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LOCATION, ACCESS 9 miles SE of Mogollon, N. Mexico in Spruce Creek 1/2 mile above junction with Dry creek. South portion of T. 11 S. R. 18 W. Probably not accessible by road.

NAME
SPRUCE CREEK PROPERTY

DISTRICT OR AREA
MOGOLLON

COUNTY	STATE	COUNTRY
CATRON	N. Mex.	U.S.A.

OWNER OR PROMOTER
unknown

GEOLOGY

White quartz veins 3 to 12 feet wide occur in rhyolite similar to that at Mogollon district. Veins trend NE-SW and contain minor amounts fluorite and pyrite. Two parallel veins, 20 feet apart, are known, and one can be followed on strike for 7200 feet.

MINERALIZATION

GEOCHEMISTRY
unknown

GEOPHYSICS
unknown

REFERENCES & MAPS
1935 report by D. M. Stranahan

DEVELOPMENT & FACILITIES
More than 1000 ft. underground workings probably mostly inaccessible.

PRODUCTION & RESERVES
No known production, reserves estimated at 37,206 tons containing from 0.25 to 1.00 oz Au, 1.34 oz. Ag.

ENGINEERING, METALLURGY
see back of this sheet

PROPERTY & OWNERSHIP
unknown

ENVIRONMENTAL PROBLEMS
Located in Gila Wilderness Area so exploration & operating problems may be insurmountable

MINERAL PROSPECT SUMMARY

EXPLORATION POTENTIAL Interesting, remote area that may not have had much attention since 1930's. Probably too small an ore deposit to hold much interest, but numerous assays are reported to average 1 ounce gold.

TERMS REQUESTED

RECOMMENDATIONS Probably not worth consideration for acquisition because of land status (Wilderness Area) and small size. At some time might be worth a look from purely geological information consideration.

SUMMARY BY: J. K. Jones
DATE: April 26, 1974

EXAMINED BY:
DATE:

OTHER COMMENTS, SKETCH MAP, ETC.

Mill test reported by Prof. Graham in El Paso recovered 87.5% of gold and 80.9% of silver by amalgamation - table - flotation test on ore with head assay of 0.42 oz. Au, 1.7 oz. Ag.

Ore crushed to pass Through -100 mesh with 40% Through +200 mesh.

Need to obtain topo maps. 7½ minute quadrangles
Holt Mountain, Grouse Mountain, Moon Ranch, Rice Ranch, Mogollon, Bear Wallow Mountain

REPORT

ON

SPRUCE CREEK PROPERTY

D. M. Stranahan.

REPORT ON SPRUCE CREEK PROPERTY

SUMMARY

The property is located within 9 miles of an operating gold mining district, is in the same formation and has the same type of vein.

The main vein is 7200 feet long, has two partially developed ore shoots, several others indicated and probility of others at unsampled parts of the vein.

The average width in the workings is 3 feet but at the lowest point opened it is over 5 feet wide. It shows places at other points on the outcrop 5 to 12 feet wide under which no work has been done.

Several series of samples have been taken and the average is around .5 oz gold and 1.3 oz Silver.

The formation is such that adit tunnels can be used to mine the ore.

Plenty of water and wood on the property.

The ore is such that the values can be extracted by the cyanide process with comparatively coarse crushing.

Transportation is by pack animals but a road can be built if required, altho the mine can be operated without. Had it been on a high way it would have been opened up long ago.

Oct 14th, 1935.

REPORT ON SPRUCE CREEK PROPERTY

The Spruce Creek property lies in the Southern part of Township 11 South, Range 18 West, Catron County, New Mexico.

It is in the Mogollon Quadrangle about 9 miles Southeast of the town of Mogollon, on Spruce and Spider Creeks whichnare tributaries to Dry Creek. The main vein is about one-half mile up Spruce Creek from Dry Creek and runs more or less parallel to Dry Creek and continues on, over and beyond Spider Creek.

