade. Minor grading to establish drainage away from the building and to the south will be done. The shaft collar will be at the same elevation as the building floor or a few feet above the pre-mining contour. Drainage will be away from the main shaft. Prior to sinking, the mine yard will be built to its production grade or contour in an area of about 3 acres. This initial yard contains and extends 100 feet beyond all buildings and the main shaft. Minor amounts of borrow will be needed to obtain these grades and will be taken from material excavated during construction of the water diversion facilities or from other areas of the Area of Operations. Waste rock from shaft sinking and mine development will extend the yard to the shape noted on Plate 2. It is estimated that 40,000 cubic yards of waste rock will be generated over the life of the mine. This volume of rock will cover

*Reference
size by 1/3*

five acres to an average depth of five feet. Waste rock is defined as all rock moved in mining with less than 0.03% uranium. If additional waste is produced, it will be disposed of along the south and west edge of the mine yard. Relief between the south edge of the mine yard and the prior surface will reach 10 feet by the end of the mine's life. Non-ore bearing mine waste will be available for the maintenance of the nearby roads and drainage channels outside the Area of Operations, if necessary. Gravel will be brought from outside the Area of Operations to provide an all-weather surface to the mine yard.

Located on the yard and along its north edge will be the main building. This steel structure will house most surface activity and fixed equipment. The hoist, air compressors, stand-by generator, shop, warehouse, and ambulance will all be housed in this building. It will be 160 feet by 50 feet and, in part, contain two floors.

The main shaft will be located approximately 100 feet south of the main building and just northeast of the deposit. Located over the shaft will be the tallest structure within the Project Area, a 100-foot high headframe. Its base will be about 40 feet wide and extend toward the main building about 75 feet. Both the main building and headframe will be finished in some shade of green to blend with the natural surroundings.

Just east of the main building will be the mine office and showers in a portable building approximately 25 feet by 50 feet. The unit will come to the site fully equipped, needing only to be connected to utilities. In this same general area one to three other trailers will be located to provide lodging for a watchman and overnight staff personnel. No full-time residents, other than the watchman, are planned. Along this north edge of the yard, other minor items, supplies, and

equipment will be stored. Tankage for water, gasoline and diesel fuel will be located in the same area. Water storage capacity should be approximately 12,000 gallons; gasoline less than 5,000 gallons; and diesel less than 10,000 gallons.

A water source of a few gallons per minute is needed for sanitation and underground drilling. At the start of activities, water will be trucked to the site. It is hoped that shaft sinking may generate a flow of a few gallons per minute of potable water from the base of the Coconino formation at approximately the 1,000-foot depth. If this does occur, this water will be collected and used at the site. However, in the event that no water is found in the shaft, a well to the Redwall of 2,500 to 3,000 feet deep would be located and drilled north of the mine yard.

*Prior Rights
of water
? will also
be affected?*

Approximately 300 feet due south of the main shaft will be the vent/escape shaft. This second shaft is required by federal mine safety law which requires at least two routes to exit any operating mine. Both a fan to exhaust air and a small hoist will be located at this point. A small headframe, about 30 feet high will be placed over the vent/escape shaft. The escape hoist will be set in a metal building with dimensions of approximately 20 feet by 20 feet. Under normal operating conditions, a larger ventilation fan will be positioned over the ventilation shaft. However, in the event this shaft is needed for access or escape, the fan will be lifted off the shaft and a man cage lowered to any level in the mine.

Located on the west and lower edge of the mine yard will be one or more water holding ponds. All surface drainage from the yard will flow into the pond or ponds. In addition, if excessive water is encountered in the course of mining it will be stored and treated in this area prior to discharge. In this regard, contemporaneously with the submittal of this

*Pond
average
included in
3 Acres of
P 282*

Plan of Operations to the NFS, a National Pollutant Discharge Elimination System (NPDES) Permit is being applied for to the Arizona Department of Health Services and the U.S. Environmental Protection Agency. No discharge is expected but this action is taken as a prudent business policy. In addition, a septic drainage field will be located just southwest of the yard in an area precisely located after soil testing.

