from NBMG OFR 83-9
See also 83-10 for
geochemical results.
3960 0002

Elko Co.-general
between 74 + 122
Item 52

ROBINSON MOUNTAIN DISTRICT

The Robinson Mountain mining district encompasses a relatively large area in the southern Pinon Range but contains only a few small prospects located on the west and east flanks of the range. The district is named after a conspicuous 8,114' peak located on the lower east flank of the range.

The main activity in the district is related to exploration for barite. Three areas of barite mineralization were examined during the course of this project but many other areas of shallow surface exploration were noted on barite claims throughout the district. The only known production from the entire district is for a small amount of vein barite (1-1,000 tons) obtained from the Snow White claims located in the south half of Section 2, T29N,R53E (Papke, in preparation). Vein samples collected by USBM engineers contained as much as 90-93% $BaSO_4$.

Newmont Exploration Ltd. holds claims near the ridgecrest in the northern and southern portions of the district. During the summers of 1981 and 1982, they conducted exploration work, including drilling, in both of these areas. The southern area, named the Jak claims, extends in a north-south direction in an area with no previous history of mining activity. The northern area, named the Irene claims, contains old prospects and exploration cuts for barite.

The rocks in this part of the Pinon Range mainly consist of siliceous, clastic and carbonate sediments of Ordovician through Permian age. The older sediments form the upper and lower plates of the Roberts Mountains thrust and the younger sediments are part of the overlap series. The most abundant rock types in the area are Mississippian and Permian clastic rocks which include conglomerates, sandstones (quartzites), shales and siltstones. Bedding attitudes are variable since the rocks are folded and deformed by thrusting and high-angle faulting. Mafic to silicic volcanic flows and rhyolitic to dacitic ash-flow tuffs overlie the sediments on the east flank of the range.

Two small rhyolitic stocks outcrop in the heart of the Jak claims in sections 26, 27 and 34, T29N, R53E. The stocks intrude limestones and siltstones of the Pennsylvanian and Permian Moleen Formation and undivided rocks (Smith and Ketner, 1978). If the stocks were emplaced during the same intrusive episode as the Railroad stock located 14 miles to the north (see Railroad district), they are probably Oligocene in age. A few dikes intrude rocks of the upper and lower plates in addition to rocks of the overlap assemblage. Although dikes are present throughout the district, they are especially prominent in areas of known barite mineralization.

At the Jak claims we examined outcrops of grey rhyolite porphyry of the southern intrusive body. The exposed rhyolite contains disseminated crystals of oxidized pyrite and in places, is sheared, silicified, bleached and iron-stained. Bedded limestones and calcarous siltstones directly east of the rhyolite appear iron-stained and sligthly recrystallized but, in general, little altered. However, north of sample sites 161 and 1510, there is a resistant ridge composed of silicified siltstone and quartzite breccia. The outcrop contains pods and veinlets of quartz, barite and iron-oxides. The ridge is most likely a surface expression of N20W high-angle fault structure. Although not much evidence of mineralization was observed at the Jak claims, the presence of pyritized and altered intrusive rocks and favorable sedimentary host rocks make this area a logical exploration target for possible disseminated precious metals.

An asphaltite prospect is located in the western foothills of the range "at the mouth of a tributary to Smith Creek, about 1½ miles east of Indian Campground" (Hamilton, 1956). Solid bituminous material of the variety impsonite is reportedly found as lenses, stringers and sheets in a fracture zone about 3' wide in Mississippian sandstones and shales (Fulton and Smith, 1932). The deposit also contains concentrations of vanadium and uranium (Smith, 1976; Garside, 1973).

Selected References:

Anderson, R. (1909) An occurrence of asphaltite in northeastern Nevada: USGS Bull. 380,p. 283-285.

Fulton, J. A. and Smith, A. M. (Oct. 1, 1932) Nonmetallic minerals in Nevada: Univ. of Nevada Bull. 17, v. 26, no.7 , 8 p.

Garside, L . J. (1973) Radioactive mineral occurences in Nevada: NBMG Bull 82, p. 46.

Hamilton, N. W, (1956) Geology of the Smith Creek area, Elko and Eureka Counties, Nevada: M.A. thesis, UCLA.

