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DIVISION OF RAW MATERIALS
SALT LAKE EXPLORATION BRANCH

URANIUM OCCURRENCES IN WILSON CREEK AREA GILA COUNTY, ARIZONA

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Thornburg File

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URANIUM OCCURRENCES IN WILSON CREEK AREA

GILA COUNTY, ARIZONA

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GILA COUNTY, ARIZONA

ABSTRACT

The Wilson Creek Area, in northern Gila County, is about 10 miles southeast of Young, Arizona, along the east side of Cherry Creek.

Four claims covering concentrations of uranium mineralization in the Dripping Spring Formation are owned by the American Asbestos Cement Company. The claims are located in typical plateau-type topography, with flat mesas and nearly vertical canyon walls. The bedded zones of uranium mineralization are exposed in the Dripping Spring Quartzite near the bottom of the canyons.

It is suggested that the mineralized beds may have spatial relationship to the bottom of the Mescal limestone and to the bottom of a thick zone in the upper member of the quartzite. Two of the four bedded deposits occur in "crackled" beds. One mineralized fracture was noted.

The uranium mineral, meta-torbernite, has formed in tiny vugs in the quartzite and is also intergrown with the iron oxide coating on the quartzite surfaces. Associated minerals are minor and consist of chalcopyrite, magnetite and chalcocite (?).

URANIUM OCCURRENCES IN WILSON CREEK AREA

GILA COUNTY, ARIZONA

INTRODUCTION

LOCATION

The Wilson Creek Area, used in this report, includes portions of three intermittent tributaries to Cherry Creek about 10 miles southeast of Young, Arizona. These streams are, from north to south, (1) Walnut Creek within Section 25, T 8 N, R 14 E, (2) Wilson Creek within Section 31, T 8 N, R 15 E, and (3) Rough Creek (a local name) within Section 1 (unsurveyed), T 7 N, R 14 E.

The area is accessible through the camp of the American Asbestos Cement Company by unimproved road and poor trails. In dry seasons, the creek bottoms offer the easiest access by foot to the radioactive areas.

TOPOGRAPHY

The area has been thoroughly dissected by streams, forming nearly vertical canyon walls, cutting into the flat or gently sloping areas.

Vertical cliffs are common where either the Troy quartzite or the Dripping Spring quartzite have been cut by erosion. The Mescal limestone, which overlies the Dripping Spring formation, forms the talus slopes along the canyons and is usually the capping formation on the mesas in this area.

The canyon bottoms, in proximity to the radioactive zones, range

in elevation from approximately 4500 feet to approximately 4600 feet. The mesas above these canyons vary from about 5000 feet to approximately 5200 feet.

HISTORY AND PRODUCTION

The uranium mineralization was discovered by Melvin Stockman and O. H. Shepp in January and February, 1953. There has been no development work other than discovery pits, and no uranium production. The neighboring area has produced substantial amounts of asbestos from the Mescal formation.

PREVIOUS REPORTS

There have been no previous reports on the Wilson Creek area, as such. However, R.M.E. 2003 by W. E. Mead and R. L. Wells, "Preliminary Reconnaissance of the Dripping Spring Quartzite Formation in Gila and Pinal Counties, Arizona" covers a portion of the subject area. E. P. Kaiser has discussed the Dripping Spring quartzite at the Red Bluff property in U.S.G.S. TEMR 210 and in U.S.G.S. Circular 137. Gordon Gastil of the University of California is currently preparing a thesis report covering a portion of the Dripping Spring formation.

REGIONAL GEOLOGY

STRATIGRAPHY

The rocks in the region of the Sierra Ancha range consist primarily of sediments of the Pre-Cambrian Apache Group, the Cambrian Troy formation and post-Pennsylvanian (1)* diabase dikes and sills that intrude all of the older formations in the area. Kaiser shows the stratigraphy in a generalized section(2) as follows:

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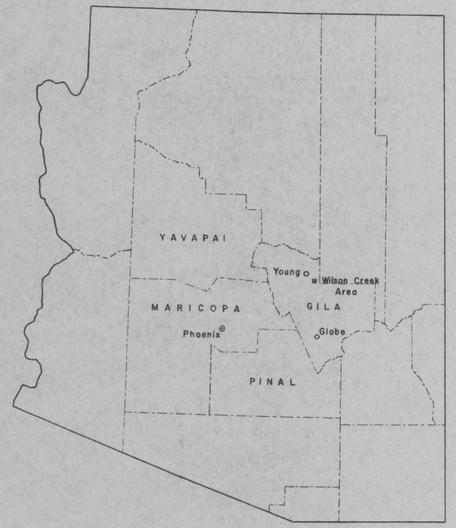
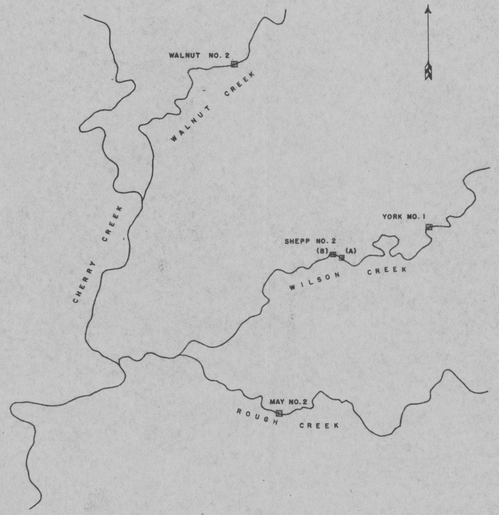
* Numbers in parantheses refer to Bibliography at end of report.