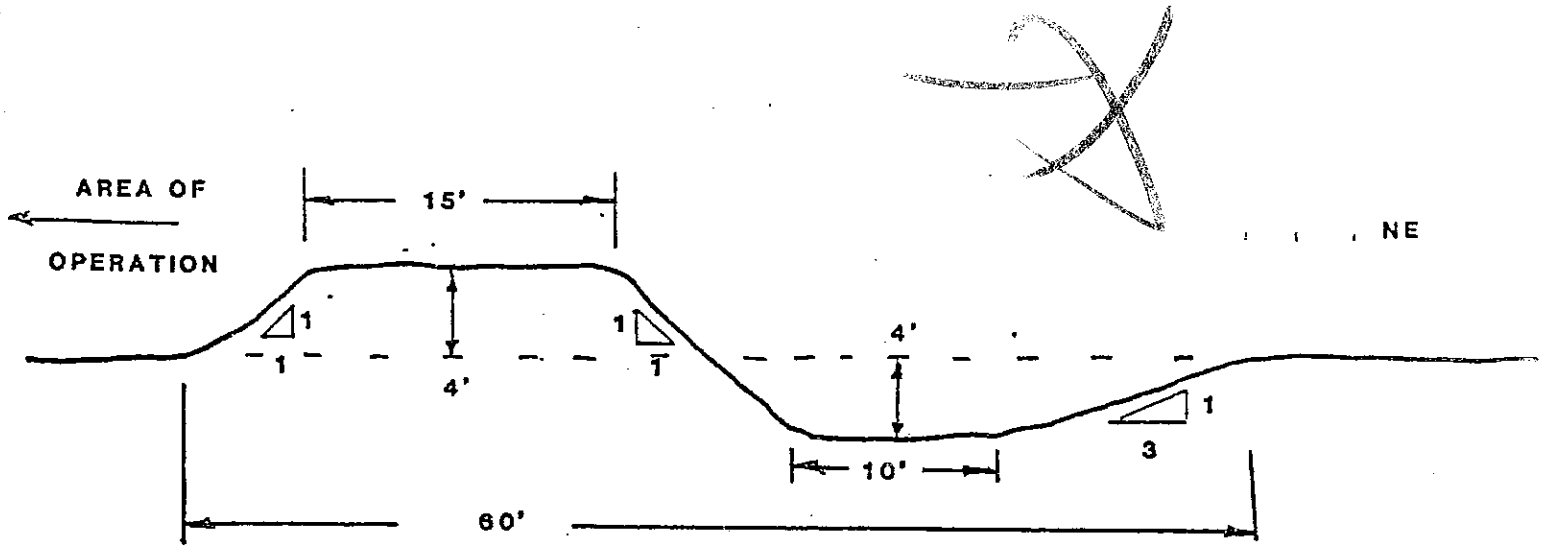
*size of drainage field
all of paper &
fail soil test?*

A 6-foot chainlink security fence with lockable gates will surround the Area of Operations and "No Trespassing" signs will be posted. Gates in the fence will be closed and locked during periods of inactivity at the mine site.

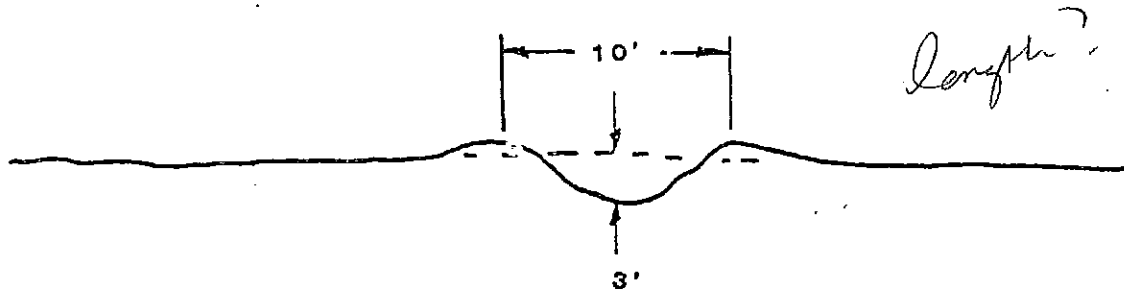
Because of the location of the Area of Operations within a portion of a half-mile wide grass-covered topographic low, one large and several small water diversion facilities will be constructed by EFN as shown on Plate 2 and Figure 3. These facilities will be maintained by EFN throughout mining activities to ensure that no surface runoff from outside of the Area of Operations is allowed to enter. The planned configuration of the Area of Operations will ensure internal drainage into the pond or ponds located along the west edge. All surface run-off within the Area of Operations and all water encountered during mining which cannot be utilized in connection with mining will be held on-site until it evaporates or until it meets the discharge standards under the NPDES permit.