The property consists of six mining claims, Royal Gorge, Mountain View, Quartz No 1 and Quartz No 2, which are contiguous, and the Mammoth and Paymaster which are on a seperate vein. Also two mill sites, adjoining the Mountain View and Royal Gorge Claims. We have located five other claims, the Elizabeth which is an extension of the Royal Gorge Claim and covers the Central Butte which will be mentioned later. The Isabel, Linabeth, Mary Jane and Scotty which are on parallel veins.

To reach the property one leaves Silver City, New Mexico, on the road to Reserve and turns off the main road at a point some eight miles North of Buckhorn and about 300 yards North of the road to Clifton. From this point there is a dirt road in fair shape which is followed eight miles to Spurgeons Ranch in Little Dry Creek at which point the road ends and the balance of the way is by trail, 5 miles up Little Dry Creek to Windy Gulch where the trail passes over a saddle into Big Dry Creek and the trail winds around the mountain gradually dropping down to the floor of the canyon which it reaches at the mouth of Spruce Creek. The trail continues on up Spruce Creek about a half mile to the mine. The trail up Spruce Creek, however, is washed out in a few places and would require about 5 days work for 3 men to put it in shape and until that work is completed it is necessary to take a trail going over the mountain and coming down to the cabin in Spruce Creek.

HISTORY

The property has been known as the Dry Creek property, Spruce Creek property, Dorsey property, etc, I have called it the Spruce Creek Property because the main workings are on Spruce Creek.

The Camp of Mogollon lying between 8 or 9 miles Northwest, and which has the same formation, produced $20,000,000.00 some of the mines having a depth of 1700 feet.

The Spruce Creek Property was located some thirty-six years ago by a miner named Louderbough and was acquired from him by W. M. Dorsey who deeded a 51% interest to the United States Smelting Refining and Mining Exploration Company who did considerable work but abandoned their mineat Fierro in 1931 and left the district. Later the price of gold was advanced and S. S. Slack and the writer obtained an option from both W. M. Dorsey and the United States Smelting Refining and Mining Exploration Company. At about this time, Dr Harrison Schmitt, Consulting Geologist, of Hanover, N. M., and J. F. Woodbury, Lawyer, of Silver City,

became interested in the property with Slack and thebwriter.

WORKINGS

There are numerous cuts and shafts along the outcrop, most of which are caved and inaccessible. A crosscut was started in the side of the hill around 500 feet above the floor of the canyon (Spruce Creek) on the Royal Gorge Claim. At thirty feet this encountered the vein, on which they drifted twenty-five feet Southwest and two hundred and ten feet Northeast. A winze was then started at the intersection of the crosscut and the drift and put down sixty-five feet on the vein. It is vertical for about twenty feet and then dips 80° and in the bottom the vein is still flatter, being around 70° to the Southeast. Both drift and winze showed ore, the winze being higher grade than the drift. Around eighty to one hundred feet from the winze Northeast is higher grade after which the drift is low grade, but should be encountering another ore shoot as the surface outcrop shows high grade in advance of the drift.

When the vein reached 65 feet they encountered water and not having a pump were compeled to stop work. This was either a pocket of water or else was drained by the lower drift, which was driven later, as there is no water in the winze at this time. They then went down the hill along the cliff 244 feet vertically and 310 feet horizontally to the Southwest and started another crosscut. They went in 40 feet and then came back and started a drift twenty-five feet from the portal and drove to a point almost under the collar of the winze. At several points along the drift they crosscut to the South apparently in search of the vein. A cross section shows that if the vein continues at the present dip shown in the bottom of the winze they still lack from ten to twenty feet of reaching the vein with these crosscuts. The crosscut going South from the Northeast end of this drift should be continued until it encounters the vein as should also the other crosscuts from this drift.

