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(171)

Item #34

UNION PACIFIC RAILROAD COMPANY

PERLITE RESOURCES

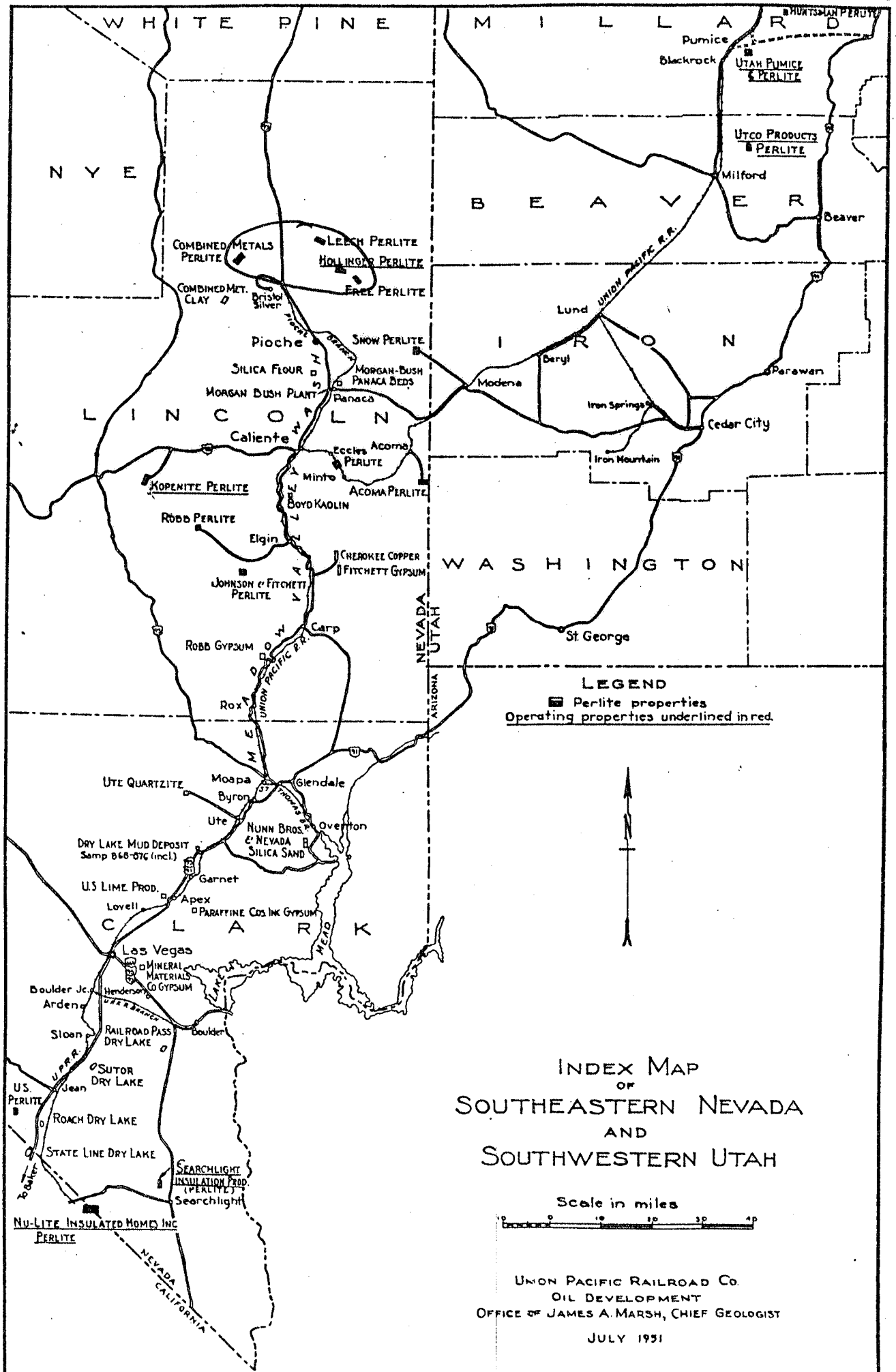
Meadow Valley Wash Area

Clark and Lincoln Counties, Nevada

Beaver and Millard Counties, Utah

By K. L. Cochran, Geologist
August 17, 1951

PLATE I



LEGEND

Perlite properties

Operating properties underlined in red.