Hudson, E.W. (1958) Geology of the Willow Creek area, Elko and Eureka Counties, Nevada: M.A. thesis, UCLA.

Kovinick, M. G. (1956) Geology of the Trout Creek area, Elko and Eureka Counties, Nevada: M.A. thesis, UCLA.

Papke, K. G., Barite deposits in Nevada: NBMG Bull., in preparation.

Petrafeso, F. A. (1967) Aeromagnetic map of the Robinson Mountain quadrangle, Elko County, Nevada: USGS OFR, scale: 1:62,500.

Roberts, R. J., et al (1967) Geology and mineral resources of Eureka County, Nevada: NBM Bull 64, p.112.

Smith, J. F. Jr. (1974) Age of the Roberts Mountains Formation in the Pine Valley quadrangle, Nevada: USGS Bull. no. 1394-A, p. A83.

Smith, J.F. Jr and Ketner, K. B. (1978) Geologic map of the Carlin-Pinon Range area, Elko and Eureka Counties, Nevada: USGS Map I-1028.

Smith, R. M. (1976) Mineral resources of Elko County, Nevada: USGS OFR 1976-56.

Sohn, I.G. (1969) Nonmarine ostracodes of Early Cretaceous age from the Pine Valley quadrangle, Nevada: USGS PP 643-B, p. B1-B9.

Vanderburg, W.O. (1938) Reconnaissance of mining districts in Eureka County, Nevada: USBM Infor. Circular 7022.

Also see general reference list for Pinon Range.

PROPERTY NAME: Dixie & Snow White claims

OTHER NAMES: TLS claims just to west

MINERAL COMMODITY(IES): Ba

TYPE OF DEPOSIT: Vein, fault zone

ACCESSIBILITY:

OWNERSHIP: Snow White & Dixie claims = Z.A. Williams located 1965 (original) & relocated Sept. 9, 1981.
~~XXXXXXXXX~~ TLS claims = James L. Harness, Agent for A-S-X, ~~XXXXXXX~~ located March 3, 1982.
Production: See CRIB.

County: Elko

Mining District: Robinson Mtn.

AMS Sheet: Elko

Quad Sheet: Robinson Mtn. 15'

Sec. 2,11, T 29N, R 53E

Coordinate (UTM):

North 4 4 7 4 2 5 0 m

East 0 5 8 8 0 2 5 m

Zone +11

DEVELOPMENT: Site developed by several trenches & open cuts on short SE-trending ridge.

ACTIVITY AT TIME OF EXAMINATION: Area recently staked & trenches are recently sampled.

GEOLOGY: The outcrops surrounding the trenches are jagged ridges composed of quartzites, pebbly sandstones & beige-colored limey siltstones. The geology of the area as shown on USGS Map I-1028 is mapped as the Diamond Peak & Moleen/Tomera Fms. A tertiary dike intrudes the sediments just above the workings. The dike was examined & found to be unaltered & unmineralized.

The main working is an open cut which exposes a fractured, Fe-stained sequence of NW-dipping beds of conglomerate & sandstone. At least one & probably more near vertical faults (or fractures) cut the sediments. One of the more obvious fracture zones strikes N-S & is about 2-3' wide. FeOxs occur on the surfaces of the broken rock. There does not appear to be much displacment in these zones. The bedding stands on end at the south end of the pit due to this structure.

White crystalline barite vein material occurs as irregular-shaped pods within this zone & in other portions of the cut. The barite is associated with some silica & Mn which coat fractures & fills vugs in the altered (Fe-stained) host rock.

REMARKS: New staking indicates property may be under second assessment.

Samples 163 A - Barite vein
163 B - Gossan

Photos

REFERENCES: USGS Map I-1028

EXAMINER: Bentz/Brooks

DATE VISITED: 6/4/82

PROPERTY NAME: Snow White claims

OTHER NAMES: Dixie

MINERAL COMMODITY(IES): Ba

TYPE OF DEPOSIT: Vein

ACCESSIBILITY:

OWNERSHIP: Z. A. Williams

PRODUCTION: 1-1,000 tons

HISTORY:

County: Elko

Mining District: Robinson Mtn.