In Spider Creek where the vein crosses the canyon some work has been done, a tunnel was driven about 120 feet Nobtheast at a point a little above the canyon floor. From the other side of the canyon a 275 foot drift was driven Southwest near the canyon floor, another tunnel some 50 feet deep part way up the mountain side and still further up an open cut. We did not do much sampling at this point but obtained an assay of 0.66 oz Au from a 5 ft cut on the open face and an assay of 0.44 oz Au from a sample of a pile of ore on the dump at the middle tunnel. The old Company assay maps show assays up to 0.62 in the lower tunnel and the former manager told me he had taken an ounce sample from the face. The map shows an assay of 1.0 oz Au from the face of the tunnel on the North side of the canyon. This section will probably average about the same as the workings on Spruce Creek.

Some work has been done on the Mammoth and Paymaster Claims further up on Spider Creek, but we did not do any sampling there. There are two tunnels and a shallow shaft which is full of water.

GEOLOGY by Dr. Harrison Schmitt

The Royal Gorge Vein is typical of many veins found in central and western New Mexico in rhyrolite especially in the San Mateo and Mogollon Ranges. The gangue of these veins is largely quartz with minor fluorite, tellurides are rare and the gold occurs free or in minor pyrite. The walls of the vein in question are rhyrolite tuff. The sulphide content is so low that most of the ore looks like pure white quartz, only

when the assays are high is there a slight grey coloration largely from pyrite. A composite analysis of a number of samples of the vein gave the following results:

Silica	90.2%
Iron	1.4%
Manganese	0.08%
Fluorine	0.58%
Tellurium	none

Minor red iron oxide due to the oxidation of the pyrite is typical of much of the richer ore so there has possibly been some secondary enrichment, but the effects of this should extend several hundred feet below the outcrop because the local relief is more than 800 feet and the outcrop is on one of the highest ridges. The development so far indicates that the ore occurs in a clearly defined shoot, but since only a small portion of the rather strong continuous quartz vein has been developed the chances are good for the discovery of other similar shoots.

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TOPOGRAPHY & VEINS ON PROPERTY

The topography consists of Spruce and Spider Creeks both running approximately North-South to Dry Creek, Spruce Creek, however, turns easterly further up and more or less parallels Dry Creek.

These creeks are seperated by ridges running from 500 to 1000 feet in elevation above the canyon floor. The main vein, on which the work on the Royal Gorge Claim has been done, runs down the ridge between Dry and Spruce Creeks, crosses Spruce Creek and the ridge between Spruce and Spider Creeks, crosses Spider Creek and down the mountain on the West side of Spider Creek.

This vein, at least on the section east of Spruce Creek, is paralleled by another vein some 20 feet in the hanging wall on which there has not been any work done except for a few shallow shafts on the outcrop.

The main vein is covered by the Quartz No 2, Quartz No 1, Mountain View, and Royal Gorge Claims in the order named from West to East. We have. also, locat ed another claim, Elizabeth, an extension of the Royal Gorge Claim to the East.

There are a number of other veins in the vicinity and these veins are not parallel but converge and meet in a high point or Butte which lies on the ridge between Spruce and Dry Creeks. This Butte is not covered by any of the original claims so we located the Elizabeth Claim covering this area which we believe will be valuable insomuch as all the veins apparently meet in this Butte.

ORE RESERVES AND POSSIBILITIES

The main vein is covered by claims for a distance of 7200 feet, on this length we have two partially developed ore shoots, one at the Royal Gorge Workings and one at the Spider Creek Workings, and also indications, by assays of samples taken on the outcrop, of at least two other shoots.

It is also quite likely that the converging veins intersecting the main vein in the Butte will make an ore shoot of commercial grade.

There is also another vein parallel to the main vein and lying 10 to 20 feet in the hanging wall. This vein is only known in the vicinity of the Royal Gorge Workings.

We have also another vein in the Spider Creek further East than the main

vein and covered by the Mammoth and Paymaster Claims.

Only a little work has been done on these claims, a tunnel on each side of the canyon and a shallow shaft near where the vein crosses the creek. The dump from the shaft gives a good string of colors when panned.