*average of
diversion
facilities
point to
intermittent
rain to my
fill ponds
How about?
will pits be
lined w/
rubber liner?*

Because the principal watershed is to the north or northeast, the main diversion channel will be positioned to divert all of the surface run-off to the northeast of the Area of Operations. After examining the annual rainfall of the area and the size of the watershed, EFN has designed this diversion channel to ensure it can accommodate not only normal anticipated surface run-off but also surface run-off anticipated in



MAJOR CHANNLE
northeast of Area of Operation



MINOR CHANNLES
mainly west of Area of Operation

figure 3. TYPICAL REBUILT DRAINAGE CHANNELS CROSS SECTIONS

any 10-year, 24-hour event. Specifically, EFN will build a trapezoidal channel and protective dike which is 1,600 feet in length and 60 feet in width, with a 10-foot wide channel bottom. The material generated in the excavation of the channel will be used to construct a bank or protective dike along its western edge to provide additional protection of the Area of Operations in the event of a severe thunderstorm and its associated surface run-off. As shown in the idealized cross-section attached as Figure 3, the slope of the channel will be 1:1, and will be four feet deep with a 15-foot wide dike top. In construction of the channel and dike, EFN will remove the six inches of available topsoil from the area of construction until the channel is completed and then reapply it over the dike. Once the soil is spread over the dike, it will be seeded to protect it from erosion. During mining activities, the channel will be kept clean of debris to ensure proper functioning and, if necessary, portions will be rip-rapped. After mining activities are completed, the channel and dike will remain in place.

add'l
2.0 acres
of drainage

reseed w/
native
grasses

West of the Area of Operations are some minor drainages which EFN proposes to divert away from the Area of Operations with small triangular diversion ditches of up to three feet deep and 10 feet wide. A total of approximately 2,000 feet of such ditches will be required to assure no run-off from the west will enter the Area of Operations. The total area of water diversion channels will not exceed 2.7 acres.

The second area of disturbance caused by the proposed activities will be the result of the electric powerline tie connecting the mine site with the existing 69KW line that is located just east of US Highway 64. This 69KW line is owned and operated by Arizona Public Service Company. Starting at the existing line just east of US Highway 64, the proposed power line will follow the shortest access to the Area of

Operations. The line will be constructed at EFN's expense, but will be owned and operated by Arizona Public Service Company. Final alignment will be submitted by them and be subject to NFS approval.

In addition to the areas of disturbance discussed above, brief mention should be made of the roads needed for access and ore haulage. All of the roads required are in existence or are scheduled for construction. Upgrading and maintenance to insure adequate ingress and egress to the Area of Operations are needed. Nearly all employees and supplies will come from US Highway 64 southwest of the Project Area, on Forest Roads 305 and 305A. Upon approval of this Plan of Operations, and with the approval and supervision of the NFS, all road surfaces on non-paved access routes will be graveled, shoulders graded for drainage, culverts and other structures, as appropriate, installed and maintained for all-weather use by EFN.

Once ore haulage begins in approximately 2-1/2 years, Forest Road 305A will be used to Forest Road 302 in the center of Section 3, Township 29 North, Range 3 East. Haulage will then follow existing Forest Roads 302 and 307 to US Highway 64 on the east edge of the Kaibab National Forest, 19 road miles from the Area of Operations.