AMS Sheet: Elko

Quad Sheet: Robinson Mtn. 15'

Sec. 2 S/2, T 29N, R 53E

Coordinate (UTM):

North 4|4|7|4|2|5|0 m

East 0|5|8|8|0|2|5 m

Zone +11

DEVELOPMENT: Trenching & small open pit.

ACTIVITY AT TIME OF EXAMINATION: Inactive.

GEOLOGY: Four or five barite veins or faulted veins are present here as replacement of quartzite & pebbly quartzites of the Lower Miss. Diamond Peak Fm. The veins are poorly exposed but have NE-strikes & steep dips. They appear to be about 4' wide. The adjacent quartzite is brecciated, altered to sericite & kaolinite, Fe-stained & contains some barite.

The barite is grey & contains only minor FeOxs & quartz. USBM engineers collected samples here which contained 90-93 % $BaSO_4$.

REMARKS: No sample.

REFERENCES: Information from Papke, K., to be published in NBMG Bull, Barite Deposits in Nevada.

EXAMINER: Papke, K. (by Bentz, J.)

DATE VISITED: 10/78

PROPERTY NAME: Jak claims

OTHER NAMES:

MINERAL COMMODITY(IES): Au?, Ag?, Ba

TYPE OF DEPOSIT: Disseminated?

ACCESSIBILITY:

OWNERSHIP: Newmont Exploration Ltd., located by Richard Harris on Dec. 16, 1980.

PRODUCTION:

HISTORY: New area of exploration

County: Elko

Mining District: Robinson Mtn.

AMS Sheet: Elko

Quad Sheet: Robinson Mtn. 15'

Sec. 34, T 29N, R 53E

Coordinate (UTM):

North 4467050 m

East 0586750 m

Zone +11

DEVELOPMENT: New roads built to drill areas. Some drilling wasdone last summer. An additional 20 holes are to be drilled this summer.

ACTIVITY AT TIME OF EXAMINATION: Surveying for expansion of claim block along ridgecrest was being completed at the time of our first visit. Also road improvement was in process on the eastern access to the property. During our second visit, the property was vacant.

GEOLOGY:

Samples 161 & 1510 were taken from the eastern margin of a small, dike-like intrusive body which outcrops in the middle of sec. 34. Where unaltered, the intrusive is a light-grey rhyolite with quartz & alkalai felspar phenocrysts. The groundmass is finely crystalline, suggesting this body is probably hypabyssal. In outcrop, the rhyolite forms a rubbly ridge which tends to show more silicification, fracturing & Fe-staining to the north (samp. loc. 1510). For example, sample 161 was slightly altered, while sample 1510 was visibly sheared, silicified, bleached & Fe-stained. Both samples contain Fe&Mn oxs & a fair amount of oxidized, disseminated pyrite.

We followed a resistant north-trending ridge just east of the intrusive body to see the alteration effects in the adjacent sediments. The sedimentary units flanking the east margin of the body have been mapped as the Pzm. Moleen Fm & undivided sediments. Where observed the sequence was composed of limestones & thin bedded, calcareous siltstones.

Directly east of sample location 161, sandy dolomites form ledges & contain pods of FeOxs possibly after sulfides. Further to the north, we sampled a resistant ridge composed of a silicified siltstone or fine quartzite breccia. The outcrop shows evidence of hydrothermal brecciation, abundant silicification both in the form of veinlets & coarse pods infilling open spaces, & minor amounts of barite & FeOxs. The ridge trends in a N20W orientation. Sample 1511 was collected from this outcrop.

Although not much evidence of mineralization was observed, the presence of pyritized & altered intrusive rocks & favorable sedimentary host rocks makes this area a logical exploration target for possible disseminated precious metals.

REMARKS: Samples 161, 1510, 1511

Photos

REFERENCES: USGS Map I-1028

EXAMINER: NBMG/BLM

DATE VISITED: 1st visit - 6/3/82
2nd visit - 7/9/82

PROPERTY NAME: Irene claims

OTHER NAMES:

MINERAL COMMODITY(IES): Ba, sulfides

TYPE OF DEPOSIT: Vein in fault zone.

ACCESSIBILITY:

OWNERSHIP: Newmont Expl. LTD.

