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RADIOACTIVE MINERAL OCCURRENCES IN NEVADA - AN UPDATE TO NEVADA BUREAU OF MINES AND GEOLOGY BULLETIN 81

This preliminary report attempts to correct and partially update NBMG Bull. 81, Radioactive Mineral Occurrences in Nevada. It is not complete, and only includes new localities for which there is reasonably good location data. Many of the corrected or ammended locations were supplied by property owners and government or mining company geologists; I have attempted to recognize these persons in the References under each description. A number of new topographic maps have been published since Bulletin 81 was issued; these were not routinely searched for better uranium occurrence location data. Also it should be remembered that new location data may change the position of the locality as shown on plate 1 of Bulletin 81. Not all the published information reported in the updated reference list was integrated into the geologic descriptions, as they are intended to be summaries. For example, Cupp, Leedom, Mitchell and Allen (1977), Cupp, Leedom, Mitchell, Kiloh and Horton (1977), Rytuba (1976) and Rytuba and others (1979) contain considerably more information than can be summarized in a report such as this, and these reports should be consulted for details of the geology of the uranium deposits described. In addition, Larson and Beal (1977) summarize the uranium favorability of the Great Basin, and report on recent exploration activity, as ascertained from mining claim records and other sources.

In the following property descriptions, only those categories were listed which were changed from Bulletin 81. Generally, a description of an individual occurrence in this update is not complete; the published bulletin should be consulted for the categories under each description (Location, Geology, etc.) which did not require changes.

No attempt was made to systematically report the location of anomalous values of uranium or other radioactive elements in stream sediments, surface waters, or groundwater. Numerous reports describe such geochemical surveys; those that were published before this updated report are listed in the Bibliography.

Any further unpublished data or uranium occurrences in Nevada, of additions, or connections to Bulletin 81 or this report would be gratefully received by the author and the Bureau, and included in future update revisions.

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7A. Cottonwood claims

Location: S34,35,T25N,R36E; along Cottonwood Creek.

7B. Lee Hot Springs

Other Names: Allen Springs, Ax-Hill claims

Location: NW/4 S34,T16N,R29E.

Development: Several pits.

Radioactivity: Background = 5-7.5μr/hr.; High = 20-25μr/hr.
Assays range from 0.003 to 0.045 percent cU_3O_8.

Geology: Anomalous radioactivity and yellow, non-fluorescent uranium minerals are reported from a spring sinter mound near Lee Hot Springs (actually a well). The occurrence is within 50 yards of the "spring". Silver and gold values are also anomalous.

References: Harrie Mallory, written commun., 1977; Wollenberg, 1974.

9. Johnson group

Location: N/2 S23,T16N,R32E.

11. Gamma Group (nos. 1 and 2)

Location: C S36,T16N,R37E; about 2600 feet N80W from the Gold Trail Mine.

Production: None

Radioactivity: B.G. = 0.07; High = 0.3 mR/hr; up to 0.1 percent U in the ash (produced by burning lignite).

References: Staatz and Bauer, 1954a; David, 1954; Gott and others, 1952; Duncan, 1952b, p. 118; Staatz and Bauer, 1951a; Willden and Speed, 1973; McKelvey, 1957, p. 36; Nev. Bureau of Mines and Geol., unpub. coal resources study; Barrows, 1971; Smedman, 1969.

CLARK COUNTY

47A. Locality 15

47B. Hidden Valley Calcrete

Location: S8(?),T24S,R61E.

Development: None

Radioactivity: Background = 1-2 cps Bi^{214}; High = 3.5 cps Bi^{214}. Assays up to 600 ppm cU, although 30 ppm cU is more characteristic of the occurrence.

Geology: Carnotite occurs as films on fracture surfaces in calcrete exposed near the axis of Hidden Valley. The occurrence is in the middle part of a calcrete zone which is up to 18 feet thick. The calcrete is buried by recent alluvium in lower Hidden Valley, where more occurrences might be located.

References: Carlisle (1978).

ELKO COUNTY

140. South Fork claims (nos. 1 and 2), Pixley No. 1 claims

Location: S35,T46N,R54E (unsurveyed). Between Pixley Creek and Nigger George Draw.

Development: Open pit and several thousand feet of rotary drilling.

Radioactivity: Over 2 percent U_3O_8 reported in some thin zones.

Geology: Autunite with minor uraninite, carnotite, zorbernite, and renardite occurs in fractures and with pyritiferous coalified wood at the base of a sequence of andesitic and dacitic welded tuffs. The deposit is localized in channels and depressions cut in Cretaceous fluvial quartz monzonite which underlies the welded tuffs. The fluvial rocks which fill these depressions are arkosic, conglomeratic granite wash and montmorillonitic tuff and tuff-breccia. Mineralized rock is bleached and hematite-stained, and reaches a maximum thickness of 80 feet; grades exceed 2 percent in some thin zones. Vanadium, zinc, copper, molybdenum, nickel, and cobalt are anomalously abundant. Postmineral normal faults have modified some deposits.

The possible source rocks include the Cretaceous quartz monzonite and Tertiary volcanic rocks. Uraniferous solutions may have migrated along the quartz monzonite-volcaniclastic rock nonconformity and deposited uranium by reduction near carbonaceous material or by adsorption on montmorillonite.