EFN will share in the required maintenance of the Forest roads used during ore haulage in proportion to use by EFN and other needs of the road bed.

Once ore production begins, it is anticipated that on the average, 10 ore trucks per day will enter and leave the Area of Operations.

V. MEASURES TO LIMIT DISTURBANCE

This Plan of Operations has been designed to minimize disturbances to the environment to allow reclamation after its completion to the standards required by law. The Project Area is as compact as practicable with stockpile and disposal areas clustered together where appropriate.

In the design of this Plan of Operations, EFN recognized that one of the important natural environmental issues at the site is proper handling of surface water run-off from adjacent watersheds. To address this issue, and to insure the integrity of the Area of Operations during activities, flood control measures have been built into the plant layout. As designed, surface water cannot enter the Area of Operations from any direction. In addition, rainfall within the yard will be retained within the Area of Operations because of its internal drainage. The low point in the yard will discharge into holding ponds along its west edge. The holding pond or series of holding ponds will be lined with plastic or impervious material. All water encountered during mining which cannot be utilized in connection with mining will be discharged into these holding ponds and held until it evaporates or treated until it meets the discharge standards applicable under the NPDES permit.

*subson
decomposition
mill
thickener*

*Def. Treatment of waste
from pond in view
of evaporation
(note 0 evap for
7 months of year).*

The central portion of the mine yard will be used to stockpile ore prior to shipment to a mill for processing. Prior to stockpiling ore grade material in the locations shown on Plate 2, EFN will construct an ore pad upon which all ore grade material will be stockpiled pending removal from the Project Area. Each ore pad will be at least one foot thick and shall be constructed utilizing an equal mixture of limestone and shale produced from the underground excavation at the Project Area. In all circumstances where ore grade

material will be stockpiled on the ground, pending removal, it is the practice of EFN to construct similar ore pads. The purpose of the ore pad is to prevent leaching of mineral values contained within the ore grade material into the soil due to rainfall. Such leaching is prevented by the impermeable characteristics of the shale and by the chemical reaction which occurs when and if any dissolved uranium contacts the limestone component of the ore pad.

In the disposal area identified as High-Waste, all material containing in excess of 0.03% uranium, which is uneconomical to ship, will be temporarily stockpiled. At present, it is anticipated that approximately 10,000 to 20,000 tons of such low grade material will be produced during mining activities. In light of the volatile market prices for energy, it is expected that nearly all of this material will ultimately be shipped to a mill for processing before the close of mining activities. However, in the event any material remains in the High-Waste stockpile at the close of activities, prior to final reclamation, EFN will haul this material from the site or dispose of it underground in the mined-out workings.

Because of the location of the Area of Operations in a naturally treeless area, there is little likelihood of increased risk of forest fire because of the proposed mining activities. In addition, the relative frequency of brief summer rains in the area further reduces risk of forest fire. However, fire security will be maintained at the surface facilities as well as on all vehicles traveling to and from the Area of Operations.

Pumps oper. during fire season - Sp out water small equip.

Although EFN considered a route for the proposed electric powerline to the Area of Operations which would follow existing roads, the route shown on Plate 2 was chosen as preferable due to the reduced length and lack of visibility to normal vehicular traffic.

While no complete new road bed is required for this project, some realignment, up-grading and maintenance, as needed, will be undertaken by EFN in consultation with the NFS. EFN has and will continue to work with the NFS and other users of the forest during activities so that road impacts will be minimal.

Ore haulage from the Area of Operations will be by independent truck contractors, with single trailer trucks of 20-ton capacity or double-trailer trucks of 25-ton capacity that meet the Arizona Highway weight restrictions. Each load will be covered with a tarpaulin, lapping over the side about a foot and secured every few feet around the truck bed. Thus, wind erosion and uneven roads will not cause any loss of material in transit. In the event of a truck accident that causes spillage of ore, EFN will take immediate aggressive action to clean up any spilled material. All uranium ore will be removed from the site of the spill within two working days of the time of the spill, provided that the action is not prevented by conditions beyond the control of EFN.

