

UNITED STATES ATOMIC ENERGY COMMISSION

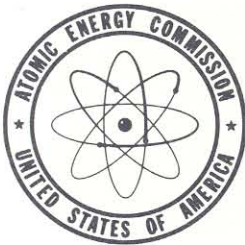
RMO-927

EXAMINATION OF THE STALIN'S PRESENT MINE,
PERSHING COUNTY, NEVADA

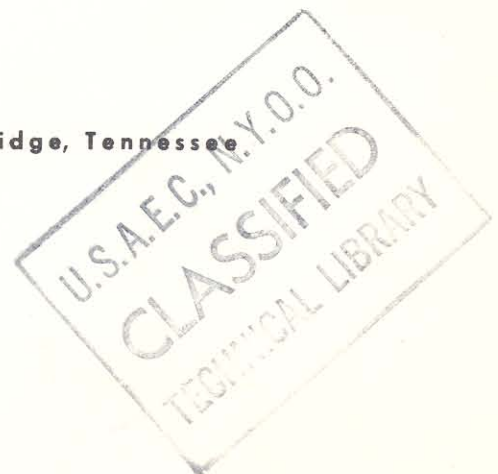
By
T. P. Anderson
G. G. Waddell

February 1952
[Site Issuance Date]

Division of Raw Materials, AEC



Technical Information Service, Oak Ridge, Tennessee



GEOLOGY AND MINERALOGY

In the interest of economy, this report has been reproduced direct from copy as submitted to the Technical Information Service.

EXAMINATION OF THE STALIN'S PRESENT MINE, PERSHING COUNTY, NEVADADistribution

Raw Materials Unclassified Distribution List, (Wide).

Table of Contents

	<u>Page</u>
Introduction	3
Location and accessibility.	3
Ownership and history of claims	4
Physiography	5
General geology.	6
Uranium mineralization	6
Table I, Sample data - current examination	9
Table II, Sample data - previous examination	10

INTRODUCTION

Location and accessibility.

The uranium prospect here described is located in Rocky Canyon on the western side of the Humbolt Range approximately 25 miles northeast of Lovelock, in Pershing County, Nevada. The claims are estimated to be in Sec. 6, T.29 N., R.34 E., MDEM. The Lovelock, Nevada, quadrangle topographic sheet of the U. S. Geological Survey, on a scale of 4 miles to one inch, and with contour interval of 100 feet, shows the area in the east central portion of the sheet.

The claims are about 25 miles by road from Lovelock. The first 14 miles are on the oiled U. S. Highways 40 and 95. The remainder of the distance is over secondary and worse mountain roads, the last 4 miles of which are passable only for 4-wheel-drive vehicles. The route from Lovelock to the entrance of Rocky Canyon is as follows:

Mileage

0.0	Traffic light at intersection of the two main streets in center of Lovelock; go north on U. S. 40 and 95.
14.2	Junction at Oreana; take dirt road to right off U.S. 40.
14.4	Junction, turn left on dirt road.
18.6	Junction with road to right; keep straight ahead.
19.2	Junction; take fork angling to right toward front of Humbolt Range.
20.5	Deserted cabin and storage shed; follow road between cabin and shed into Rocky Canyon; Stalin's Present claim is approximately 4 miles up the canyon.

The nearest railroad shipping point is Oreana, about 10 miles from the mine. The Southern Pacific R. R. agent at Lovelock quoted rail haulage to Salt Lake at \$16 per ton plus 6% of the extended revenue. Mr. Bottomley stated that he believed he could obtain truck haulage to Salt Lake City at about 6 cents per ton-mile, the distance being 440 miles.

Ownership and history of the claims.

The Stalin's Present prospect consists of four claims held by mineral location; they are the Stalin's Present, and No. 1, No. 2, and No. 3. The discovery was made in the fall of 1948 and located and recorded in December, 1948, by Mr. E. J. Bottomley, P. O. Box 653, Lovelock, Nevada.

Mr. Bottomley shipped a 20-pound sample of material from the discovery outcrop to the New York Raw Materials Office on Nov. 17, 1948. On Jan. 3, 1949, he was informed that the material assayed 0.7% eU_3O_8 and he was requested to provide additional information; this was supplied by Mr. Bottomley on Feb. 7, 1950.

The first examination of the prospect was made on April 21, 1950, by C. C. Towle and T. P. Anderson. At that time the only workings on the claim consisted of a discovery cut 2 to 3 feet wide, 15 feet long, and 2 to 3 feet deep.

In September 1950, C. C. Towle, with Mortimer Staatz, of the U. S. Geological Survey Reconnaissance Unit, visited the

property. By this time the surface in the vicinity of the outcrop had been uncovered and a 41-foot drift adit had been driven. The property was then under lease and option to the Canadian Uranium and Radium Company. Upon termination of the option, the owners formed the Nevada Uranium Company, of which Mr. Gus Rodgers is president and secretary, and Mr. E. J. Bottomley is treasurer and mine manager.

PHYSIOGRAPHY

The area in question is on the west flank of the Humbolt Range, a fault-block mountain range with blocks tilted to the east. The range rises abruptly from the gently rolling flood plain of the Humbolt River valley. The topography in the vicinity of the claims is steep and rugged. Rocky Canyon, the principal drainage in the local area, carries a perennial mountain stream. The lower reaches of the stream are in a narrow canyon with steep walls but the headward portion of the stream to the east shows a more mature character.