References: U. S. Atomic Energy Commission, unpublished map; U. S. Bur. Mines Minerals Yearbook, 1960; D. L. Hetland, written communication, 1971; Birkholz, 1978.

143. Mystery (sec. 21), Good Luck (sec. 18), Good Morning (sec. 28), Pot Luck (sec. 33) claims

Location: S18,21,28,33,T44N,R55E. See fig. 8 for exact locations. Possibly in T43N,R55E.

144. Anomaly No. 3

References: Peterson, 1956, p. 7.

145. Anomaly No. 1

Location: S20,T46N,R53E (location approximate). On the Duck Valley Indian Reservation.

153. Prince claims

Location: W/2 S21,T44N,R66E.

Production: None(?)

Development: Bulldozer cuts and trenches and a small amount of underground workings.

Radioactivity: Background (Paleozoic rocks) = 125 cps; High = 9500 cps. Assays of 0.3 percent cU_3O_8 or greater are reported across a width of several feet, up to 7 percent U_3O_8 reported locally.

Geology: Anomalous radioactivity and uranium mineral occurrences are present along fault zones in Permian(?) limestone and sandstone. Uranophane renardite, phosphuranylite, and coffinite(?) were recognized at one locality; however, elsewhere uraniferous limonite-maghemite is the main radioactive species. Four radioactive lo-alities are reported in a 0.5 mi^2 area, associated with northeast- or northwest-trending fault zones which are hydrothermally altered and leached. The mineralization has not been investigated at depth. Two alternate hypotheses have been proposed to explain the mineralization: (1) uranium was leached from tuffaceous and arkosic conglomeratic sedimentary rocks of the Mio-Pliocene Idavada Formation or from the granitic and volcanic source-rocks for this unit. In this model, uranium would be deposited from uranium-bearing ground water along fault zones in limestone and quartzite, either precipitated on amorphous iron-oxides or coprecipitated with the iron oxide minerals. (2) An alternate hypothesis is that the radioactive occurrences are the oxidized portions of hypogene veins, probably of simple mineralogy (pyrite-uraninite?).

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3417; Redfern, 1977.

162. Midas Area

Location: S14,T38N,R44E; exact location unknown.

Geology: Uranium mineralization has been reported from opalized volcanic beds. Claims for uranium were staked in this area in the 1950's, according to Elko County claim records. However, no radioactive localities could be found during a 1978 visit.

163. Deerhead group (nos. 1-18)

Geology: Anomalous radioactivity and flakes of carnotite occur in a silicified fault breccia zone in shale of the Devonian Woodruff Formation and an overlying water-laid(?) tuff on the Deerhead No. 6 claim. Samples reportedly contain up to 0.03 percent U_3O_8.

References: D. L. Hetland, written communication, 1971. Smith and Ketner, 1976, p. B45; Smith, 1976.

164. Black Kettle group (nos. 1-4)

Geology: Anomalous radioactivity occurs in siltstone of the Devonian Woodruff Formation on the Black Kettle No. 4 claim. Samples reportedly contain up to 0.04 percent U_3O_8.

References: D. L. Hetland, written communication, 1971. Smith and Ketner, 1976, p. B45; Smith, 1976.

165. KEF No. 2 claim

Geology: Very weak radioactivity is reportedly associated with clays, gypsum, and weak iron staining in lake sediments of the upper Tertiary and lower Quaternary Hay Ranch Formation.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3468. Smith and Ketner, 1976, p. B45.

166. Asphaltite prospect

Location: N1/2 N1/2 S1,T29N,R52E; on the north side of Smith Creek.

Geology: An asphaltic pyrobitumen (probably impsonite or grahamite) has been reported from several localities between Trout Creek and Willow Creek, near the Eureka County line. The occurrences are reportedly associated with a north-trending basin-and-range fault. At the best described locality, the impsonite? occurs in lenses, stringers, and sheets along a fractured zone about 3 feet wide. The veins cut sandstone, shale, and conglomerate of the Diamond Peak Formation-Chainman Shale, and range from pure lenses up to 18 inches wide to asphalt impregnated sandstone. The vein which follows the fracture zone trends N60°E and is nearly vertical. Samples of impsonite? are said to resemble coal,

have a specific gravity of 1.9, pitch-like luster, and conchoidal fracture. Vanadium and uranium are both present in anomalous amounts. The vanadium is present almost exclusively in the impsonite?, as shown by the ash analyses below (Vanderburg, 1938).

	Percent V_2O_5
Original sample	0.16
Ash and impurities	6.4
Minus 20-mesh ash	24.8

Another sample (Vanderburg, 1938, p. 57) gave the following result:

	Percent
Gold	Trace
Silver	None
V_2O_5	0.918
U_3O_8	.097

Smith and Ketner 1975 report semiquantative data on other elements. This property could not be located in 1970.

References: Anderson, 1909; Vanderburg, 1938, p. 56, 57; Gianella, 1945, p. 69; Roberts, Montgomery, and Lehner, 1967, p. 112; Lovering, 1954, p. 96; Lincoln, 1923, p. 261; Hamilton, 1956, p. 73; Tischler and Oesterling, 1964; Smith and Ketner, 1976, p. A44, B45.