PRODUCTION:

HISTORY:

County: Elko

Mining District: Robinson Mtn.

AMS Sheet: Winnemucca

Quad Sheet: Pine Valley 15'

Sec. 21, T 30N, R 53E

Coordinate (UTM):

North 4480050 m

East 0583050 m

Zone +11

DEVELOPMENT: Sample was taken from barite prospect & exploration cut along eastern base of small hill. This is the oldest development in the area. Last year, Newmont drilled exploration holes on pre-existing roads in this area.

ACTIVITY AT TIME OF EXAMINATION: None, but Newmont is expected to continue to drill exploration holes in this area this summer.

GEOLOGY: The sampled exploration cut exposes a barite vein occurrence hosted by chert pebble conglomerates of the Mississippian Diamond Peak Fm. & Paleozoic carbonate rocks. The vein may have been emplaced along a fault, as USGS Map I-1028 shows several NE-striking, high-angle faults parallel to the drainage at this locality.

The barite vein, as exposed in the dozer cut, is white & grey in color. The white barite is cut by Fe-rich veinlets & secondary, finer-grained barite veinlets. Some medium grey colored barite was also sample. This vein material contains abundant finely crystalline sulfides, mostly pyrite, along veinlets & in distinct clots. The exposure of the vein is poor but in general, the vein looks underformed & shows NE fractures which parallel the mapped fault system. (The attitude of the vein could not be determined from limited outcrop exposure.)

REMARKS: Sample 162

Photo

REFERENCES: USGS Map I-1028

EXAMINER: Bentz/Brooks

DATE VISITED: 6/4/82

PROPERTY NAME: Bobcat Claims

OTHER NAMES:

MINERAL COMMODITY(IES): Ba

TYPE OF DEPOSIT: Bedded

ACCESSIBILITY:

OWNERSHIP: A.S. Boyack, D.A. & P. D. Montrose

PRODUCTION: None.

HISTORY:

County: Elko

Mining District: Robinson Mtn.

AMS Sheet: Winnemucca

Quad Sheet: Pine Valley 15'

Sec. 7,8,18, T 30N, R 53E

Coordinate (UTM):

North 4 4 8 2 8 0 0 m

East 0 5 8 1 2 0 0 m

Zone +11

DEVELOPMENT: Shallow bulldozer trenches on the ridges in the area.

ACTIVITY AT TIME OF EXAMINATION:

GEOLOGY: The barite occurs in argillites & cherts of probable Ordovician age. Smith & Ketner (1975) believed the rocks were early Mississippian in age, but the presence of barite is good evidence that the rocks are older. The bedding of the sediments strike N-NE & dip 10-50° W. Igneous dikes or sills are common & in one place intrude the barite. The dikes are probably Tertiary in age. Faults terminate some of the units. Several barite units are exposed in the explored areas. At one locality, three units up to 4' thick occupy a stratigraphic interval of about 20'.

Much of the barite is low grade because of interstitial quartz & unreplaced rock. The samples reportedly had a specific gravity of 3.3 to 3.9.

REMARKS:

REFERENCES: Information from Papke, K., to be published in NBMG Bull., Barite Deposits in NV.

EXAMINER: Papke, K. (by Bentz, J.)

DATE VISITED: 11/81

from: Hamilton, W.B. (1956) Geology of the Smith Creek area, Lincoln and Elko Counties, Nevada: unpub. MA Thesis, Univ. Calif, Los Angeles, 76p. For Stek