Residual dust from ore drive protection

VI. MEASURES TO RECLAIM AT THE END OF THE OPERATIONS

At the end of all mining activities, EFN will remove all structures, clean the Area of Operations, seal the mine entrances, and reclaim the disturbed areas.

After the removal of all equipment, the main shaft and vent shaft will be sealed in a manner approved by the appropriate regulatory agencies. At the shaft openings, the concrete slab used during operations will be left in place and used in the shaft sealing system. All supplies and equipment in the buildings within the Area of Operations will be removed. The headframe, buildings, and tankage will all be taken down and

removed. All concrete slabs and footings other than those around shafts will be excavated, broken and buried in the mine yard or backfilled into the shafts. Minor amounts of other debris will be handled similarly.

The mine yard will be radiometrically surveyed and any material found which exceeds radiation regulations will be removed from the area, backfilled into the shaft or hauled from the Project Area. In the event treatment of water from the underground working is needed during mining operations, sediments resulting from this will be scalped from the ponds and either hauled from the Project Area or disposed of underground in the mined-out workings.

The Area of Operations which has relief only along its south and west edge will have its edge rounded and recontoured to blend with the surrounding area. All holding ponds will be filled and recontoured. Thereafter, the previously stockpiled topsoil will be spread evenly over the entire Area of Operations.

All ground surface which has been disturbed will be drill-seeded using a seed mixture as follows, or any recommended mixture approved by the NFS prior to application:

Fairway Crested Wheatgrass	5.0 lbs./acre
Intermediate or Western Wheatgrass	5.0 lbs./acre
Yellow Sweet Clover	<u>2.0 lbs./acre</u>
TOTAL	12.0 lbs./acre

James, Folger & Shuler '88

All drainage channels used during operations will be left in place, so as to direct surface runoff around the area of

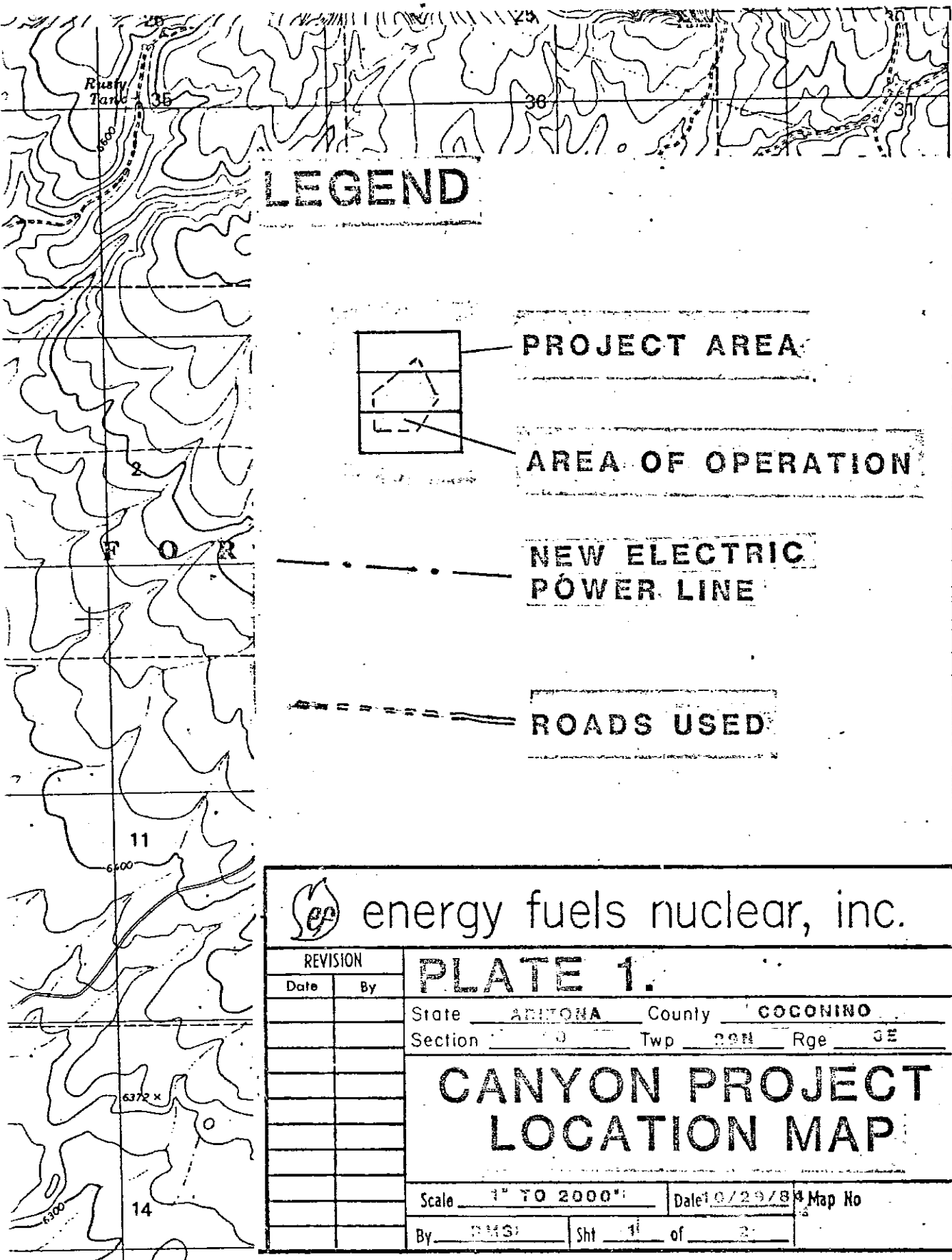
reseeding until revegetation has been adequately reestablished. Thereafter, if requested by the NFS, these channels will be similarly recontoured and reseeded.