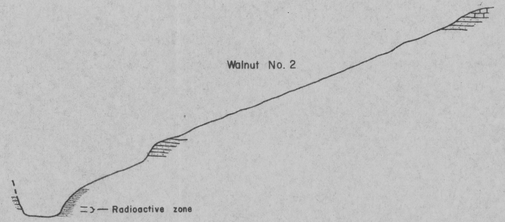
INDEX MAP OF ARIZONA SHOWING LOCATION OF WILSON CREEK AREA

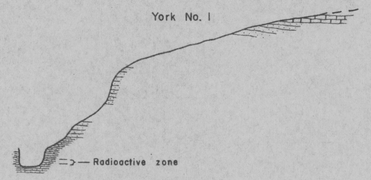
0 50 100 MILES



LOCATION MAP OF URANIUM MINERALIZATION
WILSON CREEK AREA

Scale: 1 inch = 1/2 mile

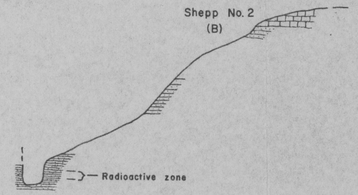


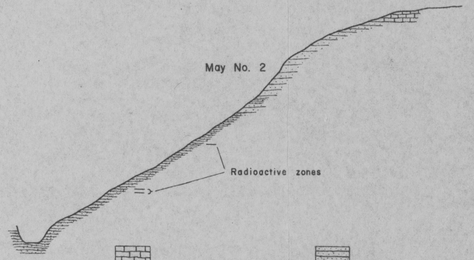


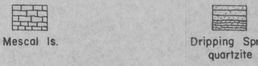
SECTION THRU RADIOACTIVE ZONES

WALNUT NO. 2 AND YORK NO. 1 CLAIMS

Scale: 1 inch = 100 feet







SECTION THRU RADIOACTIVE ZONES

SHEPP NO. 2 AND MAY NO. 2 CLAIMS

Scale: 1 inch = 100 feet

Aug., '53
A - Pm 14

Age	Formation	Thickness in Feet
Tertiary & Quaternary	Gravel and Sand	
Cambrian	Troy Quartzite	500
	Unconformity	
Younger Pre-Cambrian Apache Group	Vesicular Basalt Flow	0-75
	Mescal Limestone	225-400
	Dripping Spring Quartzite	450-700
	Barnes Conglomerate	5-50
	Pioneer Shale	150-750
	Scanlon Conglomerate	0-30
	Unconformity	
Older Pre-Cambrian	Granite and schist	

The Scanlon conglomerate in the Castle Dome area is described by Peterson, et al [3] as varying in thickness from a thin layer to a 6 foot bed of subangular pebbles of glossy vein quartz, 4 to 5 inches long, in a reddish arkose matrix.

The Pioneer shale in the Sierra Ancha region is an arkosic siltstone [4] that may include one or more dark maroon phases. In the Castle Dome area (Peterson, op. cit.) the sandstone beds of the Pioneer formation vary in thickness from 3 to 18 inches and many of them are laminated, cross-laminated and ripple marked. Thin films of shale separate the beds in this area. The Pioneer grades upward from a pebbly arkose through a reddish, medium-grained, arkosic sandstone to a fine-grained sandstone and arenaceous shale.

The Barnes conglomerate is typified by well rounded pebbles and cobbles of quartzite in a matrix of arkosic sandstone.

The Dripping Spring quartzite may be divided into two units:

the upper thin-bedded, rusty-colored, fine-grained quartzite and the lower, massively-bedded, buff-colored, medium-grained quartzite. Ransome [1] reported beds up to 50 feet in thickness.

After measuring 17 different sections, Gastil states that "the thicknesses and appearance" of the two units of the Dripping Spring are relatively consistent and that "the distinction between the finely bedded upper unit and the coarse cross-laminated lower unit is clear in all areas investigated".

The Mescal limestone, characterised by many thin, intercalated beds of chert, is a light grey to white limestone in beds 1 to 4 feet in thickness. An algal unit occupies the upper 15 to 50 feet as determined by diamond drilling by the American Asbestos Cement Company [5].

The Troy quartzite, the uppermost cliff forming formation in the area, is a medium to coarse-grained, thick-bedded, yellowish to buff-colored quartzite. According to Darton [6], the basal conglomerate of the Troy formation contains debris from the underlying Mescal and Dripping Spring formations.

STRUCTURE

The most prominent structural feature in the area is the series of block faults evident in all portions of the Sierra Ancha Range. There is no apparent consistency in the relative direction of throw along the faults except on the margin of the range. Here, generally, the west block is the down-dropped block. Toward the center of the Sierra Ancha range it is not uncommon to find down-dropped blocks in which the Mescal limestone is in contact with the lower member of the Dripping Spring formation. This indicates a movement of several hundred feet.

GEOLOGY OF MINERAL DEPOSITS

STRATIGRAPHY

In the areas adjacent to the zones of uranium mineralization only the Dripping Spring and Mescal formations are exposed. In some places diabase sills and dikes have intruded the Mescal limestone and dikes have been intruded into and through the Dripping Spring formation. No diabase sills have been observed or reported in the quartzite.

The upper member of the Dripping Spring quartzite, in which the uranium mineralization occurs, consists in general of the following units in ascending order; (a) paper thin to 1/4 inch beds of bright red to dull, rusty red and black, fine-grained quartzite; (b) fine-grained light to dark gray quartzite in 1/4 to 6 inch beds that weather to dark, rust red and bluish green colors; (c) buff colored, 1 to 1½ inch beds of medium-grained quartzite grading into (d) a zone of light tan to buff colored beds ranging in thickness from 1 to 3 feet.

In the four sections measured, the distance of the bottom of the upper unit (d) below the Mescal-Dripping Spring contact seems to be fairly constant. On the York No. 1, Shepp No. 2 and May No. 2 claims, the bottom of this thick-bedded zone is approximately 100 feet below the Mescal contact. On the Walnut No. 2 claim it is approximately 130 feet below the limestone. There is a possibility that Kaiser's "upper white marker beds" may be the expression of the thick-bedded portion of the upper member in the Wilson Creek area. These relationships are shown diagrammatically in Figure 1.

STRUCTURE

The sedimentary beds, in the Wilson Creek area, are nearly flat lying with an observed maximum dip of 8 degrees toward the north or north-