169. Pride and Last Chance

170. B&D claims

Location: E12,S35 and W/2,S36,T29N,R66E and NW/4,S1,T28N,R66E.; exact location uncertain. Reportedly in low foothills on the east side of Melrose Mountain.

Geology: Very slight radioactivity is reported in flow-banded Tertiary rhyolitic flows and ash-flow tuffs reportedly associated with hematite.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3416; Snow, 1963, p. 48-50.

ESMERALDA COUNTY

181. Coaldale prospect, Phillips and Wentland No. 1 claims, Quinseck claim.

Location: NW/4,S33,T2N,R37E.

Geology: Uranium mineralization occurs in a rhyolitic welded tuff near a fault contact with younger Tertiary fluviatile and lacustrine rocks. A normal sedimentary contact is present just east of the prospect (fig. 9). The area of mineralization is 400 feet long

and up to 200 feet wide. Uranium is irregularly disseminated in siliceous veinlets, in a siliceous breccia pipe, along limonite stained joint surfaces, and as incrustations and cavity fillings of autunite and phosphuranylite. Veinlets and limonite coatings contain up to 0.31 percent cU_3O_8. Except for samples containing visible secondary uranium minerals, chemical assays are about 10 to 20 percent lower than radiometric analyses. Nearby lignite beds in the sedimentary rocks are not uraniferous.

Duncan (1952a) estimated 50 tons of indicated and inferred ore averaging 0.25 percent cU_3O_8, 350 tons averaging 0.025 percent, and perhaps 67,000 tons averaging above 0.005 percent cU_3O_8. These reserves were calculated to a depth of 50 feet.

References: Duncan, 1953c; Sharp, 1956; Duncan 1952a; Moore and Stephens, 1954; McKelvey, 1957; U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3453; Davis, 1954, p. 6, 8; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

202. Mustang, Mustang Nos. 1-7 claims

Location: NE/4 S31,T1S,R37E (unsurveyed). Projected from the west.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3445; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

HUMBOLDT COUNTY

211. Virgin Valley Opal district

Other names: Crane claims, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Wee Wee Marie, September, October, March, 4th of July Nos. 1 and 2, February, April Fool Nos. 1 and 2; January, November, August, December, Tony Jack Group, Lode Star Uranium Co., Krerger et al. claims, Angie group.

Location: S24,25,36,T45N,R25E (unsurveyed).

Radioactivity: Background = 0.015 - 0.05 mR/hr; High = 0.90 μR/hr. Samples as high as 0.14 percent U_3O_8 are reported, but many analyses are in the 0.02 - 0.03 percent range.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Repts. 3498, 3498a, 3499, 3499a, 3487; Staatz and Bauer, 1951b; Davis, 1954; Davis and Hetland, 1956, p. 358; Finch, 1967; Wyant, Beroni and Granger, 1952, p. 29; McKelvey, 1957; Staatz and Bauer, 1954b.; Cathrall and others, 1978; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977; Henry, 1978.

212. CC Mines claims

Other names: Barbara and Hal group

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3480; Cathrall and others, 1978.

217A. Granite Point claims

217B. Chevron Resources deposit

Other names: Horse Creek occurrences

UTM approx.
N 4643300
E 403300

Location: S21,28,33,T47N,R34E.

Development: Bulldozer roads and several thousand feet of drill holes.

Radioactivity: Up to 0.1 percent U reported.

Geology: In 1976 uranium mineralization was encountered in drill holes along Horse Creek several miles north of the Moonlight Mine, in King's River Valley. The mineralization is associated with an extensive area of potassium feldspar alteration, and occurs in fractures and breccia zones in porphyritic, peralkaline rhyolite domes and hypabyssal intrusive rocks. These domes were emplaced along a probable ring-fracture in the western part of the McDermitt caldera complex in the period from 14.0 to 13.7 m.y. A small volume ash-flow tuff associated with these domes is altered to potassium feldspar and quartz, and reportedly contains up to 0.1 percent uranium. The main uranium mineralization at the Horse Creek occurrences is reported to be pyrite-uraninite; a number of other elements are anomalous, including Mo, F, Hg, As, Sb, Ba, Ag, and Zr.

Fluid inclusions in quartz from ore at the Moonlight Mine, related occurrences to the south indicate a deposition temperature of 330°C, and stratigraphic evidence indicates that the Moonlight deposit formed at a shallow depth of about 2600 feet. Tonnage and grade figures have not been announced, although possible mill sites have been investigated by Chevron Resources. Molybdenum-porphyry mineralization was reportedly encountered in deep drill holes in the vicinity of the Moonlight Mine to the south.

The McDermitt caldera complex is a Miocene collapse structure 27 miles in diameter. Large-volume rhyolitic and peralkaline ash-flow tuffs were erupted from 17.9 to 15.8 m.y. ago, leading to the formation of overlapping and nested calderas. The rhyolitic ring domes are the last phase of the volcanic activity, and were emplaced mainly along the west margin of the caldera complex about 14-15 m.y. ago. The complex is the site of large

deposits of mercury, an ore deposit and several occurrences of uranium, and widespread occurrences of lithium. Uranium exploration activity has been concentrated in the vicinity of the Moonlight Mine and Horse Creek occurrences, and to the north in the vicinity of the Bretz and Opalite mercury mines, near Cottonwood Creek in Oregon about 3 mines north of the Nevada State line.