The half-mile of road between the Area of Operation and Forest Road 305A will be graded back to surrounding contour, scarified and reseeded.

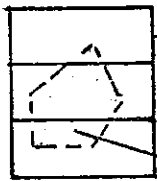
The powerline will be dismantled if no other uses exist, as directed by the NFS.

VII. CONCLUSION

EFN, as operator of the Canyon Mine, has prepared and submitted this Plan of Operations. The Plan was developed in accordance with guidelines contained in the published regulations, and pursuant to discussions with the NFS. EFN will provide additional information as required, and will entertain a request for further discussion or on-site meetings. EFN believes that implementation of this Plan of Operations will ensure that there is no unnecessary or undue degradation of the land associated with the Canyon Project.



LEGEND



PROJECT AREA

AREA OF OPERATION

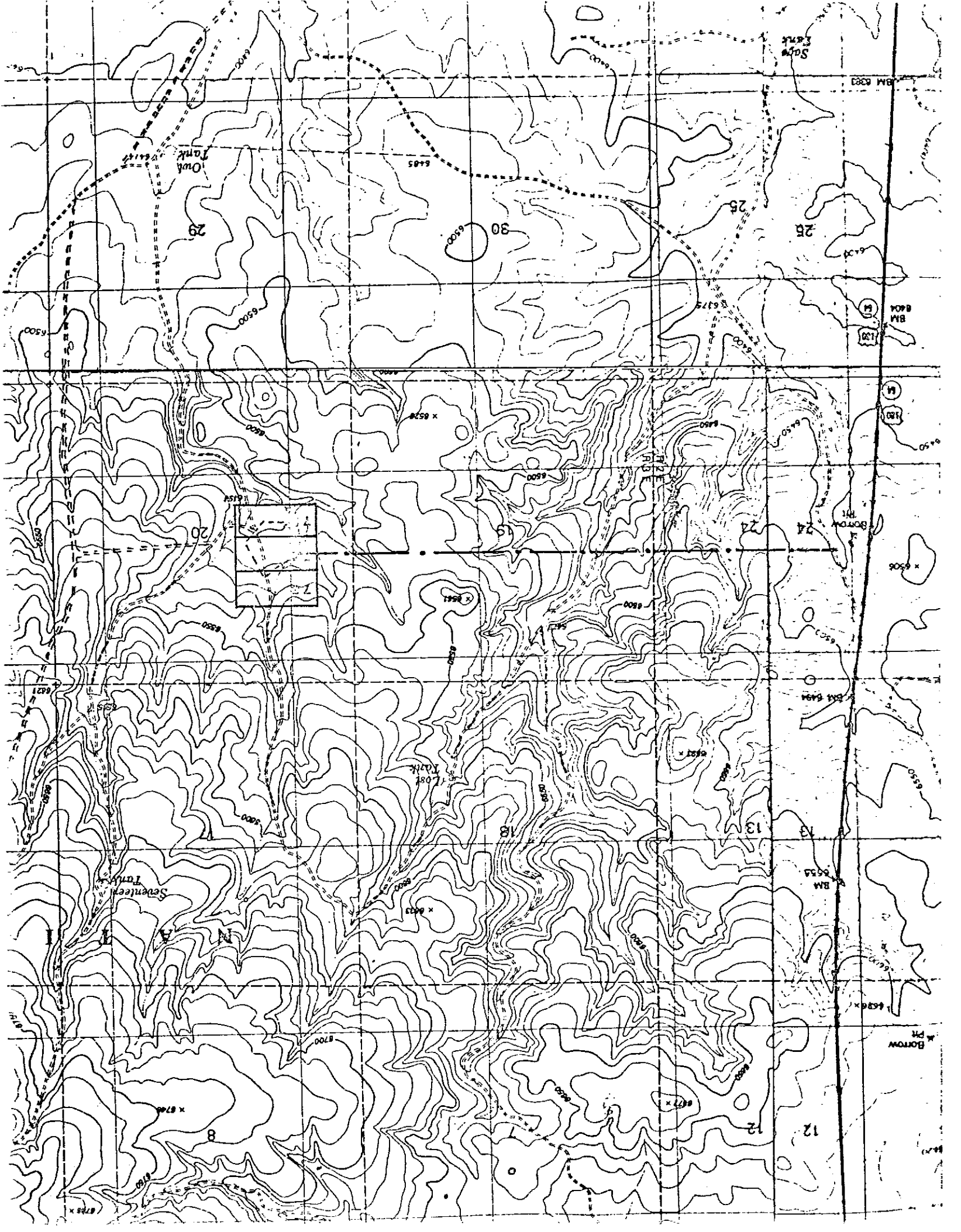
NEW ELECTRIC POWER LINE

ROADS USED