INDEX MAP OF SOUTHEASTERN NEVADA AND SOUTHWESTERN UTAH

Scale in miles

0 10 20 30 40

UNION PACIFIC RAILROAD CO.
OIL DEVELOPMENT
OFFICE OF JAMES A. MARSH, CHIEF GEOLOGIST

JULY 1951

Hollinger Perlite Deposit - Pioche, Nevada

The Hollinger deposit consists of three placer claims in Sections 3 and 10, T. 3 N., R. 68 E., Lincoln County, Nevada. The Combined Metals Reduction Company at Pioche, Nevada, has taken over this property and has developed it for mining. It is reached via six miles of good oiled road and 12 miles of well improved road from the company's plant at Caselton, Nevada.

The deposit occurs between two glassy flows but most of the capping has been eroded away leaving a large tonnage free of overburden. On the surface of the flow the perlite is of the "onion skin" type but mining operations have opened up a face 90 feet in height showing mostly all granular perlite of very good grade. It is estimated to contain a reserve of 9 million tons easily accessible for mining.

The property is being developed by quarry methods whereby a large tonnage can be produced quickly and economically. A "V" was first cut into the deposit and gradually widened as operations were extended. The perlite is drilled with a jackhammer using detachable bits, blasted, and then loaded into 20-ton capacity trucks and hauled to the grinding plant at the Caselton Mill. Some 10,000 tons of material are stockpiled at the mill at all times in order to insure a continuous yearly operation. Production from the deposit totalled about 35,000 tons in 1950 of which better than 28,000 tons were shipped to expanding plants throughout the country. Scheduled mine production for the year 1951 is from 3,500 to 4,500 tons per month. (See Plate VIII)

The grinding plant at Caselton is completely modern and has only recently been operating at capacity load. The plant can process about 50 tons per hour on a one shift basis and the variously sized crushed products are as follows:

Minus 16, plus 100 mesh

Minus 14, plus 100 mesh

Minus 12, plus 100 mesh

Minus 12, plus 40 mesh

The crushed and sized material is stored by conveyor into six steel storage bins (see Plate XII) of 200 tons capacity each and is then loaded into railroad cars and any specific size or blend of sizes can be furnished upon demand. About 8,000 tons were shipped in 1949 and 28,300 tons in 1950.

The company has perfected an expanding furnace which is licensed to reputable operators and distributors. Licensed plants are established in Los Angeles and Richmond, California; Salt Lake City, Utah; Oklahoma City, Oklahoma; Kansas City, Kansas; Pittsburgh, Pennsylvania, and other eastern points. For complete information regarding any phase of this company's perlite activities contact Mr. Neal Snyder, Combined Metals Reduction Company, 218 Felt Building, Salt Lake City, Utah.

The bulk of the company's crude production is for the manufacture of light-weight plaster aggregate. The Metropolitan Housing Project in Los Angeles and the North Long Beach Development at North Long Beach, California, have been plastered with perlite aggregate from this source. It is also being shipped to Cleveland and Akron, Ohio; Carnegie, Pennsylvania; Nashville, Tennessee; Sausalito, California; Houston and Dallas, Texas; Grand Rapids, Michigan and St. Louis, Missouri.

Some of the production is used for light-weight concrete aggregate, pre-cast roofing slabs and prefabricated housing. Recently considerable demand has arisen for expanded perlite as a light-weight aggregate in oil well drilling both as an aggregate in cementing and as a medium to aid in restoring lost circulation. The Panacalite-Pacific Company, Inc., of Los Angeles produces two speciality products known to the trade as "Pana Seal" and "Pana Crete". Since perlite is chemically inert, it can be combined with any drilling fluid mix without fear of causing flocculation of the mud.