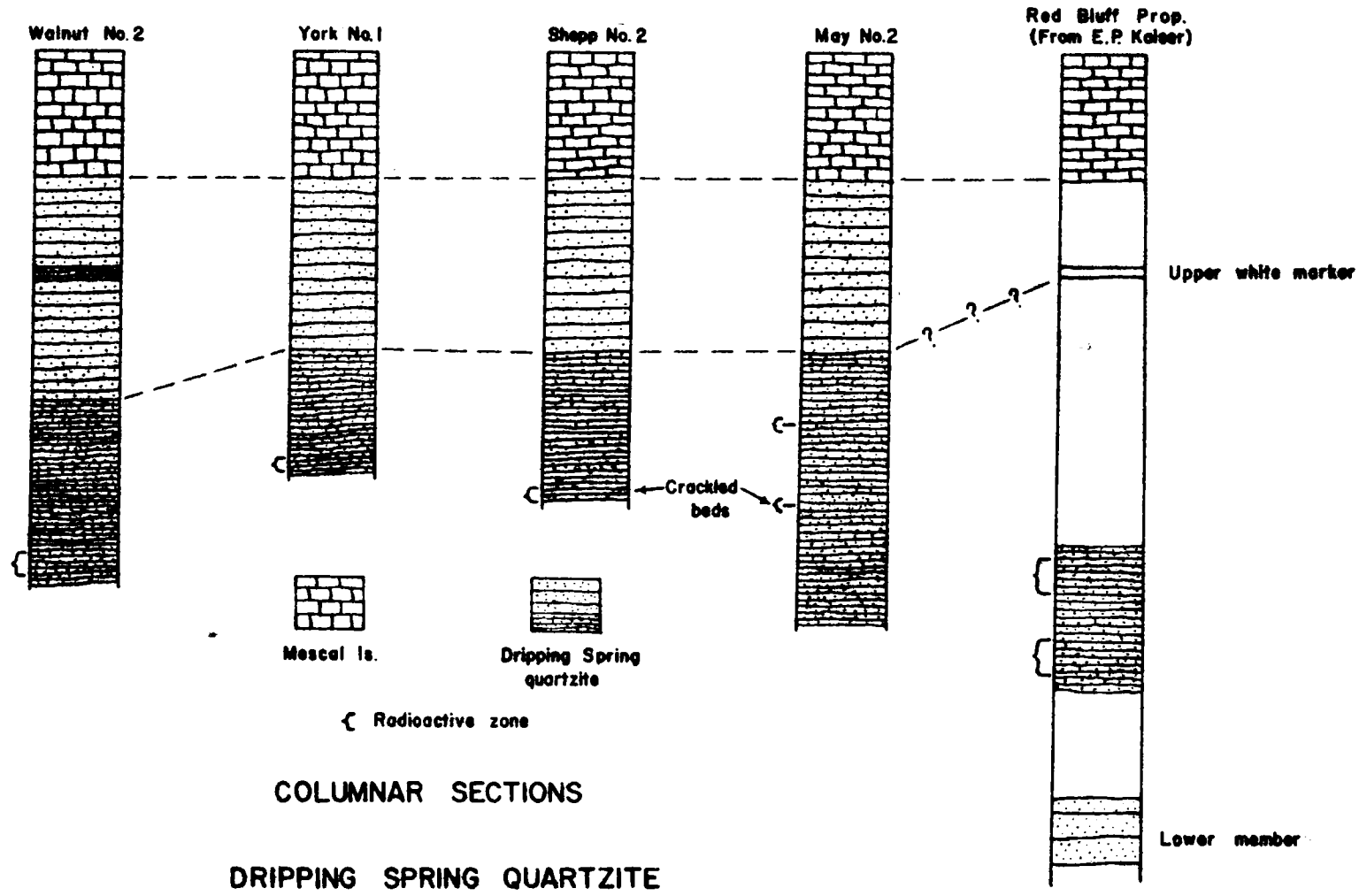
east. Very local and shallow undulations were noted in the thinly-bedded quartzite.

There is a minor amount of weak fracturing in the vicinity of the mineralized zones, along which there has been no apparent movement. If any fracture system is present, it would possibly include a series of weak fractures that strike a few degrees north of west and another series at nearly right angles to the first, striking several degrees east of north. However, so few faults were observed and mapped, it would be impossible at this time to state that such a system exists.

There is a definite system of weak jointing in the thin-bedded quartzite throughout the Wilson Creek area. These jointing planes strike generally northwesterly and dip from 85° southwesterly to 85° northeasterly. There are no indications of movement along these planes.

On the Shepp No. 2 and the May No. 2 claims, a "crackled" zone was mapped. In both cases, this zone is confined to one bed. The bed on the Shepp No. 2 claim is approximately one and one-half feet thick and the "crackled" nature is continuous within the bed for approximately 20 feet. There is no apparent indication that the "crackled" nature is a result of movement. However, the projection of a nearby weak fault passes within 20 feet from the exposed portion of the bed. The topography is such that the fault cannot be traced through the bed.

On the May No. 2 claim the 6 to 8 inch "crackled" bed is exposed in a shallow wash that cuts the talus on a fairly steep slope. For this reason, the continuity of the crackled zone or the existence of faults could not be determined. It should be noted (Fig. 1) that these beds occur at approximately the same distance below the limestone contact.



COLUMNAR SECTIONS

DRIPPING SPRING QUARTZITE

Scale: 1" = 100'

FIGURE 1

Aug., '53
A-Pm 13

MINERALOGY (7)

The quartzite consists of quartz grains averaging 0.1 millimeters or slightly less in diameter. The cementing material is predominantly silica with some iron oxide. Sparse amounts of chalcopyrite, magnetite and chalcocite (?) were noted with some interstitial chloritic material. One sample contained grains of microperthite in very minute quantities.

The only uranium mineral identified from the Wilson Creek area is meta-torbernite. It occurs as minute crystal aggregates in tiny vugs scattered throughout the quartzite and is intergrown with the iron oxide coating. One small cluster of meta-torbernite crystals was observed in the field. This occurrence is in close proximity to the mineralized fracture on the Shepp No. 2 Claim and is associated with a minor amount of malachite. No copper mineralization has been observed other than the very fine disseminated chalcopyrite.

URANIUM OCCURRENCES

Chip samples from the zones of concentrated uranium mineralization vary from 0.06% eU_3O_8 to greater than 0.20% eU_3O_8. As these samples were taken from the walls of canyons where water in the streams has undoubtedly had an appreciable mechanical and chemical erosional effect, it is suggested that the average grade of the material represented by these samples is somewhat less than could be expected from samples of fresh rock.

The radiometric equivalent for samples from this area vary up to 10% greater than actual chemical assays.

WALNUT NO. 2 CLAIM

The zone of anomalous radioactivity mapped on the Walnut No. 2

claim has a lateral extent of at least 175 feet along the creek bottom. Beds 1/4 inch to 6 inches in thickness contain the bulk of the mineralization. The average thickness of the zone of anomalous radioactivity is approximately 2 feet with a maximum thickness of approximately 7 feet. The bottom of the lowermost bed is no more than 6 feet above the stream bed and in the wet seasons, the stream reaches a depth of at least 10 feet at this point.

The radioactivity across the entire length of the anomalous zone averages 0.16 mr/hr and ranges from the 0.04 mr/hr background to a maximum of 0.50 mr/hr in a small "hot spot".

YORK NO. 1 CLAIM

The zone of anomalous radioactivity in the York No. 1 claim, like that on the Walnut No. 2 claim, is confined to a zone of thin-bedded quartzite (1/8 inch to 2 inches thick) having an overall thickness of not more than 2 feet. The horizontal length of this zone does not exceed 40 feet with an average radiometric value of 0.13 mr/hr and a maximum of 0.15 mr/hr.

SHEPP NO. 2 CLAIM

(A) The only observed fracture, showing anomalous radioactivity, in the Wilson Creek area was found on the Shepp No. 2 claim. This structure, striking N 9° E and dipping 86° easterly, is evident on both walls of the creek and has a radiometric value of 0.70 mr/hr. Although concentrated in the fracture, a certain amount of the mineralization has penetrated the surrounding rock for a maximum of 2 feet on each side of the fracture.