The partially developed ore shoots are the main workings on the main vein on the Royal Gorge Claim and the workings on Spider Creek on the same vein and the Quartz No 1 Claim.

The old assay maps of the Spider Creek workings indicate faces of high grade ore in the tunnels on both sides of the creek which may indicate two ore shoots or one large one.

The indicated ore shoots are those North and South of the main workings on the Royal Gorge Claim and indicated by assays of samples taken at various points on the outcrop. The outcrop follows the ridge and at some points is inaccessible due to the rugged character of the formation. At some points on the ridge the vein shows 12 ft wide and where it meets the Butte it is 4 to 5 ft wide.

ORE RESERVES

In figuring the ore reserves if we use the extreme Northeast point at which the old Company obtained high grade samples as one limit and the Southwest face of the drift as the other we have an ore shoot 180' long, 3 ft wide and explored by the winze to a depth of 65 ft. The outcrop varies between 50 ft as a minimum and 100 ft as a maximum above this section of the vein so we can assume an average elevation of the outcrop above the drift of 75 ft.

Then we have,

Proved ore above the drift, 180 x 3 x 75 ÷ 10 = 4050 tons.

The winze is 65 ft deep and assuming that the proved ore is a triangle from the extreme limits of the ore shoot in the drift to the bottom of the winze, we have,

Proved ore below drift, (180 x 3 x 65 ÷ 2) ÷ 10 = 1755 tons.

Assuming the balance of the vein to the bottom of the winze to be probable ore we have, the same figures as above and 1755 tons, probable ore.

If we assume from the experience in the nearby Mogollon district that the veins have depth then we assume possible ore from the bottom of the winze to the level of the lower tunnel or

180 x 3 x 179 ÷ 10 = 9666 tons.

If we assume that the ore goes to the level of the canyon floor, (probable water level) we have an additional

180 x 3 x 370 ÷ 10 = 19980 tons.

All the above sections have been figured as 3 ft width but it must be remembered that the last seen of the vein at the bottom of the winze it was over 5 ft wide.

SUMMARY

Proved ore, White level to Surface	4050 tons
Proved ore, White level to bottom of winze ($\frac{1}{2}$)	1755 tons
Probable ore, White level to bottom of winze ($\frac{1}{2}$)	1755 tons
Possible ore, Bottom of winze to lower tunnel level	9666 tons
Possible ore, lower tunnel to canyon floor level	19980 tons
Total all classes	37206 tons

From this ore shoot we have a possible tonnage of 37206 tons without figuring on the possibility that the vein will go deeper than the level of the canyon floor.

Then if the other partially developed ore shoots proved to have as much as the above shoot and if the indicated ore shoots proved to have a similar quantity then we would have 4 times the above tonnage. (148824)

It is also possible that the Butte would furnish considerable tonnage.

GRAD E OF ORE BODY

The assay map of the United States Smelting Refining and Mining Exploration Company shows an average of 1.00 oz Au.

Samples taken by Mr. Benham, Engineer for a group of men in the A. S. & R Co., gave an average of .97 oz Au.

Samples taken by Mr. Allaire, Supt of the Ground Hog Unit of the A. S. & R Co., are said by him to have checked the assay map of the United States Smelting Refining and Mining Exploration Company.

Samples taken by Dr. Harrison Schmitt gave an average of 0.46 oz Au.

Samples taken by Karl Strand gave an average assay of 0.25 oz au.

Assay of between 150 and 200 lbs of ore broekn at several places on the vein by us was 0.4 oz Au, 1.34 oz Ag.

Some of these series of samples were of a larger number than other, the sampling by the U. S. Company being the most complete and the sampling by Harrison Schmitt next.

Equipment on property

The equipment on the property consists of the following, one 125 cu ft Ingersoll-Rand Portable air compressor, gasoline driven, about 400 ft of pipe, 150 pcs of machine drill steel and some hand drill steel.