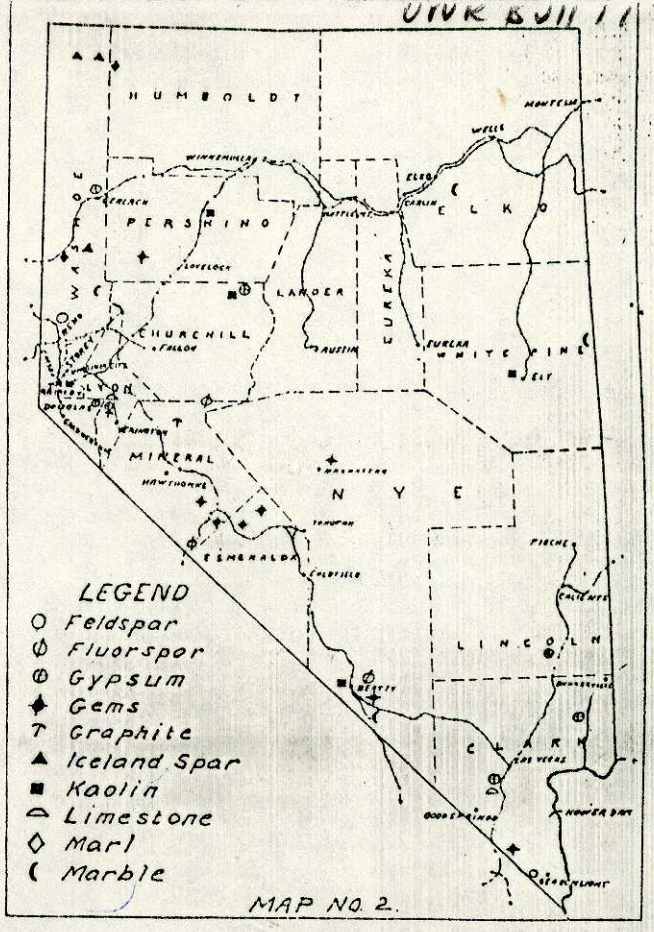
in diameter. There appears to be no optical orientation of the smaller grains and the larger grains appear sheared and fractured and have an unequal extinction. Movements along the fault during crystallization probably caused this brecciation of the ore.

ASPHALTITE PROSPECT

An asphaltite prospect is located at the mouth of a tributary of Smith Creek, about one and one-half miles east of Indian Campground. The prospect is of historical interest because it is the first deposit of bituminous material recorded in Nevada (Anderson, p. 283). A small exploration shaft, now caved, and a dump mark the site. Asphaltite found on the dump is black, hard, anthracite-like material with a specific gravity of 1.9, pitchlike luster, and conchoidal fracture. Vanderburg (p. 57) reports that the asphaltite contains traces of vanadium which is concentrated to 25% vanadium pentexide in the ash. The deposit is associated with sandstone and shale of the Papoose Creek formation. Plant fossils have been found in the shale but have not been satisfactorily identified.

PETROLEUM POSSIBILITIES

Various oil companies have shown interest in the black shales of the thrust sequence as possible source rocks of petroleum. One oil seep in the vicinity of Bruffey's ranch, about 15 miles to the south, has been drilled by an



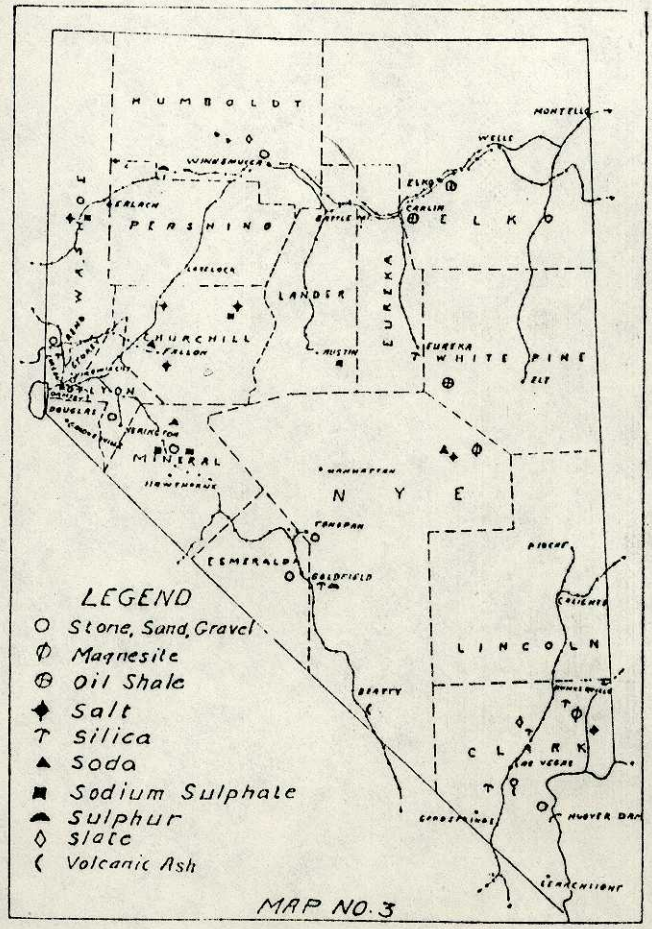
A series of maps showing the locations of the nonmetallic-mineral deposits of Nevada.