(B) At approximately 160 feet westerly from the mineralized fracture, a "crackled" zone is exposed in a bed about five feet above the stream bottom. This zone is approximately 30 feet in length and is contain-

ed within a 1-1/2 foot bed. Although the "crackled" area is confined to one bed, a thickness of greater than 12 feet shows anomalous radioactivity. The accessible 12 feet has an average radiometric value of 0.60 mr/hr with 0.80 mr/hr maximum in the "crackled" zone.

MAY NO. 2 CLAIM

The mineralized zones on May No. 2 claim are exposed in the bottom of a small draw where water action has cut through the talus.

The upper zone occurs in thin-bedded quartzite that is locally warped, forming shallow undulations. The maximum radioactivity reaches 0.40 mr/hr.

The lower zone showing anomalous radioactivity -- 0.50 maximum, 0.40 average -- occurs in a 6 to 8 inch partially crackled bed. If the crackled nature is due to movement, the source of the movement may have been a fault that passes through the east end of the short exposure. However, there are no apparent indications of movement along the fault.

CONCLUSIONS AND RECOMMENDATIONS

The occurrence of uranium mineralization in beds of the Dripping Spring quartzite, at a fairly constant distance from a recognizable contact, suggests a possible widespread deposit of low grade mineralization. Discovery of concentrations, such as those discussed in this report, may be enhanced by information gained by physical exploration on two of the localities in this area.

It is recommended that sufficient work be done on the Walnut No. 2 and the Shepp No. 2 claims to determine the continuity of the uranium mineralization. A minimum of ten feet of drifting or deep trenching should be accomplished in each of three areas: the two "hot spots" on the Shepp No. 2 claim (A & B described above) and the anomalous zone on the Walnut No. 2 claim.

If the minimum program indicates the necessity of further exploration, recommendations will be submitted covering an extended program.

BIBLIOGRAPHY

(1) Ransome, F. L., The Copper Deposits of Ray & Miami, Arizona, U.S.G.S. Prof. Paper 115, 1919

(2) Kaiser, E. P., Uraniferous Quartzite, Red Bluff Prospect, Gila County, Arizona. USGS TEMR-210, 1951, Page 5

(3) Peterson, N. P.; Gilbert, C. M. and Quick, G. L., Geology and Ore Deposits of the Castle Dome Area, Gila County, Arizona U.S.G.S. Bull. 971, 1951

(4) Gastil, Gordon, Letter to F. J. Williams, USAEC, SLEB, March 26, 1953.

(5) Brewer, L. J., Geologic and Diamond Drilling Reports Prepared for the American Asbestos Cement Co., 1952.

(6) Darton, N. H., A Resume of Arizona Geology, Arizona Bureau of Mines, Bull. 119, 1925, Page 32-37.

(7) Determinations by the Technical Services Branch, Division of Raw Materials, U. S. Atomic Energy Commission, N.Y.

URANIUM OCCURRENCES IN WILSON CREEK AREA

GILA COUNTY, ARIZONA

PART II

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URANIUM OCCURRENCES IN WILSON CREEK AREA

GILA COUNTY, ARIZONA

PART II

ABSTRACT

Surface samples from the four claims examined show an indicated ore reserve containing 925 tons at 0.123% U_3O_8 and an inferred reserve of 170 tons at ± 0.06% U_3O_8.

Higher assay and radiometric values and accessibility indicate that the Walnut No. 2 and Shepp No. 2 claims are the logical choices for physical exploration. Therefore, a program of underground work including three short shafts totalling 150 feet and 675 feet of drifting is recommended.

URANIUM OCCURRENCES IN THE WILSON CREEK AREA

GILA COUNTY, ARIZONA

PART II

ASSAY AND ORE RESERVE DATA

WALNUT NO. 2 CLAIM

The radiometric readings taken in the field vary from background (0.04 mr/hr) to a maximum of 0.50 mr/hr over a 2 foot to 7 foot width and a total length of 175 feet along the creek. Assays of samples from this zone indicate an equivalent value of from 0.01% to 0.20% U_3O_8. These samples were taken from the wall of the canyon where the water of the stream has undoubtedly had an appreciable mechanical and chemical erosional effect. Therefore, it is suggested that the average grade of all of the samples taken at this exposure (0.092% eU_3O_8) is somewhat less than could be expected from samples of "fresh" rock in the same area.

An indicated ore reserve may be calculated, using 12 cubic feet of rock per ton, as follows:

3' (thickness) x 20' (width) x 85' (length) -- 5100 cu. ft. or 425 tons at 0.10% eU_3O_8.

YORK NO. 1 CLAIM

Although a zone of weak anomalous radioactivity two feet thick extends laterally for approximately 40 feet along the wall of the canyon, an insufficient number of samples have been taken to propose an indicated tonnage at this time.

However, there is the possibility of developing approximately 135 tons of ore at greater than 0.06% U_3O_8. This is included as inferred

ore.

SHEPP NO. 2 CLAIM

(A) Assays along the mineralized fracture on this claim indicate the following tonnage and grade:

10' (thickness) x 3' (width) x 40' (Length) (20' each side of creek) - 1200 cu. ft. or 100 tons at 0.11% eU_3O_8.

(B) Samples from the mineralized bed, extending for 30' along the creek, indicate a zone 8 feet high that may be projected into the wall for 20 feet with an average grade of 0.15% eU_3O_8. This would give an indicated reserve of 400 tons at 0.15% U_3O_8.

MAY NO. 2 CLAIM

The mineralized zone on the May No. 2 Claim is poorly exposed and consequently only an inferred tonnage may be presented. Exposures show a 2 foot thickness over a width of 10 feet. By projecting this zone 20 feet into the hillside, approximately 35 tons of greater than 0.06% U_3O_8 may be tabulated in the inferred ore reserves.

TABULATION OF ORE RESERVE

	Indicated Ore	Inferred Ore
Walnut No. 2 Claim	425 tons @ 0.10% U_3O_8	
York No. 1 Claim		135 tons @ ± 0.06% U_3O_8
Shepp No. 2 Claim	(A)100 tons @ 0.11% " (B)400 tons @ 0.15% "	
May No. 2 Claim		35 tons @ ± 0.06% U_3O_8
TOTALS	925 tons @ 0.123% U_3O_8	170 tons @ ±0.06% U_3O_8

CONCLUSIONS AND RECOMMENDATIONS

Samples from the four claims examined indicate good possibilities of developing appreciable production of uranium from the Wilson Creek area.