The brand name is "Panacalite" and it is packaged in standard four cubic foot bags at the expanding plant to facilitate distribution. Retail prices of the crude ore, f.o.b. Pioche, Nevada, start at $6.50 per ton and the expanded product price varies according to the locality. (See Plate XX)

U. S. Perlite Manufacturing Company's Deposit - Goodsprings, Nev.

This perlite deposit is located in the Goodsprings Mining District about 20 miles southerly from the town of Goodsprings, Nevada. It consists of 10 placer mining claims which were located in 1945 and only discovery and annual assessment work have been performed to develop the deposit. The United States Perlite Manufacturing Company is under the direction of Messrs. Harris Hammond and A. R. Chandler of 609 South Grand Avenue, Los Angeles, California.

The deposit is unique in its occurrence in that it is surrounded by limestone and dolomitic limestone sedimentary deposits. It appears that a fissure or vent has opened in the limestone to allow a mass of perlite and dacite to flow out and down an erosional gully in the limestone. (See Plates XVIII and XIX). The front of the flow is characterized by a mixture of both igneous and sedimentary debris and the flow limits are clearly recognizable and defined.

The type of perlite varies from "onion skin" to an intimate mixture of glossy granular black perlite and reddish dacite. There are numerous inclusions of dacite and obsidian within the flow which may cause objectionable amounts of contamination in mining.

It is not possible to estimate the exact tonnage of the deposit but it is safe to say, conservatively, that there are in excess of one million tons. Minimum thickness of the flow is observed to be 15 feet and it is not exposed sufficiently to obtain the maximum thickness which might exceed 200 feet in the thickest place.

Mining operations are being carried on by an open cut system. The perlite is drilled with pneumatic drills, blasted and loaded into trucks by a power shovel of 3/8 cubic yard capacity.

Production was started on a small scale from this deposit in February, 1948, by the original locators and about 300 tons of good quality material were mined and trucked to the Basic Materials Company in Las Vegas, Nevada. Nu-Lite Insulated Homes, Inc., plans to install mining machinery and grinding plant equipment at the property having a capacity of 200 tons daily which will greatly facilitate and increase production from this large deposit.

In conjunction with production of crude perlite from the mine, the company is operating an expanding plant at Fontana, California. The plant consists of three furnaces with a capacity of 6,000 cubic feet per day of plaster aggregate size. The company specializes in pre-cast roofing slabs and prefabricated housing units using perlite aggregate. The brand name is Nu-Lite.

Fairview Perlite Deposit - Pioche, Nevada

This perlite deposit lies in the comparatively low foothills of the Ely Range in the SW¼ of Section 28, T. 4 N., R. 69 E., Lincoln County, Nevada, some 26 miles northerly from the town of Pioche. It is reached via 13 miles of oiled highway and approximately the same amount of improved mountain and desert road.

There are no facilities at the property and all supplies must be trucked from Pioche.

Detailed exploration and development of the deposit indicates a reserve in excess of one million tons of commercial material. There are other deposits within adjacent areas but the Fairview is of the best grade and most accessible. The estimated total reserve tonnage contained in the deposit is 6,038,400 tons. (See Plate VI)

Approximately 5,000 tons of crude were mined and shipped to the grinding plant at Caselton, Nevada; the bulk of the product was minus 1/8 inch which was shipped to an expanding plant at Bauer, Utah, and the plus 1/8 inch and larger was stockpiled to be used later as concrete aggregate after expansion. Operations at this property were suspended upon full development of the Hollinger deposit where the quality of the material was better and operations were more economical.

Kopenite, Inc. - Lincoln County, Nevada

The Kopenite deposit is located in an unsurveyed and unorganized mining district, 35 miles southwest of Caliente in Lincoln County, Nevada. It is reached via 28.5 miles of oiled highway #93, thence 6.5 miles east over fair desert road, approximately in T. 4 S., R. 63 E.