County (Caliente District), Lyon County (Yerington District), and Nye County in what is known as Burrel Hot Springs District.

The value of ground raw alunite as a fertilizer has not been definitely established, but claims are made in its favor. Experiments have shown that calcined potash alunite is a valuable fertilizer.[3]

Asphalt.—Asphaltite occurs in the Pinon Range in Eureka County, 15 mi. south of Palisade, 4 mi. east of Maples Ranch on the Eureka Nevada railroad, according to Anderson.[4] The mineral is of the variety known as impsonite, and would be commercially classed as graphamite. It is found in lenses, stringers and sheets along a fracture zone 3 ft. wide in sandstone and shale. Although it has been but slightly prospected the distribution is believed extensive. Outcrops are reported ½ mi. east, 3 mi. north and 7 mi. south of one point of discovery. Deposits of similar material are being mined with much profit in the neighbor state of Utah.

Barite.—Barite occurs in many districts, often as a gangue mineral in metal-bearing veins, and in other deposits sufficiently pure to be of value. Lincoln[5] describes various prospects.



[3] Ladoo (R. L.). *Nonmetallic Minerals.* McGraw-Hill Book Co., Inc., New York, p. 26, 1925.

[4] Anderson (R.). *An Occurrence of Asphaltite in Northeastern Nevada.* U. S. Geol. Survey Bull. 380, pp. 283-285, 1909.

[5] Lincoln (F. C.). *Mining Districts and Mineral Resources of Nevada.* Mackay School of Mines, University of Nevada, 1923.

Fulton + Smith

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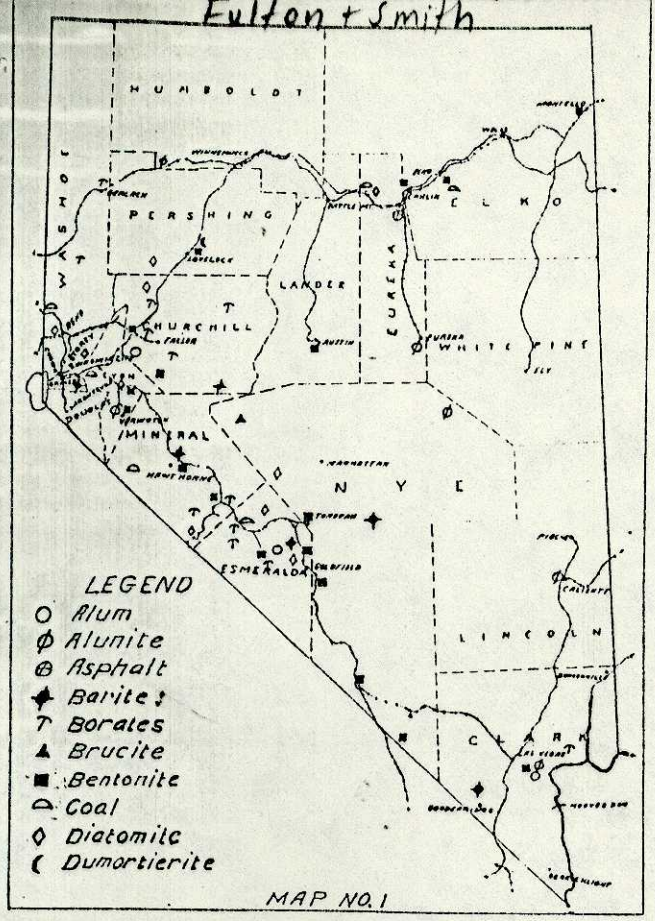