217C.

Name: Name unknown

Location: S14(?),T45N,R34E.

Geology: A uranium prospect is shown in Figure 2 of Rytuba (1976) at this locality.

References: Rytuba, 1976.

217C.

Name: Name unknown

Location: W/2,T47N,R34E.

Geology: A mercury and uranium prospect is shown on Figure 2 (1976), apparently in the vicinity of Disaster Peak.

References: Rytuba, 1976.

221A. Unnamed prospect

221B. McDermitt Mine

Other names: McDermitt alteration area

Location: S28 and 33,T47N,R37E.

Development: Large open-pit mercury mine.

Radioactivity: Up to 192 ppm U.

Geology: The McDermitt Mine contains cinnabar and corderoite in argillicially altered Tertiary sedimentary rocks which are caldera-fill sediments within the McDermitt caldera complex. Native mercury and mercury oxychlorides occur, but are uncommon. Strongly silicified rocks (opalite) are adjacent to the mercury ore. Fluid inclusion studies indicate a deposition temperature of 200°C, at a depth of at least 500 feet. Uranium values up to 192 ppm are reported in the McDermitt zone of alteration. The

uranium and mercury mineralization are believed to be related, and similar relationships are reported from the Bretz, Cottonwood Creek, and Opalite areas in Oregon, approximately 15 miles northwest of the McDermitt Mine.

References: Rytuba and others, 1979; Rytuba, 1976.

221C. Rock Creek area

Location: W/2,T45N,R35E.; in the vicinity of Rock Creek.

Development: None(?).

Geology: Hydrothermal alteration (clinoptilolite and, locally, potassium feldspar is associated with anomalous concentrations of uranium and mercury.

References: Rytuba and others, 1979.

221D. Crowley Creek area

Location: T44 and 45N,R36E.; near Crowley Creek.

Development: None(?)

Geology: Hydrothermal alteration (clinoptilolite and, locally, potassium feldspar) is associated with anomalous concentrations of As, Sb, U, Be, and Hg in upper Tertiary sedimentary rocks.

References: Rytuba and others, 1979.

222. Foster property

Location: Border of S35 and 36,T.43N,R28E.

Radioactivity: High radioactivity is reported, with assays of up to 0.18 percent reported. A sample reportedly from this locality containd 5.48 percent eU_3O_8 (2.81 percent cU_3O_8).

Geology: A radioactive locality is reported from a small roof pendant of Happy Creek Volcanic Series in Duffer Peak Granodiorite, as well as in the main mass of Happy Creek Volcanic Series just to the south of the granodiorite-volcanic series contact (fault? contact). A nearby spring is also reportedly radioactive.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3485; Chiaki Fujikawa, oral communication, 1977; Smith, 1973.

228. Getchell mine

Location: SE/4 SW/4 S33,T39N,R42E.

LANDER COUNTY

237. Arizona property

Location: S6 or 7,T19N,R44E. Exact location unknown.

References: U. S. Atomic Energy Comm., unpublished map; Kay Critchlow, oral commun., 1977.

238. Dacie Creek claims (about 300)

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3514; Davis and Hetland, 1956, p. 358; Files, 1978.

240. Hart group (nos. 1-27), Pinto group (nos. 1-50)

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3508; Finch, 1967; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

241. Two-Bit group (nos. 1-6)

Location: S26,35,T24N,R43E.

Development: Shallow bulldozer trenches and pits.

Geology: Anomalous radioactivity is reported from zeolitized tuff and tuffaceous mudstone which are interbedded with minor sandstone and conglomerate. A modest radioactive anomaly was detected during a helicopter scintillometer survey in this area, but the anomaly could not be located on the ground. Basinski and Larson (1979) suggest that zeolites or calcium montmorillonite present in the rocks may have acted to concentrate the uranium.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3511; Cupp, Leedom, Mitchell, Kiloh and Horton, 1977, p. 17; Basinski and Larson, 1979; Papke, 1972, p. 23.

242. Rex Jean claims (nos. 1-11)

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3511; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

243. Lee Rene claims (nos. 1-8)

Radioactivity: Background = 0.015 mR/hr.; High = 0.42 mR/hr. Over 0.1 percent eU_3O_8 in thicknesses of 2.3 feet on prospects in this area; mineralization occurs at the oxidized-unoxidized contact near the water table.

References: Basinsky and Larson, 1979; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

244. Boon Uranium claims

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3510; Finch, 1967; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

LINCOLN COUNTY

251. Silver Park mine

Location: NW/4 S21,T7N,R68E (unsurveyed).

References: Sharp and Myerson, 1956; U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3564; Atlanta 7.5-minute sheet.

252. Nevada Rath claims (nos. 1-13)

Location: NE/4 S26(?),T7N,R68E. (unsurveyed). Half a mile west of Bradshaw Spring; exact location uncertain.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3537; Rosencrans Knolls 7.5-minute sheet.