It was originally located by A. J. Mackie of Caliente. The property consists of eight placer claims held by location and

of the perlite would become more expensive as operations progressed.

Three kinds or types of perlite can be observed. The first is a light gray, firm, good grade of perlite; the second is quite black but appears to be of good quality; the third is a broken mixture of black and gray perlite and expansion tests will have to determine whether or not this third type is commercial.

The perlite flow will average 25 feet in thickness although there are places where it will be more than 75 feet. It is exposed over an area approximately 3000 feet by 3000 feet and it is estimated that there are at least 16 million tons in the deposit.

Mining operations would be from an open cut. Perhaps 15% of the deposit could be cleaned of overburden quite cheaply but continued operations would encounter a heavy overburden of solid porphyry which would have to be drilled, blasted, and hauled away.

Free Perlite Deposit - Pioche, Nevada

The Free Perlite deposit is located 14 miles via fair to poor desert road northeast of Pioche, Nevada. It consists of three lode mining claims, unpatented and unrecorded, in Sections 5 and 6 T.2N., R.69E., Lincoln County, Nevada. Mr. Darrel Free of Panaca, Nevada, is the owner.

This deposit is comparatively small in relation to other observed occurrences but it is fairly well located with respect to rail, labor, and housing facilities. It is a very light gray "onion skin" type perlite lying on and partially capped by dacite flow. There are many seams and ribbons of dacite within the mass but it is, for the most part, relatively free of contaminating materials. It is flat-lying in the low, rolling foothills of the Wilson Range and mining operations would present no particular problem. It is 800 feet long by 300 feet wide by 25 feet thick, having an estimated available reserve of 1,450,000 tons.

Road improvements might shorten the distance to the rail by no more than one mile and maintenance or construction would not cost excessively in the loose talus and wash debris covering the road area.

Johnston & Fitchett Perlite - Carp, Nevada

The perlite property owned by Johnston-Fitchett of Carp, Lincoln County, Nevada, is located 12 miles northwest of Carp. It is reached by poor desert road in the foothills of the Meadow Valley Mountains. (See Plates IX and X)

The property consists of 480 acres held by placer location in an unorganized mining district, Lincoln County, Nevada. Specifically in the south half of Sections 27, 28, and 29 and the north half of Sections 33, 34, and 35, T.8S., R.66E.

Present workings consist of an open pit which is operated by first drilling and blasting and then loading broken material by hand on a conveyor belt from pit to mill. As production requirements increase, the mining problem will become simpler. (See Plate III)

The property is about 50 miles from Las Vegas and about 35 miles from a loading ramp at Boulder City. Mr. Tanner plans to ship crude material to distributing points in California.

Indicated reserves of good quality granular, gray perlite are estimated at 10,581,000 tons.

The plant is in position to produce both plaster and acoustic aggregate. The latter is a larger bubble product and has been found satisfactory. Some experimental work has been done toward production of a perlite aggregate building block and lightweight wall board or lath.

Leech Perlite Deposit - Lincoln County, Nevada

The Leech Perlite deposit is located 23 miles northeast of Pioche via 7 miles of oiled highway No. 93 and 16 miles of poor to bad desert road. It is situated in the SE¼, Section 16 and NE¼ Section 21, T.3N., R.68E., Lincoln County, Nevada, on the low foothills of the Wilson Range.