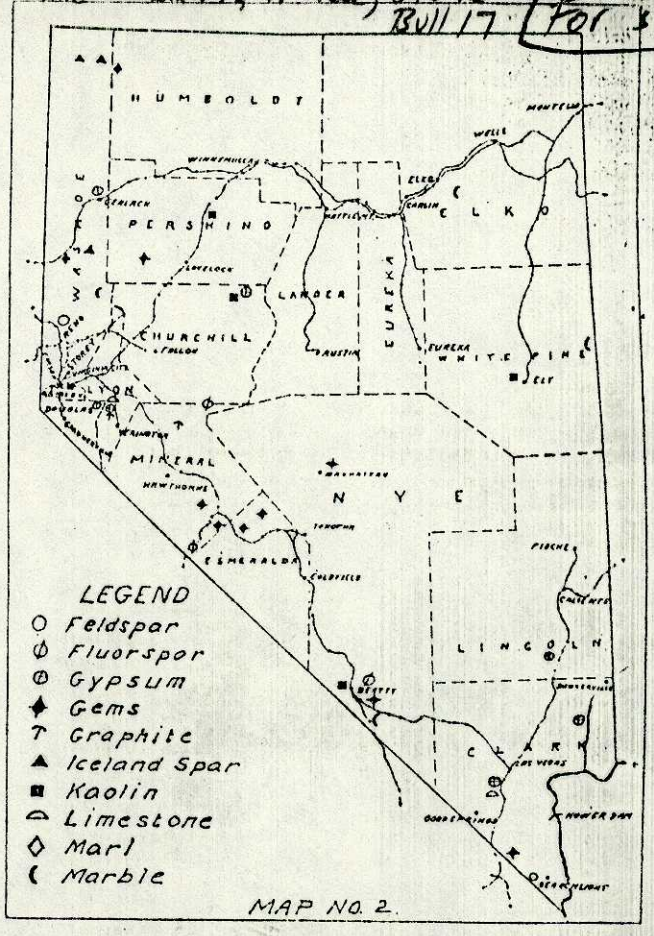

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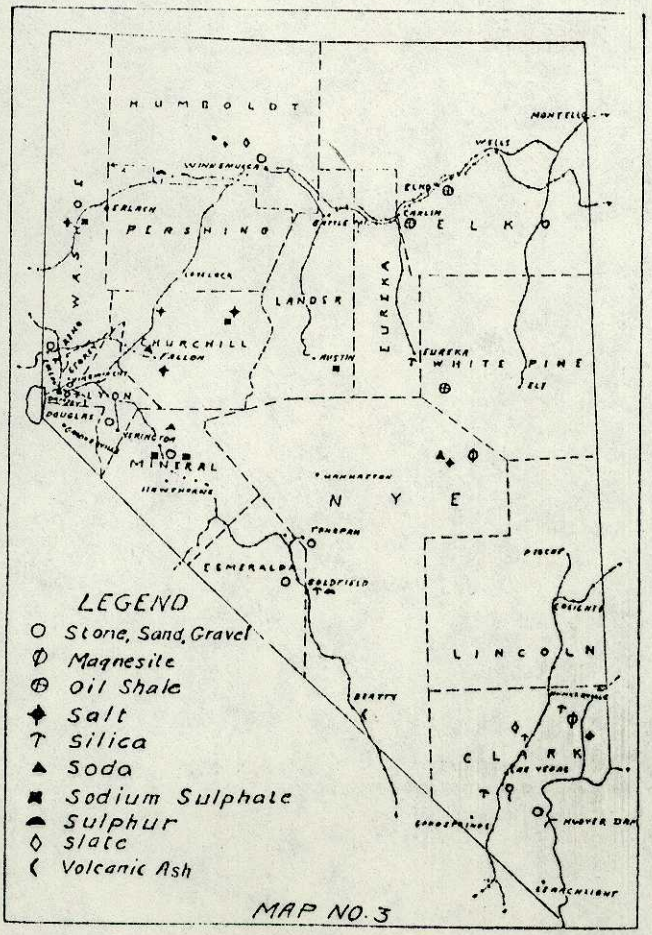

[3] Ladoo (B. L.). *Nonmetallic Minerals.* McGraw-Hill Book Co., Inc., New York, p. 26, 1925.