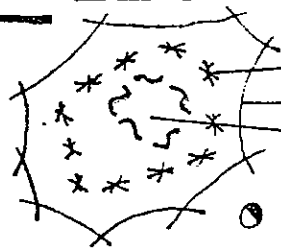
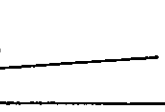
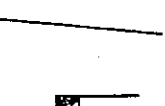


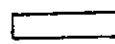
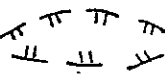

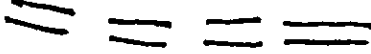
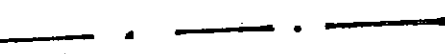
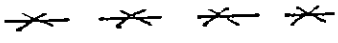




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REVISION		PLATE 1.	
Date	By		
		State <u>ARIZONA</u>	County <u>COCONINO</u>
		Section <u>0</u>	Twp <u>29N</u> Rge <u>3E</u>
		CANYON PROJECT LOCATION MAP	
		Scale <u>1" TO 2000'</u>	Date <u>6/29/84</u> Map No
		By <u>BMS</u>	Sht <u>1</u> of <u>2</u>



LEGEND

-  AREA OF OPERATION
-  EXISTING TREE LINE
-  DEPOSIT
-  SHAFTS & HEADFRAME
-  BUILDINGS AS NOTED
-  TOPSOIL STOCKPILE
-  WASTE ROCK DISPOSAL
-  ORE&HI-WASTE STOCKPILES
-  ROADS USED BY PROJECT
-  ELECTRICT POWER LINE
-  FENCE
-  HOLDING POND
-  REBUILD CHANNEL



energy fuels nuclear, inc.