253. White Cloud prospect

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3544; Westgate and Knopf, 1932; Davis and Hetland, 1956; Myerson, 1956; Finch, 1967; Hetland, Sharp and Warner, 1969; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

254. Pay Zone claim

Location: SE/4 S9 and SW/4 S10, T2S,R68E.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3543; Finch, 1967; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

255. Dorothy Claim

Location: SW/4 S4,T2S,R68E; on a small butte half a mile from the center of Panaca.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3539; Myerson, 1956; Finch, 1967; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

LYON COUNTY

272. Silver Pick property

Location: NW/4 NW/4 NW/4 S2,T7N,R27E, at shaft symbol on Mt. Grant 15-minute sheet.

275A. River Road mine

275B. Flying "M" prospect

Location: NW/4 S19,T9N,R27E.

Development: Three short adits, several surface trenches, and two drill holes.

Radioactivity: Assays of 0.004 to 0.19 percent U_3O_8 reported.

Geology: Yellow, six-valent uranium minerals occur as thick coatings on northeast-trending fracture surfaces in Tertiary sedimentary rocks. The fracture zones are 8 to 12 feet wide and also contain some iron-oxide minerals. The Tertiary rocks consist of interbedded tuffaceous sandstone and diatomite.

Many stream-sediment samples from the East Walker River in this part of Lyon County contain over 10 ppm uranium and a few contain over 20 ppm.

References: Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977; Lawrence Livermore Laboratory, 1976a.

278. Glacier King No. 1 claim

Location: C, E/2, S24,T16N,R20E.

Geology: Autunite(?) and iron oxides occur along a minor fault near the base of the Guild Mine Member of the Mickey Pass Tuff.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3578; U. S. Bur. Mines Minerals Yearbook, 1957; E. C. Bingler, oral commun., 1977.

282. Well 12/23-25 cb1

Location: NW1/4 SW1/4, S25,T13N,R23E.

285. White Rose & White Rose No. 1 claims

Location: NW/4 S16,T10N,R26E.

Geology: Carnotite, gypsum, and sulfur(?) are reported as coatings along fractures and joints in diatomaceous beds of Miocene or Pliocene age. The mineralized outcrop was not visible in the prospect pit in 1979.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3580; Finch, 1967; Powers and Finch, 1955; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

MINERAL COUNTY

296A. Lost Sheep claims

296B. Name unknown

Location: S16,17,20,21,T10N,R35E.; location approximate.

Development: Bulldozer cuts(?) in white Tertiary sedimentary rocks.

Geology: Colored uranium minerals are reported from white Tertiary sedimentary rocks.

References: Frank Kleinhampl, oral communication, 1977.

297A. Broken Bow and Broken Bow King groups.

297B. Ramshead Claims

Location: S27(?),T9N,R34E.

Ownership: Ralph Fullington, Mina

Geology: Radioactive occurrences reported along fault and in granite (also possibly in Tertiary sedimentary rocks). The granite may be slightly anomalously radioactive.

311A. Sunday Mining Co. group

Other names: Sunday prospect, Yellow Cat claim

Location: NW/4 NW/4 S33,T5N,R32E (unsurveyed). Projected from west.

Geology: Numerous iron-stained seams in a Tertiary andesite breccia locally contain torbernite or metatorbernite. The andesite disconformably overlies Jurassic(?) granitic rocks. Zeunerite(?) and cuprosklodowskite have also been reported.

The uranium occurrence is adjacent to a major east-west fault; the uranium minerals appear to be concentrated with iron-oxide minerals. Some of the nearby Cretaceous granitic rocks are anomalous in uranium (7-10 ppm); ground water may have leached uranium from the rocks and deposited it (along with iron-oxide minerals) in fault and fracture zones.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3597; Ross, 1961, pl. 1, table 6, 7, and p. 76; Borbas, 1977.

311B. Name: Name unknown

Location: NE/4 NE/4 S31,T5N,R32E.

Geology: Samples of argillized Cretaceous quartz monzonite from this area are reportedly as high as 36 ppm cU_3O_8.

References: Borbas, 1977, pl. 1 and 2.

322 Carol R mine

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3621; Davis and Hetland, 1956; Finch, 1967; Ross, 1961, p. 76 and pl. 1; Power and Finch, 1955; U. S. Bur. Mines Minerals Yearbooks 1955, 1956; Cupp, Leedom, Mitchell, Kiloh, and Horton, 1977.

NYE COUNTY

343. N&H group

Location: C E/2 E/2 S27,T10N,R44E (unsurveyed).

Development: About 1000 feet of workings on two levels. Previously worked for tungsten.

Radioactivity: Background = 0.03 mR/hr; High = 0.15 mR/hr. Numerous assays reportedly run 0.004 to 0.09 percent U_3O_8.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3662; Gibbs, 1976.

344A. 4 Aces and Joker claims

Location: NW/4 S27,T10,R44E (unsurveyed).

Development: A 17-foot shaft (Joker shaft) and approximately 300 feet of horizontal workings (Ace adit) for tungsten.

Radioactivity: Fractures give readings up to 1500 cps. Some 3- to 4-foot chip samples assay 0.03 to 0.04 percent eU_3O_8, and a select sample from the Ace adit contained 0.08 percent cU_3O_8.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Repts. 3660, 3685; King and Roberts, 1954a; Gibbs, 1976.

344B. Good Enough inclined adit

Location: NE/4 NE/4 S27,T10N,R44E.