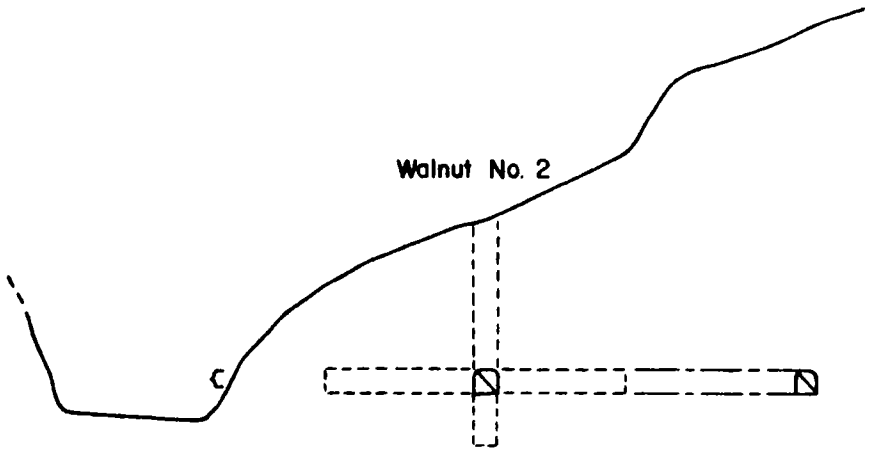
The occurrence of uranium mineralization in beds of the Dripping Spring quartzite, at a fairly constant distance from a recognizable contact, indicates the possibility of a widespread deposit of low grade mineralization. The possibility of discovering concentrations, such as those discussed in this report, may be enhanced by information gained in physical exploration.

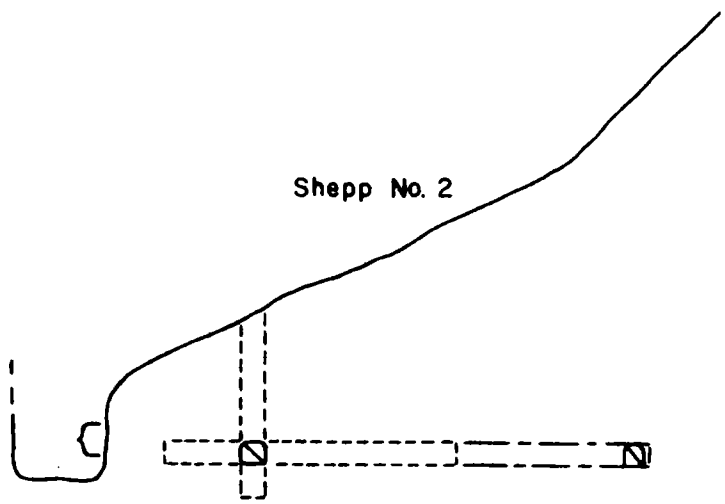
It is recommended that the mineralized zones on Walnut No. 2 and Shepp No. 2 claims be given first consideration for physical exploration work in the Wilson Creek area. These two claims have the greatest exposures of mineralized rock showing the highest assays and the mineralized zones are more readily accessible.

It will be necessary to construct approximately 1-1/2 miles of road to each of these locations. The cost of construction of access roads, by a bulldozer, should not be excessive. There would be little or no blasting required as the major portion of the roads would be cut in limestone overburden. Estimates of the cost of this type of road construction vary from $0.75 to $1.00 per foot. Using $0.90 per foot, the total cost of 3 miles of road would amount to $14,256.00.

WALNUT NO. 2 CLAIM

The proposed exploration program on the Walnut No. 2 claim is summarized below:





First stage ----
Second stage —— —

℄ Radioactive zone

SECTION THRU PROPOSED EXPLORATION

WALNUT NO. 2 AND SHEPP NO. 2 CLAIMS

Scale: 1" = 50'

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A-Pm 15

STAGE I:

60 feet of shaft @ $35.00/ft	$2100.00
150 feet of drift @ $25.00/ft	$3750.00
60 feet of timber (shaft @ $5.00/ft	$ 300.00
	$6150.00

STAGE II:

100 feet of drift @ $25.00/ft	$2500.00

The shaft, herein proposed, would allow work to continue during wet seasons when there is water in the creek. If an adit is collared from the stream channel, it would be susceptible to flooding and filling by water washed debris. The proposed access road would necessarily approach the area to be prospected from above. The shaft would be accessible by road, whereas any work from the stream channel could be reached only on foot.

From the shaft, the mineralized bed should be explored in four directions. The proximity to the stream will limit the drifting toward the east. The length of the mineralized outcrop should be explored by drifting northerly and southerly from the shaft for a minimum of 85 feet. The mineralized bed should also be prospected toward the west for at least 25 feet. The 100 feet of drifting, recommended in Stage II, would continue the west drift for 50 feet or to the limit of mineralization, whichever is less, and would allow a 25 foot drift to the north and 25 foot to the south. The north and south drift would also be controlled by the limit of the mineralization.

SHEPP NO. 2 CLAIM

(A) The mineralized fracture on the Shepp #2 claim should be prospected on both sides of the stream channel.

(1) On the south side, a crosscut should be driven from the wall of the canyon at approximately 30 feet downstream from the fracture. This 40 foot crosscut should intersect the fracture at approximately 45° and about 25 feet from the exposure. By running the crosscut at 45° to the wall of the canyon, a lesser amount of water washed debris will accumulate in the adit.

From the intersection of the crosscut and the fracture, a 25 foot drift should be driven toward the south and a short (10 foot) drift driven northward toward the canyon wall. The amount of mineralization should control the amount of drifting.

STAGE I:

75 feet of drift @ $25.00/ft - - - - - - - - - - - $1875.00

STAGE II:

50 feet of drift @ $25.00/ft - - - - - - - - - - - $1250.00

$3125.00

(2) On the north side of the creek the fracture may be prospected by the method described for the Walnut No. 2 claim, i.e., a shaft no deeper than 50 feet should be sunk through the talus above the creek and a drift from the shaft should be driven northerly on the fracture.

STAGE I:

40 feet of shaft @ $35.00/ft - - - - - - - - - - - $1400.00

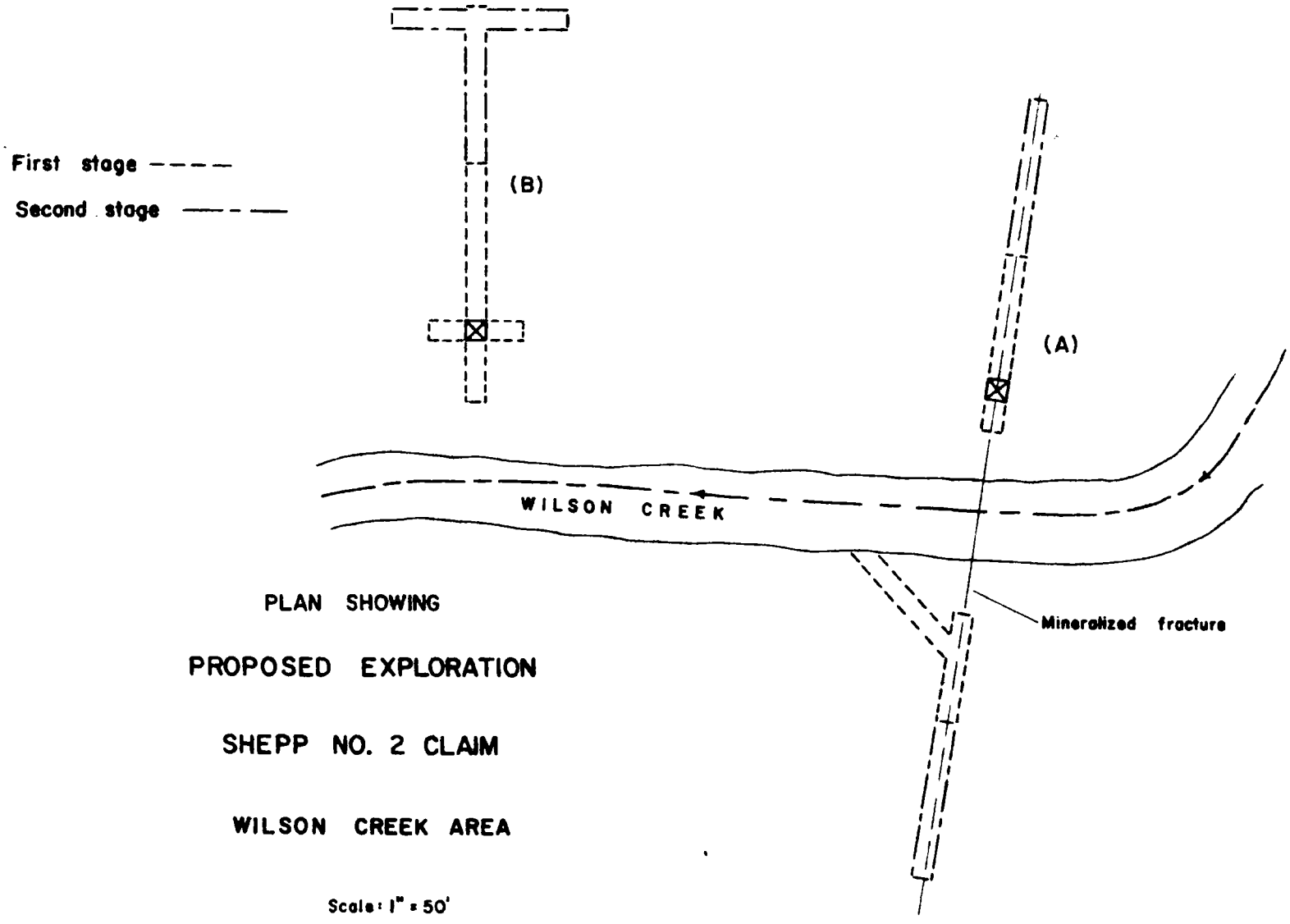
50 feet of drift @ $25.00/ft - - - - - - - - - - - $1250.00

40 feet of timber (shaft) @ $5.00/ft - - - - - - $ 200.00

$2850.00

STAGE II:

50 feet of drift @ $25.00/ft - - - - - - - - - - - $1250.00



PLAN SHOWING

PROPOSED EXPLORATION

SHEPP NO. 2 CLAIM

WILSON CREEK AREA

Scale: 1" = 50'

Aug., '53
A - Pm 16

(B) Drifts from a shaft should also be utilized to explore the bedded mineralization on the Shepp No. 2 claim. Here again, flooding will be prevented and access will be easier. In this case, a maximum of 50 feet of shaft would be necessary and the drifting, as above, would be controlled by the mineralization.

STAGE I:

50 feet of shaft @ $35.00/ft	$1750.00
100 feet of drift @ $25.00/ft	$2500.00
40 feet of timber @ $5.00/ft	$ 200.00
	$4100.00

STAGE II:

100 feet of drift @ $25.00/ft	$2500.00

TABULATION OF COST ESTIMATES

Tabulated below are estimates for proposed exploration program:

ROAD CONSTRUCTION	$14,256.00
STAGE I:	
150 feet of shaft @ $35.00/ft	-$ 5,250.00
375 feet of drifts & crosscuts @ $25.00/ft	-$ 9,375.00
150 feet of timber (shaft) @ $5.00/ft	-$ 750.00
	$15,375.00
STAGE II:	
300 feet of drifts & crosscuts @ $25.00/ft	-$ 7,500.00
TOTAL	$22,875.00

Total — 14,256.00 / 37,131.00

URANIUM OCCURRENCES IN WILSON CREEK AREA

GILA COUNTY, ARIZONA

PART II

TABLE OF CONTENTS

URANIUM OCCURRENCES IN WILSON CREEK AREA

GILA COUNTY, ARIZONA

PART II

ABSTRACT

Surface samples from the four claims examined show an indicated ore reserve containing 925 tons at 0.123% U_3O_8 and an inferred reserve of 170 tons at ± 0.06% U_3O_8.

Higher assay and radiometric values and accessibility indicate that the Walnut No. 2 and Shepp No. 2 claims are the logical choices for physical exploration. Therefore, a program of underground work including three short shafts totalling 150 feet and 675 feet of drifting is recommended.

URANIUM OCCURRENCES IN THE WILSON CREEK AREA

GILA COUNTY, ARIZONA

PART II

ASSAY AND ORE RESERVE DATA

WALNUT NO. 2 CLAIM

The radiometric readings taken in the field vary from background (0.04 mr/hr) to a maximum of 0.50 mr/hr over a 2 foot to 7 foot width and a total length of 175 feet along the creek. Assays of samples from this zone indicate an equivalent value of from 0.01% to 0.20% U_3O_8. These samples were taken from the wall of the canyon where the water of the stream has undoubtedly had an appreciable mechanical and chemical erosional effect. Therefore, it is suggested that the average grade of all of the samples taken at this exposure (0.092% eU_3O_8) is somewhat less than could be expected from samples of "fresh" rock in the same area.

An indicated ore reserve may be calculated, using 12 cubic feet of rock per ton, as follows:

3' (thickness) x 20' (width) x 85' (length) -- 5100 cu. ft. or 425 tons at 0.10% eU_3O_8.

YORK NO. 1 CLAIM

Although a zone of weak anomalous radioactivity two feet thick extends laterally for approximately 40 feet along the wall of the canyon, an insufficient number of samples have been taken to propose an indicated tonnage at this time.

However, there is the possibility of developing approximately 135 tons of ore at greater than 0.06% U_3O_8. This is included as inferred

ore.

SHEPP NO. 2 CLAIM

(A) Assays along the mineralized fracture on this claim indicate the following tonnage and grade:

10' (thickness) x 3' (width) x 40' (length) (20' each side of creek) - 1200 cu. ft. or 100 tons at 0.11% eU_3O_8.

(B) Samples from the mineralized bed, extending for 30' along the creek, indicate a zone 8 feet high that may be projected into the wall for 20 feet with an average grade of 0.15% eU_3O_8. This would give an indicated reserve of 400 tons at 0.15% U_3O_8.