REVISION

Date By

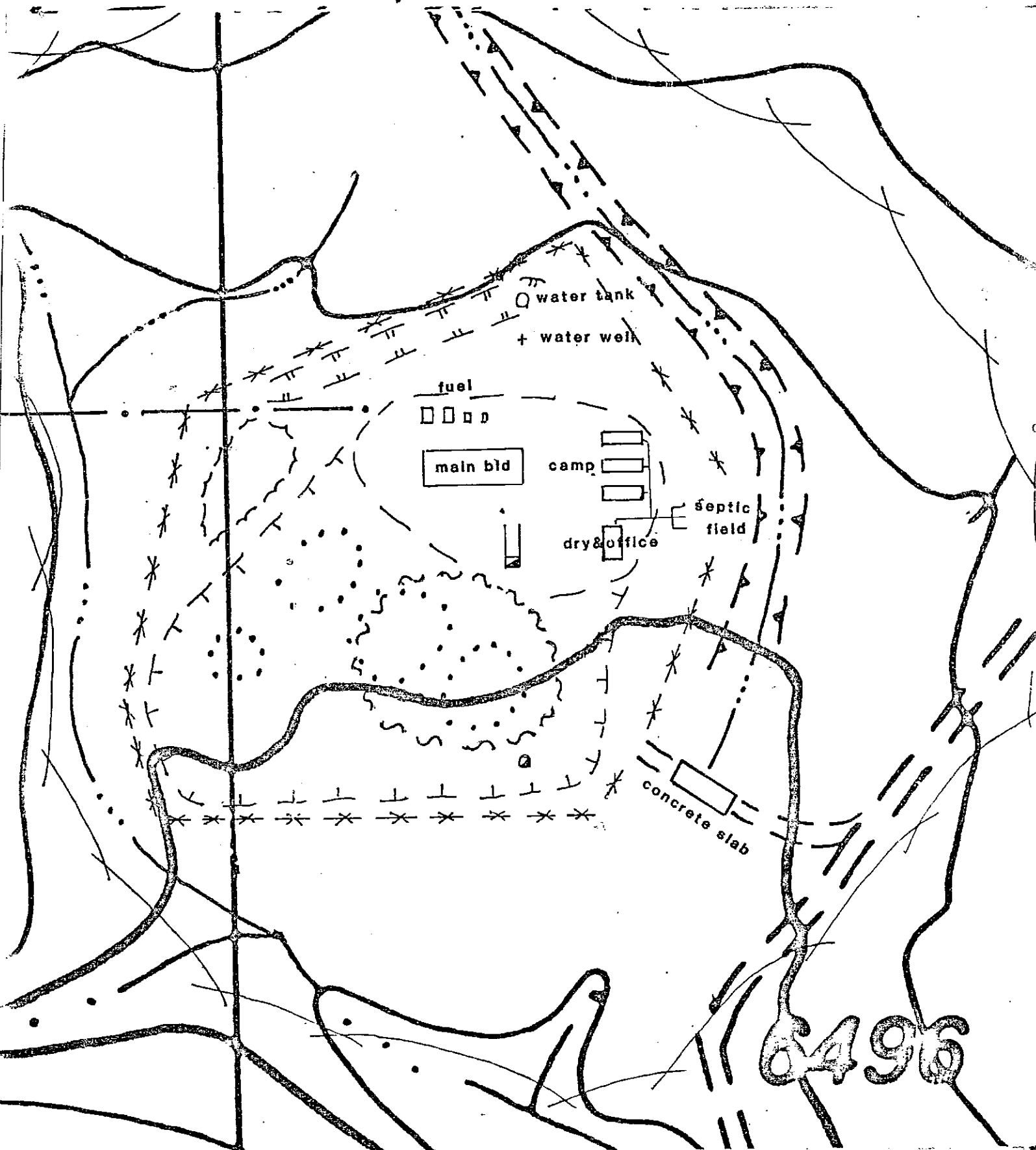
PLATE 2.

State ARIZONA County COCONINO
 Section 20 Twp 29N Rge 3E

CANYON PROJECT AREA OF OPERATION

Scale 1" TO 200' Date 10/29/8 # Map No

By RMS Sht 2 of 2



0496