Blacksmith shop, forge connected to air compressor, blacksmith tools, one leyner tank, 2 lengths each of air and water hose, shovels, picks, axes, saws, etc, one wheel barrow, windless and rope, gasoline cans and pack boxes, shed over blacksmith shop and compressor at mouth of lower tunnel.

A two room log cabin with several beds, two stoves, cooking utensils, and dishes.

Gasoline power would probably have to be used at first due to cheapness of installation but water powerncould be developed later.

WATER

Spruce Creek runs all the year but at times in the summer it sinks below the ground in places but comes to the surface when it encounters exposed bed r rock. We believe that Spruce Creek will furnish all the water necessary all the year around butnif necessary water could be pumped from Dry Creek, a distance of one-half mile.

WOOD

All the claims are more or less covered with a growth of Spruce and fur trees, as can be seen in the photographs. These can be cut for mine and fuel use. Any trees off the claims can be purchased from the Forest Service.

TRANSPORTATION

At the present time supplies would have to be brought to Spurgeons ranch on Little Dry Creek by truck. This could be by special hired truck, or by trucks which make a business of freighting from Silver City to Mogollon and serve all the country inbetween.

From there supplies would have to be packed 9 miles into the mine.

The trail up Spruce Creek could be repaired in a few days and a few fallen trees cut out of the trail that leads up towards the head of Big Dry making a much better trail than the one that is now open. The present trail is all right for packing but the little work described above would open a trail with better grades.

Should a road be desired later it could be built around by Holt Mountain and come in thru Camp Creek to Spider Creek. I have not been over this proposed road site but a man familar with the country and not connected in any way with the hauling or packing stated that a road could be built there for $8000.00.

There is a road part way up Big Dry to Johnson's cabin and from there a trail goes part way up Big Dry and I understand that the CCC men are working on this trail extending it and that they will eventually, perhaps this fall, bring it up to Spruce Creek. This would then be the best trail to use for packing supplies into the mine.

Hauling and packing would be about $8.00 per ton.

MILL

We took all of our samples to Prof. Graham in El Paso and had him run a series of mill tests.

The result of the tests was as follows,

Assay heads- 0.42 oz Au, 1.7 oz Ag.

Amalgamation-table-flotation Test

Ore crushed to pass thru -100 mesh, with 40% thru +200 mesh.

	Au	Recovery	Ag
By Amalgamation	66.7%		13.0%
By Table Concentration	6.8%		12.8%
By Flotation Concentrates	14.0%		55.1%
Total Recovery	87.5%		80.9%

Cyanide Tests

By grinding thru -48 mesh, using .1% cyanide solution & Agitating for 24 hours.
by grinding thru -65 mesh, using .05% cyanide solution & agitating for 24 hours.

Prof. Graham reported that either set up gave a gold extraction of better than 95% and a silver extraction of better than 75%.
The cyanide consumption in operation would not exceed .4 lbs cyanide and the amount of lime used would not exceed 2 or 3 lbs per ton.

Prof. Graham offers the following skeleton flow sheet.

Crushing plant-ball mill- classifier-thickener-agitator-thickener-filter- zinc box- refinery. A 24 hour cycle.

It is therefore evident that a better recoovery is made with cyanide and also the grinding would not have to be as fine which would lower the first cost of the grinding equipment and also the operating cost.

OPERATING COSTS

	25 ton plant	100 ton plant
Mining	2.65	1.45
Milling	1.25	0.80
Overhead	0-80	0.34
Overhead	4.70	2.60

RECOMMENDATIONS FOR PRELIMINARY WORK.

(1) Continue No 1 Crosscut, at the end of the lower tunnel where it is under the winze, South until it hits the vein.

(2) Drive drift both ways on the vein from the point where No 1 Crosscut hits it. Put up a raise from this drift to hit the bottom of the winze.