Development: A 35-foot inclined shaft.

Radioactivity: Background = 200 cps; High = 7000 cps. Assays of 0.01 to 0.61 percent uranium are reported.

Geology: Autunite and anomalous radioactivity occur in a shallow inclined shaft in quartz monzonite. Iron- and copper-oxide minerals, pyrite, chalcopyrite, and narrow (1-2 inch) quartz veinlets are also reported.

References: Gibbs, 1976.

347A. Henebergh Tunnel

Location: C NW/4 S28(?),T10N,R44E (unsurveyed).

Radioactivity: (Underground): Background = 0.02 mR/hr.; High = 1.5 mR/hr. Select samples here reportedly assayed up to 0.16 percent U_3O_8, but chip and grab samples do not contain more than 0.05 percent U_3O_8.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Repts. 3655, 3710; Davis, 1954; King and Roberts, 1954a; Mining Jour. 1946; Kral, 1951, p. 154; Mining and Ind. News, 1948a; Eng. and Mining Jour., 1946, 1950c; Gibbs, 1976.

347B. Sample locality 15

Location: SW/4 SE/4 S21,T10N,R44E.

Radioactivity: Background = 80 cps; High = 750 cps. An assay of 0.06 percent U_3O_8 is reported from the most radioactive area.

Geology: Autunite and anamalous radioactivity are reported from fracture surfaces in Cretaceous quartz monzonite. The most intense anomaly occurs at the intersection of two vertical fractures which trend N48E and N70W. This prospect apparently lies along the continuation of a N55E fault zone recognized at the Henebergh Tunnel, 0.5 mi. to the southwest.

References: Gibbs, 1976.

362. Butler prospect

Other names: Blue Bird prospect? (fluorite claim)

Location: C, N/2, S22,T12S,R47E.

365. Thor claims (nos. 1-3)

Geology: Anomalous radioactivity is present along a N19°E, 65°W fault zone in a Tertiary rhyolite tuff and latite. The highest radioactivity is found near the surface, and is associated with limonite coatings on fracture surfaces. Autunite was reported from one locality. Conglomerate and sandstone are also reportedly mineralized.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Repts. 3683, 3689, 3690, 3709; Davis, 1954; Kral, 1951, p. 47.

PERSHING COUNTY

378A. Big Question claim

378B. Cay - U claims

Location: Approx. NW/4 S12,T26N,R24E.

Geology: Uranium minerals are reported in metamorphic rocks which occur as roof pendants in a granitic intrusive. The geology is similar to the nearby Four Jacks claims.

References: Don Antrim, oral commun. 1974.

380. Kimbo group

Location: NE/4 S9,T28N,R24E.

381. Black Granite group (nos. 1-12), Willow group (nos. 1-19)

Location: NE/4(?) S4,T28N,R24E.

WASHOE COUNTY

399. Ickes Prospect

Location: SE/4 S3, and SW/4 S2, T24N,R24E.

Development: Adit (+200 feet long) and some bulldozer cuts.

Geology: Phosphuranylite, calcite, and manganese- and iron-oxide minerals occur with fault gouge along a fault zone in ash-flow tuff. This fault also brings the tuffs into coincidence with pre-Tertiary metamorphic rocks.

References: Schilling, 1963; Bonham, 1961; H. F. Bonham, Jr., oral commun. 1978.

403. Armstrong claims

Location: NW/4 SW/4 S31 (Penny claims) and SE/4 SW/4 S32 (Armstrong claims), T24N,R21E.

Production: 21 tons of ore averaging 0.33 percent U_3O_8 (138 lbs U_3O_8).

Development: Bulldozer trenching a 40-foot shaft, and about 27 feet of underground workings.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 377; Bonyam, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

405. Lowary claims

Location: SE/4 SE/4 S36,T24N,R20E; and SW/4 S31,T24N,R21E.

Production: 311 tons of ore averaging 0.53 percent U_3O_8 (3306 lbs U_3O_8).

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3775; McJannet, 1957; Brooks, 1956; U. S. Bur. Mines Minerals Yearbooks, 1957, 1964; Cupp, Leedom, Mitchell, and Allen, 1977.

406A. DeLongchamps prospects

Production: 200 tons of ore averaging 0.23 percent U_3O_8 (911 lbs U_3O_8).

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3780; Bonham, 1969; Brooks, 1956; Smith, 1956; Butler, 1958, p. 123; McJannet 1957; U. S. Bur. Mines Minerals Yearbooks 1956, 1959, 1966; Holmes, 1972; Cupp, Leedom, Mitchell, and Allen, 1977.

406B. Winnemucca Hills prospect

Other name: Double Jack placer claim

Location: NE/4 NE/4 S10,T23N,R20E.

Development: Bulldozer cuts

Radioactivity: 15 and 32 ppm U_3O_8

Geology: Anomalous radioactivity occurs in thin clay beds in sandstone and interbedded vitric tuff. The prospect is at the mouth of Mine Canyon, which drains an area having several uranium prospects.

References: Cupp, Leedom, Mitchell, and Allen, 1977.

407. Lost Partner group

Location: SW/4 SW/4 S24,T23N,R21E; near the head of Perry Canyon.