[4] Anderson (R.). *An Occurrence of Asphaltite in Northeastern Nevada.* U. S. Geol. Survey Bull. 380, pp. 283-285, 1909.

[5] Lincoln (F. C.). *Mining Districts and Mineral Resources of Nevada.* Mackay School of Mines, University of Nevada, 1923.

USBM Vandenberg

Metal quotations:	Gold	$34.9125 per ounce
	Silver	.64125 " "
		Ounce per ton
Settlement assay:	Gold	0.035
	Silver	32.0
		Percent
	Insoluble	82.8
	Iron	1.2
	Zinc	0.6

	Pounds	
Wet weight	21,540	
Moisture 0.5 percent	108	
Dry weight	21,432	or 10.716 tons

Metal payment:	Gold, 100 percent at $31.8183 per ounce	$1.11	
	Silver, 95 percent at $0.64125 per ounce	31.68	
		32.79	
	Treatment charge	4.98	
	Net value per ton	27.81	
	10.716 tons at $27.81		$298.01
Deductions:	Freight, $6.50 per ton		70.00
	Net proceeds		228.01

PALISADE DISTRICT

Palisade is a station on the Southern Pacific and Western Pacific Railroads at the north end of the Cortez Range. It is also on the Humboldt River, which cuts across the Cortez Range through a narrow, steep-walled canyon known as the Palisades.

Deposits of ashphaltite, pumice and diatomaceous earth occur in this area, but there has been no production of these minerals.

Asphaltite

Asphaltite occurs in the Pinon Range, 15 miles south of Palisade, about 4 miles east of the Yates ranch. It was discovered about 1900, and shortly after this the deposits were prospected by a number of trenches and open cuts, but no production was made. The best showings are covered by six unpatented claims owned by Stanley Fine and associates of Eureka, Nev.

According to Anderson,[28] the asphaltite is of the impsonite variety, resembling coal, except that it is very light, having a specific gravity of

28/ Anderson, R., An Occurrence of Asphaltite in Northeastern Nevada: Geol. Surv. Bull. 380, 1909, pp. 283-285.

less than 2. It occurs in a number of small fissures, striking S 75° E and dipping northerly 50° to 60° within steeply dipping sedimentary strata composed of alternating beds of shale and sandstone. The fissures are in a shear zone about 3 feet wide, and the asphaltite varies from nearly pure to that mixed with sand and clay in which asphaltite is the cementing medium. The largest fissure is 16 inches wide. Asphaltite is also present in the bedding planes of the country rock adjacent the shear zone. Occurrences are also reported 3 miles north and 7 miles south of the foregoing locality.

A test of the asphaltite was made by Prof. Walter S. Palmer at the Mackay School of Mines laboratory, Reno, Nev.; it was found that the material carried a small percentage of vanadium. The sample was crushed to 1/4-inch size and, after burning, the resultant ash comprised 2.5 percent of the weight of the original sample. The ash was separated from the impurities, chiefly rock fragments and iron oxides, by screening through a 20-mesh screen; it constituted only 0.64 percent of the weight of the original sample, but it contained virtually all of the vanadium. The assay results of the several products were as follows:

Product	Vanadium pentoxide (V_2O_5)
	percent
Original sample	0.16
Ash and impurities	6.4
Minus 20-mesh ash	24.8

Three samples of asphaltite were tested by the Union Assay office at Salt Lake City, Utah, with the following results:

Sample 1

Gold	Trace.
Silver	None.
Vanadium pentoxide (V_2O_5)	0.918 percent
Uranium oxide (U_3O_8)	.097 "

Sample 2

Lead	None.
Molybdenum	None.
Vanadium pentoxide (V_2O_5)	None.
Uranium oxide (U_3O_8)	None.

Sample 3

Vanadium pentoxide (V_2O_5)	0.305 percent
Uranium oxide (U_3O_8)	Trace.

Diatomaceous Earth

Diatomaceous earth occurs in the hills several miles north and northwest of Palisade. Two deposits are covered by five unpatented claims owned by Judge Edgar Eather and associates of Eureka, Nev. Very little work has been done, and no tests have been made to determine the value of the material for specific purposes. Judging from the surface showings, the deposits are extensive.