(3) Continue the other crosscuts on the lower tunnel level until they hit the vein.

Yours very truly,

D M Shanahan

SPRUCE CREEK PROPERTY

ESTIMATE COST OPERATION ON 100 TON BASIS

MINE	2 shifts				
1	Foreman	5.50	5.50		
1	Night Foreman	3.50	3.50		
Dev					
1	Machnineman	3.00	3.00		
2	Mucker	2.50	5.00		
Stoping					
6	Machinemen	3.00	18.00		
10	Muckers	2,50	25.00		
1	Timberman	3.00	3.00		
General					
1	Blacksmith	4.00	4.00		
2	Topmen	2.50	5.00	72.00	
Supplies					
Gasoline 50 gal at 12¢			6.00		
oil 4 qts	16¢		.65		
Powder, fuse, caps			40.00		
B. S. Coal			1.00		
Carbide			1.25		
Misc			10.00		
Frt & packing(trail)			15.00	73.90	145.90
MILL	3 shifts				
1	Foreman	5.00	5.00		
3	Millmen	3.50	10.50		
4	Helpers 1-3.00, 3-2.50		10.50		
1	Mechanic		4.00	30.00	
Supplies					
Grinding balls			2.50		
Repairs			4.00		
Gasoline			8.40		
oil			.50		
Misc			10.00		
Chemicals			10.00		
Freight & Trail packing			15.00	50.40	80.40
Overhead					
Supt			7.00		
Clerk			3.00		
Cook			2.50		
Trailmen (2)			4.00		
Chemist			4.00		
loss cook house (?)			14.00	34.50	34.50
Total					260.80

SUMMARY

Dev & Stoping	145.90	per ton	1.45
Milling	80.40	per ton	0.80
Overhead	34.50	per ton	0.34
Total	260.80		2.60

SPRUCE CREEK PROPERTY

ESTIMATE COST OF OPERATION ON 25 ton BASIS

Mine					
1	Foreman	5.00	5.00		
Dev					
1	Machineman	3.00	3.00		
1	Mucker	2.50	2.50		
Stoping					
2	Machinemen	3.00	6.00		
4	Muckers	2.50	10.00		
General					
1	Blacksmith	3.50	3.50		
1	Topman	2.50	2.50	32.50	
Supplies					
Gasoline	15 gal at 12¢		1.80		
oil	2 qts at 35¢		.70		
Powder, fuse, caps			15.00		
Blacksmith coal			1.00		
Carbide			.50		
Misc			10.00		
Frt on above, 500 lbs at 8.00					
= 2.00 but say			5.00	33.65	66.15
MILL					
1 F	Foreman	5.00	5.00		
3	Millmen	3.50	10.50		
1	Helper	3.00	3.00	18.50	
Supplies					
Grinding balls			2.50		
Repairs			2.00		
Gas & Oil			10.00		
Chemicals			2.50		
Misc			2.30	19.30	37.80
Overhead					
Supt			7.00		
Clerk			3.00		
Cook			2.50		
Trailmen			2.00	14.50	14.50
Total					118.45

SUMMARY

Mining	66.15	per ton	2.65
Milling	37.80	per ton	1.51
Overhead	14.50	per ton	0.58
Total	118.45		4.74

SPRUCE CREEK PROPERTY

Assay 0.4 oz Au, 1.3 oz Ag	25 tons per day	100 tons per day
Tons mined per month	750	3000
Gold content month	300 oz	1200 oz
Silver Content per month	975 oz	3900 oz
Gold recovered month 90%	270 oz	1080 oz
Silver Recovered month 70%	682 oz	2730 oz
Value recovered gold	$8640.00	$34560.00
Value recovered Silver	$511.80	$2047.50
Price gold used in figuring	32.00	32.00
Price silver used in figuring	.75	.75
Cost operation for month	$3547.50	$7800.00
Cost does not include shipping and marketing product.		
Profit not deducting line above	$5604.30	$28807.50