The climate is semi-arid; summers are cool and the winters fairly mild except in the high country along the Humbolt Range. The mine access road in Rocky Canyon could be kept open throughout the winter with only occasional need for snow-plowing after it is once graded. A limited amount of timber is available near the mine.

GENERAL GEOLOGY

Stalin's Present claims are located on the west slope, near the crest line, of the Humbolt Range, a fault-block range of folded and metamorphosed pre-Cretaceous rocks. The range was probably elevated and tilted to the east in late Tertiary time along a zone of north-south trending faults. The dissected fault scarp with numerous triangular facets can be seen along the west flank of the range.

Host rock in the vicinity of the prospect is a medium-to coarse-grained, white to gray granite. In addition to quartz and feldspar, there is between 5 and 10% of ferromagnesian minerals, mostly shiny euhedral biotite crystals.

URANIUM MINERALIZATION

Mine workings consist of a 41-foot adit driven on a uranium-bearing vein at about 25 to 30 feet below the discovery cut exposing the vein. About midway in the adit, a winze had been sunk to a depth of approximately 12 feet, with intention to deepen it to 75 or 100 feet and to then drift on the vein for at least 100 feet.

The mineralized structure, striking essentially north-south and dipping nearly vertical, is a replacement type of vein which appears to be coextensive with a narrow zone of highly metamorphosed rock enclosed in granite. The zone, ranging from 4 to 10 inches

thick, is greenish gray in color due to a considerable amount of green pyroxene with epidote and chlorite. The dark band is possibly a schlieren enclosed in the granite, but is more probably a highly contact-metamorphosed xenolith of calcareous material than an igneous segregation or a concentration of residual fluids.

Both the dark schlieren zone and the enclosing granite show evidence of crushing and faulting. The zone and, to lesser extent, the granite in the adjacent walls have been replaced by calcite, clear quartz, smoky quartz, sericite, and small amounts of pyrite, hornblende, and pitchblende. The mineralization is scattered in irregular patches along the dark zone.

Rock and vein minerals have been studied only in hand specimens, wherefore their identification and paragenetic relationships are tentative. No pitchblende was positively identified in the hand specimens, but the New York Office mineralogical laboratory identified pitchblende in similar material from the prospect which assayed 0.70% eU_3O_8 .

Near the portal of the adit several joint surfaces in the granite were observed to be coated in irregular patches by thin crusts of radioactive amorphous yellow-green secondary mineral; this was not seen in the freshly exposed rock in the winze and is probably a product of near-surface or post-mine oxidation.

The pitchblende-bearing mineralized zone extends from the

portal to the breast, a distance of 41 feet. The first 20 feet from the portal are largely obscured by lagging against the back. It is exposed in the winze and in the remainder of the adit. At the south end of the adit, near the breast, the vein is offset about 8 feet by a fault striking $N.30^{\circ}E.$ and dipping 68° northwest. The fault is also observed at the east end of the hoist station at the winze. Slickensides are not consistent enough to determine the direction of slip. The offset portion of the vein is only 2 to 6 inches wide and appears to be lower in uranium content than the other part of the vein.

The vein exposed in the winze, which apparently was sunk on the richest shoot encountered in the adit, shows little change in structure or character of mineralization with depth.

Seven channel samples from winze and adit are listed in Table I; they range in grade from 0.009% to 0.19% U_3O_8 . Selected material from hand-sorted ore submitted by Mr. Bottomley assayed 0.68% U_3O_8 . Table II contains data from the earlier sampling.

TABLE I

Sample Data - Current Examination

Sample Number	Description	% eU	% U	%U ₃ O ₈
F-4536	2.5' channel including 6" of main streak and 12" of each wall; N. rib of winze 4'6" below floor of drift.	0.050	0.033	0.039
F-4537	8" channel across vein, N. rib of winze 6'6" below drift.	0.22	0.16	0.189
F-4538	9" channel across vein, N. rib of winze 8' below drift.	0.11	0.088	0.103
F-4539	1' channel across vein in altered crushed zone, S. rib of winze 4'6" below drift.	0.041	0.037	0.044
F-4540	2' channel across footwall adjacent to vein; S. rib of winze 7'6" below drift.	0.031	0.019	0.022
F-4541	10" channel across main streak in breast at 40.5' from portal.	0.018	0.010	0.012
F-4542	14" channel across footwall adjacent to vein (F-4541).	0.012	0.008	0.009
F-6794	Dump sample submitted by E.J. Bottomley, Dec. 28, 1951; stated to be representative of hand-sorted ore.	0.50	0.58	0.68

TABLE II

Sample Data - Previous Examination

Sample Number	Description	% eU	% U	% U ₃ O ₈
(The following samples were collected by C. C. Towle and T. P. Anderson on April 22, 1950)				
F-5096	18" channel cut of vein material across face of discovery cut.	0.076	0.060	0.07
F-5097-A	Selected samples from vein in pit.	0.16	0.13	0.15
F-5097-B	Selected specimens from section of vein 5" wide exhibiting best radioactivity.	0.28	0.22	0.26
NYO 1189	20 lb. of selected material submitted by E.J. Bottomley to NYO.	0.70	-	-