MAY NO. 2 CLAIM

The mineralized zone on the May No. 2 Claim is poorly exposed and consequently only an inferred tonnage may be presented. Exposures show a 2 foot thickness over a width of 10 feet. By projecting this zone 20 feet into the hillside, approximately 35 tons of greater than 0.06% U_3O_8 may be tabulated in the inferred ore reserves.

TABULATION OF ORE RESERVE

	Indicated Ore	Inferred Ore
Walnut No. 2 Claim	425 tons @ 0.10% U_3O_8	
York No. 1 Claim		135 tons @ ± 0.06% U_3O_8
Shepp No. 2 Claim	(A)100 tons @ 0.11% "	
	(B)400 tons @ 0.15% "	
May No. 2 Claim		35 tons @ ± 0.06% U_3O_8
TOTALS	925 tons @ 0.123% U_3O_8	170 tons @ ± 0.06% U_3O_8

CONCLUSIONS AND RECOMMENDATIONS

Samples from the four claims examined indicate good possibilities of developing appreciable production of uranium from the Wilson Creek area.

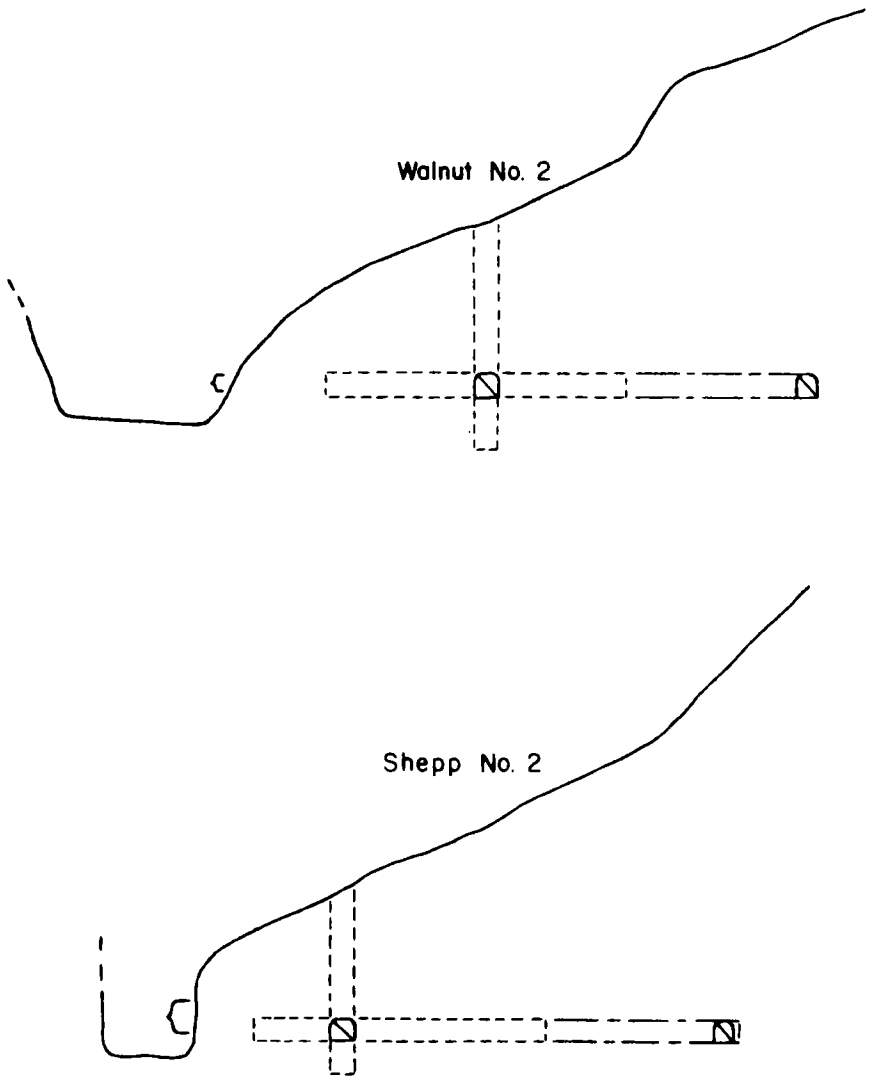
The occurrence of uranium mineralization in beds of the Dripping Spring quartzite, at a fairly constant distance from a recognizable contact, indicates the possibility of a widespread deposit of low grade mineralization. The possibility of discovering concentrations, such as those discussed in this report, may be enhanced by information gained in physical exploration, such as that herein proposed.

It is recommended that the mineralized zones on Walnut No. 2 and Shepp No. 2 claims be given first consideration for physical exploration work in the Wilson Creek area. These two claims have the greatest exposures of mineralized rock showing the highest assays and the mineralized zones are more readily accessible.

It will be necessary to construct approximately 1-1/2 miles of road to each of these locations. The cost of construction of access roads, by a bulldozer, should not be excessive. There would be little or no blasting required as the major portion of the roads would be cut in limestone overburden. Estimates of the cost of this type of road construction vary from $0.75 to $1.00 per foot. Using ~~$0.50~~ $0.90 per foot, the total cost of 3 miles of road would amount to $14,256.00.

WALNUT NO. 2 CLAIM

The proposed exploration program on the Walnut No. 2 claim is summarized below:



SECTION THRU PROPOSED EXPLORATION

WALNUT NO. 2 AND SHEPP NO. 2 CLAIMS

Scale: 1" = 50'

Aug., '53
A-Pm 15

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STAGE I:

60 feet of shaft @ $35.00/ft - - - - - - - - - - - - $2100.00

150 feet of drifts @ $25.00/ft- - - - - - - - - - - - $3750.00

60 feet of timber (shaft) @ $5.00/ft - - - - - - - $ 300.00

$6150.00

STAGE II:

100 feet of drifts @ $25.00/ft - - - - - - - - - - - $2500.00

The shaft, herein proposed, would allow work to continue during wet seasons when there is water in the creek. If an adit is collared from the stream channel, it would be susceptible to flooding and filling by water washed debris. The proposed access road would necessarily approach the area to be prospected from above. The shaft would be accessible by road, whereas any work from the stream channel could be reached only on foot.

From the shaft, the mineralized bed should be explored in four directions. The proximity to the stream will limit the drifting toward the east. The length of the mineralized outcrop should be explored by drifting northerly and southerly from the shaft for a minimum of 85 feet. The mineralized bed should also be prospected toward the west for at least 25 feet. The 100 feet of drifting, recommended in Stage II, would continue the west drift for 50 feet or to the limit of mineralization, whichever is less, and would allow a 25 foot drift to the north and 25 foot to the south. The north and south drift would also be controlled by the limit of the mineralization.