Development: Prospect pits and bulldozer cuts.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3768; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

410. Thunder Bird group (nos. 1-15)

Location: NW/4 SW/4 S35,R23N,R21E; at end of road shown on topographic map.

Production: 16 tons of ore averaging 0.34 percent U_3O_8 (109 lbs U_3O_8).

Geology: Phosphuranylite and fluorescent opal (sparse) occur in cavities and along fractures in a crystal-poor ash-flow tuff (probably the Nine Hill Tuff). The occurrence,is adjacent to a strongly altered zone in the tuff. Autunite uranophane(?), and gummite(?) have also been reported. Uranium minerals replace sparse phenocrysts in a few places. The adit was driven on a gouge and breccia zone which trends N55°E and is vertical. The uranium mineralization seems to be concentrated in the basal, less-welded portion of the Nine Hill Tuff.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3784; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977; H. F. Bonham, Jr., written commun., 1978.

413. Sunnyside claims (nos. 1 and 2)

Location: SW/4 SW/4 S20,T24N,R19E.

Development: Several bulldozer cuts and a caved shaft.

References: Cupp, Leedom, Mitchell, and Allen, 1977.

414. Go-Getter and Pup claims

Location: NE/4 SE/4 S29 or near the corner of S27, 28, 33, and 34, T24N,R19E (projected).

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3776; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

415. Lara No. 9 claim

Location: SW/4 NW/4 and NE/4 SW/4 S29,T24N,R19E (projected).

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3771; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

417. Tick Canyon group (nos. 1-16)

Location: SW/4 NE/4 S32,T24N,R19E. Prospect is located in Tick Canyon 1/4 miles beyojd the end of the road. Shown at shaft symbol on Dogskin Mountain 15-minute topographic sheet.

Production: 15 tons of ore averaging 0.21 percent U_3O_8 (64 lbs U_3O_8)

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3785; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

418A. Independence group (nos. 1-12)

418B. Waltman prospect

Location: SE/4 NW/4 S19,T24N,R18E; 0.25 mi. north of the junction of US 395 and Red Rock Road, turn east; locked gate, obtain key from U. S. Forest Service; follow road to property. In Calif. about 0.5 mi. from the State line.

Production: Possibly a small amount in 1976, 1977.

Radioactivity: Up to 0.5 percent U_3O_8 reported by owner. Sample collected by H. F. Bonham, Jr. contains disseminated autunite and assays 0.017% U_3O_8.

Geology: Uranium occurs in tuffaceous sedimentary rocks interbedded with ash-flow tuffs. Mineralized beds are 3-6 feet thick. Interbedded conglomerates are reportedly not strongly mineralized.

References: H. F. Bonham, Jr., oral commun., 1977.

419A. Crescent claims

Location: SW/4 NW/4 S27,T24N,R18E.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Repts. 3772, 3791; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

419B. Red Rock Canyon prospect

Location: SW/4 SW/4 S30,T24N,R18E.

Development: Drill holes and bulldozer cuts.

Radioactivity: Samples contain 42 to 137 ppm eU.

Geology: Anomalous radioactivity occurs in a thin clay zone interbedded with arkosic sandstone and boulder conglomerate. The beds dip 45°W. Carbonaceous debris in the clay zone can be traced for at least 300 feet along strike. The zone is within 100 feet of the contact with underlying ash-flow tuff.

References. Cupp, Leedom, Mitchell, and Allen, 1977.

420. Yellow Jacket claims

Location: NW/4 S5,T23N,R18E.

Radioactivity: Background = 0.02 mR/hr.; High = 0.1 mR/hr. One select sample reportedly contained 0.06 percent eU_3O_8, and another only 69 ppm cU_3O_8.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3786; Finch, 1967; Cupp, Leedom, Mitchell, and Allen, 1977.

421A. Jeanne K claim

Location: NW/4 SE/4 S7,T23N,R18E; near the California-Nevada border.

Geology: Sabugalite is disseminated in a 1-foot-thick Tertiary clay bed and an underlying 2-inch carbonaceous bed. The mineralized unit overlies water-deposited tuffs which disconformably overlie granitic rocks. Sparse uranium mineralization extends a short distance into the underlying tuffs. The clay bed was found to contain uranium for over 100 feet along the strike. An outcrop of quartz diorite 150 feet southeast of the prospect contained 22 ppm cU_3O_8; indicating a possible source for the uranium in this and nearby deposits.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 1151 (California). Cupp, Leedom, Mitchell, and Allen, 1977; Waters, 1955.

421B. Cornelia C prospect

Other names: Crystal prospect, Jeannie K claim

Location: SE/4 SE/4 S6,T23N,R18E.

Development: Drill holes, bulldozer cuts and trenches.

Radioactivity: Average values for bedded tuff is 50 ppm U, for sandstone 23 ppm.

Anomalous radioactivity occurs in steeply dipping upper Tertiary sandstone and interbedded waterlaid tuff. The feldspathic sands exhibit festoons of iron oxides, indication downdip migration of solutions, but there is no evidence of roll-type alteration. The quartz grains do not appear to be etched, the feldspar and biotite grains are not significantly altered, and relict pyrite is not evident. The sands are clearly oxidized, but no evidence was observed to indicate that the sediments were ever reduced. The reductant responsible for fixing anomalous concentrations of uranium at the prospect is thought to be organic, related to a limited bog and marsh environment, possibly of Pleistocene age.