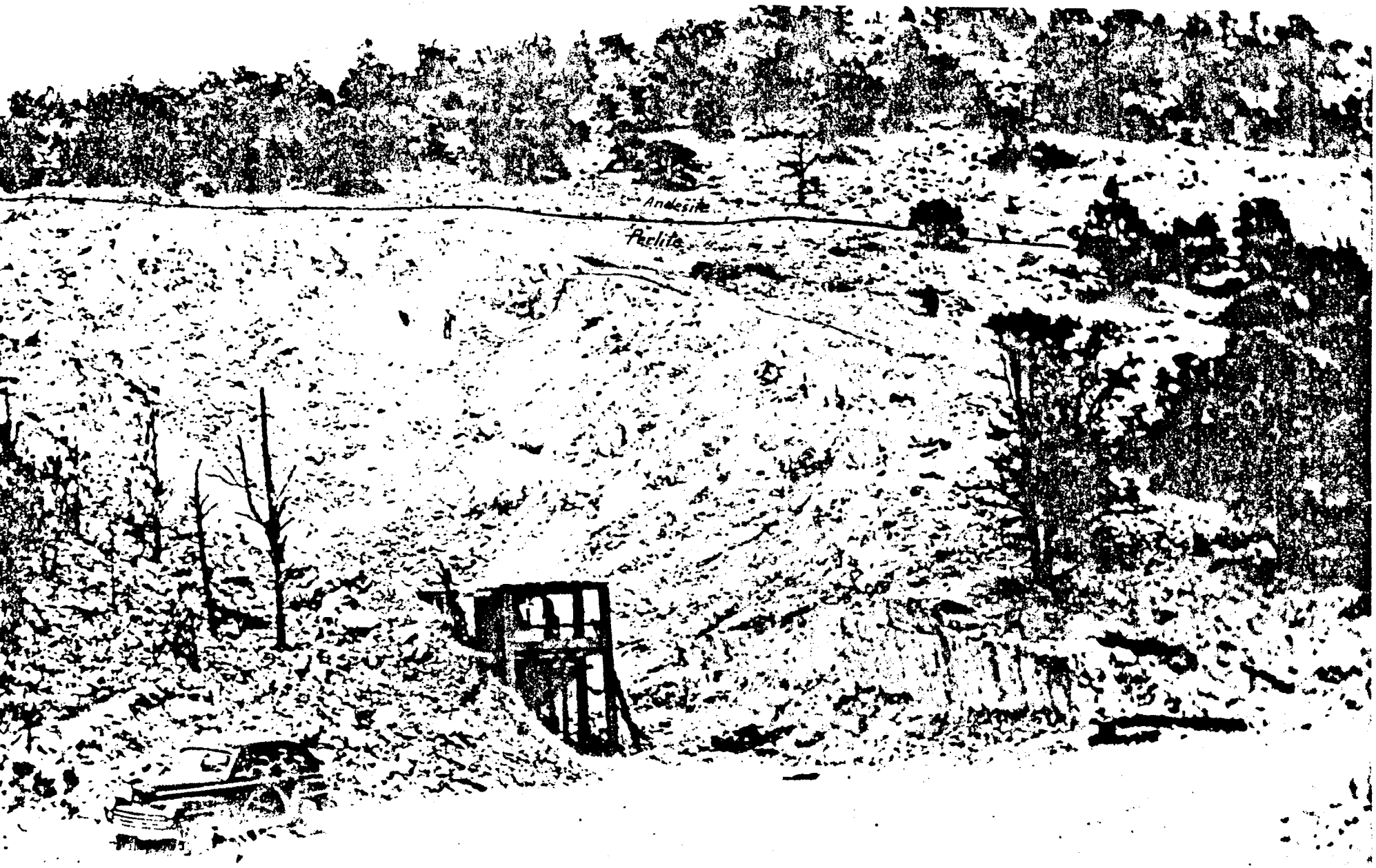
The property consists of two placer claims (40 acres) in an unorganized mining district. It is held by location by Mr. Paul Leech of Pioche, Nevada, and is 23 miles from the Union Pacific Railroad Pioche branch.

The deposit is, apparently, flat lying over an andesite flow. All of the capping material has been eroded away and there is but a minor amount of overburden. The perlite is dark gray to black, "onion skin" type, glassy and fairly free of contaminating materials. The deposit is 600 feet long by 500 feet wide by 50 feet thick, having an estimated reserve of 1,725,000 tons.