SHEPP NO. 2 CLAIM

(A) The mineralized fracture on the Shepp #2 claim should be prospected on both sides of the stream channel.

(1) On the south side, a crosscut should be driven from the wall of the canyon at approximately 30 feet downstream from the fracture. This 40 foot crosscut should intersect the fracture at approximately 45° and about 25 feet from the exposure. By running the crosscut at 45° to the wall of the canyon, a lesser amount of water washed debris will accumulate in the adit.

From the intersection of the crosscut and the fracture, a 25 foot drift should be driven toward the south and a short (10 foot) drift driven northward toward the canyon wall. The amount of mineralization should control the amount of drifting.

STAGE I:

75 feet of drift @ $25.00/ft - - - - - - - - - - - - $1875.00

STAGE II:

50 feet of drift @ $25.00/ft - - - - - - - - - - - - $1250.00

$3125.00

(2) On the north side of the creek the fracture may be prospected by the method described for the Walnut No. 2 claim, i.e., a shaft no deeper than 50 feet should be sunk through the talus above the creek and a drift from the shaft should be driven northerly on the fracture.

STAGE I:

40 feet of shaft @ $35.00/ft - - - - - - - - - - - - $1400.00

50 feet of drift @ $25.00/ft - - - - - - - - - - - - $1250.00

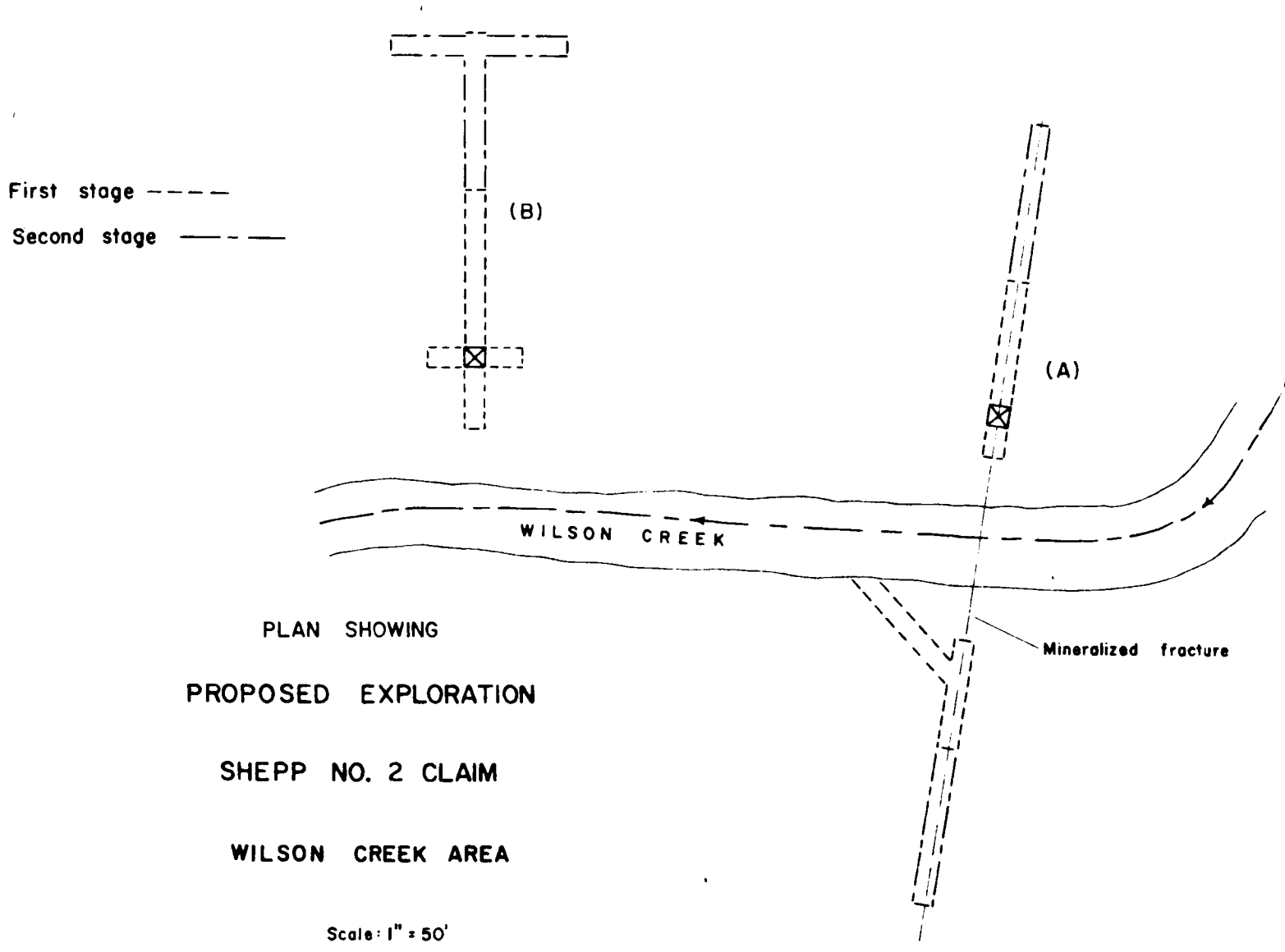
40 feet of timber (shaft) @ $5.00/ft - - - - - - - - $ 200.00

$2850.00

STAGE II:

50 feet of drift @ $25.00/ft - - - - - - - - - - - - -$1250.00

RESTRICTED
SECURITY INFORMATION



PLAN SHOWING

PROPOSED EXPLORATION

SHEPP NO. 2 CLAIM

WILSON CREEK AREA

Scale: 1" = 50'

Aug., '53
A - Pm 16

RESTRICTED
SECURITY INFORMATION

(B) Drifts from a shaft should also be utilized to explore the bedded mineralization on the Shepp No. 2 claim. Here again, flooding will be prevented and access will be easier. In this case, a maximum of 50 feet of shaft would be necessary and the drifting, as above, would be controlled by the mineralization.

STAGE I:

50 feet of shaft @ $35.00/ft	$1750.00
100 feet of drifts @ $25.00/ft	$2500.00
40 feet of timber @ $5.00/ft	$ 200.00
	$4100.00

STAGE II:

100 feet of drifts @ $25.00/ft	$2500.00

TABULATION OF COST ESTIMATES

Tabulated below are estimates for proposed exploration program:

ROAD CONSTRUCTION	$ 14,256.00
STAGE I:	
150 feet of shaft @ $35.00/ft	$ 5,250.00
375 feet of drifts & crosscuts @ $25.00/ft	$ 9,375.00
150 feet of timber (shaft) @ $5.00/ft	$ 750.00
	$ 15,375.00
STAGE II:	
300 feet of drifts & crosscuts @ $25.00/ft	$ 7,500.00
TOTAL	$ 22,875.00