References: Cupp, Leedom, Mitchell, and Allen, 1977.

422. Barbara L. claim

Location: NW/4 NW/4 S18,T23N,R18E; (in California, near the state line).

Development: Drill holes and shallow pits and trenches.

Radioactivity: Background = 0.015 mR/hr; High = 0.32 mR/hr; average = 0.07 mR/hr. Samples contain 0.17 to 0.41 cU_3O_8.

Geology: The Barbara L prospect consists of several small pits and trenches that expose a radioactive organic-rich layer overlying basal upper Tertiary sandstone and the "Hartford Hill Rhyolite". A 4-ft-thick layer of humic-rich plant debris, intermixed with clay, silt, and scattered detrital phenocrysts, is anomalous over a 1,000-square-ft area. Chemical uranium values for ore-grade material are nearly 100 times greater than radiometric equivalent values, indicating substantial dis-equilibrium. The radioactive anomaly extends into the underlying limonite-stained arkosic and tuffaceous basal sandstone, which contains 30 ppm U_3O_8. Recent slopewash sands, including minor carbonaceous trash, are also anomalous (23 ppm U_3O_8). The humic-rich layer, locally developed from the Bastain prospect northward to the Barbara L prospect, probably represents an exhumed paleosol related to a discontinuous paleobog and marsh environment marginal to the shores of Pleistocene Lake Lahonton. Anomalous recent slope-wash sediments containing finely disseminated carbonaceous material may indicate that (1) Petersen Mountain was an active source for decomposed vegetation that accumulated within this environment, and (2) uranium concentrations constantly evolve in a predominantly arid oxidizing environment. Additional uranium concentrations may be expected in sandstone directly downdip from exposures of the uranium-rich paleosol (Cupp, Leedom, Mitchell, and Allen, 1977).

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3778; Finch, 1967; Cupp, Leedom, Mitchell, and Allen, 1977.

424. Bastain prospects

Location: NE/4 SE/4 S30,T23N,R18E.; 1 mile north of the Buckhorn mine on the California-Nevada boundary.

Development: Drill holes and bulldozer cuts.

Radiocativity: Composite trench samples contain 100-500 ppm cU_3O_8.

Geology: Autunite is disseminated in and encloses and replaces carbonized wood fragments which occur near the base of an ash-flow tuff overlying granodiorite. A paleosol developed on the granodiorite is also anomalous in uranium.

References: McJannel, 1957; Van Couvering, 1962; Cupp, Leedom, Mitchell, and Allen, 1977).

425, Lucky Day and Valley View prospects

Location: SE/4 NE/4 S19,T23N,R18E.; on the California-Nevada boundary.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 1153 (California). Cupp, Leedom, Mitchell, and Allen, 1977).

426. Buckhorn mine

Location: SE/4 NE/4 S31,T23N,R18E; northeast of Hallelujah Junction on the California-Nevada boundary (fig. 31).

Production: 317 tons of ore at a grade of 0.24 percent U_3O_8(1490 lbs U_3O_8).

References: Hetland, 1955; Sharp, 1956; Walker, Lovering, and Stephens, 1956, p. 34; Bonham, 1969; Troxel, Stinson, and Chesterman, 1957, p. 671 and 672; McJannet, 1957; Van Couvering, 1962; U. S. Atomic Comm. Prelim. Reconn. Rept. 1152 (California); Cupp, Leedom, Mitchell, and Allen, 1977.

428. Petrified Tree group (nos. 1-17)

Other name: Spanish Springs Valley prospect

References: U. S. Atomic Energy Comm. Prelim. Reconn. Repts. 3773, 3760; Bonham, 1969; Holmes, 1972; Cupp, Leedom, Mitchell, and Allen, 1977.

429. Daisy Mae claims

Other name: Greenstone prospect

Location: NW/4 SE/4 S17,T22N,R20E.

Development: A 45-foot adit, several cuts and trenches.

Geology: Autunite(?) has been reported from a light green band in an ash-flow tuff. Anomalous radioactivity is also associated with iron staining.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3765; Cupp, Leedom, Mitchell, and Allen, 1977.

431. Good Luck claims (nos. 1-8)

Location: NE/4 NW/4 S16,T21N,R20E.

References: U. S. Atomic Energy Comm. Prelim. Reconn. Rept. 3763; Finch, 1967; Bonham, 1969; Cupp, Leedom, Mitchell, and Allen, 1977.

WHITE PINE COUNTY

442. Grand Prize and Mayflower claims

Other name: Hendrix

Location: S8(?) or 17(?),T12N,R63E; Sawmill Canyon, 6 mi. NE of Lund, at dozer cuts on hill, past Lund Mining Co. buildings.

Radioactivity: Samples reportedly up to 0.15% U_3O_8; 1 mR/hr over 18 feet with a high of 2 mR/hr, both in a 30-foot adit.

Geology: A north-south brecciated zone, 125 ft wide and 5 ft thick in quartzite is anomalously radioactive. An intrusive contact with granitic rocks is associated with the radioactivity. Also, a latite porphyry intrusive occurs nearby.

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