Snow Perlite Deposit - Lincoln County, Nevada

The Snow Perlite deposit consists of two lode claims located in the Goldsprings Mining District, Section 23, T.1N., R.70E., Lincoln County, Nevada. It is owned jointly by Messrs. Wayne Snow, W. Atkin and Gile Hardy, all of St. George, Utah, and is under lease to Canadian Global Investment Company, Toronto, Canada. There are two deposits, one of which is reached via 13 miles of fair desert road northwest of Modena, Utah. By road improvements, the second and larger of the two could be reached by ten miles of road from Modena. There are no excessive grades and both properties are easily accessible.

Of the two deposits, the first is part of a dacite flow and considerable contamination is evident. The perlite is quite glassy, greenish-black in color and covers an area 1320 feet long by 600 feet wide by 50 feet thick. The second is a blackish-gray, granular flow and covers an area some 2640 feet long by 1320 feet



HOLLINGER PERLITE DEPOSIT. QUARRY OPERATION
Lincoln County, Nevada.

PLATE VIII

SUMMARY NEVADA - UTAH PERLITE DEPOSITS

Name of Property	Name and Address of Owner	Estimated Ore Reserves			Tons Present Monthly Production	Distance from Railroad (Miles)
		Indicated	Inferred	Total		
NEVADA DEPOSITS						
Eccles & Minto Deposits	Combined Metals Reduction Co. 218 Felt Building Salt Lake City, Utah	19,281,000	9,640,000	28,921,000	-	1
Acoma Perlite	J. Pulcepher Overton, Nevada J. L. Boykin Little Rock, California	38,700,000	21,850,000	60,550,000	-	6 to 10
Hollinger Perlite	J. Hollinger Pioche, Nevada (Leased to Combined Metals Reduction Company)	6,000,000	3,000,000	9,000,000	4,000	14
Fairview Perlite	Combined Metals Reduction Co. 218 Felt Building Salt Lake City, Utah	4,038,400	2,000,000	6,038,400	-	24
Emery & Henry Perlite	A. C. Emery & J. R. Henry Box 53 Searchlight, Nevada	214,450,000	-	214,450,000	600	21
Kopenite, Inc.	Kopenite, Inc. 169 No. La Brea Los Angeles 36, California	10,460,000	5,000,000	15,460,000	200	35
Robb Perlite	Jay Robb Glendale, Nevada	16,000,000	8,000,000	24,000,000	-	14
Johnston-Fitchett Perlite	S. Fitchett Carp, Nevada	2,680,000	1,000,000	3,680,000	-	13
Free Perlite	Darrel Free Panaca, Nevada	450,000	1,000,000	1,450,000	-	14
Leech Perlite	Paul Leech Pioche, Nevada	1,150,000	575,000	1,725,000	-	23
Searchlight Insulation Products	B. L. Tanner Box 1126 Las Vegas, Nevada	10,581,000	-	10,581,000	-	35
U. S. Perlite Products	A. R. Chandler 609 So. Grand Avenue Los Angeles, California	1,000,000	1,000,000	2,000,000	-	12
Snow Perlite	Wayne Snow St. George, Utah	29,615,000	-	29,615,000	-	13
Total Nevada Deposits		**338,405,400**	**53,065,000**	**391,470,400**	**4,800**	
UTAH DEPOSITS						
Huntsman Perlite	Allonzo Huntsman Fillmore, Utah	500,000	1,000,000	1,500,000	-	5
Utah Pumice and Perlite Co.	Byron A. Ray 409 Ness Building Salt Lake City, Utah	5,000,000	-	5,000,000	3,000*	5
UTCO Products Co. Perlite	H. H. Ellerbeck 1210 Continental Bank Building Salt Lake City, Utah	5,000,000	2,500,000	7,500,000	400	8
Total Utah Deposits		**10,500,000**	**3,500,000**	**14,000,000**	**3,400**	
GRAND TOTALS		**348,905,400**	**56,565,000**	**405,470,400**	**8,200**	